

CHAPTER 4

RESEARCH RESULTS

4.0 Introduction

This chapter prepared the research results and findings from the survey. This chapter was divided to four sections which included a summary of demographic profile of respondents, frequency analysis of online grocery shopping, factor analysis, correlation analysis and multiple regression analysis on variables. Lastly, the testing of hypotheses was conducted by using structural equation modeling (SEM).

4.1 Summary of data collection

A total of 370 questionnaires were distributed to potential respondents who residing in the Klang Valley. Only 312 questionnaires were returned up to March 2011, with the response rate of 84%. However, the number was then reduced to 302 after the data had been screened, checked and cleaned. Table 4.1 shown the summary of response rate:

Table 4.1 Summary of data collection

Data			
Distributed	Collected	Response Rate (%)	Usable
370	312	84%	302

4.2 Respondent profile

Table 4.2 presented the respondent demographic profile. The respondents consisted of 30.8% males and 69.2% females in Malaysia. This study purposely targeted more female respondents because women in Malaysia are still the family member who take care a household matters and purchase for grocery products (Raijas, A., 2002; Hansen, T., 2003).

The majority of the respondents were younger than 40 years old, where 58.3% of the respondents were aged between 21 to 30 years old and 30.5% of the respondents were aged between 31 to 40 years old. In terms of marital status, the largest group fell into the single category, which contributed 57% and the rest of the respondents were married status either married with children (29.8%) or married without children (12.6%).

Based on the Department of Statistics Malaysia, Malaysia in a multi racial country where the total population is about 50% Malays, 24% Chinese and 8% Indians and 18% others. In this case, the selection of ethnic groups of this study was 50% of Malays, 30.1% of Chinese and 19.9% of Indian. The population of Indian respondent was preset at 20% to ensure the number of respondents is sufficient for the analysis required by the proposed research framework, which is slightly higher than actual percentage of the composition in the Malaysian

population. In general, the distribution of sample size was slightly same with Malaysia population.

In terms of education level, almost half of the respondents owned a degree/professional certificate, which was 59.3%. This was followed by the respondents from certificate or diploma (18.5%), SPM/MCE (10.9%), postgraduate degree with a master or doctorate (7.3%), SPTM/HSC (3.6%) and PMR/SRP and below (0.3%). The education levels generally reflected the respondents were high educated and expected had knowledge on advanced technology or internet.

The table also shown that, in terms of occupation, the largest group of respondents were holding the position of supervisor/executive (43.4%) and clerical/supporting staff (31.5%). The rest of the respondents were holding the position of middle management (16.2%), own business (2.6%), top management (2%), unemployed (0.7%) which were students, housewives, retired and others.

From the monthly income profile, most of the respondents earned a monthly income of RM3,001 to RM5,000 (38.4%) and followed by RM1,501 to RM3,000 (37.4%). This can be categorised as middle income group. Another 10.9% and 9.3% of the respondents earned less than RM1,500 and RM5,001 to RM7,000 or more respectively. Finally, approximately 4% of respondents were from the

higher income group earning a monthly income RM7,001 to RM9,000 or RM9,000 and above.

Table 4.2 Demographic profile of the respondents

Demographic Profile		Frequency	Percentage (%)
Gender	Male	93	30.8%
	Female	209	69.2%
	Total	302	100.0%
Age	20 and below	9	3.0%
	21-30	176	58.3%
	31-40	92	30.5%
	41-50	20	6.6%
	51 and above	5	1.7%
	Total	302	100.0%
Marital Status	Single	172	57.0%
	Married with children	90	29.8%
	Divorced	2	.7%
	Married without Children	38	12.6%
	Total	302	100.0%
Ethnic Background	Malay	151	50.0%
	Chinese	91	30.1%
	Indian	60	19.9%
	Total	302	100.0%
Occupation	Unemployed	2	.7%
	Top Management	6	2.0%
	Middle Management	49	16.2%
	Supervisor / Executive	131	43.4%
	Clerical / Supporting Staff	95	31.5%
	Own Business	8	2.6%
	Others	11	3.6%
	Total	302	100.0%

Table 4.2 Demographic profile of the respondents (cont.)

Demographic Profile		Frequency	Percentage (%)
Education	PMR/SRP/LCE or below	1	0.3%
	SPM/MCE	33	10.9%
	STPM/HSC	11	3.6%
	Certificate/Diploma	56	18.5%
	Degree/Professional Degree	179	59.3%
	Postgraduate (Master or Doctorate)	22	7.3%
	Total	302	100.0%
Income	<RM1,500	33	10.9%
	RM1,501 - RM3,000	113	37.4%
	RM3,001 - RM5,000	116	38.4%
	RM5,001 - RM7,000	28	9.3%
	RM7,001 - RM9,000	7	2.3%
	>RM9,001	5	1.7%
	Total	302	100.0%

4.3 Consumer behaviour of online purchase

Based on the Malaysia Internet Usage and Telecommunication Report¹, it showed that 59% of Malaysian population was internet users. However, Table 4.3 showed that 99% of the respondents were internet users in this study. Besides that, it showed that 80.5% of respondents had online purchase experience and 19.5% did not have it, which presented in Table 4.3. If compare the statistics which conducted by IDC market research² on the online purchase among internet users, it showed that 53% of internet users had online purchase experience. This was due to the survey was conducted in Klang Valley, Peninsular

² 2 IDC Market Research: www.malaysiacrunch.blogspot.com, statistics from Oriental Daily News

Malaysia where Klang Valley is the heartland of Malaysia's industry and commerce. The population in Klang Valley was larger compared with other regions, such as Malacca, Penang and etc., which was approximately 4 millions.

