CHAPTER 2
LITERATURE REVIEW

This chapter begins with the explanation of the concept and definition of psychographics and its role in explaining consumer behavior in general. Then the applications of psychographic research are described followed by a review of previous psychographics studies in Malaysia. Then a more significant empirical research findings pertaining to the demographic and psychographic profiles of dietary supplement users were discussed.

2.1 PSYCHOGRAPHICS CONCEPT
The need to study the psychographic profile of the consumer was recognized in the United States as early as 1940's (Lee 1987). However, in Malaysia psychographic studies only began in the early 1980's where some minor and isolated psychographic studies were conducted. Psychographics has been extensively used in the study of consumer behavior. Its key applications have been in media selection, product and brand choice analysis, buyer behavior and shopping orientation, social marketing, leisure and vacation behavior and others.

Various definitions have been given to the term "psychographics". Wells (1974) regarded it as seeking to “describe the human characteristics of consumers that may have bearing on their response to products, packaging, advertising and public relations efforts”. Schiffman and Kanuk (1987) deemed psychographics to include relatively intangibles such as motives, interests,
attitudes and values, in contrast to demographics which consist of objective and measurable characteristics of a population. Demby (1989) on the other hand defined psychographics as the use of psychological, sociological and anthropological factors such as benefits desired, self-concept and lifestyle to determine how the market is segmented by the propensity of groups within the market and their reasons to make a particular decision about a product, person ideology or otherwise hold an attitude or use a medium.

2.2 PSYCHOGRAPHICS AND DEMOGRAPHICS

Psychographic and demographic profile is often seen as competing segmentation approaches as if marketers could select only one method for segmentation purposes. However, Schiffman and Kanuk (1991) have pointed out that psychographic and demographic profile is actually complementary approaches that work only best together.

Demographics consist of objective and measurable characteristics of a population, for example age, income, education, gender and marital status. Such demographic characteristics can tell marketer who is apt to use a product and how heavily and how the users of one brand vary from those of another in their quantifiable characteristics. This information is important but it tells us little about why products were purchase.

On the other hand, psychographics tends to include relatively intangible variables; for example motives, interests, attitudes and values. These variables add vitality to consumer profile that cannot be easily captured by
demographics (Schiffman and Kanuk 1991). Psychographics or life style research combines demographic information such as sex, age, income and so on with attitude, interests and opinion. It entails a large number of questions designed to determine activities, opinions and interests of a certain group of consumers - for example homemakers, retirees or the highly mobile. Questions usually focus on product use category such as clothing or sporting goods. The net outcome is a lifestyle profile of a group of consumers who buy certain products (McNeil 1982). In fact according to Plummer (1974), "The basic premise of lifestyle research is that the more you know and understand about your consumers, the more effectively you can communicate and market to them".

Consumers within the same demographic group can exhibit very different psychographic dimensions. According to the Technical Director of Survey Research Malaysia Simon H. Frien, Malaysian marketers can see their consumers in "black and white" by using demographic variables but with psychographic variables the marketer can see them in "colours" (Ho 1988).

In the next decade, finely tuned niche marketing will be more important than ever as traditional demographics models become overshadowed by individual psychographic (Burrell 2000). Thus in order to get a sharper picture of psychographics profile of consumers, it is necessary and useful to compare it with consumer demographic and with motivational research, two forms of consumer research that have had a bearing on the development of
psychographic. Table 2.1 below indicates the lifestyle dimensions that maybe investigated among consumers for research.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Interests</th>
<th>Opinions</th>
<th>Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Family</td>
<td>Themselves</td>
<td>Age</td>
</tr>
<tr>
<td>Hobbies</td>
<td>Home</td>
<td>Social issues</td>
<td>Education</td>
</tr>
<tr>
<td>Social events</td>
<td>Job</td>
<td>Politics</td>
<td>Income</td>
</tr>
<tr>
<td>Vacation</td>
<td>Community</td>
<td>Business</td>
<td>Occupation</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Recreation</td>
<td>Economics</td>
<td>Family size</td>
</tr>
<tr>
<td>Club membership</td>
<td>Fashion</td>
<td>Education</td>
<td>Dwelling</td>
</tr>
<tr>
<td>Community</td>
<td>Food</td>
<td>Products</td>
<td>Geography</td>
</tr>
<tr>
<td>Shopping</td>
<td>Media</td>
<td>Future</td>
<td>City size</td>
</tr>
<tr>
<td>Sports</td>
<td>Achievements</td>
<td>Culture</td>
<td>Stage in life cycle</td>
</tr>
</tbody>
</table>

Source: Plummer 1974

2.3 PSYCHOGRAPHICS AND LIFESTYLE

The concept and term for psychographics were introduced by Emanuel Demby to describe a technique that “added the richness of behavioral and social sciences to demographics” (Engel and Blackwell 1982). Wells (1975) in attempting to distinguish between lifestyle and psychographics stated that while the former focuses on broad cultural trends or on need and values thought to be closely associated with consumer behavior, the latter refers to generalized personality traits (Lim 1992). Wells (1975) dubbed the lifestyle
method as "backward segmentation" because it groups people by behavioral characteristics before seeking correlates (Kassarjian 1971). Kassarjian (1971) further discussed that the technique divides the total market into segments based on interests, value opinion, personality characteristics, attitude and demographic variables using techniques of cluster analysis, factor analysis and canonical correlation.

