CHAPTER 4
RESEARCH RESULTS

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4.1 Introduction

This chapter will discuss on data analyses and the interpretation of data collected from the respondents. Testing will also be performed in all the hypotheses. The preliminary analyses will cover descriptive statistics of the demographic section and the entire test will ensure that the assumptions of linearity, normality and homoscedasticity are accurately conducted.

Next, the research used factor analysis to verify the factor groupings for Virtual Brand Personality measures in the context of Malaysian context. The reliability tests were conducted in the variables of Virtual Brand Personality, Customer Satisfaction and Brand Loyalty. They all passed the reliability test. The Bivariate analysis is explored to identify whether the Virtual Brand Personality dimensions meet the correlations between the dimensions. Then, it follows with Multiple Regression Model in which to identify the established relationships of the variables proposed.

4.2 Preliminary Analyses

As discussed in Chapter 3, a total of 350 personalized email questionnaires and hardcopy questionnaires were sent out individually via email and by hand distribution to attract respondents. Messages advertising the survey were also posted at one week intervals reached by personal email and University of Malaya postgraduate students' yahoo group. Responses submitted through the email were saved onto a folder that was downloaded daily. This survey lasted for approximately one month from 15th July to 15 August 2009.

In an effort to collect proper and accurate sampling, the researcher also send personal email to working adults and MBA students that have accessed to online banking websites through the first hand information of evaluation. Prior to the research begin, the researcher also started to receive feedback from the sampling through email and the willingness of participating in this research.

As soon as this research was started, the researcher also examines his respondents' intention to reply the questionnaire through building a focus group discussion in a blog website. The sources received further strengthen its capability and support to carry out this study as soon as the questionnaire is distributed.

Another sample respondents chosen in this study are MBA students who currently pursuing their MBA in University of Malaya and other universities locally in Malaysia. The MBA students were chosen due to the capability of understanding the importance of research and most of them are experienced managers, executives and senior managers that could provide constructive feedback for this research. In addition, the speed of replies will be immediate as the researcher meets them personally in the class.

From all the questionnaires distributed, a total of 253 sets were returned. A cross validation on the survey was checked to avoid any missing values and only 219 sets of completed questionnaires with all answers given were accepted for the result analysis and coded into SPSS version 17.0. The returned rate translates to a percentage of 63% from the total questionnaire sent.

4.2.1 Demographic Data

This research is specifically targeted to understand the Virtual Brand Personality to Malaysian who have at least one active online banking account and used online banking websites in the last six months. From the total of 219 accepted returned questionnaire, the gender percentage of Male is 48.4% and Female is 51.6%. According to Household use of the Internet Survey 2008 from Malaysian Communications and Multimedia Commission, the survey found that 51.9% of Malaysian online users were males, while 48.1 percent were females. The balance of gender is a good representation of both Male and Female users who used online banking websites in Malaysia.

Table 4.1 Demographic Data – Gender

A1. Gender	**Frequency**	**Percent**
Male	**106**	**48.4**
Female	**113**	**51.6**

Next, the marital status of the respondents marked 60.3% for single and 39.7% for married. The marital status indicated mostly single respondents prefer to use online banking websites than married partners. With reference from Household use of the Internet Survey 2008 from Malaysian Communications and Multimedia Commission, more than half of the online users are single accounted for 53.7% and married accounted for 46.0%, lastly others include divorced and widowed at 0.1% respectively. The respondents also collectively represented a good representation of the population in Malaysia.

Table 4.2 Demographic Data – Marital Status

A2. Marital Status	**Frequency**	**Percent**
Single	**132**	**60.3**
Married	**87**	**39.7**

For Ethnic group, 46.1% of the returned questionnaire marked for Malay ethic group while Chinese marked at 40.2%, Indian at 8.2% and others at 5.5%. The percentages between ethnic groups of the respondents provide a good representation of the overall ethnic group that reflects Malaysian customer. According to the official statistics dated January 2009 from Department of Statistics Malaysia, the Malay group make up of 65% of the total population in Malaysia, follow by 26% of Chinese and Indian 8%. Other unlisted ethnic groups only achieved 1% out of the total population. In summary, the ethnic group of this study indicated a balance of representation of Malaysian online banking study in the country.

Table 4.3 Demographic Data – Ethnic Group

A3. Ethnic Group	**Frequency**	**Percent**
Malay	**101**	**46.1**
Chinese	**88**	**40.2**
Indian	**18**	**8.2**
Others	**12**	**5.5**

Next, the religion group achieved consistency in comparison with the ethnic group. The Muslims marked at 47% and Buddhist marked at 26.5%. Next, it follow by 15.1% Christian and Others at 6.4%, last but not least, Hindu marked 5.0% of the total respondents of this study. According to a report from Department of Statistics Malaysia, the religion group in Malaysia achieved 60.4%, Buddhism 19.2%, Christianity 9.1%, Hindu 6.3%, and others 5.0%. The percentages of the religion in this study have matched with the representation of Malaysian religion population.

Table 4.4 Demographic Data – Religion

A4. Religion	**Frequency**	**Percent**
Muslim	**103**	**47.0**
Buddhist	**58**	**26.5**
Hindu	**11**	**5.0**
Christian	**33**	**15.1**
Others	**14**	**6.4**

In terms of age distribution, the age between 20 – 24 capped at 5.5%, 25 – 29 at 46.6% which marks the highest age group in this research, 30 – 34 at 26.9%, 35 – 39 at 14.6%, 40 – 44 at 3.2%, 45 – 50 at 0.9% and 50 above at 2.3%. The second highest age group which responded in this research is between 30 – 34 years old.

