UNIVERSITY of STRATHCLYDE

(Department of Marketing)

"The Analysis of Consumers' Decision-Making Style Dimensions across Different Product Classes."

by,

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DECLARATION

I

Abstract

This thesis investigates the usefulness and reliability of consumers' decision-making style dimensions across the Copeland's (1923) convenience, shopping and speciality product classification. In addition, it also explore the relationships of the differences of consumers' age, household size, job type, income, marital status, child existence in household and gender, and the consumers' decision-making style dimensions.

The findings indicate that different profiles of consumers' decision-making style dimensions are formed in different product classes, reflecting the significant product class effect on consumers' purchase behaviour across different product classes. It also suggests that consumers differ along these valid and reliable dimensions when dealing with products from the respective product classes. Product intangibility is also found to be positively related to the dimensionality of consumers' decision-making styles.

Relatively, the differences in consumers' age and types of jobs are found to be strongly related to the differences of consumers' decision-making styles. While, differences in income and child existence in household are moderately related, and marital status, gender and household size are weakly related to the differences of consumers' decision-making styles. These variables provide more information on how consumers differ along their decision-making style dimensions.

Methodologically, this study uses structural equation modeling in generating the measurement model, other studies in the same area which rely only on the exploratory factor analysis technique. The generated measurement model provides a good starting point for the study on consumers' decision-making styles in the UK environment. This study uses heterogeneous samples to represent the general public in contrast to the student samples used in the earlier studies.

Discussions on the theoretical and managerial contributions, research limitations and suggestions for further research summed up this thesis.

ACKNOWLEDGEMENTS

ROSLI BIN SALEH   August, 1998.

DEDICATION

TO,

MY LATE BELOVED MOTHER, FATHER & GRANDMOTHER,

MAY GOD ALWAYS BESTOW PEACE AND FORGIVENESS UPON YOUR SOULS.

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CHAPTER 1

General Introduction

1.0. Setting the Agenda

Understanding consumer behaviour has always been the central theme of the marketing concept. Right from the mid 50's (Drucker, 1954; McKitterick, 1957; Levitt, 1960; Keith, 1960) up until recently (eg. Peter and Olson, 1994; and Webster, 1992), the emphasis on "profiting from satisfying consumers" still remains the central issue of the marketing concept. Even an effort to redefine the marketing concept by Houston (1986) cannot run from the prophecy of consumer sovereignty in marketing. Therefore, it seems that the understanding of consumer behaviour will remains as the central theme in the marketing concept entirely.

One aspect focused in relation to the understanding of consumer behaviour is in the understanding of consumer buying behaviour, specifically the interest on understanding on how a consumer approaches the market in order to purchase an intended product. This aspect of consumer behaviour has become the focus of several studies and has become the most vital part in the understanding of the purchase behaviour of consumers. This is because it involves the final stage of the consumers' covert behaviour before the realisation of their overt behaviour – the actual purchase of a product. Because this is the stage where all the efforts related to making the product available in the market is about to be turned into revenue which eventually be the source of profit realised from the product. Therefore, it is important for marketers to have a better understanding of it. This in turn will provide them with a good basis to formulate an appropriate marketing strategy in order to ensure that their products

have a better chance of being chosen at the final stage of consumers' purchase decision.

The importance of studying how a consumer approaches the market in purchasing the intended product stimulates a number of studies (eg. Durvasula et al 1993, Hafstrom et al 1992, Sproles and Kendall 1986, Sproles 1985; Darden and Ashton, 1974; Moschis 1976; Stone 1954). In the literature, the study on consumers' approach towards purchasing products has been termed as shopper orientation (Darden and Ashton, 1974; Moschis 1976; Stone 1954). While in the more recent studies, it has been termed as decision-making styles (Durvasula et al 1993, Hafstrom et al 1992, Sproles and Kendall 1986, Sproles 1985).

The study on the consumers' approach towards the purchasing of products has been applied to purchase behaviour on either general product basis (eg. Durvasula et al 1993, Hafstrom et al 1992, Sproles and Kendall 1986, Sproles 1985) or specific product basis (eg. Hughes, 1978: Young, 1973: Ziff, 1971: Pernica, 1974: and McConkey and Warren, 1987). In the general product cases, it is assumed that the consumers employ the same behaviour for all categories of product, regardless of the types of products they are dealing with. While, in the specific product cases, the findings emphasise only on the consumers' behaviour regarding a particular type of product, with little or no emphasis given on comparing consumers' purchase behaviour between specific product categories.

There are few, if any, studies done in between these two poles. Therefore, it is the objective of this thesis to integrate both the specific and general product approaches in investigating the consumers' approach towards the purchasing of

products in the market. To achieve this, the study will have to investigate the consumers' decision-making style dimensions in different product classes. The findings will be looked at both within the product classes basis, as well as between the product classes. A study will be carried out to examine the characteristics of consumers' decision-making style dimensions in their purchase behaviour in the different product class prospective. This is because nothing much can be said on the differences or similarities of the consumers' decision-making style dimensions unless a comparative study between those product specific studies are carried out. This issue has also been raised by Gunter and Furnham (1992) in their useful recent book on Consumer Profiles:

> For all this effort (research on consumers' profiles), however, relatively little appears to be known about relationship between the more specific versus the more general lifestyle or psychographic items. General systems of values and lifestyle measurements make only broad statements about consumer behaviour and market movements, while systematic links between such measures and different product specific activities remain to be developed.
>
> (Gunter and Furnham,1992)

Specifically, the emphasis of this study will be to investigate the substantiality and reliability of the consumers' decision-making style dimensions (an example of psychographic profiles) in indicating the consumers' purchase behaviour across product classes. The substantiality of the consumers' decision-making style dimensions here refers to the appearance of a particular dimension in the profiles of consumers' decision-making style in a particular product class. On the other hand, the reliability of the consumers' decision-making style dimensions refers to those dimensions which are reliably measured by the measurement variables assigned to measure a particular dimension. In other words, a consumer's decision-making style

dimension is said to be valid if it appears in the profile of the consumers' decision-making styles of a particular product class. At the same time, a consumer's decision-making style dimension is said to be reliable if it is indicated to have been reliably measured by a set of measurement variables assigned to measure the said dimension.

From another perspective, this study is also intended to investigate the product class effect on the consumers' decision-making style dimensions in their purchase behaviour. Alongside this, the study is also intended to investigate the effects of demographic variables such as the consumers' age, household size, type of job, income, household types and gender, have on consumers' decision-making style dimensions. The inclusion of demographic variables is necessary in this study because it is proven that demographic variables can supplement psychographic studies in interesting and useful ways (Wells, 1975).

1.1. The Research Questions

Based on the above agenda, the study will hope to provide answers to the following questions;

1. Will consumers approach the market with the same decision-making styles when dealing with product from different product classes?

2. Which of the consumers' decision-making style dimensions (if any) that will be common across product classes?

3. Which of the consumers' decision-making style dimensions (if any) that will be unique in any of the particular product class?

4. Which of the consumers' decision-making styles (if any) that are reliable across different product classes?

5. Is there any form of relationship between the nature of the product (implied by the product class) with the dimensions of consumers' decision-making style which are reliable across different product classes?

6. Which are the demographic variables that are influential in determining consumers' purchase behaviour in a particular product class?

7. Are those demographic variables being consistently influential in determining consumer purchase behaviour across different product classes?

1.2. Research Objectives

Considering the given background on the research problem, this research will be done with the objectives:

a) To study the product class effect on the substantiality and reliability of consumers' decision-making style dimensions, depicted by the list of the dimensions from the convenience, shopping and speciality product classes.

The dimensions of consumers' decision-making style indicated by the psychographic profiles of the dimension in each product class will be compared to investigate for any significant differences which may occur between the profiles of the consumers' decision-making style dimensions.

b) To investigate the relationships between the differences of the selected demographic variables and the consumers' decision-making style

dimensions depicted by the list of the dimensions from the three different product classes.

The differences of the selected demographic variables consisting of consumers' age, household size, types of job, income, household types and gender may be related to the differences in the consumers involvement with the decision-making style dimensions in each product class will also be investigated.

It is expected that some differences in the list of the consumers' decision-making style dimensions should occur across product classes due to the different nature of the products from various product classes involved in this study. In addition, the relationships of the differences of the demographic variables such as the consumers' age, household size, type of job, income, household types and gender, and the differences in the consumers' decision-making styles need to be recognised. This is in order to have a better understanding of the consumer purchase behaviour in the purchasing of products from different product classes.

1.3. Limitation of the Study Scope

In the study, the focus will be made particularly on the usage of psychographic profiles in determining consumers' decision-making styles in their purchase behaviour. This is to limit the scope of this study in order for it to be within the means of the researcher's resources. This is because psychographic profiles have often been used in a broad scope of studies such as lifestyle and activities, interests and opinions (AIO) studies, which involve around 300 statements (Wells and Tigert:1971) and 250

items (Cosmas, 1982). On the other hand, the number of items used in the study of consumers' decision-making styles is around 50 items.

In this study, the same number of items will be used in measuring consumers' decision-makings styles repeatedly for each product class. Therefore, if three product classes are involved, the number of items used will have to be multiplied by three. It is important to limit the number of items used in one product class, as to limit the number of total items required for the whole study.

1.4. Main Methodology

Basically, the study will be conducted in three stages;

First Stage: The first stage involves a literature review on the consumer decision-making style dimensions, psychographic profiling and the relevant consumer behaviour theories. This follows with the review on selected demographic variables used and the consumer product classifications. The development of the research model is done based on the review of the relevant literature.

Second Stage: The next stage involves a qualitative study of the development of the research questionnaires: modification of items, structure, language and outline of the questionnaires. This is done through in depth interviews and piloting of the proposed questionnaire.

Third Stage: The final stage involves the actual data collection and the analyses done on the available data. In this study, the data was collected using the mail survey method. Out of the total of 995 questionnaires distributed, 63 did not reached the targeted samples. Two hundred and fifty-nine usable samples were collected giving

the response rate of 27.8%. The data were then quantitatively analysed and the results were interpreted accordingly.

1.5. Motivations of the Research

Most research requires a long and persistent hard work from the part of the researchers who conduct them. This requires a consistent interest from the researchers in order to provide them with the kinds of motivation needed to keep them going and in achieving the intended result successfully. The same applies to this study which took at least three years of independent work on part of the researcher. To ensure that the researcher could have a better chance of performing this task, some of the motivating factors on this study will be discussed in the proceeding sections.

