SATISFACTION OF FINANCIAL SERVICES PROVIDED BY TOUCH 'N GO APPS AND COMMERCIAL BANK TOWARDS MALAYSIAN

CHEONG SYNC YUET

LEE JING NING

NG QIAN NING

PAN WEI XIONG

BACHELOR OF FINANCE (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE
DEPARTMENT OF FINANCE

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BY

CHEONG SYNC YUET

LEE JING NING

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PAN WEI XIONG

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DECLARATION

We hereby declare that:

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

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

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

(4) The word count of this research report is 16,781.

Name of Student:	Student ID:	Signature:
1. Cheong Sync Yuet	2001324	CHEONG
2. Lee Jing Ning	2001338	LEE
3. Ng Qian Ning	1903473	NG
4. Pan Wei Xiong	1904016	PAN

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DEDICATION

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PREFACE

During the pandemic COVID-19, the development of e-wallet had advanced rapidly, especially the Touch 'n Go application. The financial products had also been launched and improved in Touch 'n Go such as GO+, GOpinjam and GOinvest, which are similar with the financial products such as fixed deposit, mutual fund and short-term loan by commercial banks. Therefore, this research is aimed to investigate the customer satisfaction of using financial products provided by Touch 'n Go and commercial banks.

The title of this study research is "Satisfaction of Financial Services Provided by Touch 'n Go apps and Commercial Banks Towards Malaysian". Dependent variable of customer satisfaction is chosen for this research, while assurance, customer expectation, performance expectancy are taken to be independent variables. In addition, age had been added to be a mediator to connect the dependent variable with independent variables.

We sincerely hope that this research project can provide some useful information and insights for the Malaysian government, education institution, as well as the developers of application and commercial banks, so that they can improve their products and services in future. Future researchers can also make this project as a reference for their further study.

ABSTRACT

This research aims to examine and evaluate the satisfaction of financial services provided by Touch 'n Go apps and commercial banks towards Malaysians. The study employs a primary data collection method, using a Google Form questionnaire targeted at respondents aged between 18 to 25 years old. There are a total of five variables used in the research, including three independent variables (assurance, customer expectation, performance expectancy), one dependent variable (customer satisfaction), and one mediator variable (age). A total of 421 questionnaires were collected, which include 30 pilot test samples and 391 actual samples for further study and data analysis. The data collected was analysed using the SmartPLS analysis software. The research found that only 3 out of 14 hypothesis developments were significant, while the remaining 11 were insignificant. The results show that assurance and customer expectation have a significant impact on the satisfaction of financial services provided by Touch 'n Go, and customer expectation has a significant impact on the satisfaction of financial services provided by commercial banks. However, performance expectancy and age do not significantly impact the satisfaction of financial services provided by commercial banks and Touch 'n Go. Furthermore, the research provides useful data on implications, limitations, and recommendations, providing a useful reference for future research relating to this topic.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

Nowadays, digital payment has become the platform that is commonly used by everyone because users can make payments in a more convenient way. Thus, several digital payment platforms have launched in Malaysia. Touch 'n Go app is one of the e-wallet that is familiar to users of Malaysia. The popular e-wallets trending in Malaysia are Maybank QRPay, BigPay, GrabPay, Alipay, Boost, WeChat Pay, FavePay and Touch 'n Go eWallet (Finder, 2020). Even though Touch 'n Go Group may not have applied for a licence to engage in digital banking, it is now starting to move into digital banking. There are enormous prospects for Touch 'n Go to provide financial services as an intermediary without being a bank, according to Effendy, CEO of CIMB Digital Assets. Touch 'n Go, which initially provided e-wallet services, now provides services like insurance, investment products, and online personal loans, acting as an "intermediary" between users and financial institutions (Lee & Goh, 2022). For example, Touch 'n Go acts as an intermediary in asset management without really managing any assets. Touch 'n Go is also now a credit intermediary and insurance intermediary without being a bank and insurer. Furthermore, the investment option offered by Touch 'n Go eWallet, GO+, has also attracted more than two million investors, according to Bernama (2022). The increasing registered users of Touch 'n Go Digital shows that more and more people are starting to use the financial services launched by Touch 'n Go. Since Touch 'n Go is offering similar financial services to commercial banks, this study aims to investigate how satisfied Malaysians are with Touch 'n Go, and similar financial services offered by commercial banks. By comparing users' satisfaction with the financial services provided by Touch 'n Go and commercial banks, this study aims to determine which services users prefer.

1.1 Research Background

1.1.1 Introduction of Commercial Banks

According to CIF Team (2022) and Okechukwu & Nebo (2016), a commercial bank is a financial institution that offers various financial services, such as deposit acceptance, loans, financial investments, and insurance services. In addition to providing financial services, commercial banks play a significant role in establishing the economy, channeling cash inflow and outflow, and providing market liquidity. The profits of a bank come from interest spreads and banking fees (Point Editorial, 2022). To increase customer engagement and decrease transaction costs, commercial banks have launched their mobile banking systems with the support of advanced technology (Goi, 2014).

Rehman et al. (2019) report that many customers have been attracted to mobile banking due to its convenience, and Maybank Berhad was the first bank to provide mobile banking services in Malaysia in 2009. Moreover, e-banking has been successful in Malaysia, with 73.1% of the population performing banking activities using e-banking. The e-payments for DuitNow QR service have been accepted by many merchants, with an increase from 0.7 million to 1.1 million between the end of 2020 and the end of 2021 (Rehman et al., 2019).

1.1.1.1 Financial Services Provided by Commercial Bank:

1. Fixed deposit

One of the products provided by all the commercial banks is fixed deposit which is also named as certificate of deposit (Okechukwu & Nebo, 2016; CFI Team, 2022). For fixed deposits, customers are required to deposit an amount of funds without withdrawal in a certain period for receiving the return with a fixed interest rate (iMoney Editorial, 2022). The article of iMoney Editorial (2022) had claimed that the fixed depositors could choose a specific tenure such as one month, three months, six months, one year and up to five years, moreover, Okechukwu and Nebo (2016) had also added their statement that the longer the tenures of deposit, the higher the interest rate. It is different from the current account which allows the customers to increase their liquidity which can withdraw the money anytime and anywhere, but it is provided with a much lower interest rate (iMoney Editorial, 2022). According to the table in article of Ringgit Plus (2022), Bank Rakyat had provided the highest interest rate recently for one-month fixed deposit which is 2.25%, MBSB Bank provided 2.35% of deposit rate for three-month fixed deposit and interest rate of 2.70% provided by Bank Simpanan Nasional for 12-month fixed deposit. Furthermore, there are many promotions of the fixed deposit plan with some requirements from a lot of banks, for example, Affin Bank had organised a deposit campaign which can get 8.88% or 18.88% for one-month deposit after purchasing the bancassurance products from them (Ringgit Plus, 2022).

Figure 1.1

Fixed Deposit Interest Rate in Malaysia from 2014 to 2021
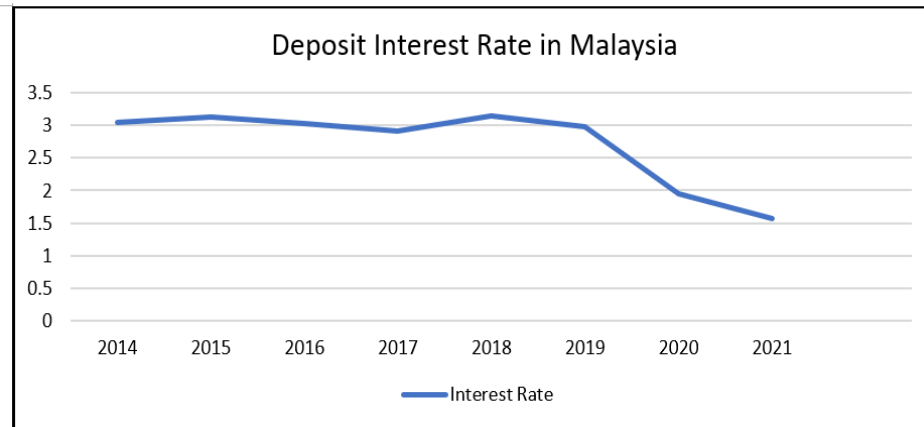
Sources: Trading Economics (2023)

2. Mutual Fund

Mutual fund is a financial investment product provided by commercial banks and it allows the investors to gather and pool their funds with other investors to be invested in a portfolio of assets such as shares, bonds, properties, commodities and deposits by the banks (Smartinvestor, 2021). Therefore, the investors are earning from the dividends from the stocks invested, capital gain from selling the stock at a higher price than buying price. According to article of Smartinvestor (2021), there is a list of the best mutual funds in Malaysia based on their past five year performance, for example, AM Bank, they had a MYR unit trust which is AmChina A-Shares, their annualised returns for the past five years is 23.33% which is only require a minimum initial investment fund and subsequent investment fund of RM 5000. However, Kaur (2018) had argued that some researchers agree that the past performance will persist in the long run, and some researchers found that the past performance will persist in

the short run. In Kaur (2018) result, he claimed that the past performance is dependent on the performance measure chosen such as gross return and Sharpe ratio.

Figure 1.2

KAF Core Income Fund Performance from 2018 to 2022
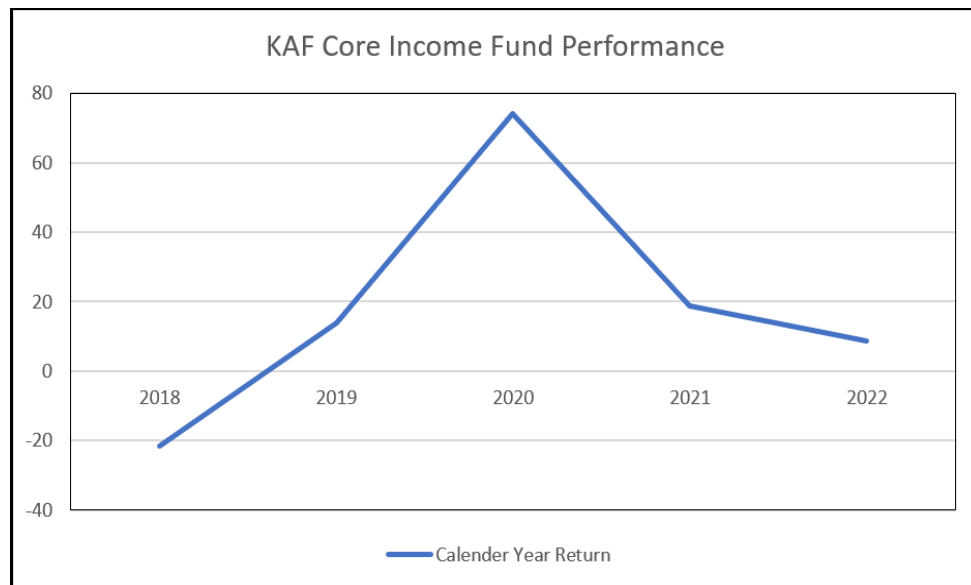
Sources: FSMOne (2023)

3. Credit Card and Short-Term Loan

Apart from that, commercial banks are also providing short-term loans such as credit loans which are credit cards (CFI Team, 2022). Credit cards have been produced due to the convenience for the liquidity because the customers can easily spend the money especially for a huge amount although they do not have enough money and it is easy to assess for a credit card (Alam et al., 2014; CFI Team, 2022). Nowadays, even a normal daily transaction can be also settled by using a credit card. However, commercial banks who provide the short-term

loans will charge some interest rate which is also known as finance charge on the outstanding amounts for the borrowers as a profit once they do not repay the loans on time, but if the customers are able to settle on time, they will not be charged for finance charge (Zandi, Mansori & Ong, 2019). Based on the Bank Negara Malaysia (2019), people who want to apply for the credit card must have at least RM 24000 of annual income and the credit limit shall not exceed two times of their monthly income. Besides, according to Bank Negara Malaysia (2019), the cardholders will be categorised into three tiers, where tier-1 who promptly settle their minimum payment for 12 consecutive months will be charged on 1.25% monthly, tier-2 who promptly settle their minimum payment for10 months in 12 months will be charged on 1.42% monthly, and tier-3 who do not match the requirement above will be charged on 1.5% for the finance charge for retail transaction and cash advances.

Figure 1.3

Malaysia Overnight Rate from 2018 to 2023
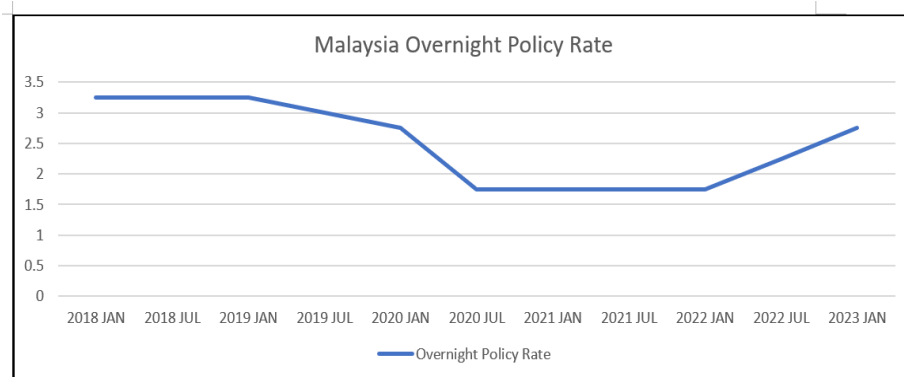
Sources: Bank Negara Malaysia (2023)

Figure 1.4

Annual Percentage Rate of Mastercard (Variable)
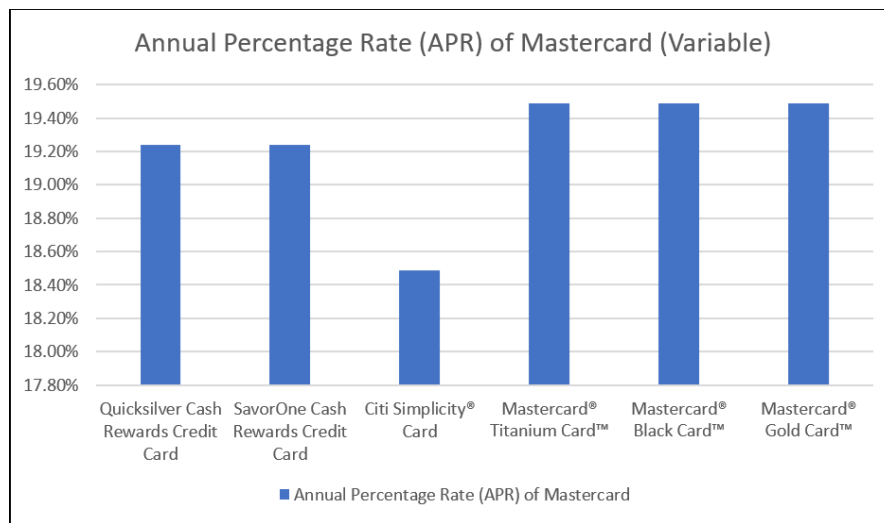
Sources: Mastercard (n.d.)

