

Understanding the Determinants of Mobile Banking App Usage in Malaysia: A Consumer Behavior Perspective

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Abstract

Consumer preference is an important topic in every organization worldwide, regardless of the scale of business, where consumer preference for a specific product is vital to enhance the business. Consumer preferences are very important to be studied because different consumer has different perceptions of a product, and consumer preference is a guide in determining the characteristics of products. Consumer preference will influence the success of a product. The research objective in this study defines the direction of a research investigation. Based on the literature review, the studies only showed the independent variables, dependent variables, and relevance characteristics. The common factor, such as service quality, technology, online marketing, corporate image, and convenience, will influence consumer preference toward specific products and will describe in detail. Indeed, existing analysis needs to adequately address the characteristic of consumer preference for a specific product. The research is important and needs to be conducted as limited studies have focused on consumer preference, and influencers differ. This research covers the SERQUAL Model, Rational Choice Theory, and Revealed Preference Theory and is important to the organization that can easily identify consumer preference between banking apps. This study intends to shed light on this nexus through quantitative-based correlation research relying on in-depth research on consumer preference towards specific products and influencing factors. This research is a quantitative-based correlation research design to determine the relationships between the respective independent and dependent variables. Research outcomes from hypotheses and suggestions will be developed during the project. The findings show that only service quality, technology, and online advertising positively influence consumer preference.

Keywords: *Service Quality, Technology, Online Advertising, Corporate Image, Mobile Banking Apps*

1. INTRODUCTION

Consumer preference is defined as a set of assumptions about an individual's subjective tastes that focus on consumer choices that result in various outcomes such as satisfaction, happiness, or utility. Malaysia's banking industry has become extremely competitive, prompting each bank to strive to differentiate itself from the competition. Therefore, research is conducted to determine the relationship between consumer preferences towards Malaysia's Mobile Banking App and the influence factors. Malaysia has a unique financial system in which Islamic and conventional banks coexist, making it the first country to deploy a dual banking system (Suppia and Arshad, 2019). Malaysia's banking industry is diverse and has gone through various revolutions. The adoption of the Islamic banking system, consolidation

process, liberalization and globalization, and technological advancement are the four primary structural change processes that have occurred in the Malaysian banking industry (Harkati, Alhabshi, and Kassim, 2020). The Islamic Banking Act 1983 authorized the foundation of the first Malaysian Islamic bank, Bank Islam Malaysia Berhad (BIMB) 1983 (Suppia and Arshad, 2019). The market structure has shifted dramatically due to liberalization, which has permitted the entry of foreign banks into the Malaysian banking industry, resulting in increased competition between banks on both a local and global basis (Harkati, et al., 2020). According to Suppia and Arshad (2019), conventional banking is based on interest, which is prohibited by Shariah. Islamic banking products and services are comparable to those offered by conventional banks, except that transaction must adhere to Islamic law (Moghavvemi, 2019). Malaysia's financial landscape has changed dramatically since the country successfully introduced a diversified banking system (Harkati, et al., 2020). According to Moghavvemi (2019), the banking industry is highly competitive as banks offer similar products and services. Therefore, to compete and exist in the banking industry, each bank must have competitive advantages over its competitors. In fact, several studies have been undertaken to determine the factors influencing consumers' preferences when using a mobile banking app, and the findings revealed that non-financial factors can influence consumers' preferences.

2. REVIEW OF THE LITERATURE

The investigation's evaluated literature is discussed in this chapter. The dependent variable (DV) and independent variables (IV) are defined and characterized, as well as their relation to consumer preferences. The dependent variable of this study is consumer preference and the independent variables are service quality, technology, online advertising, corporate image, and convenience. The aim of this chapter is to explain the relationship between the dependent variable and the independent variable using secondary data from relevant academic journals and previous studies. Furthermore, factors influencing customer preference will be thoroughly investigated in both the global and Malaysian contexts. Other than that, the most effective and useful SERQUAL Model, Rational Choice Theory, and Revealed Preference Theory are elaborate to support the current study. The framework will be drawn to guide the research in this chapter, and the hypothesis will be developed to clarify so that the results may be focused on achieving the research goal.

2.1 Service Quality

According to Endara et al. (2019), the service industry is critical to every country's economy, particularly low-income countries, where it usually accounts for more than half of GDP (GDP). Because of the global expansion of the service sector, there is a constant demand for higher service quality and perceived customer satisfaction, particularly in the banking industry (Bruin, Lombard, and Heydenrych, 2021). Banks are responsible for offering high-quality services to their customers to maintain competitive advantages (Khatab, Esmaeel, and Othman, 2019). Service quality refers to how companies fulfil or exceed client expectations (Pakurár et al., 2019). Ananda and Sonal (2019) claimed that in a competitive environment, banks can get a competitive advantage by delivering superior quality services that increase consumer satisfaction. This was concurred by (Islam, Ahmed, and Rahman et al., 2021) who also stated that service quality is the most fundamental prerequisite for thriving in a competitive environment.