1.5.1. Usefulness of Psychographic Profiling.

Psychographic profiling is becoming increasingly useful in the study of consumer behaviour. This is stressed by Gunter and Furnham (1992), who state that it can provide useful insights into the behaviour of consumers that cannot be obtained from any other ways. Consumers' profiling in the study of consumer behaviour often inspire concepts and ideas that substantially strengthen the marketing effort. The ever increasing competition in contemporary marketing has made psychographic analysis more important, as stated further by Gunter and Furnham (1992). They claim "understanding not only what customers need, but also how they think and feel about shopping is essential in today's increasingly competitive retail environment". This further stressed by Lesser and Hughes (1986), who argue that "psychographic (profiles) have been used frequently because of the rich descriptive detail they have provided corporate strategists for developing marketing strategies."

Gunter and Furnham (1992), in their book entitled "Consumer Profiles: An Introduction To Psychographics", provide an outline of the advantages of using psychographic profiling and the reason why it is used frequently in the market segmentation studies. The outline is as follows:

- To identify target markets

- To provide better explanations of consumer behaviour

- To improve a company's strategic marketing efforts

- To minimise risks for new products and business ventures.

Psychographic profiling has become the principle technique available for researchers in consumer behaviour to operationally measure consumers' lifestyles. It is also useful as "it provides quantitative measures with large samples in contrast to soft or qualitative research techniques such as focus group interviews or in-depth interviews." (Engel, Blackwell and Miniard 1990). It has become more popular than other methods of explaining consumer behaviour due to its ability to visualise consumers' mental characteristics. As claimed by Gunter and Furnham (1992), that in order to be more able "to motivate or attract a particular group of consumers, it is necessary to know how they think and what their values and attitudes" are along with demographic factors such as age, income and gender.

In other words, by studying the consumers' psychographic profiles, the marketers are in a better position to know for example their attitudes towards brands, quality, and values to a product or products. From another perspective, by studying the profiles of consumers' decision-making style, marketers can have a better

understanding of which consumers' decision-making style dimensions will be more relevant to the type of product that the consumers are dealing with.

1.5.2. Research Experience to the Researcher.

The intended research represented by this thesis will also enhance the research skills for the researcher at a professional level. It will hope to help the researcher to develop a field of expertise in the area of consumers' decision-making style dimensions specifically, and in the consumer behaviour in general. This will enable him to be more effective in researching and teaching in this particular area, which in turns, help him to excel in his career as an academician. This is also the main concern of the employer of the researcher who is sponsoring him to do this study.

1.6. Significance of the Research

All the persistent hard work and resources devoted to the research will be wasted unless the expected findings of the research are useful and relevant to the potential users of the particular study. To ensure that the expected findings from this study will be useful, some of the contributions that can be offered by the findings are outlined briefly as follows.

1.6.1. Academic Contribution

It is argued that this research will contribute to the literature of consumer behaviour in the area of consumers' decision-making style studies (psychographic profiling) in several ways. Firstly, in terms of methodology this study will enrich the method of studying consumers' decision-making style dimensions, with the inclusion of product class element. Very few of such study, if any, has been found published in the literature. In other words, this study is trying to incorporate the product class

effect into the method of studying consumers' decision-making style dimensions in their purchase behaviour. It is intended in this study that the structural equation modeling technique, which is relatively a more contemporary technique, be used for the analysis of consumers' decision-making style dimensions.

Secondly, in terms of analysis, this research will investigate the substantiality and reliability of the consumers' decision-making style dimensions over different product classes. Also, this study will investigate the effects of demographic variables such as the consumers' age, household size, type of job, income, household types and gender have on their decision-making style dimensions. The findings from the study might help bridging the gap between product specific studies and general product approach studies of the psychographic profiles, which in this case will use the consumers' decision-making style dimensions.

1.6.2. Managerial Implications

The use of psychographic profiling has been carried out in advertising and marketing research centres in Britain during the 1980's (Gunter and Furnham, 1992). However, since it is only recently been used and therefore limited, the findings from this study will likely be of interest to business organisations which deal with several product classes in the market. Knowledge of the substantiality and reliability of the consumers' decision-making style dimensions across product classes on consumers' decision-making style dimensions in different product classes can also be beneficial to marketers to use as inputs to develop better marketing strategy formulation. Such benefit may also be obtained from the findings related to the effects of selected demographic variables such as the consumers' age, household size, type of job, income, household types and gender, have on the dimensions. More importantly, this

knowledge can increase the marketers' confidence in the usage of psychographic profiles, such as the consumers' decision-making style dimensions, as a tool in their decision-making process.

1.7. Organisation of the Study

The study will be presented in ten chapters, as illustrated in Figure 1.1. After setting up the agenda, outlining the objectives and justifying the motivation and significance of the study in the introductory chapter, this thesis will proceed by a review of the relevant literature. This is to establish a theoretical foundation for the study. This will also justify the contributions that this study can provide in filling up the gap within the literature of consumers' decision-making styles studies in particular, and consumer purchase behaviour studies in general.

All these will be presented in Chapter Two which will start off with a definition of psychographic profiles. This will provide a conclusive understanding of what psychographic profile is all about. The definition of the psychographic profiles will be reviewed from the conceptual as well as from the practical perspective. Next, the theoretical foundation of consumers' purchase orientation will be reviewed in order to get a better understanding of the theoretical aspects of consumers' decision-making style dimensions. This will provide a strong theoretical foundation for the study.

In addition, the relevant consumer behaviour theories will also be reviewed in order to support the validity of the study on consumers' decision-making style dimensions and its relevance to the consumer behaviour discipline. Finally, the reliability, validity and generalisability of consumer profiles will also be reviewed.

This is to justify the usefulness of consumer profiles, such as the list of consumers' decision-making style dimensions, in explaining consumer behaviour in the market.

Another issue that will be addressed in the study is the possible relationships of the differences of the relevant demographic variables with the differences of the consumers' decision-making style dimensions in their purchase behaviour and on their degree of involvement with a particular decision-making style dimension. For example, to find out whether the younger consumers will be more brand conscious than their older counterparts, or whether higher income consumers will be less price-value conscious than the lower income consumers. Special emphasis will be given to study those demographic variables which may affect the consumers' purchasing power, and those which may affect the trend of the consumers' spending and product requirements.

Furthermore, these demographic variables should also be those variables which are measurable within the scope of this research. The variables may enrich the findings of this study by describing how consumers differ along the consumers' decision-making style dimensions. This will be further discussed in Chapter Three. Also discussed in Chapter Three is the use of a well established consumer product classification scheme. This scheme is chosen because it has a relatively wider scope of product categorisation beside being established in the marketing texts. Therefore hopefully, it is also wellknown to the general public.

Chapter Four will proceed with the discussion of the development of the research model. The model is used to measure the consumers' decision-making styles towards purchasing their intended products in the market. The model will be based on

the relevant models used in the recent studies, with necessary modifications made in order to accommodate for the UK environment from which the samples of the study will be collected. Significant improvements, such as the use of structural equation modeling technique, will be made on the methodology used in the model development.

The research methodology that will be used for the data collection in the study will be thoroughly discussed in Chapter Five. Basically, the study will rely mainly on the quantitative method. Therefore, the methodology used for the data collection will mainly adhere to the quantitative method requirement. The data obtained in the study will be analysed in four subsequent chapters. Firstly, Chapter Six will cover the descriptive statistics of the data, the validity and reliability analyses of the scales used on the measurement of the data. Secondly, in Chapter Seven, there will be a discussion on the modification of the measurement model using the available data and the confirmatory factor analysis technique. This is in order to get a measurement model that will have a better fit to the obtained data. Thirdly, Chapter Eight will look at the consumers' decision-making style dimensions across different product classes used in the study. Finally, Chapter Nine will cover the analysis of the effects of selected demographic variables on the consumers' decision-making style dimensions.

Lastly, the findings of this study will be synthesised in Chapter Ten. The theoretical, managerial and policymakers implications that can be derived from the findings of this study will also be discussed in this chapter. The thesis will then be concluded with a discussion of the limitations and suggestions for possible future research.

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                      CHAPTER 1
                      Identification of
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Organisation of the Thesis

Figure 1.1

CHAPTER 2

Psychographic Profiles and Consumer Behaviour

2.0. Introduction

In this chapter, the concept of psychographic profiling as a method used to describe the consumers' decision-making styles in their purchase behaviour, will be reviewed. This will help to provide a better understanding of consumer behaviour in the market. The chapter will firstly introduce the precise definition of psychographic profiles as compared to the one given in Chapter One. Secondly, the chapter will review the theoretical background of psychographic analysis and its relevance to other related theories of consumer behaviour. This is to show the usefulness of psychographic analysis in providing explanation of consumer behaviour.

The theoretical background review will also help to show how psychographic analysis is relevant to other important concepts in the literature of consumer behaviour. Thirdly, the chapter will review the concept of psychographic profiles as a measurement and an indication of consumers' purchase behaviour prior to actually buying products. Finally, the issues of reliability and usefulness of psychographic profiles, particularly as a method of measuring and indicating consumer purchase behaviour in different product classes will be surveyed.

2.1. Definition

In this section, psychographic profiles will be defined using the definitions extracted from the literature. These definitions can be divided into conceptual and practical definitions.

2.1.1. A Conceptual Definition

Psychographic profiles, which include the consumers' decision-making styles, are being used widely by marketing practitioners (eg. Stanford Research Institute International, California, USA and DDB Needham International Inc., USA) as well as being widely researched by researchers (eg. Durvasula et al 1993, Hafstrom et al 1992, Sproles and Kendall 1986, Sproles 1985, Burns and Harrison, 1979 and Wells, 1975). Psychographic profiles have been defined in a variety of ways in the literature and to have a better understanding of the profiles, it will be worth looking at some of the definitions that have been brought forward in the literature.

Review of the literature shows that psychographic analysis is defined both in conceptual as well as practical senses. First, it will be best to look at some of the conceptual definitions in the literature. This is hope to provide an understanding of the underlying concepts, which form the foundation of the psychographic analysis.

The Dictionary of Marketing Research defines Psychographic analysis as:

A description of groups that go beyond personal data and includes, for example, psychological characteristics (such as personality traits). The basic premise is that a group may be described more adequately in terms of interests, level of aspiration, or aggression, than by place of residence or size of community.