In terms of frequency of purchase through online for past one year, 32.8% of respondents had purchased through online 1 to 2 times, followed by 25.2% had purchased 3 to 5 times, 13.6% respondents had purchased more than 10 times and 8.9% respondents had purchased 6 to 10 times. Since the statistics was showed that 19.5% of respondents did not have online purchase experience, then the frequency of purchase through online was not applicable for them.

Table 4.3 presents the types of the products and services which respondents purchased via online before. The table showed that respondents preferred to purchase travel related services such as airline tickets, hotel accommodation or vacation package (30.9%). This was followed by movie tickets (25.8%), apparels (17.1%), books (7.9%), technology gadgets (7.3%), computers (6.3%), CD or DVD (1.8%) and lastly groceries (2.8%). Again, based on IDC market research², it showed that travel related services, such as airline tickets was the most popular products which bought by consumers. It was followed by the books, general consumer goods, movie tickets, technology gadgets, computers, CD & DVD and jewelry and watches. Both statistics showed that the most popular products which had purchased by consumers were travel related services.

Table 4.3 Consumer behaviour of online purchase

Description	Frequency (n)	Percentage (%)
Number of internet users		
User	299	99.0
Non-user	3	1.0
Online purchasing behaviour		
Online shopper	243	80.5
None online shopper	59	19.5
No of times of online purchase		
None	59	19.5
1-2 times	99	32.8
3-5 times	76	25.2
6-10 times	27	8.9
Above 10 times	41	13.6
Most online purchase		
Travel	152	30.9
Books	39	7.9
Movie tickets	127	25.8
Technology gadgets	36	7.3
Computers	31	6.3
CD & DVD	9	1.8
Apparels	84	17.1
Groceries (e.g. fresh vegetables, fruits, raw foods)	14	2.8
Level of interest on OGS		
Very interested	27	8.9
Interested	17	5.6
Somewhat interested	34	11.3
Neutral	78	25.8
Somewhat not interested	52	17.2
Not interested	37	12.3
Not interested at all	57	18.9
OGS experience		
Online grocery shopper	30	9.9
Non online grocery shopper	272	90.1
Most visit of online grocery		
None	272	90.1
1-2 times	14	4.6
3-5 times	9	3.0
6-10 times	3	1.0
Above 10 times	4	1.3
Monthly expenses on groceries		
Less than RM1,000	271	89.7
RM1,001-RM2,000	24	7.9
RM2,001-RM3,000	4	1.3
RM3,001-RM4,000	1	0.3
RM5,001-RM6,000	1	0.3
More than RM6,001 and above	1	0.3

Based on the statistics, a total of 25.8% respondents were interested on online grocery shopping where it could be separated to very interested (8.9%), interested (5.6%) and somewhat interested (11.3%). On the other hand, a total of 48.4% respondents were not interested on online grocery shopping where it could be separated to not interested at all (18.9%), not interested (12.3%) and somewhat not interested (17.2%). The rest of the 25.8% respondents were neutral where they did not have any comments on online grocery shopping. From the result, it showed that majority Malaysian, 48.4%, were not interested on online grocery shopping.

Table 4.3 also showed that 9.9% of respondents had online grocery buying experience and 90.1% of respondents did not have it. This was due to online grocery stores were limited and not popular in Malaysia. In terms of frequency of online grocery buying, only 4.6% of respondents had purchased groceries via online 1 to 2 times, and followed by 3% had purchased 3 to 5 times, 1.3% had purchased above 10 times and 1% had purchased 6 to 10 times. The majority, 89.7% of the respondents spent less than RM1,000 on grocery products, followed by 7.9% of respondents spent around RM1,001 to RM2,000. Only 1% of respondents spent RM2001 and above.

4.4 Analyses of measures

4.3.1 Factor analysis

According to Coakes, S. J. et al. (2010, pp. 133), factor analysis is a factor reduction technique used to reduce a large number of variables to a smaller set of underlying factor that summarise the essential information contained in the variables. To reduce the number of items for all variables, principal component factor analysis with a varimax rotation was used. Besides that, to determine the appropriateness of factor-analytic model, computation of the correlation matrix is necessary in factor analysis.

In reviewing Table 4.5, it showed that six factors can be extracted as they have eigenvalues greater than 1. If six factors were extracted, then approximately 61% of the variance would be explained. According to Coakes, S. J. et al. (2010), Barlett's test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy are both tests that can be used to determine the factorability of the matrix as a whole. Factorability of independent variables which included perceived convenience (PC), perceived information accessibility (PIA), perceived order accessibility (POA), perceived risk (PR), perceived enjoyment (PE) and social factors (SF) was assumed since Barlett's test of sphericity was large which is 4480.794 and significant ($p < 0.05$), and the Kaiser-Meyer-Olkin (KMO) measure is greater than 0.6 which is 0.879.

Variables with factor loading of more than 0.5 was considered as significant and are believe correlated with appropriate factor. Based on Table 4.5, the rotated component matrix indicates that a six-factor solution was evidence in the data. Items comprised PC, PIA, POA, PR, PE, SF scales appear to be grouping relatively well. There have 3 factors comprised 5 items which was PC, PR and PE. These 3 factors were selected with the factor loadings ranging from 0.664 to 0.797, 0.661 to 0.830, 0.642 to 0.785 respectively. On the other hand, perceived information accessibility was selected where it comprised 4 items with the factor loadings ranging from 0.505 to 0.777. Furthermore, another 2 factors which were perceived order accessibility and social factors was selected where the factor loadings ranging from 0.539 to 0.775 and 0.518 to 0.821 respectively. The table also presented that some of the irrelevant items were fall on the particular factor. In this case, irrelevant items will be eliminated.