According to Khatab et al. (2019), the importance of service quality can be seen in the service industries, and service providers should be aware of the concept to exhibit product

distinction to their customers. This was occurred by Pakurár et al. (2019), who stated too that the highest quality means the best satisfaction of consumers' preferences. Ananda et al. (2019) stated that service quality enables banks to attract more consumers at a lower cost while also increasing sales volume. Service quality is the key to measuring consumer preferences which are the lifeblood of any business and essential to the long-term existence of a business (Endara et al., 2019). In other words, consumer preference is based on the service quality they have received. To survive in the market, banks must have an understand of quality and client satisfaction (Endara et al., 2019).

Pakurár et al. (2019) stated that service quality is an essential success element for businesses seeking market competitiveness, development, and expansion. This was concurred by Ananda et al. (2019), who stated too that the ultimate weapon has been described as maximizing client satisfaction through excellent customer service. High service quality differentiates service providers from their competitors by increasing profitability, attracting new consumers, reducing costs, retaining existing customers, and thus enhancing the corporate image (Islam et al., 2021). As a result, service quality is an important factor influencing consumer preference toward mobile banking apps in Malaysia.

H1: Service quality has a significant positive influence on Consumer Preference towards Mobile Banking apps in Malaysia.

2.2 Technology

According to Kong and Ibrahim (2019), technology advancements have been a primary driving factor behind developments in banking distribution. This was concurred by Sankaranarayanan and Rajagopalan (2020), who stated too that technological advancement is forcing the corporate to change; an example is global banking which is undergoing a tremendous transition. Consumers' interactions with banks, as well as how they handle their finances, have been revolutionized by technological advancements, particularly in banks (Hatem, Thayaseelan, and Babatunde, et al., 2021). This can be explained by advanced technology getting important to most industries, especially the banking sector. Consumer expectations have been rapidly changing in the banking sector due to ongoing innovation and the use of technology (Hatem et al., 2021).

Globalization has changed how banks employ technology to serve their consumers better (Kamau et al., 2019). According to Anouze et al. (2019), banks benefit from new e-banking dimensions, which show various products and services for consumers due to technological advancements. According to Purwanto et al. (2020), millennials are extremely close to technology in their daily lives and cannot detach themselves from their mobile phones in the current digitalization era. In fact, this is an opportunity for the banking industry as many banks are rolling out various products or services with the help of technology to meet consumer demand.

According to Kamau et al. (2019), banks face opportunities and challenges as they integrate more into the global economy. This was concurred by Rahi et al. (2019), who stated that numerous studies have been carried out to address technology adoption challenges in the banking industry. As a result, the current study incorporates the unified theory of technology acceptance and use to explore user behavior toward Internet banking adoption. Therefore, technology adoption is considered one of the influencing factors in consumer preference for an online banking app.

H2: Technology has a significant positive influence on Consumer Preference towards Mobile Banking App in Malaysia.

2.3 Online Advertising

According to Mulchandani, Mulchandani, and Attri (2019), the difficulty of differentiation and creating a distinct selling proposition is more acute in the banking sector because the competitors very quickly imitate any new service or product launched. According to Aghaei (2021), a strategic marketing tool like online advertising assists banks in working in accord spot targeted consumers and identifying preferences. There are various marketing tools that will significantly influence consumer preference in selecting banks, such as online advertising. Banks typically set aside a significant amount of their budget for promotion expenses through social media, visual media, and print media to attract potential consumers and service existing ones (Mulchandani et al., 2019). This can be explained by the banking industry's understanding online advertise that online advertising can easily attract consumers Zephaniah et al., (2020) because of its effectiveness in informing, persuading, and reinforcing consumer purchase decisions, online advertising is an important component of marketing communication tools that generates brand preference and consumer patronage. This was occurred by Alshannag et al. (2020), who also stated that advertisement is the primary source of motivation for a consumer's intention and desire, leading to appropriate purchasing behavior. According to Aghaei (2021), consumer identification assists banks in increasing profitability because products and services that are presented in the banks should be based on a deeper understanding of consumers.

According to Shpak et al. (2020), banking marketing activities are one of the factors that influence the efficacy of banking structures. This was concurred by Aghaei (2021), who stated too that advertising is very important as it can assist the corporation in attracting more consumers. Using current marketing activities, such as online advertising, can help banks compete more effectively in the market (Shpak et al., 2020). Therefore, online advertising is an important factor influencing consumer preference in selecting a banking app.

H3: Online Advertising has a significant positive influence on Consumer Preference towards Mobile Banking App in Malaysia.

2.4 Corporate Image

According to Anouze et al. (2019), the consumer's perception of the company in their recollections is referred to as a corporate image. This was concurred by Purwanto et al. (2020) who stated too that a corporate image is defined as a consumer or the overall public positive perception of a company. When a corporation has a negative image or reputation, the first and most obvious negative impact is loss of business (Loveland et al., 2019). Corporate image is more crucial in the banking industry than in manufacturing, according to Özkan et al. (2020), because banks lack a tangible product whose features can be immediately evaluated.

According to Loveland et al. (2019), research has revealed a link between a corporate public image or reputation and its financial performance. This was concurred by Mubarak, Hamed, and Mubarak (2019) who also stated that a positive image fosters beneficial connections between the bank and its stakeholders and attracts investment. In fact, consumer loyalty can be harmed by a tarnished image and reputation, especially in the financial services industry Özkan et al. (2020). According to Purwanto et al. (2020), trust in mobile banking mediates the effects of corporate image on millennials' loyalty.

