CHAPTER 4: RESEARCH RESULTS

4.0 Chapter Overview

This chapter presented the findings of the survey. It began with a description of the general characteristics of the participating respondents and demographic comparison. The results of independent sample t-test, ANOVA, Cronbach's coefficient alpha for reliability and factor analysis were examined. Then, the results of correlation analysis for the research variables were discussed. Finally, the results of the multiple regression analysis were presented using brand loyalty as the dependent variable and brand name, brand design, perceived quality, price, and promotion as the independent variables. Thus, the results of the study were discussed in accordance to the research objectives and hypotheses of the study.

4.1 Response Rate

A total of 230 sets of questionnaires were distributed to the respondents. Out of the 230 (100%) questionnaires, 214 (93%) were usable for analysis while 16 (7%) were rejected for analysis.

4.2 Characteristics of the Demographic Profile

The general profile of the respondents' demographic statistics was depicted in Table 4.1.

Table 4.1: Characteristics of the Demographic Profile

Characteristics	Categories	Frequency	Percent (%)
Gender	Male	99	46.3%
	Female	115	53.7%
Status	Single	139	65%
	Married	73	34.1%
	Divorced	2	0.9%
Age	Below 25 years old	88	41.1%
	25 – 34 years old	68	31.8%
	35 – 44 years old	35	16.4%
	Above 45 years old	23	10.7%
Ethnic	Malay	105	49.1%
	Chinese	61	28.5%
	Indian	41	19.2%
	Others	7	3.3%
Education	STPM/A-Level	33	15.4%
	Certificate/Diploma	46	21.5%
	Professional Qualification	15	7.0%
	Undergraduate Degree	93	43.5%
	MBA/Masters Degree/PHD	27	12.6%
Occupation	Student	74	34.6%
	Housekeeper	1	0.5%
	Self-Employed/Entrepreneur	18	8.4%
	Retired	4	1.9%
	General Office/ Clerical/ Secretarial	14	6.5%
	Senior Executive	28	13.1%
	Manager	26	12.1%
	Senior Manager & Above	10	4.7%
	Others	39	18.2%
Income Level	Less than RM2,000	89	41.6%
	RM2,000 – RM3,999	58	27.1%
	RM4,000 – RM5,999	34	15.9%
	RM6,000 – RM7,999	15	7.0%
	RM8,000 – RM9,999	9	4.2%
	More than RM10,000	9	4.2%

Additionally, the graphical presentation of the respondents' profile was also provided (see Appendix 4.1).

4.3 Independent Sample T-Test for Gender

The t-test is conducted on gender to determine whether two groups (male and female) are different from each other on a particular interval-scaled or ratio-scaled variables of interest (Sekaran 2006). In this study, these variables included the factors influencing brand loyalty (brand name, brand design, perceived quality, price and promotion). The results on whether there were any significant differences in the means for the two groups in the variables of interest were shown in Table 4.2.

All the probability values were more than 0.05 ($P>0.05$). Hence, none of the factors that influenced brand loyalty showed statistical difference in the means between the two groups. The probability value scores were: brand name ($p=0.079$), brand design ($p=0.57$), perceived quality ($p=0.152$), price ($p=0.165$) and promotion ($p=0.113$).

Table 4.2: Independent Sample T-Test (Gender)

Variables	Gender		Total	Sig.*
	Male	Female		
Brand Name	3.706	3.574	3.640	0.079
Brand design	3.816	3.697	3.756	0.570
Perceived Quality	4.152	4.047	4.099	0.152
Price	3.868	3.784	3.826	0.165
Promotion	3.527	3.386	2.956	0.113

Note:* Significant at 0.05 level

4.4 Analysis of Variance (ANOVA)

ANOVA is used to examine the significant mean differences among more than two groups on an interval of ratio-scaled variables of interest (Sekaran 2006). In this study, ANOVA was used to test income, race and age groupings.

4.4.1 Income

ANOVA analysis was used to test whether there were any significant differences in the means among the various income levels as shown in Table 4.3. All the probability values were more than 0.05 (P>0.05). Hence, none of the variables showed any statistical difference in the means for the various income levels. The probability value scores were: brand name (p=0.063), brand design (p=0.325), perceived quality (p=0.411), price (p=0.541) and promotion (p=0.537).

Table 4.3: Income Level versus Factors of Brand Loyalty

Variables	Brand Name	Brand Design	Perceived Quality	Price	Promotion
*Sig.					
	.063	.325	.411	.541	.537
Mean					
< RM2,000	3.7434	3.7921	4.0772	3.8521	3.4899
RM2,000 – RM3,999	3.4569	3.6487	4.0841	3.7529	3.3345
RM4,000 – RM5,999	3.6275	3.7647	4.0809	3.8382	3.4588
RM6,000 – RM7,999	3.6167	3.7667	4.1167	3.8333	3.5200
RM8,000 – RM9,999	3.6111	3.7222	3.9861	3.7222	3.4000
> RM10,000	3.7963	3.9722	4.4722	4.0185	3.7333

Note: * Significant at 0.05 level

4.4.2 Race

ANOVA analysis was used to test whether there were any significant differences in the means among the various races as shown in Table 4.4. All the probability values were more than 0.05 (P>0.05). Hence, none of the variables showed any statistical difference in the means for the various races. The probability value scores were: brand name (p=0.850), brand design (p=0.662), perceived quality (p=0.535), price (p=0.930) and promotion (p=0.933).

Table 4.4: Race versus Factors of Brand Loyalty

Variables	Brand Name	Brand Design	Perceived Quality	Price	Promotion
			*Sig.		
	.850	.662	.535	.930	.933
			Mean		
Malay	3.6389	3.7619	4.0405	3.8413	3.4800
Chinese	3.6448	3.7787	4.1537	3.8060	3.4131
Indian	3.6423	3.7165	4.1433	3.7967	3.4390
Others	3.4524	3.5714	4.1250	3.8571	3.4286

Note: * Significant at 0.05 level

4.4.3 Age

ANOVA analysis was used to test whether there were any significant differences in the means among the various age groups as shown in Table 4.5. Except for brand name ($p<0.05$), the other probability values were more than 0.05 ($P>0.05$). Hence, only brand name showed statistical difference in the means for the various age groups. Other factors that influenced brand loyalty such as brand design, perceived quality, price and promotion showed no statistical difference in the means for the various age groups. The probability value scores were: brand name ($p=0.011$), brand design ($p=0.576$), perceived quality ($p=0.248$), price ($p=0.197$) and promotion ($p=0.236$). Overall results showed that brand name as predictor variable was linked to age and the effect of age on this variable was the strongest for the age-group of below 25 years.