The factor analysis also used to evaluate the items of mediating variables and dependent variables. The same procedure was applied. The result showed that KMO for mediating variables which was attitude towards online grocery shopping (ATT) was 0.871, significant at 0.00 level. On the other hand, KMO for dependent variables, which was future online buying intention (FBI) was 0.745, significant at 0.00 levels. Approximately 77% and 66% of the variance for ATT and FBI would be explained respectively. Each of the factors comprised five items with the factor loadings ranging from 0.806 to 0.867 and 0.563 to 0.868 respectively.

Table 4.4 Principal factor analysis for independent variables

Items (Independent Variables)	PC	PIA	POA	PR	PE	SF
Using electronic shopping of groceries saves much time	0.716					
Shopping groceries via internet is favourable as it makes me less dependent of opening hours of store	0.785					
There is a lot of money to save buying groceries via the internet	0.648					
Using online groceries shopping can improve my efficiency and effectiveness in purchasing groceries	0.659					
Using online groceries shopping can make my grocery shopping easier	0.642					
It is easy to compare the quality of groceries via the internet		0.777				
It is easy to get a lot of information of the groceries which I would like to buy		0.711				
It is easy to find the product I would like to purchase		0.598				
My interaction with the processes of online grocery shopping might be clear and understandable.		0.505				
With electronic shopping of groceries it is difficult to order products			0.539			
It is difficult to receive groceries purchased via the internet and to have them home delivered			0.558			
It is easy for me to follow the procedures when ordering the groceries online			0.775			
Security around payment on the Internet is not good enough				0.661		
Return and exchange opportunities are not as good on the internet as the supermarket/non-internet shop				0.726		
A risk when buying groceries via the Internet is receiving low quality products or incorrect items				0.830		
I am concerned about the privacy of my information provided when using online grocery shopping				0.778		
There are too many untrustworthy online store				0.754		
I have fun when interacting with the website					0.733	
Using the website to purchase groceries provides me with a lot of enjoyment					0.797	
I think that purchasing groceries from the website is interesting					0.757	
It is fun when discover new products launch in the online grocery website					0.670	
It is fun when I can participate on the competition organized by online grocery website					0.664	
I will adopt online grocery shopping if my boss uses it.						0.821
I will adopt online grocery shopping if my friends / relatives use it.						0.783
Most of my friends and acquaintances think that shopping groceries via the internet is a good idea						0.518
Initial Eigenvalue						
Total	8.724	3.780	1.895	1.512	1.266	1.198
% of Variance	29.097	12.600	6.315	5.039	4.219	3.993
Cumulative %	29.079	41.679	47.994	53.034	57.253	61.245

Notes: PC = perceived convenience, PIA = perceived information accessibility, POA = perceived order accessibility, PR = perceived risk, PE = perceived enjoyment, SF = social factors, Total variance extracted by 6 factors = 61, KMO = 0.879; Bartlett's Test p < 0.05, extraction method: principal component; rotation method: varimax

Table 4.5 Principal factor analysis for mediating variables and dependent variables

Items (Mediating Variables)	ATT
Electronic shopping of groceries is attractive to me in my daily life	0.870
Buying groceries via the Internet is well suited to the way in which I normally shop for groceries	0.838
Online grocery shopping matches the needs of members of my household	0.858
Using online grocery shopping is beneficial to me	0.866
Using online grocery shopping in purchase groceries is good idea	0.806
Initial Eigenvalue	
Total	3.875
% of Variance	77.494
Cumulative %	77.434
Notes: ATT = attitude towards online grocery buying, Total variance extracted by 1 factors = 61; KMO = 0.871; Barlett's Test $p < 0.05$, extraction method: principal component; rotation method: varimax	

Items (Dependent Variables)	FBI
Given a chance, I intend to purchase through online grocery in future	0.868
Given a chance, I predict that I should use online grocery website in future	0.842
How likely is it that over the next years you will shop for groceries via the Internet?	0.731
How large a part of your grocery shopping do you think you will carry out via the Internet over the next year?	0.563
How frequently you will shop for groceries via the internet in future?	0.765
Eigenvalue	
Total	3.285
% of Variance	65.699
Cumulative %	65.699
Notes: FPI = future online grocery buying intention; Total variance extracted by 6 factors = 61; KMO = 0.745; Barlett's Test $p < 0.05$, extraction method: principal component; rotation method: varimax	

4.4.2 Reliability assessment

Table 4.6 Reliability assessment

Constructs	No of items	Cronbach's Alpha (α)
Perceived Convenience	5	0.839
Perceived Information Accessibility	3	0.693
Perceived Order Accessibility	2	0.640
Perceived Risk	5	0.830
Perceived Enjoyment	5	0.863
Social Factors	4	0.807
Attitude towards Online Grocery Buying	5	0.927
Future Online Grocery Buying Intention	5	0.867

Cronbach's alpha was used to analyse the reliability of each construct. According to Nunnally (1978), a construct can be categorised as reliable when the alpha value is more than 0.6. In reviewing Table 4.4, the Cronbach's alpha for each of the construct is greater than 0.6. However, the deletion of items might be necessary in order to increase the reliability of the constructs.

At this situation, the 'Corrected Item-Total Correlation' of all the items for each construct was examined to adjust the Cronbach's Alpha. Based on Churchill, G. A. J. (1979), those 'Corrected Item-Total Correlation' of all item for each construct are above 0.5, then no item was eliminated. However, in reviewing the reliable analysis for each construct (shown in Appendix 2), there have six items were below than 0.5 which are PIA6, PIA10, POA11, POA 14, POA15 and SF26. Therefore, deletion of these items may be considered appropriate.

We concluded that perceived convenience, perceived risk, perceived enjoyment, attitude towards online grocery shopping and future online grocery buying intention had 5 items. It followed by social factors, (4 items), perceived information accessibility (3 items) and perceived order accessibility (2 items).

