

CHAPTER 4

RESEARCH RESULTS

This chapter summarizes the findings of the survey and analysis of the results. It begins with the presentation on the demographic of the respondents. This is followed by factor analysis, reliability analysis, correlation analysis, multiple regression analysis and testing the hypotheses.

4.1 Respondents' Demographic Profile

The demographic profile of the respondents who participated in the survey is presented in Table 4.1.

Table 4.1: Demographic Profile of the Respondents

		N	%
Ethnic Group	Malays	150	50.0
	Chinese	100	33.3
	Indians	50	16.7
	Total	300	100.0
Gender	Male	113	37.7
	Female	187	62.3
	Total	300	100.0
Age	Below 20	18	6.0
	20 - 29	128	42.7
	30 - 39	109	36.3
	40 - 49	32	10.7
	50 - 59	10	3.3
	60 and above	3	1.0
	Total	300	100.0

Table 4.1 (continued)

Marital Status	Single	148	49.3
	Married with children	113	37.7
	Married without children	7	2.3
	Divorced/ Widowed	32	10.7
	Total	300	100.0
Number of Children	0 – 1	85	55.9
	2 – 3	50	32.9
	4 - 5	15	9.9
	6 and above	2	1.3
	Total	152	100.0
Education	Primary School	3	1.0
	PMR	10	3.3
	SPM	62	20.7
	STPM/ College Diploma	89	29.7
	Bachelor's Degree	85	28.3
	Master's Degree and above	51	17.0
	Total	300	100.0
Employment Status	Government Employee	14	4.7
	Private Sector Employee	190	63.3
	Self-Employed	31	10.3
	Professional	23	7.7
	Retired	2	0.7
	Unemployed	3	1.0
	Student	37	12.3
	Total	300	100.0
Monthly Household Income	Below RM 1000	32	10.7
	RM 1000 - RM 2999	91	30.3
	RM 3000 - RM 4999	65	21.7
	RM 5000 - RM 6999	38	12.7
	RM 7000 - RM 8999	25	8.3
	RM 9000 - RM 10 999	16	5.3
	RM 11 000 and above	33	11.0
	Total	300	100.0

The Malays constitute of 50 percent of the sample, and the Chinese and Indians constituted 33.3 percent and 16.7 percent, respectively. In term of gender, about 37.7 percent were males and 62.3 percent were females. The majority of the respondents fell under the age group of 20 – 29 years old (42.7 percent), followed by 30-39 years old group (36.3 percent) and 40-49 years old group (10.7 percent). The remaining of the respondents were comprised of age group below 20 years old (6.0 percent), and 50 years old and above (4.3 percent).

In terms of marital status, half of the respondents were singles (49.3 percent) and this is followed by those who were married with children (37.7 percent). On the other hand, 10.7 percent of total respondents were divorced or widowed and 2.3 percent who were married without children.

The majority of the respondents who were married (55.9 percent) had 0 – 1 children in their families. This followed by those who had 2-3 children (32.9 percent); 4-5 children (9.9 percent); 6 children and above (1.3 percent).

Most of the respondents possessed education level equal to or higher than STPM. Respondents who had education level of STPM or college Diploma were 29.7 percent; followed by 28.3 percent who were University graduates; 20.7 percent who held SPM Qualification; 17.0 percent who had Master's Degree and above; 3.3 percent who possessed PMR/LCE/SRP and only 1.0 percent had primary level of education.

In addition, the study took into consideration the employment status of respondents. Most of the respondents were employees from the private sector which consisted of 63.3 percent. The second largest group was students (12.3 percent) and followed by self-employed (10.3 percent). The other groups were professional (7.7 percent); government-employee (4.7 percent); unemployed (1.0 percent); and retired which formed about 0.7 percent of the total.

Finally, the study also examined the monthly household income of the respondents. The largest group of respondents (30.3 percent) were reported to earn monthly household income of RM 1000- 2999; followed by 21.7 percent who earned RM 3000- 4999; and 12.7 percent who earned RM 5000- 6999. There were 11.0 percent of respondents had more than RM 11, 000 of their monthly household income which represented the highest earning income group. Contradictory, there were 10.7 percent of respondents earned the lowest household income that below RM 1000 a month. Subsequently, there were 8.7 percent had RM 7,000 – 8999 and the minority group (5.3 percent) earned RM 9000- 10,999 of their monthly household income.