1.1.2 Introduction of Touch 'n Go

In 1996, the Touch 'n Go system was first implemented at Jalan Pahang Toll Plaza. According to the new features Touch 'n Go introduced from 1996 to 2011, such as contactless card payments and SmartTAG, enabling users in Malaysia to pay for toll roads, public transportation, and parking as well as to shop at retail establishments. (Tan, 2016) In 2008, CIMB Group Holdings Bhd made the decision to purchase a share in Touch 'n Go Sdn Bhd. Before forming a collaboration with Ant Financial, Touch 'n Go first made its e-wallet application, Touch 'n Go Wallet. Instead of depending on the NFC technology that is frequently employed by other prominent e-wallet businesses, it used QR code technology. Users may replenish prepaid mobile services, pay bills, buy movie, and flight tickets, transfer and receive money from other e-wallet users, and make purchases at shops using the application's original iteration. Users

reacted favourably to the Touch 'n Go wallet app's initial release. After that, as a joint venture between Touch 'n Go and Ant Financial, the parent company of Alipay, Touch 'n Go eWallet was introduced in 2017 in Malaysia. So far, Touch 'n Go eWallet has officially entered the financial technology industry (Touch 'n Go, n.d.). In February 2022, Touch 'n Go eWallet announced its participation in DuitNow, a Malaysian electronic transaction ecosystem that enables money transfers from Touch 'n Go eWallet to rival services as well as payments to businesses that accept only a single standardised DuitNow QR code that can also be used by rival e-wallet apps. (Course Hero, 2021)

The Securities Commission of Malaysia has granted permission for Touch 'n Go eWallet to function as a Recognised Market Operator for the first time. This entails that the business is permitted to directly distribute capital market products through the Touch 'n Go eWallet platform, including money market unit trust funds, without having to divert users to a third-party application. Go+, a new investing option that enables its eWallet users to earn daily returns with their money, was formally introduced by Touch 'n Go in March 2021 (Wong, 2021). The group's long-term strategy includes GO+ as a component of its expansion into the "disruptive" financial technology market (Touch 'n Go 2022). After a few months, CarInsure was released on the Touch 'n Go platform, simplifying the process for consumers to renew their road tax and get auto insurance. In 2022, a new inclusive digital personal loan option called GOpinjam was launched by Touch 'n Go Group and is accessible through Touch 'n Go eWallet. This is the first digital loan service offered by Touch 'n Go eWallet. Until now, Touch 'n Go eWallet has offered a number of other financial services including, GOinvest, SafeTrip, SafeHome, WalletSafe and Program Baucar Perlindungan Tenang.

1.1.2.1 Financial Services Provided by Touch 'n Go

1. GO+

Touch 'n Go eWallet has introduced a new investment tool called GO+ that enables users to earn daily returns with their amount. GO+ allows users of the Touch 'n Go eWallet to begin investing with a minimum cash-in of RM10. All Malaysians aged 18 and above with a verified account are allowed to access this financial service. Users can earn a return of 1.43% per annum from their total GO+ balance. Earnings will be transferred to the user's account on a daily basis. Besides, GO+ users can choose to cash out the balance of GO+ to either their bank account or their eWallet. If the request is made before 4pm, cash-out to an eWallet is completed instantaneously, whereas a transfer to a bank account only takes one business day. There are no fees associated with requesting a cash-out at Touch 'n Go, but a 0.45% management fee and a 0.03% trustee fee will be charged per year (Wong, 2021). In November 2021, the Touch 'n Go eWallet launched a three-month Bonus Return campaign that allows customers to earn an additional 4% a year in bonuses on top of the daily return rate. The additional 4% per year plus the current daily return rate, which is anticipated to be 1.47% per year, ensure that users will get up to 5% daily bonus rate. The GO+ account must have a minimum value of RM200 and a maximum balance of RM9500. The significant offer of the 4% GO+ bonus return campaign makes for a great short-term, hassle-free savings tool to the users (Alex, 2021). This function in Touch 'n Go eWallet, had also exceeded 2 million investors, the total asset had grown by 261.8 percent in the fourth quarter of 2021 to RM 492 million as at December 2021.

Figure 1.5

The Growth Rate of GO+ and Fixed Deposit from 2021 to 2022
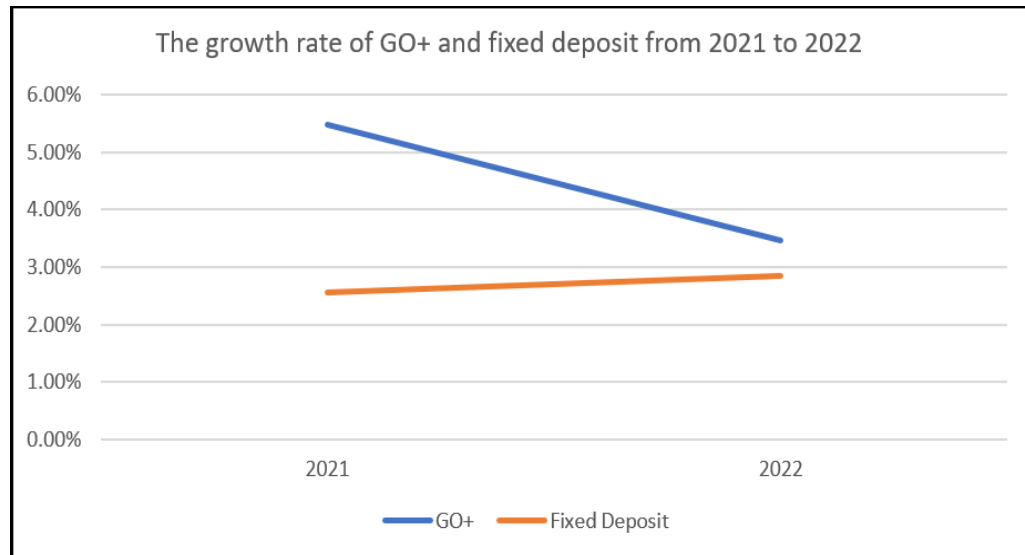
Sources: Alex Cheong (2022)

2. GOinvest.

A goal-based investment platform, GOinvest claims to deliver a better estimated gross return of up to 2.85% annually. All Malaysians aged 18 and above are allowed to access this financial service. According to Touch 'n Go, the fund is based on the Principal's Shariah-compliant Islamic Money Market Fund (Class D) which enables users to invest in Unit Trust funds with Principal Asset Management Berhad. It is designed for mid and short-term investments, and users can use it to start saving money for an initial fund as low as RM10. GOinvest has no maximum limit. The user can begin by setting up a general savings account or their financial goal. With a goal, a user can specify the period and target amount of the amount they want to save. Touch 'n Go will determine the monthly cash-in requirement, anticipated net return and interest rate for the

time frame. As GOinvest is launching in August 2022, there is currently no data available regarding its return (Digital News Asia, 2022).

3. GOpinjam

In collaboration with the Malaysian bank CIMB Bank Berhad, GOpinjam was created. Through TNG eWallet, users can access the inclusive digital personal loan product known as GOpinjam. Personal loans are available from GOpinjam starting at RM100 and going up to MYR10,000. From 8% per year to 36% per year, GOpinjam charges fixed interest on its borrowings. These loans have no hidden costs or early settlement charges and have repayment terms of one week to one year. To obtain GOpinjam, prospective borrowers will just need a monthly income of RM 800. Touch 'n Go has long prioritised financial inclusion, and they intend GOpinjam to be accessible to those who otherwise would not have had access to formal credit facilities (Technode Global, 2022). As GOpinjam was only launched in April 2022, there is no available data for the interest rate of GOpinjam (Ignatius, 2022).

1.2 Problem statement

Due to COVID-19, Malaysia has witnessed an explosive growth of e-payment services owing to the widespread adoption of e-wallets and cashless payments. It is clear that the adoption of Touch 'n Go has witnessed an astronomical increase among Malaysians. However, there are various challenges and barriers that may hinder the adoption of e-wallets due to the complex and multifaceted financial services sector in Malaysia. Commercial banks compete with e-wallets in the financial market as they provide

similar financial services, such as borrowing and investment plans. Therefore, the problem statement of this research is to identify which financial service providers-Touch 'n Go or commercial banks - satisfies consumers in Malaysia more, particularly among the 18 to 25-year-old age group. Furthermore, this research aims to investigate the underlying factors that affect and influence the preference of Malaysian consumers for Touch 'n Go or commercial banks, focusing on investment and borrowing plans, while also looking into the barriers that hinder the widespread adoption of e-wallets.

In terms of statistics, there is a 45% increase in e-payment transactions in the first half of 2020 compared to 2019 during the same period, reported by the Central Bank of Malaysia (Central Bank of Malaysia, 2020). Hence, a Mastercard report revealed that the usage of e-wallets has increased by a drastic 20% in 2020 (Mastercard, 2021). However, despite these impressive figures, Visa found out that cash payments are still preferred by 38% of Malaysians over e-wallets (Visa, 2021). Moreover, a survey done by iMoney discovered that a whopping 83% of Malaysians between 18 to 25 years old use e-wallets (iMoney, 2020). These conflicting statistics propose the need for a study that can provide a clearer understanding of barriers and consumer preferences to the adoption of e-wallets in Malaysia.

1.3 Research Objectives

1.3.1 General Objectives

The purpose of this investigation is to study the satisfaction level of Malaysians aged 18 to 25 regarding the assurance, customer expectation, and performance expectancy of Touch 'n Go and commercial banks.

1.3.2 Specific Objective

1.3.2.1 Commercial bank

1. To investigate the significant relationship between assurance and customer satisfaction with using commercial banks.
2. To investigate the significant relationship between customer expectation and customer satisfaction with using commercial banks.
3. To investigate the significant relationship between performance expectancy and customer satisfaction with using commercial banks.
4. To investigate the significant relationship between age and customer satisfaction with using commercial banks.
5. To investigate the significant relationship from assurance through age to customer satisfaction with using commercial banks.
6. To investigate the significant relationship from customer expectation through age to customer satisfaction with using commercial banks.

7. To investigate the significant relationship from performance expectancy through age to customer satisfaction with using commercial banks.

1.3.2.2 Touch 'n Go

1. To investigate the significant relationship between assurance and customer satisfaction with using Touch 'n Go.
2. To investigate the significant relationship between customer expectation and customer satisfaction with using Touch 'n Go.
3. To investigate the significant relationship between performance expectancy and customer satisfaction with using Touch 'n Go.
4. To investigate the significant relationship between age and customer satisfaction with using Touch 'n Go.
5. To investigate the significant relationship from assurance through age to customer satisfaction with using Touch 'n Go.
6. To investigate the significant relationship from customer expectation through age to customer satisfaction with using Touch 'n Go.
7. To investigate the significant relationship from performance expectancy through age to customer satisfaction with using Touch 'n Go.

1.4 Research Question

1.4.1 General Question

A research conducted in order to investigate the comparison of satisfaction rate of financial services provided by Touch 'n Go apps and commercial banks towards Malaysians aged 18 to 25.

1.4.2 Specific Question

1.4.2.1 Commercial bank

1. What is the significant relationship between assurance and customer satisfaction with using commercial banks?
2. What is the significant relationship between customer expectation and customer satisfaction with using commercial banks?
3. What is the significant relationship between performance expectancy and customer satisfaction with using commercial banks?
4. What is the significant relationship between age and customer satisfaction with using commercial banks?
5. What is the significant relationship from assurance through age to customer satisfaction with using commercial banks?
6. What is the significant relationship from customer expectation through age to customer satisfaction with using commercial banks?

7. What is the significant relationship from performance expectancy through age to customer satisfaction with using commercial banks?

1.4.2.2 Touch 'n Go

1. What is the significant relationship between assurance and customer satisfaction with using Touch 'n Go?
2. What is the significant relationship between customer expectation and customer satisfaction with using Touch 'n Go?
3. What is the significant relationship between performance expectancy and customer satisfaction with using Touch 'n Go?
4. What is the significant relationship between age and customer satisfaction with using Touch 'n Go?
5. What is the significant relationship from assurance through age to customer satisfaction with using Touch 'n Go?
6. What is the significant relationship from customer expectation through age to customer satisfaction with using Touch 'n Go?
7. What is the significant relationship from performance expectancy through age to customer satisfaction with using Touch 'n Go?

1.5 Significance of Study

Our research is to investigate the Malaysians' satisfaction with Touch 'n Go and commercial banks. There are three independent variables included in our study which

are customer expectation, assurance, and performance expectancy. The respondents can compare these variables of Touch 'n Go and commercial banks directly through the survey. It is important for Touch 'n Go and commercial banks to understand the needs of customers in order to provide better service to customers. Besides, from the information collected, Touch 'n Go and commercial banks can know their own shortcomings and improve them to expand their customer base.

This study is beneficial to the following parties:

Firstly, the investigation will provide a clear view to Malaysia's consumers on which platform provides the financial service such as investment functions and loan services will be beneficial to them. Moreover, it also provides guidance to Malaysia's consumers in choosing the platform that best suits their preferences and demand. The study also provides investment information to consumers. Hence, they can invest in better financial instruments and gain higher profits.

Secondly, this investigation also can be useful material to Touch' n Go developers. In the process of development, developers need to improve the service and function of the platform from time to time to the user's experience and the usage of the platform. Platform developers can refer to the research as a reference to create the strategy for improving their platform service and function by comparing their function and features with competitors to increase their competencies.

Thirdly, this investigation is significant to commercial banks in Malaysia. In this era, e-wallets have been launched one after another. In addition to the financial services of banks, people can also choose the financial services of e-wallets. Users of commercial banks may invest their money from savings accounts at the bank into e-wallets, causing

the bank to lose customers. Through this study, commercial banks can learn more about their competitors in the financial services industry.

Lastly, the researchers who are intended to study the topics related to the financial products provided by Touch n' Go or commercial banks, could refer to this investigation as their references. The researchers could understand some fundamental information about the financial services for their further study. Moreover, they could also compare the information in this investigate and know that the publics are preferring which platforms that providing similar financial services throughout our survey.

Overall, this study is significant because it can be a source of reference for multiple parties to have more understanding and view of the topic study. For example, the substitute platform can use the study as a reference to formulate an effective strategy. Other than that, it also will benefit other researchers that study a topic that is related to the study and variable of this topic. Moreover, by referring to the respondent's suggestions in the studies, platform developers can improve their platform's performance in the future by developing an effective strategic plan that fulfils consumer behaviour.

1.6 Conclusion

In the nutshell, the study is going to investigate the relationship between the independent variables which include investment function, insurance service, and loan

service and dependent variable which is Touch 'n Go application and the commercial bank.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

In this chapter, the underlying theories applied in this research will be discussed. Additionally, studies about the dependent variable and independent variables will be developed as the second part of this chapter and have undergone a thorough evaluation in a highly regarded publication. To make the relationships between the dependent and independent variables clearer, the third part of this chapter presents a conceptual framework. Last but not least, the hypotheses development of both Touch 'n Go and commercial banks is introduced to demonstrate each relationship between the variables, and as a final step to wrap up Chapter 2, a conclusion is produced.

2.1 Review of Theoretical Model

2.1.1 SERVQUAL

Many services and organisations are looking for profitable ways to stand apart as a result of increased competition and rapid deregulation. Delivering high-quality service has been linked to success in these firms as one method (Rudie

& Wansley, 1985; Thompson, DeSouza, & Gale, 1985). This is especially true given that marketers believe that a customer's assessment of the quality of a service and the subsequent degree of satisfaction have an impact on the key performance indicators for a company (Iacobucci et al., 1994). However, unlike the quality of goods, services have distinct qualities including intangibility, heterogeneity, inseparability, and perishability, assessing service quality appears to be difficult for service providers (Bateson & Hoffman, 1997). Due to this complexity, Parasuraman et al. created the SERVQUAL model to measure service quality (Krishna, 2018).

Customers are the only ones who can determine the quality of a service, according to a study by Parasuraman, Zeithaml, and Berry (1985) on the four service industries of retail banking, credit card companies, security brokerage, and product repair. Customers assessed the quality of the service based on the difference between what they felt and what they had anticipated. The difference between what customers expect from a service and what they actually receive is what they refer to as the service quality (Tan L H & Maran M, 2014). In addition, Bitner et al. (1990) showed that the customer's perception of the company and the services it offers is a good indicator of the quality of the services offered. Therefore, SERVQUAL received widespread recognition and enabled researchers to examine a variety of service industries such as healthcare, financial services, education, and banking (Nyeck, Morales, Ladhari, & Pons, 2002).