According to Household use of the Internet Survey 2008 from Malaysian Communications and Multimedia Commission (MCMC), the overall broad generational groups of online users are mostly Adults of 20-49 years old at 65.8% in year 2008 while the seniors of 50 years and above at 9.4% and pre teens & teens of up to 19 years at 24.7%. Based on the

Internet Survey from MCMC, the age groups of 20-49 in the sample collectively represented a good representation of population in Malaysia that was online users and indicated the biggest segment of users of the Internet that show consistent of the MCMC survey and this study.

Table 4.5 Demographic Data – Age

A5. Age	**Frequency**	**Percent**
20 – 24	**12**	**5.5**
25 – 29	**102**	**46.6**
30 – 34	**59**	**26.9**
35 – 39	**32**	**14.6**
40 - 44	**7**	**3.2**
45 – 50	**2**	**0.9**
50 above	**5**	**2.3**

In the income group, the highest income level is from RM3,001 – RM4,000 at 27.4%, follow by income level from RM2,001 – RM3,000 at 18.7%, then to RM4,001 – RM5,000 at 16.9%, RM7000 above at 15.5%, RM5,001 – RM6000 at 9.6%, Less than RM2,000 at 7.8%, and lastly from RM6,001 – RM7,000 at 4.1%.

According to a report from The Edge Malaysia dated 24 November 2004, it was reported that the average income level for executives are between RM 3,000 to RM5,000 in the urban. The income group has indicated a good reputation of the income level from the respondents in Klang Valley that show consistency of the report published in The Edge Malaysia and this study.

Table 4.6 Demographic Data – Income Level

A6. Income Level (RM)	**Frequency**	**Percent**
< 2,000	**17**	**7.8**
2,001 – 3,000	**41**	**18.7**
3,001 – 4,000	**60**	**27.4**
4,001 – 5,000	**37**	**16.9**
5,001 – 6,000	**21**	**9.6**
6,001 – 7,000	**9**	**4.1**
7,000 above	**34**	**15.5**

For occupation level, Top management stands at 2.7%, Middle management at 25.1%, Assistant Managers, Senior Executives and Executives level marked 52.1% and achieved highest occupation level among the respondents rate, lastly Supervisor and Team Leader at 8.7% and Individual Owner at 11.5%. The occupation level indicated that most executives have owned at least one online banking account and have used online banking frequently among other occupation level.

Table 4.7 Demographic Data – Occupation

A7. Occupation	Frequency	Percent
Top management (CEO, CFO, GM, VP)	**6**	**2.7**
Middle Management (Senior Manager, Manager)	**55**	**25.1**
Asst. Manager/ Snr. Exec/ Exec	**114**	**52.1**
Supervisor/ Team Leader	**19**	**8.7**
Individual/ Owner	**25**	**11.5**

Last on the demographic data shown the education level, the education level of the respondents which marked highest at 69.4% are Degree/ Professional certificate graduate, follow by Postgraduate level at 23.7%, Diploma level at 3.2% and High School level at 3.7%. This represented that most educated Malaysian has used the online banking websites and surfing online.

According to Household use of the Internet Survey 2008 from Malaysian Communications and Multimedia Commission, the largest group of online users who have a university degree or higher are 35.1%, followed by those who have some secondary education at 31.5% and those who have a diploma at 30.9%. Therefore, the education level of Degree or Professional Certificate of the respondents collectively represented a good representation of the population in Malaysia.

Table 4.8 Demographic Data – Education Level

A8. Education Level	Frequency	Percent
PMR/ LCE or below	**-**	**-**
SPM/ STPM/ MCE/ HSC	**8**	**3.7**
Certificate/ Diploma	**7**	**3.2**
Degree/ Professional Certificate	**152**	**69.4**
Postgraduate	**52**	**23.7**
Others	**-**	**-**

As the research covered the online banking industry, the respondents are asked to select one of the most frequently browsed online banking websites in the past six months. From the survey, it is known that the top 5 websites include Maybank2u, CIMB Clicks, Public Bank Online, Citibank Online and HSBC Internet Banking.

Maybank2u.com is the most frequently browsed website capped at 57.5%, over half of the response rate. Next, CIMB Clicks capped at 17.8%, Public Bank Online at 5.5%, Citibank Online at 4.6%, and HSBC Internet Banking at 4.1%.

Other lower rate websites are included Hong Leong Online, RHB Online, UOB Internet Banking, OCBC Internet Banking, AM Online, EON Bank, Bank Islam, Alliance Bank, Al Rahji Bank and no response from iRakyat and BSN Online.

According to a latest report in June 2009 released by comScore, Inc., Maybank2u.com has achieved the Top Malaysian Internet Properties in Malaysia Based on Unique Visitors of 1,081,000 out of the total audience of 9,320,000. Next, CIMBClicks has also achieved 398,000,000 audience rates from of the total audience from the survey. Therefore, the representation of 57.5% Maybank2u users collectively presented a good representation of the population in Malaysia for online banking websites.

Table 4.9 Online Banking Websites the respondents have browsed in the past 6 months

	Frequency	**Percent**
Maybank2u.com	126	57.5
CIMB Clicks	39	17.8
Public Bank Online	12	5.5
Hong Leong Online	4	1.8
RHB Online	8	3.7
Citibank Online	10	4.6
iRakyat	-	-
HSBC Internet Banking	9	4.1
UOB Internet Banking	1	0.5
OCBC Internet Banking	1	0.5
BSN Online	-	-
Am Online	1	0.5
Standard Chartered Online Banking	1	0.5
Others (please list) • Bank of America (1) • EON Bank (1) • Bank Islam (3) • Al Rahji Bank (1) • Alliance Bank (1)	7	3.2

4.2.2 Normality

Normality test is one of the most important tests to ensure the assumptions for the subsequent tests are met; therefore it is notable to study the skewness and kurtosis which is less than 2 to confirm the normality of the data.