(Author's own words in brackets) (Van Minden, 1987)

This very definition shows that psychographic analysis deals with inner-self characteristics of individuals, for example, their interests and level of aspiration. The interest however is not in the characteristics of a particular individual, as in the clinical psychology, but more in the characteristics of the group of people as a whole. In other words, psychographic analysis is meant for studying the characteristics of individuals in aggregate manner, unlike the clinical psychology approach, although both may be dealing with the same variables. The difference between research that use tailor-made psychographic instruments and those which used clinically developed and standardised personality measures will be discussed in more detail in section 2.2.4 later in this chapter.

The conceptual definition also emphasises that psychographic analysis goes beyond the overt characteristics of individuals such as place of residence or size of community. It deals with the covert characteristics such as interest and level of aspiration of the consumers, which enables it to give a more comprehensive and rich descriptions of individuals in aggregate terms.

A psychographic profile characterises the consumers' psychological processes and properties such as how the consumers regards brand, quality or price of product in their decision-making styles. This is in line with the way Demby (1974) described psychographic analysis:

> It seeks to measure the consumer's predisposition to buy a product, the influences that stimulate buying behaviour and the relationship between the consumer's perception of product benefits and the (consumers') life style, self-concept and material needs.

(Demby, 1974)

In a broader definition, psychographic analysis refers to "any form of measurement or analysis of the consumer's mind which pinpoints how one thinks, feels, and reacts" (Nelson, 1971). Mowen (1990) has termed psychographic profiling as the idea of describing the psychological makes up of the consumers. The description is done for the purpose of describing groups of consumers in order for organisations to reach and understand their customers better. This can possibly be done through the combination of the analysis of personality with the study of lifestyles to develop a more managerially relevant approach.

An example of such approach is the segmentation or profiling of consumers. This approach is mentioned by Burns and Harrison (1979) in which they consider psychographic measures as valuable segmentation tools and insightful descriptors of consumer behaviour. Personality, another component of psychographic analysis, is defined by Mischel (1973) as "the distinctive patterns of behaviour, including thoughts and emotions, which characterised each individual's adaptation to the situations of his or her life." Meanwhile lifestyle, yet another component of psychographic analysis, is defined by Lazar as,

> the distinctive or characteristic mode of living, in the aggregative or broadest sense of a whole society or segment thereof. It is concerned with those unique ingredients or qualities, which describe the style of life of some culture or group, and distinguish it from others.

(Lazar, 1963)

The definitions mentioned above describe a general concept of psychographic analysis, which tries to illustrate the inner attributes of consumers in the effort to better understand their behaviour. This is because the emphasis of the analysis is mainly to describe consumers for the purpose of marketing strategy development. Its approach is more towards studying those inner attributes of consumers in aggregate

terms. In other words, psychographic analysis can be regarded as an effort to expand the usefulness of motivational and personality based research from analysing people at individual level to understanding them at group or aggregate level. This makes such analysis to be more useful in marketing because the aggregate or group responses appear to have greater value in marketing than the individual responses (Burns and Harrison, 1979).

Another point worth considering is that, unlike demographic analysis, psychographic analysis goes beyond the overt attributes of consumers, where it deals with factors such as interests, aspirations, thoughts and emotions. These may provide a better explanation for the differences among consumers of the same age, gender or living in the same area, and the differences in their purchase behaviour, which cannot be explained using demographic analysis alone. This is because people make decisions not only based on the overt factors such as those of the demographic factors, but also on the covert factors which are dealt with in psychographic analysis.

Therefore, conceptually, psychographic analysis by means of psychographic profiles can be defined as a method which tries to illustrate the internal attributes of consumers in the effort to explain the consumer behaviour. The internal attributes consist of such factors as the consumers' interests and level of aspirations, which are also being deal with in motivational and personality researches. However, there is a major difference in terms of approach between psychographic analysis and motivational and personality analysis. On the one hand, psychographic analysis is more interested in the responses of these factors at the aggregate level. On the other hand, motivational and personality analyses are more interested at the individual level.

2.1.2. A Practical Definition

Apart from the conceptual definitions, there are other definitions which try to describe psychographic analysis in a more practical way. In other words, these definitions try to define the practicality of psychographic analysis in explaining consumer behaviour. To begin with, Schiffman and Kanuk (1983) describe psychographic profiles as consisting of a battery of statements designed to capture relevant aspects of a consumer's personality, buying motives, interest, attitudes, beliefs and values. Table 2.1 illustrates some of the examples of item statements found in the battery of statements. These item statements were extracted from the commonly used categories cited from the literature (Wells, 1975; Sproles and Kendall, 1986). In general, the psychographic items used in most related studies can be categorised as Specific Activities, General Activities (Wells, 1975 terms it as General "Life-Style" Dimensions), Single Product Type (Wells, 1975 terms it as Product-Specific) and Multi-Product Type. Table 2.1, shows these four examples of categories which are commonly used in psychographic profiling. More discussion on the psychographic instruments will be continued in section 2.2.5, later in this chapter. But for now, the illustration of the examples of psychographic items is just to give some ideas on the psychographic instruments used as the measurement instruments in psychographic research. The important thing to be raised here is that the psychographic items used must be appropriate to the scope of the intended study.

The following illustrations will describe these categories briefly. Firstly, the item statements of the specific activity category are usually used in a study to investigate whether a particular group of people is interested in specific activities. The study is done by surveying samples from a predetermined group of people. For

example, a researcher may want to know whether the members of sailing clubs are interested in other sea-related activities such as diving or fishing. In this case, the samples of such study will be limited to the sailing club members only. This study may be done to prove that people who like sailing as a sport should also like other sea or water related activities. If this is proven correct, then it can be concluded that people are consistent in their interest.

Category of Statements	Items of Statements
Specific activities	1. I like hunting* 2. I like to go camping*
General activities	1. I like to work outdoors* 2. I like danger*
Single product type	1. I am more practical in car selection* 2. The only function for a car is transportation*
Multi-product type	1. I prefer buying the best selling brands[@] 2. I buy as much as possible at sale prices[@]

From Wells (1975) and[@] From Sproles and Kendall (1986).

Examples of Categories and Item of Statements Used in Psychographic Profiling

Table 2.1

Another similar example is the study of the leisure activities which are of interest to the high-risk professionals, such as stockbrokers. A researcher may be interested to know whether they are also interested in doing other high risk activities during their leisure time, as they do in their profession. This can be seen by their interest in high-risk sports such as sky diving, mountain climbing or bungy jumping. Here, it can be seen how the item statements of specific activities category might be

used to investigate the relationship between a predetermined group of people and specific activities.

Secondly, the item statements of the general activity category are usually used to investigate the interests of a particular group of people towards more general activities. For example, a researcher may want to investigate the characteristics of people from which the sailing clubs consist of. Examples of such characteristics include whether they are more of the outdoor type, like to face dangerous situation or physical in nature. In order to do this, item statements such as 'I like to work outdoors', 'I like danger' and 'I like to watch combative sports' may be used. Here, it can be seen how these kinds of item statements can be used to describe general activities, which are of interest to a segment of people.

Thirdly, the item statements from the single product type category are usually used to study the relationship between consumers and a particular type of product. Examples of such studies can be on how consumers perceive a type of product or on the characteristics of consumers of a particular type of product. In this more product-specific study, the consumers are directed to respond to a selective of statements about products, services, brands or specific consumption situations. An item statements such as 'I am more practical in car selection' or 'The only function for a car is transportation' can be used to determine how consumers perceive a car or their attitudes towards a car. These responses are very important inputs for marketers and producers to have for a better chance to satisfy the consumers as well as to increase the possibility of the product to be more successful in the market.

Lastly, the item statements from the multi-product type category are used to study the decision-making style of consumers in their purchase behaviour for all

products in general. Statements such as 'I prefer buying the best-selling brands' and 'I buy as much as possible at sale prices' can be used to describe the characteristics of certain groups of consumers on how they make their decisions, whenever they approach the market to purchase products. This information can also be used to classify consumers into groups according to their decision-making styles such as price conscious, quality conscious or impulsive type of consumers. This information is vital to the process of segmenting consumers into relevant market segment according to their decision-making style. The item statements used in this research will be of the multi-product type category. This category is of interest to the researcher because the study is intended to deal with consumers' decision-making styles in different product classes.

Demby (1974) offers another practical definition to psychographic profiles. He defines the profiles into a three-level definitions according to which approach one will be looking at. Firstly, in general the profile is a practical application of behavioural and social sciences to marketing research. Secondly, In a more specific term it is a quantitative research procedure recommended when demographic and other analysis is not sufficient to explain and predict consumer behaviour. Thirdly, in a most specific term it seeks to describe the human characteristics of consumers that may have a bearing on their response to products, packaging, advertising and public relations efforts.

The definitions of psychographic profiles can be summarised using Wells' (1975) conclusion. He concludes that psychographic profiles are considered as using something beyond demographic approach in categorising consumers and are quantitative in nature. In his summary, Wells (1975) concludes that:

Operationally, psychographic research can be defined as quantitative research to place consumers on psychological - as distinguished from demographic - dimensions. Because it goes beyond the standard and the accepted, it offers the possibility of new insights and unusual conclusions. Because it is quantitative rather than discursive, it opens the way to large, representative samples of respondents, and multivariate statistical analysis of findings.

(Wells, 1975)

Finally, in a review on consumer profiles, Gunter and Furnham (1992) described psychographic profiles as;

Conceptually, consumers are classified (by psychographic profiles) in terms of their values and lifestyles...Methodologically, psychographic instruments tend to be original measures often tailor-made to elaborate and define segments within specific product or service target market.

(Gunter and Furnham, 1992)

The term 'lifestyles' and 'psychographic' analysis are sometimes referred to as two different terms (Wells, 1974; Demby, 1974). 'Lifestyle' is said to focus more "on broad cultural trends or on needs and values thought to be closely associated with consumer behaviour" (Wells, 1974). While 'psychographic' focuses more on generalised personality traits (Wells,1974). However, most of the times, both terms are used interchangeably due to much overlap of meaning and usage between them . Therefore, for the purpose of this study, both terms will also be used interchangeably because "psychographic measures are (indeed) an operational form of the lifestyles concept." (Gunter and Furnham, 1992). This supports Reynold and Darden's (1972) statement:

Psychographic (analysis) is the systematic use of relevant activity, interest and opinion (which are lifestyle dimensions) constructs to quantitatively explore and explain the communicating, purchasing and consuming behaviours of persons for brands, products and clusters of products.