In its original form, SERVQUAL was developed by Parasuraman, Zeithaml, and Berry (1985), who discovered that 10 potentially overlapping dimensions corresponded to the criteria customers used to evaluate service quality. These attributes included: access, understanding/ knowing the consumer, courtesy, competence, security, responsiveness, reliability, tangible, communication,

credibility, and competence. Later in 1988, these ten elements were divided into five separate dimensions: 1. *Assurance*: The customers trusted the staff because of their expertise, politeness, and service quality; 2. *Reliability*: The correctness and promptness of the service; 3. *Tangibles*: The way a company's representatives, buildings, supplies, and equipment look; 4. *Empathy*: Concern for the individualised service offered to the client; 5. *Responsiveness*: The timely response to the needs of the consumer (Munusamy, J. et al, 2010; Tan L H & Maran M, 2014). The SERVQUAL scale is multidimensional, and because of its higher variability, it can provide more analytical information, according to Angur et al. (1999). The SERVQUAL model's five dimensions capture both expectations and perceived performance (Murari K., 2018).

Retailers can utilise SERVQUAL, a multiple-item scale with strong reliability and validity, to better understand customer service expectations and perceptions and, as a result, provide better service. Through its expectations format, which includes statements for each of the five service quality characteristics, the instrument provides a fundamental framework. If necessary, the skeleton can be modified or expanded to match the characteristics of a particular institution. Finding out how much the five factors matter in relation to how customers perceive quality as a whole is one possible SERVQUAL use. Another use of SERVQUAL was suggested by Parasuraman et al. (1988), which involved grouping clients of a company into several perceived-quality sectors based on their individual SERVQUAL scores. The demographics of these segments, the relative weights of the five dimensions in influencing perceptions of service quality, and the justifications for the reported perceptions can then be examined. Additionally, it can assist in identifying areas that need managerial focus and action to raise service standards (Parasuraman et al., 1988).

Based on Ansari (2010), after the researchers conducted multivariate linear regression, the results showed that tangibility, responsiveness, assurance, empathy, reliability, and trust have significant relationship with customer satisfaction with p-value smaller 0.05. In addition, according to Ighomereho (2022), the three independent variables of reliability, security and responsiveness have statistically significance on the dependent variable e-service quality. Based on the findings from Raza et al. (2020), its independent variables of responsiveness, personal needs, customer's reliability, user friendliness, site organisation and efficiency have a positive relationship with the dependent variable electronic customer satisfaction.

In summary, the main determinant of whether clients will continue to use a financial institution on a regular basis is the level of service provided (Lymperopoulos et al., 2006). Researchers largely concur that perceived value, trust, and customer satisfaction are all influenced by service quality (Harris and Goode, 2004; Verhoef et al., 2002; Olorunniwo and Hsu, 2006). Furthermore, Chau and Kao (2009) discovered that every aspect of service quality has a direct impact on customer satisfaction. According to Spreng and Mackoy (1996), providing better service results in higher satisfaction.

Figure 2.1

Research Framework of SERVQUAL
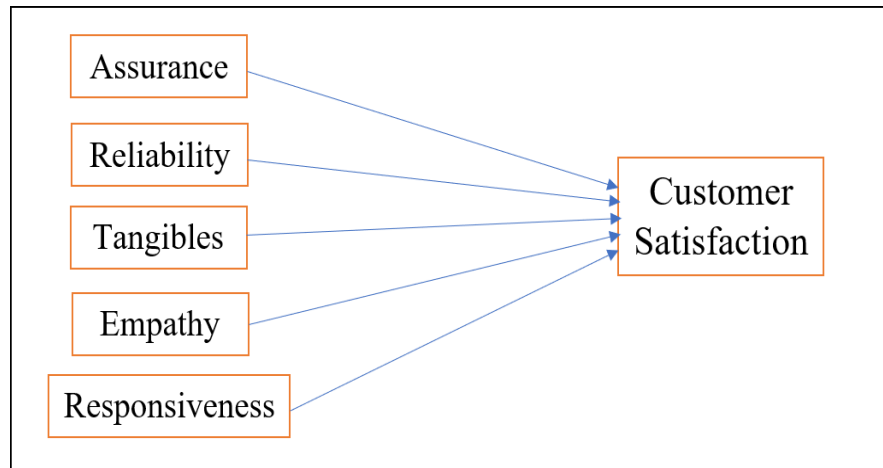
Sources: Munusamy, J. et al (2010)

2.1.2 American Customer Satisfaction Model (ACSI)

The American Customer Satisfaction Model (ACSI) was first proposed at the University of Michigan by the National Quality Research Centre in 1994. The development of this model is built based on the Swedish Customer Satisfaction Barometer model (SCSB) and the ACSI model is widely used to measure the quality of goods and services experienced by customers. On the other hand, the ACSI model is the only national cross-industry model in the United Stated that is used to measure customer satisfaction.

ACSI model is a cause-and-effect model that starts from indices for the driver of satisfaction such as "customer expectation", "perceived quality", and "perceived value" on the left side of the model, then the "customer satisfaction" that impact by the three factors in the left side of the model will place in the

centre. Finally, the outcome of satisfaction such as "customer complaints" and "customer loyalty" will be placed on the right side of the ACSI model. There are three components in the ACSI model that will affect the level of customer satisfaction (Angelova & Zekiri, 2011).

First is customer expectation, this is an important component in measuring customer satisfaction and is used to determine the overall satisfaction of customers by measuring the expectation of the customer to the quality of goods and service (Angelova & Zekiri, 2011). Thus, this component is important because the expectation is the result of prior experience with the goods and services of the company if there is a problem that occurs with the customer expectation, the company might lose their customer or spend the money and time in the direction that does not meet customer expectation. (Xue & Yang, 2008). According to Kolter (2000), the customer will create their expectation through experience, advice from friends, and company promises. Thus, the company should perform their service well for the first time to keep the rise expectation from the customer perspective (Parasuraman et al, 1988). However, customer expectation for the services is likely to increase if the service by the organisation is not performed as promised. Therefore, to decrease customer expectations, the retailer can do its best to increase customer satisfaction (Angelova & Zekiri, 2011).

 The second component in the model that impacts customer satisfaction is perceived quality. This component is used to measure the experience of customers with the quality of goods and services because quality is the most important factor. For example, according to Xue & Yang (2008), the customer will still get back to the goods and services without concern much to the prices if the goods and services are worth to them, and perceived quality is also expected to have a direct and positive effect to the overall of satisfaction (Angelova & Zekiri, 2011).

Next, the third component as an impact on customer satisfaction in the model is perceived value. Perceived value is related to the level of product quality that is related to the price paid (Angelova & Zekiri, 2011). and also a perception of goods and services by customers when making a comparison to other competitors' products (*Understanding Perceived Value,* 2020). However, according to Fonell (1996), when the impact on the value of goods and services increases is related to quality, the price will become a more important component to determine the satisfaction due to the quality is one of the components in the value, quality and value will link directly to the model (van Haaften, 2017). Thus, they expect that when both perceived quality and perceived value increase. The customer satisfaction should increase too.

Moreover, the outcome of customer satisfaction in the ACSI model can be classified into a positive and negative relationship with customer satisfaction. The first is customer complaints and the second is customer loyalty. In customer complaints, they can measure a percentage of respondents who make a complaint directly to the company about their goods and services (The American Customer Satisfaction Index,2022). Therefore, customer complaints have a negative relationship with customer satisfaction because a customer with a high level of satisfaction will have a low level of complaint. According to Reichheld& Sasser (1990), an increase in customer satisfaction will lead to a decrease in customer complaints.

Finally, the second outcome from satisfaction is customer loyalty and this outcome has two measurements in the ACSI model (van Haaften, 2017). The first is a rating repurchasing likelihood, which is the intention of the customer to repurchase from the same supplier and the second measure is the likelihood to purchase company goods and services at a different price point (Angelova & Zekiri, 2011). For instance, the second measurement can be done by a firm in two survey ratings. First is increasing the prices of goods and services as a

percentage before a customer would definitely not repurchase from that firm again and next is decreasing the prices of goods and services in percentage before the customer would definitely choose to repurchase from that firm again (van Haaften, 2017).

However, there are several studies with different contexts using the ACSI model to test their result. The adoption of the ACSI model to study customer satisfaction in an online context was tested by researchers but they get the result that there is a negative relationship between customer satisfaction and customer expectation (Wu & Ding, 2015). In addition, the ACSI model was adopted to test the relationship between customer satisfaction and firms' performance in the hospitality and tourism context and get a result of positive relationships (Sun & Kim, 2013).

In a nutshell, when the relationship is positive, the organisation may be able to successfully swift complaining customers to loyal customers (Xue & Yang, 2008).

Figure 2.2

Research Framework of ACSI Model
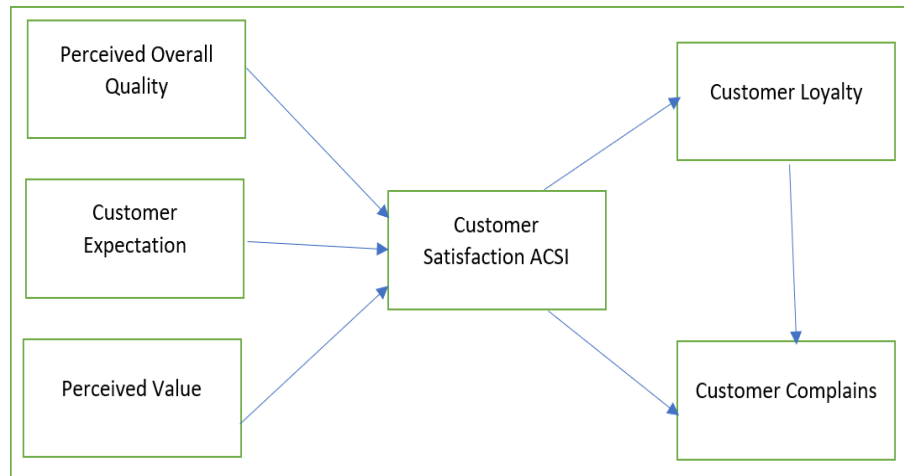
Sources: Mohammad (2011)

2.1.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

TAM mainly offers a basic framework only to explain the effect of external variables towards behavioural intentions. The UTAUT was created to improve the limitations of the TAM model, for example TAM excludes the consideration of time and money. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a model that is based on constructs of eight established models including the TAM, IDT, TBP, TRA and other model and theories such as Motivational model, the model of PC utilisation, combined TAM-TPB, model of PC Utilisation, and the Social Cognitive Theory (Venkatesh et al., 2003). The UTAUT model proposes that effort expectancy, performance expectancy, facilitating conditions and social influence are the determinants of behavioural intention of users towards usage and adoption of technology. It also

includes four control variables: age, gender, voluntariness and experience of use.

Behavioural intention is the desire, possibility or readiness of someone to perform a specific behaviour. Performance expectations or performance expectancy are significantly and positively related to behavioural intention towards adoption of technology by users. Effort expectancy expectation is the level of difficulty to use the technology by the consumers. It has a positive and significant effect on behavioural intention technology adoption. Social influence is the level at which a user decides whether to adopt a certain technology based on others who are important to him such as friends and family. Hence, social influence also has a positive and significant relationship to the adoption of system decision or technology. Lastly, facilitating conditions is also one of the variables that have a positive relationship and significant effect on behaviour intention, it is the perception of the availability of resources and support to perform a behaviour.

The UTAUT model was tested in different organisational settings and it resulted in 70% of the variance in intention to use which is a considerable amount of improvement compared to the previous model (Venkatesh et al., 2003). Moreover, the influence of moderating factors are being looked at and tested, all of them are proved significant but some of which only received little attention in the adoption of technology literature. The UTAUT allows for a better understanding of technology acceptance, and it is considered the best model (Jong & Wang, 2009).

The UTAUT model has been adopted and tested by a number of studies in different contexts. The applicability of the UTAUT to study educational

technology users has been tested in Turkish culture. In addition, they discovered that the behavioural intention correlation proposed by the UTAUT and other models are really low, pending for an explanation (Gogus et al., 2012). Other studies used the UTAUT to understand technology adoption in education (Jong & Wang 2009; El- Gayar & Moran 2006). The UTAUT model has proved to be applicable in other languages and outside its original country. The UTAUT's consideration of constraints that may influence adoption is crucial compared to other models like TAM and TPB. It is very likely that those constraints play a major role in predicting the use and adoption of learning innovations as a result of challenges and issues faced by these institutions and the lack of resources.

Figure 2.3

Research Framework of UTAUT Model
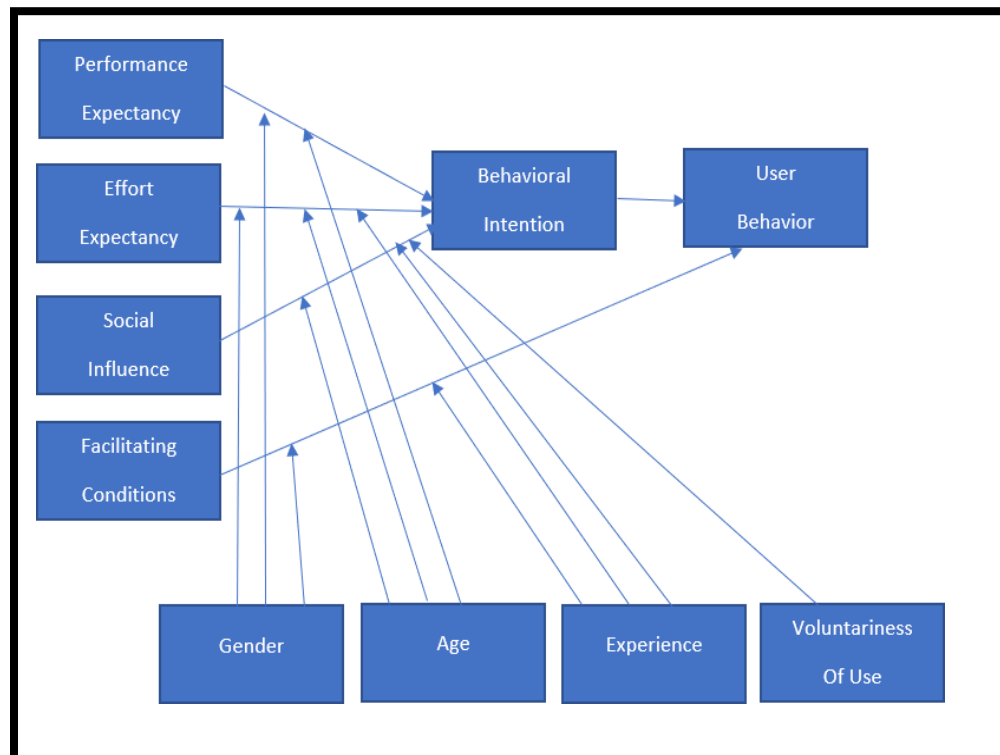
Sources: Wu, Y. L. et al. (2007)

2.2 Review of Variables

2.2.1 Dependent variable – Customer Satisfaction

Customer Satisfaction is considered as the key to success in the competitive financing industry (Zameer et al., 2015). There are two types of customer satisfaction: first is satisfaction as a process and the second is the result of a consumer experience or activity. The definition of process is widely accepted by researchers, the satisfaction of customers to the product can be evaluated and determined by whether the product or service achieved their desired degree of satisfaction.

Hence, satisfaction is a post choice evaluative judgement from customer's perception of relationship where value equates to perceived service quality or value received during translation relative to customer acquisition costs and price (Ali F. et al., 2016). This is in line with the definition by Jain et al. (2017) as "the customer satisfaction judgement is borne out of the comparison of post purchase evaluations. Customer satisfaction is seen as a path to success by marketers who adopt the marketing concept, so they will satisfy their customer to ensure survival and success.