Table 4.5: Age versus Factors of Brand Loyalty

Variables	Brand Name	Brand Design	Perceived Quality	Price	Promotion
		*Sig.			
	.011	.576	.248	.197	.236
		Mean			
< 25 yrs	3.7670	3.8040	4.0952	3.8807	3.5205
25 - 34 yrs	3.4963	3.7077	4.0423	3.7353	3.3324
35 - 44 yrs	3.6619	3.7250	4.2500	3.8714	3.5486
> 45 yrs	3.5000	3.7228	4.0163	3.7899	3.3913

Note: * Significant at 0.05 level

4.5 Internal Consistency Reliability Assessments

Table 4.6 presented the coefficient alpha scores for the entire variables to ensure that the scales developed were reliable. The Cronbach's Coefficient Alpha (Cronbach and Meehl 1955) was employed to test their reliability. The acceptable level of reliability coefficient is 0.50 or greater as proposed by Nunnally (1967). He stressed that Alpha coefficient that is below 0.50 should therefore be dropped from subsequent analysis as it has limited use in regression analysis due to its low reliability. The results of the reliability coefficients or Cronbach (α's) were as follows: brand Loyalty (10 items) α = 0.707; brand name (12 items) α = 0.859; brand design (8 items) α = 0.675; perceived quality (8 items) α = 0.896; price (6 items) α = 0.591; and promotion (5 items) α = 0.793. The results of the reliability were more than 0.50 which indicated that the data was reliable.

Table 4.6: Comparison of Final Cronbach's Alpha Scores between all Variables

Variables	Cronbach's Alpha Score	No. of Items
Brand Loyalty	0.707	10
Brand Name	0.859	12
Brand Design	0.675	8
Perceived Quality	0.896	8
Price	0.591	6
Promotion	0.793	5

4.6 Factor Analysis

For assessment of factor loadings, although factor loadings of ± 0.30 to ± 0.40 are minimally acceptable, value greater than ± 0.50 are generally considered necessary for practical significance. The goals of factor analysis are the summarization of correlations among variables and the reduction of a large set of variables into a smaller number of factors. Factor analysis produces several linear combinations of observed variables, and each linear combination is a factor. The set of factors are extracted from the correlation matrix and rotated to increase interpretability. It is a good statistical approach to use in the search for different dimensions within data containing a lot of variables (Hair et al., 2006).

Tables 4.7 to 4.12 showed the rotated factor loadings matrix for each of the variables/constructs (brand loyalty, brand name, brand design, perceived quality,

price and promotion). The factor loadings of each of item to their correspondence constructs/variables were used to assess the validity of the scales.

4.6.1 Factor Analysis of Brand Loyalty Statements

A principal components analysis (PCA) with varimax rotation was performed for brand loyalty to determine formation of any grouping. Prior to performing PCA, the suitability of data for factor analysis was assessed. Factor analysis is considered appropriate if the value of coefficients is 0.3 and above in the correlation matrix (Pallant 2001). The Bartlett Test of Sphericity and Kaiser-Meyer-Olkin (KMO) were also used to assess the factorability of the data.

The results in Table 4.7 indicated that the Bartlett Test of Sphericity (Bartlett 1954) reached statistical significance (Chi-Square = 409.90, $p < .000$) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.694, exceeding the recommended value of 0.60 (Kaiser 1974; Tabachnick and Fidell 2001). These results suggested that the factorability of the data was considered appropriate. Using eigenvalue of $\geq$ 1 as shown in Figure 4.1, the analysis produced 4 factors, accounting for 64.9% of total variance explained. It has been suggested that for social science studies, it is not uncommon to consider a solution of about 60% as satisfactory (Hair et al., 1995).

Factor 1 (F1), Factor 2 (F2), Factor 3 (F3) and Factor 4 (F4) explained 29.48%, 13.73%, 11.38% and 10.28% of the variance respectively, which proved that the factors were reliable and had high degree of internal consistency. To facilitate easy interpretation, these factors were then rotated using the varimax criterion for orthogonal rotation. Only statements/items with factor loadings of 0.50 and above in the rotated factor matrix were considered as significant in interpreting the factors. The factor matrix indicated the factor loadings on these four factors. Factor 1 (F1), Factor 2 (F2), Factor 3 (F3) and Factor 4 (F4) which comprised of three statements/items (eigenvalue= 2.948), three statements/items (eigenvalue = 1.373), two statements/items (eigenvalue = 1.138) and two statements/items (eigenvalue = 1.028) respectively. No item was deleted.

Table 4.7: Characteristics of Brand Loyalty: Scale Items, Means, Standard Deviations (SD), KMO, Bartlett's Test for Sphericity and Factor Loadings

Items	Description	Mean	SD	Factor Loadings			
				F1	F2	F3	F4
BL10	The brand must be among my "favorite brands" before I consider buying it.	4.05	0.783	.814			
BL9	I would rather stick to well-known brands when buying a mobile phone.	3.64	0.982	.794			
BL1	The brand is the first one which I would consider buying among the competing brands.	3.79	0.928	.520			
BL7	I usually buy the same brands even if they are only average.	3.33	1.019		.796		
BL3	I would rather stick to a brand which I usually buy than try something which I am not very sure of.	3.54	1.077		.778		
BL2	The brand is the most preferred brand among the alternatives set of brands.	3.71	0.863		.525		
BL4	If I like a brand, I rarely switch to another brand just to try something different.	3.60	0.991			.829	
BL6	I rarely take chances by buying unfamiliar brands even if it means sacrificing variety.	3.32	1.089			.743	
BL5	I rarely introduce new brands and products to my family/friends/colleagues.	3.29	1.008				.602
BL8	I would rather wait for others to try a new brand than try it myself first.	3.29	1.035				.584
	Eigenvalue			2.948	1.373	1.138	1.028
	Percent of Variance			29.482	13.728	11.377	10.281
	Cumulative Percent			29.482	43.210	54.588	64.869
	KMO Measures of Sampling Adequacy = 0.694						
	Bartlett's Test of Sphericity = (Chi-Square = 409.900, p < .000)						

