

# The Relationship between Factors Influencing Purchasing and Purchase Intention of Smartphones among Adults in Johor Bahru

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DOI: <https://doi.org/10.30880/rmtb.2023.04.01.014>

Received 31 March 2023; Accepted 30 April 2023; Available online 01 June 2023

**Abstract:** Due to lack of support on mobile devices, users are forced to perform their tasks on desktops which frustrates them when they use mobile devices for both communication and entertainment. Another issue is that most Android phone users upgrade to new devices after three to four years of use. Therefore, the purpose of this study is to identify the relationship between factors influencing purchasing and purchase intention of smartphones among adults in Johor Bahru. The quantitative approach was used in this study. Using online Google Forms, 384 questionnaires were distributed to adult consumers aged 20–49 in Johor Bahru. The data was collected and examined using the Statistical Package for Social Science (SPSS), and the response rate was 80.47%. According to the findings of the descriptive analysis, brand was the main factor in the purchase of smartphones among adults in Johor Bahru. The findings showed that there is a significant relationship between brand, price, and product features and the purchase intention of smartphones among adults in Johor Bahru. The limitations of this study included a lack of time, a small number of respondents, unreliable and untruthful answers, and communication difficulties. This study provided some recommendations for future research.

**Keywords:** Brand, Price, Product features, Purchase intention

## 1. Introduction

Almost every year, a more advanced smartphone is launched. This demonstrates how swiftly technology is evolving. Most people, particularly adults, have embraced smartphones around the world (Rospata, 2017). Adults are more open to innovative features and new technologies that have a rapid adoption curve. As a result, they can adopt new technology more quickly than older age groups. The age group of 20 to 49 years' old who own a smartphone represents 73.7% (Malaysian Communications and Multimedia Commission, 2022). Johor become the second highest number of smartphones users (Rospata, 2017). (Brinkhoff, 2020) stated that Johor Bahru has the largest population in the state of Johor, with 1.7 million people. Thus, the researcher need to focus on what are the factors that influence

the purchase intention of smartphones among adults in Johor Bahru.

As the smartphone industry grows and their market offerings become more complex, consumers' requirements increase not only beyond the handset, but also include the entire package of software systems, applications, and network services (Ashraf, 2018). Most Malaysians conduct extensive surveys before acquiring their next smartphone. Most Malaysians keep their smartphones for less than three years; they will change their phones in less than two years, with one in every two aspiring (Birruntha, 2019). Due to smartphone technology, consumers' intention has been altered. However, research conducted over time has been insufficient and lacks knowledge on customer intention when it comes to purchasing smartphones (Rai, 2021).

There have a supply issues for low-end 4G models, particularly from Chinese manufacturers, caused a decline in smartphone shipments, affecting volumes and allocations. When the demand for smartphones slows, the shipment of high-priced models become low. At the beginning of 2022, Malaysia's cost of living has risen, affecting necessary items and other commodities, reducing customers' budget for smartphones (International Data Corporation, 2022).

Customers' knowledge and attitudes vary, which may influence how they act and behave. Certain Malaysians are more concerned with features such as the camera mechanism, battery life, and operating system than with the price of a phone (Lim, 2019). Due to the battery life issues, consumers have lost faith in the smartphone brand (Osman & Yee, 2021). Samsung cell phones overheat and consume their batteries since they get hot readily during calls (BBC, 2017). (Sasitharan, 2015) stated that consumers have highlighted their dissatisfaction with the current smartphone model and the limitations of smartphone features such as a small keypad, a small screen, and poor quality. Due to a lack of support on mobile devices, users are forced to perform their tasks on desktops, which frustrates them when they use mobile devices for both communication and entertainment. Another issue is that most Android phone users replace their smartphones every three to four years. Google will discontinue support for the older version of Android for a number of its popular apps, including Gmail, YouTube, Google Maps, and more (The Star, 2021).

In this technology-oriented environment, it is difficult to determine consumer buying intentions for smartphone companies. The smartphone market is always changing and developing at a rapid pace. Consumers' purchasing intentions have been influenced by smartphone evaluation (Hasan, 2017). Consumers can recognize a brand name when making purchasing decisions, indicating that the smartphone has a stronger brand image. According to International Data Corporation 2017, Samsung is the best-selling smartphone in Malaysia, while Apple has a better brand image (Lee, 2022).

Maliha *et al.* (2020) stated that brand, price, and product features all have significant relationship with smartphone purchasing intent. Based on Hand Phone Users Survey in 2018, the number of smartphone users aged 20 to 49 years represents 73.7%, which is a large portion (Malaysian Communications and Multimedia Commission, 2022). In the past, numerous studies focused on the factors influencing the purchase intention of smartphones among adults in other states. However, there are no studies concentrating on purchase intention toward smartphone brands by Malaysian adults 20 to 49 years old in Johor Bahru (Rospata, 2017). Thus, this gap influencing that there is a need to conduct a research to identify the relationship between the factors influencing purchasing and purchase intention of smartphones among adults in Johor Bahru.