Notably, the non-compatibility of kurtosis for some of the items are:

- Virtual Brand Personality Item 1 in the Dimension of Competence for Reliable,
- Satisfaction Item 1 – My decision to choose this site was a wise one
- Satisfaction Item 2 – I am pleased to be associated with this site

- Satisfaction Item 3 – I am happy shopping or do business/ transaction with this site
- Loyalty Item 4 – I am likely to re-visit this site within next 3 months

All of the above constructs were computed again by adding logarithm of Gamma function to ensure it fulfills the Kurtosis level of less than 2.0. A revised normality was functioned to ensure the compatibility of all other test that follows. The detailed normality test for all items was indicated in Appendix A in page 65.

4.2.3 Factor Analysis and Reliability Test

Next, factor analysis was conducted on the Virtual Brand Personality measures to explore if there were any new factor groupings that may emerge relevant to the Malaysian context on Virtual Brand Personality. Through the factor analysis concept, it will determine the accurate validity to the measures of the virtual brand personality (Aaker 1997, Davies et.al. 2004, Da Silva et.al. 2007). Appendix C indicated the table of the Exploratory Factor Analysis using Principal Component Analysis were analysed. Seven new groupings were formed but only four new groupings were accepted which will discuss in the next paragraph.

Next, the best indicator to determine if the data is appropriate for factor analysis is the Kaiser-Meyer-Olkin (KMO), a measure of overall sampling adequacy. KMO provides a mean to the extent of which indicators of a construct belongs to. For KMO measures, the measure of sampling adequacy is far greater than 0.6 will be well accepted. For this research, the sampling adequacy of Virtual Brand Personality has reached to 0.902 for Virtual Brand Personality measures.

Table 4.10 Summary Results of KMO Measure and Bartlett's Test of Sphericity

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.902

Bartlett's Test of Sphericity

Approx. Chi-Square	5475.644
df	861.000
Sig.	0.000

In addition, the research obtains a value of 5475.644 for the Bartlett's test of Sphericity. The Bartlett's value is considered large and the associated significance level of 0.000 is small ($p < 0.05$). Therefore, the result of the research concludes that the strength of the relationship among the measures is strong.

Thus, the high KMO value obtained with a high level of test of Sphericity indicated both comfortable indications for the research. It is also shown that the data of the virtual brand personality measures are adequate for factor analysis. Therefore, the study concluded that it is appropriate to continue the factor analysis for the data.

Since the measurement of virtual brand personality measures were developed from established literatures, principal factor analysis was used to identify the items. Seven factors evolved in the factor analysis and it is the objective of the study to determine the new dimensions of Virtual Brand Personality that has an impact on the other variables.

A correlation matrix was also computed on Virtual Brand Personality measures to ensure the items are correlated or related to each other for the factors to emerge and results indicated that all measures are correlated at significant level $p < 0.05$. Next the Principal Component method were used to assess the variables to ensure it is perfectly reliable and without error.

In the decision on the retained factors, scree plot is examined based on Table 4.10. The retained factors are those lie before the point at which the eigenvalues level off. Secondly, the retained factors were also distinguished based on Kaiser's criterion factors with an eigenvalue of more than one. Seven factors retained with an eigenvalue of more than one explains 61.511 percent of the variance. The evidence indicated representation of the scree plot when the eigenvalues are leveled off after the seven factors.

After the factor analysis, next action will be to conduct reliability test for the variables, include virtual brand personality, customer satisfaction and brand loyalty items. In the reliability tests, it is important that all Cronbach's alpha value for the variables of virtual brand personality, customer satisfaction and brand loyalty to exceed the recommended 0.7 (Cronbach, 1970) and the grouping will be therefore valid. From the reliability test computed, only four factors exceeded the recommended 0.7 Cronbach alpha value and therefore only four dimensions are valid for banking virtual brand personality. The new groupings were summarized in Figure 4.2.

Reliability analyses were also conducted for Customer Satisfaction and Brand Loyalty, The Cronbach's alpha for the variables are 0.882 and 0.842. All of the reliability tests meet the recommended of 0.70 and valid.