Figure 4.1: Eigenvalue Plot for Scree Test Criterion – Brand Loyalty

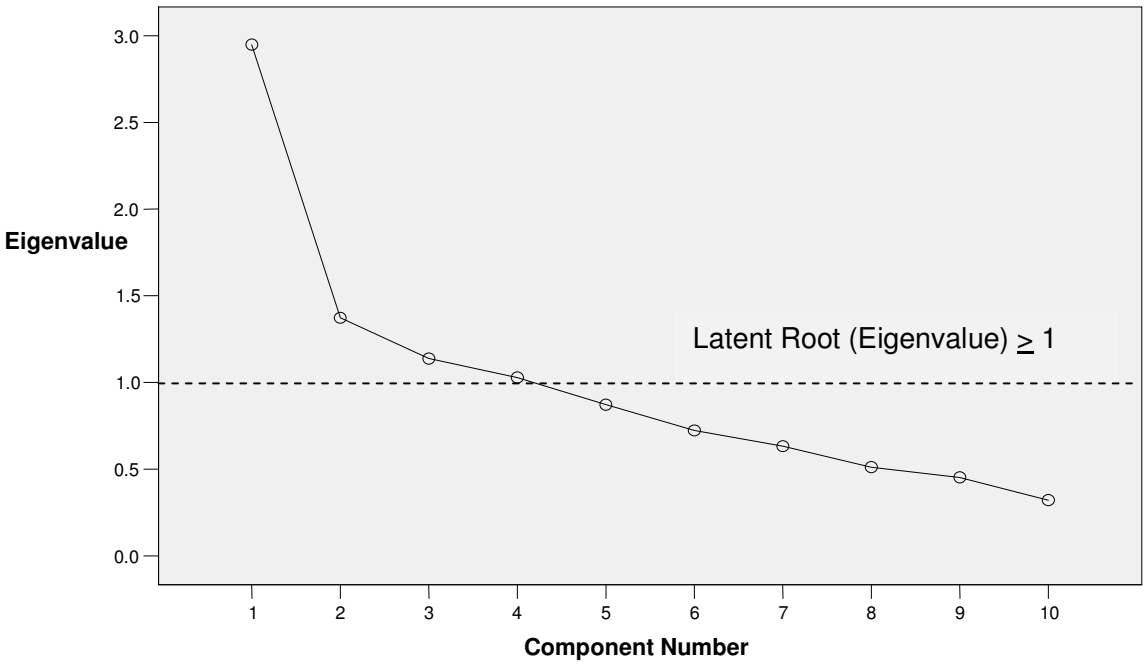

Table 4.7 also showed the mean value for each statement of brand loyalty, the responses to each statement were multiplied by each evaluation of the five scales respectively, and summed for the mean of the sample. Highest mean was reported for statement – "The brand must be among my "favorite brands before I consider buying it" at mean value of 4.05. However, the lowest mean was reported for statements –"I rarely introduce new brands and products to my family/friends/colleagues", and "I would rather wait for others to try a new brand than try it myself first", both at mean value of 3.29. The overall means of the statements/items were higher than 3.00 on the average, indicating that the respondents had high agreement level with the statements/items.

4.6.2 Factor Analysis of Brand Name Statements

The results in Table 4.8 indicated that the Bartlett Test of Sphericity (Bartlett 1954) reached statistical significance (Chi-Square = 1108.96, $p < .000$) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.848, exceeding the recommended value of 0.60. These results suggested that the factorability of the data was considered appropriate. Using eigenvalue of $\geq$ 1 as shown in Figure 4.2, the analysis produced three factors, accounting for 64.17% of total variance explained.

Factor 1 (F1), Factor 2 (F2) and Factor 3 (F3) explained 40.39%, 15.41% and 8.37% of the variance respectively, which proved that the factors were reliable and had high degree of internal consistency. The factor matrix indicated the factor loadings of these three factors. Factor 1 (F1), Factor 2 (F2) and Factor 3 (F3) comprised of five statements/items (eigenvalue = 4.847), four statements/items (eigenvalue = 1.849) and two statements/items (eigenvalue = 1.004) respectively.

Item 5 “I know about the mobile phone brand through the company’s advertising (newspaper, magazine, radio, television, internet, in-store, other information sources” was dropped due to low factor loading.

Table 4.8: Characteristics of Brand Name: Scale Items, Means, Standard Deviations (SD), KMO, Bartlett's Test for Sphericity and Factor Loadings

Items	Description	Mean	SD	Factor Loadings		
				F1	F2	F3
BN12	Using a branded mobile phone signifies social class.	3.20	1.057	.864		
BN11	The brand must say something about me as a person.	3.11	0.977	.847		
BN8	The brand name must be able to enhance my self-image.	3.43	0.966	.746		
BN10	The brand must improve the way I am perceived by others.	3.53	0.902	.694		
BN9	The brand name plays a significant role in my decision on which brand of mobile phone to purchase.	3.61	0.927	.684		
BN1	The brand must be reputable.	3.91	0.742		.789	
BN2	It is important for me to know about the background of the mobile phone brand.	3.92	0.771		.780	
BN4	Some characteristics of the mobile phone brand come to my mind quickly.	3.75	0.868		.669	
BN3	I must be able to recognise the 'brand' among competing mobile phone brands.	3.90	0.768		.642	
BN6	I know about the brand through its attractive logo/symbol,	3.57	0.873			.776
BN7	The prestigious brand name attracts me to purchase the mobile phone.	3.61	0.848			.727
	Eigenvalue			4.847	1.849	1.004
	Percent of Variance			40.394	15.409	8.366
	Cumulative Percent			40.394	55.803	64.170
	KMO Measures of Sampling Adequacy = 0.848					
	Bartlett's Test of Sphericity = (Chi-Square = 1108.985, p < .000)					