This research was conducted in Johor Bahru and focused on adult consumers. This study was chosen in Johor Bahru because Johor has the second-highest number of smartphone users (Rospata, 2017). According to (Brinkhoff, 2020), Johor Bahru has the largest population in the State of Johor, with 1.7 million people. Based on hand phone users' survey in 2018, it indicated that the highest percentage of smartphone adoption rates by age group is 87%, which is in the age group of 20 to 34 years old, while there is approximately 74.9% of smartphone adoption rates in the age group of 35 to 49 years old, which is also a large portion Malaysian Communications and Multimedia Commission (2022) As a result, the sample for this study consists of adults aged 20 to 49 in Johor Bahru.

Future academics who wish to undertake further research in the same area of consumer behavior will benefit from this work. Furthermore, this study may be a reference for smartphone manufacturers to obtain the most updated information to better understand consumers' smartphone requirements, such as smartphone's design, color, function, application, and price setting. This research is critical for a variety of smartphone-related industries because it helps with real-time changes in marketing planning based on consumer preferences to increase sales. Smartphone manufacturers should include a variety of appealing features to better appeal to adults who express a significant rising market in the smartphone sector.

## 2. Literature Review

### 2.1 Purchase Intention

Purchase intention is a dependent variable in this study. A purchase intention is a long-term plan to buy a specific good or service in the future. Purchase intention can be used to identify the possibility of making a purchase (Kumar. R & Fernandez, 2020).

Many previous academics have defined the term "purchase intention". One of the definitions of "purchase intention" is the stage of respondents' willingness to act before they make a purchasing decision (Sarjono, Sasmita, & Handoko, 2019). Besides, purchase intention indicates that consumers evaluate a variety of alternatives or options based on a variety of variables and then decide whether or not to buy one of them (Ashraf, 2018).

A number of factors influence consumers' decisions to purchase smartphones. Shabrin *et al.*, (2017) stated that brand image is taken into consideration when people come to purchase smartphones. Besides, customer demand is also dependent on innovative product features for both software and hardware.

There are numerous marketing studies have been studies the widely used notion of purchase intention. Customers' demands, attitudes, and impressions of a product or brand interact to determine purchasing intention (Wei & Zhu, 2020). Before making a purchasing decision, consumers will seek for relevant information about various items, compare and assess them. If the product meets the needs and desires of the customers, it can be defined as a valuable product. The higher the purchase intention, the more possible customers to purchase (Kumar. R & Fernandez, 2020). Thus, past studies has shown that there is a significant connection between brand, price, product features and purchasing intention of smartphones (Shabrin *et al.*, 2017; Mustafa & Rifat, 2019; Maliha *et al.* (2020); Rai, 2021; and Shahirah, Saibin, Nickson, & Kinabalu, 2021).

### 2.2 Brand

The brand is more than just a name or symbol. The brand name place in customers' mind regarding the services' quality provided. Word of mouth an effective marketing strategy that will influence other consumers to buy the brand if the consumer is pleased with the branded product (Shabrin *et al.*, 2017). Ahmad, Basri, and Abashah (2020) stated that the company will use a brand name, word, symbol, and design to set itself apart from their competition.

According to Kumar. R and Fernandez (2020), brand name is an important asset to every business which is an exclusive term that informs customers about its products. Consumers usually choose a famous smartphone brand that represents a different level of high status and provides quick access to information. Additionally, building a strong brand allows companies to gain a large market share and

enhance their profits. Successful brands have connected elements that competitors unable to copy, imitate and replicate, increasing consumer preference over competing brands (Tadese, 2019).

Saranya and Yoganandan (2019) reported that the process of developing a brand image is and taking a long time and expensive, yet ultimately results in image or brand development. Consumers have a tendency to forget some brands and remember the ones they want to buy in the future (Moslehpour, Chiu, Lin Cor, & Shalehah, 2019). Thus, brand assists customers in recognizing and identifying items and their manufacturers (Saranya & Yoganandan, 2019).

### 2.3 Price

Students may find themselves difficult to work effectively in a team atmosphere due to a lack of face-to-face communication between colleagues, students, and lecturers in an online environment. Even if students have excellent academic knowledge, they may lack the skills essential to convey that knowledge to others. Students will frequently be required to learn tough subject in the comfort of their own homes, without the added pressure that traditional colleges impose. As a result, students lacking strong self-motivation and time management skills may struggle to fulfil regular deadlines when studying online. Price is the financial worth of a commodity or service. Price also is a financial term that consumers are willing in exchange for the goods or service they want to buy (Shahirah *et al.*, 2021). According to Ahmad *et al.*, (2020), customers' financial values differ because some agree that high prices indicate great quality, while others disagree. Rao, Bhamani, and Chauhan (2022)) defined that price refers to the sum of money exchanged for a product or service. Price is the total amount to be paid by a consumer in order to gain a benefit from owning a product or service.

Every product should be priced in accordance with the level of consumer acceptance. Consumers will be hesitant to purchase goods or products at a lower price because they assume that a lower price indicates a lower quality product. Despite the cheaper price, consumers are confident to choose the product would provide the best (Kumar. R & Fernandez, 2020).