Figure 4.1 Scree Plot

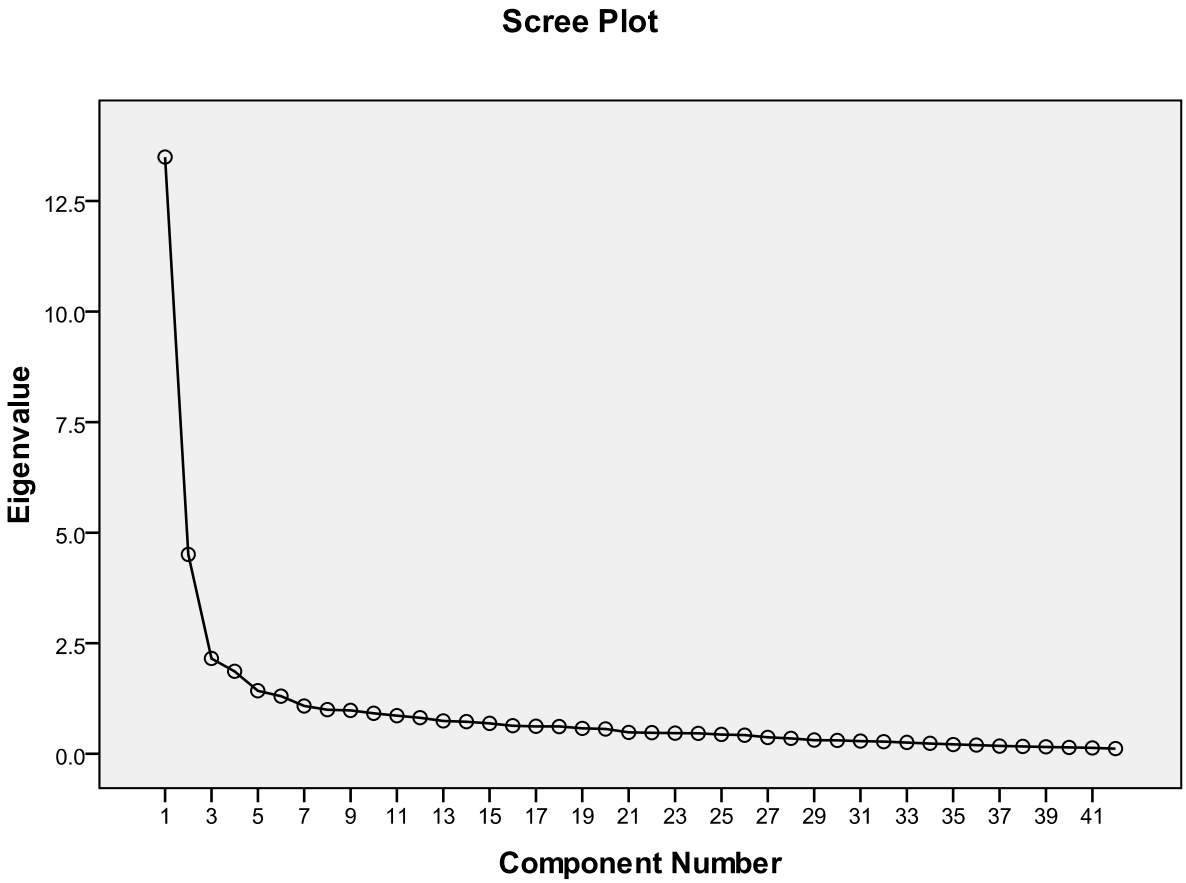


Table 4.11 Grouping of components from factor analysis
New Dimension No. 1 Excitement (8 items)

Original Dimension	**Item**	**Cronbach's Alpha**
Excitement	Exciting	0.911
	Trendy	
	Spirited	
	Imaginative	
	Cool	
	Unique	
	Daring	
	Young	

Table 4.12 Grouping of components from factor analysis
New Dimension No. 2 Sophistication (8 items)

Original Dimension	Item	Cronbach's Alpha
Sophistication	Good looking	0.908
	Charming	
	Feminine	
	Glamorous	
	Upper class	
	Smooth	
Ruggedness	Tough	
	Outdoorsy	

Table 4.13 Grouping of components from factor analysis
New Dimension No. 3 Competence (5 items)

Original Dimension	Item	Cronbach's Alpha
Competence	Secure	0.880
	Reliable	
	Confident	
	Successful	
Excitement	Up to date	

Table 4.14 Grouping of components from factor analysis
New Dimension No. 4 – Sincerity (4 items)

Original Dimension	Item	Cronbach's Alpha
Sincerity	Small town	0.710
	Family Oriented	
	Down to earth	
	Original	

Figure 4.2 New Groupings of Virtual Brand Personality Dimensions and Traits generated form the factor analysis.

Excitement (8)	**Sophistication (8)**	**Competence (5)**	**Sincerity (4)**
• Exciting • Trendy • Spirited • Imaginative • Cool • Unique • Daring • Young	• Good Looking • Charming • Feminine • Glamorous • Upper class • Smooth • Tough • Outdoorsy	• Secure • Reliable • Confident • Successful • Up to date	• Small town • Family oriented • Down to earth • Original

New Groupings of Virtual Brand Personality

The new groupings of the four dimensions from Aaker's (1997) Brand Personality Scale were consistently reflected in this study of Virtual Brand Personality. The study has also been able to demonstrate the theory defined by Aaker's can be applicable to brand personality in virtual environment, in which 4 dimensions were identified in this study, namely Excitement, Sophistication, Competence, and Sincerity.

In the new groupings, the researcher concluded and accepted the traits proposed by Aaker's as shown in Figure 4.1. Excitement dimensions has been the key factor to virtual brand personality, with the traits of exciting, trendy, spirited, imaginative, cool, unique, daring and young. Consistent with the study from Opoku et. al. (2007) on the food SMEs, Excitement dimensions are one of the most important personality virtual context for the websites.

In the study of banking industry in Malaysia and websites of the banks, the Excitement dimensions proved to be the most useful personality dimensions in this study context. Keller (2006) defined that 21st century brand personality must possess the agility to capture and deliver value to consumers in the face of challenging market dynamics. The researcher concluded that with the new web 2.0 introduction and digital age, Excitement becomes the core factors of a virtual brand personality to attract consumers to experience cool, trendy and excitement while browsing the websites virtually.

Next new groupings of Sophistication dimensions were identified. The traits of Sophistication being concluded in this study were included good looking, charming, feminine, glamorous, upper class, smooth, tough and outdoorsy. Two traits adopted from Ruggedness dimension were grouped into Sophistication dimensions as tough and

outdoorsy could be explained as part of Sophistication since the ruggedness dimension is not valid in this study.

Apparent to Aaker's Brand Personality Scale, the traits of Sophistication were identified as the second important dimensions in which the user of online banking websites are hoping that the virtual brand personality experiences have to be good looking, charming, glamorous, feminine, upper class and smooth. The users of online banking websites aimed to experience a websites that are good looking and charming, and this is also consistent with the study from Opoku et. al (2006) to the websites brand personality of top South African Business School.