(Reynold and Darden's, 1972)

An example of a consumer psychographic analysis used on consumers' purchase behaviour is the one developed by Sproles and Kendall (1986). In their work, they characterise the consumers into eight dimensions, according to the consumers' decision-making styles in their purchase behaviour for general products. The eight dimensions of consumers' decision-making styles developed by Sproles and Kendall (1986) are:

1. Perfectionism or high quality consciousness,

2. Brand consciousness,

3. Novelty-fashion consciousness,

4. Recreational, hedonistic shopping consciousness,

5. Price and 'value for money' shopping consciousness,

6. Impulsiveness,

7. Confusion from overchoice (from a proliferation of brands, stores, and consumer information, for example), and

8. Habitual, brand-loyal orientation toward consumption.

These dimensions are formed from the underlying psychographic variables which consist of a battery of statements. Examples of such statements are; 'I always shop during sales periods','I always buy products of well-known brands','Going shopping is just a waste of time' and 'I like to shop in supermarkets for variety.'Respondents are asked to respond to such statements by indicating their degree of agreement usually using the 'Likert Scale' format.

Summary

To summarise, most of the definitions brought forward here deal with both personalities and lifestyles of consumers in the effort to explain consumer behaviour. Practically, psychographic profiles can be described as a method of categorising

people (consumers in this study) into groups based on their personality and lifestyle dimensions which covers their common activities, interests and opinions. Since these factors are covert aspects of the consumers, they need to be illustrated and quantified before they can be analysed.

A battery of statements needs to be constructed for the purpose of illustrating and quantifying the covert aspects of the consumers in this study. The battery of statements will consist of item statements from the appropriate category, which are relevant to the interest of the researcher involved. For example, if a researcher want to categorise consumers based on their decision-making styles, then the researcher has to select item statements that are relevant to consumers' decision-making styles. These statements are then selected and included in the battery of statements in the questionnaire that are going to be used for the data collection for the study.

Therefore, it is important that the item statements used in developing the battery of statements to be properly selected according to the objective of the research undertaken. This is to ensure that the descriptions obtained from the responses given in the questionnaires by the respondents really reflect as much as possible the covert factors that are to be measured. In other words, the item statements should have content validity. As for this study, one of the research objectives is to see the reliability and usefulness of psychographic profiles of consumers' decision-making style dimensions in explaining consumers purchase behaviour across product classes. Therefore, this will involve most of the aspects of consumers' activities, interests and opinions towards purchasing products of different product classes. The next section will explore the development of theories related to psychographic analysis in order to have a deeper understanding of the theoretical foundations of psychographic analysis.

2.2. Theoretical Foundation

Three main things will be discussed in this section. Firstly, the basic foundation of psychographic analysis will be discussed. Secondly, some application of psychographic profiles in marketing strategy, especially in market segmentation, will be reviewed. Lastly, some of the recent research works involving psychographic analysis will also be reviewed. This is to provide a better understanding on psychographic analysis, especially in the practical aspects of it in marketing.

2.2.1. The Basic Foundation.

Psychographic profiles, as stated by Gunter and Furnham (1992), originated from the work by Lazarfeld (1935), which initiates a 'humanist' approach to social research. Psychographic profiling is also said to be originated from the studies in motivation and personality. Based on these fields of studies, psychographic profiling can conceptually be divided into two main concepts. The first concept is values, which is the 'generalised beliefs or expectations about behaviour', and the second one is lifestyles, which is the 'patterns in which people live and spend time and money'. Wells (1975) states that "...lifestyle research promises the explanatory power of personality with direct consumer behaviour relevance." This might be possible because in most cases, psychographic profiles describe consumers according to their personality characteristics such as perfectionistic, impulsive, careless and hedonistic, in the process of grouping them into relevant segments.

At the same time, the personality characteristics used in this study are for the purpose of explaining consumer behaviour with respect to the acquisition, use and disposition of products and services. Therefore, it can be said that lifestyle or psychographic research has, to some extent, the explanatory capability of personality

researches relevant to the consumer behaviour studies. Although lifestyle characteristics possess the explanatory ability of personality characteristics, they are less abstract and more relevant to consumer behaviour than personality characteristics (Lastovicka, 1982).

Psychographic analysis also referred by many (Reynolds and Darden, 1974; Mowen, 1990; Solomon, 1996) as lifestyle analysis or activities, interests and opinions (AIO) research. Reynolds and Darden (1974) have defined AIO as follows:

> An **activity** is a manifest action such as viewing a medium, shopping in a store, or telling a neighbour about the new service. Although these acts are usually observable, the reasons for the action are seldom subject to direct measurement.
>
> An **interest** in some object, event or topic is the degree of excitement that accompanies both special and continuing attention to it.
>
> An **opinion** is a spoken or written 'answer' that a person gives in response to stimulus situations in which some 'question' is raised. It is used to describe interpretations, expectations, and evaluations - such as beliefs about the intentions of other people, anticipation concerning future events, and appraisals of the rewarding or punishing consequences of alternative courses of action.
>
> (Gunter and Furnham, 1992)

A study by Darden and Ashton (1974), show that lifestyle can have a valuable input in understanding and influencing supermarket patronage in a particular area. Two major issues discovered in this study. First, there are segments based on patronage attribute preferences which imply that customers can be segmented according to their profiles of preferences towards patronage attributes of the supermarkets. Some examples of the supermarket attributes are prices, friendliness, location and brand variety. The consumers were asked to rank their preferences according to the supermarket attributes as their answers were used as the basis for

segmenting them. Second, the findings also indicate that lifestyle and shopping orientations of the customers differ from one segment to the other. The findings of Darden and Ashton's (1974) study suggest that there are various types of consumers in the market. These varieties of consumers are more likely to engage in different types of decision-making styles when approaching the market to purchase products and services. From this, it can be argued that, if consumers can differ in terms of their shopping outlet preferences, they may also differ in their decision-making styles in their purchase behaviour across product classes. Thus, the differences in decision-making style dimensions should be reflected in the different formations of psychographic profiles of the dimensions of these consumers when purchasing products from different product classes.

Another study by Moschis (1976), reveals that lifestyle characteristics can be used to determine the consumers' communication needs which can then be useful in formulating the promotional strategy. Another way of saying it is that consumers have different communication needs which are reflected in the differences of the psychographic profiles formed among consumers. Here, it can be suggested that consumers differ in their communication needs, as reflected in the differences of their psychographic profiles. Again, psychographic profiles have shown that they can be used to show differences in the consumers' decision-making styles when purchasing products of different product classes. This is possible because the products they want to buy, which consist of products from different product classes, are different in nature.

The studies that have been discussed earlier indicate that consumers can be categorised into various categories in the market. For example, some consumers are

said to be loyal to a particular brand of product once they are satisfied with it (Foxall and Goldsmith, 1994). In contrast, there are also consumers who are said to be variety seekers (Ehrenberg, 1972; Ehrenberg and Goodhart, 1979). Another study by Handelsman's (1982) suggests that consumers have different variety seeking behaviour across different product classes. These differences in consumers' types can also be reflected in the different formations of psychographic profiles of consumers' decision-making style across product classes.

This review has shown that psychographic research is rooted in personality and motivation research. The research emerged from the effort to integrate the explanatory ability of personality and motivation with the broadbased and quantitative approach of lifestyle research. This is in order to provide a better understanding of consumer behaviour. It also enables psychographic researchers to deal with the cognitive aspects of consumers in the effort to provide better explanation of consumer purchase behaviour. This results in the frequent use of psychographic profiles as the basis for market segmentation. Another use of these profiles is to describe the particular segments defined by another basis of segmentation, such as demographic segmentation.

2.2.2. Market Segmentation.

Psychographic segmentation is one of the common bases used for segmenting consumers, alongside with geographic, demographic, behaviouristic, usage situation and benefit (Engel, Blackwell and Miniard, 1990: Baker, 1992). The importance of psychographic segmentation is found to be increasing and have made obsolete and rendered irrelevant the traditional and rather simplistic demographic classifications (Mueller-Human, 1992). Mitchell (1993), argues that psychographic segmentation can

provide greater insights and be used more frequently than it is now. Unlike other bases of segmentation, psychographic segmentation attempts to divide consumers according to psychological dimensions. In other words, it involves the measurement of consumers' attitudes towards purchasing goods and services in the market. This is required in order to understand how the consumers make decisions when they approach the market to buy the goods they need.

In this study, the consumers' decision-making process is referred to as "the cognitive processes by which consumers interpret product information and integrate that knowledge to make choices among alternatives." (Peter and Olson, 1994). Relevant to this, consumers' decision-making styles are also related to consumers choice makings, but the emphasis is more on describing how consumer approach the market to buy their required products. For examples, are the consumers more conscious about the price of the products (price-value conscious), or are they more concern about the brands (brand conscious) of the product they buy, more than anything else.

These decision-making styles should also be seen in the context of purchases made by consumers in different product classes. This is in order to see whether consumers are the same or different in their approach towards purchasing products of different product classes. If there are any differences, then a comparative study needs to be done.

Apart from its usage as a basis for market segmentation (Wells, 1975; Mehotra and Wells, 1979), psychographic profiles can also be used to define market segments, as cited in the literature (Engel, Blackwell and Miniard, 1990). However, due to the difficulties in reaching the specified segments, its usefulness has been somewhat

limited in practice. Despite this, psychographic profiles are becoming very useful in developing the in-depth understanding of market segments which have already been defined using other more reachable methods of segmentation. This is also mentioned by Engel, Blackwell and Miniard (1990) who state that "...a better practice is to avoid definition of the segment through psychographic (profile but use them) to better understand segments that have been defined with more traditional variables." If these profiles are used together with demographic segmentation, they can produce a very effective means to segment the market, as it being nicely stated by Wells (1975), that "psychographic information can put flesh on demographic bones." This is also supported in the literature by an argument saying that "adding consumers' personal values (using psychographic profiles) to demographic variables, can greatly enhance the effectiveness of segmentation." (Kahle, 1986; Perri, 1990; Rousseau, 1990).

The segmentation based on physical attributes such as demographic, geographic and socio-economic analysis can be misleading. This is because this kind of segmentation relies more on the consumers' external factors, rather than the internal factors in analysing the targeted consumers. Furthermore, the judgement based on this overt attributes may not always be true. This has been illustrated by Young's report on the positioning of the Ford Pinto cars in Wells (1975). He states:

> According to Young, the introductory Pinto advertising portrayed the car as "carefree, small (and) romantic." The strategy was "to sell to small car prospects; to compete against imported small cars; to say that the car was carefree, trouble free, beautifully styled and economical" As the introduction of the Pinto proceeded, psychographic research disclosed that potential Pinto buyers had a less romantic orientation toward cars and driving.
>
> As a result of this research, the Pinto was repositioned (using advertisement) as "The epitome of function, exemplifying basic economical transportation, trading on Ford's heritage of the Model A." Consequently, "Today Pinto is the largest selling subcompact, outselling Volkswagen by a sizeable margin."