According to previous studies mentioned above, customers are likely to be satisfied when the rewards of the related purchase and its functions were exceeded or in line with anticipated consequences of the payment. The comparison of actual performance and perception of the performance of the product or service are the base of value judgement by customers. Researchers

have different opinions when it comes to the relationship between customer satisfaction and service quality provided. Some researchers think that satisfaction leads to service quality (Alzoubi et al., 2021). However, some believe that service quality leads to satisfaction (Sharma, S., & Srivastava, S., 2018). Hence, the benchmark to achieve satisfaction was determined by the customer's previous experiences with the service provider.

Factors like assurance, customer perception and service quality are the main elements determining customer's satisfaction. It is the backbone for all companies in the service industries (Biljana & Jusuf, 2021). Strong correlation exists between independent variables like ease of use, assurance and service quality with the customer satisfaction of e-wallet as dependent variables (Shaliza Alwi, 2019). It is important for managers in banks to formulate corporate social performance strategies and competitive marketing strategies by knowing the customer satisfaction and loyalty (Vukosavljević, 2015).

2.2.2 Independent variable

2.2.2.1 Assurance

Assurance adequately increases the trust of users and lowers the risk while performing any online transaction (Parasuraman et al., 1991). High security of intangible services indicates that service consumption is effectively communicated to relevant stakeholders, increasing the positive impact on service encounters. Assurance is highly correlated with customer satisfaction.

It has been viewed as a major factor in terms of mobile shopping and payment usage (Wang & Lin, 2016). Assurance and satisfaction are closely related (Zhu et al., 2014). In order for a mobile web system to succeed it has to be trustworthy and result in building customer satisfaction (Amin et al., 2014). This is further proven by Phuong et al. (2020) that assurance has a positive impact on continuance intention of using e-wallets. On the other hand, building confidence by providing its customers with suitable services will lead an organisation to achieve a comparative advantage (Karim et al., 2022).

Banks can increase customer satisfaction by increasing the assurance of the banking system (Naushad et al., 2020). Assurance includes the security of service provided. It can be defined as a way of protecting and ensuring, for example, preventing stealing of customer private information. Banks can protect their customers' financial and private information using secure electronic systems when performing online banking. The correlation between dimensions of service quality including assurance and customer satisfaction has been further proven by Rahi (2017), it suggests that assurance represents significant dimensions of customer satisfaction.

2.2.2.2 Customer Expectation

Customer expectation is the prediction of perceived value, service, or benefits individual by customers when they are interacting with a company for a purchase of products or use of services (MBA Skool Team,2022). Moreover, customer expectation is one of the factors that will bring an impact to the customer satisfaction to the goods and services of the company. There is little research highlighting that fulfilment of customer prediction to the goods and

services will bring an impact to the customer expectation that directly affects customer satisfaction. According to e research, customer expectation is an essential factor for marketers and companies to define in advance because failing or exceeding to meet the customer expectation could lead to customer dissatisfaction (Almsalam, 2014). In short, the research shows that there is a positive relationship between customer expectation and customer satisfaction.

Moreover, research has mentioned that customer expectation is one of the important elements that should not be ignored in the study of customer satisfaction because it plays an important role in customer behaviour that is related to the repurchase decision of customers in future (Ali et al, 2015). On the other hand, the research also mentions that customer expectation is important because customers will prefer the goods and services next time if the goods and services meet their expectations. According to Kim et al. (2015), customer expectation is a key to customer satisfaction, delight, and loyalty. In short, if the expectation of customers to the goods and services is fulfilled, they will have satisfaction by preferable the goods and services in the future.

However, the research of Wu & Ding (2015) has shown that there is a negative relationship between customer expectation and customer satisfaction. Therefore, the result from this research does not support the research of Almsalam (2014) that claims there is a positive relationship between customer expectation and customer satisfaction. This is because Wu & Ding (2015) research is aimed to study customer satisfaction in an online context such as online shopping platform. As a mention in their research, customers that shop online might evaluate their satisfaction through the price and delivery standard only because they may have a misunderstanding that the online platform only provides a service from order handling to delivery without other services such as development and design of websites, reliability of services and other features.

Thus, the customer will not rate their satisfaction based on the expectation on electronic platform service quality because they might be able to accept the low level of electronic platform service quality as an exchange for a cheaper price of electronics product. According to Wong (2005), online shoppers are satisfied with the consumer electronic product on online shopping platforms due to the prices.

There is a weakness in earlier research such as there is a misunderstanding of the target respondent in the research. Thus, the research shows that there is a negative relationship between customer expectation and customer satisfaction. In a nutshell, our research expects that there is a positive relationship between customer expectation and customer satisfaction due to the higher level of fulfilment to customer expectation, the higher the level of customer satisfaction.

Customer expectation has a positive relationship with customer satisfaction based on the study of (Almsalam, 2014). Thus, the result has support to the finding at Ali et al (2015) claims there is a positive relationship between customer satisfaction and customer expectation. From a literature review, customer expectation is one of the important factors that will bring an impact to customer satisfaction.

2.2.2.3 Performance Expectancy

The degree to which an individual believes that job performance can be attained by using the system is the definition of performance expectancy. For example,

individuals believe that banking operations can be better by using internet banking (Venkatesh et al., 2003). Convenience of payment, service effectiveness and fast response are the ways of user's perception towards improvement by using internet banking. Performance expectancy in other models was described as relative advantage, perceived usefulness, extrinsic motivation and outcome expectancy. Performance expectancy in relation to internet banking is considered as a term of utility that is faced during the use of internet banking (Alalwan et al., 2014). Performance expectancy has been a popular variable used to understand the behavioural intention of customers to internet banking adoption (Martins et al., 2014).

Performance expectancy has a significant positive relationship with use of mobile banking (Yeh & Tseng, 2017; Zain et al., 2017). Hence, the results have indicated a support of UTAUT findings with Venkatesh et al. (2003). It was significant with user's intention to adopt internet banking suggesting that users having more performance expectancy had more inclined towards adoption of internet banking. Interestingly, the effect of sizes revealed that social influence, facilitating condition and effort expectancy had small effect sizes in predicting the user's intention to adopt internet banking. This statement is further supported by other studies as they claim that performance expectancy is a key predictor of behavioural intention in mobile banking (Ugur et al., 2017). From literature review, performance expectancy seems to be the most important measuring factor in UTAUT in the mobile banking sector. It is likely that customer satisfaction and performance expectations are positively correlated in the banking and mobile banking sectors.

2.2.3 Mediator

2.2.3.1 Age

According to Ng, T. W., & Feldman, D. C. (2015). The age used as mediator will affect the relationship between the dependent variables and independent variables of their study. The result of their research showed that age was a mediator that will affect their study. For instance, age affect the relationship between job experience and job performance on their study.

Furthermore, according to Löckenhoff, C. E., & Carstensen, L. L. (2004). They used age as mediator to studies the relationship between emotion regulation and health outcomes. The result of their studies show that age will affect the relationship between emotion regulation and health outcomes by get a result that adults with older age tend to engage more in more emotion regulation behaviours than younger adults. Thus, these studies show that age as a mediator play an important role in the relationship between dependent variables and independent variables.

2.3 Proposed Theoretical Framework/ Conceptual Framework

Figure 2.4

Conceptual Framework
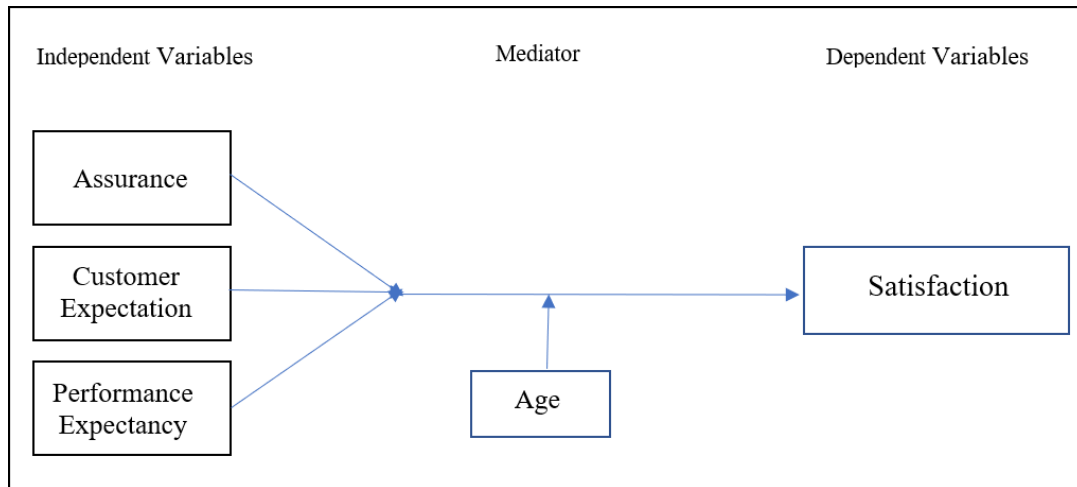
Assurance and satisfaction is adopted from SERVQUAL. Customer expectation is adopted from the ACSI model. Performance Expectancy is adopted from UTAUT.

Figure above shows the three independent variables that will be studied in this research, which is assurance, customer expectation, and performance expectancy. On the other hand, the mediator for this study is age while the dependent variable is satisfaction.

2.4 Hypothesis Development

2.4.1 Significant Relationship between Assurance and Customer Satisfaction

Commercial Banks

H0: There is no significant relationship between assurance and customer satisfaction with using commercial banks.

H1: There is a significant relationship between assurance and customer satisfaction with using commercial banks.

Touch 'n Go

H0: There is no significant relationship between assurance and customer satisfaction with using Touch 'n Go.

H1: There is a significant relationship between assurance and customer satisfaction with using Touch 'n Go.

2.4.2 Significant Relationship between Customer Expectation and Customer Satisfaction

Commercial Banks

H0: There is no significant relationship between customer expectation and customer satisfaction with using commercial banks.

H1: There is a significant relationship between customer expectation and customer satisfaction with using commercial banks.

Touch 'n Go

H0: There is no significant relationship between customer expectation and customer satisfaction with using Touch 'n Go.

H1: There is a significant relationship between customer expectation and customer satisfaction with using Touch 'n Go.

2.4.3 Significant Relationship between Performance Expectancy and Customer Satisfaction

Commercial Banks

H0: There is no significant relationship between performance expectancy and customer satisfaction with using commercial banks.

H1: There is a significant relationship between performance expectancy and customer satisfaction with using commercial banks.

Touch 'n Go

H0: There is no significant relationship between performance expectancy and customer satisfaction with using Touch 'n Go.

H1: There is a significant relationship between performance expectancy and customer satisfaction with using Touch 'n Go.

2.4.4 Significant Relationship between Age and Customer Satisfaction

Commercial Banks

H0: There is no significant relationship between age and customer satisfaction with using commercial banks.

H1: There is a significant relationship between age and customer satisfaction with using commercial banks.

Touch 'n Go

H0: There is no significant relationship between age and customer satisfaction with using Touch 'n Go.

H1: There is a significant relationship between age and customer satisfaction with using Touch 'n Go.

2.4.5 Significant Relationship from Assurance through Age to Customer Satisfaction

Commercial Banks

H0: There is no significant relationship from assurance through age to customer satisfaction with using commercial banks.

H1: There is a significant relationship from assurance through age to customer satisfaction with using commercial banks.

Touch 'n Go

H0: There is no significant relationship from assurance through age to customer satisfaction with using Touch 'n Go.

H1: There is a significant relationship from assurance through age to customer satisfaction with using Touch 'n Go.

2.4.6 Significant Relationship from Customer Expectation through Age to Customer Satisfaction

Commercial Banks

H0: There is no significant relationship from customer expectation through age to customer satisfaction with using commercial banks.

H1: There is a significant relationship from customer expectation through age to customer satisfaction with using commercial banks.

Touch 'n Go

H0: There is no significant relationship from customer expectation through age to customer satisfaction with using Touch 'n Go.

H1: There is a significant relationship from customer expectation through age to customer satisfaction with using Touch 'n Go.

2.4.7 Significant Relationship from Performance Expectancy through Age to Customer Satisfaction

Commercial Banks

H0: There is no significant relationship from performance expectancy through age to customer satisfaction with using commercial banks.

H1: There is a significant relationship from performance expectancy through age to customer satisfaction with using commercial banks.

Touch 'n Go

H0: There is no significant relationship from performance expectancy through age to customer satisfaction with using Touch 'n Go.

H1: There is a significant relationship from performance expectancy through age to customer satisfaction with using Touch 'n Go.

2.5 Conclusion

This chapter has discussed the literature review of past studies that were done by several researchers that related to the satisfaction of customers. The research has used three independent variables such as assurance, customer expectation, and performance expectancy to determine customer satisfaction and the theory proposed has been formed to investigate how the three independent variables used in the research influenced dependent variables. On the other hand, the theoretical framework that is used for this research has been proposed together with the development of a hypothesis.

CAHPTER 3: METHODOLOGY

3.0 Introduction

In chapter 3, the methodology will show out and further explain the method and process to conduct this research which includes the method of collecting the data and analysing the results of the data. Therefore, the research objectives and goals can be achieved through this method. This research will require the collection of primary data from online surveys in order to study the relationship between satisfaction of financial services provided by Touch 'n Go apps and commercial banks towards Malaysians, so a few sections will be included in this chapter. For instance, research design, data collection method, sampling design, data processing as well as data analysis are included in this chapter.

3.1 Research Design

This chapter is to determine the method and procedure that was used to analyse the variable that stated in this research such as customer satisfaction, assurance, performance expectancy and customer expectation and measure the relationship between dependent variable and independent variables. Moreover, research design plays an important role to formulate the problem and objective of the research and present the outcome from the data collected for the research. This research is a primary

data and quantitative research; therefore, data have to be collected via survey for a sample of 384 of Malaysians who are 18 to 25 years old. After that, conduct a data analysis through Pilot Test, Multiple Linear Regression Analysis, Reliability Analysis, and Pearson Correlation Coefficient Analysis.

3.1.1 Quantitative Research

Quantitative design is used for measuring and processing the data collected in numerical form and a systematic scientific investigation of the data to study the relationship between dependent and independent variables in mathematics by developing a mathematical framework. Thus, convenience sampling is used for quantitative design for this study topic by determining the customer satisfaction of Touch 'n Go app and commercial bank. Convenience sampling is a type of a non-probability sampling method by collecting a sample from a group of population that is easy to contact.

3.2 Data Collection Method

Quantitative method was used for data collection through primary data for this study. The questionnaires were created using Google Forms and distributed via social media platforms such as WhatsApp Messenger, and email. Other than social media platforms, the data also collected physically by distributing the google form to respondents physically. Target respondents were required to fill a self-administered questionnaires and send it back afterwards. The data collection period was conducted from October

2022 to January 2023. Hence, to evaluate the reliability and validity of the questionnaire a pilot test was carried out among 30 students in UTAR. As a result, 90% of the data is collected physically, 8% is collected through WhatsApp Messenger, and the remaining 2% is collected through email.

3.2.1 Primary Data

Online surveys and questionnaires are used to obtain primary data. Primary data is a cost-effective tool for researchers to collect different opinions of individual consumers within a short period of time (Boey et al, 2015). Previous studies were used to construct the survey question and distributed to the target population.

3.3 Sampling Design

3.3.1 Target Population

The target population for this study is Malaysians between the ages of 18 and 25. This is because due to COVID-19, Malaysia has witnessed an explosive growth of e-payment services owing to the widespread adoption of e-wallets and cashless payments.

3.3.2 Sampling Method

The sampling method used in this study is a non-probability sampling. Convenience sampling is non-probability sampling. It is a sampling technique that draw the sample from the population that is close to hand. Researchers collect the responses from the respondents who are "convenient" to them.

3.3.3 Sampling Size

Sample size can be defined as the amount of participants included in the study. As of January 2021, the Touch 'n Go eWallet has more than 15 million users. Therefore, this study requires a sample size of 384 with a 95% confidence interval and a margin of error of approximately 5.0%.