4.2 Factor Analysis

Factor analysis was conducted by using the principal component method to extract the factors and the oblique rotation to enable a better interpretation of these factors. We chose the oblique rotation since the attitude and behavioural

dimensions based on theoretical grounds were expected to be correlated among themselves (Laroche et al., 2002). Items with low loadings (i.e., <.50) were removed from the analysis.

Table 4.2 KMO and Barlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.738
Bartlett's Test of Sphericity	Approx. Chi-Square	1432.071
	df	210
	Sig.	.000

As highlighted in Table 4.2, KMO value of 0.738 and the Barlett's test of sphericity was significant (Chi-square= 1432.071, $p \leq 0.01$), and therefore the sample size of 300 was adequate and satisfactory in this study. The result was consistent with previous study by Tsen et al. (2006) with KMO value was reported of 0.774 and the Barlett's test of sphericity was significant (Chi-square= 2589.495, $p \leq 0.01$). According to Table 4.3, the result of the factor analysis for both attitudes and behaviours constructs confirmed all the questionnaire dimensions coincided with the research framework and echoed results from previous studies done by Laroche et al. (2002) and Tsen et al. (2006). Based on previous study by Laroche et al. (2002), the "recycling" construct was only measured in one item (question) and environmental knowledge was not measured in Likert-scale (as a non-metric construct), thus both of these constructs would not take part in factor analysis but would retain for further analysis in this study.

Table 4.3 Factor Analysis

		Component						
		1	2	3	4	5	6	7
Severity of environmental problems	B-Question 4	.829						
	B-Question 5	.776						
	B-Question 7	.742						
	B-Question 1	.696						
	B-Question 2	.635						
Level of responsibility of corporations	B-Question 9		.857					
	B-Question 10		.824					
Inconvenience of being environmentally friendly	B-Question 15			.757				
	B-Question 16			.707				
	B-Question 12			.706				
	B-Question 13			.572				
Importance of being environmentally friendly	B-Question 8				.699			
	B-Question 6				.635			
	B-Question 3				.623			
Considering environmental issues when making a purchase	B-Question 19					.775		
	B-Question 20					.695		
Buying environmental harmful products	B-Question 22						.873	
	B-Question 21						.864	
Willingness to pay more for environmental friendly products	B-Question 14							.754
	B-Question 11							.709
	B-Question 17							.665

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

4.3 Assessing the Reliability of the Constructs

Reliability analysis was conducted by using Cronbach's alpha test to assess the internal consistency of each construct measuring attitudes and behaviours. The assumption was that the items of a measure work together as a set and should be capable of independently measuring the same construct. The items should be consistent in what they indicate about the concept being measured.

Table 4.4 Results of Reliability Test

CONSTRUCTS	MEASURES	ALPHA
Severity of environmental problems	1. Our country has so many trees that there is no need to recycle paper.	0.809
	2. Since we live in such a large country, any pollution that we create is easily spread out and therefore of no concern to me.	
	3. In our country, we have so much electricity that we do not have to worry about conservation.	
	4. With so much water in this country, I don't see why people are worried about leaky faucets and flushing toilets.	
	5. The earth is a closed system where everything eventually returns to normal, so I see no need to worry about its present state.	
Importance of being environmentally friendly	1. Recycling will reduce pollution.	0.429
	2. Recycling is important to save natural resources.	
	3. Recycling will save land that would be used as dumpsites.	
Level of responsibility of corporations	1. Packaged food companies are acting responsibly toward the environment.	0.639
	2. Paper companies are concerned about environment.	
Inconvenience of being environmentally friendly	1. Keeping separate piles of garbage for recycling is too much trouble.	0.716
	2. Trying to control pollution is much trouble than it is worth.	
	3. Recycling is too much trouble.	
	4. I hate to wash out bottles for recycling.	
Willingness to pay more for environmentally friendly products	1. It is acceptable to pay 10% more for groceries that are produced, processed, and packaged in an environmentally friendly way.	0.567
	2. I would be willing to spend an extra RM10 a week in order to buy less environmentally harmful products.	
	3. I would accept paying 10% more taxes to pay for an environmental cleanup program.	
Considering environmental issues when making a purchase	1. When buying something wrapped, check that it is wrapped in paper or cardboard made of recycled material.	0.505
	2. Refusing to buy products from companies accused of being polluters.	
Buying environmentally harmful products	1. Buying / Using plastics knives, forks, or spoons.	0.727
	2. Buying / Using Styrofoam cups.	