Sarjono *et al.* (2019) indicated that price is one of the elements in the marketing mix. On the other hand, the price will become a challenge for many marketing executives, as many businesses struggle to manage prices efficiently. A price as a value proposition for the entire organization plays a critical part in producing customer value and developing relationships with customers.

### 2.4 Product Features

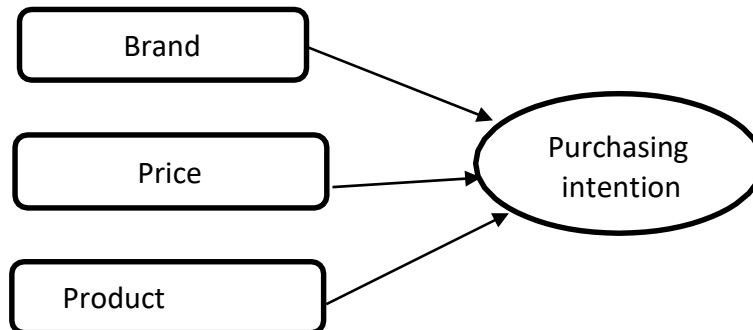
Product features are characteristics of a product that add value to the end customer and set it apart from its competitors (Shahirah *et al.*, 2021). According to Sarjono *et al.* (2019), product features are unique characteristics or idiosyncrasies, such as interior and exterior equipment. For example, products with differ technologically from other brands, having additional functions that other brands do not have, and have higher specifications.

Osman and Yee (2021) stated that product features refer to a characteristic of a product that satisfies consumers' wants and desires through ownership, use, and utilization of the product. Product features can be in different product characteristics, such as the appearance of size, color, or function of composition (Wei & Zhu, 2020). Purchase intentions are influenced by various product features and functionalities that create different levels of satisfaction in the user's heart (Rospata, 2017).

Buyers have a higher intention to repurchase if they are pleased with the product characteristics and have a positive post-purchase experience (Osman & Yee, 2021). Kumar. R and Fernandez (2020) indicated that different people prefer different smartphone features to fit their requirements and aspirations. There are two categories of product features on smartphones, which are hardware and software (Ahmad *et al.*, 2020). Certain smartphone consumers prioritize high-performance megapixel cameras and cutting-edge software capabilities while selecting smartphones (Rospata, 2017).

Consumers always desire more than one feature from a product to satisfy their various needs (Sarjono *et al.*, 2019).

## 2.5 Conceptual Framework



**Figure 1: Conceptual framework**

The figure above depicts the conceptual framework that evolved as the basis for this research topic. The research objectives and research questions are used to construct a conceptual framework. A conceptual framework is developed based on research objectives and research questions. It shows the dependent and independent variables. Figure 2.1 indicates the conceptual framework, which focuses on three factors that influence purchase intention for smartphone brands among adult consumers. Thus, the objective of this study is to investigate the relationship between these three variables. The three variables, which are brand, price, and product features, are classified as independent variables, while purchase intention is classified as a dependent variable.

## 2.6 Research Hypotheses

The research hypotheses of this study are as follows:

H1: There is a relationship between brand and purchasing intention of smartphones among adults.

H2: There is a relationship between price and purchasing intention of smartphones among adults.

H3: There is a relationship between product features and purchasing intention of smartphones among adults.

## 3. Research Methodology

### 3.1 Research Design

According to Boru (2018), a research design describes how data are gathered, analyzed, clarified, and reported in research studies. It is the overall strategy for connecting conceptual research problems to relevant academic research. For this research, a quantitative approach was appropriate and employed to collect data. A quantitative study was used to identify the variables in the relationship between the factors influencing purchasing and purchase intention of smartphones (Apuke, 2017). The researcher decided to use a questionnaire as a tool for data collection. A random sample of adult consumers was used to select the respondents in Johor Bahru. Then, SPSS software was used to analyze the results of some analysis, such as reliability analysis, descriptive analysis, normality test, and correlation, in order to answer the research objectives.

### 3.2 Research Process

For this study, the researcher started with the identification of issues related to factors influencing the purchase and the purchase intention of smartphones among adults. Next, the researcher identified the research objectives according to the research questions. The literature review discussed an overview of the smartphone industry in Malaysia, purchasing intentions, and factors influencing the purchase of smartphones. After that, IBM SPSS 26 Statistics Software was used to analyze the collected data. All the results were organized and presented in pie charts, bar charts, and tables. Then, the results and discussion were explained. Lastly, the conclusion and recommendations were carried out in the last part of this study.

### 3.3 Unit Analysis

The unit of analysis defines the level of integration of data obtained during the data analysis process. There are four types of units of analysis: individuals, groups, organizations, and social artefacts and social interactions. The individual was the unit of analysis in this study, which included adult consumers in Johor Bahru. The study focused on the factors influencing the purchase and purchase intention of smartphones among adults in Johor Bahru. The target respondents were adult consumers who own a smartphone in Johor Bahru.