4.5 Structural equation modeling - model fit

Assessment of model fit has to be analysed in SEM modeling to accept and reject models. The relationships between variables were calculated by maximum likelihood estimation. In this study, model modification was needed to improve the model fit.

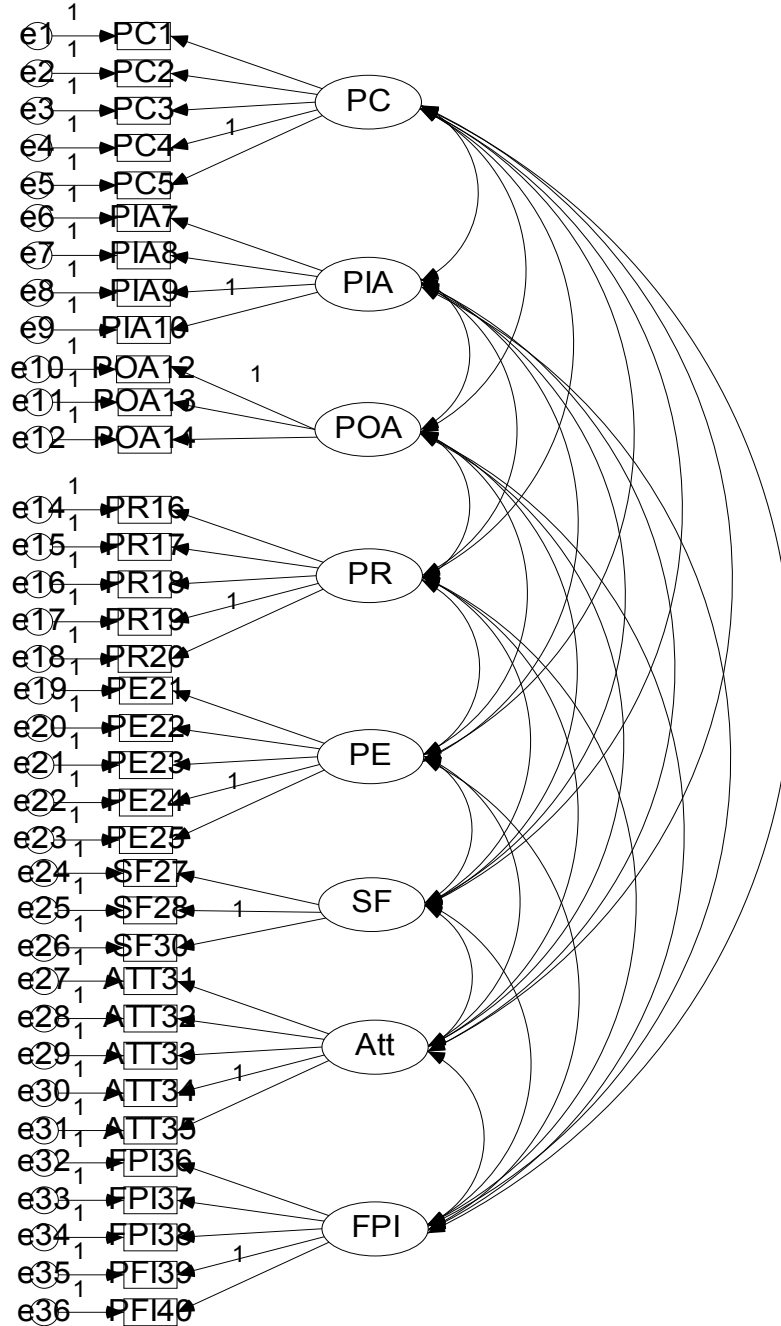
4.5.1 Initial result of model fit

All the items for each constructs, as shown in Figure 4.1, was analyses. Refer to Table 4.7, the chi-square of the model was 1485.451 (df = 532, $p < 0.001$). It indicates that the model failed to fit since the chi-square value had larger correlation. Goodness-of-fit can be conducted by comparing between value of chi-square and degrees of freedom (χ^2 / df). The ratio (χ^2 / df) of this initial model was $1485.451 / 532 = 2.792$. Besides that, Goodness of Fit (GFI) and Adjusted Goodness of Fit index (AGFI) will be identified to determine the accuracy of model in generating observed covariance matrix (Ghozali, H. I., 2008). According to Diamantopoulus, A. and Siguaw, J. A (2000), the model is good when the value of GFI and AGFI was more than 0.9. From the Table 4.7, it showed that GFI was 0.763 and AGFI was 0.719 where the model can be categorised as poor fit since the value was below 0.9.

Table 4.7 Initial fit indices for online grocery shopping attributes

Initial Fit Indices For Online Grocery Buying Attributes							
Fit Indices	χ^2	χ^2/df	GFI	AGFI	CFI	TLI	RMSEA
	1485.451	2.792	0.763	0.719	0.854	0.836	0.077
	(p < 0.001)						

Figure 4.1 Initial model of online grocery shopping attributes



In addition, the value of Comparative Fit Index (CFI) was 0.854, Tucker-Lewis Index (TLI) amount to 0.836. Based on Ghozali, H. I. (2008), all these values should be greater than 0.9 because it described that the improvement of fit over the null model is substantial. In this study the values of CFI and TLI showed that the model was not good fit enough and possibility because of the complexity of model. On the other hand, the point estimate of Root Mean Square Error of Approximation (RMSEA) was 0.077 which less than 0.08.

