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# Customer Perception towards Mobile Phones: A Theory of Planned Behaviour (TPB) Perspective

[1]V. P. Padma, [2]Dr. T. Kannan

[1] Ph.D Scholar, Department of Commerce, Alagappa University, Karaikudi, Tamilnadu, India.

[2]Associate Professor and Head, PG & Research Department of Commerce, Government Arts College, Paramakudi, Affiliated to Alagappa University, Karaikudi, Tamilnadu, India.

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***Abstract:*** **The present study aims to analyze customer perception towards mobile phones using the Theory of Planned Behaviour (TPB). This study explores how attitude towards mobile phone, subjective norms, and perceived behavioural control affect consumers' attitudes towards buying and using smartphones. Data analysis is done using statistical tools descriptive analysis, reliability analysis, KMO and Bartlett tests, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). Based on the results of reliability and validity, it can be concluded that the measurement model is statistically valid and appropriate for further analysis. Educational statistics indicate that attitude towards mobile phones, subjective norms and perceived behavioural control significantly and positively influence the behaviour intention which has a positive influence on the actual smartphone usage behaviour. The study also reveals that younger and more educated consumers have more positive perceptions related to the mobile phone, including their technological characteristics, convenience, social connectivity and digital accessibility. Based on the model fit index results, it can be concluded that the proposed structural model fits the collected data, and the proposed structural model is valid in explaining customer perception towards the use of mobile phones.**

**According to the study, customer perception is an important factor which determines the intention of buying a smartphone and its usage behaviour. The results offer valuable information for marketers, mobile phone manufacturers, and policy makers for designing their marketing strategies, improving the quality of their products, boosting satisfaction of customers, and maintaining competitiveness in the fast-changing smartphone industry.**

***Keywords:*** **Customer Perception, Mobile Phones, Smartphones, Behavioural Intention, Structural Equation Modeling, Theory of Planned Behaviour (TPB), Consumer Behaviour.**

## 1. INTRODUCTION

With the swift pace at which technology is evolving, digital transformation is taking place and internet connectivity has been increasing over the years, mobile phones have become a necessary part of modern life. Smartphones are used all across the globe for communication, education, entertainment, online banking, social networking, e-commerce, and business purposes. As the smartphone becomes more essential in today's life, it has also made a major impact on consumer lifestyle and shopping habits around the globe. Over the last few years, there's been a lot of competition in the mobile phone industry, and that competition has prompted the mobile phone manufacturers and marketers to concentrate on customer preferences, satisfaction and perception so as to maintain the market growth and competitiveness.

Customer perception is an individual's selection, organization and interpretation of product and service information to develop opinions and attitudes. The factors that affect the perception of customers regarding the mobile phone are the product quality, the image of the brand, the price, the technological features, the performance of the battery, the quality of the camera, the design, the influence of society, the promotional strategy, etc. People tend to compare various brands of the

smartphone before they make a buying decision, based on their usefulness and functionality. Thus, the perception of mobile phone is an important aspect of research for marketers and researchers. The surge of mobile smart phone usage has also made the importance of behavioural theories in the study of consumer purchase intentions and technology adoption even more relevant. The Theory of Planned Behaviour (TPB) propounded by Icek Ajzen is one of the most popular behavioural theories used for analysing consumer behaviour and decision-making process. The theory suggests that the subjective norms, attitude and perceived behavioural control have a significant impact on behavioural intention, which in turn has an impact on behaviour. Consumers' attitudes toward the smartphone usefulness, social influence of relatives and friends, and confidence in using smartphone technology together influence their purchase intention and usage behaviour in the context of mobile phone usage.

The smartphone industry in India has seen a huge growth with the rise in the digitalization of the country, availability of cheap Internet connection, rise in the income levels and awareness towards the advanced smartphone technologies. People are drawn to smartphones with innovative features including digital payment facilities, fast internet connectivity, gaming, artificial intelligence applications and high-quality cameras. This has made it necessary to understand what makes people feel good about mobile phones so that a good marketing strategy can be put in place, and customer satisfaction can be improved. The objective of the present study is to analyse the perception of customers with the help of the Theory of Planned Behaviour applied to the mobile phones. The study aims to analyse how attitude towards mobile phone, subjective norm and perceived behavioural control influence behavioural intention and actual smartphone usage behaviour. The research also tries to validate the relationship between the variables in the form of structural relationships by using Structural Equation Modeling (SEM). The results of the study will be beneficial for mobile phone manufacturers, marketers and researchers in learning about the consumer's behaviour and creating marketing strategies based on customer needs and satisfaction in the highly competitive mobile phone industry.

## 2. REVIEW OF LITERATURE

Icek Ajzen (1991) put forth the Theory of Planned Behaviour (TPB) and explained that the theory is that three factors, attitude, subjective norms, and perceived behavioural control, most significantly affect human behaviour. The theory proposed that the behavioural intention is a significant predictor of real behaviour. TPB has been extensively used in research on consumer behaviour, technology adoption and purchase intention. The Technology Acceptance Model (TAM) was introduced by Fred Davis (1989) and it showed that the perceived usefulness and perceived ease of use are important factors that affect users' acceptance of technology products. It was found that consumers would be more willing to embrace technologies which are convenient and efficient. The results are very applicable to the knowledge of the adoption of smartphones and customer perception of mobile phones.

Venkatesh et al. (2003) developed the Unified Theory of Acceptance and Use of Technology (UTAUT) and identified four factors that contribute to the adoption of technology: performance expectancy, effort expectancy, social influence, and facilitating conditions. Finally, the study confirmed that the social influence and behavioural intention have significant influence on users' technology usage behaviour. Philip Kotler (2016) said that the perception of the customers towards the product is highly dependent on the quality of the product, brand image, promotional activity, and customer experience. They pointed out that it is important for marketers to pay attention to customer satisfaction and value creation to build long-term customer relationships and competitive advantage.