Figure 4.2: Eigenvalue Plot for Scree Test Criterion – Brand Name

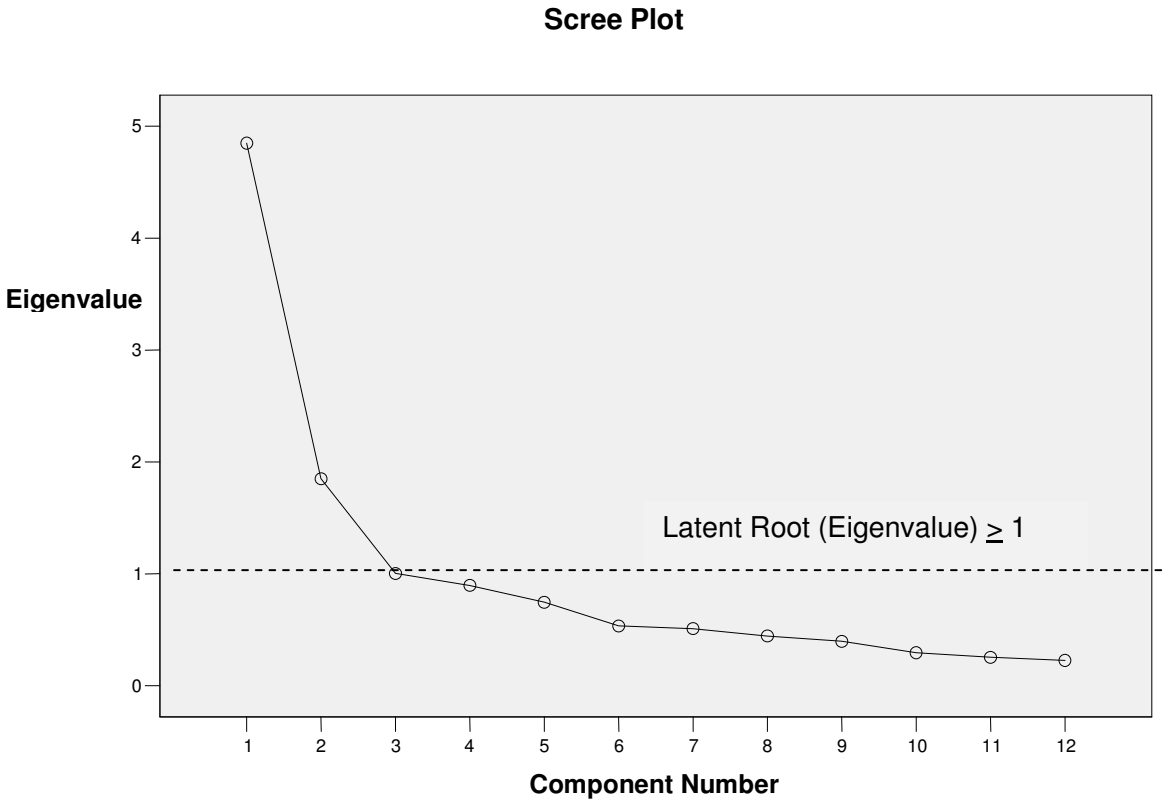

Table 4.8 also showed the mean value for each statement of brand name, the responses to each statement were multiplied by each evaluation of the five scales respectively, and summed for the mean of the sample. Highest mean was reported for statement – “It is important for me to know about the background of the mobile phone brand” at mean value of 3.92. However, the lowest mean was reported for statement – “The brand must say something about me as a person” at mean value of 3.11. The overall means of the statements/items were higher than 3.00 on the average, indicating that the respondents had high agreement level with the statements/items.

4.6.3. Factor Analysis of Brand Design Statements

The results in Table 4.9 indicated that the Bartlett Test of Sphericity (Bartlett 1954) reached statistical significance (Chi-Square = 536.40, $p < .000$) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.742, exceeding the recommended value of 0.60 .These results suggested that the factorability of the data was considered appropriate. Using eigenvalue of ≥ 1 as shown in Figure 4.3, the analysis produced two factors, accounting for 60.13% of total variance explained.

Factor 1 (F1) and Factor 2 (F2) explained 38.71% and 21.40% of the variance respectively, which proved that the factors were reliable and had high degree of internal consistency. To facilitate easy interpretation, these factors were then rotated using the varimax criterion for orthogonal rotation. Only statements/items with factor loadings of 0.50 and above in the rotated factor matrix were considered as significant in interpreting the factors. The factor matrix indicated the factor loadings on these two factors. Factor 1 (F1) and Factor 2 (F2) comprised of five statements/items (eigenvalue = 3.097) and three statements/items (eigenvalue = 1.714) respectively. No item was deleted.

Table 4.9: Characteristics of Brand Design: Scale Items, Means, Standard Deviations (SD), KMO, Bartlett's Test for Sphericity and Factor Loadings

Items	Description	Mean	SD	Factor Loadings	
				F1	F2
BD2	The designs of the brand of mobile phone must have great features.	4.01	0.822	.826	
BD3	The designs of the brand of mobile phone must be suitable for me.	4.14	0.637	.783	
BD1	The brand of mobile phone must provide a wide variety of designs for me to choose from.	3.93	0.760	.731	
BD4	The brand of mobile phone must have sufficient/many color choices that I can choose from.	3.84	0.826	.723	
BD8	The design of the brand of mobile phone must be trendy and fashionable.	3.76	0.761	.644	
BD6	I prefer to purchase a smaller size compared to a bigger size brand of mobile phone.	3.83	0.959		.875
BD7	I prefer to purchase a bigger size compared to a smaller brand of mobile phone.	2.59	1.001		-.773
BD5	Size of the mobile phone is my concern when purchasing a brand of mobile phone.	3.91	0.788		.558
	Eigenvalue			3.097	1.714
	Percent of Variance			38.712	21.420
	Cumulative Percent			38.712	60.131
	KMO Measures of Sampling Adequacy = 0.742				
	Bartlett's Test of Sphericity = (Chi-Square = 536.398, p < .000)				

