CHAPTER 4
RESEARCH RESULTS

This chapter discusses the findings of the survey and presents the results of the research conducted. The discussion is divided into five main sections. Firstly, the first session reviews the demographic characteristics of the respondents. The second section discusses mobile phone usage dependencies and usage patterns of the respondents as well as identifies dependent mobile phone users and non-dependent mobile phone users. Subsequently, the third section presents demographic characteristics of the two groups of mobile phone users respectively. Next, the fourth section delivers analysis and discussions of the lifestyle or psychographics profiles that distinguish the two mobile user groups are presented from the factor analysis, t-test and Pearson correlation analysis. Finally, the fifth section presents analysis and discussion on the relationship between the demographic profiles of the psychographic segments.

4.1 Respondent Characteristics

Four hundred and thirty eight survey questionnaires (438) were returned survey out of five hundred (500) distributed, yielding a response rate of 87.6 per cent. Out of these 438 responses, 11 questionnaires were rejected due to there are missing responses. Thus, a total of four hundred and twenty six (426) or 85.2 percent responded questionnaires were used in the final analysis for the study.

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

Table 4.1: Demographic Profile of the Respondents

Profile		Frequency	Percent
Gender	Male	188	44.1
	Female	238	55.9
	Total	426	100.0
Age	Below 20	36	8.5
	20 – 29	213	50.0
	30 – 39	139	32.6
	40 – 49	23	5.4
	50 – 59	13	3.0
	Above 60	2	0.5
	Total	426	100.0
Ethnicity	Malay	130	30.5
	Chinese	229	53.8
	Indian	52	12.2
	Others	15	3.5
	Total	426	100.0
Marital status	Single	260	61.0
	Married, without children	57	13.4
	Married, with children	106	24.9
	Widow/Widower/Divorcee	3	0.7
	Total	426	100.0
Highest education level	Primary School or less	3	0.7
	PMR/SRP/LCE	22	5.2
	SPM/SPVM/MCE	50	11.7
	STPM/HSC	11	2.6
	College Diploma	79	18.5
	Professional Qualification/ University Degree	261	61.3
	Total	426	100.0

Profile		Frequency	Percent
Occupation	Clerical/Production staff	32	7.5
	Sales Personnel	13	3.1
	Supervisor/Executive	102	23.9
	Administration Executive/Teacher	48	11.3
	Managerial/Professional/Lecturer	113	26.5
	Self-Employed	11	2.6
	Retired	4	0.9
	Not working	7	1.6
	Student	53	12.4
	Others	43	10.2
	Total	426	100.0
Gross monthly personal income	Less than RM1,000	54	13.1
	RM1,000 - RM1,999	88	21.4
	RM2,000 - RM3,999	186	45.3
	RM4,000 - RM5,999	61	14.8
	RM6,000 - RM7,999	14	3.4
	RM8,000 - RM9,999	2	0.5
	RM10,000 and above	6	1.5
	Total	*411	100.0

* There is inconsistency in total number of respondents due to the missing values and a small number of respondents have deliberately omitted to provide personal information which is confidential in nature, for instance gross monthly personal income.

Of the 426 individuals who participated in the survey, 44.1 percent were men and 55.9 percent were women. Majority of the respondents fell under age group of 20 to 29 years old (50.0 percent), followed by 32.6 percent between 30 to 39 years old, 8.5 percent were below 20 years old and 5.4 percent fell in the 40 to 49 years age groups. To complete to that, 3.0 percent of the respondents were aged 50 to 59 years old and only 0.5 percent were aged above 60 years old.

In terms of ethnicity composition of the respondents, 30.5 percent were Malays, 53.8 percent were Chinese, 12.2 percent were Indians and 3.5 percent were

other race groups. It is worth to note that such composition does not reflect the actual overall ethnicity of the population in Malaysia, which should be predominant by Malay communities, however it is still considered as representative of the study as Chinese communities form the major population group in Klang Valley, the urban area where the study was carried out. However, ethnicity remained as one of the underlying basis for the sampling controlling procedure.

As for marital status of the respondents, 61.0 percent of the respondents were still single while 24.9 percent were married with children, and 13.4 percent were married without children. The divorced group made up only 0.7 percent of the respondents.

With regards to the highest education level of the respondents, the majority of the respondents (61.3 percent) possessed a university or professional degree while those with a college diploma represented 18.5 percent of the respondents. 14.3 percent of the respondents had education level up to only high school or STPM/SPM/SPVM/O-Level whereas a small number of respondents, representing 5.2 percent, had education level less than high school and 0.7 percent had education up to primary school or less than primary school only.

Take into consideration of the occupation of the respondents, majority of the respondents (26.5 percent) were having managerial or professional jobs while respondents who were at the supervisor and executive positions made up 23.9 percent of the total respondents. This result is consistent with the educational profiles as discussed in the previous paragraph, as respondents in these job positions would normally required to obtain university degree or professional qualifications. Following to these were students, who made up 12.4 percent of the respondents while 11.3 percent of the respondents were those in the positions of administration executive or teaching profession. Next, those respondents with others occupation than as specified consisted of 10.2 percent of the respondents while 7.5 percent of the respondents were working as clerical staff or production staff. Rounding up the occupation demographic were 3.1 percent of the respondents who were sales personnel; 2.6 percent of the respondents who were

self employed while 1.6 percent of the respondents who were not working and 0.9 percent of the respondents were retired.

The statistics on gross monthly personal income showed that 13.1 percent of respondents earned below RM1,000 and 21.4 percent of respondents earned between RM1,000 to RM1,999. The majority group consisted of 45.3 percent of the respondents who were earning a monthly income between RM2,000 to RM3,999. 14.8 percent of the respondents who had a monthly income of RM4,000 to RM5,999. Next at 3.4 percent of respondents had a higher monthly personal income level of between RM6,000 to RM7,999 and only 0.5 percent of the respondents were earning RM8,000 to RM9,999 while rounding them off were those with earning the highest monthly personal income level RM10,000 and above, represented 1.5 percent of the total respondents.

4.2 Defining Mobile Phone User Groups

People often rank order their preferences. An ordinal scale may be developed by asking respondents to rank order a set of objects or attributes, from most preferred to least preferred (Zikmund, 2000). Based on the similar framework adopted by Wareham *et al.* (1998), Heinzmann *et al.*, (1997) and Haddon (1997), respondents were requested to rank the eight different ICT gadgets and equipments, on ordinal scale, yielding a potential minimum score of 1 for the most important equipment perceived by respondents while a maximum score of 8 for the least important equipment perceived by respondents, in their daily personal and business related activities. In other words, lowest score represents greatest perceived important an ICT equipment in respondents' daily activities.

The eight ICT gadgets and equipments comprised traditional phone, mobile phone, television set, video games, computer with Internet access, digital camera, CD player and DVD or VCD player. Table 4.2 shows the ranking of the eight ICT gadgets and equipments based on the scale, lower mean score indicates a greater importance of an ICT equipment to respondents' daily personal and business related activities.

From Table 4.2, the findings on the ranking of mobile phone and computer with Internet access is consistent to the prediction of the study as well as the latest statistics with respect to higher growth rate of mobile service subscription than Internet dial-up subscription (MCMC, 2004), as the result showed that majority of the respondents perceived and mobile phone as the most important ICT gadget or equipment in their daily personal and business related activities, followed by computer with Internet access, television set, traditional phone, CD player, video games, digital camera and DVD/VCD player, at ascending ranking scores.

Table 4.2: Ranking of the Most Important ICT Equipment to Respondents' Daily Activities

	ICT Gadgets and Equipments	Mean Score *	Standard Deviation	Frequency of ranking as one	Percent
1.	Mobile phone	2.07	1.66	223	52.35
2.	Computer with Internet access	2.97	1.77	82	19.25
3.	Television set	3.27	1.59	47	11.03
4.	Traditional telephone	3.92	2.19	43	10.09
5.	CD player	5.15	1.66	12	2.82
6.	Video games	6.89	1.73	9	0.95
7.	Digital camera	6.06	1.62	6	1.41
8.	DVD/VCD player	5.25	1.58	4	2.11

* Minimum score of 1 for the most important ICT equipment and maximum score of 8 for the least important ICT equipment.