Demby uses the term psychographic to refer to measure truly "mental"-attitudes, beliefs, opinions, personal traits etc, and lifestyle to refer to the analysis and act or behavioral aspects (Anderson and Golden 1984; Lim 1992). Assael (1995) broadly defines lifestyle as a mode of living that is identified by how people spend their time (activities), what they consider important in their environment (interest) and what they think of themselves and the world around them. He explains further that lifestyle variables are also known as psychographic characteristics because attitudes, interests and opinion are psychological oriented variable that can be quantified. In 1987, Assael describe psychographics as consumer psychological characteristics that could be quantified and represented by two close variables: lifestyle and personality (Assael 1987).

Lifestyle and psychographics are commonly used as synonyms. Even though there are attempts to differ between lifestyle and psychographics, the two terms are often used interchangeably. Wells (1975) and Wells and Tigert (1971) themselves look upon the concept as synonyms. They refer to it as
being variously called "lifestyle", "psychographics" or "activity and attitude research".

2.4 APPLICATION OF PSYCHOGRAPHICS RESEARCH

Psychographics in research typically seeks to identify a limited set of distinct consumer types to which marketers may direct different marketing efforts. The more the marketers know and understand about their consumers, the easier for the marketers to define the key target consumer to position and improve a product or service and the more effective the marketer can communicate to the consumer through the creation of advertisement (Plummer 1974). The fact that no single population is homogenous and no "average man" make psychographic research particularly useful in developing marketing segment strategies with specific marketing objective. It identifies important subtypes in the population or target for the product.

A combine use of demographics and psychographics helps marketer to locate their target market of consumers and classify consumers into groups based on their similar lifestyle characteristics. Then, marketer are able to acquire a picture of the "inner" consumer; that is to know what consumers are feeling and what ought to be stressed in the marketing campaigns to satisfy the needs and wants of specific groups of consumers.

A market segmentation strategy by product attribute alone as a basis for multi-brand development is inadequate to describe and analyse a consumer
as a person. The richness of redefinition of key target market in such market segment strategy is added with the combination of lifestyle dimensions obtained from psychographic research (Plummer 1974).

Market segmentation is closely linked to product improvement and product positioning whether new or old. Conclusion drawn from the portrait of consumer in terms of their needs and how a product fits into their life can be employed to position a product. As market segmentation defines the characteristic of various segments in the marketplace and the allocation of marketing resources among these segments, product positioning helps to determine how consumers perceive the marketer's product and the kind of marketing strategies to be developed and implemented to achieve the desired position in the market.

As psychographic segmentation provides information on different needs of different types of consumers and the potential size of those types in the population, it helps in identifying the unserved market segments. The psychographic segmentation study undertaken by Colgate Palmolive has uncovered three clear defined consumer groups – independent, rejuvenators and compensators. This has brought Colgate Irish Spring bar soap to the position of the third leading bar soap in the United States three years after is nationally introduced (Loudon and Della Bitta 1984).

In the development of advertising campaigns, psychographic analysis could be used to select the appropriate design on promotional themes to appeal to a
target market, the type of advertisement copy to use to reflect the lifestyle profile of the target market and the proper media vehicles to get the message across to the target market. All these were made possible as psychographics provide a richer and more life-like picture of the target market than demographic characteristic.

The findings from psychographic research can be used to determined the setting of the advertisement, type and appearance of the characters, nature of the music and artwork, tone of voice, rewards people seek in their activities and interests, notion of the numbers of types of role in which the target consumer sees the characteristic, etc. (Loudon and Della Bitta 1984).

Such application has been successfully used by Schlitz in creating a strong appeal to the heavy beer drinker’s sense of masculinity, hedonism and fantasy by using the “gusto man” and “gusto life” approach. Its advertisement campaign was around imaginary of the sea to glamorize the adventure of seaman who lived their lives with gusto and enjoyed a “gusto brew”. Its advertising copy reads, “I only go around once in life, so grab all the gusto you can (cited by Loudon and Della Bitta 1984).

The basic premise underlying psychographic research is that the more marketers understand their consumer, the more effectively they can communicate and market to them (Plummer 1974). In 1975, Wells in his review on psychographic studies provided five examples on the use of psychographics which are:
1. A psychographic profile based on general "life style dimensions"
2. A product-specific psychographic profile
3. Personality traits as description
4. A general life style segmentation study
5. A product specified segmentation.

2.5 PSYCHOGRAPHIC STUDIES DONE IN MALAYSIA

Numerous psychographic studies have been conducted overseas in Western countries such as in United States, Canada and Britain. However, one may question whether the AIO inventory which was successfully developed and used in studying lifestyles in the Western culture would also be applicable in a non-Western environment.

Rejab and Yacob's (1986) study on Malaysian women's life style has proven that the AIO inventory is universally applicable and adaptable in different research settings (Rejab and Yacob 1986, pp 51). Their study has shown that the Malaysian women population can similarly be segmented into various lifestyle groups by means of their activities, interests and opinions (Rejab and Yacob, 1986, pp 49). In this study, 2,214 women aged 18 and above were selected based on their household income level and residing area (urban, semi rural and rural) from two states in Peninsular Malaysia. These Malaysian women were segmented into eight life style groups by means of the 61 AIO items which have been modified to accept the local culture variation. The eight life style stratified segments found were "Traditional Mothers", "Fashion-conscious Women", "Innovative Opinion Women", "Feminine Women", "..."
"Liberated Women", "Economically-conscious Women", "Socially-active Women and "Basic Role Orientation (Rejab and Yacob 1986)\n
In Malaysia, the first nationwide lifestyle study was only conducted in 1988 by Survey Research Malaysia (SRM). Due to its complex multiracial population, Malaysia presents a great challenge for marketing. Simon H. Friend, the Technical Director of Survey Research Malaysia (SRM) has pointed out that rural and urban lifestyle is different in Malaysia and was so obstructive compared to Hong Kong and other countries (Ho 1988).