Figure 4.3: Eigenvalue Plot for Scree Test Criterion – Brand Design

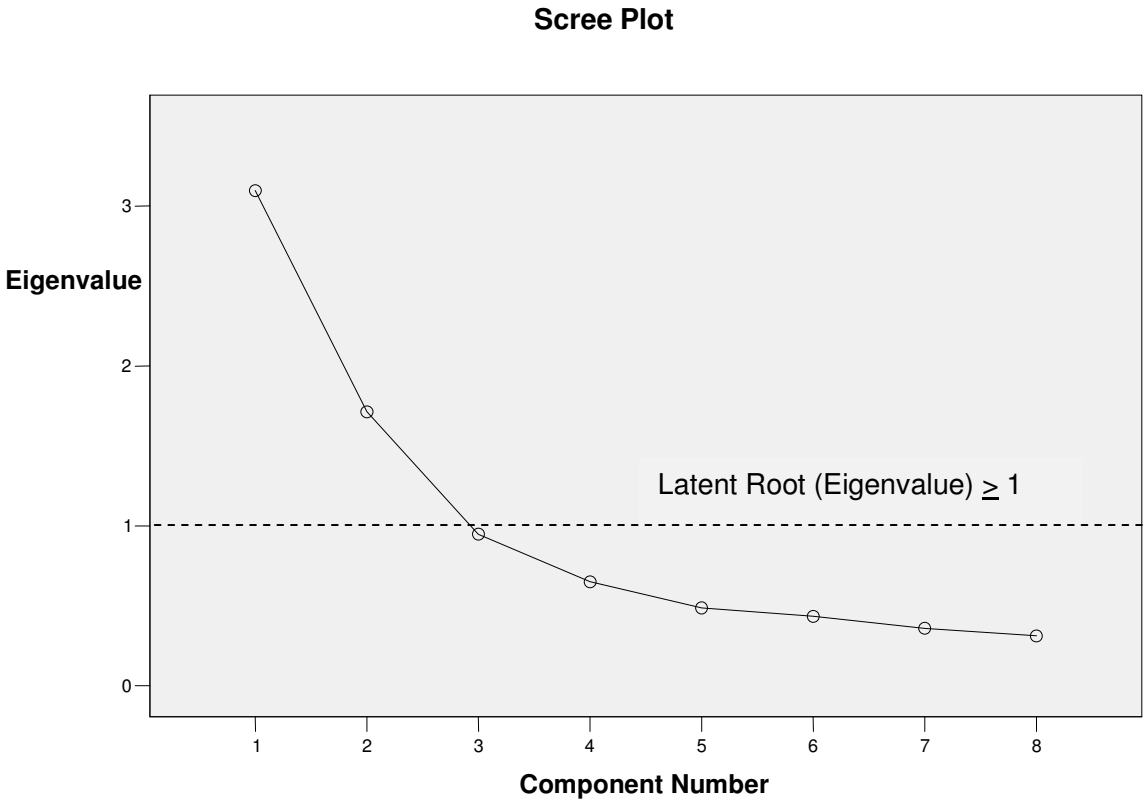

Table 4.9 also showed the mean value for each statement of brand design, the responses to each statement were multiplied by each evaluation of the five scales respectively, and summed for the mean of the sample. Highest mean was reported for statement – "The designs/styles of the brand of mobile phone must be suitable for me" at mean value of 4.14. However, the lowest mean was reported for statement – "I prefer to purchase a bigger size compared to a smaller brand of mobile phone" at mean value of 2.59 (which was lower than 3.00 on average, indicating that the respondents had low agreement level with the statement/item. However, the overall means of the other statements/items

were higher than 3.00 on the average, indicating that the respondents had high agreement level with the statements/items.

4.6.4 Factor Analysis of Perceived Quality Statements

The results in Table 4.10 indicated that the Bartlett Test of Sphericity (Bartlett 1954) reached statistical significance (Chi-Square = 992.62, $p < .000$) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.882, exceeding the recommended value of 0.60.These results suggested that the factorability of the data was considered appropriate. Using eigenvalue of ≥ 1 as shown in Figure 4.4 , the analysis produced one factor which comprised of eight statements/items (eigenvalue=4.741), accounting for 59.27% of total variance explained. No item was deleted.

Table 4.10: Characteristics of Perceived Quality: Scale Items, Means, Standard Deviations (SD), KMO, Bartlett's Test for Sphericity and Factor Loadings

Items	Description	Mean	SD	F1
PQ4	The brand can be trusted.	4.31	0.604	.865
PQ2	The brand is known to be reliable.	4.19	0.659	.852
PQ5	The brand is known to be dependable.	3.95	0.730	.821
PQ7	The performance of the brand is satisfactory.	4.11	0.765	.766
PQ1	The brand is known to be of good quality.	4.22	0.610	.761
PQ6	The brand is known to be durable.	3.99	0.705	.733
PQ8	A well-known branded mobile phone is always better in quality than a lesser-known brand.	3.97	0.790	.704
PQ3	The brand is known for its good workmanship.	4.02	0.715	.627
	Eigenvalue			4.741
	Percent of Variance			59.265
	Cumulative Percent			59.265
	KMO Measures of Sampling Adequacy = 0.882			
	Bartlett's Test of Sphericity = (Chi-Square = 992.620, p < .000)			

Figure 4.4: Eigenvalue Plot for Scree Test Criterion – Perceived Quality

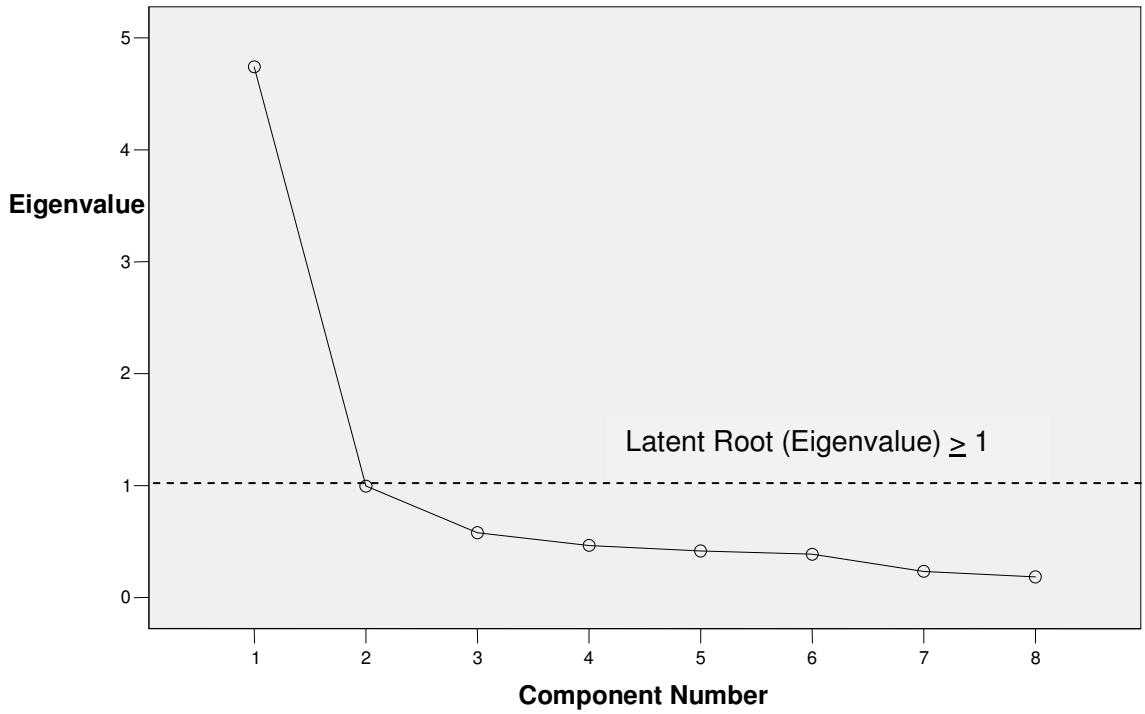

Table 4.11 also showed the mean value for each statement of perceived quality, the responses to each statement were multiplied by each evaluation of the five scales respectively, and summed for the mean of the sample. Highest mean was reported for statement – "The brand can be trusted" at mean value of 4.31. However, the lowest mean was reported for statement – "A well-known branded mobile phone is always better in quality than a lesser-known brand" at mean value of 3.97. The overall means of the statements/items were higher than 3.00 on the average, indicating that the respondents had high agreement level with the statements/items.