According to Purwanto et al. (2020), in order to create positive thinking in the minds of customers and maintain a competitive advantage in the market, organizations must maintain a positive corporate image. A company's performance is determined by how customers perceive its corporate image which is a way to gain a competitive advantage and makes it tough for competitors to mimic (Mubarak et al., 2019). According to Loveland et al. (2019), the most important risk to identify, manage, and minimize is corporate reputation risk.

H4: Corporate image has a positive significant influence on Consumer Preference towards Mobile Banking App in Malaysia.

2.5 Convenience

While convenience is widely studied in the banking industry, most previous studies have concentrated on the convenience of e-banking services (Wibowo, 2020). According to Anouze et al. (2019), creating convenience is an important factor for the consumer who uses the banking product which leads to a positive effect on consumer preference. This was concurred by Mahmoud (2019) who emphasizes that convenience is one of the most important factors to be considered when a consumer wants to adopt a banking app.

According to Kaur and Arora (2019), convenience is the most important factor in bank selection. According to Anouze et al. (2019), consumers' convenience when dealing with a bank can be determined by various factors, including the bank's location, operating hours, parking accessibility, and the number of times they must wait to be served. Convenience has been one of the key motives for consumers to use electronic banking, as the various online banking app features are able to meet consumer demands (Mahmoud, 2019).

According to Rawwash et al. (2020), convenience is one of the factors that will influence consumer decisions when selecting a bank since e-banking will deliver a better level of convenience by allowing users to access e-banking services at any time and location. On the basis of convenience, customers will select between traditional and electronic services (Mahmoud, 2019). According to Mahadin and Akroush (2019), boosting all sorts of convenience should increase consumers' good behavioral intentions by making services more accessible. This was concurred by Nguyen (2020), who stated too that increasing convenience would help consumers' intention to use the service by minimizing time and avoiding errors during bank transactions. Convenience influences the corporate image and consumer preference (Mahadin and Akroush, 2019). Therefore, this study aims to analyze whether convenience influences consumer preference when choosing a bank.

H5: Convenience has a significant positive influence on Consumer Preference towards Mobile Banking apps in Malaysia.

2.6 Underlying Theory

According to Ma, Fan and Guo et al. (2019), the core of revealed preference theory is to infer consumers' preferences. This was concurred by Thoma (2021), who stated too that the core tenet of revealed preference theory is a commitment to a behavioural interpretation of preference that associates preference with choice. According to Galambos (2019), a revealed preference axiom characterizing a choice theory is equivalent to that theory's Ramsey sentence. The formal foundations for mapping choice behaviour to preference can be laid via the revealed preference theory (Thoma, 2021). This can be explained by the revealed preference theory is used to understand potential consumer preference based on their previous purchase choice.

Ma et al. (2019) indicate that revealed preferences can approximate consumers' true preferences. According to Thoma (2021), revealed preference theory uses past consumer preference data to make predictions of unobserved preference. This was concurred by Adams (2020), who stated too that the revealed preference approach to demand prediction employs the behavioural premise of utility maximisation in conjunction with a limited number of historical observations of a consumer's behaviour to determine demand responses at new budgets of interest. Beyond that, revealed preference theory is distinguished by a methodological approach that uses these preference and utility ascriptions to anticipate unobserved choices (Thoma, 2021). This can be explained that the bank can be based on the revealed preferences theory learn more about targeted consumer preferences to enhance the banking product.

According to Cattaneo, Ma and Masatlioglu, et al. (2020), empirical testing of classical revealed preference theory shows that it is only sometimes compatible with the observed choice behaviour of consumers. Therefore, the revealed preference theory is important and needs to restudy to understand the core of consumer preference for a specific product. Revealed preference theory about consumer preference will be used to support the study to determine the influence factor of consumer preference for this writing.