Consumers' acceptance of new technologies is linked to the Diffusion of Innovation Theory, developed by Everett Rogers in 2003, which details the relative advantage, compatibility, complexity, observability, and trialability of new technologies. The study showed that the innovative features offered by smartphones and technological developments have an impact on the purchasing decisions and acceptance of products.

According to Schiffman Leon and Kanuk (2010), psychological, personal, social and cultural factors influence consumer buying behaviour. Through their research they found that social influence, lifestyle, income and preferences have a significant impact on the perception of the customer and purchasing decision. Parasuraman A. et al. (2005) pointed out that technology readiness and customers willingness to adopt digital technologies have a relationship to customer satisfaction and behaviour of using the technology. The study revealed that the more technologically confident consumers, the more likely they are to use advanced smartphone usage applications and digital services. According to Malhotra Naresh, (2017), the studies of customer perception helps in understanding the consumer's expectation, preference, and the behavioural intention of the customer. The study highlighted the significance of using the statistical tools like Factor Analysis and Structural Equation Modeling to understand customers' behaviours and market trends.

From the literature reviewed above, it can be seen that mobile phone attitudes, social influences, mobile phone awareness, mobile phone intentions and perceived usefulness are all factors that influence the customers perception. The study on the adoption and purchase intention of consumer technologies has been widely studied in accordance to behavioural theories, namely TPB, TAM, and UTAUT. But, some limited studies have focused on customer perception with regard to the mobile phone with the theory of planned behaviour and structural equation modelling method. Thus, the present study tries to address this gap by considering the structural relationship between TPB variables and customers' perceptions on mobile phone.

**Research Gap**

A literature review shows that various studies on consumer behaviour, technology adoption, smartphone use and purchase intention have been conducted with the theories including the Theory of Planned Behaviour (TPB), the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Most of the earlier studies emphasized perceived usefulness, ease of use, social influence, customer satisfaction and technology acceptance as factors to understand consumers' behaviour towards smart phones and digital technologies. Some studies, however, have only explored customer perception of mobile phones by combining the key factors of the Theory of Planned Behaviour (i.e., attitude, subjective norm, perceived behavioural control, behavioural intention, and behaviour) in one structural model. Most of the previous research was focussed on either adoption or purchase intention and ignored the complete behavioural relationship to the perception of mobile phone.

Moreover, most of the previous studies relied on simple statistical analysis like percentage analysis, correlation analysis and regression analysis and very few studies employed multivariate statistics like Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) for model validation of the instrument and model. Moreover, technological developments, with fast changes, greater digitalization, shifting consumer preferences and reliance on smart phones, have greatly changed consumer behaviour, calling for new research in this field.

Furthermore, there is limited research that has been done focusing on customer perception towards mobile phones in Indian context by using the theory of planned behaviour (TPB). Hence this study aims to fill the gap in research by analyzing customer perception of mobile phones by using TPB and SEM analysis. The study offers a holistic picture of the influences on the behavioural intention and actual smartphone usage behaviour of consumers.

**Objectives of the Study**

- To analyze the demographic profile of respondents using mobile phones.
- To examine the factors influencing customer perception towards mobile phones.
- To evaluate the relationship between attitude towards mobile phones and behavioural intention.
- To analyze the influence of subjective norms on consumers' behavioural intention towards mobile phones.
- To examine the effect of perceived behavioural control on behavioural intention towards mobile phones.
- To study the impact of behavioural intention on actual mobile phone usage behaviour.
- To validate the applicability of the Theory of Planned Behaviour (TPB) in explaining customer perception towards mobile phones.
- To assess the structural relationship among the variables using Structural Equation Modeling (SEM).

**Hypotheses of the Study**

**H1:** There is a significant relationship between attitude towards mobile phones and behavioural intention.

**H2:** There is a significant relationship between subjective norms and behavioural intention towards mobile phones.

**H3:** There is a significant relationship between perceived behavioural control and behavioural intention towards mobile phones.

**H4:** There is a significant relationship between behavioural intention and actual mobile phone usage behaviour.

**H5:** Attitude towards mobile phones positively influences customer perception towards mobile phones.

**H6:** Subjective norms positively influence customer perception towards mobile phones.

**H7:** Perceived behavioural control positively influences customer perception towards mobile phones.

**H8:** The Theory of Planned Behaviour (TPB) model significantly explains customer perception towards mobile phones.

## 3. RESEARCH METHODOLOGY

The present study is descriptive and analytical in nature and the study aimed at examining customer perception towards mobile phones as per Theory of Planned Behaviour (TPB). Both primary and secondary data sources are used for the study. The primary data gathered were from mobile phone users using a structured questionnaire which was based on constructs of the Theory of Planned Behaviour (TBP): attitude towards mobile phones, subjective norms, perceived behavioural control, behavioural intention, and actual behaviour. Secondary data was gathered from journals, books, books and journals, research articles, websites and published reports related to consumer behaviour and mobile phone marketing.