This example demonstrates how psychographic analysis can give a better insight of the salient attributes of the consumers.

From this review, it can be concluded that psychographic profiling can be a useful tool in providing a better explanation of consumer behaviour. Nevertheless, the effectiveness of psychographic profiles as a basis for market segmentation lies on their substantiality and reliability in determining consumer behaviour in marketing. These issues will be discussed in more detail, later in this chapter.

2.2.3. Recent Literature

Sproles and Kendall (1986), in their study on "A Methodology for Profiling Consumers' Decision-Making Styles" develop a methodology for profiling consumers' decision-making styles in their purchase behaviour for product purchases in general. This study was done using samples of 482 high school home economics students in Tucson, Arizona, USA. Compared to the more general scope of Activities, Interest and Opinion (AIO) studies which commonly use psychographic analysis, their methodology focuses more on consumers' decision-making process in their purchase behaviour. Sproles and Kendall (1986) used a battery of statements referred to as the Consumers' Style Inventory (CSI) in their study to develop the profile of the consumers' decision-making styles in their purchase behaviour for general product. According to Sproles and Kendall (1986), the method of profiling the consumers' decision-making styles should meet four criteria as follows:

1. It should contain mental characteristics of a consumer's decision-making that are among the most important 'real world' consumer characteristics. Here we distinguish between fundamental and tangential characteristics. Quality consciousness is fundamental because it is directly related to

consumer decisions; characteristic like is tangential, with only indirect links to consumer choices.

2. The characterisation should be as complete as possible, identifying a small number of basic and independent consumer decision-making characteristics.

3. The method should measure how a consumer rates on each characteristic. Several measurable characteristics may make up a consumer's style, and the consumer should be profiled accordingly.

4. The method should include measures important to consumer-interest professionals in theirs varied roles as consumers' educators, researches, and financial counsellors.

(Sproles and Kendall, 1986)

This Consumers' Style Inventory is then used to replicate eight dimensions of consumers' decision-making styles;

1. Perfectionism or high-quality consciousness,

2. Brand consciousness,

3. Novelty-fashion consciousness,

4. Recreational, hedonistic shopping consciousness,

5. Price and 'value for money' shopping consciousness,

6. Impulsiveness,

7. Habitual, brand-loyal orientation toward consumption

8. Confusion from overchoice (from a proliferation of brands, stores, and consumer information),

What is meant by consumers' decision-making style dimensions are the types of shopping orientation that the consumers will likely to engage in approaching the market to purchase a product.

The same methodology is replicated by Durvasula, Lysonsky and Andrews (1993) in their study using a sample of 210 undergraduate students of a major

university in New Zealand. This study was successful in yielding the same finding as in the earlier research by Sproles and Kendall (1986). Another similar study is by Hafstrom, Jung and Young (1992) who used samples of subjects consisting of 310 college students in the city of Taegu, South Korea. The study also replicates the earlier work by Sproles and Kendall (1986), except for the 'Novelty-fashion conscious' dimension. However, another dimension, the 'Time-energy conserving' type of consumer, was discovered instead.

The results of these two studies successfully replicate the Sproles and Kendall's (1986) study on general product basis. However, this methodology needs to be tested on the specific product class basis to see whether those eight dimensions exist in every product class. If the same dimensions exist in the similar profiles for every product class, then the findings from those studies can be said to be useful and reliable across product classes.

Herrman and Warland (1990), used a similar approach in finding out the consumers' compliance with recommended food buying practices. They used cluster analysis to form the relevant segments of consumers on the basis of their compliance with the recommended food buying practices. This study was done using a sample of 458 of major food preparers in households across the USA. In their research, they come up with five categories of consumers with respect to their compliance to the recommended food buying practices. These categories are as follows:

1. Complete consumers

2. Almost complete consumers

3. Economy specialists

4. Planning specialists

5. Disinterested consumers

The finding from this study provides some explanation of consumer behaviour in food purchases only. Although this study is meant for the food category, it may also be used to provide useful information on consumers' compliance to these practices in other product categories as well. In order to prove this, a similar study needs to be carried out on other product classes. Unless this study is replicated to other product categories, the question of whether this finding can be generalised to other product categories will remain unanswered.

However, this still cannot provide a complete picture of consumer behaviour unless it is done on several product classes simultaneously. By doing this, a comparative study of the consumer profiles obtained from food category with consumer profiles obtained from other product categories can be made. Only then, it can be known whether or not consumers comply with the recommended buying practice in food purchases as well as in other product categories. If there is any differences among these product classes, the finding may be able to show the type, magnitude and direction of those differences.

Consumer profiles have also been done in more specific settings such as in shopping, as pioneered by Stone (1954). He indicates that shopping behaviour originated from social-psychological area. In this study, Stone (1954) comes up with four types of shopper; the economic shopper, the personalising shopper, the ethical shopper and the apathetic shopper. Darden and Reynolds (1971), expand Stone's (1954) shopper types to special shopper and quality shopper. Moschis (1976) on the other hand uses six shopping orientations:

1. Special Shopper

2. Brand-Loyal Shopper

3. Store-Loyal Shopper

4. Problem-Solving Shopper

5. Psychosocializing Shopper

6. Name-Conscious Shopper.

In his study, Moschis (1976) used samples from urban shoppers and the product category used was limited to cosmetics. Again, this limits the finding to only one product category, which in turn raise the question whether the finding can be generalised to other product categories as well. Studies on supermarket customers by Darden and Ashton (1974), as discussed earlier, also used limited scope of product which consisted of health and personal care products. Examples of the products used were deodorant, liquid face make-up, medicated face make-up, hand lotion and eye make-up. The finding again creates the problem of generalising it to other category of products.

These psychographic researches were mostly done either on purchase behaviour on general products or specific products basis. In the first case, due to the generality of the approach, some of the important findings in explaining the consumer purchase behaviour are overlooked. An example of those important findings is whether findings from studies using general product approach will also yield the same findings if done on individual product category. If the same findings cannot be obtain from both the general and specific product category, then the generalisation is not useful.

On the other hand, the studies on specific product approach may not produce the same result if used on other product categories. Even if the same result is produced, it still need to be known whether the method, samples and other research variables used are similar in each study. This is to make sure that the measurement error is minimised in order to get a valid comparison between those specific product category studies. Therefore, a simultaneous study of consumers' decision-making styles in different product classes may be able to overcome all the limitations presented by both the general and specific product category studies. It may also enable us to capture the differences that might exist in the psychographic profiles of consumers between different product classes.

Beside its usage in profiling consumer purchase behaviour, psychographic profiling has also been used widely by academicians and managers to segment people on a more general aspect of life. Some of the more general use of psychographic profiles are the Values and Lifestyle (VALS) by Mitchell (1983) which was further improved by Riche (1989) and the List of Values (LOV) by Kahle (1983), Veroff, Douvan and Kulka (1981). These are done using a large inventory of psychographic items which includes a wide scope of activities, interests and opinions. As for the purpose of this study, the scope has to be limited only to decision-making styles of the consumers purchase behaviour. This is to prevent the questionnaire from getting too long and beyond the researcher's ability to manage due to limited resources.

It is worthwhile for the research using similar methodology to be done using UK samples in order to test the robustness of the methodology of the psychographic research in the study of consumers' decision-making styles, in the UK environment. Furthermore, this study may also provide some important indications on its usefulness

of psychographic profiles in providing explanation of consumer behaviour in the late 90's era.

This review shows a wide and versatile use of psychographic profiles in market segmentation and the formulation of other marketing strategy. The usefulness of psychographic profiles as the determinant of consumers' decision-making styles in their purchase behaviour lies on two assumptions. Firstly it is assumed that consumers are engaged in a cognitive process in their purchase behaviour. Secondly, it is assumed that their decision-making style dimensions illustrated by the psychographic profiles are useful indicators of their actual purchase behaviour. These issues will be addressed further in the next section on psychographic analysis and consumer behaviour theories.

2.2.4. Distinction between Tailor-Made Psychographic Instruments Research and Clinically Developed and Standardised Personality Measures Research

For further understanding, it will be worthwhile to compare and contrast research that use tailor-made psychographic instruments and those which used clinically developed and standardised personality measures. Tailor-made psychographic instrument originated from clinically developed and standardised personality measures. Later it can be seen that the difference between the two is more on the purpose of usage. Tailor-made psychographic instruments are geared more towards a wider scope approach, that is to describe consumer behaviour in aggregate. On the other hand, clinically developed and standardised personality measures are geared more towards specific approach. In the present study, tailor-made psychographic instruments are used because the study investigates product class effects on consumers' decision-making style dimensions in general purchase

behaviour. In addition, it also investigates the relationships between selected demographic variables and consumers' decision-making style dimensions in general purchase behaviour.

Studies using tailor-made psychographic instruments have been cited and discussed earlier in section 2.2.3 of this chapter. For comparison purposes, some studies which used clinically developed and standardised personality measures have been cited. This is to distinguish studies using tailor-made psychographic instruments from studies using clinically developed and standardised personality measures. Firstly, a study by Starvridou and Furnham (1996) have used the Eysenck Personality Questionnaire, along with Wallach-Kogan Divergent Thinking (DT) test and a 'negative priming' experimental task as a measure of cognitive inhibition. This is done to examine the relationship between psychoticism, trait-creativity and the intentional mechanism of cognitive inhibition. They found that subjects who score highly on psychoticism also produce a large number of responses. The subjects also give more unique answers on the DT items, and the high-P scorers showed a reduced negative priming effect.

In another study, Caruso and Spirrison (1996) have used the NEO Personality Inventory, along with the Constructive Thinking Inventory, to examine the viability of motivated retrieval failure as a mechanism for childhood amnesia. The finding supports the hypothesis that individuals with weak recall of early childhood events use motivated retrieval failure to minimise anxiety and experience less negative emotion. Egloff and Gruhn (1996) used a widely used German personality inventory called the Freiburger Personlichkeitsinventar (revised version, FPI-R: Fahrenberg, Hampel and Selg, 1989), to examine the relationship between personality and

endurance sports. They found that outstanding athletes were more extraverted than the average sportsmen, while neuroticism was associated with "management of negative affect" and "recreation" as reasons for beginning with endurance sports. Russell and Wells (1994) on personality and quality of marriage have used the revised Eysenck Personality Questionnaire (EPQ-R: Eysenck, Eysenck and Barrett, 1985). In this study, they found that personality have an impact on marriage quality. These examples indicate that studies using clinically developed and standardised personality measures are more focused on investigating causal relationships between relevant variables.