2.7 Theoretical Framework

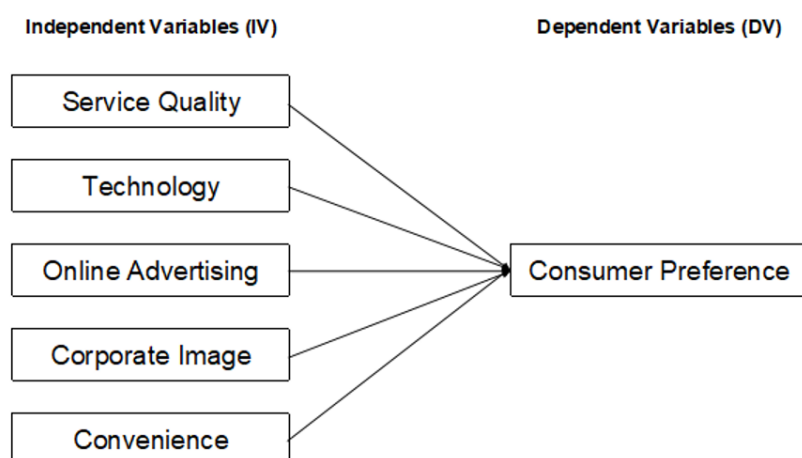


Figure 1: Source: Conceptual framework- Authors drawing

3. METHODOLOGY

The research methodology of this study is based on the interpretation of data that would be applied to the data collection processing procedure. Questionnaires will be distributed, as this is a retrospective study. The test design details the survey's purpose, the type of inquiry, the level of research intervention, the sample size, the time frame, the analysis unit, the sampling method, the data collection process, calculation and evaluation, and data analysis. The nature of the questionnaire was tabulated, along with the number of items for each element, and references for questions were cited. According to Cronk (2019), statistical Package for the Social Sciences (SPSS) is the tool that is used to review and analyze the data obtained from the researcher's questionnaires to avoid bias and to ensure a precise and accurate result. However, the data used for a generation only includes qualified or complete questionnaires. According to Mishra, Pandey, and Singh et al. (2019), Descriptive statistics are a type of analysis that uses only a few words to summarise the main characteristics of a study's data, such as the mean and

standard deviation. Descriptive statistics are used to characterize the basic properties of the data in a study and are an important part of biomedical research. Descriptive analysis differs from inferential analysis in that it just summarises the facts, but inferential analysis concludes by using the data from the sample to represent the population. Definition tests are used to evaluate data analysis quantitatively, and each vector displays the collected data in a frequency distribution. Frequency analysis is done to establish the demographic profile of respondents regarding gender, age, monthly income, and preferred local mobile banking app using SPSS.

4. RESULTS

The questionnaires are released online through various social media platforms to reach consumers from different states in Malaysia. Due to the research's time constraints, a convenient sampling method was adopted. However, there are only 416 respondents in total.

Table 1: Demographic Profile

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21 – 30	185	44.5	44.5	44.5
	31 – 40	103	24.8	24.8	69.2
	41 – 50	72	17.3	17.3	86.5
	51 – 60	27	6.5	6.5	93.0
	61 and above	29	7.0	7.0	100.0
	Total	416	100.0	100.0	
		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	174	41.8	41.8	41.8
	Male	242	58.2	58.2	100.0
	Total	416	100.0	100.0	
		Monthly Income			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	RM 12,001 and above	40	9.6	9.6	9.6
	RM 3,000 and below	145	34.9	34.9	44.5
	RM 3,001 to RM 6,000	155	37.3	37.3	81.7
	RM 6,001 to RM 9,000	48	11.5	11.5	93.3
	RM 9,001 to RM 12,000	28	6.7	6.7	100.0
	Total	416	100.0	100.0	
		Most frequently used banking app			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Am Online	39	9.4	9.4	9.8
	CIMB Clicks	46	11.1	11.1	20.4
	HLB Connect	42	10.1	10.1	30.5
	Maybank2u MY	179	43.0	43.0	73.6
	Other	14	3.4	3.4	76.9
	PB engage MY	68	16.3	16.3	93.3
	RHB	28	6.7	6.7	100.0
	Total	416	100.0	100.0	

The Demographic Profile of the Study Participants is provided in Table 1. The two largest age groups of respondents were 21-30 (44.5 %; n=185) and 31-40 (24.8 %; n=103), accounting for over 70% of all respondents. The female respondents are 41.5% (n=174) and the male respondents are 58.2% (n=242). The two-income groups with the highest percentage of responses are RM 3,000 and lower (34.9 per cent; n=145) and RM 3,001 to RM 6,000 (37.3

per cent; n=155). According to Table 1, the majority of the monthly income group is between RM 3,000 and RM 6,000, and the responses are between the ages of 21 and 40; the majority of young people prefer mobile banking apps over the elderly. Maybank2u (n=179) and PB engage (n=68) are the respondents' most popular banking apps. Other average respondents include CIMB (n=46), HLB Connect (n=42), and Am Online (n=39). This could be because Maybank2u is more reliable and offers more convenient features to its customers.

According to Anderson et al. (2019), the focus of hypotheses testing is the direction of R^2 and P-value, which are statistical measures of multiple regression fitting regression lines. The range of R^2 is between 0 and 1. When R^2 is equal to 0, there would be no variation in independent variables that can be attributed to dependent variables. Referring to Table 2, all hypotheses are accepted as each independent variable has a high F value with $p < 0.05$. From the R^2 , service quality accounts for the highest variance in consumer preference (58.1%) followed by technology (55.6%), online advertising (41%), corporate image (31.2%), and convenience (25.2%).

Table 2: Simple linear regression Result

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1. Service Quality	.762 ^a	.581	.580	.38085
2. Technology	.745 ^a	.556	.554	.39221
3. Online Advertising	.640 ^a	.410	.409	.45183
4. Corporate Image	.559 ^a	.312	.311	.48783
5. Convenience	.507 ^a	.252	.255	.50706
a) Predictors: (Constant), Service Quality, Technology, Online Advertising, Corporate Image, Convenience				
b) Dependent Variable: Consumer Preference				

Based on the model summary in Table 3, the model fits the research as the R^2 value is 0.681, which indicates that 68% of consumer preference can be predicted by all the independent variables, which are service quality, technology, online advertising, corporate image, and convenience.