Next new grouping of Virtual Brand Personality being identified in this study is Competence, in which the traits of secure, reliable, confident, successful and up to date were identified. As online banking websites provide services that include banking or cash transaction, the direct effect of reliability and security issues coexisted. It is important that the banking websites able to build confident and up to date information with the transaction to consumer once the log in and transaction process begins. More importantly, the success rate of each transaction process has to satisfy with the services provided to the consumer.

In the study form Da Silva et. al. (2007) on the online bookstores study, the Competence dimension is also one of the related dimensions to virtual brand personality in which it was explained that secure and reliable may be related to the accuracy of the product delivery and privacy issues in a website.

The fourth grouping being identified from the result is Sincerity dimension with the personality traits of small town, family oriented, down to earth and original. The virtual brand personality of Sincerity was associated with the banking industry may be due to the fact that consumers wish to see the banking websites to be more family-oriented where the websites are applicable to all members in the family. Product marketing and promotion campaign to family members could also be one of the factors why the dimension of Sincerity is accepted for the banking industry in Malaysia.

Lastly, Ruggedness dimension was found to be inappropriate in explaining virtual brand personality in this study from the factor analysis. Similar to study from Da Silva et. al (2007) on the study of online brand image of online bookstores, Ruggedness or Ruthlessness was found to be irrelevant. More often than not, it is also consistent with the findings form Davies et. al. (2001) and Rojas-Mendez et. al. (2004) on Ford brand personality, in which Ruggedness dimension considered to be irrelevant. The argument is

also apparent with Aaker's (1997) study by Levis Strauss and the inclusion of Levi jeans in each brand group presented that may have influenced the emergence of the Ruggedness dimension.

4.3 Bivariate Analysis

The Bivariate Analysis is used when the study wants to explore the predictive ability of a set of independent variables, on one categorical dependent measure. It is important to find the linear combination of features that best separate two classes of objectives and also to categorize observations in pre-defined groups.

The Bivariate Analysis used is Pearsons correlation. The results of the correlations are shown on the following table:

Pearson Correlations Matrix

	Excitement	Sophistication	Competence	Sincerity
Excitement	1	0.678	0.378	0.494
Sophistication	0.678	1	0.292	0.458
Competence	0.378	0.292	1	0.390
Sincerity	0.494	0.458	0.390	1
Customer Satisfaction	0.400	0.385	0.396	0.334
Brand Loyalty	0.299	0.226	0.424	0.273

Based on the results, the new groupings of the Virtual Brand Personality emerged, namely Excitement, Sophistication, Competence and Sincerity. All of the new groupings of Virtual Brand Personality is accepted and tested with the discriminant analysis and achieved the r with less than 0.70 as shown in the table.

H1: There is a positive relationship between Virtual Brand Personality and Customer Satisfaction

From the hypothesis 1, the positive relationship between Virtual Brand Personality and Customer Satisfaction is accepted with $r = 0.503$, $p < 0.05$.

H2: There is a positive relationship between Virtual Brand Personality and Brand Loyalty

For the hypothesis 2, the positive relationship between Virtual Brand Personality and Brand Loyalty is also accepted with $r = 0.398$, $p < 0.05$.

H3: Customer Satisfaction mediates the relationship between Virtual Brand Personality and Brand Loyalty

For hypothesis 3, the Customer Satisfaction mediates the relationship between Virtual Brand Personality and Brand Loyalty is also confirmed. Based on the results, $r = 0.779$, $p < 0.05$. Although the relationship is weak, but it has confirmed the Step 1 of the Baron and Kenny Steps (Baron & Kenny, 1986) which is used for testing of the effect of the Customer Satisfaction as a mediator between Virtual Brand Personality and Brand Loyalty.

4.4 Multivariate Analysis

The multivariate analysis was computed using the multiple regression models. The objective of carrying out the multiple regression is to explore the predictive ability of a set of independent variables, which is Virtual Brand Personality in this context, on one continuous dependent measure, which include Customer Satisfaction and Brand Loyalty (Pallant, J., 2005). As the Virtual Brand Personality as Independent Variable consists of several dimensions, performing multiple regression able to result and represent the best prediction of a dependent variable from several independent variable in this study context.

Hypothesis 1:
There is a positive relationship between Virtual Brand Personality and Customer Satisfaction.

To test Hypothesis 1, a multiple regression is conducted on the new dimensions of Virtual Brand Personality, which Excitement, Sophistication, Competence and Sincerity as a predictor and dependent variable as Customer Satisfaction.

The result of the multiple regression shown in Table 4.16 indicated that there is strong relationship of the 4 new dimensions of Virtual Brand Personality and Customer Satisfaction with correlation coefficient of $R = 0.499$. Therefore the Hypothesis 1 is accepted.

Table 4.16 Multiple Regression Model Summaries

R	0.499[a]
R Square	0.249
Adjusted R Square	0.235
Standard Error of the Estimate	3.42471

a. Predictors (Constant): Excitement, Sophistication, Competence, Sincerity
b. Dependent Variable: Customer Satisfaction

Based on the results on Table 4.17, the strongest predictor to Customer Satisfaction on Virtual Brand Personality is Agreeableness with beta value of 0.265, followed by Excitement, Sophistication and Sincerity with beta value of 0.176, 0.156 and 0.029 respectively. In addition, the coefficient of total Virtual Brand Personality was computed as Table 4.18. In the significance level, Sincerity is capped at 0.709 and it is not significant. Therefore, Sincerity dimension will be dropped as stated in Table 4.17 although it has met the Cronbach Alpha's of 0.710 earlier and was initially accepted to proceed.