4.6.5 Factor Analysis of Price Statements

The results in Table 4.11 indicated that the Bartlett Test of Sphericity (Bartlett 1954) reached statistical significance (Chi-Square = 346.53, $p < .000$) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.622, exceeding the recommended value of 0.60. These results suggested that the factorability of the data was considered appropriate. Using eigenvalue of ≥ 1 as shown in Figure 4.5, the analysis produced two factors, accounting for 62.60% of total variance explained.

Factor 1 (F1) and Factor 2 (F2) explained 40.40% and 22.20% of the variance respectively, which proved that the factors are reliable and have a high degree of internal consistency. To facilitate easy interpretation, these factors were then rotated using the varimax criterion for orthogonal rotation. Only statements/items with factor loadings of 0.50 and above in the rotated factor matrix were considered as significant in interpreting the factors. The factor matrix indicated the factor loadings on these two factors. Factor 1 (F1) and Factor 2 (F2) comprised of four statements/items (eigenvalue = 2.424) and two statements/items (eigenvalue = 1.332) respectively. No item was deleted.

Table 4.11: Characteristics of Price: Scale Items, Means, Standard Deviations (SD), KMO, Bartlett's Test for Sphericity and Factor Loadings

Items	Description	Mean	SD	Factor Loadings	
				F1	F2
P5	The price of the mobile phone brand that I choose must be satisfactory.	4.16	0.638	.833	
P4	The price of the mobile phone brand must be reasonable.	4.20	0.656	.789	
P2	The brand must provide good value-for-money.	4.09	0.643	.760	
P1	The brand that I choose is based on price.	3.76	0.715	.699	
P6	The brand is selected regardless of the price of the mobile phone.	3.40	0.948		.808
P3	The increased price of the brand would not hinder my purchase intention.	3.33	0.972		.795
	Eigenvalue			2.424	1.332
	Percent of Variance			40.402	22.202
	Cumulative Percent			40.402	62.604
	KMO Measures of Sampling Adequacy = 0.622				
	Bartlett's Test of Sphericity = (Chi-Square =346.526, p < .000)				

Figure 4.5: Eigenvalue Plot for Scree Test Criterion – Price

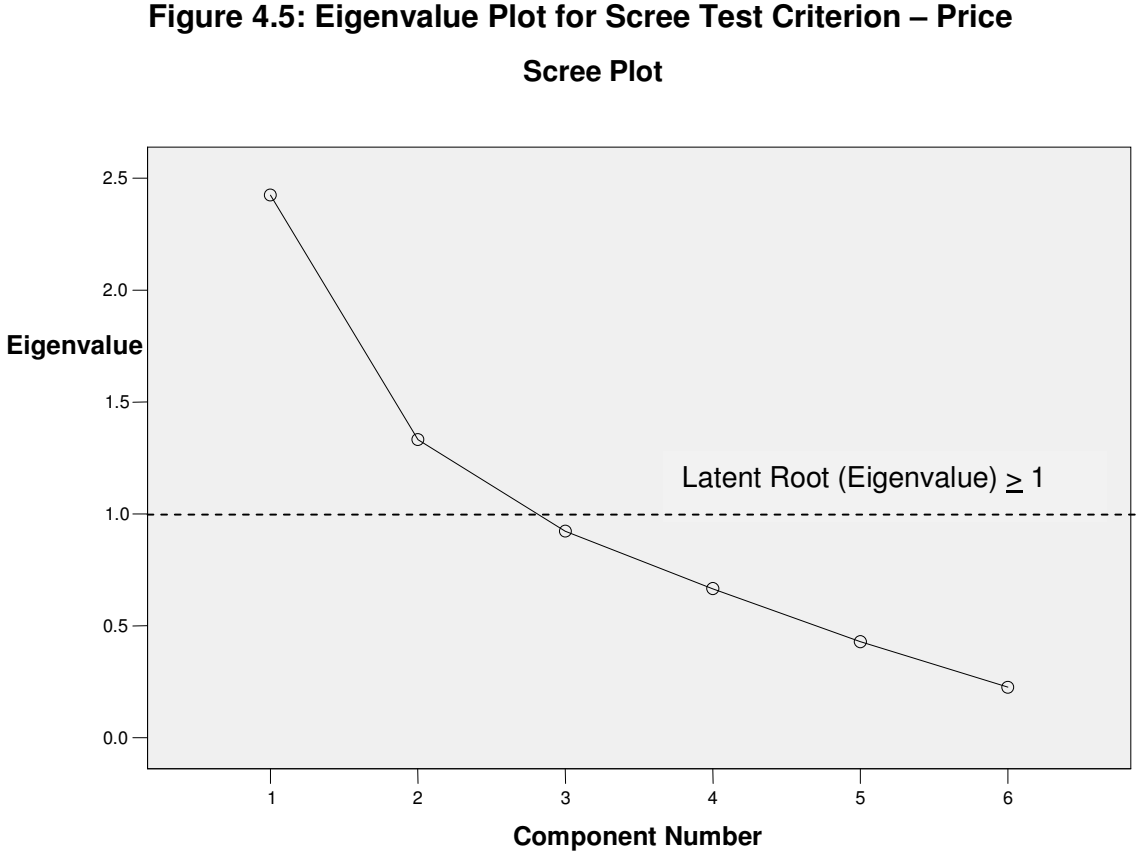

Table 4.11 also showed the mean value for each statement of price, the responses to each statement were multiplied by each evaluation of the five scales respectively, and summed for the mean of the sample. Highest mean was reported for statement – "The price of the mobile phone brand must be reasonable" at mean value of 4.20. However, the lowest mean was reported for statement – "The increased price of the brand would not hinder my purchase intention" at mean value of 3.33. The overall means of the statements/items were higher than 3.00 on the average, indicating that the respondents had high agreement level with the statements/items.

4.6.6 Factor Analysis of Promotion Statements

The results in Table 4.12 indicated that the Bartlett Test of Sphericity (Bartlett 1954) reached statistical significance (Chi-Square = 339.43, p < .000) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.714, exceeding the recommended value of 0.60. These results suggested that the factorability of the data was considered appropriate. Using eigenvalue of $\geq$ 1 as shown in Figure 4.6, the analysis produced one factor which comprised of five statements/items (eigenvalue=2.770), accounting for 55.39% of total variance explained. No item was deleted.