### 3.4 Population and Sampling

#### (a) Population

The population defines the total number of units to whom the research findings will be applied (Shukla, 2020). Asiamah, Mensah, and Oteng-Abayie (2017) stated that the population is important because it helps others assess the sample's reliability, sampling techniques, and research findings. The target population for this study was adult consumers. According to Department Of Statistics Malaysia (2020) Department of Statistics Malaysia (2020), the total population is 1.7 million consumers in Johor Bahru.

#### (b) Sampling techniques

Sampling can be used to generate population evaluations or to make inferences about a theory. In essence, the sampling technique employed determines it. Probability sampling and non-probability sampling are the two categories of sampling techniques (Taherdoost, 2018).

This study employed a probability sampling method in which a simple random sample was chosen. In a simple random sample, each case in the population has an equal probability of being included. The simplicity of assembling the sample is one benefit of simple random sampling. Each person has an equal chance of being chosen, making it a fair technique for selecting a sample from a given population. For a given degree of sampling error, random sampling is the least biased, but it can also be the most time- and energy-consuming (Sharma, 2017). In this study, adult consumers in Johor Bahru have a chance to be chosen as respondents.

#### (c) Sample size

A sampling strategy is frequently required because it is not always possible to gather data from every unit of the population. Identifying the appropriate sample size is crucial for drawing reliable conclusions from the result of the study (Memon *et al.*, 2020). According to Krejcie and Morgan (1970), a sample must be taken to represent the entire population. Based on Krejcie and Morgan (1970), the sample size is 384 respondents. Thus, 384 questionnaires were distributed to adult consumers in Johor Bahru.

### 3.5 Research Instrument

The researcher adopted the questionnaires which were developed by Rospata (2017); Ling, Lang, Fong, & Perinpajothi (2014) and Kaushal & Kumar (2016). The questionnaires were divided into five sections, which are: Section A is demographic information; Section B is brand; Section C is price;

Section D is product features; and Section E is purchase intention of smartphones. There are 6 questions about the respondents' information are included in Section A. Section B, Section C, Section D, and Section E each have 5 questions.

### 3.6 Data Collection Procedure

The two types of data acquired in this study are primary data and secondary data.

#### (a) *Primary data*

Information obtained through first-hand experience is referred to as primary data. The primary data is more trustworthy, authentic, and objective because it has not yet been published (Kabir, 2016). In this study, a primary data collection was used to gather data, which was questionnaire. First of all, the researcher prepared a questionnaire to achieve the research objectives. The questionnaire was designed as a closed-ended question. An online Google form was used to distribute the questionnaire to the respondents. Using Google Forms, the questionnaires were distributed to respondents via email, WhatsApp, and other messaging services. A total of 384 questionnaire forms were randomly distributed to adults in Johor Bahru who are 20 to 49 years old using the Google Form method. Due to its low cost, speed, and efficiency, the researcher chose to collect a lot of data from a large number of individuals using a Google form. Lastly, the researcher was able to enter all of the data into the Statistical Package for Social Science (SPSS) system to examine the relationship between the independent variables and dependent variables in this study.

#### (b) *Secondary data*

Information received from a source that has already been published in whatever manner is referred to as "secondary data." Secondary data is used to perform a literature review in any study. Secondary data is essential since it helps researchers conduct a new survey that can accurately record earlier alterations or advancement (Kabir, 2016). Secondary data is gathered from outside resources like publications, online databases, research articles, and books. All of the data from these sources was utilized to support the findings of this study.

### 3.7 Data Analysis

Data analysis is the process of checking, cleansing, transforming, and modelling data in order to discover a comprehensive understanding, come to conclusions, and support decision-making. In both qualitative and quantitative research, data analysis is a crucial step (Alem, 2020). The data collected from the respondents was analyzed using SPSS statistical software, which included reliability analysis, descriptive analysis, normality analysis, and correlation analysis in order to draw a conclusion from this study.

#### (a) *Descriptive analysis*

Descriptive analysis is used to describe the relationship between variables in a sample or population in order to present data in an organized manner. Descriptive analysis includes measures of frequency, central tendency, statistics of mean, standard deviation, and percentage, as well as types of variables such as nominal, ordinal, interval, and ratio (Kaur, Jill, & Vikas, 2018). According to Samsudin, Awang, and Ahmad (2017), the average mean score between 1.00 to 2.33 indicates weak level, where the score between 2.34 to 3.67 indicates moderate level, and the score between 3.68 to 5.00 indicates high level. In this study, the demographic information such as gender, age, race, education level, current employment status, and income level is described using descriptive analysis.

#### (b) *Reliability analysis*

Reliability is the degree to which any measuring tool controls for random error, referring to the level of trust that can be placed in the data obtained through the use of an instrument. (Mohajan, 2017). The reliability score should be 0.60 or above. A Cronbach's alpha score of 0.6 to 0.7 implies a moderate level of dependability, 0.7 to 0.8 a high level of reliability, and 0.8 to 0.9 a very high level of reliability.