On the other hand, research which use tailor-made psychographic instruments focus more on describing consumer typologies. For example studies by Stone (1954) provides the consumer typology according to their shopping behaviour. Darden and Reynolds (1971) later extended the shopper typologies by Stone, using the same approach. This followed by Moschis (1976) whose study provides consumer typologies according to their shopping orientations. Darden and Ashton (1974) also provide consumer typologies according to their need for information in supermarket shopping. Studies by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993) provide consumer typologies according to the consumers' decision-making style dimensions. Herrman and Warland (1990), use a similar approach in developing the consumer typologies according to the consumers' compliance with recommended food buying practices.

Based on this review, research which used tailor-made psychographic instruments are found to be focusing more on describing consumer typologies. On the other hand, research using clinically developed and standardised personality measures

are found to be focusing more on examining causal relationship between personality variables and the designated dependent variables. The present study, which is more relevant to describing consumers' decision-making styles across product classes, will be done using tailor-made psychographic instruments.

2.2.5. Distinction between Normative Psychographic Instruments and Specific Psychographic Instruments

Psychographic research is done both in the wider scope covering the whole population as well as in the more specific scope covering specific market for specific products. In both cases, the construction of psychographic instruments used will be different due to the differences in approach and emphasis of the research. Studies done in the wider scope are usually performed for profiling the general public into segments based on their general activities, interest and opinions. The public profile established in this manner would be more in the form of normative typology. That is classifying people in a broader based personality, values and lifestyle segments. For this, the psychographic indicators or measures will be more general in the sense that the item statements are more related to the respondents' general activities. This involves their work, hobbies, social events, vacation, entertainment, shopping, sport as well as their interests and opinions on social, personal, political, business, education and products (Chisnall, 1995). For example, the statements used will include question asking their opinion on the current business environment, which type of entertainment they like most, what type of sport they like to watch, what are their favourite television program and what do they think of the current political leader in power. These item statements are more diverse in terms of their emphasis due to the generality of the study.

Example of these normative psychographic instruments are the Values and Life-Style (VALS) inventory developed by the Stanford Research Institute, initiated by Arnold Mitchell in the 1970s. Using the VALS inventory, people can be segmented as 'Need-Driven', consisting of 'Survivors' and 'Sustainers'; 'Outer-Directed', consisting of 'Belongers', 'Emulators', and 'Achievers'; and Inner-Directed' consisting of 'I-Am-Me', 'Experiential', 'Societally Conscious' and Integrated' (Engel et. al., 1990). Another example is the List of Values (LOV) inventory (Kahle, 1984; Kahle et. al. 1988). Using the LOV inventory, people can be segmented based on the values that they put as priority in life. Those values are 'Self-respect', Security', 'Warm relationship with others', 'Sense of accomplishment', 'Self-fulfilment', 'Being well-respected', 'Sense of belonging' and 'Fun and enjoyment in life' (Tull and Kahle, 1990).

In the UK, the Research Bureau Ltd. has developed a normative typology on 3,500 housewives. They classify housewives into groups of 'The young sophisticates', 'Cabbages', 'Traditional working class', 'Middle-aged sophisticates', 'Coronation Street housewives', 'The self-confident', 'The homely' and 'The penny pinchers'. Since the 1980s, Taylor Nelson has established and monitored the changes in the UK people based on the social value groupings of 'Self-explorers', 'Social resisters', 'Experimentalists', 'Conspicuous consumers/achievers', 'Belongers', 'Survivors', and 'Aimless'. Finally, Target Group Index (TGI) research service has established TGI Outlook which groups people in the UK as 'Trendies', 'The Indifferents', 'Social Spenders', 'Pleasure Seekers', 'Working-Class Puritans' and 'Moralists' (all cited from Chisnall, 1995). Due to the wider scope of grouping emphasis in establishing a more normative typology, the psychographic indicators or

measures should also be broad-based, comprising of the wider aspects of people's activities, interests and opinions.

On the other hand, the psychographic indicators or measures for studies intended for specific markets or products will be tailored specifically on the particular activity or issue under study. For example if the study is on the consumers' decision-making styles in purchasing cars, the statements used will be mostly related to car purchases. Examples of the statements used will be, "I am more interested in the shape of a car," "To me, the fuel efficiency of a car is the most vital thing," and "I don't like compact cars". The typology that will be produced by such statements will be more confined to groups of car buyers, such as Price-Value Conscious, Style Conscious, Quality Conscious and Brand Conscious car buyers. Other examples of the more specific psychographic research have been mentioned earlier in this chapter. For example, Herrman and Warland (1990) produced a typology of consumers based on their compliance with recommended food buying practice. They grouped the consumers as Complete consumers, Almost complete consumers, Economy specialists, Planning specialists and Disinterested consumers. Another example is the typology based on the consumers' patronage preference of a supermarket by Darden and Ashton (1974).

From the description above, the type of psychographic instruments used can be distinguished between psychographic studies covering the whole population and those covering specific markets or issues. The psychographic indicators or measures covering the whole population are more general and broad-based, and relevant to the aspects of activities, interests and opinions of the people. On the other hand, the psychographic indicators or measures designed to under specific markets for specific

products are more specific and confined, and relevant to the market, product or issue studied. As for the present study, the scope will be more specific to the consumers' decision-making style in their purchase behaviour. Therefore the psychographic indicators or measures used will be more confined to the consumers' way of approaching the products they intended to buy in the market. For example, they may be either Quality conscious, Price-value conscious, Perfectionistic and so on.

Related to the above discussion, the attempts to establish normative psychographic indicators or measures involve the usage of broader AIO statements. On the other hand, the attempts to establish psychographic indicators or measures designed for a specific market or product will involve the usage of more specific psychographic statements which are relevant to the market or product under study.

2.3. Relevant Consumer Behaviour Theories.

Having discussed and understood psychographic analysis in the earlier sections, a comparative study between psychographic analysis with other relevant consumer behaviour theories will be done in the proceeding section. This has to done because there are very few theories established in the literature of psychographic profiling that can explain the formation of consumers' dimensions in psychographic profiles. Related to this, one of the critiques mentions that:

> Since adequate psychographic theory has not been developed, the selection of segmentation descriptors and scales is too often a 'fishing expedition'
>
> (Hustad and Pessemeier, 1974; Wind and Green, 1974)

By doing such comparative study between psychographic analysis with other relevant consumer behaviour theories, some of the better theoretical insights in understanding psychographic profiling can be obtained. Due to this, it is also

worthwhile reviewing some of the common and relevant consumer behaviour theories, especially the attitude-behaviour theories in order to look at their vigour in explaining consumer behaviour. This is because, to some extent, these theories can be used as a basis for justifying the vigour of psychographic profiling, since both share the same root in providing explanation for consumer behaviour, that is the consumers' attitude.

Some factors related to psychographic analysis, for example attitude, beliefs and values are also the components that make up most of the attitude-behaviour theories. Such theories include the Theory of Reason Action (Ajzen and Fishbein 1980) , the Theory of Planned Behaviour (Ajzen 1985), the Theory of Buyer Behaviour (Howard and Sheth 1969) and the Theory of Trying (Bagozzi and Warshaw 1990). These theories are also said to be rooted from the attitude theory, as Lutz (1991) states "that attitudes and behaviour are seen as being grounded in basic values of some centrality to the individual".

Due to this fact, these consumer behaviour theories, especially the attitude-behaviour theories, are used here because both deal with attitude measurement and the assumption that consumers' behaviour is initiated from their attitudes. This in some ways similar to most of the attitude-behaviour theories because these theories as well as psychographic profiling are intended to quantify the attitudinal factors of consumers. Most of the attitude-behaviour theories reviewed in this study look at the correlation between intention, which is generated by the attitude formation process, and the purchase behaviour. Only towards the end, the psychographic profiling and the attitude-behaviour theories tend to differ in their emphasis. In the case of the attitude-behaviour theories, they are more concern on measuring correlation between

intention and the related behaviour. This is to ensure that intention to behaviour is the best proxy for the actual behaviour for predictive purposes. While, in the case of psychographic profiling, it emphasis is more towards providing consumers dimensions or typology based on their activities, interests and opinions.

The fundamental idea of using psychographic profiles as a basis for segmentation lies in the assumption that purchase behaviour occurs as a result of a cognitive decision-making process. Relevant to this notion, Engel, Blackwell and Miniard (1990) state that the attitude theory indicates that there is a consistency between consumers' behaviour and attitudes. This is in line with the definition of psychographic profile which has to something do with "the profiling of consumers' psychological processes and properties, thus it pertains to the consumers' cognitive style." (Anderson and Golden, 1984). The cognitive decision-making process ranges from a lengthy one such as in a purchase of highly technical products such as computers, to a brief one such as in the case of impulsive buying. The lengthy process is sometimes referred to as a high involvement purchase, while the brief one as a low involvement purchase.

The decision-making process should also include routine and impulsive purchases. However, the behaviourist may not agree for these forms of purchases to be considered as the consequences of the cognitive process (Skinner, 1972; Alhadeff, 1982). It can be argued that for routine purchases, the decision is based on past purchase experience, which involved the cognitive process during the first purchase of the particular product. As for an impulsive purchase, it can still be argued that it still involves cognitive process, but maybe in a slighter form of it. This is because no matter how 'impulsive' a purchase takes place, a consumer must have a reason in his

or her mind even before he or she picks up an item and makes payment at the counter. This is because it is most unlikely for any consumers to perform any purchase without doing any thinking beforehand. At most, the consumers must justify the product price with the ability to pay for it, or what he or she can do with it if they decide to purchase.

In most cases, there are always needs associated with every purchase, either for the consumers' own consumption or other people which the consumers intend to give it to. The bottom line is, almost all purchases involved decision-making process as antecedent to it, which happens instantly as in routine buying, or in the one that involves a complex process of decision-making in the purchase of high value items or in the first time purchases. Among the views supporting this notion is the one provided by Heyland et. al. (1995) who argues that:

> with the established view that consumers are rational decision-makers, who act on beliefs and strive towards goals. It is, therefore, not surprising that most consumer behaviour models, until now, have been based on a cognitive view of the world.