The respondents were selected through convenience sampling technique. All valid responses were used to analyse a total of 250 questionnaires were distributed among mobile phone users. The questionnaire was divided into two parts, one to obtain the demographic profile and the other to obtain the statements about the TPB variables, which were measured with a 5-point Likert Scale from strongly disagree to strongly agree. Various statistical tools were used for analyzing the collected data. Demographic description of the respondents was carried out using a percentage analysis and descriptive statistics to gain insight into the demographic characteristics and overall opinion of the respondents. To test the internal consistency of the variables the reliability analysis was conducted by using Cronbach's alpha. To check the suitability of the data for factor analysis, the following tests were used: Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity. The exploratory factor analysis (EFA) was conducted to determine the underlying factor structure and confirmatory factor analysis (CFA) was conducted to validate the measurement model.

In addition, Structural Equation Modeling (SEM) was used to analyze the causal relationship of the variables and test the hypotheses presented in the study. The goodness of the model fitness was determined based on the goodness of fit indices, including GFI, AGFI, CFI, TLI, NFI, RMSEA and Chi-square/df ratio. SPSS and AMOS software packages were used for the entire statistical analysis. The methodology used for the study gives a systematic approach for analyzing customer perception and customer behavioural intention with respect to mobile phone.

## 4. ANALYSIS AND INTERPRETATION

### Demographic Analysis

The various demographic characteristics of the respondents lead to understand the background profile of the mobile phone users and their perception, attitude and behavioural intention towards mobile phone. Demographic factors (gender, age, educational qualification, occupation, monthly income) have significant impact on customer preferences, buying decision, brand awareness, and usage behaviour. These variables can be analyzed to determine the key consumer segment in the mobile phone market and the effect of the demographic variables on the perception of the customers. The demographic details collected from the respondents are presented in Table 1.

**Table 1: Demographic Profile of Respondents**

| Variables | Categories | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 118 | 47.2 |
| | Female | 132 | 52.8 |
| Age | Below 20 Years | 34 | 13.6 |
| | 21–30 Years | 96 | 38.4 |
| | 31–40 Years | 71 | 28.4 |
| | Above 40 Years | 49 | 19.6 |
| Educational Qualification | UG | 82 | 32.8 |
| | PG | 104 | 41.6 |
| | Professional | 64 | 25.6 |
| Occupation | Student | 58 | 23.2 |
| | Employee | 97 | 38.8 |
| | Business | 54 | 21.6 |
| | Others | 41 | 16.4 |
| Monthly Income | Below ₹20,000 | 63 | 25.2 |
| | ₹20,001–₹40,000 | 88 | 35.2 |
| | ₹40,001–₹60,000 | 61 | 24.4 |
| | Above ₹60,000 | 38 | 15.2 |

Source: Primary Data

Table 1 shows the Demographic profile of the respondents selected in this study about customer perception towards mobile phones. In terms of gender, a majority of the respondents is female at 52.8 per cent, the males at 47.2 per cent. This suggests that the level of participation of female consumers in the study is relatively high and this is an indication of the rise in usage and involvement of females in smartphone adoption and digital communication activities. Regarding age distribution, the maximum number of respondents is in the age group 21-30 years old with 38.4 percent of the respondents. This is followed by respondents in the age category of 31–40 years with 28.4 percent. This is followed by those aged 40 years and above (19.6 percent), and below 20 years (13.6 percent). The results are quite clear: a majority of people who use a smartphone are young adults. The advanced features of mobile phones, internet connectivity, social media apps, gaming, digital payment options and online shopping capabilities are more appealing to younger consumers and have a profound impact on their views of mobile phones.

In terms of educational qualification, 41.6 per cent have post-graduate qualifications, 32.8 per cent have undergraduate qualifications and 25.6 per cent are professionally qualified. The findings reveal that consumers with education are more aware of aspects of smart-phone technology, product detail, digital marketing, and online platforms for purchasing a product. In addition, greater educational exposure also improves consumers' ability to compare brands, assess the product's performance, and make informed buying decisions. It was revealed in the occupational profile that employees have the largest group (38.8 percent), followed by students (23.2 percent), business people (21.6 percent), and others (16.4 percent). The majority of respondents who were employed, indicates that they heavily use their phones to communicate, network, do banking transactions, conduct online meetings, watch movies, and work on productivity related activities. Likewise, pupils are a large consumer group, as they rely heavily on their smartphones for learning, social interaction, and online access.

With respect to monthly income, 35.2 percent of the respondents earn between ₹20,001 and ₹40,000 per month, followed by 25.2 percent earning below ₹20,000, 24.4 percent earning between ₹40,001 and ₹60,000, and 15.2 percent earning above ₹60,000. Income level is an important factor when it comes to the ability of consumers to make such purchases, their preference for brands and the likelihood that they will be interested in premium smartphone options. The moderate and higher income people are more likely to value the smart phone with cutting-edge technological capabilities, good quality camera, high storage capacity and high brand image. In general, the demographic analysis shows that the young, educated and employed are the dominant segment of mobile phone users. The socio-economic status of the participants has a significant effect on their perception, attitude and behavioural intention towards the use of Mobile phones. The results also show that demographic factors are significant in explaining the preference and market trend of the smartphone market.

**Descriptive Analysis**

The data collected from the respondents are presented and summarized through Descriptive analysis. It aids the comprehension of the general perception, attitude and behavioural dispositions of customers about the mobile telephones based on constructs of the Theory of Planned Behaviour (TPB). Descriptive statistics (mean and standard deviation) are used in this study to analyze the respondents' opinions about Attitude towards Mobile Phones, Subjective Norms, Perceived Behavioural Control, and Purchase Intention. The mean value represents the average level of agreement of the respondents, and the standard deviation represents the level of consistency and variation among respondents. The descriptive statistics of TPB variables are shown in Table 2.