Table 3: Multiple linear regression Result

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.825 ^a	.681	.677	.33406
a) Predictors: (Constant), Convenience, Corporate Image, Technology, Online Advertising, Service Quality				
b) Dependent Variable: Consumer Preference				

According to Bougie and Sekaran (2019), ANOVA is a framework that forms the basis for significance tests and provides knowledge about the levels of variability within a regression model. Referring to the ANOVA table and model summary of multiple linear regression (Table 3 and Table 5); $R^2 = 0.666$; taken as a set, service quality, technology, online advertising, corporate image, and convenience can predict 67% of the variance in consumer preference. The overall regression model was significant with $p < 0.05$.

Table 4: Regression ANOVA for Independent Variables

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1. Service Quality	Regression	83.242	1	83.242	573.889	.000 ^b
	Residual	60.050	414	.145		
	Total	143.292	415			
2. Technology	Regression	79.609	1	79.609	517.527	.000 ^b
	Residual	63.684	414	.154		
	Total	143.292	415			
3. Online Advertising	Regression	58.772	1	58.772	287.880	.000 ^b
	Residual	84.520	414	.204		
	Total	143.292	415			
4. Corporate Image	Regression	44.770	1	44.770	188.128	.000 ^b
	Residual	98.522	414	.238		
	Total	143.292	415			
5. Convenience	Regression	36.851	1	36.851	143.330	.000 ^b
	Residual	106.441	414	.257		
	Total	143.292	415			

a. Dependent Variable: ConsumerPreference
b. Predictors: (Constant), ServiceQuality, Technology, Online advertising, corporate image, Convenience

Table 5: Regression ANOVA for Dependent Variable

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.539	5	19.508	174.813	.000 ^b
	Residual	45.753	410	.112		
	Total	143.292	415			

a) Dependent Variable: Consumer Preference
b) Predictors: (Constant), Convenience, Corporate Image, Technology, Online Advertising, Service Quality

According to Schindler (2018), the standardization of the data coefficient is to identify the factor that has a higher influence on consumer preference. The closer the Beta coefficient value to 1, the higher the statistical influence on the research phenomena. Based on the result shown in Table 6, all the independent variables influence the dependent variable.

Table 6: Beta Coefficient Results from Simple Linear Regression

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.067	.132		8.058	.000
	Service Quality	.736	.031	.762	23.956	.000
2	(Constant)	1.206	.133		9.039	.000
	Technology	.709	.031	.745	22.749	.000
3	(Constant)	2.368	.111		21.383	.000
	online advertising	.455	.027	.640	16.967	.000
4	(Constant)	1.949	.166		11.711	.000
	Corporate Image	.532	.039	.559	13.716	.000
5	(Constant)	1.940	.191		10.154	.000
	Convenience	.524	.044	.507	11.972	.000

a. Dependent Variable: Consumer Preference

Table 7: Beta Coefficient Results from Multiple Linear Regression

Model		Coefficients				t	Sig.
		Unstandardized Coefficients		Standardized Coefficients			
		B	Std. Error	Beta			
1	(Constant)	.688	.148		4.652	.000	
	Service Quality	.405	.046	.419	8.763	.000	
	Technology	.262	.044	.276	5.898	.000	
	online advertising	.176	.029	.247	6.166	.000	
	Corporate Image	.005	.037	.006	.144	.886	
	Convenience	-.012	.037	-.012	-.325	.745	

a) Dependent Variable: Consumer Preference

Table 8 summarises the status of the research hypotheses. Based on the result, all hypotheses are accepted as each independent variable has a high F value with $p < 0.05$. Service quality is the main factor that is influencing consumer preference toward mobile banking apps in Malaysia, as the Beta value is 0.762. Followed by technology (0.745), Online Advertising (0.640), corporate image (0.559), and convenience (0.507). According to Anderson et. al. (2019), the findings of the aforementioned test are statistically significant and follow the rule of thumb.

Table 8: Research Hypotheses Results

Hypotheses	Results	Status
H1: Service quality has an influence on Consumer Preference towards Mobile Banking App in Malaysia.	p-value:0.000 β : .419	Accepted
H2: Technology has an influence on Consumer Preference towards Mobile Banking App in Malaysia.	p-value: 0.000 β : .276	Accepted
H3: Online Advertising has an influence on Consumer Preference towards Mobile Banking App in Malaysia.	p-value: 0.000 β : .247	Accepted
H4: Corporate image has an influence on Consumer Preference towards Mobile Banking App in Malaysia.	p-value: 0.886 β : .006	Rejected
H5: Convenience has an influence on Consumer Preference towards Mobile Banking App in Malaysia.	p-value: 0.745 β : -.012	Rejected

5. DISCUSSION

The research objective for this study is to determine if there is a relationship between service quality, technology, online advertising, corporate image, and convenience with consumer preference toward mobile banking apps in Malaysia. However, only 3 independent variables (Service Quality, Technology, and Online Advertising) managed in this study. The result shows that corporate image and convenience factors have not significantly influenced consumer preference toward online banking apps in Malaysia. An extensive literature review conducted in Chapter 2 guides the design of the conceptual structure. The researcher developed five hypotheses to answer the five research objectives and questions in this study. The research findings from hypotheses testing in Chapter 4 are addressed in detail in this section:

Objective 1: Service quality has a significant positive influence on Consumer Preference toward Mobile Banking apps in Malaysia

Based on Table 4.16, hypothesis 1 has a p-value of 0.000 ($p < 0.05$) and a beta value of 0.419. Therefore, it can be inferred that the relationship between service quality and consumer preference has a significant influence. On the basis of the analysis, Hypothesis 1 is accepted. The findings imply that consumer preference is influenced by service quality and that service

quality plays an essential role in consumer preference. Based on the demographic profile, most respondents (43%) are using the Maybank2u app, which can be explained by the service quality of Maybank2u being greater than others. Maybank app is the most preferable mobile banking app to most Malaysians.