Table 4.17 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	2.668	1.611		1.656	0.099
	Excitement	0.904	0.047	0.176	1.997	0.047
	Sophistication	0.086	0.043	0.156	1.999	0.047
	Competence	0.195	0.054	0.265	3.633	0.000
	Sincerity	0.043	0.114	0.029	0.374	0.709

a. Dependent Variable: Customer Satisfaction

Table 4.18 Coefficients[a] of Virtual Brand Personality and Customer Satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.435	1.578		1.543	.124
	Total Virtual Brand Personality	.103	.012	.503	8.581	.000

Table 4.18 Coefficients[a] of Virtual Brand Personality and Customer Satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.435	1.578		1.543	.124
	Total Virtual Brand Personality	.103	.012	.503	8.581	.000

a. Dependent Variable: Total Customer Satisfaction

The following figures generated from SPSS version 17.0 indicated the normality, linearity and homoscedasticity of the multiple regression models and confirm that the assumption are true before the regression model can be generated.

Figure 4.3 Histogram

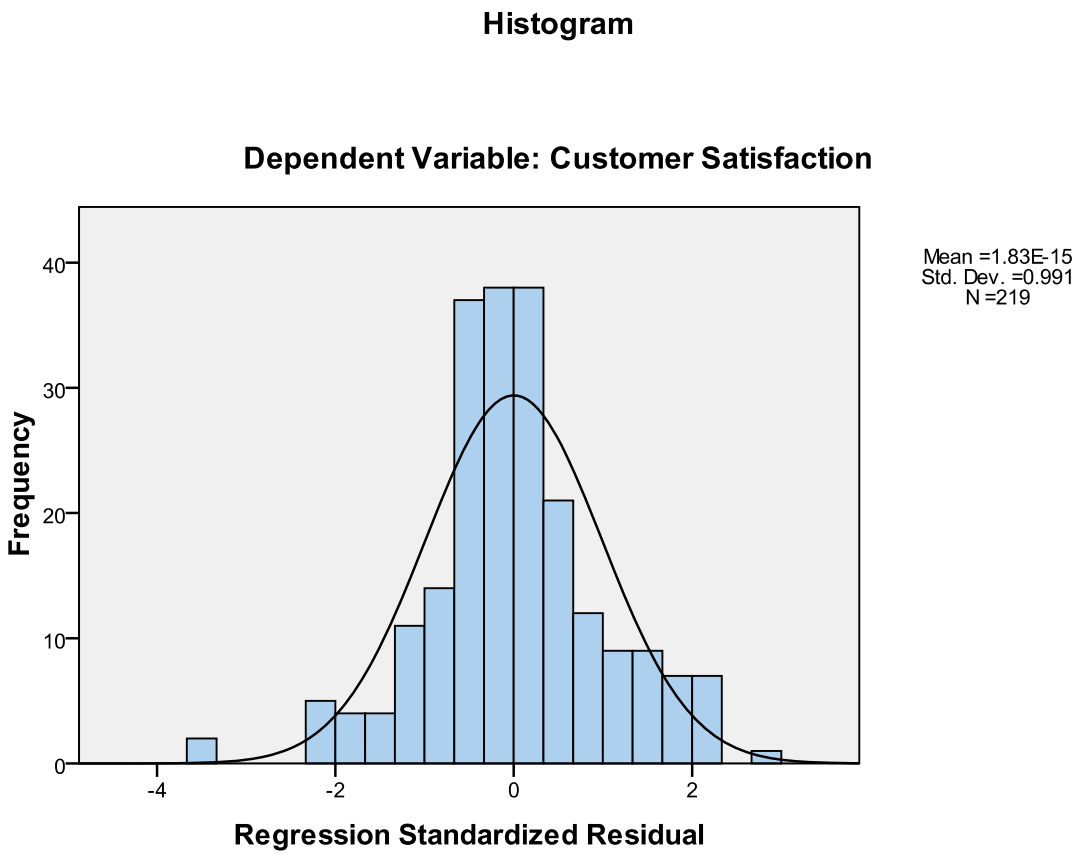


Figure 4.4 Normal P-P Plot of Regression Standardized Residual

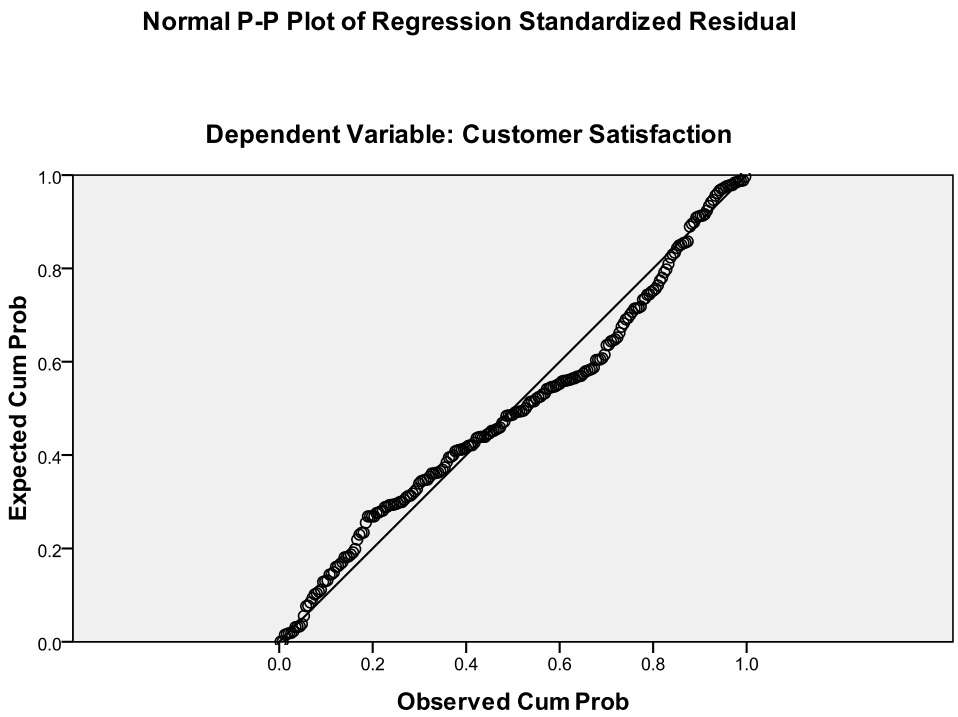
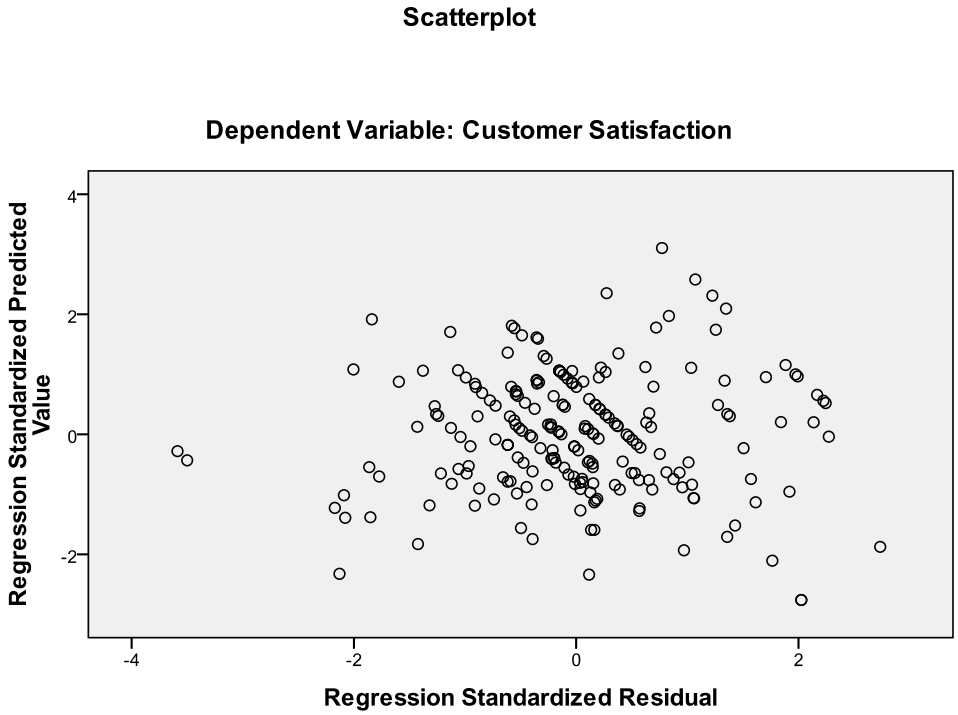


Figure 4.5 Scatterplot



H2: There is a positive relationship between Virtual Brand Personality and Brand Loyalty

To test Hypothesis 2, a multiple regression is also conducted as well on the new dimensions of Virtual Brand Personality, which Excitement, Sophistication, Competence and Sincerity as a predictor and dependent variable as Brand Loyalty. The result of the multiple regression shown in Table 4.19 indicated that there is strong relationship of the 4 new dimensions of Virtual Brand Personality and Customer Satisfaction with correlation coefficient of R = 0.449