A Cronbach's alpha value above 0.9 indicates excellent reliability. Cronbach's alpha between 0.6 and 0.8 is considered acceptable (Nawi, Tamil, Samat, & Mustapha, 2020).

*(c) Normality test*

To test data normality, numerical approaches were used in this study. The data were checked for normality using the Kolmogorov-Smirnov (K-S) and Shapiro-Wilk (S-W) tests. Use of Shapiro-Wilk will be appropriate if the study's sample size is less than 50. However, Kolmogorov-Smirnov will be used if the sample size is larger than 50. When the p-value was greater than 0.05, the data was regarded as normal, and when it was lower than 0.05, the data was regarded as not normal.

*(d) Correlation analysis*

Correlation analysis is a widely utilized approach to identify interesting relationships in data (Kumar & Chong, 2018). Pearson and Spearman correlation are two types of correlation analysis commonly utilized in studies. This study used correlation analysis to identify variables that significantly influenced the outcome. This study performed correlation analysis to identify relationships between independent variables, which are factors influencing the purchasing of smartphones (brand, price, and product features), and the dependent variable (purchase intention of smartphones). According to IBM SPSS 26 Statistics Software, there is a relationship between two variables if the effective value is less than 0.05, whereas there is no relationship if the effective value is greater than 0.05.

### 3.8 Pilot Test

A pilot study is the first step in the research process. It is typically a smaller study that aids in planning and modifying the main study. Pilot studies are not designed to test hypotheses; hence, sample size isn't always calculated. Determining an appropriate sample size can help figure out how feasible it is to recruit participants or design a study, but it does not provide enough power to test hypotheses (In, 2017). As a result, 30 sets of questionnaires were given to the respondents via online Google Form.

## 4. Data Analysis and Findings

This chapter discussed the data analysis and findings from the questionnaire that was given to respondents in Johor Bahru. All of the collected data were examined using the Statistical Package for Social Science (SPSS). In this chapter, reliability analysis, demographic analysis, descriptive analysis, normality test, and correlation analysis were covered.

### 4.1 Results

*(a) Response rate and demographic information*

In this study, the respondents were selected in Johor Bahru. The population was targeted at 1.7 million consumers in Johor Bahru. Based on the table developed by Krejcie & Morgan (1970) for determining sample size, the sample size for this study was determined to be 384 respondents. The researcher was able to gather 309 questionnaires from respondents in Johor Bahru and the response rate was 80.47%. Table 4.1 displays the questionnaire response rate.

**Table 1: Response rate**

Items	Description
Population	1,700,000
Sample size	384
Questionnaires distributed	384
Questionnaires collected	309
Usable respondents	309
Percentage (%)	80.47%



Table 2 indicates that the question designed in Section A was related to the respondent's demographic information. The questions concern gender, age, race, current employment status, current smartphone brand, preferred smartphone brand, and how much money you have spent on your smartphone. The findings of the analysis of all the survey data, which included frequency and percentage, were summarized in Table 2.

According to Table 2, it displays the total number of male respondents, which is 158 out of 309, while the total number of female respondents is 151 out of 309. Therefore, 51.5% are male respondents, which is higher than female respondents, which are at 48.9%. The number of respondents classified into four age groups. The majority of respondents are aged 20 to 29 years old, which is 119 respondents or 38.5%. The sequence was followed by respondents aged 30 to 39 years old, who accounted for 101 respondents or 32.7%, and 89 respondents or 28.8% came from the age range of 40 to 49 years old.

Table 2 indicates that the majority of Malay respondents, who contributed 52.4% out of 100%, or 162 respondents, in this study. Following that were 127 Chinese respondents (41.4%) and 20 Indian respondents (6.5%). There are no other races involved in this study. This indicates that among the respondents who responded to the questionnaire, Malay respondents scored highest. Besides, it shows that there are six categories of current employment status. The majority of the respondents are working, which was 167 out of 309 respondents, or 54%, followed by 85 respondents, or 18.5%, who are students. While the minority of the respondents were housewives, which was 57 respondents or 18.5%.

Table 2 displays what brand of smartphone you currently use. The majority of respondents are 71 respondents or 23% who use Apple, followed by 51 respondents or 16.5% who use Huawei, 49 respondents or 15.9% who use Oppo, 40 respondents or 12.9% who use Vivo, 39 respondents or 12.6% who use Samsung, 38 respondents or 12.3% who use Xiaomi, and 21 respondents or 6.8% who use other brand of smartphone. In addition, the frequency of which smartphone brand do you prefer, there were 98 respondents, or 31.7%, who preferred Apple; 44 respondents, or 14.2%, who preferred Samsung; 25 respondents, or 8.1%, who preferred Vivo; 47 respondents, or 15.2%, who preferred Oppo; 29 respondents, or 9.4%, who preferred Xiaomi; and 64 respondents, or 20.7%, who preferred Huawei. However, there were only 2 respondents, or 0.6%, who preferred other brand.