**Table 2: Descriptive Statistics of TPB Variables**

| TPB Variables | Number of Items | Mean | Standard Deviation |
|---|---|---|---|
| Attitude towards Mobile Phones | 5 | 4.12 | 0.71 |
| Subjective Norms | 4 | 3.94 | 0.68 |
| Perceived Behavioural Control | 5 | 4.06 | 0.73 |
| Purchase Intention | 4 | 4.18 | 0.65 |
| Customer Perception | 5 | 4.09 | 0.69 |

Source: Primary Data

The descriptive statistics of major constructs employed in the study are reported in Table 2, which is based on the theory of the planned behaviour. Purchase Intention has the highest mean score of 4.18 with a standard deviation of 0.65 showing that the respondents have high intention to buy and use mobile phones among the variables. Further, the lower standard deviation shows that the opinions of respondents with regard to their intention in using the smartphone and their purchasing behaviour are relatively consistent. The mean score of Attitude towards Mobile Phones is 4.12 with a standard deviation of 0.71, indicating that the respondents have positive attitude towards mobile phones. Smartphones are viewed by consumers as a need to communicate, learn, entertain, transact online and connect socially. The positive mean value suggests that mobile phones have become a part of consumers' lives.

The result for Customer Perception is 4.09 (Mean) and 0.69 (Standard deviation), which indicates the good perception of the customers about the mobile phone brands, features, quality and technological advancement. While assessing smartphones, people are greatly affected by aspects like product performance, camera quality, battery life, storage space, internet connection, and brand reputation. The mean score for the Perceived Behavioural Control is 4.06 with SD 0.73. This finding suggests that the respondents are not at all frightened by buying and using mobile phone effectively. The affordability of the product, ease of use, access to technical knowledge and support, and access to digital services are among the factors that enhance behaviour control for consumers.

The mean score of the Subjective Norms is 3.94 with a standard deviation of 0.68, which is comparatively the lowest. While the other variables have higher mean scores, the mean score for the family members, friends, colleagues and social groups still suggests a positive influence on consumers' decision to buy a mobile phone. Social influence is also a critical factor in customers' preferences particularly with regard to smartphone brand and sophisticated technical characteristics. The descriptive analysis in general shows that the respondents have positive perceptions and positive behavioural intentions with respect to mobile phones. All of the variables of TPB are above the average value, which shows the favourable opinions of customers to use the smartphone and buy it. The relatively low standard deviation values also indicate that there is a consistency in the views of the respondents and that the data collected are reliable for further statistical analysis.

**Reliability Analysis**

Reliability analysis is used to assess the internal consistency and stability of the variables employed in the study. It aids in assessing the consistency across items in the questionnaire of the intended constructs. The constructs of the Theory of Planned Behaviour (TPB), namely Attitude towards Mobile Phones, Subjective Norms, Perceived Behavioural Control, Purchase Intention, and Customer Perception are examined for their reliability in this study. Cronbach's alpha coefficient of more than 0.70 is interpreted as having a good scale reliability. Table 3 shows the results of the reliability analysis.

**Table 3: Reliability Analysis using Cronbach's Alpha**

| Variables | Number of Items | Cronbach's Alpha |
|---|---|---|
| Attitude towards Mobile Phones | 5 | 0.842 |
| Subjective Norms | 4 | 0.801 |
| Perceived Behavioural Control | 5 | 0.856 |
| Purchase Intention | 4 | 0.824 |
| Customer Perception | 5 | 0.879 |
| Overall Reliability | 23 | 0.891 |

Source: Primary Data

Table 3 shows the reliability values of the variables included in the study. The Cronbach's alpha values are between 0.801 and 0.879, which represents a high degree of internal consistency of items measuring the same construct. The variables with the highest reliability level are Customer Perception (0.879), Perceived Behavioural Control (0.856) and Attitude towards Mobile Phones (0.842). Purchase Intention and Subjective Norms also show good reliabilities with 0.824 and 0.801, respectively. The overall reliability coefficient of the study is 0.891 which is higher than the recommended level of 0.70. This indicates that the questionnaire items are very reliable and appropriate to be used for further statistical analysis. The results show that the measurement scale used in the study has been able to consistently measure the perception, attitude and intentions of the respondents towards using a mobile phone. Therefore, the data collected is deemed reliable for doing Factor Analysis and Structural Equation Modeling.

**Sampling Adequacy Test**

Prior to running factor analysis, one must determine if the data gathered is appropriate for factor analysis and dimensionality testing. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity are two frequently used tests to assess the suitability of data for factor analysis. KMO test measures the adequacy of sample size and tells if the variables are sufficiently correlated with each other to yield reliable factors. The acceptable value for KMO is greater than 0.70 in factor analysis. The Bartlett's Test of Sphericity tests if the correlation matrix is significantly different from an identity matrix. If the p value is significant, $< 0.05$, then it is appropriate to use factor analysis. Table 4 shows the outcome of the sampling adequacy test.

**Table 4: KMO and Bartlett's Test of Sphericity**

| Test | Value |
|---|---|
| Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy | 0.884 |
| Bartlett's Test Approx. Chi-Square | 2145.376 |
| Degrees of Freedom | 253 |
| Significance Level (p-value) | 0.000 |

Source: Primary Data

From the result of table 4, it can be seen that the obtained KMO value is 0.884 and is greater than the minimum KMO value of 0.70. This means that the number of observations that were gathered for this study is sufficient and suitable for the purposes of factor analysis. The high KMO value also indicates that the variables have a considerable common variance and they are appropriate for analyzing the common underlying factors associated with the customer perception towards mobile phones. The Bartlett's Test of Sphericity is approximate chi square = 2145.376, n - k = 253, p = 0.000. The results showed that the value of p is less than 0.05, so the null hypothesis is rejected, which means that there is a significant relationship between the variables included in the study. The significant result suggests that the correlation matrix is not an identity matrix and hence factor analysis can be successfully applied to the data.