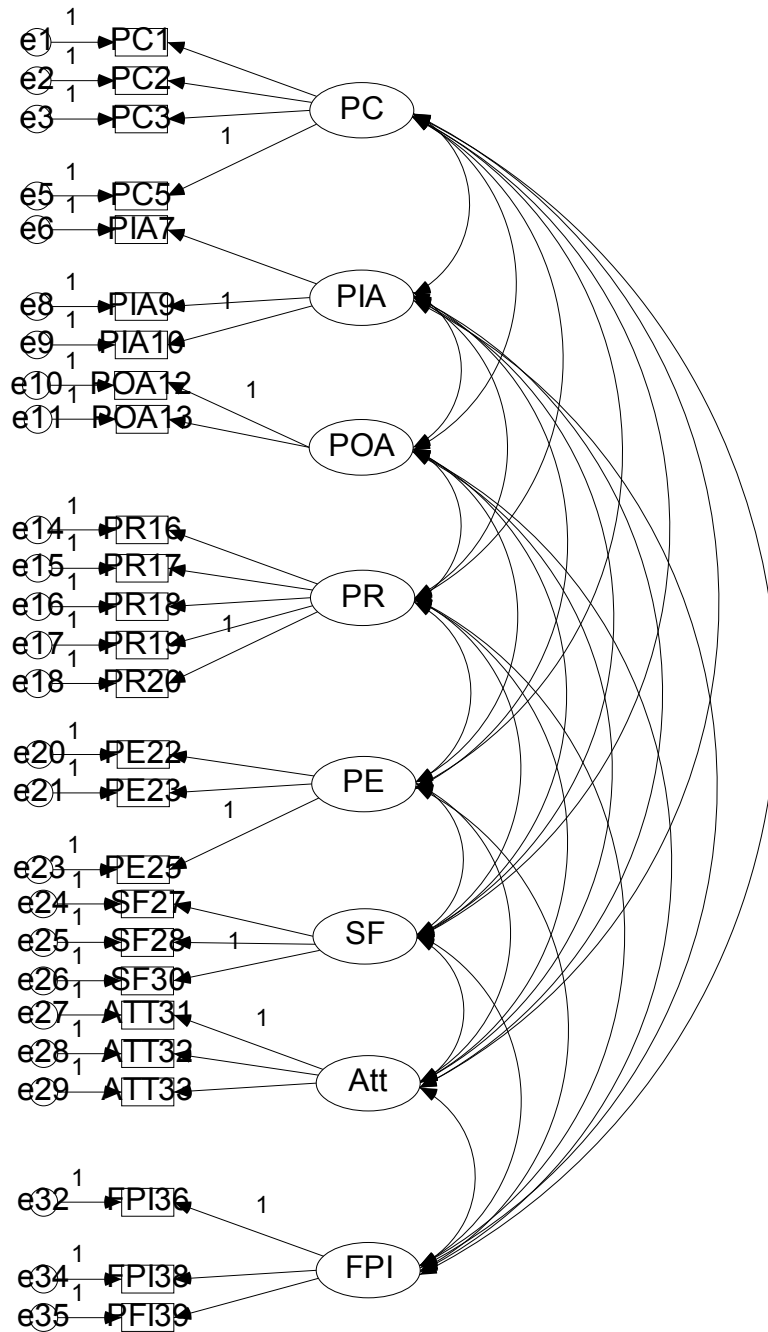
4.5.2 Model modification

The initial analysis of online grocery attributes model produced a set of unacceptable goodness-of-fit statistics. Due to the poor fit of the model, it was necessary to review the squared multiple correlations in order to remove the items which shows very small value of reliabilities (Blunch N. J., 2008). In additional, Blunch, N. J. (2008) also mentioned that the inter-correlations between items also can be reviewed from modification indices. In this study, item FPI40, POA14, PE24, PE21, ATT35, FPI35, PC4, PIA8 and ATT34 was removed to improve the goodness of model fit, as shown in Figure 4.2.

Table 4.8 Final fit indices for online grocery shopping attributes

Final Fit Indices For Online Grocery Shopping Attributes							
Fit Indices	χ^2	χ^2/df	GFI	AGFI	CFI	TLI	RMSEA
	589.554	2.175	0.869	0.839	0.919	0.902	0.062
	(p < 0.001)						

Figure 4.2 Final model of online grocery shopping attributes



After removed the poor fitting observed variables, the chi-square of the model was reduced to 589.554 (df=271, $p < 0.001$). The ratio (χ^2 / df) of model was $589.554 / 271 = 2.175$. The result shows that the value is lower than cut off

model which is 5 (based on Wheaton et al., 1977) and slightly higher than 2 (based on Carmines, E. and Mclver, J. 1981), then the model indicates a good overall model fit. In reviewing the Table 4.8, the value of Goodness of Fit (GFI) and Adjusted Goodness of Fit (AGFI) were increased to 0.869 and 0.830 separately after the removing of poor fit items. But, the value of GFI and AGFI showed the model was not good fit enough since the values were less than 0.9. On the other hand, after removing the poor fit variables, the value of Comparative Fit Index (CFI) was adjusted to 0.919 and Tucker-Lewis Index (TLI) was adjusted to 0.902. Since the values of CFI and TFI were more than 0.9, the model for this study can be categorised as good. The point estimate of Root Mean Square Error of Approximation (RMSEA) was 0.062 which is less than 0.08. The 90% confidence interval for RMSEA was equal to (0.056, 0.069) also indicated that the value of RMSEA was accurate (Browne and Cudeck, 1993). Therefore, support was provided for the overall model as proposed.

4.6 Correlation analysis

In this section, correlation analysis was used to examine the relationship between perceived convenience (PC), perceived information accessibility (PIA), perceived order accessibility (POA), perceived risk (PR), perceived enjoyment (PE) and social factors (SF). The aims is to determine whether there are any linear relationship amongst these independent variables with the mediating variables which is attitude towards online grocery shopping (ATT) and dependent variables which is future online grocery buying intention (FBI). To test the

correlation between two variables, all Likert Scale points of all items under a particular construct were summed up to produce new variables. Table 4.9 showed the correlation amongst the variables.