There are four categories for how much money you have spent on your smartphone, as shown in Table 2. Most respondents spend on their smartphones between RM 1001 and RM 2000, which is 150 respondents or 48.5%, followed by 123 respondents or 39.8% who spent between RM 2001 and above on smartphones, and there are 36 respondents or 11.7% who spent between RM 501 to RM 1000 on smartphones. There were no respondents who paid less than RM 500 for their smartphones.

**Table 2: Summary of respondent demographic**

Item	Details	Frequency	Percentage (%)
Gender	Male	158	51.1
	Female	151	48.9
Age	20 to 29 years old	119	38.5
	30 to 39 years old	101	32.7
	40 to 49 years old	89	28.8
Race	Malay	162	52.4
	Chinese	127	41.1
	India	20	6.5
	Other	0	0
Current Employment Status	Students	85	27.5
	Working	167	54.0
	Housewife	57	18.4
What is your current brand of smartphone?	Apple	71	23.0
	Samsung	39	12.6
	Vivo	40	12.9
	Oppo	49	15.9
	Xiaomi	38	12.3
	Huawei	51	16.5
	Other	21	6.8

Which smartphone brand do you prefer?	Apple	98	31.7
	Samsung	44	14.2
	Vivo	25	8.1
	Oppo	47	15.2
	Xiaomi	29	9.4
	Huawei	64	20.7
	Other	2	0.6
How much money have you spent on your smartphone?	Below RM 500	0	0
	RM 501 to RM 1000	36	11.7
	RM 1001 to RM 2000	150	48.5
	RM 2000 and above	123	39.8

*(b) Reliability and validity of pilot study*

The Cronbach's alpha value for the pilot study conducted for this research is shown in Table 3. There were two variables, including factors influencing purchase and purchase intention of smartphones. The first variable consisted of three factors with five items each. The reliability of Cronbach's alpha for brand is 0.795, price is 0.851, and product features are 0.854. The purchase intention of smartphones for the five items has a Cronbach's alpha of 0.844. As all independent and dependent variables have a minimum Cronbach Alpha value of 0.5, all items used in the questionnaire for this study are considered reliable. The factor with the highest Cronbach's alpha among these factors is product features, with a value of 0.854, while the factor with the lowest Cronbach's alpha, with a value of 0.795, is brand. Besides, the overall reliability test result, which ranged from 0.8 to 0.9, indicated that the scale had very good reliability and validity, whereas the brand had good reliability and validity, which ranged from 0.7 to 0.8 in the reliability test results.

After the pilot study showed that the questionnaires were valid and reliable, the actual study was conducted. The results of the reliability test for the actual study are presented in Table 3. A total of 309 smartphone users in Johor Bahru The reliability of Cronbach's alpha for brand is 0.870 and price is 0.845, indicating the reliability level for both factors is very good, while product features are 0.771 and the purchase intention of smartphones is 0.772, which is good. All items adopted in the questionnaire for this study are reliable, as all independent and dependent variable have at least minimum value of 0.5 for their Cronbach alpha. Brand has the greatest Cronbach's alpha among these variables, with a value of 0.870, while product features have the lowest, at 0.771. Moreover, the overall reliability test result was between 0.7 and 0.8, showing a good reliability and validity scale, as well as brand and price factors that support a very good reliability and validity scale based on the reliability test result of between 0.8 and 0.9.

**Table 3: The result of reliability test**

Variables	N of items	Cronbach's Alpha of Pilot Test (N=30)	Cronbach's Alpha of Actual Test (N=309)
Dependent variable			
Purchase Intention of Smartphones	5	0.844	0.772
Independent variables (Factors Influencing Purchasing)			
Brand	5	0.795	0.870
Price	5	0.851	0.845
Product features	5	0.854	0.771

*(c) Descriptive analysis*

Table 4 shows the overall descriptive analysis data for this study. According to table 4, the overall value of the mean for the related items for the factors influencing purchasing is between 4.3450 and

4.3935. The standard deviation ranges of the factors influencing purchasing are between 0.45608 and 0.56686, which involve brand ( $M = 4.3780$  and  $SD = 0.56686$ ), price ( $M = 4.3450$  and  $SD = 0.53859$ ), and product features ( $M = 4.3327$  and  $SD = 0.46221$ ). The minimum and maximum of these three factors are between 3.00 and 5.00. While the overall value of the mean and standard deviation of purchase intention of smartphones is 4.3935 and 0.45608. The minimum and maximum of purchase intention of smartphones are 3.20 and 5.00. The overall central tendency level of all items among the factors influencing purchasing is high. These findings indicate that respondents considered these factors when deciding whether or not to purchase a smartphone.

**Table 4: The result of descriptive analysis data**

Item	N	Minimum	Maximum	Mean (M)	Standard Deviation (SD)	Central Tendency Level
Brand	309	3.00	5.00	4.3780	0.56686	High
Price	309	3.00	5.00	4.3450	0.53859	High
Product features	309	3.00	5.00	4.3327	0.46221	High
Purchase intention of smartphones	309	3.20	5.00	4.3935	0.45608	High

*(d) Normality test*

Table 5 displays the results of the normality test. This study used a Kolmogorov-Smirnov test because the respondent was more than 50. By Kolmogorov-Smirnov, the significant level of dependent variables shows that the p-value is 0.000, which means that p is less than 0.05, which is a non-normal distribution. In this study, a non-parametric test called Spearman correlation analysis was used because the data were not normal.