In general, the findings show that KMO and Bartlett's test values are appropriate and adequate for conducting further multivariate analysis. The results confirm the suitability of using Exploratory Factor Analysis (EFA) and other advanced statistical methods to analyze customer perception towards mobile phones.

**Exploratory Factor Analysis**

In order to shed light on the factor structure of variables observed, and to be able to reduce the observed variables to a smaller number of meaningful factors, exploratory Factor Analysis (EFA) is performed. The use of EFA in the present study is to analyze the dimensions which affect the perception of customers regarding mobile phones based on the constructs of Theory of Planned Behaviour (TPB). The analysis makes it possible to cluster the related variables under common factors: Attitude towards Mobile Phones, Subjective Norms, Perceived Behavioural Control, Purchase Intention, and Customer Perception. The factors are obtained by Principal Component Analysis with Varimax Rotation. Any factor loading with values above 0.50 are significant for interpretation. The results of Exploratory Factor Analysis are shown in Table 5.

**Table 5: Exploratory Factor Analysis (EFA) Results**

| Variables | Factor Loadings | Extracted Factors |
|---|---|---|
| Mobile phones improve communication efficiency | 0.812 | Attitude towards Mobile Phones |
| Smartphones make daily activities easier | 0.794 | Attitude towards Mobile Phones |
| Mobile phones are useful for online transactions | 0.768 | Attitude towards Mobile Phones |
| Family members influence mobile phone purchase | 0.751 | Subjective Norms |
| Friends' opinions affect brand preference | 0.733 | Subjective Norms |
| Social media influences purchase decisions | 0.706 | Subjective Norms |
| I can easily operate smartphone applications | 0.821 | Perceived Behavioural Control |
| I can afford advanced smartphones | 0.786 | Perceived Behavioural Control |
| I have sufficient knowledge to use smartphones | 0.772 | Perceived Behavioural Control |
| I intend to purchase a new smartphone soon | 0.838 | Purchase Intention |
| I prefer upgrading smartphones regularly | 0.801 | Purchase Intention |
| I recommend smartphone brands to others | 0.764 | Customer Perception |
| I am satisfied with smartphone performance | 0.847 | Customer Perception |
| Smartphone features meet my expectations | 0.816 | Customer Perception |

Source: Primary Data

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

The result of Exploratory Factor Analysis which was carried out to determine the most dominant dimensions affecting customers perception of mobile phones is presented in Table 5. All the factor loadings are greater than 0.50, which represents a good relationship between observed variables and their factors. The factors extracted are obvious and support the theoretical constructs of the theory of Planned behaviour.

The factor "Attitude towards Mobile Phones" includes the variables related to the usefulness, convenience, and communication efficiency, which means that the respondents are likely to have positive attitudes towards using smartphones. The variables related to family influence, peer opinion and social media effect are grouped to "Subjective Norms", showing that among the factors that influence consumers' mobile phone preferences, the influence of social is a significant factor. Likewise, variables related to affordability, ease of use and technical knowledge are classified under 'Perceived Behavioural Control' which represent consumers' confidence in using and buying smartphones.

**Measurement Model Assessment**

Confirmatory Factor Analysis (CFA) is used to test the measurement model and to explore the correlation between observed variables and latent constructs. CFA can be used to evaluate construct validity, convergent validity and discriminant validity of the variables involved in the study. The present study uses CFA to test the representativeness of the constructs of Theory of Planned Behaviour (TPB) in the customer perception of mobile phone. To check the fitness and validity of the measurement model, standardized factor loadings, Composite Reliability (CR) and Average Variance Extracted (AVE) are employed. Table 6 shows the results of the CFA.

**Table 6: Confirmatory Factor Analysis (CFA) Results**

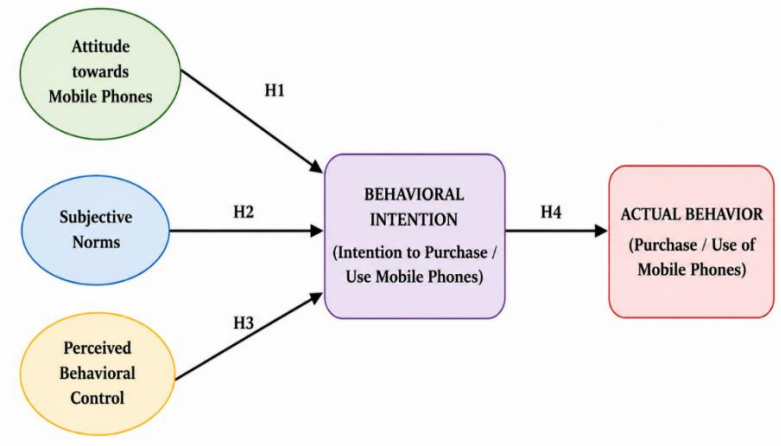
| Constructs | Factor Loadings | Composite Reliability (CR) | Average Variance Extracted (AVE) |
|---|---|---|---|
| Attitude towards Mobile Phones | 0.742 – 0.812 | 0.871 | 0.629 |
| Subjective Norms | 0.706 – 0.751 | 0.836 | 0.604 |
| Perceived Behavioural Control | 0.772 – 0.821 | 0.882 | 0.651 |
| Purchase Intention | 0.801 – 0.838 | 0.864 | 0.618 |
| Customer Perception | 0.764 – 0.847 | 0.891 | 0.673 |

Source: Primary Data

The intention to upgrade and future buying plans are included in "Purchase Intention", and satisfaction, recommendation behaviour and performance evaluation are grouped under "Customer Perception". In general, the results of EFA strongly support the goodness of the factor measurements of the study which can be seen from the fact that all selected variables have fulfilled the criteria for the dimensions of the study. The result showed that the extracted factors significantly explained the customer perception towards mobile phones, which would make it useful for further analysis by using Confirmatory Factor Analysis and the model of Structural Equation.