Table 4.12: Characteristics of Promotion: Scale Items, Means, Standard Deviations (SD), KMO, Bartlett's Test for Sphericity and Factor Loadings

Items	Description	Mean	SD	F1
PM3	If the brand offers (price discounts/ free gifts); I feel that I am getting a good buy.	3.71	0.824	0.830
PM2	I am attracted to the brand because it offers (price discounts/ free gifts).	3.43	0.824	0.774
PM1	My loyalty towards a mobile phone brand is influenced by promotions.	3.30	0.901	0.756
PM5	The advertisements attract me to purchase the brand.	3.47	0.943	0.704
PM4	I have a favourite mobile phone brand, but I will buy that brand of mobile phone only if it offers (price discounts/free gifts).	3.35	0.895	0.644
	Eigenvalue			2.770
	Percent of Variance			55.391
	Cumulative Percent			55.391
	KMO Measures of Sampling Adequacy = 0.714			
	Bartlett's Test of Sphericity = (Chi-Square = 339.433, p < .000)			

Figure 4.6: Eigenvalue Plot for Scree Test Criterion – Promotion

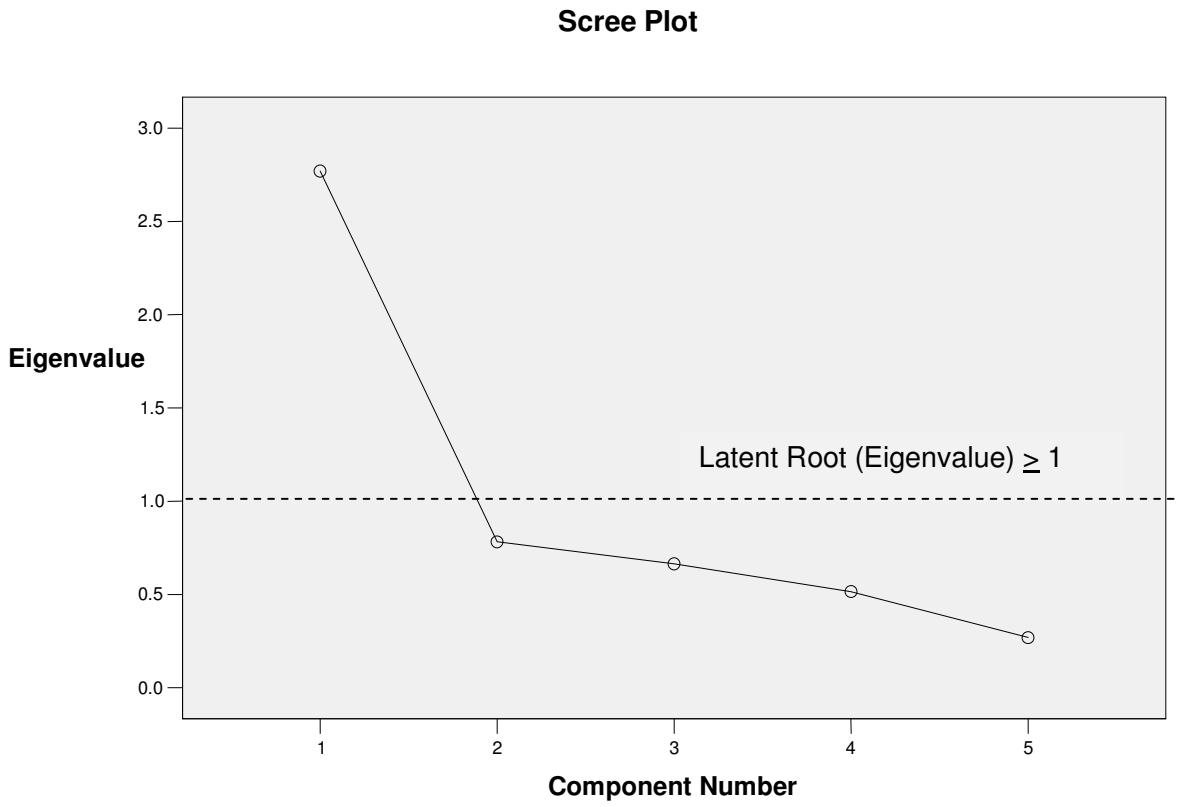

Table 4.12 also showed the mean value for each statement of promotion, the responses to each statement were multiplied by each evaluation of the five scales respectively, and summed for the mean of the sample. Highest mean was reported for statement – "If the brand offers (price discounts/ free gifts); I feel that I am getting a good buy" at mean value of 3.71. However, the lowest mean was reported for statement – "My loyalty towards a mobile phone brand is influenced by promotions" at mean value of 3.30. The overall means of the statements/items were higher than 3.00 on the average, indicating that the respondents had high agreement level with the statements/items.

4.7 Pearson Product - Moment Correlation

Correlation analysis was used to describe the strength and direction of the linear relationship between two variables (Pallant 2001). The correlation analysis determined the relationship or association between brand loyalty (dependent variable) and brand name, brand design, perceived quality, price and promotion (independent variables). Table 4.13 displayed a correlation matrix using the Pearson Product-Moment correlation coefficient for all variables. According to Cohen (1988), the value of Pearson's correlation is divided into three areas. A correlation coefficient between 0.10 and 0.29 will indicate a small correlation, a correlation coefficient between 0.30 and 0.49 will indicate a medium correlation, and a correlation coefficient between 0.50 and 1.0 will indicate a large correlation.

The results of the correlation analysis indicated that there was a positive correlation between the dependent and independent variables. It showed that the Pearson's coefficient ($r = 0.512$, $p < 0.01$) was highest for brand name, followed by perceived quality ($r = 0.456$, $p < 0.01$), price ($r = 0.332$, $p < 0.01$), brand design ($r = 0.239$, $p < 0.01$). The lowest was for promotion, in which ($r = 0.237$, $p < 0.01$). This indicated that both the magnitude and direction of the linear relationship and the direction of the relationship between brand loyalty and brand name was the highest, followed by perceived quality, price, brand design and promotion which was the lowest.

According to Pallant (2001), r = 0.90 and above indicates that variables are highly correlated and existence of multicollinearity is possible. It was observed that none of the correlation coefficients in Table 4.13 was greater than 0.90.

The Pearson-Moment correlation was also used to test the hypotheses. Thus, the following hypotheses were tested using Pearson's correlation.

4.7.1 Relationship between Brand Loyalty and Brand Name

H_1: Brand name will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.