According to Ananda and Sonal (2019), service quality has a significant positive influence on consumer preference, especially in the banking sector. Service quality becomes the most important factor because the product or service offered by some industries, such as the banking sector, is similar. This was concurred by Endara et al. (2019), who state too that service quality is the key to measuring consumer preference in most service sector. The global expansion of the service sector led to higher consumer preference for service quality. This was affirmed by Pakurár, et al. (2019) who also state that service quality is an important factor influencing consumer preference. Based on the previous study's findings, most of the result is similar to this study's findings. Therefore, this can be explained by the fact that consumer preference will influence by service quality in the majority industry.

Objective 2: Technology has a significant positive influence on Consumer Preference towards Mobile Banking App in Malaysia

Based on Table 4.16, hypothesis 2 has a p-value of 0.001 ($p < 0.05$) and a beta value of 0.276. Therefore, it can be inferred that the relationship between technology and consumer preference has a significant influence. On the basis of the analysis, Hypothesis 2 is accepted. The findings imply that consumer preference is influenced by technology and that technology plays an essential role in consumer preference. According to the Demographic profile, most respondents (44.5%) between the ages of 21 and 30 use mobile banking apps, indicating that Malaysia's millennials are more tech-savvy and prefer online banking apps.

Based on the findings, the question with the highest mean (4.36) of technology is "The banking apps provide secured and faster transactions". Therefore, the bank can upgrade its apps with safer and faster verification methods instead of SMS TAC. The bank can implement face and voice recognition, as sometimes consumers are not able to access the application in a normal way. Face recognition can use for verification, and voice recognition can help the user to select the feature they want to use in the banking apps. Besides, bank marketers can upgrade their banking app for more features to attract consumers. For example, Maybank has many applications with different purposes, such as MAE by Maybank2u, Maybank QRPayBiz, Maybank2u Biz, Maybank Wealth, and others. Therefore, the Maybank marketer should integrate all the features in one app that allows consumers done all their transactions with only one app. This also helps consumers clear the phone space. Besides, the bank marketer can enhance the app's Chatbot feature by adding more or upgrading the question-and-answer feature frequently. Consumers can always easily solve every issue they face in advance instead of waiting for customer service.

Objective 3: Online Advertising has a significant positive influence on Consumer Preference toward Mobile Banking apps in Malaysia

Based on Table 4.16, hypothesis 3 has a p-value of 0.000 ($p < 0.05$) and a beta value of 0.247. Therefore, it can be inferred that the relationship between online advertising and consumer preference has a significant influence. On the basis of the analysis, Hypothesis 3 is accepted. The findings imply that consumer preference is influenced by online advertising and that online advertising plays an essential role in consumer preference. According to the demographic profile, the two largest monthly income groups are RM3, 000 and above (34.9%)

and RM3,001 to RM6,000 (37.3%), indicating that online advertising will influence this group of respondents. The two highest income ranges of a responder group, RM9,001 to RM12,000 (6.7%) and RM12,001 and above (9.6%), indicate that this group of people is less confident with banking apps.

Based on the findings, the question with the highest mean (4.32) of online advertising is “Positive review of the bank influences me to select a bank”. Therefore, the bank needs to enhance its services to gain positive reviews from their consumer. A positive review of the service and advanced technology can help the banking sector to enhance its consumer preference level. The bank can increase its advertising efficiency by increasing online advertising expenses. They can achieve greater consumer awareness and preferences by allocating more platforms. Most industries widely adopt online advertising on different platforms. Nowadays, people spend most of their time on their electronic devices. Most businesses will choose to put place advertisements on online platforms such as Facebook and Instagram. Therefore, online advertising is a fast and efficient way to reach their targeted consumer. Besides, the function of the online platform, such as “likes” and “share” can help them reach the potential customer. Facebook users can share the advertisement through WhatsApp friends. Hence, marketers should wisely allocate their advertisements to better platforms to reach the potential consumer.

Objective 4: Corporate image has a significant positive influence on Consumer Preference towards Mobile Banking App in Malaysia

Based on Table 4.16, hypothesis 4 has a p-value of 0.886 ($p > 0.05$) and a beta value of 0.006. Therefore, it can be concluded that corporate image does not significantly influence consumer preferences. On the basis of the analysis, Hypothesis 4 is rejected. The findings imply that consumer preference would not be influenced by corporate image. Therefore, it can be concluded that corporate image does not show a significantly positive relationship with consumer preference. But at times, corporate image will not influence consumer preference toward online banking apps, which thereby shows no significant relationship.