Figure 3.1

Required Sample Size

Required Sample Size[†]								
	Confidence = 95%				Confidence = 99%			
Population Size	Margin of Error				Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

† Copyright, The Research Advisors (2006). All rights reserved.

Sources: Krejcie & Morgan (1970)

3.4 Data Processing

Figure 3.2

Data Processing

3.4.1 Primary Data Collection

Preparing the questionnaire which is related to our topic in order to investigate the factors of financial products provided by Touch 'N Go and commercial banks that will affect the customers satisfaction. Collecting the data from online surveys by providing the questionnaire to the teenagers who are between 18 to 25 years old.

3.4.1.1 Questionnaire Design

The questionnaire will consist of three sections from section A to section C. In total, there are 74 questions and statements that are required to answer.

In section A, the demographic information of the respondents is collected, which are their age and the states they live in. The nominal scale of measurement is used in this section for both questions, the respondents need to choose their age by choosing multiple choices and give a short answer on the states they live in.

Besides, section B aimed to find out how satisfied the respondents are with the Touch 'n Go and the financial products (GO+, GOpinjam, GOinvest) according to the independent variables, which are assurance, customer expectation and performance expectancy. On the other hand, section C is to study how satisfied the respondents are with the commercial bank and the financial products (fixed deposit, mutual fund, credit card and short-term loan) according to the independent variables, which are assurance, customer expectation and performance expectancy.

In both section B and C, the ordinal scale of measurement with numeric value is used to rank their agreement on each question and statement, while SD, D, N, A and SA represent Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree respectively. Dependent variables contain 3 statements in each section B and C; Assurance variable contains 12 statements; Customer expectation

variable contains 9 statements; Performance expectancy variable contains 12 statements.

3.4.2 Data Checking

Checking the data in the questionnaire are valid and delete the data if it is invalid to ensure the quality and accuracy of the data collected. The data will be invalid if the data are not fully completed as required and the data provided are illogic. Summarising the data collected from online surveys and record in the suitable form, so that the data can be organised easily and neatly.

3.4.3 Data Analysis

Using the data organised to conduct the tests stated in part 3.5. Run the SmartPLS to get the result of the various tests which are pilot test, multiple linear regression analysis test, reliability analysis test and Pearson correlation coefficient analysis test. After getting the result, interpret and evaluate the results.

3.5 Proposed Data Analysis Tool

3.5.1 Pilot Test

This study will conduct a pilot test to evaluate the questionnaire's consistency and accuracy. Examining the internal consistency, reliability, and factor structure of the scale during the pilot test will validate and improve the questionnaire. Hence, the pilot test will be used to test the questionnaire with a smaller sample than the intended sample size. According to Zikmund (2010), a sample size of 30 respondents is optimal for pilot testing. The online survey will be distributed to 30 Malaysians aged between 18 and 25 to take part in a pilot test. After the test, the less supportive statements will be removed and corrected. Besides, each construct's mean, standard deviation, and Cronbach alpha will be reported. The measurement for this study is finally ready to be applied to actual research. A commonly accepted guideline for good internal consistency reliability is a Cronbach's alpha value of 0.70 or higher (Hulin et al., 2001).

Table 3.1

Cronbach's Alpha of Commercial Bank

Cronbach's Alpha	No of items
0.737	30

Sources: Developed from questionnaire raw data

Based on table 3.1, the result of Cronbach's Alpha for Commercial Bank is 0.737 with 30 numbers of items. According to Hulin et al. (2001) mentioned above, the good internal consistency reliability that is commonly acceptable is a Cronbach's alpha value of 0.70 or higher. Hence, the questionnaire in this study is acceptable.

Table 3.2

Cronbach's Alpha of Touch 'n Go

Cronbach's Alpha	No of items
0.842	30

Sources: Developed from questionnaire raw data

Based on the table above, the result of Cronbach's Alpha for Touch N Go is 0.842 with 30 numbers of items. According to Hulin et al. (2001) mentioned above, the good internal consistency reliability that is commonly acceptable is a Cronbach's alpha value of 0.70 or higher. Hence, the questionnaire in this study is acceptable.

3.5.2 Multiple Linear Regression Analysis

Multiple regression is used to explain the relationship between more than two independent variables and one dependent variable.

(1) The multiple linear regression model for commercial bank is as follows:

Y= *β0* + *β1AS* + *β2CE* + *β3PE* + *εi*

Where

Y= Customer's Satisfaction of commercial bank

AS= Assurance towards commercial bank financial services

CE= Customer expectations towards commercial bank financial services

PE= Performance expectancy of commercial bank financial services

β0= constant

εi= Error term

(2) The multiple linear regression model for Touch 'n Go is as follows:

Y= *β0* + *β1AS* + *β2CE* + *β3PE* + *εi*

Where

Y= Customer's Satisfaction of Touch 'n Go

AS= Assurance towards Touch 'n Go financial services

CE= Customer expectations towards Touch 'n Go financial services

PE= Performance expectancy of Touch 'n Go financial services

β0= constant

εi= Error term

3.5.3 Construct Reliability

Cronbach's alpha is calculated as the average correlation between all pairs of items in a scale or test. The resulting value ranges from 0 to 1, with higher values indicating greater internal consistency reliability (Hulin, Netemeyer, & Cudeck, 2001). However, Shafie Rosli and other researchers (2021) had highly suggested that use construct reliability as the reliability coefficient to measure reliability which questionnaire-based is better than use Cronbach's alpha since Cronbach's alpha will give higher reliability value. Therefore, construct reliability is a good indicator to measure the consistency across items on the same test.

In construct reliability, indicator reliability and internal consistency reliability will be using in this study to measure the reliability adequacy. To look into the indicator reliability, indicator loading is using to indicate the bivariate correlation between indicator and construct. The result of above 0.70 is recommended for indicator loading, however, for the result which is fall in the range of 0.40 and 0.70, the indicator should be considered to be removing if the result of eliminating it will affect the increases in other reliability measures (Hair et al, 2021). On the other hand, the result of 0.40 should be deleted from

the model. Furthermore, composite reliability is used to measure the internal consistency reliability, and the value between 0.60 to 0.90 is recommended (Hair et al, 2021). For the value, which is above 0.9, it is considered that they affect the result of correlations among the indicators.

3.5.4 Construct Validity

Validity refers to the meaningfulness and suitability of the measurement and it indicates the accuracy of the instruments used to measuring and describing the constructs. According to Henseler et al. (2009), to assess the outer model, both convergent validity and discriminant validity are usually examined. Convergent validity is the extent to which the construct converges and examine the variance of the indicators. Average variance extracted (AVE) is used for measuring the convergent validity of the construct. According to Henseler et al. (2009), the value of AVE should be at least 0.5 to consider acceptable for convergent validity which indicate that the variables are able to explain over half of the variation of its indicators.

Moreover, discriminant validity examines whether a construct and its connected indicators are significantly different from other constructs in the overall model. Henseler (2015) had suggested to assess the Heterotrait-Monotrait ratio (HTMT) to measure discriminant validity rather than Fornell-Larcker criterion and the value of HTMT should be less than 0.9. The value of above 0.9 had indicated that the discriminant validity is not present. Bootstrap confidence intervals can be used such as 0.9 or 0.85 based on context of the study to determine whether the HTMT differs significantly from 1.0 or a lower threshold value (Henseler et al., 2015).

3.5.5 Variance Inflation Factor

Collinearity is a significant problem in regression analysis that can lead to unstable and unreliable results. One commonly used method to detect collinearity is the variance inflation factor (VIF), which measures the correlation between independent variables in a regression model (Senthilnathan, S., 2019). A high VIF value above 5 or 10 suggests severe collinearity, indicating the need to remove independent variables from the model (Marcoulides et al., 2019).

However, it's not all doom and gloom. Recent research has proposed a variety of alternative methods to mitigate the impact of collinearity in regression analysis. Some of these methods include regularization techniques and Bayesian methods (Gelman et al., 2018), which have become increasingly popular in recent years.

Regularization techniques such as ridge regression and lasso regression can reduce the effect of collinearity by introducing penalty terms that shrink regression coefficients toward zero. By doing so, they minimize the impact of collinearity on the estimates and improve the model's precision.

Bayesian methods, on the other hand, allow for the incorporation of prior knowledge and uncertainty into the regression analysis. By considering prior information about the relationship between the variables, researchers can better handle the collinearity problem and achieve more accurate estimates (Gelman et al., 2018).

Overall, while collinearity can be a significant issue in regression analysis, researchers have access to a variety of tools and methods to mitigate its effects. By carefully considering the nature of their data and choosing appropriate techniques, they can achieve more reliable and accurate results.

3.5.6 Booststrapping

Partial Least Squares Structural Equation Modeling (PLS-SEM) is one of the most extensively utilised methods of multivariate data analysis among business and social science experts. It is a common choice among academics and students for examining models containing latent variables. (Mumtaz, et al., 2021) Due to PLS-SEM is a nonparametric approach, bootstrapping is required to estimate standard errors and generate confidence intervals. (Hair et al., 2021)

Bootstrapping is a nonparametric approach for testing the statistical significance of path analysis and process outcomes such as path coefficients. (SmartPLS, n.d.). It is a statistical approach that uses replacement sampling from a large number of samples drawn from original sample. The number of bootstrap samples should be large, but not greater than the number of valid observations in the dataset. In addition, Streukens and Leroi-Werelds (2016) advised that PLS-SEM applications should be built on at least 10,000 bootstrap samples. The bootstrap samples are then utilised 10,000 times to estimate the PLS path analysis and process model. (Hair et al., 2021) Bootstrapping allows for the measurement of the accuracy and reliability of sample estimates and is

recommended for small samples as well as samples with unknown or non-normal distributions. (Egbert, J. & Plonsky, L, 2020).

The bootstrapping technique generates t-values for indicator weights as well as other model parameters. To determine whether the coefficients are significantly different from zero, we must compare these t-values to its critical values from the standard normal distribution. In two-tailed test, a t-value greater than 1.96 indicates that the indicator weight is statistically significant when significance level is 5%. Alternatively, confidence interval is another method to test the significance of indicator weights. It reflect the range of values for the population parameter assuming a specific level of confidence (e.g., 95%).

3.5.6.1 Coefficient of Determination- R square

The coefficient of determination, also can be said as R square, is a simple metric that practitioners use to measure the goodness of fit and effectiveness in a multiple linear regression. It is indeed given in the majority of statistical analyses, and while it is not suggested as a final model selection tool, it does provide an indication of the adequacy of the chosen explanatory factors in predicting the answer (Renaud, O., & Victoria-Feser, M., 2010). A high R square indicates that the model is efficient (Onyutha, C., 2020)

3.5.6.2 Assess Effect Size- F Square

According to Cohen (1988), effect size F square is used to measure the effect size by means for each effect in the path model. F square is the change in R square caused by the removal of an exogenous variable from the model. The removal of an exogenous variable can also have an effect on the dependent variable. F square value of 0.02, 0.15 and 0.35, respectively, indicates small, medium and large effect sizes.

3.5.6.3 Assess Model's Predictive Relevance- Q Square

Q square is to measure the predictive relevance of a model. Q square also establishes the endogenous components' predictive relevance. Q square values greater than zero suggest that the values have been well rebuilt and that the model is predictive. Furthermore, the Q square is intended to help assess predictive validity at the indicator level, whereas indices that help provide information on the predictive validity of a PLS model at the construct level are still needed. This statistic is a good indicator for social scientists interested in the predictive validity of their models (Chin, 2009).

3.5.6.4 Mediation – Bootstrapping

The effect of mediation, also known as indirect effect, occurs when the effect of the independent variable on the dependent variable passes through a mediator.

Mediation covers the issue of how change occurs. A mediator is a third variable that is assumed to be intermediary in the interaction between two variables (Chondra et, al., n.d.). The most common method have been utilized to examine mediation including zero-order and partial correlation, hierarchical regression models, and structural equation modelling (SEM). Researchers have been looking for the appropriate statistical test for mediation effect due to the significance of mediation studies (Cheung, & Lau, 2008)

3.6 Conclusion

In short, there are some research methods introduced in chapter 3 by including the investigation of the relationship between Malaysian satisfaction toward the financial services of Touch 'n Go and commercial banks. The relationship between the dependent variable, customer satisfaction and independent variables, assurance, customer expectation and performance expectancy will be determined in this chapter. These methods and information will help for further discussion and further process. For example, the results of data analysis interpretation outcome will be included in the next chapter, Chapter 4.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

In chapter 4, all the raw data that had been collected and had been generated from the questionnaire that was distributed to the target respondents will be processed. This includes both pilot test samples and other actual data.

From the target respondent who meet the criteria of being Malaysian between aged 18 to 25 that are using the financial services provided by Touch 'n Go apps and commercial banks.

A total of 421 valid data samples had been collected from targeted respondents. These data include 30 adjusted pilot test samples and 391 actual data. Due to the target respondent for the study required is age between 18 to 25, the researchers had spent around 3 months to complete the data collection process from another 391 respondent after the pilot test testing had been conducted. Researchers had conducted the collection of data in university by distributing the questionnaire to the students in universities that mostly meet the age criteria of targeted respondents. The research outcome of the data will be mainly analysed by utilising the SmartPLS software.

4.1 Two Stage Analysis in PLS for Commercial Bank

4.1.1 Measurement Model Assessment

4.1.1.1 Indicator Reliability

Traditionally, Cronbach's alpha was used to assess the reliability. However, Hair *et al.* (2012) suggested using composite reliability (CR) to replace Cronbach's alpha. An individual item loading and the threshold value for composite reliability (CR) need to be greater than 0.70 Hair *et al*. (2011); Hair *et al*. (2010). It will indicate that it gives a consolidation to the latent construct and the reliability is adequate for each item. (Ismail *et al.,* 2011). From Table 4.1, all CR value were in the range of 0.893 to 1. The items with factor loadings were in the range of 0.5 to 1. The items loading which value is lower than 0.70 (AS2, AS3, AS4, CE2, PE5) will be removed.

Table 4.1

Reliability Statistics and Validity

Construct	Item	Loading	CR	AVE
DV: Customer Satisfaction (CS)	CS1	0.837	0.893	0.735
	CS2	0.890		
	CS3	0.845		
IV1: Assurance (AS)	AS1	0.719	0.932	0.536
	AS2	0.500		
	AS3	0.602		
	AS4	0.691		
	AS5	0.744		
	AS6	0.719		
	AS7	0.859		
	AS8	0.820		
	AS9	0.801		
	AS10	0.711		
	AS11	0.802		
	AS12	0.744		

IV2: Customer Expectation (CE)	CE1	0.756	0.935	0.618
	CE2	0.608		
	CE3	0.760		
	CE4	0.732		
	CE5	0.855		
	CE6	0.865		
	CE7	0.827		
	CE8	0.780		
	CE9	0.858		
IV3: Performance Expectancy (PE)	PE1	0.776		
	PE2	0.812		
	PE3	0.916		
	PE4	0.713		
	PE5	0.658		
	PE6	0.742		
	PE7	0.855		
	PE8	0.818		
	PE9	0.844		
	PE10	0.830		

	PE11	0.751		
	PE12	0.819	0.954	0.636
MV: Age	A1	1.000	1.000	1.000

Sources: Developed from questionnaire raw data

4.1.1.2 Internal Consistency Reliability

Table 4.1 indicates the reliability outcome from the research data when the significance level is 0.05 with two-tails test or confidence interval equals 95%. Cronbach's alpha can be replaced by composite reliability as an alternative option if Cronbach does not perform reliably. The composite reliability would be reliable if the value is above 0.7. According to the result stated in table 4.1 above, the entire composite reliability for each variable is reliable since all of the figures exceed 0.7. Among the variables, the MV age shows that largest figure (1.000), second is the IV3 performance expectancy (0.954), third is the IV2 customer expectation (0.935), follow by IV1 assurance (0.932) while DV customer expectation holds the lowest value among all of them (0.893).