The SRM study in 1988 involved 2,037 respondents and used 86 AIO statements. It has successfully divided Malaysia consumers into seven lifestyle patterns – “The Yesterday People”, “The Yuppies”, "The New Breed", “The Chameleon”, “The Loner”, “The Kampung Trendsetter” and “The Sleepwalkers”. The details of the segments with their characteristic are as shown in Table 2.2 (Ho, 1988).

Table 2.2
Malaysian Consumer Segmentation According to the 1988 Lifestyle Survey

<table>
<thead>
<tr>
<th>Segment</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Yesterday People (20%)</td>
<td>Like to cling to the past and hard to adapt to change. Older people, female, with minimum education and rural. Traditional in outlook, lack self-confidence and difficult to sell new products.</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>2. The Yuppies (9%)</td>
<td>Socially and physically active, highly ambitious and confident. Relatively younger, Chinese, well educated. Buy more up-market brands and label conscious.</td>
</tr>
<tr>
<td>3. The New Breed (19%)</td>
<td>Manage to combine modern materialise with traditional, moral and religious background. Very family-oriented and see themselves as leader. Younger Malays, middle and higher income, males, urban dweller and have above average education.</td>
</tr>
<tr>
<td>4. The Chameleons (14%)</td>
<td>Two third are Chinese. Blend perfectly in society, quiet citizen and want to avoid hassle. Mr. Average.</td>
</tr>
<tr>
<td>5. The Loner (9%)</td>
<td>Self centered, want to be left alone, very relax about life. Mostly found in bigger town, upper and middle class groups, white collar jobs, Not heavy buyer of products.</td>
</tr>
<tr>
<td>6. The Kampung Trendsetter (19%)</td>
<td>Very religious, patriotic, family and community oriented. See themselves as leader in the environment. Better educated, younger people with relatively higher income. Most buy branded products. 2% Chinese and Indian.</td>
</tr>
<tr>
<td>7. The Sleepwalkers (9%)</td>
<td>Female, Chinese with lower education in middle or upper income household. Unadventurous, follower and ‘switch-off’ from life. Not house-proud and heavy video tapes viewers. Usually non-working wives.</td>
</tr>
</tbody>
</table>
In 1993, Survey Research Malaysia (SRM) conducted another lifestyle study where this time it involved 1,968 respondents clustering Malaysian consumers into another seven psychographic dimensions. The seven psychographic segments together with a summary of their characteristics are as shown in Table 2.3 (Seow, 1997).

### Table 2.3
Malaysian Consumer Segmentation According to 1993 Lifestyle Survey

<table>
<thead>
<tr>
<th>Segment</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pious Strivers</td>
<td>Relatively more religious, visit mosque, church or temple at least once a month.</td>
</tr>
<tr>
<td>(27.3%)</td>
<td>Traditional in their outlook. Strong opposition to abortion and non-censorship.</td>
</tr>
<tr>
<td></td>
<td>Tend to be active physically and socially and put high priority on family,</td>
</tr>
<tr>
<td></td>
<td>community and country.</td>
</tr>
<tr>
<td>2. Non Conformist</td>
<td>Religious but not traditional and very liberal in outlook. Less concern about</td>
</tr>
<tr>
<td>(10.3%)</td>
<td>family, community and world. Very active in sports and outdoor activities</td>
</tr>
<tr>
<td></td>
<td>although it is not health driven but due to interest. Careful spenders, less</td>
</tr>
<tr>
<td></td>
<td>susceptible to TV advertisement and promoters. However, they are influence by</td>
</tr>
<tr>
<td></td>
<td>sales promotion.</td>
</tr>
<tr>
<td>3. Chinese Contemporaries</td>
<td>Very liberal and not religious. Very confident but like to work in groups than</td>
</tr>
<tr>
<td>(6.1%)</td>
<td>act as leaders. Like outdoor activities and jog or run at least once a week.</td>
</tr>
<tr>
<td></td>
<td>Likely to eat out.</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4. Passive Liberals (17.6%)</td>
<td>Very liberal and religion to them is important. Believe in sex before marriage and relaxation censorship, no clear goal in life and less in self confidence. More likely to buy on credit, supporter of Malaysian products.</td>
</tr>
<tr>
<td>5. Young at Heart (11.3%)</td>
<td>Inclined to impulsive spenders. Brand conscious and followers of trends or fashions. Confident, extrovert, socially active and proud of their home. However, they dislike to be seen as a leader. Quite religious and less neurotic. Do not easily give up when face with hardship.</td>
</tr>
<tr>
<td>6. The &quot;Tidak-Apa&quot; Spindrift (9.1%)</td>
<td>Less confident but ambitious. Active (socially and physically) and like to be seen as a leader. Compulsive spender but not easily duped by neither advertisements nor sales promotion. Want to run to some extent and keen on adopting any brand or products.</td>
</tr>
<tr>
<td>7. The Caring Traditionalists (18.5%)</td>
<td>Health conscious and concern about nutritional value in food. Religious, traditional and have clear rules of rights and wrongs. Visit mosque, church or temple two or more times a week. However they are quite receptive to non-censorship. Very active socially and physically. Invite friend over for meal at least once a week. Proud of their home and being Malaysians.</td>
</tr>
</tbody>
</table>
Besides the SRM lifestyle survey, some local psychographic studies have also been conducted in Malaysia. In a study conducted by Eng (1992), he examined the psychographic differences of working wives and housewives in relation to food preparation styles, shopping goals and shopping behavior. A total of 253 working wives and 153 housewives were randomly selected from three areas within Klang Valley. The questionnaire measures a number of issues including role overload, food preparation, shopping goals and shopping measures. The study found that some psychographic differences exist in food shopping and preparation between both categories of wives. For example, compared with housewives, working wives eat out more frequently with their families, make fewer shopping trips and shop mostly in the evenings and on Sundays. Working wives rely more on newspaper advertising to help them in food purchase. They are also more likely to delegate cooking chores to their husband and maids. Quality and convenience are the two most important attributes emphasize in store selection by both categories of wives. While working wives emphases more in convenience, housewives give more attention on quality. Both categories of wives are likely to delegate food shopping duties to their husband. In terms of food preparation styles, housewives are more familiar and concern in their meal preparation and enjoying creating new and unusual dishes compared with working wives. Both housewives and working wives are equally concerned about health and food nutrition and dislike quickly prepared meals with regards to shopping goals, housewives are more price conscious than working wives although both are quality minded regarding behaviour, housewives prefer novelty products whereas working wives show greater liking to important gourmet products.
Nevertheless, both wives like to make shopping list, economise and buy products with quality.