Based on the results on Table 4.20, the strongest predictor to Brand Loyalty on Virtual Brand Personality is Competence with beta value of 0.336 followed by Excitement with beta value of 0.194. However, Sincerity and Sophistication have zero beta value and -0.031 in beta value which means that these two dimensions are held constant.

Table 4.19 Multiple Regression Model Summaries

R	0.449[a]
R Square	0.201
Adjusted R Square	0.187
Standard Error of the Estimate	2.50534

a. Predictors (Constant): Excitement, Sophistication, Competence, Sincerity

b. Dependent Variable: Brand Loyalty

Table 4.20 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
	(Constant)	5.558	1.178	
	Excitement	0.074	0.034	0.198
	Sophistication	-0.012	0.032	-0.031
	Agreeableness	0.176	0.039	0.336
	Sincerity	0.001	0.084	0.000

a. Dependent Variable: Brand Loyalty

H3: Customer Satisfaction mediates the relationship between Virtual Brand Personality and Brand Loyalty

For the testing of mediation effect of Customer Satisfaction on Virtual Brand Personality and Brand Loyalty, the Baron and Kenny Steps (Baron & Kenny, 1986; Judd & Kenny, 1981) were used. With Steps 1 to 3 confirmed, the mediation effect of Customer Satisfaction is established confirming the Hypothesis 3.

Step 4 of the Baron and Kenny Steps is used to confirm whether the mediating effect of Customer Satisfaction is a full or partial mediation. When the standardized coefficient beta becomes zero, the mediation means complete mediation. When the mediation effect of Customer Satisfaction is established, and Virtual Brand Personality as predictor and Brand Loyalty as outcome, the results indicated a beta value of 0.009 and significance of $p < 0.05$. Therefore, the mediation effect of Customer Satisfaction is a partial mediation and not a full mediation.