According to the result in Table 4.4, Cronbach alphas varied from 0.429 (for the “importance of being environmentally friendly” construct) to 0.809 (for the “severity of environmental problems” construct) which was acceptable except for “importance of being environmentally friendly” construct. For consistency, it was decided that reliability should not be lower than 0.5, the minimum acceptable level suggested by Kerlinger and Lee (2000). Thus, the environmental attitude construct “importance of being environmentally friendly” would be dropped from further discussion due to its low reliability score.

The range of scores in this study was lower than previous study conducted by Laroche et al. (2002), revealed a range of scores of 0.65 to 0.91. In Laroche et al. (2002) study, “severity of environmental problems” construct had highest Cronbach alpha score of 0.91, this was followed by “willingness to pay more for environmentally friendly products” (0.88), “buying environmental harmful products” (0.73), “considering environmental issues when making a purchase” (0.73), “inconvenience of being environmentally friendly” (0.72), “level of responsibility of corporations” (0.68) and “importance of being environmentally friendly” (0.65). The possible explanation of the low Cronbach alpha scores obtained in this study might be due to the items used in the constructs were selected from local experiences based on Western literature.

4.4 Environmental Knowledge

Table 4.5 summarizes the number of correct answers in the environmental knowledge scale. The environmental knowledge scale represented basic and general knowledge related to the environment adopted from Laroche et al. (2002). From a total of 7 questions, only 2 questions received more than 90 percent correct answers. These would be the statements that required respondents to explain the recycling symbol and identify recyclable items. Most of the respondents were able to identify and name the recycling symbol and items.

Table 4.5 Frequency of correct answers in the environmental knowledge

Items of environmental knowledge scale	Correct Answer	
	Frequency	%
Can you explain what this  symbol means to you?	285	95.0
Can you explain what the blue bin or green bin is for?	182	60.7
To the best knowledge, what is the single most important source of air pollutant?	131	43.7
What does the term greenhouse effect means to you?	126	42.0
Please name a "greenhouse gas"?	152	50.7
What is the percentage of household garbage would you say can be recycled or composted?	78	26.0
Identify items that can / cannot be recycled?	292	98.0

However, the respondents did below the average score on questions to identify the most important source of air pollution, the "greenhouse gas" and the percentage of household garbage could be recycled; less than 50 percent of the respondents were able to provide the correct answers for these statements. This indicated that most of the respondents were not aware about the environmental

issues, contributed from their basic daily activities such as driving. Basically, gasses released by the automobiles are the main contribution to the air pollution. In fact, some of what might be assumed to be relatively well known concepts such as carbon monoxide, carbon dioxide and chlorofluorocarbons (CFCs) were considered unfamiliar as greenhouse gasses to the respondents. In addition, the fact that 70 percent of our household garbage could be recycled and composted, however, only 26 percent of the respondents were aware about this issue. This might be the reason that the majority of Malaysians' awareness and involvement in recycling programmes are still very low (Ibrahim et al., 1999). According to Aini and Roslina (2002), Malaysian recycling rate was merely 5 percent in 2001.

Further examination has been done on question number 7 (Identify items that can / cannot be recycled?) of the environmental knowledge scale, and the result was shown in Table 4.6. Items that are considered recyclable are metal food cans, plastic containers, magazines, catalogs, books and newspapers (Alam Flora, 2007; Haron et al., 2005). The result showed that more than 75 to 99.5 percent of respondents were able to identify recyclable items, indicated that the respondents' knowledge about recyclable items was reasonably high. These results were consistent with the finding by Ibrahim et al. (1999) and Haron et al. (2005), both reported that approximately 80-90 percent of respondents in their study knew what items were recyclable. Perhaps, this implied that the rigorous efforts (recycling-education and "Say-No" to plastic bag programme) by government and private sectors had effectively increased public awareness about recyclable items. No previous study could be used to compare the results

reported in Table 4.5 and Table 4.6 because none of them (including Laroche et al., 2002) had done this detail examination on each item in the environmental knowledge scale.