Kaur (1990) investigates the demographic and psychographic characteristics that distinguish 156 male credit card holders from 85 non-users in Kuala Lumpur/Petaling Jaya area. She utilizes 49 statements measuring various activities, interests and opinions (AIO). The study found that in terms of demographics, credit card holders are slightly older (generally in their 40's), highly educated, earn higher incomes and are married with children. They are mostly professional or businessmen. With respect to race, most of the credit card holders are Chinese. In terms of psychographics, eight psychographic dimensions have been identified: credit disbeliever, swinger/achiever, appearance conscious, self confident, conservative, and socially active, risk oriented/innovative and bargain shopper. In short, credit card users attitude are more positive towards credit, more self confident, socially active, more willing to take risk and thus more innovative and less price conscious in their buying behavior. With respect to the swinger or achiever dimension, concern with appearance and conservative outlook, there is no significant difference between the card users and non-users.

2.6 LITERATURE REVIEW ON DIETARY SUPPLEMENT STUDIES

Several studies on dietary supplement users have been conducted abroad and in Asian countries. This subsection discusses previous literature review on dietary supplement users on their usage behaviour, demographic and their psychographic or lifestyle profile.
One of the biggest trends in the healthcare industry is that consumers are taking charge of their health and they are seeking alternative forms of medicines including dietary supplements, nutraceuticals and functional foods (Greger 2001). In Western countries, a significant proportion of the population also regularly consume dietary supplement as part of their health regimen (Gardiner 2000; Dorant 1991).

Dietary supplements are often taken as part of a healthy lifestyle. The motivations for taking supplements can be varied and include ensuring nutritional adequacy, reducing one's risk for certain diseases and age-related changes, and enhancing physical performance (Hathcock 2001). The use of dietary supplements has been increasing annually among most age groups for a variety of reasons, including a shift toward alternative and complementary medicines.

2.6.1 DIETARY SUPPLEMENT USER DEFINITION

A user of dietary supplement has been defined differently by different researchers in studies. In the study by Kim (2003) looking at the use of vitamins, minerals and other dietary supplements by 17- and 18-year old students in Korea, a user of vitamin and mineral supplement was defined as a person who took vitamin and mineral on more than 1 or 2 days per week for more than 1 month within the previous 12 month period. Gunther (2004) studied on herbal and speciality supplement use in Washington where current use of each supplement was defined as use at least weekly over the past year.
In the study by Ishihara (2003) to profile dietary supplement users in Japan, users of dietary supplements were defined as subjects who used at least one category of dietary supplement ≥1 week for ≥1 year. The five categories used in the study were multivitamin, beta-carotene, vitamin C, vitamin E and others. This method of defining the supplement users in this study by Ishihara has been validated in their previous study. In the JPHC Study also conducted in Japan, users of dietary supplement were defined as subjects who used each category of dietary supplements one or more times a week.

A report based on a compilation of 30 consumer surveys in America entitled “Consumer Research in the Nutrition Industry II” published in the Nutrition Business Journal (2002) had shown that 70% of American adults can be characterized as supplement users (NBJ 2002). Supplement users can be further classified into sub-segments based on their volume of purchases as shown in the Table 2.4 below.

Table 2.4
Classification of Dietary Supplement User Based on Volume of Purchase

<table>
<thead>
<tr>
<th>Type of User</th>
<th>Average Number of Purchases Per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy User (4.3%)</td>
<td>Five purchases or $43 per month</td>
</tr>
<tr>
<td>Regular User (32%)</td>
<td>One and two purchases or $11 per month</td>
</tr>
<tr>
<td>Occasional User</td>
<td>Once every two months</td>
</tr>
<tr>
<td>Rare User</td>
<td>Once every five months</td>
</tr>
</tbody>
</table>
For the purpose of this study, a “user” of dietary supplement will be defined as those who use dietary supplements for at least a week in the past one year whereas regular usage would mean using it on daily or at least few times in a week basis based on previous research definition. Any other pattern of dietary supplement consumption of less than weekly will be defined as non-regular user.