4.1.1.3 Convergent Validity

The degree of agreement between various items measuring the same idea is measured by convergent validity. CR, AVE, and factor loadings can all be used to evaluate

Validity that converges (Hair et al., 2019). Examining AVE is important since it shows how much variance the latent variable has in comparison to measurement error (Ramayah et al., 2013). A construct's AVE is determined by averaging the square of each indicator's loading (Hair et al., 2019). According to table 4.1, the AVE range lies between 0.536 to 1 for all constructs, which is higher than 0.50 the minimum recommended value (Barclay *et al*., 1995).

4.1.1.4 Discriminant Validity

Henseler et al. (2015) established the Heterotrait-Monotrait ratio (HTMT) criterion, which will be used to assess the discriminant validity in this study.The values for HTMT is suggested to be less than 0.90 (Teo *et al*., 2008). Table 4.2 displays the results of the HTMT analysis conducted on the research data, assuming a 95% confidence interval or a significance level of 0.05 with a two-tailed test. The purpose of using the HTMT is to identify any issues with discriminant validity. Previous research by Henseler et al. (2015) suggested that an HTMT value above 0.9 indicates a lack of discriminant validity when the path model contains constructs that are very similar in concept. However, when the constructs in the path model are more distinct, a threshold of 0.85 should be considered instead. For this particular research, a threshold

value of 0.9 was used. Throughout the entire result no variable tends to appear the issue of multicollinearity between the latent variable.

Table 4.2

HTMT Output

	MV: Age	DV: CS	IV1: AS	IV2: CE	IV3: PE	Age x PE	Age x CE	Age x AS
MV: Age								
DV: CS	0.071							
IV1: AS	0.064	0.596						
IV2: CE	0.029	0.701	0.818					
IV3: PE	0.033	0.608	0.704	0.834				
Age x PE	0.177	0.072	0.053	0.038	0.076			
Age x CE	0.144	0.147	0.086	0.103	0.040	0.686		

| Age x AS | 0.145 | 0.138 | 0.067 | 0.090 | 0.046 | 0.596 | 0.692 | |

Sources: Developed from questionnaire raw data

4.1.2 Structural Model Assessment

Figure 4.1

Structural Model of Commercial Bank
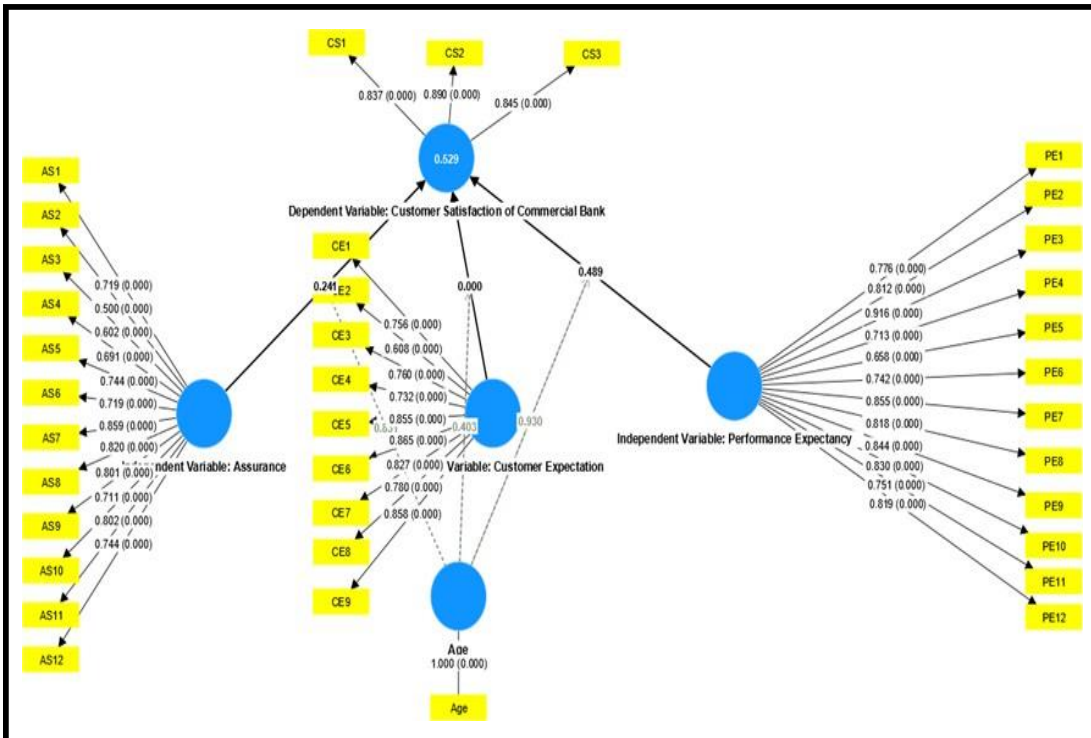
Sources: Developed from questionnaire raw data

4.1.2.1 Collinearity (VIF)

Collinearity issues of the constructs will be interpreted as absent if the inner
VIF values are below 5. Refer to Table 4.3, the inner VIF values for Age,
Customer satisfaction (CS), Assurance (AS), Customer Expectations (CE),
Performance Expectancy (PE) and each independent variable mentioned above
through age as mediator are all below five indicating that no collinearity issue
exist between the constructs.

Table 4.3

Inner VIF values

	MV: Age	DV: CS	IV1: AS	IV2: CE	IV3: PE	Age x PE	Age x CE	Age x AS
MV: Age		1.038						
DV: CS								
IV1: AS		2.456						
IV2: CE		3.629						
IV3: PE		2.696						
Age x PE		2.057						

Age x CE		2.486						
Age x AS		2.036						

Sources: Developed from questionnaire raw data

4.1.2.2 Assess Path Coefficients

Table 4.4

Hypothesis Testing

Hypotheses	Description	Beta Value	Standard Error	T-Value (1.96)	P-Value (<0.05)	Decision
H1	Assurance > Customer Satisfaction of Commercial Bank	0.116	0.099	0.539	0.590	Not supported
H2	Customer Expectation > Customer Satisfaction of Commercial Bank	0.551	0.141	4.079	0	Supported

H3	Performance Expectancy > Customer Satisfaction of Commercial Bank	0.075	0.112	0.816	0.415	Not supported

Sources: Developed from questionnaire raw data

According to Hypothesis 1, there is a strong correlation between customer satisfaction and using commercial banks. With a t-value of 0.539, which is lower than 1.96, and a P-value of 0.590, which is higher than 0.05, this hypothesis is ruled out. As a result, assurance does not significantly affect customer satisfaction in terms of certainty.

According to Hypothesis 2, there is a strong correlation between consumer expectations and satisfaction with utilizing commercial banks. With a t-value of 4.079, which is more than 1.96, and a P-value of 0, which is lower than 0.05, this hypothesis is not disproved. As a result, there is a strong correlation between customer expectations and satisfaction while utilizing commercial banks.

According to hypothesis 3, there is a strong correlation between performance expectations and consumer satisfaction while utilising commercial banks. With a t-value of 0.816, which is lower than 1.96, and a P-value of 0.415, which is higher than 0. 05, this hypothesis is disproved. As a result, using commercial banks has no discernible relationship between performance expectancy and customer satisfaction.

4.1.2.3 Coefficient of Determination (R^2)

Table 4.5

R Square Finding PLS-SEM for DV and MV

Variable	R^2
DV: Customer Satisfaction of Commercial Bank	0.511

Sources: Developed from questionnaire raw data

Table above indicates the result of the coefficient of determination that is also known as R square for dependent variable: customer satisfaction towards financial services provided by commercial banks, independent variable: assurance, customer expectancy, performance expectancy, and mediator variable: age. As a result, stated on the table above, the R square value for the customer satisfaction is 0.511. This represents that those independent variables (assurance, customer expectancy, performance expectancy) define 51.1% of variance in customer satisfaction towards financial services provided by commercial banks.

4.1.2.4 Assess Effect Size ff^{22}

Table 4.6

Determination of Effect Size (ff^2)

	DV: Customer Satisfaction of Commercial Bank	Assessment Criteria
MV: Age	0.004	Small
IV1: Assurance	0.002	Small
IV2: Customer Expectation	0.132	Small
IV3: Performance Expectancy	0.005	Small

Sources: Developed from questionnaire raw data

F square is used to measure the change of R squared value in the dependent variable that is defined by an independent or set of independent variables (Hair et al., 2014). Other than that, it is also commonly used in multiple regression analysis to determine the impact of every independent variable in accounting for the variability observed in the dependent variable (Cohen, 1988; Stevens, 1992). According to Field (2013), the greater the f square value, the stronger the relationship between independent variable and dependent variable.

According to the table 4.6, f square of all independent variables (assurance, customer expectancy, and performance expectancy range from 0.002 to 0.132 show small (<0.15) effects on customer satisfaction toward financial services provided by commercial banks.

4.1.2.5 Assess Model's Predictive Relevance (Q²)

Table 4.7

Determination of Predictive Relevance (Q^2)

	Original Sample Q²
DV: Customer Satisfaction of Commercial Bank	0.351

Sources: Developed from questionnaire raw data

Q² used to evaluate and measure the model is predictive relevance of endogenous variables. It tests the ability of the model to be reformed by determining the variable's indicators. It is considered that the model has predictive relevance if the value of predictive relevance is greater than zero (Hair et al., 2011).

Therefore, the result in the table above for customer satisfaction of Commercial Bank, which has a Q² value of 0.351, had shown that this study has a good predictive relevance for the Commercial Bank model.

4.1.2.6 Mediation

Table 4.8

Mediating Latent Variable

Hypo-thesis	Description	Direct effect (Beta)	t-value	Significance (p<0.05)	Indirect effect	t-value	Significance (p<0.05)	Decision
H4	Age > Customer Satisfaction of commercial bank	0.041	1.223	0.221				Not supported
H5	Age x Assurance > Customer Satisfaction of commercial bank				-0.051	0.778	0.437	Not supported
H6	Age x Customer Expectation > Customer Satisfaction of commercial bank				-0.055	0.645	0.519	Not supported

H7	Age x Performance Expectancy > Customer Satisfaction of commercial bank				0.009	0.04	0.968	Not supported

Sources: Developed from questionnaire raw data

Table 4.8 presents the results of the Bootstrapping mediation analysis with a 95% confidence interval or a significance level of 0.05 using a two-tailed test. The analysis indicates one mediator variable - Age plays an intermediary role in linking three independent variables -Assurance, Customer expectation, and Performance expectancy to the dependent variable of customer satisfaction in commercial banks.

The t-statistics (P-Value) for Assurance, Customer expectation, and performance expectancy through Age are 0.778 (0.437), 0.645 (0.519), and 0.04 (0.968), respectively. Upon examining the results, it is evident that all variables are found to be insignificant in this test. The mediator Age is insignificant in this test as the T-Statistics (P-Value) are 1.223 (0.221).

4.2 Two Stage Analysis in PLS for Touch 'n Go

4.2.1 Measurement Model Assessment

4.2.1.1 Indicator Reliability

In the past, Cronbach's alpha was commonly used to assess the reliability of a measurement scale. However, Hair et al. (2012) recommended using composite reliability (CR) instead. To ensure adequate reliability, both the individual item loading and the threshold value for CR should be greater than 0.70 (Hair et al., 2011; Hair et al., 2010). This indicates that the measurement scale is consolidating the latent construct effectively, and each item is reliable. (Ismail et al., 2011). In summary, CR is now considered a more suitable method to assess reliability compared to Cronbach's alpha. From Table 4.9, all CR value were in the range of 0.893 to 1. The items with factor loadings were in the range of 0.568 to 1. The items loading which value is lower than 0.70 (AS2, AS3) will be removed.

Table 4.9

Reliability statistics and Validity

Construct	Item	Loading	CR	AVE
DV: Customer Satisfaction	CS1	0.942	0.946	0.854
	CS2	0.931		
	CS3	0.900		
IV1: Assurance	AS1	0.718	0.954	0.638
	AS2	0.568		
	AS3	0.699		
	AS4	0.877		
	AS5	0.815		
	AS6	0.875		
	AS7	0.826		
	AS8	0.819		
	AS9	0.856		
	AS10	0.848		
	AS11	0.818		
	AS12	0.808		

IV2: Customer Expectation	CE1	0.875	0.954	0.967
	CE2	0.839		
	CE3	0.862		
	CE4	0.833		
	CE5	0.821		
	CE6	0.835		
	CE7	0.818		
	CE8	0.802		
	CE9	0.829		
IV3: Performance Expectancy	PE1	0.863	0.970	0.727
	PE2	0.811		
	PE3	0.880		
	PE4	0.893		
	PE5	0.896		
	PE6	0.852		
	PE7	0.792		
	PE8	0.820		
	PE9	0.819		
	PE10	0.875		

	PE11	0.853		
	PE12	0.867		
MV: Age	A1	1.000	1.000	1.000

Sources: Developed from questionnaire raw data

4.2.1.2 Internal Consistency Reliability

In Table 4.9, the reliability of the research data is presented using a two-tailed test with a significance level of 0.05 or a confidence interval of 95%. Cronbach's alpha is a commonly used measure of reliability, but composite reliability can be used as an alternative if Cronbach's alpha is not reliable. A composite reliability value of above 0.7 is considered reliable. According to the result stated in table 4.9 above, the entire composite reliability for each variable is reliable since all of the figures exceed 0.7. Among the variables, the MV age shows that largest figure (1.000), second is the IV3 performance expectancy (0.970), followed by IV2 customer expectation and IV1 assurance (0.954) while DV customer expectation holds the lowest value among all of them (0.946).

4.2.1.3 Convergent Validity

The degree of agreement between various items measuring the same idea is

measured by convergent validity. CR, AVE, and factor loadings can all be used to evaluate

Validity that converges (Hair et al., 2019). Examining AVE is important since it shows how much variance the latent variable has in comparison to measurement error (Ramayah et al., 2013). A construct's AVE is determined by averaging the square of each indicator's loading (Hair et al., 2019). The AVE range for all constructs, as shown in Table 4.9, is between 0.638 and 1, which is greater than the minimum required value of 0.5. (Barclay et al., 1995).

4.2.1.4 Discriminant Validity

To check if variables measure different concepts, the HTMT criterion was used. An HTMT value less than 0.9 is ideal, and the results were shown in Table 4.10. The study used a significance level of 0.05 and a two-tailed test. The HTMT helps to identify discriminant validity issues. If the concepts are similar, an HTMT above 0.9 is problematic, but a threshold of 0.85 should be considered for more distinct concepts. The study used a threshold of 0.9. For Touch 'n Go, throughout the entire result no variable tends to appear the issue of multicollinearity between the latent variable. For this particular research, a threshold value of 0.9 was used.