Table 4.6 List of recyclable and non-recyclable items

Items	CAN		CANNOT		DON'T KNOW	
	Frequency	%	Frequency	%	Frequency	%
Metal food cans	272	90.7	23	7.7	5	1.7
All plastic containers	229	76.3	65	21.7	6	2.0
Lightbulbs	106	35.3	145	48.3	49	16.3
Magazines, catalogs and books	297	99.0	2	0.7	1	0.3
Newspaper	298	99.3	2	0.7	-	-

4.5 Correlation Analysis

Pearson correlation of coefficient was conducted to test the relationship between consumer environmental knowledge, attitudes and behaviours, and “Willingness to pay more for environmentally friendly products”. The correlation analysis is presented in Table 4.7. According to previous theoretical grounds and studies (Amyx et al., 1994; McCarty and Shrum, 1994; Laroche et al., 1996; Chan, 1999; Laroche et al., 2001; Laroche et al., 2002; Othman et al., 2004; Haron et al., 2005; Tsen et al., 2006) the relationship between environmental knowledge, attitudes and behaviours, and “willingness to pay more for environmentally friendly products” were expected to be correlated among themselves in certain direction (positive or negative), thus one-tailed test was

chosen in this study. Additionally, similar analysis using the same constructs has been found in Tsen et al. (2006) study, one-tailed test was used to perform analysis on the relationship between willingness to pay and independent variables (attitudes, behaviours and values).

Table 4.7: Correlation between “willingness to pay more environmentally friendly products” and environmental knowledge, attitudes and behaviours

	Willing	Know	A1	A2	A3	B1	B2	B3
Willing	1							
Know	0.107*	1						
A1	0.105*	0.077	1					
A2	0.087	-0.167**	-0.131*	1				
A3	-0.153**	-0.014	-0.397**	-0.128*	1			
B1	0.124*	0.053	-0.022	0.125*	-0.254**	1		
B2	0.194**	0.024	0.071	0.051	-0.245**	0.495**	1	
B3	-0.056	-0.024	-0.089	0.076	0.163**	-0.010	-0.138**	1

*Correlation is significant at 0.05 level (1-tailed)

**Correlation is significant at 0.01 level (1-tailed)

Willing :Willingness to pay more for environmentally friendly products

Know :Environment knowledge

A1 :Severity of environmental problems

A2 :Level of responsibility of corporations

A3 :Inconvenience of being environmentally friendly

B1 :Recycling

B2 :Considering environmental issues when making a purchase

B3 :Buying environmentally harmful products

4.5.1 Correlation between “willingness to pay more for environmentally friendly products” and “environmental knowledge”

According to Table 4.7, correlation analysis indicates that environmental knowledge was significant and correlated positively with willingness to pay with value 0.107 significant at 0.05 level. Therefore, the more environmental

knowledgeable respondents were to be, the more they would pay more for environmentally friendly products. This finding was consistent with past study conducted Othman et al. (2004), people who have low level of environmental knowledge were less committed to take action in environmental behaviour manner. Similarly, this finding on consumer's environmental knowledge has positive relationship with environmentally friendly behaviours was echoed previous studies conducted by Amyx et al. (1994), Chan (1999) and Haron et al. (2005).

4.5.2 Correlation between “willingness to pay more for environmentally friendly products” and “environmental attitudes”

According to Table 4.7, there is a significant and positive correlation between “willingness to pay more for environmentally friendly products” and “severity of environmental problems” with $r=0.105$, $p<0.05$. On the other hand, “inconvenience of being environmentally friendly” was found significant negative correlated with “willingness to pay more for environmentally friendly products” with $r= -0.153$, $p<0.01$. “Level of responsibility of corporations” was reported not significant correlated to “willingness to pay more for environmentally friendly products”. These findings were consistent with previous study (Tsen et al., 2006), found “severity of environmental problems” was significant and positively, and “inconvenience of being environmentally friendly” was significant and

negatively correlated with “willingness to pay more for environmentally friendly products”.

Positive correlation was found between “severity of environmental problems” and the “willingness to pay more”. This indicates those who perceived that the environmental problems are worsening tend to be more willing to spend more for environmentally friendly products.

On the other hand, “inconvenience of being environmental friendly” was reported to be correlated significantly and negatively with “willingness to pay more”. On top of that, “inconvenience of being environmental friendly” was reported to be correlated significantly and negatively with the other two environmental behaviours, namely “recycling” ($r = -0.254$, $p < 0.01$) and “considering environmental issues when making a purchase” ($r = -0.245$, $p < 0.01$). These findings are consistent with previous studies (McCarthy and Shrum, 1994; Laroche et al., 2002) which discovered that people who perceived being environmentally friendly is inconvenient would be less likely to recycle and spend more on environmentally friendly products. Hence, it is important to increase the availability of recycling sites and environmentally friendly products in convenient store such as 7-11 in order to increase consumers’ recycling rate and their willingness to pay more for environmentally friendly products.