Table 4.21 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	4.698	.493		9.530	.000			
	Customer Satisfaction	.552	.030	.779	18.275	.000	.779	.779	.779
2	(Constant)	4.584	.820		5.593	.000			
	Customer Satisfaction	.549	.035	.774	15.668	.000	.779	.729	.669
	Brand Personality	.001	.007	.009	.175	.861	.398	.012	.007

a. Dependent Variable: Brand Loyalty

Table. 4.22 Coefficients

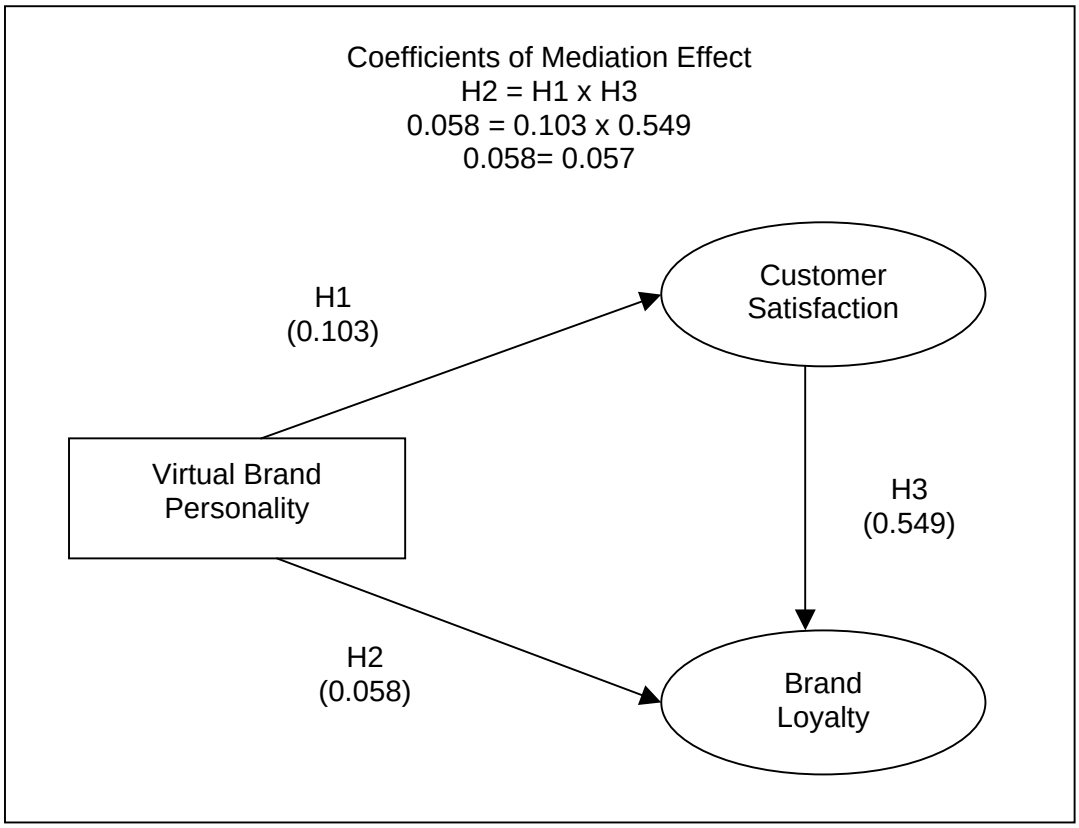
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	5.922	1.189		4.982	.000			
	Brand Personality	.058	.009	.398	6.397	.000	.398	.398	.398
2	(Constant)	4.584	.820		5.593	.000			
	Brand Personality	.001	.007	.009	.175	.861	.398	.012	.007
	Customer Satisfaction	.549	.035	.774	15.668	.000	.779	.729	.669

a. Dependent Variable: Brand Loyalty

According to Baron and Kenny (1986), the mediation effect can be seen when the difference between the coefficients of H2 equal to the coefficients of H1 multiplied H3.

This is derived from the assumption that the reduction of effect of Virtual Brand Personality on Brand Loyalty is theoretically same as the effect of Virtual Brand Personality on Customer Satisfaction multiplied with the effect of Customer Satisfaction on Brand Loyalty. Figure 4.6 illustrates the relationship and the calculation of the formula.

Figure 4.6 Coefficients of Mediation Effect



In conclusion, the Hypothesis 3 is tested to be significant based on Baron and Kenny Steps as calculated above with the coefficient scores of mediation effect of +/-0.058. The hypothesis 3 is valid and there is a positive relationship between Customer Satisfaction and Brand Loyalty.

4.5 Chapter Summary

This chapter discussed the results of the survey and various tests were conducted to test the hypotheses recommended. The data collected from the questionnaires were screened for error and only completed questionnaires were coded into SPSS version 17.0. The demographic data was verified to distinguish the data collection met the sample framework and showcased the Malaysia population. Normality test was confirmed with skewness and kurtosis level of less than 2.0 for all questions in the questionnaires to be accepted. The unaccepted skewness and kurtosis level were then computed using Logarithm gamma and recalculated on the normality again.

Next, the factor analysis and reliability test were then conducted to verify the factors that affect the independent variable of Virtual Brand Personality. Seven factors were distinguished from the reliability of the measures of virtual brand personality and retained with an eigenvalue of more than one explained 61.511 percent of the variance. The evidence indicated representation of the scree plot when the eigenvalues are levelled off after the seven factors.

Then, reliability tests were delivered for all variables. From the reliability test, only four factors exceeded the recommended 0.7 Cronbach alpha value and therefore only four dimensions are valid. The new groupings are then created. Dependent variables of Customer Satisfaction and Brand Loyalty of the reliability tests passed the score of 0.7 and above and valid.

Following with that, the Bivariate analysis was used to identify the independent variables that correlate a nominally scaled dependent and followed by the multiple regression model was used to establish the relationship of Virtual Brand Personality and distinguish the relationship of the Hypothesis with Customer Satisfaction and Brand Loyalty as outcome.

The results of the Hypothesis will be discussed in the following chapter and provide suggestions on the new dimensions of Virtual Brand Personality for online banking industry.