After examining the simple mean comparison of responses on the ranking of the eight ICT equipments concerned in terms of its importance to respondents' daily activities (see Table 4.2), it showed mobile phone mean score of the segments of population was on the low end of the scale. It signals that mobile phone was perceived as the most important ICT gadget or equipment by majority of the respondents, among the eight ICT gadgets and equipments so specified, as the mean value of mobile phone score for the sample was the lowest, at 2.07 and a standard deviation of 1.66. The result concords to what has conceded by Saljoughi (2001), mobile communications have influenced deeply not only

economic activities of business and households but also various areas of people's daily life.

Since the study is exploratory in nature, based on the result of simple mean comparison, the study decided to adopt a new concept that the ranking of the eight ICT equipments in terms of its importance to daily activities would be utilized as the base to determine mobile phone usage dependencies, which in turn as priori basis of segmentation. This concept utilized is deemed applicable and appropriate for the purpose of this study, as it is accord with similar frameworks adopted by other studies, in relation to the adoption of computers (Heinzmann *et al.*, 1997); as well as Haddon's (1997) research on adoption of mobile phone in Belgium.

In view of the ranking the eight different ICT gadgets and equipments, on ordinal scale, yielding a potential minimum score of 1 for the most important equipment perceived by respondents while a maximum score of 8 for the least important equipment perceived by respondents, the study decided the top of the scale-score fixed at 1 and the bottom half ranged from 2 to 8. The study then profiled the respondents into dependent and non-dependent mobile phone user groups. Respondents were categorized as dependent mobile phone users, if they ranked mobile phone the most important ICT equipment in their daily personal and business related activities. On the other hand, respondents ranked mobile phone the second or above important ICT equipment in daily activities were categorized as non-dependent mobile phone users.

The result of the mobile phone usage profiling showed that 223 of the respondents were categorized as dependent mobile phone users and 203 of the respondents categorized as non-dependent mobile phone users. This represents 52.3 percent of the respondents are dependent mobile phone users and 47.7 percent of the total as non-dependent users. Table 4.3 shows the mobile phone usage dependencies profiles of the respondents.

Table 4.3: Mobile Phone Usage Dependencies Profile of the Respondents

Mobile Phone Usage Profile	Frequency	Percent
Dependent mobile phone users	223	52.3
Non-Dependent mobile phone users	203	47.7
Total	426	100.0

On top of that, both dependent and non-dependent users have been analyzed further based on the underlying mobile phone service subscription consisted of prepaid service and postpaid service by a cross tabulation. Respondents rated the type of services on nominal scale, yielding a potential scale of 1 for prepaid service and scale of 2 for postpaid service. Table 4.4 shows the summary results of mobile phone service subscription comparison of dependent and non-dependent users. The result (see Table 4.4) showed that 99 respondents or 44.4 percent within the dependent user group are using prepaid service while 124 respondents or 55.6 percent within the same group are using postpaid service. On the other hand, there were 117 respondents or 57.6 percent within the non-dependent user group are using prepaid service while 86 respondents or 42.4 percent within the same group are using postpaid service. Besides, the result showed that there was a significant difference ($p<0.05$) between mobile phone service subscription with regards to whether the respondent is dependent user or non-dependent user ($p=0.013$). As expected, the findings reasonably demonstrated that dependent users who are having heavy usage dependency of mobile phone would tend to subscribe for postpaid service which is a more cost efficient option in terms of packaged pricing.

Table 4.4: Cross-tabulation Results of Mobile Phone Service Subscription of Dependent and Non-Dependent Mobile Phone Users

Mobile Phone Service Subscription Profile	**Dependent Users**		**Non-Dependent Users**	
	N	**Percent**	**N**	**Percent**
Prepaid	99	44.4	117	57.6
Postpaid	124	55.6	86	42.4
Total	223	100	203	100
χ^2 significant value p=0.013				

Further to that, an analysis on the total monthly expenses on both personal and business related usage of mobile phone of dependent and non-dependent users, was studied through a comparison of the mean values for the two user groups using the t-test. Table 4.5 shows the results of the comparison mean scores of total monthly mobile phone bill of the two groups of users.

From the Table 4.5, the result showed that the mean score of total monthly mobile phone bill of dependent user group was RM145.63 while the mean score of total monthly mobile phone bill of non-dependent user group was RM106.43. The result is quite tally with the benchmark used by mobile operators in Malaysia, namely ARPU (Average Revenue Per User) for postpaid service at approximately RM165.00, in this case, more applicable to dependent users as the majority of these users are postpaid subscribers. Besides, the result showed the differences in mean scores were statistically significant ($p<0.05$) in total mobile phone expenses between the two groups of mobile phone users compared.

Table 4.5: Total Monthly Mobile Phone Bill Profile of Dependent and Non-Dependent Mobile Phone Users

Mobile Phone Expenses	Group Mean Scores		Significance*
	Dependent users	Non-dependent users	
Total monthly mobile phone bill	RM145.63	RM106.43	0.027

* Using t-test statistical technique.

In order to further enrich the study on the mobile phone usage patterns of the two groups of users, an analysis conducted on the relationship of the two groups of mobile phone users and their monthly mobile phone expenses for personal usage and business related usage respectively and distinctively. It was observed through a comparison of the mean values for the two user groups using the t-tests. Table 4.6 shows the result of the comparison mean scores of respective personal and business related monthly mobile phone bills of the two groups of users.

Table 4.6: Monthly Personal and Business Related Mobile Phone Bill Profile of Dependent and Non-Dependent Mobile Phone Users

Monthly mobile phone bill	Group Mean Scores		Significance*
	Dependent users	Non-dependent users	
Personal use	RM101.68	RM72.30	**0.001**
Business related	RM43.95	RM34.01	0.447

* Using t-test statistical technique.

From the Table 4.6, the result showed the differences in group means were statistically significant ($p<0.05$) only in personal mobile phone expenses between the two groups of mobile phone users compared. It is contrary to the expectation

that the low mean scores of business related monthly mobile phone expenses were found in the research findings for both dependent and non-dependent users.

The respondents might prefer to use other alternatives such as fixed line telephone to settle business related transactions instead of using mobile phone. This might be due to a fixed phone could define an intimate area within public zones which allowed them to talk in a more confidential, considerate and attentive mood away from worries of cost and from any interruptions or interference from the environment (de Gourney, 1997). However, the result matches with the findings in United States that a survey of mobile subscribers in United States revealed that nearly two-third of the respondents subscribed to mobile services for personal uses rather than business (Telecommunication Reports, 1995); It is also confirmed research findings of another study (James, 1992) reported that while mobile phones were an important business tool, "personal use" was the fastest growing segment of the market; as well as adhered to study conducted by Sussex Research Group (1998) that most people are actually used mobile more for private calls.

4.3 Dependent and Non-Dependent Mobile Phone Users by Demographic Groups

This section identifies the dependent mobile phone users and non-dependent mobile phone users along with their demographic variables. To compare and distinguish the demographic profiles of the two groups of mobile phone users, the seven demographic variables studied were statistically analyzed by a cross tabulation. Table 4.7 shows the summary results of demographic comparison for the dependent and non-dependent mobile phone user groups.