**Table 5: Result of normality test for purchase intention of smartphones**

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Purchase intention of smartphones	0.134	309	0.000	0.935	309	0.000

*(e) Correlation analysis*

According to Table 6, there was a moderate, positive correlation between brand and purchase intention of smartphones, which was statistically significant (correlation coefficient = 0.439,  $P = 0.000$ ). Moreover, there was a weak, positive correlation between price and purchase intention of smartphones, which was statistically significant (correlation coefficient = 0.396,  $P = 0.000$ ), and there was a weak, positive correlation between product features and purchase intention of smartphones, which was statistically significant (correlation coefficient = 0.363,  $P = 0.000$ ).

**Table 6: Result of correlation analysis**

Variables	Spearman's rho Purchase intention of smartphones	
	Correlation coefficient	Significant value (P)
Brand	0.439**	0.000
Price	0.396**	0.000
Product features	0.363**	0.000

## 4.2 Result of Hypothesis

The results of the correlation analysis show that there is a moderate correlation coefficient between brand and purchase intention of smartphones, while there is a weak correlation coefficient between price and product features and purchase intention of smartphones. This indicates that there is a relationship between factors influencing purchasing and purchase intention of smartphones. Hence, H1, H2, and H3 are supported.

## 5. Discussions and Conclusion

### 5.1 Research Objective 1

In this study, the first objective is to identify what is the relationship between brand and purchase intention of smartphones among adults in Johor Bahru. Spearman's rho correlation analysis was used to respond to this objective. Based on the results of correlation analysis, there was a positive correlation between brand and purchase intention of smartphones among adults in Johor Bahru. These tests were conducted to test the following hypothesis.

H1: There is a significant relationship between brand and purchase intention of smartphones among adults in Johor Bahru.

According to Spearman's rho, the correlation coefficient for brand is 0.439. As its significant value is less than 0.05, or 0.000, the correlation coefficient shows a significant relationship between brand and purchase intention of smartphones. Thus, H1 is supported. The result is comparable to that of past research by Ahmad *et al.* (2020).

According to the respondents' answers, they agreed that they would buy a smartphone because of the good brand image, which was discussed in the previous chapter. The purchase intention of smartphone is positively influenced by brand image. Brand image is important to the success of a company since it conveys information about the brand's name, functionality, reputation, and overall value. The impact of brand names on smartphones shows that consumers believe well-known brands are of high quality and performance and that they represent a person's lifestyle and social standing (Kumar. R & Fernandez, 2020).

Apart from that, if the customer is pleased with the product brand, they might spread the word about it, which might persuade more customers to buy the brand (Shabrin *et al.*, 2017). The majority of respondents said that when choosing a smartphone, brand image is their top priority. Consumers develop a favorable image of brands by becoming knowledgeable about them, which makes it easier for them to remember them. The brand image impacts how the consumer perceives the brand, which benefits subsequent purchases of the same product (Shahirah *et al.*, 2021).

Furthermore, it has been acknowledged that brand recognition is important in influencing consumers' purchase intentions with regard to smartphones (Kaushal & Kumar, 2016). Thus, it was demonstrated that there is a significant relationship between smartphone brand and purchase intention among adults in Johor Bahru.

### 5.2 Research Objective 2

In this study, the second objective is to identify what is the relationship between price and purchase intention of smartphones among adults in Johor Bahru. Spearman's rho correlation analysis was used to respond to this objective. Based on the results of correlation analysis, there was a positive correlation between price and purchase intention of smartphones among adults in Johor Bahru. These tests were conducted to test the following hypothesis:

H2: There is a significant relationship between price and purchase intention of smartphones among adults in Johor Bahru.

Based on Spearman's rho, the correlation coefficient for price is 0.396. As its significant value is less than 0.05, or 0.000, the correlation coefficient shows a significant relationship between price and purchase intention of smartphones. Therefore, H2 is supported.

According to the answers of respondents, the majority of respondents agreed that they purchase smartphones because they are valuable in terms of both their pricing and usage quality. This shows that when consumers buy smartphones, price is another crucial factor to take into consideration. Kumar. R and Fernandez (2020) had supported the study's findings. The researcher indicated that price is recognized as one of the significant factors and the primary determinant of a product's value.

Moreover, income levels or financial situations have an impact on consumers who evaluate pricing while purchasing smartphones. Low-income customers will evaluate price into their decision to purchase a smartphone. However, customers with high salaries seem unconcerned with the price of smartphones. This demonstrates that the low-income segment has restricted options for phones due to their price range (Shahirah *et al.*, 2021). Based on the findings, some respondents agreed that before choosing a smartphone, they compare the prices of various store brands and other smartphone brands. People would consider a smartphone to be good value for their money if they believed the quality to be beyond their expectations (Kumar. R & Fernandez, 2020).