The result of the Confirmatory Factor Analysis for validations of the measurement model is presented in Table 6. All the standardized loads of the variables are between 0.706 and 0.847, which is greater than the minimum of 0.50 recommended. This means that all the observed variables have shown significant contribution to the corresponding latent variables. The Composite Reliability (CR) values are between 0.836 and 0.891, which is higher than the defined value (0.70). This suggests the constructs employed in the study have good internal consistency and reliability. Similarly, the Average Variance Extracted (AVE) values range from 0.604 to 0.673, which are above the recommended level of 0.50. AVE values are adequate for convergent validity and show that the constructs account for the variance of the observed variables.

**Figure 1: Conceptual Framework based on Theory of Planned Behaviour (TPB) for Customer Perception towards Mobile Phones**




Source: Primary Data

In terms of constructs, the highest Composite Reliability is 0.891 and AVE value is 0.673, which means that the respondents have a high consistency and clarity in perceiving the quality, performance and satisfaction of their smartphones. Perceived Behavioural Control also proves to have high validity and reliability, indicating consumers' confidence in the use of mobile technologies. Overall, the CFA results support the validity of the measurement model and suggest that the constructs selected for further structural analysis are valid and reliable. The results validate the use of the TBP for analysing the perception of customers regarding the mobile phone and contribute significantly to the testing of the structural relationship between the variables.

The conceptual framework of the study is shown in Figure 1, which is based on the Theory of Planned Behaviour (TPB). The framework shows the relation between the constructs of Attitude toward Mobile Phones, Subjective Norms, Perceived Behavioural Control, Behavioural Intention, and Actual Behaviour. The results from the model showed that the positive attitude of the customers towards mobile phone, influence of social persons in the family and perceived ability of customers to use their smartphones significantly affect the behavioural intention towards the purchase and use of mobile phones. In addition, consumers' behavioural intention directly influences their usage behaviour. The framework also serves as a theoretical basis for analyzing the perception of the customer towards mobile phones and to investigate the factors affecting the purchase intention and usage behaviour.

**Structural Model Assessment**

Using the method of Structural Equation Modeling (SEM), the causal relationship between the constructs contained in the study will be examined and the hypotheses developed from the Theory of Planned Behaviour (TPB) will be tested. SEM is used to analyse the direct and indirect relationships among the latent variables of the model, Attitude towards Mobile Phones, Subjective Norms, Perceived Behavioural Control, Behavioural Intention and Actual Behaviour. The structural model assessment demonstrates the significance of the path coefficient and if the path hypothesized is supported by the collected data. The standardized regression estimates, critical ratios and p-values are utilized in order to determine the structural relationships between the variables in this study. The result of the hypothesis testing is presented in Table 7.

**Table 7: Structural Equation Modeling (SEM) Hypothesis Testing Results**

| Hypotheses | Relationship | Standardized Path Coefficient | Critical Ratio (C.R.) | P-Value | Result |
|---|---|---|---|---|---|
| H1 | Attitude towards Mobile Phones → Behavioral Intention | 0.742 | 8.614 | 0.000 | Supported |
| H2 | Subjective Norms → Behavioral Intention | 0.658 | 7.382 | 0.000 | Supported |
| H3 | Perceived Behavioural Control → Behavioral Intention | 0.701 | 8.027 | 0.000 | Supported |
| H4 | Behavioral Intention → Actual Behavior | 0.786 | 9.215 | 0.000 | Supported |