Based on Table 4.7, the “inconvenience of being environmental friendly” construct was correlated significantly and positively with “buying environmental harmful products” ($r = 0.163$, $p < 0.01$). This implied, the more inconvenient to

behave in environmental friendly manner, the more people would opt to buy environmental harmful products. As this result has been expected and mentioned earlier in the literature, Malaysian consumers may continue to use and buy Styrofoam cup due to convenience reason.

4.5.3 Correlation between “willingness to pay more for environmentally friendly products” and “environmental behaviours”

According to table 4.7, “recycling” ($r= 0.124$, $p<0.05$) and “considering environmental issues when making a purchase” ($r=0.194$, $p<0.01$) are significant and positively correlated with “willingness to pay more for environmentally friendly products”. Therefore, consumers who are keen on recycling act and considered about the environmental issues when making a purchase are associated with higher willingness to pay more for environmentally friendly products. On the other hand, there was no significant correlation between “buying environmental harming products” and “willingness to pay more on environmentally friendly products”. The results were consistent with the findings of Tsen et al. (2006), which revealed “recycling” and “considering environmental issues when making a purchase” are positively correlated with “willingness to pay more for environmentally friendly products” and “buying environmentally harmful products” had no correlation with “willingness to pay more for environmentally friendly products”.

Based on Table 4.7, it shows “recycling” construct was positively correlated with “considering environmental issues when making a purchase” construct with $r=0.495$, $p<0.01$. This result indicates people, who would engage in recycling act, would be more environmental conscious and take into consideration on environmental issues when making a purchase. For example, this kind of “recycling” customer would be interested to know the items they purchased were made from recyclable material or not.

On the other hand, “considering environmental issues when making a purchase” was reported significant negative correlated with “buying environmentally harmful products” ($r= -0.138$, $p<0.01$). This finding implied consumers who really considered about the environmental issues would be less likely to buy products that would pose harm to the environment.

4.6 Multiple Regression Analysis

Multiple linear regression was performed on seven independent variables, namely “eco-literacy”, “severity of environmental problems”, “level of responsibility of corporations”, “inconvenience of being environmentally friendly”, “recycling”, “considering environmental issues when making a purchase”, “buying/ using environmentally harming products” and towards “willingness to pay more for environmental friendly products” (the dependent variable). The result of this regression was shown in Table 4.8.

As highlighted in Table 4.8, the overall result for the regression model was significant ($p = 0.003$). It indicated that all the factors (the seven independent variables) were simultaneously significant to the dependent variable and proven that consumers' environmental knowledge, attitudes and behaviours contributed significantly to their willingness to pay more for environmental friendly products. From the adjusted R square value (Adjusted $R^2 = 0.049$), the seven independent variables explained or contributed 4.9 percent to the dimension of willingness to pay more for environmentally friendly products.

From the analysis, only one independent variable ("considering environmental issues when making a purchase") did contribute significantly to the consumers' willingness to pay more for environmental friendly products with significant values of 0.020. The results of standard coefficient (beta) revealed that "considering environmental issues when making a purchase" was the largest and most important variable that contributed to the dependent variable (beta= 0.155).

In addition, Table 4.8 also summarizes other independent variables that were not found statistically significant in influencing consumers' willingness to pay more for environmentally friendly products. One possible reason why only one variable was significant would be the consumers' intention or actual purchasing behaviour is a complex with multi-dimension concepts and may be influenced by many other factors which were not studied in this research, such as personal norm, government's role and environment protection factors in Tan and Lau (2010) study. According to Tan and Lau (2010), the three factors (personal

norm, government's role and environment protection contributed 19.6 percent to the dimension of attitudes towards green products.

Table 4.8: Result of Regression Analysis

Dependent Variable: Willingness to pay more for environmentally friendly products					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.471	0.816		3.028	0.003
Ecoliteracy	0.093	0.048	0.112	1.957	0.051
Severity of environmental problem	0.085	0.077	0.070	1.098	0.273
Level of responsibility of corporations	0.086	0.052	0.098	1.658	0.098
Inconvenience of being environmental friendly	-0.071	0.070	-0.067	-1.005	0.316
Recycling	0.009	0.049	0.013	0.193	0.847
Considering environmental issues when making a purchase	0.133	0.057	0.155	2.348	0.020
Buying environmentally harmful products	-0.020	0.052	-0.023	-0.392	0.695
R Square = 0.071 Adjusted R Square = 0.049			F-value = 3.191 Significance= 0.003		

4.7 Testing Hypotheses

4.7.1 Hypothesis 1

“Chinese are more knowledgeable about environmental issues than Malays and Indians.”