Table 4.9 Correlation between independent variables, mediating variables and dependent variables

	ATT	FBI	PC	PIA	POA	PR	PE	SF
ATT	1							
FBI	0.774**	1						
X1 PC	0.667**	0.605**	1					
X2 PIA	0.513**	0.441**	0.574**	1				
X3 POA	0.511**	0.543**	0.485**	0.446**	1			
X4 PR	-0.156**	-0.192**	0.049	0.054	-0.182**	1		
X5 PE	0.704**	0.566**	0.585**	0.537**	0.482**	0.008	1	
X6 SF	0.720**	0.614**	0.494**	0.421**	0.397**	-0.061	0.587**	1

** . Correlation is significant at the 0.01 level (2-tailed)

4.6.1 Correlation analysis between independent variables and attitude towards online grocery shopping

Based on Table 4.9, correlation analysis had been used to test the correlation between independent variables and attitudes towards online grocery shopping. There was significant positive relationship between attitude towards online grocery shopping (ATT) and perceived convenience (PC) ($r = 0.667$, $p < 0.01$) and perceived information accessibility (PIA) ($r = 0.513$, $p < 0.01$) and perceived order accessibility (POA) ($r = 0.511$, $p < 0.01$) and perceived enjoyment (PE) ($r = 0.720$, $p < 0.01$) and social factors (SF) ($r = 0.704$, $p < 0.01$), while significant negative relationship was found in perceived risk (PR) ($r = -0.156$, $p < 0.01$).

Based on correlation value of each variable, it showed that the strength of perceived enjoyment (PE) and social factors (SF) were greater compare to the other variables. Therefore, the results showed there were linear relationships.

4.6.2 Correlation analysis between independent variables and future online grocery buying intention

Refer to Table 4.9, correlation analysis had been used to test the correlation between independent variables and future online grocery buying intention. the result showed that there was significant positive relationship between future online grocery buying intention (FBI) and perceived convenience (PC) ($r = 0.605$, $p < 0.01$) and perceived information accessibility (PIA) ($r = 0.441$, $p < 0.01$) and perceived order accessibility (POA) ($r = 0.543$, $p < 0.01$) and perceived enjoyment (PE) ($r = 0.614$, $p < 0.01$) and social factors (SF) ($r = 0.566$, $p < 0.01$), while significant negative relationship was found in perceived risk (PR) ($r = -0.192$, $p < 0.01$).

Based on correlation value of each variable, it showed that the relationship between future online grocery buying intention (FBI) and all independent variables except for perceived information accessibility (PIA) was valid and strong since the correlation value was more than 0.5.

4.6.3 Correlation analysis between attitude towards online grocery buying and future online grocery buying intention

Based on Table 4.9, correlation analysis had been used to test the correlation between attitudes towards online grocery buying and future online grocery buying intention. The result indicated that the significant value (2-tailed) is 0.000 and correlation values is 0.774. This represented that there was significant correlation between two variables and there have positive relationship and influences. In the same time, the correlation value also shows that there has multi correlative relationship between each other as the correlation value is more than 0.7.

4.7 Multiple regression analysis

Multiple regression analysis was conducted aimed to investigate the most influential predictor among PC, PIA, POA, PR, PE and SF to attitudes towards online grocery shopping (ATT) and future online grocery buying intention (FBI). The strength of independent variables influences attitude towards online grocery shopping (ATT) and future online grocery buying intention (FBI) will be examined as below.

4.7.1 Multiple regression analysis for independent variables and attitudes towards online grocery shopping

Table 4.10 Model summary, ANOVA result, relations between attitude towards online grocery shopping and perceived convenience, perceived information accessibility, perceived order accessibility, perceived risk, perceived enjoyment and social factors

Adjusted R Square = 0.711, F = 124.459, Sig = 0.000

	Attitude towards Online Grocery Shopping		
	β	t	Sig
Perceived Convenience	0.283	6.581	0.000
Perceived Information Accessibility	0.021	0.527	0.589
Perceived Order Accessibility	0.049	1.257	0.210
Perceived Risk	-0.144	-4.489	0.000
Perceived Enjoyment	0.322	7.263	0.000
Social Factors	0.044	8.509	0.000

Dependent Variable: Attitude towards Online Grocery Shopping (ATT)

The analysis results (Table 4.10) presented that all independent variables which includes perceived convenience (PC), perceived information accessibility (PIA), perceived order accessibility (POA), perceived risk (PR), perceived enjoyment (PE) and social factors (SF) explained 71.7% of the variance (R Square) in attitude towards online grocery buying. It showed that independent variables and dependent variable are highly significant whereas the F-value is 124.459.

This study generally explored the relationship between whole set of predictors and the dependent variables. Standardised coefficients (β) had been used to compare the distribution of each independent variable. The results showed that social factors ($\beta=0.338$, $p < 0.001$), perceived enjoyment ($\beta=0.322$, $p < 0.001$), perceived convenience ($\beta=0.283$, $p < 0.001$), perceived risk ($\beta=-0.144$, $p < 0.001$) were significant predictors of attitude towards online grocery shopping. However, perceived information accessibility ($\beta=0.021$, $p < 0.005$) perceived order accessibility ($\beta=0.049$, $p > 0.005$) were not significant predictor of attitude towards online grocery shopping.