Heyland et. al. (1995)

Parallel to the attitude-behaviour theories, psychographic profiles are generated from the attitude measurement on the consumers through the self-reporting questionnaires. This profile on the consumers' decision-making styles can be considered as an effort to describe the most likely way that the consumers will perform in their purchase behaviour along with the description of their activities, interest and opinion. The description can serve as the basis for predicting the consumers' intention in their purchase behaviour. For example, if the profile of the consumers decision-making styles indicates that the consumers are brand conscious in

their purchase of clothing item, then the chances of the consumers to actually purchase the well-known brand of clothing item is higher than the consumers to purchase the less-known brand of clothing item. In short, there is some element of similarities between the psychographic profiling with other consumer behaviour theories. To find out such similarities, it will be worth looking at some of these consumer behaviour theories in order to provide some theoretical insight on the study of psychographic profiling in providing explanation to consumers purchase behaviour.

2.3.1. The Theory of Reasoned Action

The Theory of Reasoned Action (Fisbein and Azjen, 1975), as in Figure 2.1, is an extension from the Fishbein's Learning Theory and considered as the benchmark in looking at the attitude-behaviour relationship. This theory consists of the component of social factor which Fishbein calls a Subjective Norm, alongside the component of attitude of the individual towards the consequences of performing a particular behaviour and the evaluative aspect on the consequences. The component of subjective norms consists of Normative Beliefs about what others expect a person to behave and the motivation to comply with those beliefs. This theory shares the similarity with psychographic profiling in a way that both derived at the prior behaviour stage after quantifying consumers' intention to purchase using the attitude measurement through self-reporting questionnaires.

The Theory of Reasoned Action then proceeds by looking at the correlation between the intention to behave with the actual behaviour. On the other hand, the psychographic analysis will come up with a profile of dimension of consumers. These profiles are then used to characterise the consumers based on their decision-making

style in their purchase behaviour or other activities, interests and opinions related aspects of the target group of interest to the study.

At this stage, it is still arguable from the literature that the correlation of attitude-behaviour relationship is not consistently high enough to be reasonably regarded as reliable. The main critique for the Theory of Reasoned Action is that it does not take into account the intervening factors. Such factors are the consumers' resource availability, the supply situation of the intended product and other environmental factors that can hinder or even stop the purchase from taking place.
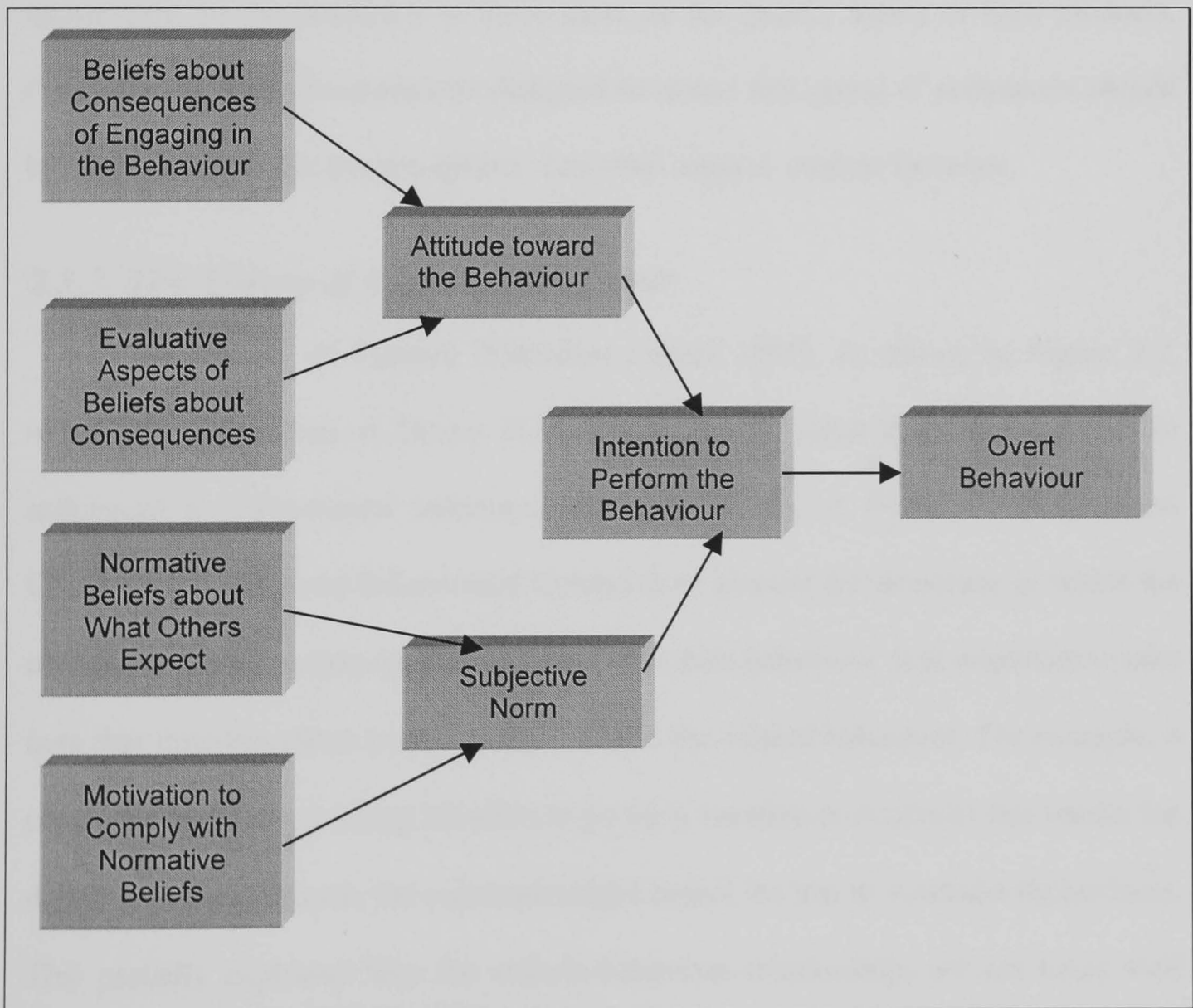
The Theory of Reasoned Action

Figure 2.1

On the other hand, psychographic profiling provides the valuable information about the consumers analysed for the marketers to further formulate the appropriate marketing strategy out of it. For instance, psychographic profiles can provide information on the shopping orientations of a particular group of consumers in their purchase behaviour. This information can guide the marketers to approach this group of consumers, with greater understanding about them. For example, if it is found that the majority of consumers within this group are quality conscious, then it will be more appropriate for the marketers to focus more on the quality aspect of their products. Consequently, the advertisements designed to attract this group of consumers should highlight more on the product quality than other aspects, such as the price.

2.3.2. The Theory of Planned Behaviour

The Theory of Planned Behaviour (Azjen 1985), as shown in Figure 2.2, which is the extension of Theory of Reasoned Action, states that behaviour can be influenced by behavioural intentions and also directly by Perceived Behavioural Control. This Perceived Behavioural Control is to account for situations in which the consumers have less than complete control over their behaviour. It is important to take note that intention alone cannot always lead to the related behaviour. For example, a consumer may have a strong intention to go for a vacation in Australia this winter but due to insufficient funds, the consumer might cancel the trip to Australia (behaviour). This partially explained why the attitude-behaviour relationships are not being well supported empirically in the literature in terms of low correlation among the two variables.

Beliefs about Consequences of Engaging in the Behaviour

Evaluative Aspects of Beliefs about Consequences

Attitude toward the Behaviour

Normative Beliefs about What Others Expect

Motivation to Comply with Normative Beliefs

Subjective Norm

Intention to Perform the Behaviour

Behaviour

Beliefs of Access to the Resource

Opportunities Needed to Perform Behaviour

Perceived Behavioural Control

Theory of Planned Behaviour

Figure 2.2

This modification has succeeded in improving the degree of usefulness of the attitude-behaviour relationship in predicting consumer purchase. On the other hand, the aspect of Perceived Behavioural Control is less of a problem in psychographic profiling as it is in the Theory of Reason Action. This is because it is assumed that when a consumer responds to the statements in the questionnaire, they do it based on their actual purchase experience which they normally encounter. For example, when they indicate that they are quality conscious when purchasing products, it is most likely they will purchase quality products because they are quality conscious consumers in the practical sense. It is unlikely that they intend to be quality conscious because they like to be one, but in practice, they are not quality conscious consumers because they cannot afford to be one.

Therefore, the inclusion of the Perceived Behavioural Control in the Theory of Planned Behaviour may be required to improve the predictive ability of the Theory of Reason Action in principle. As for psychographic profiling, such inclusion is not necessary. This is because the consumers' responses which are taken into account in developing the psychographic profiles of consumers decision-making styles are based on their purchase experiences rather than their purchase intentions alone as in both the Theory of Reason Action and the Theory of Planned Behaviour.

necessary. This is because the consumers' responses which are taken into account in developing the psychographic profiles of consumers decision-making styles are based on their purchase experiences rather than their purchase intentions alone as in both the Theory of Reason Action and the Theory of Planned Behaviour.

2.3.3. The Theory of Buyer Behaviour.

The Theory of Buyer Behaviour by Howard and Sheth (1969), as in Figure 2.3, is a more comprehensive approach towards explaining the consumer's choice behaviour in purchasing, compared to those theories mentioned earlier. Basically, it consists of four main components namely the Hypothetical Construct, which contain all the endogenous variables that are happening in the consumer's mind. Next, is the Stimulus Input Variables, the Response Output Variables and the Exogenous Variables. In the Theory of Buyer Behaviour, the attitude-behaviour relationship is incorporated in the Output component. At the same time, the Output component also tries to explain the decision-making process that might occur in the consumers' mind, after they received marketing inputs and influences from the exogenous variables. In addition, the exogenous factors, namely Personality Variables, Social Class and Culture, in this model are part of the variables that directly influence lifestyle and thus, the psychographic profiles of the consumers. Personality is one of the components that formed the foundation in psychographic profiles. For example when a consumer disagrees with a statement "I like to buy the same brand of product all the time", it directly reflects the consumer's personality of lack of brand loyalty.