Contrary to the expectation, there was no significant difference ($p>0.05$) between the gender groups with regards to whether the respondent is dependent mobile phone users or non-dependent mobile phone user ($p=0.148$). Within the gender, 48.4 percent of the male respondents are dependent users as compared to 51.6 percent who are non-dependent users. On the other hand, 55.5 percent of the

female respondents are dependent users as compared to 44.5 percent who are non-dependent users. Hence, the result contradicts the findings of Ling and Vaage's (2000) study which found statistically significant gender difference follows from male's greater access to mobile phone as well as usage via their jobs. Nevertheless, the findings is in accordance with the results of earlier studies that women's mobile phone usage is remarkable as it enables "remote mothering" to keep track with children (Rakow and Navarro, 1993) and women use the telephone twice as much as men (Classie and Rowe, 1993).

Table 4.7: Cross-tabulation Results of Two Groups of Mobile Phone Users with Demographic Variables

Demographic Profile	**Dependent Users**		**Non-Dependent Users**		χ^2 **Significance**
	N	**Percent**	**N**	**Percent**	
Gender					
Male	91	48.4	97	51.6	P = 0.148
Female	132	55.5	106	44.5	
Age					
Below 20	14	38.9	22	61.1	**P = 0.019**
20 – 29	111	52.1	102	47.9	
30 – 39	84	60.4	55	39.6	
Above 40	14	36.8	24	63.2	
Ethnicity					
Malay	74	56.9	56	43.1	P = 0.420
Chinese	114	49.8	115	50.2	
Indian	28	53.8	24	46.2	
Marital status					
Single	141	54.2	119	45.8	P = 0.403
Married, without children	32	56.1	25	43.9	
Married, with children	50	47.2	56	52.8	

Demographic Profile	Dependent Users		Non-Dependent Users		χ^2 Significance
	N	Percent	N	Percent	
Highest education level					
High School or less	28	37.3	47	62.7	**P = 0.004**
College Diploma	57	63.3	33	36.7	
Professional Qualification/ University Degree	138	52.9	123	47.1	
Occupation					
Clerical/Production staff	19	59.4	13	40.6	**P = 0.002**
Sales Personnel	9	69.2	4	30.8	
Supervisor/Executive	57	55.9	45	44.1	
Administration Executive/Teacher	28	58.3	20	41.7	
Managerial/Professional/ Lecturer	63	55.8	50	44.2	
Self-Employed/Others	30	55.6	24	44.4	
Retired/Not working	1	9.1	10	90.9	
Student	16	30.2	37	69.8	
Gross monthly personal income					
Less than RM1000	18	33.3	36	66.7	**P = 0.023**
RM1,000 – RM1,999	48	54.5	40	45.5	
RM2,000 – RM3,999	110	59.1	76	40.9	
RM4,000 – RM5,999	33	54.1	28	45.9	
RM6,000 and above	11	50.0	11	50.0	

Due to the small cell values, the different age groups of "40 to 49 years old", "50 to 59 years old" and "above 60 years old" were combined to form the "40 years old and above" age group. It was found that there was a significant difference between dependent and non-dependent respondents with respect to age

(p=0.019). It was also noted from the results that the respondents who were at their age between 30 to 39 years old showed a higher tendency of mobile phone usage. Within this particular group, 60.4 percent of the respondents are dependent users as compared to 39.6 percent who are non-dependent users. On the other hand, 52.1 percent of the respondents aged between 20 to 29 years old are dependent user as compared to 47.9 percent who are non-dependent users while 61.1 percent of the respondents aged below 20 years old are non-dependent user while only 38.9 percent of these respondents are dependent users. It is worth to note that only 36.8 percent of the respondents aged 40 years old and above are dependent users as compared to 63.2 percent are non-dependent users. In other words, the results reveal that generally respondents from both the youngest and the eldest age groups tend to be non-dependent mobile phone users while respondents who were young adults and medium aged groups are tend to be dependent mobile phone users.

The result is in accordance with findings of a study by Haddon (1997) who reported that elderly people have not yet appeared significantly in mobile phone usage statistics even they do possess mobile phones. Besides, the result also confirmed the findings of the study by Heinzmann *et al.* (1997) that frequent users of mobile phones tend to be elder adults who aged 30 something and tend to be working. Interestingly, and as expected, younger respondents were found as non-dependent users which could be due to the reason of payment or expenses for mobile phone usage as they might not be financial independent. However, it is expected that the extend of mobile phone usage by this group of respondents could be drastically changed in the near future as the current generation of teenagers would be established themselves in the job market.

In the ethnicity analysis, due to the small cell values, the ethnic group other than prescribed has been excluded for the analysis. The analysis showed that there was no significant difference (p>0.05) between the ethnic groups with regards to whether the respondent is dependent or non-dependent mobile phone user (p=0.420). Within the ethnic group, there were slight majority of 56.9 percent of the Malay respondents are dependent users as compared to 43.1 percent who are non-dependent users. Besides, there were only 49.8 percent of the Chinese

respondents are dependent users as compared to slight higher 50.2 percent who are non-dependent users. On the other hand, 53.8 percent of the Indian respondents tend to be dependent users as compared to 46.2 percent who are non-dependent users. In other words, the result reveals that no significant different found between Malays, Chinese and Indians in terms of mobile phone usage dependencies.

This findings contrary to Wareham *et al.*'s (1998) findings which revealed that specific ethnic like African-American respondents adopted mobile phones at higher rates than the general population in United States while Hispanic and Asian respondents are not statistically different from the general population.

With regards to marital status, the respondents were summarized into three categories, the single, married without children and married with children groups. The analysis showed that there was no significant difference ($p>0.05$) between the marital status groups with regards to whether the respondent is dependent mobile phone users or non-dependent mobile phone users ($p=0.403$). Within the group, 54.2 percent of the single respondents are dependent users as compared to 45.8 percent who are non-dependent users.

Apart from that, 56.1 percent of the married without children respondents are dependent users as compared to 43.9 percent who are non-dependent users. Contrary to speculation, only 47.2 percent of the married with children respondents are dependent users as compared to 52.8 percent who are non-dependent users. These findings contradict with Rakow and Navarro's (1993) study which found it was married women with children that were calling home by using mobile phone to awaken their children and make sure that they were on their way to school. Nevertheless, the result also contradicts Wareham *et al.*'s (1998) study which found although the presence of children in a family tend to be a consistent negative predictor of mobile phone adoption rate although the result showed marital status was significant to mobile phone usage.

In order to obtain a better distribution of education level of the respondents, two new groups were created. The respondents with an education level of "Primary

School or less", "PMR/SRP/LCE" with "SPM/SPVM/MCE" were combined. Meanwhile, those respondents who were in the groups of "STPM/HSC" with "College Diploma" were jointed up. This new education level groups were named "High School or less" and "College Diploma" respectively.

The analysis showed that there was a significant difference ($p<0.05$) between the education level groups with regards to whether the respondent is dependent mobile phone user or non-dependent mobile phone user ($p=0.004$). It was noted from the results that respondents with College Diploma level of education showed a highest tendency of dependent mobile phone usage behaviour. Within that group, 63.3 percent of the respondents are dependent users as compared to 36.7 percent who are non-dependent users. On the other hand, there were moderate high of 52.9 percent of the respondents with university degree or professional qualification are dependent users as compared to 47.1 percent who are non-dependent users. Apart from that, 62.7 percent respondents within high school or less education level group are non-dependent users and only 37.3 percent of these respondents were dependent users.

As expected that the higher the education level of consumers, the more positive their attitudes towards technology acceptance but not necessary reflective to mobile phone usage dependencies. The findings on education level seemed to enjoy a fairly consistent result with speculation. As compared to earlier research, this result of the current study is also closely resembled to the findings of Heinzmann *et al.* (1997) found the higher education renders to the higher resistance to modern technology like mobile phone. Thus, the mobile phone usage dependency might be less heavy in respondents with higher education level. However, the result is contrary with Wareham *et al.*'s (1998) study, that education level was not statistically significant in mobile phone adoption rate.

In terms of occupation analysis, the self-employed respondents were combined with those with others occupation to form a new single occupation group. Besides, respondents who were retired and respondents who were not working were also joined up to be a single group. The analysis showed that there was a significant difference ($p<0.05$) between the occupation level groups with regards

to whether the respondent is dependent mobile phone user or non-dependent mobile phone user (p=0.002).