Table 4.10

HTMT Output

	MV: Age	DV: CS	IV1: AS	IV2: CE	IV3: PE	Age x PE	Age x CE	Age x AS
MV: Age								
DV: CS	0.029							
IV1: AS	0.077	0.485						
IV2: CE	0.092	0.505	0.803					
IV3: PE	0.033	0.402	0.777	0.799				
Age x PE	0.202	0.015	0.102	0.089	0.120			
Age x CE	0.162	0.017	0.066	0.051	0.100	0.773		
Age x AS	0.078	0.024	0.097	0.024	0.083	0.732	0.735	

Sources: Developed from questionnaire raw data

4.2.2 Structural Model Assessment

Figure 4.2

Structural Model of Touch 'n Go
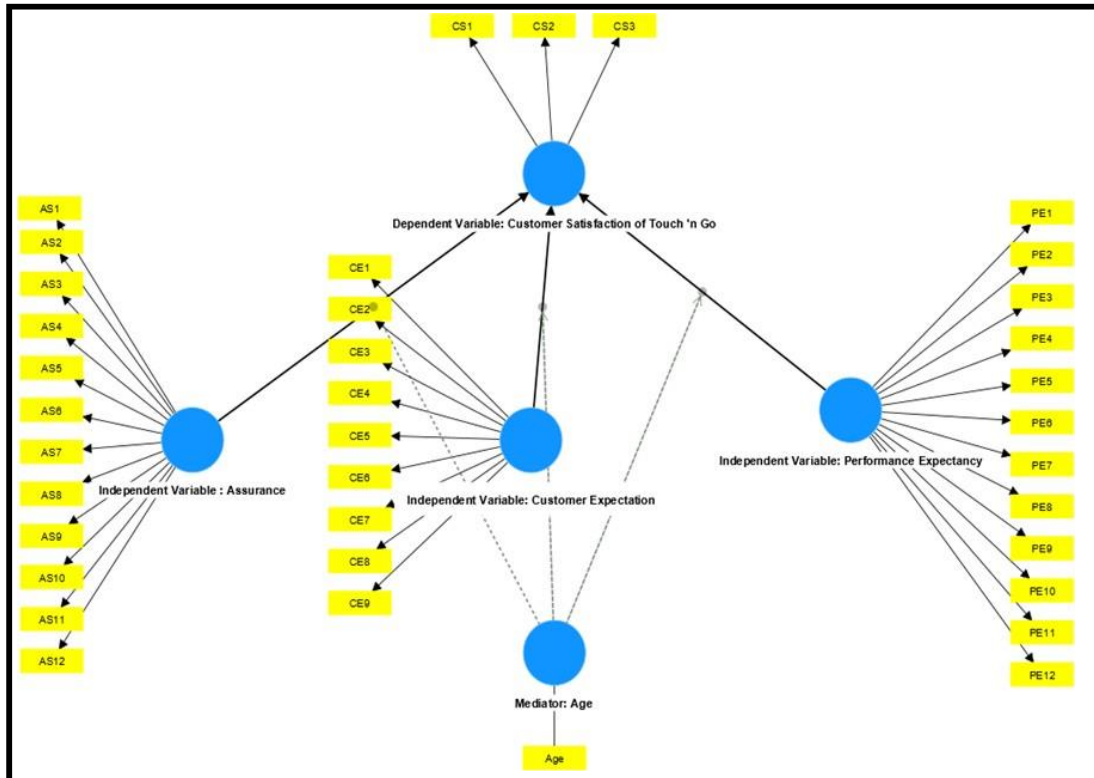
Sources: Developed from questionnaire raw data

4.2.2.1 Collinearity (VIF)

To check for collinearity issues between constructs, inner VIF values below 5 are acceptable. Table 4.11 shows that the inner VIF values for Age, Customer Satisfaction (CS), Assurance (AS), Customer Expectations (CE), Performance Expectancy (PE), and each independent variable through Age as mediator are

all below 5. This means that there are no collinearity issues between the constructs.

Table 4.11

Inner VIF values

	MV: Age	DV: CS	IV1: AS	IV2: CE	IV3: PE	Age x PE	Age x CE	Age x AS
MV: Age		1.088						
DV: CS								
IV1: AS		2.949						
IV2: CE		3.135						
IV3: PE		2.893						
Age x PE		3.022						

Age x CE		3.026						
Age x AS		2.686						

Sources: Developed from questionnaire raw data

4.2.2.2 Assess Path Coefficients

Table 4.12

Hypothesis Testing

Hypotheses	Description	Beta Value	Stand ard Error	T- Value (1.96)	P- Value (<0.05)	Decision
H1	Assurance > Customer Satisfaction of Touch 'n Go	0.248	0.088	2.871	0.004	Supported
H2	Customer Expectation > Customer Satisfaction of Touch 'n Go	0.409	0.103	3.935	0	Supported

| H3 | Performance Expectancy > Customer Satisfaction of Touch 'n Go | - 0.105 | 0.089 | 1.180 | 0.238 | Not supported |

Sources: Developed from questionnaire raw data

According to Hypothesis 1, there is a considerable correlation between assurance and customer satisfaction when utilizing Touch 'n Go. With a t-value of 2.871, more than 1.96, and a P-value of 0.004, less than 0.05, this hypothesis is accepted. As a result, there is a strong link between assurance and consumer satisfaction.

According to Hypothesis 2, there is a strong correlation between customer expectations and satisfaction with using Touch 'n Go. With a t-value of 3.935, which is greater than 1.96, and a P-value of 0, which is less than 0.05, this hypothesis is supported. With Touch 'n Go, there is a strong correlation between customer expectations and customer satisfaction.

According to hypothesis 3, there is a strong correlation between performance expectations and customer satisfaction while using Touch 'n Go. With a t-value of 1.180, which is lower than 1.96, and a P-value of 0.238, which is higher than 0.05, this hypothesis is disproved. As a result, utilizing Touch 'n Go has no discernible impact on the link between performance expectancy and consumer satisfaction.

4.2.2.3 Coefficient of Determination (R^2)

Table 4.13

Determination of Co-efficient (R^2)

Variable	R^2
DV: Customer Satisfaction of Touch 'n Go	0.289

Sources: Developed from questionnaire raw data

The table above shows the R-squared value for customer satisfaction towards Touch 'N Go app's financial services, based on independent variables of assurance, customer expectancy, performance expectancy, and mediator variable age. The R-squared value is 0.277, indicating that these independent variables account for 28.9% of the variance in customer satisfaction. The mediator variable age accounts for the remaining variance. It is important to note that in PLS-SEM, R-squared values are typically lower than those obtained from covariance-based SEM. However, low R-squared values should not necessarily be interpreted as poor model fit, and should be evaluated in the context of the research question and the theoretical framework (Hair et.al, 2014)

4.2.2.4 Assess Effect Size f²

Table 4.14

Determination of Effect Size (f²)

	DV: Customer Satisfaction of Touch 'n Go	Assessment Criteria
MV: Age	0.003	Small
IV1: Assurance	0.025	Small
IV2: Customer Expectation	0.061	Small
IV3: Performance Expectancy	0.005	Small

Sources: Developed from questionnaire raw data

F square is a measure to show how much impact an independent variable or set of independent variables have on the dependent variable. It is commonly used in multiple regression analysis. A higher F square value indicates a stronger relationship between the independent variable and dependent variable.

According to table 4.14, f square of all independent variables (assurance, customer expectancy, and performance expectancy range from 0.003 to 0.061 show small (<0.15) effects on customer satisfaction toward financial services provided by Touch 'N Go app.

4.2.2.5 Assess model's predictive relevance (Q^2)

Table 4.15

Determination of predictive relevance (Q^2)

	Original Sample Q^2
DV: Customer Satisfaction of Touch 'n Go	0.206

Sources: Developed from questionnaire raw data

Q square evaluates the predictive relevance of endogenous variables by testing the model's ability to predict the variable's indicators. If the predictive relevance value is greater than zero, the model is considered to have good predictive relevance (Hair et al., 2011). The result above for customer satisfaction of Touch 'n Go, which has a value of 0.206, has shown that this study has a good predictive relevance for the Touch 'n Go model.

4.2.2.6 Mediation

Table 4.16

Mediating Latent Variable

Hypothesis	Description	Direct effect (Beta)	t-value	Significance (p<0.05)	Indirect effect	t-value	Significance (p<0.05)	Decision
H4	Age > Customer Satisfaction of Touch 'n Go	-0.046	1.010	0.312				Not supported
H5	Age x Assurance > Customer Satisfaction of Touch 'n Go				0.032	0.439	0.661	Not supported
H6	Age x Customer Expectation > Customer Satisfaction of Touch 'n Go				0.010	0.107	0.915	Not supported

H7	Age x Performance Expectancy > Customer Satisfaction of Touch 'n Go				-0.092	1.210	0.226	Not supported

Sources: Developed from questionnaire raw data

Table 4.16 shows the results of the Bootstrapping mediation analysis with a 95% confidence interval, which tested whether Age played a mediator role in linking Assurance, Customer expectation, and Performance expectancy to customer satisfaction in commercial banks. However, the analysis found that none of the variables were significant in this test, as the T-Statistics (P-Value) for Assurance, Customer expectation, and Performance expectancy through Age were 0.439 (0.661), 0.107 (0.915), and 1.210 (0.226), respectively. The mediator Age is insignificant in this test as the T-Statistics (P-Value) are 1.010 (0.312).

4.3 Conclusion

All the results in Chapter 4 are generated from SmartPLS and performed in tabular form, so that the results can be shown in a clear way. Two step analysis in PLS is conducted and the result in two models which are measurement model and structural model. The results in a measurement model including indicator reliability, internal

consistency reliability, convergent validity and discriminant validity. The result in a structural model including collinearity, assess path coefficients, coefficient of determination, assess effect size, assess model's predictive relevance and mediation. These analyses are able to show the relationship between those independent variables and dependent variables. The findings are further discussed in the next chapter.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

5.0 Introduction

In Chapter 5, the overall result and finding of this research project will be carried out and further analysed. The result in Chapter 4 will be summarised and compared between Touch 'n Go and commercial banks according to their significance value and hypothesis testing. A clear explanation and understanding in every variable including mediator which is age in this study will be provided, so that other researchers can understand the relationship between the variables very well for Touch n' Go and commercial banks. Besides, the implications, limitations, recommendations based on the limitations for further study and conclusions for this study will be included at the end of this chapter.

5.1 Respondent Demographic Profile

Figure 5.1

Demographic Profile from the respondents: Age

A1.   Age
401 responses
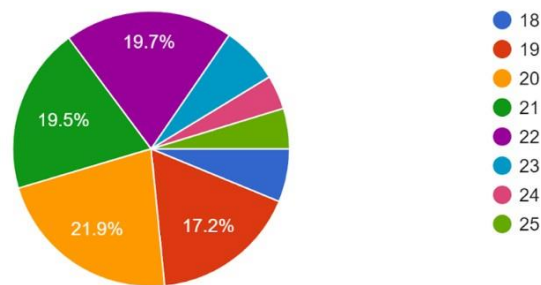
Source: Questionnaires of the study

Table 5.1

Age Frequency Table

Age	Frequency	Percentage
18	25	6.2%
19	69	17.2%
20	88	21.9%
21	78	19.5%
22	79	19.7%

23	27	6.7%
24	16	4%
25	19	4.7%

Source: Questionnaires of the study

This survey had been distributed to teenagers aged between 18 to 25 years old. As demonstrated in table 19, most of the respondents are aged 20 years old, which obtained 21.9% of the respondents. Next, 21- and 22-years respondents reached 19.5% and 19.7% of total respondents which is the second and third highest percentages. The remaining percentages fall under age 19 (17.2%), 23 (6.7%), 18 (6.2%), and 25 (4.7%). Lastly, only 4% of the respondents who are 24 years old contributed to this survey form.

5.2 Overall Results

Table 5.2

Summary of the statistical findings

Commercial Bank			Touch 'n Go		
Description	P-value	Results	Description	P-value	Results
Assurance > Customer Satisfaction	0.590	Insignificant	Assurance > Customer Satisfaction	0.004	Significant

Customer Expectation > Customer Satisfaction	0.000	Significant	Customer Expectation > Customer Satisfaction	0.000	Significant
Performance Expectancy > Customer Satisfaction	0.415	Insignificant	Performance Expectancy > Customer Satisfaction	0.238	Insignificant
Age > Customer Satisfaction	0.221	Insignificant	Age > Customer Satisfaction	0.312	Insignificant
Assurance > Age > Customer Satisfaction	0.968	Insignificant	Assurance > Age > Customer Satisfaction	0.661	Insignificant
Customer Expectation > Age > Customer Satisfaction	0.519	Insignificant	Customer Expectation > Age > Customer Satisfaction	0.915	Insignificant
Performance Expectancy > Age > Customer Satisfaction	0.437	Insignificant	Performance Expectancy > Age > Customer Satisfaction	0.226	Insignificant

5.2.1 Assurance and Customer Satisfaction

The result above shows that the assurance has an insignificant impact on the customer satisfaction for commercial banks model because the P-value of 0.590 is greater than 0.05. It had an opposite view with the previous researchers in Chapter 2, but it had the same result with the research of Phiri and Mcwabe (2013) with the insignificant result between assurance and customer satisfaction. The perception of feeling safe is lower in commercial banks and may be affected by the scamming in commercial banks that happened recently (Dubey, 2022).

However, for the Touch 'n Go model, table 5.2 shows the significant relationship between assurance and customer satisfaction because it had a P-value of 0.004 which is lower than 0.05. This result had the same expectation with the research of Ansari (2010) which said that assurance and customer satisfaction had a significant relationship. It is because assurance of Touch 'n Go is guaranteed by the WalletSafe which launched with the collaboration of AIA (AIA, 2021). So, consumers feel safer when using the financial services in Touch 'n Go.

In short, the assurance variable is not suitable for the commercial banks model to affect the customer satisfaction but can be used in Touch 'n Go model.

5.2.2 Customer expectation and Customer Satisfaction

Referring to table 5.2, both models which are commercial banks model and Touch 'n Go model are having the same P-value result which is 0.000. It can be concluded that the customer expectation and customer satisfaction are having a significant relationship since the P-value is lower than 0.05 for both models. This outcome had fulfilled the expectation of previous researchers who prove that customer expectation can affect customer satisfaction, such as Angelova and Zekiri (2011).

To conclude, the consumers will not be satisfied when they did not get what they expected. Therefore, Touch 'n Go platform and commercial banks should perform well in their financial products to meet customer expectations in order to increase their loyalty by satisfying them.

5.2.3 Performance Expectancy and Customer Satisfaction

According to table 5.2, with P-values of 0.415 and 0.238, respectively, there is no significant relationship between Performance Expectancy and customer satisfaction in commercial banks and Touch 'n Go. The causes of these unimportant interactions, however, are intricate and complicated. One such factor might be the wide range of expectations that consumers have for financial services, depending on their prior experiences, financial goals, and personal preferences. For instance, some customers might place a higher priority on convenience than others might place on security or level of customer care.

The effects of perceived usefulness and perceived simplicity of use, which are comparable constructs to performance expectancy, on customer satisfaction in the context of online banking were studied in a study by Siagan, H. (2022). The findings demonstrated that whereas perceived usefulness had a favourable effect on customer satisfaction, perceived simplicity of use had no appreciable influence. This raises the possibility that customers may value utility over usability when it comes to financial services, which would account for the lack of a relationship between performance expectations and customer satisfaction discovered in the current study.

The complexity of financial services decision-making processes is another aspect that could explain the lack of correlation. This complexity could leave clients with a poor grasp of financial products and services. This may lead to erroneous assumptions, misunderstandings, and a lack of contentment with the services offered by both Touch 'n Go and commercial bank.

5.2.4 Age and Customer Satisfaction

Based on the result from table 5.2, there is no significant relationship between the age of customers and their satisfaction levels for both Touch 'n Go and commercial banks. The P-values for the age of Touch 'n Go and customer satisfaction of Touch 'n Go and age of commercial bank and customer satisfaction of commercial bank are 0.221 and 0.312, respectively, which are both insignificant. These results suggest that customer age is not a significant predictor of their satisfaction levels with Touch 'n Go or commercial banks.

This statement is supported by a study by Mithas and Krishnan (2008), they found that demographic factors such as income, age and gender were not significant predictors of customer satisfaction with online financial services.

For a number of reasons, age may not be a key indicator of consumer satisfaction in the financial services industry. First, when it comes to financial services, customers of different age groups could have comparable goals and expectations, such as convenience, security, and high-quality customer care. Second, age is simply one of many demographic variables, such as income, education, and occupation, that might affect consumer satisfaction. Customer satisfaction may be more influenced by other variables like individual preferences, financial aspirations, and life events. Age becomes a less important element in evaluating customer satisfaction levels because financial service providers may develop their services to satisfy the needs and preferences of clients across different age groups.