According to Özkan et al. (2020), a strong corporate image is a competitive advantage that can boost consumer preference in a competitive environment. This was concurred by Purwanto et al. (2020), who state too that corporate image will influence millennials' preference for mobile banking apps. Loveland et al. (2019) affirmed that a negative corporate image would influence consumer preference and lead to business loss. Based on some of the previous research findings (Özkan et al., 2020; Purwanto et al., 2020; Loveland et al., 2019), corporate image influences consumer preferences. However, the corporate image does not directly influence satisfaction (Ni, Zhang, and Hu, et al., 2020). Since previous studies' results differ, this factor should be analysed again by future researchers. The finding differences might be due to different targeted respondents or data collection methods. Based on the findings, the question with the highest mean (4.36) of the corporate image is “The bank is in good financial shape.” Although the findings show that corporate image has no significant influence on consumer preference, marketers can still look for the highest mean question as most respondents consider bank financial health crucial.

Objective 5: Convenience has a significant positive influence on Consumer Preference towards Mobile Banking App in Malaysia.

Based on Table 4.16, hypothesis 5 has a p-value of 0.745 ($p > 0.05$) and a beta value of -0.012. Hence, convenience does not show a significant influence on consumer preferences. On

the basis of the analysis, Hypothesis 5 is rejected. The findings imply that the convenience factor would not influence consumer preference. Therefore, it can be concluded that the convenience factor does not show a significantly positive relationship with consumer preference. But at times, the convenience factor will not influence the consumer preference toward online banking apps, thereby showing no significant relationship.

According to Kaur and Arora (2019), convenience is the most important factor that influences consumer preference. This was concurred by Mahmoud (2019); the convenience factor is one of the main reasons that consumers use online banking apps. This was affirmed by Rawwash et al. (2020), who state too that convenience is an important factor that will influence consumer decisions and preferences when selecting a bank. Based on the findings from the previous researchers (Kaur and Arora, 2019; Mahmoud, 2019; Rawwash et al., 2020), convenience is an important factor that will significantly influence consumer preference. However, convenience does not significantly influence consumer satisfaction (Vetrivel, Rajini, and Krishnamoorthy, 2020). Since previous studies' results differ, this factor should be analysed again by future researcher. The finding differences might be due to different targeted respondents or data collection methods.

Based on the findings, the question with the highest mean (4.37) of convenience is “The banking apps create convenience for me, especially when I need to access the service anywhere.” Although the convenience factor had no significant influence on consumer preference, the bank should take note of this as the highest mean represent consumer preference. Therefore, the bank should update their banking app to a simple feature as some banking apps will show the total account balance when they need to pay. Consumers will not feel comfortable with this feature. Therefore, the banker can refer to the highest mean question to make appropriate improvements to gain consumer preference.

5. IMPLICATIONS

The preceding chapters' findings revealed that only 3 factors, namely service quality, technology, and online advertising, had a significant positive relationship with consumer preferences in selecting an online banking app. To dominate the market and establish consumer loyalty, banks should use their strengths and exploit new opportunities by controlling these independent variables, such as developing more services in the banking apps.

The analysis result shows that the most important factor is service quality which has the highest coefficient of 0.419. Fast and efficient services, correct performance of promised services, detailed information, and well-trained staff to manage consumer requirements are all covered under the area of service quality. That is to say; consumers prefer innovative, diverse feature products, services, and performance from a single source. Since the features and services of banking apps are the essential criteria for consumer preference when selecting a banking app, bank management must keep this as a major strategy for their long-term and short-term goals by continuing to provide unique and useful products and services. The bank should also be striving to introduce new and innovative products that are convenient for consumers and monitor, evaluate, and analyze market trends on a regular basis because consumer expectations and preferences might change at any time. The bank is urged to develop professional relationships with consumers and provide value to keep their business. An increased workforce with linguistic capabilities would also help to stimulate the service and make it more efficient. Due to the findings, mobile banking app users desire quick and efficient

service. As a result, the bank should provide customer assistance at all hours of the day and night.

Besides, the bank should pay attention to technology as it has the second-greatest coefficient of 0.276. This demonstrates that technology is a major source of concern for individuals nowadays. This study defines a technological aspect as a fast and secure banking service, an essential feature, a user-friendly interface, and easy access to banking apps. The bank manager must stay current with technology and ensure that each transaction or service is secure. Technology creates valuable products or services for consumers, particularly regarding barriers and convenience. For example, banks collaborating with fintech start-ups can offer a simple but useful product at a lower cost due to economies of scale. In fact, current mobile banking app services include banking transactions, an E-wallet for acquiring and transferring funds, and Duit-now, which simply requires an individual's identity. The bank might innovate or add more services to existing mobile banking apps, such as introducing an online robot to receive inquiries and solve problems in seconds. The bank must focus on innovative technology that can aid financial institutions in retaining existing consumers and reach out to new potential consumers.

Furthermore, a value of 0.247 from Online Advertising showed that it has a strong influence on the dependent variable as well. The research result of online advertisement refers to consumer preference that will positively be affected by the bank's presence on social media platforms, the presence of the bank activity, and referrals from other customers (word of mouth). To increase the number of favorable evaluations from consumers, the bank could implement a consumer referral program that encourages consumers to recommend bank products or services to potential consumers. In fact, existing consumers' willingness to share their experiences or advice with potential consumers may increase their confidence in selecting a bank.