As expected, the results that respondents with sales occupation reasonably showed a highest tendency of dependent mobile phone usage behaviour. Within that group, 69.2 percent of the respondents are dependent users as compared to 30.8 percent who are non-dependent users. This result is supported by Ling and Haddon's (2001) findings that there are disparities in access to jobs, in this case, sales positions, where perquisites such as mobile phone access are available and hence these individuals would be exhibited heavy mobile phone usage dependency, which is also in accordance with the expectation. On the other hand, a majority 59.4 percent of the respondents who were clerical and production staff are dependent users as compared to 40.6 percent who are non-dependent users. Next, a majority of 58.3 percent of the respondents who were administration executives or teachers are dependent users while 41.7 percent are non-dependent users.

Follow to that were respondents who worked as supervisors or executives as well as managers, professionals or lecturers, as 55.9 percent and 55.8 percent within the two groups respectively are dependent users and 44.1 percent and 44.2 percent of the respondents in respective groups were non-dependent users. Besides that, within the respondents who were self-employed or possess others occupation, 55.6 percent are dependent users and 44.4 percent are non-dependent users. In addition, respondents were students showed as low as only 30.2 percent within the group are dependent users and majority of 69.8 percent are non-dependent users. Lastly, as expected, retired or not working respondent group showed the lowest mobile phone usage dependency amongst all the occupation groups, within this group, there was only 9.1 percent of the respondents tend to be dependent users and 90.9 percent tend to be non-dependent users.

As the type of occupation depends on the level of education obtained, the results are expected to correlate with the education level of the respondents. Therefore, the finding is consistent with the previous education demographic analysis.

Besides, the findings is tally with the speculation, for instance, the result reveals respondents with managerial and professional occupations are likely to have higher educational level would exhibit somewhat similar patterns of dependency on mobile phone usage.

Moreover, the result of the study is in accordance with findings of the study of Heinzmann *et al.* (1997) which found academic professionals tend to be less depend on mobile communications. Besides, the result also supported by Wareham *et al.*'s (1998) study, which found occupation is significant different in mobile adoption rate while people in sales positions are consistently adopt mobile phones at the highest rate.

Finally, the analysis of gross monthly personal income with dependent mobile phone usage tendency showed that there was a significant difference ($p=0.023$). It was noted that respondents with monthly personal income between RM2,000 to RM3,999 showed a highest tendency of mobile phone usage behaviour. Within that group, 59.1 percent of the respondents are likely the dependent users as compared to 40.9 percent who are non-dependent users. In addition, respondents with monthly personal income between RM1,000 to RM1,999 showed a moderate high tendency of mobile phone usage behaviour too. Within that group, 54.5 percent of the respondents are dependent users as compared to 45.5 percent who are non-dependent users.

In addition, respondents with monthly personal income between RM4,000 to RM5,999 showed a third higher tendency of dependent mobile phone usage behaviour. Within that group, 54.1 percent of the respondents are tend to be dependent users as compared to 45.9 percent who are non-dependent users. It is interesting to note the respective dependent users and non-dependent users were at an equivalent 50 percent of the respondents within the monthly personal income group of RM6,000 and above. Not surprising, the results showed that respondents with monthly personal income less than RM1,000 had lowest dependency of mobile phone usage. Within that group, 33.3 percent of the respondents are dependent users as compared to 66.7 percent who are non-dependent users. In other words, as expected, the result showed monthly

personal income able to explain mobile phone usage and hence the result resembled the findings of the study by Wareham *et al.* (1998).

Table 4.8 summarized the demographic profiles of higher dependent and non-dependent mobile phone users in urban Malaysia based on the Chi-square cross tabulation analysis.

Table 4.8: Demographic Profiles of Dependent and Non-Dependent Mobile Phone Users in Urban Malaysia

Consumer Profile	Demographic Profile
Dependent users	• Likely to be aged between 30 to 39 years old • Likely to possess college diploma • Likely to be sales personnel • Likely to be earning between RM2,000 to RM3,999 monthly
Non-Dependent users	• Likely to be aged below 20 years old or above 40 years old • Likely to be educated until high school or below • Likely to be student or retired or not working individual • Likely to be earning less than RM1,000

4.4 Defining Lifestyle Dimensions

Factor analysis was performed on the 28 lifestyle statements to identify the underlying patterns or relationships of the lifestyle statements. The analysis will also determine the degree that the statements can be condensed or summarized into smaller set of factors or dimensions.

4.4.1 Factor Analysis of the Lifestyle Statements

Firstly, the study further analyzed the matrix of correlations between lifestyle variables and the appropriateness of the factor analysis by using Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The KMO measure of sampling adequacy and Bartlett's test of sphericity were used to determine whether the study could comfortably proceed with the factor analysis of the 28 variables of the lifestyle constructs. Table 4.9 shows the results of the KMO measure and Bartlett's test of sphericity.

Table 4.9: Summary Results of KMO Measure and Bartlett's Test of Sphericity on Lifestyle Variables

Kaiser-Meyer-Olkin Measure	0.774
Bartlett's test of sphericity	
▪ Approx. chi-square	3209.388
▪ Degree of freedom	378
▪ Significance	0.000

For Table 4.9, the KMO's measure of sampling adequacy for the sample data set is high at 0.774, which is greater than 0.5 for a satisfactory factor analysis to proceed. The result indicates that the correlations between pairs of variables can be explained by other variables and hence the factor analysis is appropriate (Norusis, 1985).

In addition, from the same Table 4.9, the study obtained a value of 3209.388 for the Bartlett's test of sphericity. Since the value is large and the associated significance level of 0.000 is small, it is sufficient for the study to reject the null hypothesis that the population correlation matrix is an identity. The result of study confirmed that the correlation matrix is not an identity matrix and concluded that the strength of the relationship among variables is strong.

In short, the high KMO value obtained together with the highly significant level of the test of sphericity, are both very comfortable indications that the given set of data lifestyle variable scores are adequate for factor analysis. Therefore, the study confirmed that it is appropriate to continue the factor analysis for the data.

The principal components analysis performed extracted seven factors having Eigenvalues greater than 1.0. The seven factors accounted for 57.16 percent of the total variance. The orthogonal Varimax rotational approach, was subsequently applied on unrotated factors to obtain simpler and more interpretable factor solutions. As the study collected a sample of 426 respondents, only items with factor loadings of 0.40 and above were considered as significant in interpreting the factors (Hair Anderson and Tatham, 1987).

Table 4.10 presents the summary of the results of the varimax-rotated factor analysis and the sorted factor loadings.

Table 4.10: Varimax Rotated Factor Matrix of Lifestyle Items

Statements	***Loadings**						
	Factors						
	I	**II**	**III**	**IV**	**V**	**VI**	**VII**
1. I think I have more self-confidence that most people	**0.761**	0.012	0.231	0.015	-0.019	0.063	0.035
2. I am more independent than most people	**0.727**	-0.173	0.192	0.033	0.039	-0.077	0.022
3. I think I have a lot personal ability	**0.701**	0.340	0.145	-0.044	0.080	0.028	0.272
4. I will probable get a job promotion In the near future	**0.607**	0.014	0.062	-0.081	0.366	0.078	-0.031
5. When I set my mind to achieve something, I usually can achieve it	**0.682**	-0.019	0.061	0.068	0.043	0.091	0.199
18. I frequently buy things when I can't afford them	0.054	**0.768**	-0.121	-0.012	0.070	0.006	-0.103
19. I pretty much spend for today and let tomorrow bring what it will be	-0.055	**0.697**	-0.067	-0.057	0.013	0.038	-0.156
20. I am an impulse buyer	-0.122	**0.746**	0.166	-0.005	0.169	-0.058	0.111
16. I am usually among the first to try new products	0.027	**0.631**	-0.085	-0.151	0.185	0.062	0.172