A one-way between-groups ANOVA was conducted to explore the impact of ethnicity on levels of Environmental Knowledge (eco-literacy) of the respondents. The eco-literacy test was rated on 11 marks and Table 4.9 shows there was a statistically significant difference at the $p < .05$ level in environmental knowledge scores for the three ethnic groups: $F = 5.93$. The result validated significant difference on the environmental knowledge scores of the cross-cultural impact among Malays, Chinese and Indians ethnic groups in Malaysia. This finding is consistent with Othman et al. (2004) evidenced Malaysian teenagers' environmental knowledge was influenced by ethnicity. On the other hand, Laroche et al. (2002) found French-Canadians were more knowledgeable and concern about ecology than their English-Canadians in Canada.

Table 4.9 One way ANOVA and Scheffe test between ethnic groups on environmental knowledge

	Mean (Standard Deviation)
Malays (M)	7.23 (1.42)
Chinese (C)	7.69 (1.55)
Indians (I)	6.82 (1.72)
F	5.93
Sig.	0.003
Difference	(C > I)**, (C > M)*

** $p < 0.05$, * $p < 0.10$

Further examination on Scheffe test, showed there were statistically significant difference between Chinese and Indians ($p < 0.05$), and marginally significant between Chinese and Malays ($p < 0.10$). Chinese ethnic group obtained highest mean (7.69) on environmental knowledge as opposed to other ethnic groups (Malays and Indians, 7.23 and 6.82 respectively). Therefore, it

was concluded that Chinese had higher environmental knowledge than Malays or Indians. The result obtained in this study was aligned with earlier study conducted by Othman et al. (2004), Chinese teenagers were found to be more knowledgeable about environmental issues compared with the Malays and Indians. Consequently, Hypothesis 1 was supported.

4.7.2 Hypothesis 2

“Chinese display stronger environmental attitudes than Malays and Indians.”

Analysis has been conducted to examine differences on Environmental Attitudes between Malay, Chinese and Indian ethnic groups. Based on Table 4.10, it shows a statistically significant difference between Malays, Chinese and Indians ethnic groups on the “severity of environmental problems” construct ($F=6.76$, $p<0.05$) and “inconvenience of being environmentally friendly” construct ($F=6.04$, $p<0.05$). However, “level of responsibility of corporations” construct was reported not significant between the three ethnic groups.

Further analysis has been conducted by using Scheffe test to compare means between the ethnic groups on “severity of environmental problems” and “inconvenience of being environmentally friendly” constructs. The results showed that Chinese (6.46) as opposed to Malays (5.98) or Indians (6.08) reported ecological problems were more severe. This indicated Chinese ethnic

group has higher level of concern for the environment. On the one hand, at marginally significant difference, Malays ethnic group (2.79) was reported to perceive being environmentally friendly was inconvenient as compared to Chinese and Indians (2.42 and 2.18, respectively). In other words, Indians who obtained the lowest mean score in this “inconvenience of being environmentally friendly” construct, perceived being environmentally friendly was not inconvenient to them. The findings of this study were consistent with past research in which Othman et al. (2004) reported Indians were more inclined to commit verbally toward environmental matters as opposed to the other ethnic groups.

Table 4.10 One way Anova and Scheffe test between ethnic groups on environmental attitudes

Attitudes	Mean (Standard Deviation)			F	Sig	Differences (Scheffe test)
	Malays n= 150	Chinese n= 100	Indians n= 50			
Severity of environmental problems	5.98 (1.11)	6.46 (0.84)	6.08 (1.09)	6.76	0.001	C>M**
Level of responsibility of corporations	4.27 (1.56)	3.98 (1.31)	3.98 (1.46)	1.47	0.231	-
Inconvenience of being environmentally friendly	2.79 (1.25)	2.42 (1.16)	2.18 (1.00)	6.04	0.003	M > C* M > I**

**p<0.05, *p<0.10

In Hypothesis 2, we initially predicted that Chinese would display strong environmental attitudes than Malays or Indians. This hypothesis was partially supported. In Table 4.10, our result clearly reported Chinese perceived environmental problems were more severe. This finding was consisted with Chan

(2001) study, Chinese consumers' ecological affect mean-score was greater than the American subjects observed in western studies. However, on the other hand, Indians were reported being environmental friendly is not inconvenient to them. These mixed results, might be due to the Malaysian Chinese have infused and exposed to multi-ethnic cultural values, thus the finding might be slightly different with the previous study conducted on Chinese in China (Chan, 2001).