2.6.2 USAGE OF DIETARY SUPPLEMENTS

The prevalence of dietary supplement users differs depending on the study population as well as the definition of supplements and survey methods used. In the United States where dietary supplements are generally very popular, the prevalence varied from 21% to 55% among a number of different studies (Messerer 2001). In the Asian countries, the prevalence of daily vitamin supplement use has been shown to be 7.1% in the Japan Public Health Center-based prospective Study on cancer and cardiovascular disease.

Furthermore, a survey conducted and subsequently published in 2001 by a Singapore-based health food manufacturer on over 6,000 people around the Asian region found that Western health supplements are trendy in Asia (Nutra 2001). The findings of the survey showed how Western dietary supplements have replaced traditional supplements such a ginseng and bird’s nest for many Asians.

It has been found that Singaporeans spend $24.20 per month on supplements followed by people in Hong Kong ($22.40), Taiwan ($20.30), Malaysia
($17.30), China ($15.60) and Thailand ($11.90). However, their knowledge of supplements and their benefits varied widely. Chinese people seem to be the most knowledgeable with a 91% knowledge rating despite buying relatively few supplements. Hong Kong people were found to be the least knowledgeable with a 62% rating. According to researchers, people in Hong Kong were more likely to give up one kind of supplement quickly and switch to another on the basis of advertising and promotion whereas Chinese customers were more likely to stick with a supplement and take it on a daily or regular basis, indicating they spend less but spent carefully.

Dietary supplements are also targeted at specific population groups, including adolescents who have high demands for school performance. However, with the exception of adolescents engaged in athletics, dietary supplement use by this age group has not been well characterized in most other countries. Studies have also shown that dietary supplement use is a well-documented practice among adult and adolescent athletes as athletes continue to use dietary supplements at a rate higher than the general population. Sobal and Marquart (1994) examined existing studies of the prevalence and patterns of dietary supplements use among athletes. A meta-analysis of 51 studies provided data on 10,274 male and female athletes with a dietary supplement use prevalence rate of 46% while general population studies only showed a use rate of 40%. (USFDA 1994). This is because claims of increased energy, improved performance and gains in muscular strength with dietary supplements seem to appeal to this population (Grunewald 1993).
The prevalence of supplement use is also relatively high among health professionals, including doctors, dietitians and pharmacists. This is a further indication that supplement use is strongly associated with increased knowledge about nutrition and health. In a survey involving 4501 female physicians participating in the Women Physicians' Health Study, it was found that half of them took a multivitamin-mineral supplement. Those at high risk of heart disease were more likely to use antioxidant supplements and "those with a history of osteoporosis were nearly 3 times as likely as those with no history to take supplemental calcium regularly" (Frank 2000). In another survey involving 692 pharmacy students in Philadelphia revealed that 47 percent of the students had used vitamin and mineral supplements in the preceding two weeks. Sixty-five percent of the supplement users said they used them routinely. Fifty-nine percent took only one product, 26 percent took two and 15 percent took three or more supplements. (Rannelli 1993).

2.6.3 DEMOGRAPHIC CHARACTERISTICS OF USERS

The characteristics of supplement users have been profiled in numerous academic and industrial surveys. Use of dietary supplement including vitamins and mineral has been reported to be strongly affected by several general characteristics, including gender, residence, socioeconomic status, age, lifestyle patterns and one's general concern about health. Users are generally more likely to be older, women, well educated and more health conscious than non-supplement users (Patterson 1998). Many studies also have shown that supplement users differ from non-users in demographic, lifestyle and dietary factors (Lyle 1998, Ishihara 2003).
Gender

Females have been found to be more likely to take supplements than males (Gregor 2001; Kim 1997) in many studies. However, this has not always been the case. In the study by Kim (2003) on use of vitamins, minerals and other dietary supplements by 17- and 18-year old students in Korea, it was found that gender did not influence the use of vitamin/mineral supplement use.

Age

Age has also been shown to be strongly associated with supplement use in some population groups. Dietary supplements are widely used by the elderly in the USA and Australia (Bazzarre 1991; Subar and Block 1990). Furthermore, the first UK study to look at supplementation usage among the UK elderly by Johanson (2000) also found that a high proportion of the elderly in the UK takes supplements to maintain good health. His study involves 957 elderly people in the UK found that 36% of those living in the urban area and 41% in the rural area took at least one dietary supplement. The elderly in the UK consumes more fish oil, and less calcium than the elderly in the USA.

Residence Area

In the study by Ishihara (2003) conducted in Japan, it was found that a high prevalence of dietary supplement users was observed in metropolitan regions (Suita and Katsushika) and in areas strongly influenced by Western lifestyles (Ishikawa) with ready access to dietary supplements. This shows that dietary supplement users are located more in urban areas with higher disposable incomes and have a better position to purchase dietary supplements.
**Socioeconomic Status**

A number of studies have also indicated a strong association between supplement use and higher income level (Kim 2002), social class (Ishihara 2001) and education. Kim (2003) reported a positive association between use of vitamin/mineral supplement use and socioeconomic status of the family. Nayga's (1999) found that household size has been found to be negatively related to the likelihood of taking dietary supplements. This finding suggests that larger households may not be able to afford supplements for all members. Furthermore, he also reported that education was positively related to the likelihood of taking dietary supplements, a result that is consistent with other research (Koplan 1986, Slesinski 1995). However, although supplement users tend to be more educated, researchers have demonstrated no correlation (Kim 1999) or a negative correlation (Barr 1986) between supplement use and nutrition knowledge.