Statements	*Loadings						
	Factors						
	I	II	III	IV	V	VI	VII
25. My family is the most important thing to me	0.098	-0.118	**0.811**	0.038	0.025	0.053	0.085
26. Youngsters should have more respect for the elders	0.139	-0.003	**0.744**	0.064	-0.039	0.044	0.025
27. I listen to the advice of elders	0.098	0.016	**0.537**	0.128	-0.218	0.107	-0.088
28. I am always proud to have a close-knit family	0.237	-0.029	**0.736**	0.003	-0.017	0.033	-0.009
9. I would rather spend a quiet evening at home than go out to party	0.031	-0.053	0.024	**0.828**	-0.170	0.034	0.151
10. I am a traditional and conservative person	0.072	0.023	0.071	**0.569**	0.157	-0.010	-0.161
11. I like parties where there is lots of music and talk (R)	-0.130	-241	-0.020	**0.634**	-0.328	0.071	-0.128
12. I am a homebody	-0.025	-0.091	0.119	**0.830**	0.027	0.034	0.054
6. I am willing to pay higher prices for famous brands	0.099	0.292	-0.126	0.054	**0.686**	0.022	0.099
7. I care for well-known brands rather than their quality	0.170	0.503	-0.087	-0.114	**0.444**	0.052	-0.220
8. I prefer to buy foreign brands than local brands	0.162	0.190	-0.148	-0.140	**0.622**	0.037	0.066
21. I find myself comparing the prices in the grocery stores even for small items	0.162	-0.010	-0.052	0.092	-0.163	**0.724**	-0.199
22. I usually watch the advertisements for announcement of sales	-0.167	0.033	0.119	-0.091	0.326	**0.595**	0.130
23. I can save a lot of money by shopping around for bargains	0.084	-0.007	0.126	0.055	-0.026	**0.781**	0.013
24. I shop a lot for specials	0.036	0.120	0.146	0.045	0.341	**0.476**	0.385
13. I like to visit places that are totally different from my home	0.375	-0.089	-0.040	-0.019	-0.161	0.032	**0.556**
14. I like to buy new and different things	0.021	0.444	0.112	-0.051	0.237	-0.070	**0.519**
15. I am interested in the cultures of other countries	0.346	-0.183	-0.058	-0.007	0.163	-0.018	**0.643**
17. I am usually among the first to try new products.	0.372	0.377	-0.001	-0.213	-0.343	0.018	0.339
Variance Explained (%)	**15.13**	**13.48**	**7.74**	**6.27**	**5.81**	**4.44**	**4.28**

* Only items with factor loadings of 0.40 and above were considered as significant in interpreting the factors.

When analyzing the items in the factors, some interpretable dimensions can be identified (see Table 4.10).

Factor I, labeled "Self-Confident", reflects individuals who are strong believer in their personal ability and are likely to display leadership characteristics. They also tend to be very high confidence in nature.

Factor II, labeled "Impulsive", portrays individuals who prefer to make consumption choices on the spur of the moment. It is also likely that these individuals consume spontaneously from accidental exposure, curiosity or fad about new things.

Factor III, labeled "Family Orientated" depicts consumers who are very concern with the well being of their family members. They tend to put the importance of their family above everything else.

Factor IV, labeled "Home Orientated" depicts consumers who are very concern with the condition of their home. They tend to put the importance of their home above everything else.

Factor V, labeled "Brand Conscious" portrays those who like experiencing new brands in the market. They are risk takers by nature and love to take chance.

Factor VI, labeled "Economizer" portrays those consumers that pay close attention to prices and special sales to benefit from bargain purchases.

Factor VII, labeled "Variety Seeking" portrays individuals who are innovative enough to try new and different things in life. They are also love to travel and seek adventures outings.

The result of the factor analysis showed some similar lifestyle patterns with the study by Kucukemiroglu (1997) of Turkish consumers. The lifestyle patterns that

were identical among Malaysian and Turkish consumers were "Family and Home Concern", "Leadership and Self-Confidence", "Care-Free Personality" and "Health Conscious". The overall variance explained by the factor analysis for the Kucukemiroglu (1997) study of Turkish consumers was 68.5 percent as compared to 57.16 percent in this study. Therefore, the lifestyle patterns extracted will be a better representative for the Turkish consumers.

The result of the factor analysis also showed some similar lifestyle patterns with the study by Kaynak and Kara (1998) of Azerbaijan consumers. The lifestyle patterns that were identical among Malaysian and Turkish consumers were "Family and Home Concern", "Leadership and Self-Confidence", "Adventurous" and "Price Conscious". The overall variance explained by the factor analysis for the Kaynak and Kara (1998) study of Azerbaijan consumers was 56.7 percent as compared to 57.16 percent in this study. Therefore, the lifestyle patterns extracted will be a better representative for the Malaysian consumers.

Besides, based on Table 4.10, it was observed that Factor I comprised 5 variables and explained 15.13 percent of the variance while Factor II, Factor III, Factor IV and Factor VI had 4 variables each and explained 13.48 percent, 7.74 percent, 6.27 percent and 4.44 percent of the variance respectively. Apart from that, Factor V and Factor VII consisted of 3 variables each and explained 5.81 percent and 0.339 percent of the variance respectively.

The component items of each factor were tested for internal consistency reliability using Cronbach's coefficient alpha. Table 4.11 summarized the conceptual attributes of items loaded on each of the seven-labeled factors with the alpha scores for each factor. The final Alpha scores for other seven factor were ranging from 0.541 to 0.787. According to Nunnally (1978), these values were quite acceptable in an exploratory research.

Table 4.11: Lifestyle Dimension and Reliability Coefficients

Factor	Dimensions of Lifestyle	No. of Items	*Alpha Score
I	Self-Confident	5	0.787
II	Impulsive	4	0.715
III	Family Oriented	4	0.725
IV	Home Oriented	4	0.727
V	Brand Conscious	3	0.680
VI	Economizer	4	0.610
VII	Variety Seeking	3	0.541

* The component items of each factor were tested for internal consistency reliability using Cronbach's coefficient alpha.

4.4.2 Group Means Analysis for Lifestyle Dimensions

An analysis of the lifestyle characteristics of the two groups of mobile phone users, dependent users and non-dependent users, along the seven dimensions portrayed by the survey data was carried out through a comparison of the mean values for the two groups using the t-tests. Table 4.12 presents the result of the comparison.

Table 4.12: Comparing Lifestyle Dimensions of Dependent and Non-Dependent Mobile Phone Users

Factor	Lifestyle Dimension	Group Mean Scores*		Significance **
		Dependent Users	Non-dependent users	
I	Self-Confident	25.13	24.47	0.131
II	Impulsive	9.12	9.39	0.416
III	Family Oriented	23.30	22.48	**0.009**
IV	Home Oriented	17.53	17.71	0.660
V	Brand Conscious	10.59	11.22	0.058
VI	Economizer	16.67	16.87	0.597
VII	Variety Seeking	23.20	22.74	0.207

* Higher scores represent greater agreement with the lifestyle constructs.
** Level of significance using t-test.

Based on group differences in mean values, a general psychographics profile of both dependent and non-dependent mobile phone users can be drawn up. Compared to non-dependent users, it seemed that the dependent users were more self-confident, family oriented and variety seeking. On the other hand, non-dependent users are tend to be more impulsive, home oriented, brand conscious and economizer if compared to dependent users (see Table 4.12).

From Table 4.12, contrary to the prediction, it showed the differences in group means were statistically significant ($p<0.05$) in only one out of seven lifestyle dimensions compared. The dimension was Family Oriented ($p=0.009$). The results tally with the earlier analysis showed that mobile phone expenses for personal use was much greater than business use purpose in both the dependent and non-dependent mobile phone user groups. Besides, Brand Conscious dimension was marginally significant ($p=0.058$) in mobile phone usage dependencies, while no significant differences ($p>0.05$) were found between the two groups of mobile phone users in Self-Confident, Impulsive, Home Oriented, Economizer and Variety Seeking dimensions.