4.7.2 Multiple regression analysis for independent variables and future online grocery buying intention

Table 4.11 Model summary, ANOVA result, relations between future online grocery buying Intention and perceived convenience, perceived information accessibility, perceived order accessibility, perceived risk, perceived enjoyment and social factors

Adjusted R Square = 0.556, F = 63.792, Sig = 0.000

	Future Online Grocery Buying Intention		
	β	t	Sig
Perceived Convenience	0.289	5.420	0.000
Perceived Information Accessibility	-0.016	-0.317	0.752
Perceived Order Accessibility	0.180	3.752	0.000
Perceived Risk	-0.162	-4.068	0.000
Perceived Enjoyment	0.249	4.545	0.000
Social Factors	0.202	4.102	0.000

Dependent Variable: Future Online Grocery Buying Intention (FBI)

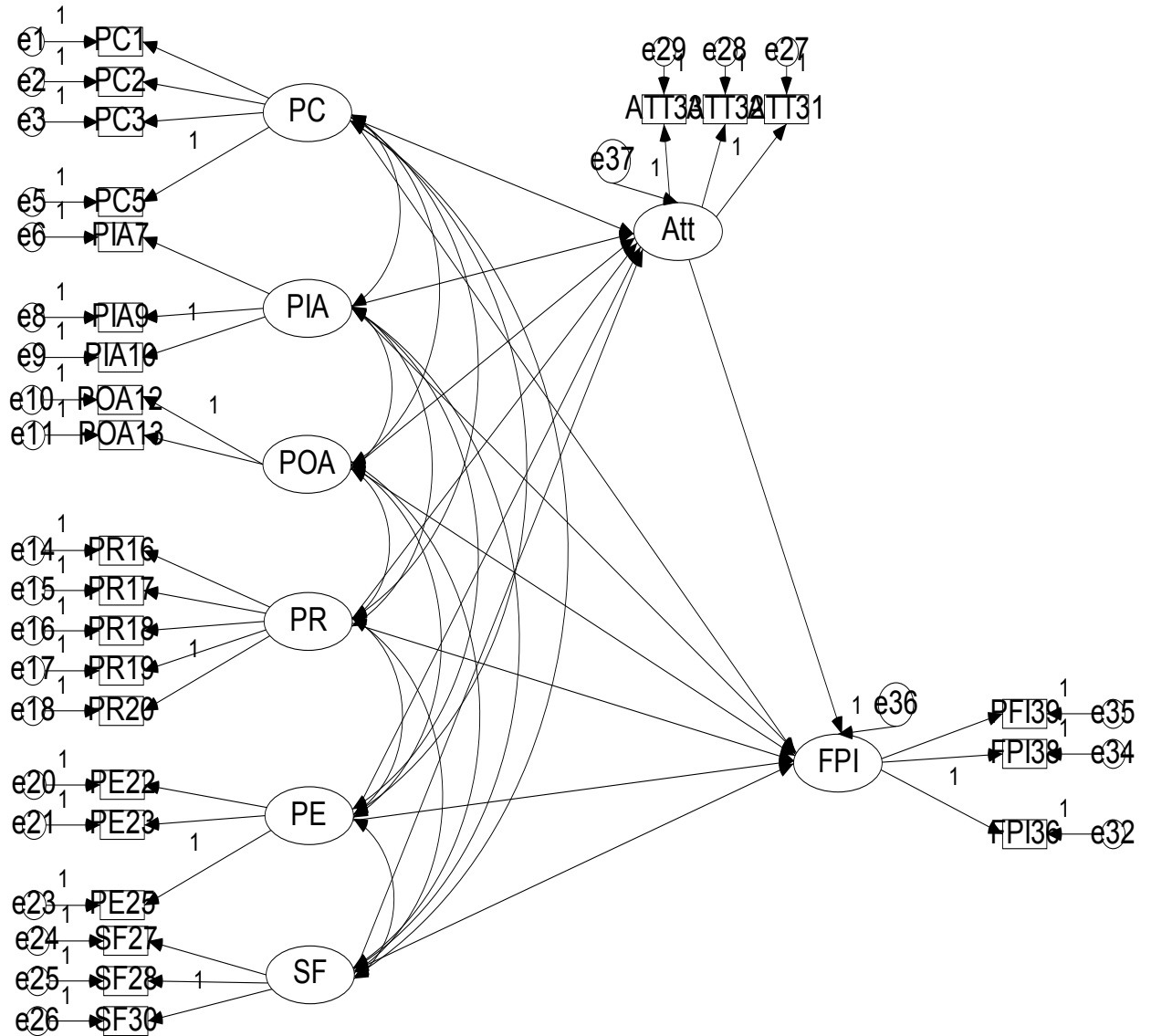
In reviewing Table 4.11, it indicated that all independent variables which included perceived convenience, perceived information accessibility, perceived order accessibility, perceived risk, perceived enjoyment and social factors explained 56.5% of the variance (R Square) in future online grocery buying intention. It showed that independent variables and dependent variable are moderately significant whereas the F-value is 63.792.

In Table 4.3, perceived convenience ($\beta=0.289$, $p < 0.001$), perceived enjoyment ($\beta=0.249$, $p < 0.001$), social factors ($\beta=0.202$, $p < 0.001$), perceived order accessibility ($\beta=0.181$, $p < 0.001$) and perceived risk ($\beta=-0.162$, $p < 0.001$) were significant predictors of future online grocery buying intention. However, perceived information accessibility ($\beta=-0.016$, $p > 0.005$) was not significant predictor of future online grocery buying intention.

4.8 Hypotheses testing (H1 – H13)

According to Wright, S. S. (1921), structural equation modeling (SEM) is a statistical technique to test and estimate the casual relationships among the variables by using a combination of statistical data and qualitative casual assumption. The relationship among all independent variables, mediating variables and independent variables was showed is Figure 4.3. Structural equation modeling (SEM) will be used to test hypothesis 1 until hypothesis 13.