**Concern About Health**

Individuals who have a high concern for health tend to take dietary supplement more frequently and it has been reported that positive lifestyle factors are associated with increased supplement usage. A few investigators have attempted to characterize the attitudes toward nutrition and health of supplement users. Patterson (1998) reported that supplement users were more apt to have strong belief in diet-cancer connections than were nonusers. However, surveyed individuals more often cited health promotion of taking control of their health rather than disease prevention (except for the prevention of colds) as a reason for using supplements or herbs (Hensrud
1999; Schutz 1982). Consumers may also perceive plant products to be more natural than manufactured medicines (Winslow and Kroll 1998).

An individual's view about the health benefit of dietary supplement is recognized to be an important motivational factor for dietary supplement use. It has been reported that most users of vitamins and mineral accept the concept that their use of the supplements gives them nutritional insurance, making them more healthy and increasing their pep and energy while reducing tiredness and stress (Neuhouser 1999). It has been reported that most users of dietary supplements are well nourished and consume diets that are more nutrient dense (especially for nutrients contained in the supplements) than those of nonusers.

*Lifestyle Pattern*

Supplement use may be a marker for a range of health-related behaviours, with supplement users being less likely to drink heavily, smoke and be obese and more likely to engage in physical activities (Block 1994). Nonsmokers and individuals who consumer moderate amounts of alcohol are more apt to use dietary supplements than are individuals who smoke or who consume large amounts of alcohol (Greger 2001; Subar & Block 1990). Individuals who exercised regularly (strenuously at least three times/week) were more apt to take supplements (Lyle 1998; Patterson 1998). However not all studies reported so. Barr (1986) reported that 75% of the marathon runners and 64% of the fitness class participants who she studied used supplements and average intake was more than two supplements daily.
However, there are also indications that dietary supplements are likely to be used by individuals who do not fit in the initial target group: individuals who already have a healthy lifestyle are more likely to buy dietary supplements (Kirk 1999; Greger 2001) but this is not confirmed by all investigators (Wallstrom 1996). Individuals might actually use functional foods and/or dietary supplements as a means to compensate for an unhealthy lifestyle (Kirk 1991; Radimer 2000).

2.6.4 DEMOGRAPHIC & PSYCHOGRAPHIC STUDIES

A review of the literature found that there is lack of psychographic or lifestyle studies done on dietary supplement users in Malaysia and also in Asian countries. However in other countries, demographic and lifestyle studies has been conducted in many Western countries like United States, United Kingdom, Australia and Germany. These studies have provided useful information about the demographic and lifestyle characteristics of supplement users which marketers will find them extremely useful.

Studies such as by Lyle (1998) and Kirk (1999) has consistently showed that women who use supplements tend to be Caucasian, be well educated, live on the West coast of United States and have an income that is greater then the median United States income. Compared to women who do not use supplements, supplement users are also more likely to have lower body mass index (smaller body size), be nonsmokers, exercise regularly, eat more fruits and vegetables and adhere to cancer screening recommendations.
Xue (1999) studied the prevalence of supplement use and investigated the characteristics of regular supplement users in an Australian population. The results showed that 32% of men and 42% of women reported regular supplement use over the two month prior to the study. Typical supplement users were younger (49 to 70 years) rather than older (more than 70 years), female, unmarried, highly educated, those with occupation of clerk or sales person, more physically active during leisure time and less likely to be overweight. This study also found that 37.4% of the respondents reported consuming some form of supplements regularly. Age, sex, socioeconomic status and body mass index were associated with supplement use in this population. Supplement users tend to be more health conscious than non-users.

In another study, Ishihara (2003) studied the association between supplement use and demographics, lifestyles, health characteristics and dietary intake in a population-based cohort study in a non-Western country such as Japan. 78,531 participants were involved in this study who completed a self-administered questionnaire which includes enquiries about supplement use, occupation, height, weight, smoking, alcohol, physical activity, dietary behaviours, working hours, subjective stress as well as intakes for 138 foods. The results showed that supplement users were likely to have formerly smoked or never smoked. Female supplement users were likely to consume alcohol moderately. The prevalence of users was higher in the elderly, the self-employed, those with lower body mass index, greater physical activity, lower frequency of eating prepared food, higher frequency of eating out and
higher stress level in both sexes after mutual adjustments. Mean intakes of energy and nutrients were lower for users than for non-users.

Beitz (2004) studied whether users of dietary supplements differ from non-users in their food consumption. The objective of the study was to analyse macronutrient and food intakes of regular users and nonusers of vitamin and mineral supplements aged 18-79 years old. The results showed a significant difference in food consumption between regular users and non-users were observed, indicating a tendency for a healthier food choice among regular users.

Chan (1988) conducted a study to determine the consumer's orientation towards over-the-counter analgesics and antipyretics among Singaporean consumers. She has used 25 AIO statements to map out the psychographic profiles of the consumers. The study had identified five patterns of shopping orientation: information seeker, brand trier, health and safety consciousness, healthy lifestyle and stressful lifestyle respondents.