In view of the current research is exploratory in nature and there is no research conducted in relation to the lifestyle profiles and mobile phone usage dependencies of urban Malaysian mobile phone users in the past, as expected, the lifestyle profile of the Malaysian mobile phone users does not entirely resemble that of the findings of similar studies with respect to lifestyles of Malaysian consumers of other types of product or service.

For instance, Ezlika (2000) in a research on demographic and lifestyle characteristics of active and passive investors of KLSE in Malaysia found there was significant difference between the two groups of Malaysian investors in terms of Risk Orientation or Innovative, Knowledge Seeker, Outdoor Lover and Outgoing or Entertainment Lover. Besides, the active investors were found more risk taking or innovative than passive investor groups.

As in Kaur's (1990) findings which showed there was significant difference between male credit card users and no-users in Kuala Lumpur and Petaling Jaya

areas, in terms of five psychographic dimensions, namely, Credit Disbeliever, Self-Confident, Social Active, Risk Oriented or Innovative, and Bargain Shopper. Besides, the credit card users were found tend to be low in their disbelief in credit, more self-confident, socially active, risk oriented and less price conscious in purchase behaviour.

4.5 The Relationship between Demographic Variables and Psychographic Segments

This section identifies the respondents' demographic profile along with their psychographic segments. To compare and analyze the demographic profiles of the seven psychographic segments, the seven demographic variables studied were statistically analyzed by ANOVA and t-test.

Individual ANOVAs and Scheffe contrasts as well as t-test were conducted to differentiate mean levels between identifiable groups and to determine the relationships between psychographic segments, namely Self Confident, Brand Conscious, Home Oriented, Variety Seeking, Impulsive, Economizer and Family Oriented, and demographic variables namely race, gender, age, marital status, education level, occupation and gross monthly personal income.

Tables 4.13 to 4.19 show the summary results for the respective demographic profiles of the psychographic segments which includes mean score for each demographic category. Based on the scale, larger scores indicate a greater orientation towards the particular psychographic aspect.

Firstly, an analysis of the gender variable of psychographic constructs through a comparison of the mean values using t-test. Table 4.13 shows the summary result for the gender profile of the psychographic segments. From the result observed (see Table 4.13), as expected, of the seven demographic variables assessed, gender significantly differentiated ($p<0.05$) in only one of the seven psychographic constructs, namely Self-Confident ($p=0.000$). As expected,

respondents who were male reported the greatest agreement with Self-Confident questions (mean=25.70) as compared to those who were female (mean=24.11). In other words, male respondents were more confident with themselves than female respondents.

Table 4.13: Gender Profile of Lifestyle Segments

Demographic Profile	**Psychographic Segment*** **						
	Mean**						
	I	II	III	IV	V	VI	VII
Gender							
Male (I)	25.70	11.29	17.11	23.33	9.16	16.90	22.78
Female (II)	24.11	10.56	18.01	22.71	9.31	16.66	23.02
p-value*	**0.000**	0.300	0.290	0.950	0.665	0.504	0.447

* Using t-test statistical technique.

** Mean values are based on a summed score for responses to items scaled: Strongly Disagree = 1, and Strongly Agree = 7.

*** I - Self-Confident
II - Brand Conscious
III - Home Oriented
IV - Variety Seeking
V - Impulsive
VI - Economizer
VII - Family Oriented

Next, an analysis of the age variable of psychographic constructs through a comparison of the mean values using ANOVA has been performed. The study found there were significant differences between age variable and five psychographic constructs, namely Self-Confident, Brand Conscious, Home Oriented, Variety Seeking, Impulsive and Family Oriented. Table 4.14 shows the summary result for the age profile of the psychographic segments.

From Table 4.14, in Self-Confident lifestyle segment, there was a significant difference (p=0.020) found between respondents in different age groups. Respondents who aged above 40 years old (mean=25.24) were exhibited higher level of self-confidence than the respondents in the other three age groups comprising respondents who aged 30 to 39 years old (mean=24.94); respondents

who aged 20 to 29 years old (mean=25.12) and respondents who aged below 20 years old (mean=22.03). In other words, as expected, elder respondents, in this study, those who aged above 40 years old were exhibited highest self-confidence while the younger respondents who aged below 20 years old were exhibited least self-confidence with themselves.

In Brand Conscious lifestyle segment, there was a significant difference (p=0.001) found between respondents in different age groups. Respondents who aged below 20 years old (mean=13.06) were most brand conscious if compared to other respondents in the other three age groups comprising respondents who aged 20 to 29 years old (mean=10.84), aged 30 to 39 years old (mean=10.55) and respondents who aged 40 years old and above (mean=10.34). In other words, as predicted, respondents who were younger, for instance, those aged below 20 years old were most brand conscious while the elder respondents such as respondents who aged above 40 years old were the least brand conscious individuals.

Next, in Home Oriented lifestyle segment, there was a significant difference (p=0.000) found between respondents in different age groups. Respondents who aged above 40 years old (mean=19.16) were more home oriented than the respondents in the other two age groups comprising respondents who aged 30 to 39 years old (mean=18.45) and respondents who aged below 20 years old (mean=16.03). In other words, as expected, elder respondents were more home oriented than younger respondents. It worth to note that there was no significant relationship between respondents who aged 20 to 29 years old and the other age groups in the Home Oriented construct.

Despite there was a significant difference (p=0.034) found in the overall relationship between age variable and Variety Seeking lifestyle construct, however, the study found there was no significant relationship between the four age groups.

Besides, in Impulsive lifestyle segment, there was a significant difference (p=0.000) found between respondents in different age groups. Respondents who

aged below 20 years old (mean=11.47) were most impulsive consumers if compared to other respondents in the other three age groups comprising respondents who aged 20 to 29 years old (mean=9.22), respondents who aged 30 to 39 years old (mean=8.87) and respondents who aged above 40 years old (mean=8.66). In this regards, as estimated, younger respondents were more impulsive than the elder respondents who.

Table 4.14: Age Profile of Lifestyle Segments

Demographic Profile	**Psychographic Segment******						
	Mean***						
	I	II	III	IV	V	VI	VII
Age							
Below 20 (I)	22.03	13.06	16.03	23.56	11.47	16.69	20.25
20 – 29 (II)	25.12	10.84	17.07	23.36	9.22	17.08	23.15
30 – 39 (III)	24.94	10.55	18.45	22.58	8.87	16.20	23.30
Above 40 (IV)	25.24	10.34	19.16	21.69	8.66	17.13	22.71
p-value*	**0.020**	**0.001**	**0.000**	**0.034**	**0.000**	0.175	**0.000**
Comparison of Mean differences**	I<II I<III I<IV	I>II I>III I>IV	I<III I<IV		I>II I>III I>IV		I<II I<III I<IV

* Using ANOVA statistical technique.
** Indicates groups that are significantly different (p<0.05) on Scheffe contrasts.
*** Mean values are based on a summed score for responses to items scaled: Strongly Disagree = 1, and Strongly Agree = 7.
**** I - Self-Confident
II - Brand Conscious
III - Home Oriented
IV - Variety Seeking
V - Impulsive
VI - Economizer
VII - Family Oriented

In addition, in Family Oriented lifestyle segment (see Table 4.14), there was a significant difference (p=0.000) found between respondents in different age groups. Respondents who aged 30 to 39 years old (mean=23.30) were most family oriented if compared to the respondents in the other three age groups comprising respondents who aged 20 to 29 years old (mean=23.15), respondents who aged above 40 years old (mean=22.71) and respondents who aged below

20 years old (mean=20.25). In other words, in accordance with the speculation, respondents who were elder were more family oriented than the younger respondents.