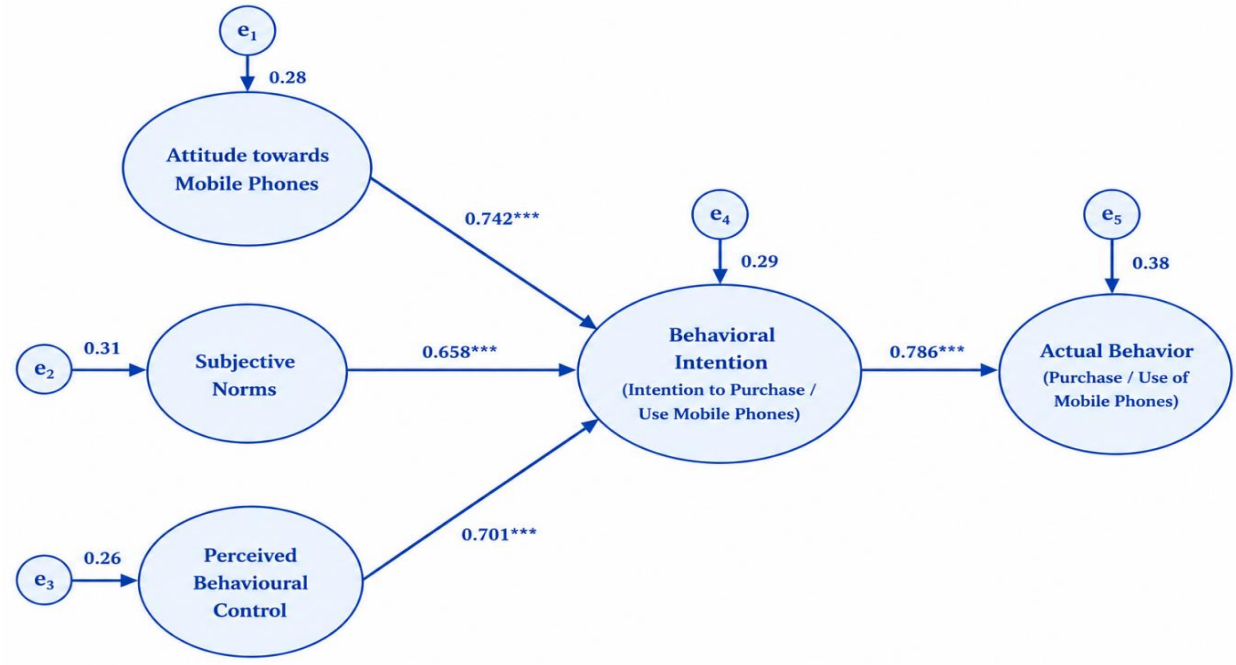
Source: Primary Data

Finally, the findings of the test of the hypotheses that were proposed in the study are presented in Table 7, which is the result of the Structural Equation Modeling analysis. The results show that all hypothesized relationship between the variables are statistically significant with p values $< 0.05$. This is a confirmation that the variables used in conceptual framework influence customer perception and behavioural intention towards mobile phones. The standardized path coefficient value of the relationship between Attitude towards Mobile Phones and Behavioural Intention is 0.742 with critical ratio 8.614. The high level of positive correlation suggests that the consumers who have a positive attitude towards the usefulness of a smartphone, its convenience, and the technological functionalities are more likely to strengthen purchase intentions. Thus, hypothesis, H1 is accepted.

Likewise, the path coefficient of Subjective Norms on Behavioural Intention is 0.658 and critical ratio is 7.382 which indicates the Positive and Significant influence of Subjective Norms on Behavioural Intention. This finding proves that social groups and circles, as well as family members, friends, and colleagues, are significant factors that guide consumers' decision to purchase a mobile phone. Thus, Hypothesis H2 is accepted. In addition, the path coefficient value of perceived behavioural control to behavioural intention is 0.701 and the critical ratio is 8.027, showing a significant positive correlation.

The results indicate that consumers having adequate knowledge, affordability and confidence in using smartphones have higher intentions to buy and use mobile phones. Thus, Hypothesis H3 is supported. Moreover, path coefficient value and critical ratio of Behavioural Intention to Actual Behaviour is 0.786 and 9.215 respectively, which means the Behavioural Intention has the strongest influence. The findings indicate that the relationship between each of the consumer purchase intention and actual purchase and usage behaviour of the smartphone were positive and significant. Thus, Hypothesis H4 is also accepted. The results of the SEM analysis do support the use of the TPB model to explain customer perception regarding mobile phones in overall. The results of the structural model show that attitude, subjective norms and PBC are important factors in the determination of behavioural intention and that behavioural intention has a significant influence on actual consumer behaviour. The findings support the conceptual framework proposed and show how SEM can analyze the customer perception and purchase behaviour in the mobile phone market.

**Figure 2: Structural Equation Modeling (SEM) Path Diagram of Customer Perception towards Mobile Phones**




Source: Primary Data

The Structural Equation Modeling (SEM) path diagram has been created for analyzing the customer perception towards mobile phones as shown in figure 2. The relationships between the key constructs of the Theory of Planned Behaviour (TPB) - Attitude towards Mobile Phones, Subjective Norms, Perceived Behavioural Control, Behavioural Intention, and Actual Behaviour - are shown in the diagram. Based on the standardized path coefficient the results showed that all independent variables have positive and significant effect on the Behavioural Intention, and the Behavioural Intention then affects the Actual Behaviour towards the purchase and use of the mobile phone. Model also incorporates unexplained variance terms for each construct. Based on the results of the SEM path analysis, the proposed theoretical framework is statistically significant and explains customer perceptions and intention towards mobile phones well.

**Model Fitness Evaluation**

The evaluation of the model fitness is an important step in Structural Equation Modeling (SEM) analysis that is used to identify the goodness of the proposed theoretical model to the collected sample data. The goodness of fit indices are used for evaluating the adequacy, validity and acceptability of the structural model used in this study. The model fitness is tested in the present research by the use of different fit indices including the ratio of Chi-square/degrees of freedom ratio (CMIN/DF), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Normed Fit Index (NFI). The acceptable threshold values suggested by the SEM analysis are compared with the received values for the suitability of the model. The model fit indices results are shown in Table 8.

**Table 8: Model Fit Indices of the Structural Model**

| Fit Indices | Recommended Value | Obtained Value | Model Fit Status |
|---|---|---|---|
| Chi-square / df (CMIN/DF) | < 3.00 | 2.184 | Good Fit |
| Goodness of Fit Index (GFI) | > 0.90 | 0.928 | Good Fit |
| Adjusted Goodness of Fit Index (AGFI) | > 0.80 | 0.901 | Good Fit |
| Comparative Fit Index (CFI) | > 0.90 | 0.947 | Good Fit |
| Tucker Lewis Index (TLI) | > 0.90 | 0.936 | Good Fit |
| Normed Fit Index (NFI) | > 0.90 | 0.918 | Good Fit |
| Root Mean Square Error of Approximation (RMSEA) | < 0.08 | 0.054 | Acceptable Fit |

Source: Primary Data

The goodness of fit indices used to test the developed structural model in the analysis of the perception of customers on the use of mobile phones are shown in table 8. All fit indices computed indicate that the proposed SEM model is considered to be a good fit for the sample data as they are within the recommended limits. The model is well fitted since the value of the Chi-square/degrees of freedom ratio (CMIN/DF) is less than 3.00. Likewise, the Goodness of Fit Index (GFI) value is 0.928 which is above the acceptable value of 0.90 and Adjusted Goodness of Fit Index (AGFI) value is 0.901 which is above the acceptable value of 0.75, showing the satisfactory model adequacy.