4.7.3 Hypothesis 3

“Malays engage in more environmentally friendly behaviours than Chinese and Indians.”

In this part, one-way ANOVA has been conducted by comparing mean-score of Malays ethnic group with other ethnic counterparts on their environmental behaviours. Environmental Behaviours that examined under this study, namely “ recycling”, “buying/using environmentally harmful products”, “considering ecological issues when making a purchase” and “willingness to pay more for ecologically friendly products” constructs.

The results (Table 4.11) showed there was significant difference between the three ethnic groups on environmental behaviours such as “recycling”, “buying /using environmental harmful products” and “willingness to pay more for ecologically friendly products” with $F= 3.22, p<0.05$; $F=5.69, p<0.01$; and $F=2.76,$

$p < 0.10$, respectively. On the other hand, “considering ecological issues when making a purchase” construct was reported not significant.

The findings also revealed Indians were reported to obtain highest mean score on adopting recycling behaviour (mean=5.02), followed by Malays (mean= 4.91) and Chinese (mean= 4.10). Since no previous study had been done in this area, the possible reasons might be due to Indians high level of verbal commitment reported in Othman et al. (2004) and their perception on being environmental friendly was not inconvenient (based on Table 4.10) have dominated their “recycling” behaviour.

Based on Table 4.11, it was unexpected to note that Malays (mean=3.80) has the highest score in buying or using environmental harmful products compared with Chinese (mean=3.33) and Indians (mean=3.14). This answer might reflect higher practices of buying or using plastic utensils (plate, spoon and fork) and Styrofoam take-away boxes in their daily activities or during festive season such as “Hari Raya” (data collection was carried out during “Ramadhan” month). As this result was contradicted with previous study (Quah and Tan, 2010) found Malays are statistically more likely to acquire organic food products, thus future study might need to be carried out to further examine in this area.

It is observed that cultural differences does impact on their “willingness to pay more for environmentally friendly products”, albeit only significant at the less stringent level of $p < 0.10$. Thus, in general view, consumer decision-making processes were culturally dependent as reported in Mokhlis and Salleh (2009)

study. The summary result of Scheffe test was shown in Table 4.11 indicated marginal significant differences between a pair of means: “Chinese” and “Indians”. Chinese ethnic group (mean=4.59) was found to be most willing to pay more for environmentally friendly products, followed by Malays (mean=4.32) and Indians (mean=4.09).

Table 4.11: One way ANOVA and Scheffe test between ethnic groups on environmental behaviours

Behaviours	Mean (Standard Deviation)			F	Sig	Differences (Scheffe test)
	Malays (M) n= 150	Chinese (C) n= 100	Indians (I) n= 50			
Recycling	4.91 (1.63)	4.40 (1.81)	5.02 (1.93)	3.22	0.042	M>C*
Buying/ Using environmentally harmful products	3.80 (1.46)	3.33 (1.21)	3.14 (1.59)	5.69	0.004	M>C** M> I **
Considering ecological issues when making a purchase	4.32 (1.47)	3.99 (1.38)	4.23 (1.70)	1.50	0.225	-
Willingness to pay more for environmentally friendly products	4.33 (1.29)	4.59 (1.06)	4.09 (1.55)	2.76	0.065	C>I*

**p<0.05, *p< 0.10

In Hypothesis 3, we predicted Malays would be more involved and engaged in environmental friendly behaviours than Chinese and Indians, especially on “willingness to pay more for environmentally friendly products” construct. However, our findings were contradicted with earlier studies by Chan (2001) and, Quah and Tan (2010). Chan (2001) reported Chinese green purchase behaviour is far behind satisfactory level, and Quah and Tan (2010)

found Malays are statistically more likely to acquire organic food products. The possible explanation might be the high level of environmental knowledge of Chinese in this study (based on Table 4.7) has been translated into corresponding ecological intention and behaviours. Therefore, Hypothesis 3 was not supported.