Figure 4.3 Hypotheses Testing of Online Grocery Buying Attributes



4.8.1 Structural equation modeling

H1: Perceived convenience will positively influence attitude towards online grocery shopping

Refer to Table 4.12, the results showed that perceived convenience was positively influenced attitudes towards online grocery shopping with estimates

equal to 0.290 and p-value < 0.05. Since p-value was less than 0.05, H1 was accepted as perceived convenience was positively related to attitudes towards online grocery shopping.

H2: Perceived convenience will positively influence future online grocery buying intention

The results presented that perceived convenience was positively influenced future online grocery buying intention with estimates equal to 0.374 and p-value < 0.05. Since p-value was less than 0.05, H2 was supported with perceived convenience was positively related to future online grocery buying intention.

H3: Perceived information accessibility will positively influence attitude towards online grocery shopping

Based on Table 4.12, the results showed that perceived information accessibility (estimates=0.014, p-value > 0.05) was not significant with positively influenced attitudes towards online grocery shopping. Since p-value was more than 0.05, H3 was not accepted where perceived information accessibility was not significantly related to attitudes towards online grocery shopping.

H4: Perceived information accessibility will positively influence future online grocery buying intention

The results indicated that perceived information accessibility (estimates=-0.071, p-value > 0.05) was not significantly related to future online grocery buying

intention. Since p-value was more than 0.05, H4 was not supported as perceived information accessibility was not significantly related to future online grocery buying intention.

H5: Perceived order accessibility will positively influence attitude towards online grocery shopping

Based on Table 4.12, the results showed that perceived order accessibility (estimates = 0.014, p-value > 0.05) was not significantly related to attitudes towards online grocery shopping. Since p-value was more than 0.05, H5 was rejected with perceived order accessibility was not significantly related to attitudes towards online grocery shopping.

H6: Perceived order accessibility will positively influence future online grocery buying intention

The results indicated that perceived order accessibility (estimates=0.18, p-value > 0.05) was not significantly related to future online grocery buying intention. Since p-value was more than 0.05, H6 was not supported with perceived order accessibility was not significantly related to future online grocery buying intention.

Table 4.12 Structural model estimation results

Path from / to	Estimate	S.E.	C.R.	P	Test
					Result
Perceived convenience →attitude towards online grocery buying (H1)	0.29	0.083	3.487	0.000	Accepted
Perceived convenience →future online grocery buying intention (H2)	0.374	0.096	3.884	0.000	Accepted
Perceived information accessibility →attitude towards online grocery buying (H3)	0.014	0.125	0.111	0.912	Rejected
Perceived information accessibility →future online grocery buying intention (H4)	-0.071	0.134	-0.529	0.597	Rejected
Perceived order accessibility →attitude towards online grocery buying (H5)	-0.052	0.102	-0.507	0.612	Rejected
Perceived order accessibility →future online grocery buying intention (H6)	0.18	0.111	1.629	0.103	Rejected
Perceived Risk →attitude towards online grocery buying (H7)	-0.226	0.074	-3.049	0.002	Accepted
Perceived Risk →future online grocery buying intention (H8)	-0.142	0.083	-1.721	0.085	Rejected
Perceived Enjoyment →attitude towards online grocery buying (H9)	0.373	0.132	2.832	0.005	Accepted
Perceived Enjoyment →future online grocery buying intention (H10)	0.219	0.135	1.62	0.105	Rejected
Social Factors →attitude towards online grocery buying (H11)	0.649	0.114	5.699	0.000	Accepted
Social Factors →future online grocery buying intention (H12)	0.353	0.146	2.421	0.015	Accepted
Attitude towards online grocery buying →future online grocery buying intention (H13)	0.243	0.116	2.087	0.037	Accepted

Significant on 5% level

H7: Perceived risk will negatively influence attitude towards online grocery shopping

Refer to Table 4.12, the results showed that perceived risk was negatively influenced attitudes towards online grocery shopping with estimates equal to -0.226 and p-value < 0.05. Since p-value was less than 0.05, H7 was accepted

with perceived risk was negatively related to attitudes towards online grocery shopping.

H8: Perceived risk will negatively influence future online grocery buying intention

The results indicated that perceived risk (estimates=-0.142, p-value > 0.05) was not significantly influenced future online grocery buying intention. Since p-value was more than 0.05, H8 was not supported with perceived risk was not significantly related to future online grocery buying intention.

H9: Perceived enjoyment will positively influence attitude towards online grocery shopping

In Table 4.12, the results showed that perceived enjoyment was positively influenced attitudes towards online grocery shopping with estimates equal to -0.373 and p-value < 0.05. Since p-value was less than 0.05, H9 was accepted with perceived enjoyment was positively related to attitudes towards online grocery shopping.

H10: Perceived enjoyment will positively influence future online grocery buying intention

The results indicated that perceived enjoyment (estimates=0.219, p-value > 0.05) was not significant influenced future online grocery buying intention. Since p-

value was more than 0.05, H10 was not supported with perceived enjoyment was not significantly related to future online grocery buying intention.

H11: Social factors will positively influence attitude towards online grocery shopping

Based on Table 4.12, the results showed that social factors was positively influenced attitudes towards online grocery shopping with estimates equal to -0.649 and p-value < 0.05. Since p-value was less than 0.05, H11 was accepted with social factors was positively related to attitudes towards online grocery shopping.

H12: Social factors will positively influence future online grocery buying intention

The results presented that social factors was positively influenced future online grocery buying intention with estimates equal to 0.353 and p-value < 0.05. Since p-value was less than 0.05, H12 was supported with social factors was positively related to future online grocery buying intention.

H13: Attitude towards online grocery shopping will positively affect future online grocery buying intention

The results indicated that attitudes towards online grocery shopping was positively influenced future online grocery buying intention with estimates equal to 0.243 and p-value < 0.05. Since p-value was less than 0.05, H13 was

supported with attitude towards online grocery shopping was positively related to future online grocery buying intention.