Based on the results reported in Table 4.13, Hypothesis H_1, was supported as the value of coefficient ($r = 0.512$) was large and significantly positive ($p < 0.01$). Therefore, it could be concluded that there was a significant positive relationship between brand loyalty and brand name.

4.7.2 Relationship between Brand Loyalty and Brand Design

H_2: Brand design will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.

Based on the results reported in Table 4.13, Hypothesis H_2, was supported as the value of coefficient ($r = 0.239$) was small and significantly positive ($p < 0.01$). Therefore, it could be concluded that there was a significant positive relationship between brand loyalty and brand design.

4.7.3 Relationship between Brand Loyalty and Perceived Quality

H_3: Perceived quality will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.

Based on the results reported in Table 4.14, Hypothesis H_3, was supported as the value of coefficient ($r = 0.456$) was medium and significantly positive ($p < 0.01$). Therefore, it could be concluded that there was a significant positive relationship between brand loyalty and perceived quality.

4.7.4 Relationship between Brand Loyalty and Price

H_4: Price will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.

Based on the results reported in Table 4.13, Hypothesis H_4, was supported as the value of coefficient ($r = 0.332$) was medium and significantly positive ($p <$

0.01). Therefore, it could be concluded that there was a significant positive relationship between brand loyalty and price.

4.7.5 Relationship between Brand Loyalty and Promotion

H_5: Promotion will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.

Based on the results reported in Table 4.13, Hypothesis H_5, was supported as the value of coefficient ($r = 0.237$) was small and significantly positive ($p < 0.01$). Therefore, it could be concluded that there was a significant positive relationship between brand loyalty and promotion.

Table 4.13: Descriptive Statistics and the Correlation Coefficients for Independent and Dependent Variables (*N=214*)

VARIABLE	MEAN	S.D	TBL	TBN	TBD	TPQ	TP	TPM
Brand Loyalty	3.56	0.51452	1 214	.512** .000 214	.239** .000 214	.456** .000 214	.332** .000 214	.237** .000 214
Brand Name	3.64	0.54899	.512** .000 214	1 214	.504** .000 214	.476** .000 214	.402** .000 214	.463** .000 214
Brand Design	3.75	0.45667	.239** .000 214	.504** .000 214	1 214	.567** .000 214	.516** .000 214	.552** .000 214
Perceived Quality	4.10	0.53246	.456** .000 214	.476** .000 214	.567** .000 214	1 214	.535** .000 214	.420** .000 214
Price	3.82	0.44408	.332** .000 214	.402** .000 214	.516** .000 214	.535** .000 214	1 214	.460** .000 214
Promotion	3.45	0.64957	.237** .000 214	.463** .000 214	.552** .000 214	.420** .000 214	.460** .000 214	1 214

Note:

1. ** Correlation is significant at the 0.01 level (2-tailed).
2. Abbreviation: S.D. = Standard Deviation; TBL=Brand Loyalty; TBN = Brand Name; BD=Brand Design; PQ=Perceived Quality; TP=Price; TPM=Promotion.

4.7.6 Summary of Pearson-Moment Correlation

A summary of hypotheses testing by using Pearson-Moment correlation between dependent and independent variables was shown in Table 4.14.

Table 4.14: Results of Hypothesis Testing for Research Model

No	Hypotheses	Result
H_1	Brand name will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Supported**
H_2	Brand design will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Supported**
H_3	Perceived quality will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Supported**
H_4	Price will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Supported**
H_5	Promotion will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Supported**

4.8 Multiple Regression Analysis

Multiple regression analysis was conducted to examine the extent to which brand name, brand design, perceived quality, price and promotion (serving as the predictor/independent variables) influenced brand loyalty (serving as the

criterion/dependent variable. The coefficient measures the total variance of the dependent variable (brand loyalty) that was accounted for by knowing the value of the independent variable(s). The multiple regression linear model was derived as follows:

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon}$$

Y, Brand Loyalty represented the criterion or Dependent Variable, which was believed to be influenced by the X_1, X_2, X_3, X_4, and X_5, which were the predictors or the independent variables.

Y = Brand Loyalty

α = Constant

β = Coefficient

X_1 = TBN

X_2 = TBD

X_3 = TPQ

X_4 = TP

X_5 = TPM

} independent variables

ε = Error term

The non-standardized coefficients were shown in Table 4.15 with one-tailed probabilities representing the directional hypotheses, that is, the direction of the relationship was clearly indicated. The final model had a good fit (F=22.148, P=0.000) with an adjusted R^2 value of 0.332. The variable used in regression is a predictor if the p-value is < 0.05 (Hair et al., 2006). In this

model, the adjusted R^2 of 0.332 indicated that 33.2% of the variance in brand loyalty was explained by the independent variables.

The independent variables such as brand name (β=0.406, p<0.05) and perceived quality (β=0.310, p<0.05) had significant positive relationships with brand loyalty. Therefore, hypothesis 1 and 3 were supported. The other variable which was brand design (β= -0.218, p<0.05) had significant negative relationship with brand loyalty. Hence, hypothesis 2 was supported. On the other hand, price (β=0.121, p>0.05) and promotion (β= -0.032, p>0.05) were not statistically significant. Thus hypothesis 4 and 5 were not supported.

Furthermore, brand name (β=0.406) was more influential toward brand loyalty than the other determinant i.e. perceived quality (β=0.310).

Table 4.15: Results of Regression Analysis on Brand Loyalty

Model/ Variable	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	1.276	.291		4.388	.000
TBN	.406	.065	.434	6.262	.000
TBD	-.218	.088	-.194	-2.481	.014
TPQ	.310	.072	.321	4.327	.000
TP	.121	.083	.104	1.460	.146
TPM	-.032	.056	-.040	-.563	.574

Notes: R^2=0.347; Adjusted R^2=0.332; F=22.148; P=0.000

Based on the regression coefficient results shown in Table 4.16, the regression line for this model was derived as follows:

$$Y = 1.276 + 0.406X_1 - 0.218X_2 + 0.310X_3 + 0.121X_4 - 0.032X_5 + \varepsilon$$

A summary of the results of the regression analysis was provided in Table 4.16.

Table 4.16: Results of Hypothesis Testing for Research Model

No	Hypotheses	Result
H1	Brand name will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Supported**
H2	Brand design will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Not Supported**
H3	Perceived quality will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Supported**
H4	Price will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Not Supported**
H5	Promotion will have a significant positive influence on brand loyalty among Malaysian consumers in their choice of mobile phone brands.	**Not Supported**

In conclusion, two hypotheses were accepted (H1 and H3), while the other three were rejected (H2, H4 and H5).