6. LIMITATION, THE RECOMMENDATION FOR FUTURE WORKS, AND THE CONCLUSION

Based on the research result, there are 3 factors that potentially influence consumer preference in choosing banking apps. By referring to existing journals and articles, there are limited questionnaires and research comprised of the dependent variable (consumer preference) and all independent variables (service quality, technology, online advertising, corporate image, and convenience). The information was gathered and entered into SPSS for analysis. There are various limitations in this study that have been revealed as a result of regression analysis.

This study has a drawback because it solely looked into Malaysians' preferences for banking apps. Because the information gathered is not based on a nationwide sample, the factors and their relative importance may differ by country. Because Malaysia is a developing country, the findings may have a minor influence on other developing countries, as they tend to use different banking apps and receive asymmetrical technologies. In fact, the consumer from different countries will have different requirements that may alter the value of each explanatory variable in terms of preference, such as the financial services legislation and guidelines for banking sectors, as well as culture, demography, and geographic location.

Due to the pandemic, many consumers are being forced to learn and utilize banking apps for payment or other contactless banking services to slow the virus's spread, especially among the elderly. The journey of collecting data become challenging, especially when distributing

surveys to the elderly as this survey is focused on different age consumer. Some of the elderly will only use the simple service of the banking apps such as transactions and QR pay. Besides, linguistic challenges are not only from the elderly but also among respondent who does not read English as their second language. Some of the respondents might need to be more educated and speak their mother tongue. In fact, the Malay language is familiar to the Malays, the Chinese language is familiar to the Chinese, and the Indian language is familiar to the Indians. Therefore, completing the questionnaire in a language with which they are unfamiliar is challenging for the elderly and respondents who do not fully grasp the question. The data collection became difficult as some of the respondents refused to fill up the survey form.

The analysis results show a few drawbacks, such as time restriction being one of the restricting factors for the analysis as the timeline for completing this research was just 14 weeks. The timeline for this project is only 14 weeks, meaning all the primary data collection and analysis must be completed before the deadline. Primary data takes more time and energy than secondary data as the researcher must create a questionnaire and gather information before running the analysis. Thus, the researcher has time constraints during the research because workloads are limited to a few weeks. In fact, the preliminary sample collected was only distributed via some social media platforms. Therefore, the analysis result may need to be more thoroughly accurate. Future research projects should take into account the time constraints and carefully plan ahead of time to operate efficiently also distribute the questionnaire via more channels.

Convenience sampling is a non-probability sampling method in which participants are selected from a small population group (Gaille, 2020). Convenience sampling is very convenient for the researcher, but a convenience sample's result needs to be representative. The feedback is helpful from an individualized standpoint but cannot provide information about a large population group. A convenience sample makes it easier to supply false data. Some respondent doesn't want to be bothered when busy, which increase a higher risk of receiving inaccurate data. In fact, several respondents answered all of the questions by choosing 5 or 3. Therefore, the researcher needs to think wisely when using this sampling method.

False data will result from a questionnaire with insufficient options. The limited option for banking application selection has a significant risk of erroneous data because respondents need help to identify their preferred bank apps. Some of the well-known banking apps not included in the questionnaire, such as Citibank and Standard Charter. In fact, only a handful of respondents chose the 'others' option and the researchers have yet to decide which other app they prefer. Therefore, more options should be included in the questionnaire in order to understand the most preferred banking apps clearly.

The current research output only applies to some countries, particularly those that are extremely modern or very poor, because the current research topic is only focused on banking apps in Malaysia. In fact, consumers from various countries would have varied preferences. A deeper model for future research means the questionnaire or other research methods can focus more on consumer sentiment. Therefore, it is suggested that future study aims for a larger sample size and observations, in terms of more nations and more diverse respondents, so that regression analysis can benefit more countries.

The journey of gathering data became difficult when come across illiterate elderly people. Encounter the respondent who does not read English as their second language did become problematic while collecting data. Bilingual or Multiple Languages can enhance the

output quality for future research as the respondent can express their thoughts and opinions in the language they feel more comfortable with. The time it takes to gather data will also be shortened since respondents can grasp the question and finish the survey quickly. Therefore, future research could consider providing bilingual or multilingual versions of English words and terminology that are regularly used in Malaysia.

The time constraint decreases the output quality of the study. Social media platforms can help the researcher to reach more respondents. Instead of using one or two platforms, the researcher can survey by using every assisting social media platform, as different platforms will have loyal users. In other words, the researcher can reach more respondents during a limited time by using every assisting social media platform. In fact, adopting more platforms to distribute questionnaires can eventually speed up the gathering data process.

This research focuses on discovering more about the factors that influence the dependent variable, customer preference for banking apps. There are 5 factors as independent variables: serviceity, technology, online advertising, corporate image, and convenience. These factors were turned into a set of questions that were included in the survey questionnaire. Based on the analysis result, it means that only 3 of the independent variables (Service Quality, Technology, and Online Advertising) are related to the dependent variable in a significantly positive way. Service quality is the most important factor, with the largest coefficient (0.419), followed by Technology (0.276), Online Advertising (0.247), Corporate Image (0.006), and Convenience (-0.012). This study can be utilized by future researchers further to study consumer preference for banking apps in Malaysia.

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