Next, an analysis of the ethnic variable of psychographic constructs through a comparison of the mean values using ANOVA has been performed. The study found there were significant differences between ethnicity variable and three psychographic constructs, namely Self-Confident, Impulsive and Family Oriented. Table 4.15 shows the summary result for the ethnic profile of the psychographic segments.

Table 4.15: Ethnic Profile of Lifestyle Segments

Demographic Profile	**Psychographic Segment*******						
	Mean***						
	I	II	III	IV	V	VI	VII
Ethnicity							
Malay (I)	24.61	10.54	18.36	22.90	10.05	17.39	24.05
Chinese (II)	24.29	11.08	17.32	22.86	8.63	16.54	22.10
Indian (III)	26.78	10.87	17.15	23.48	9.75	16.45	23.69
p-value*	**0.001**	0.367	0.054	0.555	**0.000**	0.089	**0.000**
Comparison of Mean differences**	III>II III>I				II<I II<III		II<I II<III

* Using ANOVA statistical technique.
** Indicates groups that are significantly different (p<0.05) on Scheffe contrasts.
*** Mean values are based on a summed score for responses to items scaled: Strongly Disagree = 1, and Strongly Agree = 7.
**** I - Self-Confident
II - Brand Conscious
III - Home Oriented
IV - Variety Seeking
V - Impulsive
VI - Economizer
VII - Family Oriented

From Table 4.15, in Self-Confident lifestyle segment, there was a significant difference (p=0.001) found between respondents in different ethnic groups. Contrary to expectation, respondents who were Indians (mean=26.78) were

possessed with highest self-confidence than the respondents in the other two ethnic groups comprising respondents who were Malay (mean=24.61) and respondents who were Chinese (mean=24.29).

Besides, in Impulsive lifestyle segment, there was a significant difference (p=0.000) found between respondents in different ethnic groups. Respondents who were Malay (mean=10.05) were most impulsive if compared to other respondents in the other two ethnic groups comprising respondents who were Indians (mean=9.75) and respondents who were Chinese (mean=8.63).

In addition, in Family Oriented lifestyle segment, there was a significant difference (p=0.000) found between respondents in different ethnic groups. Respondents who were Malay (mean=24.05) were most family oriented if compared to the respondents in the other two ethnic groups comprising respondents who were Indians (mean=23.69) and respondents who were Chinese (mean=22.10).

Further to that, an analysis of the marital status variable of psychographic constructs through a comparison of the mean values using ANOVA has been performed. The study found there were significant differences between marital status variable and four psychographic constructs, namely Brand Conscious, Home Oriented, Variety Seeking and Family Oriented. Table 4.16 shows the summary result for the marital status profile of the psychographic segments.

From Table 4.16, despite there was a significant difference (p=0.034) found in the overall relationship between marital status variable and Brand Conscious lifestyle construct, however, the study found there was no significant relationship between the three marital status groups.

Next, in Home Oriented lifestyle segment, there was a significant difference (p=0.000) found between respondents in different marital status groups. Respondents who were married with children (mean=19.09) were more home oriented than the respondents in the other two marital status groups comprising

respondents who were married without children (mean=17.37) and respondents who were single (mean=17.07). In other words, as expected, married respondents were more home oriented while the single respondents were least home oriented.

In Variety Seeking lifestyle segment, there was a significant difference (p=0.012) found between respondents in different marital status groups. Respondents who were single (mean=23.30) were more variety seeking than respondents who were married with children (mean=22.05). It worth to note that there was no significant relationship between respondents who were married without children and the other marital status groups in the Variety Seeking construct.

Table 4.16: Marital Status Profile of Lifestyle Segments

Demographic Profile	**Psychographic Segment******						
	Mean***						
	I	II	III	IV	V	VI	VII
Marital status							
Single (I)	24.84	11.24	17.07	23.30	9.47	16.69	22.54
Married, without children (II)	24.67	10.39	17.37	23.42	8.96	16.12	22.82
Married, with children (III)	24.89	10.32	19.09	22.05	8.89	17.32	23.92
p-value*	0.956	**0.034**	**0.000**	**0.012**	0.272	0.131	**0.001**
Comparison of Mean differences**			III>II III>I	I>III			I<III

* Using ANOVA statistical technique.
** Indicates groups that are significantly different (p<0.05) on Scheffe contrasts.
*** Mean values are based on a summed score for responses to items scaled: Strongly Disagree = 1, and Strongly Agree = 7.
**** I - Self-Confident
II - Brand Conscious
III - Home Oriented
IV - Variety Seeking
V - Impulsive
VI - Economizer
VII - Family Oriented

Based on Table 4.16, in Family Oriented lifestyle segment, there was a significant difference (p=0.001) found between respondents in different marital status groups while respondents who were married with children (mean=23.92) were most family oriented if compared to the respondents in the other marital status group comprising respondents who were single (mean=22.54). In other words, in accordance with the speculation, married respondents were more family oriented than the single respondents. It worth to note that there was no significant relationship between respondents who were married without children and the other marital status groups in the Family Oriented construct.

An analysis of the education variable of psychographic constructs through a comparison of the mean values using ANOVA has been performed. The study found there were significant differences between highest education level variable and three psychographic constructs, namely Self-Confident, Variety Seeking and Impulsive. Table 4.17 shows the summary result for the education profile of the psychographic segments.

From Table 4.17, in Self-Confident lifestyle segment, there was a significant difference (p=0.000) found between respondents in different education groups. As expect, respondents who had professional qualification or university degree (mean=25.89) were possessed higher self-confidence than the respondents in the other two education groups comprising respondents who possessed college diploma (mean=23.80) and respondents who were only had education background until high school (mean=22.39). In other words, as expected, respondents who had higher education level were most confident with themselves than the lower educated group.

Besides, in Variety Seeking lifestyle segment, there was a significant difference (p=0.015) found between respondents in different education groups. As speculated, respondents who had professional qualification or university degree (mean=23.33) were more variety seeking if compared to other respondents who had lower education level until high school (mean=21.91). It should be taken note that there was no significant relationship between respondents who possessed college diploma and the other education groups in Variety Seeking construct.

In addition, in Impulsive lifestyle segment, there was a significant difference (p=0.000) found between respondents in different education groups. Respondents who had college diploma (mean=10.33) were most impulsive if compared to other respondents who had lower education background until high school (mean=10.07) and those who had professional qualification or university degree (mean=8.64).

Table 4.17: Education Level Profile of Lifestyle Segments

Demographic Profile	**Psychographic Segment******						
	Mean***						
	I	II	III	IV	V	VI	VII
Highest education level							
High School or less (I)	22.39	10.88	16.89	21.91	10.07	16.69	22.41
College Diploma (II)	23.80	11.24	17.29	22.87	10.33	17.14	23.27
Professional Qualification/ University Degree (III)	25.89	10.77	17.93	23.33	8.64	16.65	22.93
p-value*	**0.000**	0.543	0.124	**0.015**	**0.000**	0.557	0.238
Comparison of Mean differences**	III>II III>I			III>I	I>III II>III		

* Using ANOVA statistical technique.
** Indicates groups that are significantly different (p<0.05) on Scheffe contrasts.
*** Mean values are based on a summed score for responses to items scaled: Strongly Disagree = 1, and Strongly Agree = 7.
**** I - Self-Confident
II - Brand Conscious
III - Home Oriented
IV - Variety Seeking
V - Impulsive
VI - Economizer
VII - Family Oriented

Apart from that, an analysis of the occupation variable of psychographic constructs through a comparison of the mean values using ANOVA has been performed. The study found there were significant differences between occupation variable and four psychographic constructs, namely Self-Confident,

Brand Conscious, Variety Seeking and Impulsive. Table 4.18 shows the summary result for the occupation profile of the psychographic segments.