5.2.5 Assurance through Age to Customer Satisfaction

Based on the result from table 5.2, there is an insignificant relationship from assurance through age to customer satisfaction with using both commercial banks and Touch 'n Go. This is similar to the previous studies which are Azman et al., (2009). They found the result is insignificant and negatively correlated between assurance, age and customer satisfaction.

The role of trust is one of the aspects that may influence the relationship between assurance and customer satisfaction. Trust is a crucial aspect in shaping consumer attitudes and behaviours towards service providers, and it influences how consumers interpret assurance and their level of satisfaction. This shows that customers' satisfaction can be increased when they trust the services provider to deliver on its assurance.

5.2.6 Customer Expectation through Age to Customer Satisfaction

Based on the result from table 5.2, there is an insignificant relationship from customer expectancy through age to customer satisfaction with using both commercial banks and Touch 'n Go. There is no past study shown that the age will not significantly affect customer expectancy and customer satisfaction of Touch 'n Go. The insignificant outcome come from this study is due to Age may not be a significant factor in determining customer satisfaction for financial services provide by Touch 'n Go wallet app and commercial bank as financial needs and expectations can differ among age groups.

Moreover, the cause of this is customer satisfaction may be affected by several elements when it comes to the financial services provided by commercial banks, including the level of service, accessibility, cost, or the range of available products. While achieving fundamental expectations may be sufficient to produce a positive customer experience, meeting more elaborate expectations may not.

Other factors that may affect customer satisfaction levels include unrealistic expectations due to a lack of understanding of the app's capabilities, technical issues, competition, poor customer support, and security concerns. These factors can have a significant impact on customer satisfaction levels for financial service apps like the Touch 'n Go wallet app, regardless of customer expectations based on age or other factors.

5.2.7 Performance Expectancy through Age to Customer Satisfaction

Based on the result from table 5.2, there is an insignificant relationship from performance expectancy through age to customer satisfaction with using both commercial banks and Touch 'n Go. There is no past study shown that the age will not significantly affect customer expectancy and customer satisfaction of Touch 'n Go. The insignificant outcome from this study is because considering that different age groups may have varied financial needs and expectations to the performance of financial product. Therefore, age may not be a significant factor in influencing consumer happiness.

Moreover, although performance expectancy is crucial for the design and growth of the financial services offered by commercial banks, it does not always ensure client satisfaction. Additionally, other elements like usability, transaction speed, customer service, the security of personal and financial data, and the overall value proposition of the financial service are very important. Depending on the individual financial service being provided, these elements may change. As a result, performance expectancy is simply one of many

elements that influence how satisfied customers are with the financial services offered by commercial banks.

Customer satisfaction for financial services like the Touch 'n Go wallet app may not be much influenced by performance expectations alone because other elements are also quite important. These elements could consist of technological problems including hiccups, errors, and sluggish loading times, rivalry with other financial service providers, customer support challenges, and security worries. The usability, accessibility, speed and efficiency of transactions, as well as the overall value proposition of the app, all have an impact on consumer satisfaction. As a result, even if performance expectancy is crucial to the design and development of the Touch 'n Go wallet software, it is not the only factor in determining consumer happiness.

5.3 Implication of study

Future financial industry researchers and service providers can gain various advantages from the study's conclusions. Secondly, the study emphasises how crucial customer expectations are in determining how satisfied they are with financial services. Future studies can concentrate on examining the various aspects of customer expectations that influence their degrees of satisfaction. This might assist service providers in comprehending the demands of their clients and designing their services and goods accordingly.

Second, the study found that customer satisfaction with financial services offered by Touch 'n Go and commercial banks in Malaysia is not significantly influenced by assurance and performance expectancy. As a result, it is suggested that service providers concentrate on other aspects of client pleasure, such as convenience, accessibility, and price.

Lastly, the study shows that the customer satisfaction levels are not significantly influenced by age. The association between independent and dependent variables can thus be explained by other mediators, which future researchers can investigate. Service providers can design their products and services in accordance with the findings of such research to better understand the elements that influence client happiness.

Overall, the results of this study can assist future researchers in identifying gaps in the body of knowledge and in designing studies that specifically cater to the needs of consumers and service providers. In order to better serve their clients and increase customer satisfaction, service providers can also use these results to build goods and services that suit their expectations and needs.

5.4 Limitations of the Study

In this research project, independent variables which are assurance, customer expectation, and performance expectancy are used to test the customer satisfaction in using financial products under commercial banks and Touch n' Go. There are still many

variables that may affect the customer satisfaction of using Touch 'n Go and commercial banks instead of these three variables used in this study.

Besides, this study did not include other age levels such as adults, middle-ages or senior citizens. This research only focuses on the teenager's group which is 18 to 25 years old because they are the most users of Touch 'n Go app and commercial banks.

Although this research has included the respondents from every state in Malaysia, the equalisation of the number of representatives from each state is not achieved well. In the data collected, there are only few respondents in some states such as Sabah and Sarawak compared to the other states.

Furthermore, there are many features and functions of financial products and services in Touch 'n Go and commercial banks. Further researchers can add on or study other financial products and features such as insurances.

In addition, there is only one mediator chosen which is age in this research. Mediator is a very good tool used to explain how the exogenous variables affect endogenous variables. However, only one mediator may not be enough to explain the relationship between the customer satisfaction and its independent variables.

5.5 Recommendation

Future studies might take into account using a more diverse sample, such as clients from various age groups and socioeconomic backgrounds, to address the shortcomings of the current research. This would contribute to a more thorough knowledge of the elements affecting client satisfaction in the financial services industry.

Future study might also think about testing various independent variables, such trust, perceived value, and perceived quality, to gauge customer satisfaction. Previous research has shown that these factors significantly affect consumer satisfaction in financial services.

In addition, future research might take into account utilising a different mediator in place of age to investigate the connection between independent variables and customer satisfaction. For instance, earlier research in the field of financial services indicated that perceived usefulness and perceived ease of use could mediate the association between independent variables and customer satisfaction. Also, future research can equalise the demographic factors to indicate the effect brought by geographic factors towards customer satisfaction.

Last but not least, future research may take into account using a longitudinal design to examine changes in customer satisfaction over time and to determine how external factors, such as alterations in economic conditions or technological advancements, affect customer satisfaction in financial services.

In general, future studies could offer a more thorough understanding of the variables that affect customer satisfaction in financial services by addressing the limitations of the current research, which could assist financial service providers improve their offerings and increase customer loyalty.

5.6 Conclusion

In conclusion, our study compares the relationship between various constructs in financial services provided by commercial banks and Touch 'n Go by utilising PLS-SEM. Our findings indicate that there are similar factors that influence customer satisfaction across these two service providers. Specifically, we found that customer expectation was a good predictor of customer satisfaction in both the commercial bank and Touch n'Go's financial services, while assurance was a more important factor in the Touch 'n Go financial services.

After reviewing the findings of the PLS-SEM study, it was discovered that banks offered customers with financial services that were more likely to be satisfied than Touch 'n Go. The results support the notion that clients are more pleased with the banking services offered by banks than by Touch 'n Go. Hence, Touch 'n Go should do a better job by enhancing the customer's satisfaction by improving their financial services.

The contribution of our study to the literature is indicating the need for industry-specific approaches to understand and improve customer satisfaction. The results of our study can be used by managers in both industries to develop tailored strategies to improve

customer satisfaction and most importantly organisational performance. However, the limitations for our study are we only focus on one age group, using only age as mediator, only focus on three types of financial services provided by both industry, and un-equalise demographic sample. Future research can be based on these limitations and explore other possible outcomes to indicate customer satisfaction over time.

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APPENDIX 1.1: SURVEY QUESTIONNAIRE

Satisfaction of Financial Services Provided by Touch 'n Go apps and Commercial Bank Towards Malaysian

Dear Respondent,

We are final year students from Universiti Tunku Abdul Rahman (UTAR), currently conducting a survey for our final year research project.

The aim of this questionnaire is to collect data on the satisfaction of financial services provided by Touch 'n Go apps and commercial banks toward Malaysia. All information collected from respondents will be kept confidential and will be used only for educational purposes.

The survey consists of 5 sections:

Section A: Demographic Information

Section B: Satisfaction Rate of Touch 'n Go users

Section C: Significant relationship between three independent variables and customer satisfaction with using Touch 'n Go.

Section D: Satisfaction Rate of commercial banks users

Section E: Significant relationship between three independent variables and customer satisfaction with using commercial bank.

If you encounter any problems, please feel free to contact us:

CHEONG SYNC YUET (Student ID no: 20ABB01324)
Email: johny1127@1utar.my

LEE JING NING (Student ID no: 20ABB01338)
Email: jingning339@1utar.my

NG QIAN NING (Student ID no: 19ABB03473)
Email: euniceng14794@1utar.my

PAN WEI XIONG (Student ID no: 19ABB04016)
Email: Dylanpan68@1utar.my

PERSONAL DATA PROTECTION STATEMENT

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

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

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

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

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

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

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

3. You may access and update your personal data by writing to us at johny1127@1utar.my.

Acknowledgment of Notice

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

☐ I disagree, my personal data will not be processed.

…………………………
Name:
Date:

Section A
Demographic Information

A1.　Age

　　　☐ 18

　　　☐ 19

　　　☐ 20

　　　☐ 21

　　　☐ 22

　　　☐ 23

　　　☐ 24

　　　☐ 25

A2.　STATE

Section B

Section B is to find out how satisfied you are with the Touch 'n Go. Please select the response that best represents your level of agreement or disagreement with each of the following statements.

(SD= "Strongly Disagree", D= "Disagree", N= "Neutral", A= "Agree", SA= "Strongly Agree")

Dependent Variable: Satisfaction Rate of Touch 'n Go users

Item		SD	D	N	A	SA
B1	I content with the Touch 'n Go application.					
B2	Touch 'n Go is functioning with good performance.					
B3	Touch 'n Go meets my expectations.					

(Reference: Olivia, M. et al., 2022)

Section C

Section C is to find out significant relationship between three independent variables and customer satisfaction with using **Touch 'n Go**. The three independent variables are assurance, customer expectation and performance expectancy. Please select the response that best represents your level of agreement or disagreement with each of the following statements.

(SD= "Strongly Disagree", D= "Disagree", N= "Neutral", A= "Agree", SA= "Strongly Agree")

Independent Variable: Assurance

Item		SD	D	N	A	SA
C1	GO+ provide low-security assurance.					
C2	You believe that GO+ takes a proper care of your money.					
C3	You believe that payments via GO+ are safe.					
C4	You rely on the security measures of GO+.					
C5	GOpinjam provide low-security assurance.					
C6	You believe that GOpinjam takes a proper care of your money.					
C7	You believe that funds via GOpinjam are safe.					
C8	You rely on the security measures of GOpinjam.					
C9	GOinvest provide low-security assurance.					
C10	You believe that GOinvest takes a proper care of your money.					
C11	You believe that transactions via GOinvest are safe.					
C12	You rely on the security measures of GOinvest.					

(Reference: Belás, J et al., 2016)

Independent Variable: Customer Expectation

Item		SD	D	N	A	SA
C13	GO+ meet your expectations regarding convenience.					
C14	GO+ meet your expectations regarding service.					

C15	GO+ meet your expectations regarding features.					
C16	GOpinjam meet your expectations regarding convenience.					
C17	GOpinjam meet your expectations regarding service.					
C18	GOpinjam meet your expectations regarding features.					
C19	GOinvest meet your expectations regarding convenience.					
C20	GOinvest meet your expectations regarding service.					
C21	GOinvest meet your expectations regarding features.					

(Reference: Dlamini, M., & Barnard, B., 2020)

Independent Variable: Performance Expectancy

Item		SD	D	N	A	SA
C22	GO+ is important for my daily financial practices.					
C23	The usage of GO+ increases the chances to achieve things which are very important to me.					
C24	The usage of GO+ helps me quickly realize my transactions.					
C25	The usage of GO+ improves my productivity.					
C26	GOpinjam is important for my daily financial practices.					
C27	The usage of GOpinjam increases the chances to achieve things which are very important to me.					
C28	The usage of GOpinjam helps me quickly realize my transactions.					
C29	The usage of GOpinjam improves my productivity.					
C30	GOinvest is important for my daily financial practices.					
C31	The usage of GOinvest increases the chances to achieve things which are very important to me.					
C32	The usage of GOinvest helps me quickly realize my transactions.					
C33	The usage of GOinvest improves my productivity.					

(Reference: Venkatesh et al.,2003)

Section D

Section C is to find out how satisfied you are with the commercial bank. Please select the response that best represents your level of agreement or disagreement with each of the following statements.

(SD= "Strongly Disagree", D= "Disagree", N= "Neutral", A= "Agree", SA= "Strongly Agree")

Dependent Variable: Satisfaction Rate of Commercial Bank users

Item		SD	D	N	A	SA
C1	I content with the Commercial Banks application.					
C2	Commercial Banks is functioning with good performance.					
C3	Commercial Banks meets my expectations.					

(Reference: Olivia, M. et al., 2022)

Section E

Section E is to find out significant relationship between three independent variables and customer satisfaction with using **commercial banks**. The three independent variables are assurance, customer expectation and performance expectancy. Please select the response that best represents your level of agreement or disagreement with each of the following statements.

(SD= "Strongly Disagree", D= "Disagree", N= "Neutral", A= "Agree", SA= "Strongly Agree")

Independent Variable: Assurance

Item		SD	D	N	A	SA
E1	Fixed deposit provides low-security assurance.					
E2	You believe that fixed deposit takes a proper care of your money.					
E3	You believe that funds via fixed deposit are safe.					
E4	You rely on the security measures of fixed deposit.					
E5	Mutual funds provide low-security assurance.					
E6	You believe that mutual fund takes a proper care of your money					
E7	You believe that funds via mutual fund are safe					
E8	You rely on the security measures of mutual fund					
E9	Credit card and Short-term loan provide low-security assurance.					
E10	You believe that credit card and short-term loan takes a proper care of your money					
E11	You believe that funds via credit card and short-term loan are safe					
E12	You rely on the security measures of credit card and short-term loan					

(Reference: Belás, J et al., 2016)

Independent Variable: Customer Expectation

Item		SD	D	N	A	SA
E13	Fixed deposit meets your expectations regarding convenience.					
E14	Fixed deposit meets your expectations regarding service.					
E15	Fixed deposit and short-term loan meet your expectations regarding features.					
E16	Mutual fund meets your expectations regarding convenience.					
E17	Mutual fund meets your expectations regarding service.					
E18	Mutual fund meet your expectations regarding features.					
E19	Credit card and Short-term loan meets your expectations regarding convenience.					
E20	Credit card and Short-term loan meets your expectations regarding service.					
E21	Credit card and Short-term loan meet your expectations regarding features.					

(Reference: Dlamini, M., & Barnard, B., 2020)

Independent Variable: Performance Expectancy

Item		SD	D	N	A	SA
E22	Fixed deposit is important for my daily financial practices					
E23	The usage of fixed deposit increases the chances to achieve things which are very important to me					
E24	The usage of fixed deposit helps me quickly realize my transactions					
E25	The usage of fixed deposit improves my productivity					
E26	Mutual fund is important for my daily financial practices					

E27	The usage of mutual fund increases the chances to achieve things which are very important to me					
E28	The usage of mutual fund helps me quickly realize my transactions					
E29	The usage of mutual fund improves my productivity					
E30	Credit card and short-term loan is important for my daily financial practices					
E31	The usage of credit card and short-term loan increases the chances to achieve things which are very important to me					
E32	The usage of credit card and short-term loan helps me quickly realize my transactions					
E33	The usage of credit card and short-term loan improves my productivity					

(Reference: Venkatesh et al.,2003)