Another study on OTC pharmaceutical products was conducted by Chong (1994). The objective of the study was to determine the psychographic profile of over-the-counter (OTC) pharmaceutical products including dietary supplements among Malaysian and French consumers. He utilizes 57 AIO statements to study the profile of the respondents. The results showed that self medication using OTC pharmaceutical products including dietary supplements between Malaysian and France respondents are comparable at
60.9% and 59.5% respectively. The results also indicate race and age as two significant demographic characteristics that determines the frequency of consuming OTC products among Malaysian respondents. In this study, Malays tend to have the lowest frequency of usage of OTC products compared with Chinese, Indians and other races. As for age, the older the age group the greater the percentage of respondent that reported more frequent consumption of OTC products. Based on conceptual attributes of the AIO statement grouped by factor analysis, the following 12 lifestyle dimensions were identified in the Malaysian respondents: health but busy worrier, exerciser, opinion leader, reader, dieter, neighbourhood brand adviser, insurance believer, traditionalist, self medicators, cautious individuals and sin avoider. The results of this study showed that only the self medicator and cautious individual factors were significant in determining the frequency of usage of OTC products. In summary, the psychographic profile description of Malaysian OTC consumers are uncautious individuals who believe in self medicating and are non Malays between thirty six and fifty five years of age.

Miller (2003) conducted a study to identify the decision-making criteria used for dietary supplements at the point of purchase among 51 women aged 25 to 45 years who consumed a supplement at least four times per week. Qualitative analysis revealed ten key criteria which participants primarily used during the decision making process for dietary supplements. The ten criteria are price, quantity, dose, product info, dose instruction/frequency, inactive ingredient, active ingredient, product formulation, supplement delivery and brand. The results from his cluster analysis had identified five homogenous
subgroups of participants based on the criteria used. These included brand shopper, bargain shopper, convenience shopper, information gatherers and quality shopper. Table 2.5 below shows a brief summary of each cluster identified.

Table 2.5

Summary of Clusters Identified by Miller

<table>
<thead>
<tr>
<th>Shopper Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Shopper</td>
<td>• They considered the brand of the supplement above all other criteria and preferred name-brand products.</td>
</tr>
<tr>
<td></td>
<td>• They also considered the formulation of the product. A supplement with a combination of ingredients (e.g. vitamin E with selenium) marketed as a name brand frequently was the supplement of choice.</td>
</tr>
<tr>
<td>Bargain Shopper</td>
<td>• Primarily considered the price, quantity and dose of supplements and wanted to purchase the supplement with the greatest number of tablets for the least amount of money.</td>
</tr>
<tr>
<td>Convenience Shopper</td>
<td>• Considered price, quantity and dose of supplements but was not brand loyal.</td>
</tr>
<tr>
<td></td>
<td>• They preferred a brand with a simple dosing schedule and one with complementary ingredients (i.e. the product formulation) in the same tablet.</td>
</tr>
<tr>
<td>Information Gatherer</td>
<td>• Examined the product information, dosing instructions, ingredients and package formulation more than any other participants.</td>
</tr>
<tr>
<td>Quality Shopper</td>
<td>Frequently these shoppers selected the brand that had an “easy to understand” description of the supplement on the label and had few inactive ingredients on the ingredient list. Brands with ingredients or terms that were confusing to participants were avoided.</td>
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<tr>
<td>-------------------------</td>
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<tr>
<td></td>
<td>Frequently wanted the highest dose per tablet and the greatest number of tablets for the least amount of money.</td>
</tr>
<tr>
<td></td>
<td>They prefer familiar name-brand products that were made in America or include information on the supplement label (product information) about testing for potency and product standardization (i.e. name-brand products perceived to be of high quality).</td>
</tr>
</tbody>
</table>


In another study by a Health Focus; it looked at the psychographic segmentation of consumers of health food. The study has identified six primary segments in the health food market based on motivations and attitudes. The six segments are Managers, Investors, Healers, Strugglers, Disciples and Unmotivateds and their description and characteristics are as follows:-

1. **Manager Segment**

Managers choose healthful foods because they perceive a day-to-day value.

There are three sub-segments of the Manager group which are Wizard Managers, Savvy Managers and Casual Managers.
• *Wizard Managers* make up 13% of the Manager segment and 7% of shoppers overall. These Managers see a strong connection between food and medicine; with that comes a highly receptive attitude toward products offering functional nutrition benefits. They have an interest in alternative health care, including herbal remedies and homeopathics. They are on the leading edge in their thinking and awareness about diet and health enhancement, as well as diet and disease prevention. Wizard Managers consider diet to be a very important factor in how they feel day-to-day. They are confident in their knowledge and beliefs, and regularly give nutrition advice to others. They actively seek out new information to improve the healthfulness of their own diet and lifestyle.

• *Savvy Managers* make up 54% of the Manager segment and account for 27% of shoppers overall. Savvy Managers have a moderate to high awareness of leading-edge health topics and feel reasonably knowledgeable about health and nutrition. Their interests are more mainstream than Wizards, and they need more convincing about food as medicine and about functional nutrition. They are interested in foods that reduce the risk of disease or enhance health. Savvys are a source of health and nutrition information for others.

• *Casual Managers* make up 33% of the Manager segment and include 16% of all shoppers. These Managers know that eating well makes them feel better now. They are younger and more focused on weight control and physical performance than other Managers. Whereas other Manager is generally proactive about their health, Casual
Managers tend to be more reactive. They are most likely to act on their health interests and concerns as a result of putting on extra pounds, feeling older, or becoming ill.