From Table 4.18, firstly, in Self-Confident lifestyle segment, there was a significant difference (p=0.000) found between respondents in different occupation groups. As expected, respondents who were clerical or production staff (mean=21.47) were exhibited lower self-confidence than the respondents in the other occupation groups comprising respondents who were administrative executives or teachers (mean=25.23) and respondents who were managers or professionals or lecturers (mean=26.76). On the other hand, respondents who were managers or professionals or lecturers were possessed highest self-confidence than supervisors or executives (mean=24.30) as well as respondents who were students (mean=23.46).

Despite there was a significant difference (p=0.034) found in the overall relationship between occupation variable and Brand Conscious lifestyle construct, nevertheless, the study found there was no significant relationship between the eight occupation groups.

Besides, in Variety Seeking lifestyle segment, there was a significant difference (p=0.000) found between respondents in different occupation groups. Respondents who were retired or not working individuals (mean=19.00) were less variety seeking if compared to other respondents in other occupation groups comprising respondents who were supervisors or executives (mean=23.17) and respondents who were student (mean=24.32). Meanwhile, surprisingly, significant relationship found between students and clerical or production staff, who were more variety seeking (mean=26.69) than respondents who were students.

Despite there was a significant difference (p=0.023) found in the overall relationship between occupation variable and Impulsive lifestyle construct, however, the study found there was no significant relationship between the eight occupation groups.

Table 4.18: Occupation Profile of Lifestyle Segments

Demographic Profile	Psychographic Segment****						
	Mean***						
	I	II	III	IV	V	VI	VII
Occupation							
Clerical/Production staff (I)	21.47	9.66	17.91	26.69	9.72	16.28	22.47
Sales Personnel (II)	25.38	10.46	17.08	23.42	9.00	18.85	22.46
Supervisor/Executive (III)	24.30	10.54	17.53	23.17	9.52	16.63	23.12
Administration Executive/Teacher (IV)	25.23	11.42	18.08	22.69	10.23	16.06	23.23
Managerial/Professional/ Lecturer (V)	26.76	11.21	17.98	23.21	8.52	16.57	22.96
Self-Employed/Others (VI)	25.11	10.28	16.98	23.17	8.98	17.22	23.67
Retired/Not working (VII)	22.27	10.18	18.09	19.00	7.18	18.36	22.64
Student (VIII)	23.46	12.00	17.08	24.32	9.85	17.04	21.79
p-value*	**0.000**	**0.034**	0.775	**0.000**	**0.023**	0.207	0.132
Comparison of Mean differences**	I<IV V>I V>III V>VIII			VII<III VII<VIII VIII<I			

* Using ANOVA statistical technique.
** Indicates groups that are significantly different (p<0.05) on Scheffe contrasts.
*** Mean values are based on a summed score for responses to items scaled: Strongly Disagree = 1, and Strongly Agree = 7.
**** I - Self-Confident
II - Brand Conscious
III - Home Oriented
IV - Variety Seeking
V - Impulsive
VI - Economizer
VII - Family Oriented

Lastly, an analysis of the gross monthly personal income variable of psychographic constructs through a comparison of the mean values using ANOVA has been performed. The study found there were significant differences between gross monthly personal income variable and three psychographic

constructs, namely Self-Confident, Impulsive and Family Oriented. Table 4.19 shows the summary result for the gross monthly personal income profile of the psychographic segments.

From Table 4.19, in Self-Confident lifestyle segment, there was a significant difference (p=0.000) found between respondents in different gross monthly personal income groups. As expected, respondents who were in higher gross monthly personal income groups such as RM4,000 to RM5,999 income group (mean=27.02), RM6,000 and above income group (mean=26.50) and RM2,000 to RM3,999 income group (mean=25.07) were possessed higher self-confidence than the respondents in the lower monthly personal income group, in this case, those who were earning less than RM1,000 (mean=22.78). In other words, as expected, respondents who had higher monthly personal income were possessed with highest level of self-confidence while the individuals with lower monthly personal income had least self-confidence.

Despite there was a significant difference (p=0.020) found in the overall relationship between gross monthly personal income variable and Impulsive lifestyle construct, nevertheless, the study found there was no significant relationship between the four gross monthly personal income groups.

In addition, in Family Oriented lifestyle segment, there was a significant difference (p=0.007) found between respondents in different gross monthly personal income groups. Respondents who earned monthly personal income less than RM1,000 (mean=21.46) were less family oriented if compared to the respondents in the other gross monthly personal income groups comprising respondents who had monthly personal income of RM1,000 to RM1,999 (mean=23.30) and respondents who earned monthly personal income (mean=23.16).

Table 4.19: Personal Income Profile of Lifestyle Segments

Demographic Profile	Psychographic Segment****						
	Mean***						
	I	II	III	IV	V	VI	VII
Gross monthly personal income							
Less than RM1000 (I)	22.78	12.00	17.19	23.46	10.19	17.28	21.46
RM1,000 – RM1,999 (II)	23.63	10.61	17.47	22.20	10.06	16.67	23.30
RM2,000 – RM3,999 (III)	25.07	10.78	17.31	23.09	9.08	16.90	23.16
RM4,000 – RM5,999 (IV)	27.02	10.77	19.03	23.38	8.56	16.00	22.67
RM6,000 and above (V)	26.50	11.05	17.86	22.25	7.64	16.64	23.27
p-value*	**0.000**	0.168	0.079	0.188	**0.020**	0.434	**0.007**
Comparison of Mean differences**	I<III I<IV I<V						I<II I<III

* Using ANOVA statistical technique.
** Indicates groups that are significantly different ($p<0.05$) on Scheffe contrasts.
*** Mean values are based on a summed score for responses to items scaled: Strongly Disagree = 1, and Strongly Agree = 7.
**** I - Self-Confident
II - Brand Conscious
III - Home Oriented
IV - Variety Seeking
V - Impulsive
VI - Economizer
VII - Family Oriented

In view of the exploratory nature of the study, the findings on the significant relationships between demographic factors and lifestyle segments of mobile phone users, might not be able to make comparison to other similar research works on same type of services.

Nevertheless, the study identified target sub-groups or sub-segments from the analysis on the respondents' demographic profile along with their psychographic segments as discussed earlier. The research results from this analysis could guide advertising strategy as the findings would enrich the description of a

particular target market. The findings resembled the studies by Gilbert and Warren (1995) and Seow (1997).

Based from findings discussed earlier in this section, it was showed support to the association between demographic characteristics and psychographics. In brief, it revealed that age variable significant differentiated in lifestyle constructs for six of the seven constructs. Besides, marital status and occupation variables were significant differentiated in four of the seven lifestyle constructs while other demographic variables namely ethnicity, highest education level and monthly personal income were significant differentiated in three of the seven lifestyle constructs and gender profile was significant differentiated in only one lifestyle construct. Table 4.20 summarized the relationship between demographic variables and lifestyle segments mobile phone users in urban Malaysia based on ANOVAs and t-test.

Table 4.20: Summary of Relationships between Demographic Variables and Lifestyle Constructs of Mobile Phone Users

Demographic Variable	Psychographic Segment*						
	Statistical Significant ✔						
	I	II	III	IV	V	VI	VII
Gender	✔						
Age	✔	✔	✔	✔	✔		✔
Ethnic	✔				✔		✔
Marital status		✔	✔	✔			✔
Education	✔			✔	✔		
Occupation	✔	✔		✔	✔		
Income	✔				✔		✔

✔ Using ANOVA and t-test statistical techniques.

* I - Self-Confident
II - Brand Conscious
III - Home Oriented
IV - Variety Seeking
V - Impulsive
VI - Economizer
VII - Family Oriented

As noted in Table 4.20, the lifestyle constructs which were related to most demographic variables were Self-Confident, Impulsive, Variety Seeking and Family Oriented. In other words, the respondents in sample were likely the self-confident, impulsive, variety seeking and family oriented individuals. It is worth to note that, among all the seven lifestyle constructs, Economizer construct showed not significant different to all the seven demographic profiles.