Pricing is probably the most important issue when choosing a new smart phone. The level of price influences consumers' willingness to make purchases positively because it shapes their perceptions of the brand (Sarjono *et al.*, 2019). As a result, it indicated that there is a significant relationship between price and purchase intention of smartphones among adults in Johor Bahru.

### 5.3 Research Objective 3

In this study, the third objective is to identify what is the relationship between product features and purchase intention of smartphones among adults in Johor Bahru. Spearman's rho correlation analysis was used to respond to this objective. Based on the results of correlation analysis, there was a positive correlation between product features and purchase intention of smartphones among adults in Johor Bahru. These tests were conducted to test the following hypothesis:

H3: There is a significant relationship between product features and purchase intention of smartphones among adults in Johor Bahru.

Spearman's rho showed the correlation coefficient for product features is 0.363. As its significant value is less than 0.05, or 0.000, the correlation coefficient shows a significant relationship between product features purchase intention of smartphones. Hence, H3 is supported.

The majority of the respondents responded that they would choose a smartphone brand that is simple to use so that they can do tasks more quickly. The result is similar to that of past research by Ahmad *et al.* (2020). The researcher indicated that product features of smartphones will influence consumers' purchase intentions on which brands of smartphones to buy, and consumers will be able to distinguish which smartphone brands are the ones from which they made their decisions based on those features.

In addition, consumers choose which smartphone features best meet their needs and expectations. Wireless networking, an integrated web browser, application installation, full programming ability, a file management system, multimedia presentation and capture, high-resolution displays, significant storage, and movement and location sensors are all features of modern smartphones (Kumar. R & Fernandez, 2020). Different smartphone models and brands offer various product features. Due to their requirements and desires for smartphones, this may make consumers struggle to make decisions when buying a smartphone (Osman & Yee, 2021).

Furthermore, customers will still purchase a smartphone even if it has premium features and can be purchased for a higher price. Consumers compare products that are provided by rival companies based on their features, evaluating the most important ones when choosing a smartphone (Shahirah *et al.*,

2021). Thus, product features influence the purchase intention of smartphones among adults in Johor Bahru.

#### 5.4 Limitation

This study has some limitations. The first is that there is a time limit on the research. Besides being completed with acceptable results, this study had a number of limitations, one of which was the respondents' unwillingness to cooperate in any way that would have made it possible to conduct the survey. The researcher also faces another difficulty while sending the questionnaire to the respondents. Some responders provided unreliable and untruthful answers to the prepared questions. This could be a result of their desire to complete the questionnaire as soon as possible. Last but not least, communication was a challenge throughout the delivery of survey questions because some respondents had problems reading and responding in English.

#### 5.5 Recommendations

Recommendations are required to enhance the weaknesses of the study. Several recommendations have been made in accordance with the overall consequences. To improve study outcomes, future researchers can expand the study's scope to include more participants and larger studies of populations. Future researchers might need to think about creating a few different versions of questionnaires in various languages, particularly in the Malay language, to solve the communication issue. This will reduce respondents' possibilities of misunderstanding or ambiguity. Additionally, the longer period of time would allow for more efficient data collection. Thus, the researcher can plan back and complete this study in a timely manner. Furthermore, this study may include a variety of approaches, such as focus groups or interviews, to identify the relationship between factors influencing smartphone purchase and intention among adults. Therefore, it is recommended to broaden the topics while maintaining the same objectives in order to create a more appropriate questionnaire. Last but not least, future studies may consider implementing more complex scales to measure brand, price, and product features, allowing a more thorough analysis of purchase intention of smartphones among adults.

Based on the findings in the preceding section of this study, it can be concluded that brand, price, and product features influence the purchase intention of smartphones among adults in Johor Bahru. In this study, correlation analysis was used to meet the objectives. According to Spearman's rho test, all hypotheses were accepted.

The findings demonstrated that there is a correlation between brand, price, and product features and smartphone purchase intentions among adults in Johor Bahru, with brand performing as the most significant influence. The smartphone maker needs to establish a solid reputation for their brand, which may be developed through inventing and leading the market, or by offering a special selling point. Price is the second factor to consider when choosing a smartphone. Because price is one of the most important elements when purchasing smartphones, smartphone manufacturers could adopt pricing methods like psychological pricing. While the third factor that customers consider when purchasing smartphones is product features. Smartphone manufacturers should be able to improve the features and innovation of their products, particularly in hardware and software, as well as work to increase brand awareness by providing unique characteristics that set one brand apart from another.

In addition, this study benefits smartphone marketers by helping them comprehend the desires and needs of adult smartphone buyers. This will help develop efficient customer retention tactics while increasing profitability. Academics who desire to do research in pertinent factors to have a deeper understanding can also gain from this study.

## Acknowledgement

The authors would like to thank the Technology Management Focus Group and Faculty of Technology Management and Business, University Tun Hussein Onn Malaysia for the support.

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