2. The Investor Segment

Investors know that what they eat today will affect them tomorrow and in coming years. This long-term view instills a confidence in the future. Compared to Managers, Investors are much more confident about managing their long-term health as their short-term health.

3. The Healer Segment

Healers, as the name implies, are on the mend. They have turned to healthy foods for medical reasons, sometimes on the advice of a physician. They may not want to eat healthy foods, but they feel they have to do so. Healers often have one-dimensional health interests. For example, if they have hypertension, they may choose low-sodium foods but have no interest in learning about fiber or fat. The highest incidence of Healers is found among shoppers aged 65-70 years (16%), although shoppers aged 50-64 are almost twice as likely to approach dietary and lifestyle choices with a mindset of a Healer (11%) than are shoppers aged 40-49 years (6%). Healers are experiencing diet- and age-related health problems and are choosing healthful foods to cure what ails them or prevent more serious health problems in the future. Healers are becoming more accustomed to the idea of food-instead of drugs-as treatment.
4. The Struggler Segment

Strugglers just can't seem to stick to a healthy eating routine. They ride a roller coaster of good-for-you eating—up one day, down the next. They might not have the time to choose healthy foods, or they might be confused about what foods are best for them. These shoppers are vulnerable to quick-fix health messages, and they may still be searching for that magic bullet. Strugglers vacillate back and forth on a daily basis about their health and nutrition, so it is not surprising that they are the least likely to feel in control of their future health.

5. The Disciple Segment

Disciples will eat healthy at any cost. They are almost compulsive about eating healthy foods, possibly because of religious or other reasons. Disciples are also at the forefront of cutting-edge food trends. Along with Manager Wizards, Disciples are leading in the area of food as medicine. Diet is very important to Disciples. They are the most likely to try new foods, especially those that offer health advantages because of this they are often an indicator of future trends. Like most shoppers, Disciples choose healthy foods to ensure future good health. Disciples are starting to see the extra energy that healthy food delivers.

6. The Unmotivated Segment

Unmotivated shoppers rarely or never base their dietary choices on health considerations. Instead, unmotivated shoppers are largely driven by taste. When they do consider the impact of their diet, they tend to focus on their
energy level and weight. But, even their weight interests are driven more by vanity than by health concerns.

Moreover, the Natural Marketing Institute (NMI) in their study had identified five major U.S. consumer segments within the health and wellness using a comprehensive NMI research and statistical analysis within the Health and Wellness Trends (HWTD). These segments were found to be mutually exclusive and have been proven invaluable for consumer target identification, as well as comparing similarities and difference between various consumer groups. The five segments identified were “Well Beings”, “Food Actives” “Magic Bullets”, “Fence Sitters” and “Eat, Drink and be Merrys”. The details and characteristics of the five segments are as shown below.

1. **Well Beings (17%)**

Health first by all means across most wellness products, services and lifestyle. Values-base, early adopting opinion leaders to whom price and brand image are less important. Proactive protector of family’s health.

- Highest usage rates of most health-related foods/beverages
- Highest use of dietary supplements and weight loss products
- Lowest index usage of prescription medicine
- Highest likelihood to use alternative healthcare

2. **Food Actives (23%)**

Dedicated to health through food. Driven by desire for balance of diet, exercise and nutrition. Late adopting opinion followers. Seek long-term solutions through healthy, balanced foods.
- High usage rates of all health-related food/beverages, especially those with specific benefits (functional, soy foods, etc)
- Eating healthy is vital part of life (155 index versus U.S. population)
- Highest usage of Rx drugs
- Most likely to be influenced by doctor in maintaining healthy lifestyle

3. Magic Bullets (22%)
Desirous of health, but primarily through the easiest means available: dietary supplements, OTC and prescription medicines. Always searching for quick solutions, somewhat health-struggling group. Highly driven by price and brand image.
- Least likely to recognize connections between diet and health; as so, food is not a driving force in health and wellness
- Highest usage of OTC products
- Highest usage of weight loss products
- Highest usage of conventional healthcare

4. Fence Sitter (18%)
Neutral on most health issue, driven sometimes by food, but disdain supplementation. At times, apathetic and carefree, other times not quite sure how to deal with health and wellness. Price-sensitive, somewhat brand influenced.
- Middle-of-the-road usage of health-related foods/beverages
- Least likely to believe in benefits of supplementation; lowest usage of vitamins, minerals, herbals
- Average user of conventional healthcare and prescription drugs

5. Eat, Drink and be Merrys (20%)

Unconcerned about health or the food they eat. Seek immediate gratification, will deal with health later. See no need for health and wellness products, oblivious to most drivers. Later-adopting, opinion followers.

- Driven by taste and emotion, rather than health and rationality
- Lowest usage rates of most health-related foods/beverages
- Average usage of dietary supplements and prescription products
- Least likely to use alternative healthcare

As we can see, most of the psychographic studies were done in Western countries. It would be interesting to conduct a psychographic study in Malaysia using AIO statements to profile dietary supplement users in Malaysia to see whether they are any difference between users since the dietary supplement market so lucrative. This study will help to add to the literature of knowledge. With the knowledge of such segments of consumers existing, marketers of dietary supplements can then develop better marketing strategies to target these segments based on their needs. This will definitely help them to perform better in the competitive marketplace.