The value of the Comparative Fit Index (CFI) and Tucker Lewis Index (TLI) are 0.947 and 0.936 respectively both of which are above the recommended 0.90. The results obtained show good fitness of the model compared to the other models and that the proposed structural model can interpret the observation results well. Similarly, the Normed Fit Index (NFI) value 0.918 is also considered to be an acceptable model fitness. Secondly, the Root Mean Square Error of Approximation (RMSEA) is 0.054, which is lower than the criterion of 0.08. This means there is little residual error and the overall structural model is adequate. In general, the statistical validity of the model fitness evaluation indicates that the proposed model (Structural Equation Model) is statistically valid and can be used as a model to describe the relationship between the variables included in the study. The results validate the applicability of the Theory of Planned Behaviour (TPB) in explaining customer perception, behavioural intention, and actual behaviour towards mobile phones.

## 5. DISCUSSION OF FINDINGS

The present study was conducted to investigate the customers' perceptions about mobile phones taking the aid of the Theory of Planned Behaviour (TPB). Based on the results of the study, it can be inferred that attitude toward mobile phones, subjective norms and perceived behavioural control have significant effects on consumers' intention to buy and use mobile phones. The demographic analysis shows that young and educated consumers is the main group of smartphone users, thereby revealing the reliance of contemporary consumers on mobile technology. The descriptive analysis indicated that the respondents have positive perceptions about mobile phones as an instrument, very convenient to use, efficient in communication and technological features. The reliability analysis showed good internal consistency among the constructs and the KMO and Bartlett's tests confirmed the data suitability and adequacy for factor analysis. The Exploratory Factor Analysis and Confirmatory Factor Analysis validated the factor structure and measurement model of the study.

The results obtained from the Structural Equation Modeling (SEM) showed that the attitude towards mobile phones had a high positive effect on behavioural intention. Easier to use, technologically advanced, and useful smartphones, are more likely to foster greater purchase intention among consumers. The subjective norms are also found to have significant influence on the behavioural intention, which means that the family members, friends, colleagues and social groups have a significant influence on the purchase decision of mobile phone by the consumers. Likewise, perceived behavioural control has a positive relationship with behavioural intention, indicating that the ease of using cellphones, the availability of information and the affordability of the product boosts consumers' confidence in using mobile technology. Moreover, mobile phone purchase and use intention is significantly related with behavioural intention. The results of the model fitness indices showed that the proposed structural model could fit with the collected data and accept the validity of the applicability of the Theory of Planned Behaviour in explaining customer perception towards mobile phones. In general, the study shows that the psychological, social, and behavioural factors influence consumer's buying intentions and usage of a smartphone together.

## 6. SUGGESTIONS

Mobile phone companies should be more concerned with customer satisfaction, by adding new features or better battery performance, better camera capabilities and user friendly applications that cater to the changing preferences of consumers. Attitude towards mobile phone is a significant factor that affects behavioural intention, marketers should use effective promotion strategies and digital marketing strategies to highlight the useful, convenient and technological advantages of using a mobile phone. To further improve brand image and customer confidence in the product, companies should also enhance the after-sales service, which is critical in ensuring a good product image.

The study also shows the subjective norm is also an important determinant of customers' perceptions and buying intention. For this reason, marketers can leverage on social media influencers, endorsements by celebrities, customer reviews, and referral marketing to positively affect consumer decisions. Mobile phone companies should also be aiming users among youngsters and working professionals, as they make up the primary group of smartphone users. Also, the pricing policies, flexible payment methods, exchange facilities, installment facilities will also make people with a moderate income more inclined toward buying the sophisticated smart phones. To increase consumers' confidence in the use of their smartphones and digital application, it is advisable to create awareness programs, product demonstration and technical support services as these are shown to have a significant impact on perceived behavioural control, which in turn influences the intention to use. Furthermore, mobile phone manufacturers need to prioritize data security, privacy measures, and software reliability, ensuring that users have greater trust and satisfaction with their devices. Last but not least, ongoing research on consumer trends and innovations will enable marketers to strategically plan for a competitive mobile phone market.

## 7. CONCLUSION

The study findings conclude that customer perception towards mobile phone is significantly influenced by psychology, social and behavioural factors explained by the Theory of Planned Behaviour (TPB). The results show that the attitude towards mobile phone, subjective norms and perceived behavioural control positively impact the consumers' behavioural intention, which leads to their actual purchase and usage behaviour. The study also emphasizes that the consumers in general have positive attitudes towards the smartphones as they are technologically advanced, convenient, efficient in communication, entertainer, and digitally connected. Based on the results of Structural Equation Modeling analysis, the theoretical framework proposed is statistically significant and has a high explanatory power for customer behaviour towards mobile phones. The study also determines that young, educated and employed consumers constitute the bulk of the smartphone consumers and are heavily influenced by product quality, brand image, social influence, affordability and technological features in their purchase decisions.

The reliability, validity and model fitness studies reveal that the research model is suitable and proper for emotional customer perception towards mobile phones. The study offers valuable input for mobile phone manufacturers, marketers and policy makers to comprehend consumer expectations and create appropriate marketing strategies. In conclusion, the study suggests that customer perception is an important factor in the purchase intention and usage behaviour of smartphones in the competitive mobile phone market.

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