EXOGENOUS VARIABLES

Importance of Purchase	Personality Variables	Social Class	Culture	Organisation	Time pressure	Financial Status

INPUT

OUTPUT

Brand

Significative
1. Quality
2. Price
3. Distinctiveness
4. Availability
5. Service

Symbolic
1. Quality
2. Price
3. Distinctiveness
4. Availability
5. Service

Social Environment
1. Family
2. Reference Group
3. Social Class

Search for Information

Inhibitors

Predisposition

Nonspecific Motives · Specific Motives · Decision Mediator · Evoked Set

Sensitivity to Information · Perceptual Bias

Satisfaction

Purchase Behaviour

Intention

Attitudes

Comprehen-sion

Attention

———————— Input-Output Flow of Information

------------------------ Feedback Effect

·········· Influence of Exogenous Variables

Theory of Buyer Behaviour

Figure 2.3

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As for social class and culture, they both directly influence the consumers' lifestyle, which is another component that forms the foundation of psychographic profiling. Therefore, the Theory of Buyer Behaviour also shares some similarities with psychographic profiling in defining the exogenous factors that can exert the influence in shaping the consumers' attitude formation.

2.3.4. The Theory of Trying

The Theory of Trying by Bagozzi and Warshaw (1990), as shown in Figure 2.4, is based on the Theory of Planned Behaviour by Ajzen (1985) and Theory of Goal Pursuit by Warshaw et. al. (1990). Its main difference from the previous Ajzen's theory is the replacement of, on the one hand, the intention to behave with intention to try, and on the other hand, the behaviour with trying. The logic for this is that, as Bagozzi and Warshaw (1990) suggested, behaviour is best seen as 'trying to achieve goal' rather than 'actual goal attainment'. This is based on the finding by Bagozzi and Youjae Yi (1989) who say that intentions correlated more strongly with trying to achieve a goal, rather than with actual goal attainment.

This assumption also agrees with psychographic profiling in a way that psychographic profiling also incorporate statements that are pertaining to the achievement of both behavioural goal as well as consequential goal. For example, a consumer may agree with the statement 'I usually buy well known brand' (behavioural goal) which leads to acknowledgement from friends (consequence goal), or statement 'Well known brand products always of high quality' which incorporates both behavioural goal (well known brand product) and high quality (consequence goal). Therefore, the finding by Bagozzi and Warshaw (1990) that the Theory of Trying

possesses a stronger explanatory power over the Theory of Planned Behaviour also may be seen as enhancing the usefulness of psychographic profiling because both share some conceptual similarities.
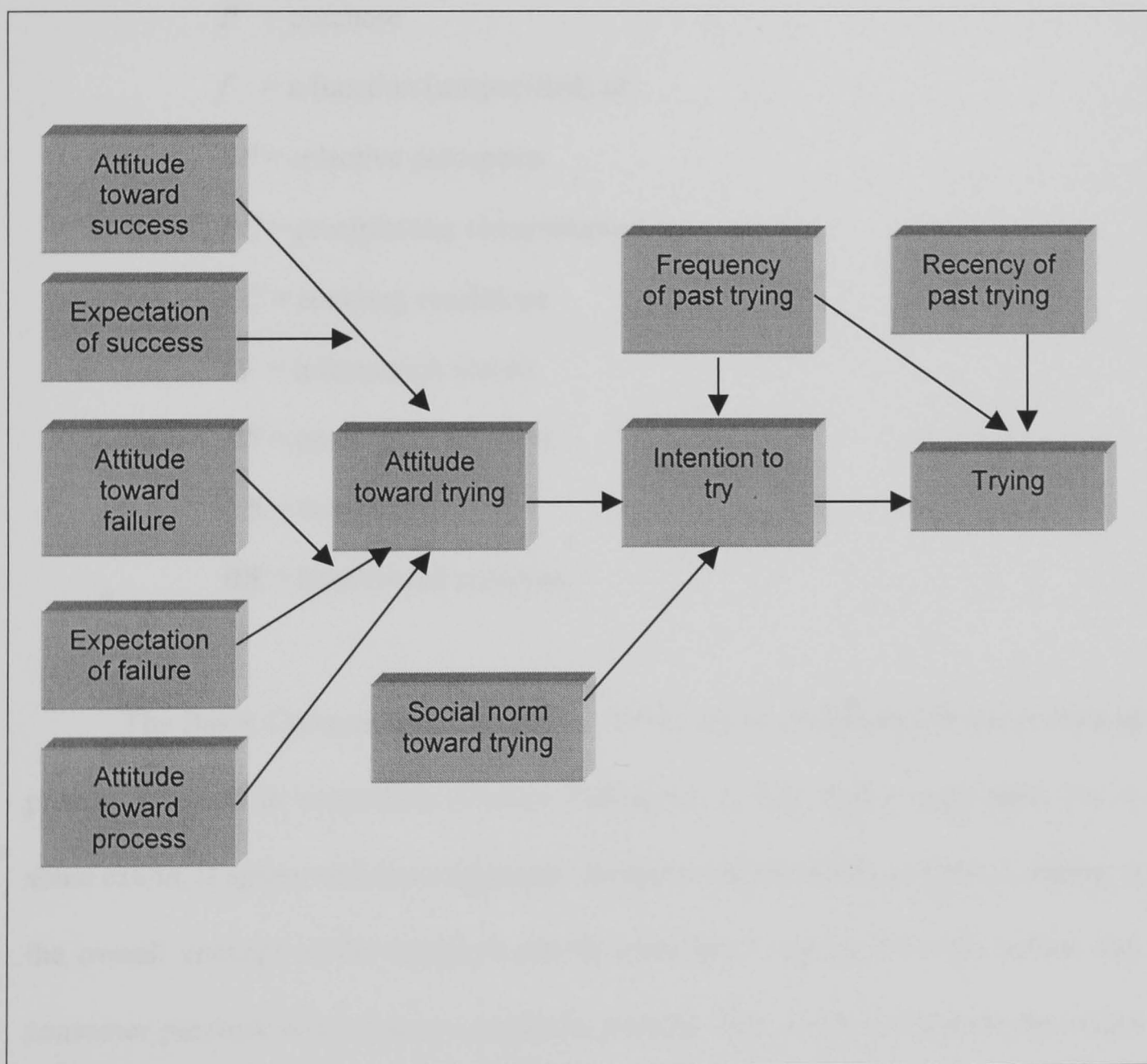
The Theory of Trying

Figure 2.4

2.3.5. The Baker Composite Model

This buyer behaviour model by Baker (1992) is a sequential process model. The model is illustrated in the form of functional equation:

$$P = f [SP (PC, EC, IS, PF, CB, BR)]$$

Where,

P = purchase

f = a function (unspecified) of

SP = selective perception

PC = precipitating circumstances

EC = enabling conditions

IS = information search

PF = performance factors

CB = cost-benefit

BR = behavioural response

The Baker Composite model (Baker, 1992), try to explain the decision-making process involved in consumers purchase behaviour. It may look complicated, but to some extent, it agrees with the consumers' decision-making styles concept. Looking at the overall concept of the model, it can be seen that it agrees with the notion that consumer purchase behaviour is a cognitive process. This means it supports the notion that consumers do involve in the thinking process before the actual behaviour is executed. In other words. most of the consumer purchases of any product are done with a purpose. Looking at the components of the model, some of them are found to be conforming to the consumers' decision-making style dimensions.

First, the selective perception component (*SP*) resembles the dimensions that involve consumers to have preconceived ideas about the product that they intend to buy. For example, if the consumer is brand conscious, then he or she will start their search on the product they intend to buy within the selected brands of product that are in their list of preference. By doing this, they engage in the purchase behaviour equivalent to the selective perception component of the Baker Composite model. This also applies to the Habitual and Brand-Loyal dimension in which consumers limit their search of product to the brands of product, or go to the selected outlets where they are loyal to. This is another form of behaviour, which is equivalent to the selective perception component of the Baker's model.

Secondly, the information search component (*IS*) of the Baker's model supports the notion that consumers do seek information to get the product that best suit their preconceived ideas. For example, a perfectionistic consumer will engage in the information search in order to get the best overall quality product available in the market. Finally, the cost-benefit component (*CB*) of the Baker Composite model resembles the price-value conscious dimension of the consumers' decision-making styles. The price-value conscious consumers will most likely choose the product that will give them the best value for their money, which is equivalent to the cost-benefit concept of the Baker's model. Therefore, it can be concluded that the Baker Composite model, to some extent, supports the concept of consumers' decision-making style dimensions in this study.

Summary

From the review of those relevant theories of consumer behaviour, it can be concluded that the attitude-behaviour relationship is relatively useful in explaining

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consumer purchase behaviour. This implies that attitudes can be said as the determinant of behaviour. This can be made possible given the favourable circumstances in which the supporting factors such as the availability of the goods and services being sought after, resource availability and conducive environmental factors. Therefore, it can be safely said that the psychographic profiles have a reasonably strong foundation for it to be considered as a useful input in the marketing strategy formulation. This is because psychographic profiling shares some conceptual similarities with those attitude-behaviour based theories.

The theories reviewed also support the idea that attitude is predisposition to behaviour, which means it can be the predictive variable to behaviour. This is also in line with the psychographic profiling in a way that it is done based on the self-report measurement of attitude of consumers. In the process involved, the consumers will answer the questioned asked on their attitude based on their own attitude and their normative beliefs, as well as their activities, interest and opinion.

The fact that the nature of psychographic profiling which is much broader than the other consumer behaviour theories reviewed earlier, makes it more able to provide a better explanation for the occurrence of consumer behaviour in the market. This benefit also applies as well in giving some bases for predicting consumer behaviour. Most of the attitude-behaviour relationship theories are more confined to the ability of predicting consumers' behaviour based on the attitude measurement of the consumers. On the other hand, psychographic profiling is more focussed on providing information on the consumers' orientation towards purchasing products based on the attitude measurement of the consumers. Based on this argument, it can be concluded that

psychographic profiling has a more flexible and wider scope of usage over attitude-behaviour theories, although both have many similarities in terms of methodology and approach towards analysing consumer behaviour.

Having this in mind, it is worthwhile to carry out a research to look at the validity and reliability of the psychographic profiles across product classes, which will be discuss in the later sections. It is also worthwhile to look at factors that can be related to consumers' purchase behaviour, that may help to enrich the description provided by the profiles of consumers' decision-making styles, such as the consumers' age, household size, type of job, income, household type and gender. The finding from such study can be very useful for both marketing practitioners as well as academicians in the field of consumer behaviour.

2.4. The Reliability and Validity of Psychographic Profiles

In this section, the reliability and validity of psychographic profiles, in indicating the consumers' decision-making styles, will be discussed. While, the issue of reliability and validity of the measurement variables used to measure consumer' decision-making styles in the present study will be discussed in Chapter Six of this study.

2.4.1. Reliability

Reliability has been one of the major issues raised in psychographic profiling. Here, reliability refers to the consistency of results produced by independent but comparable measures of the same object, trait or construct (Churchill, 1995). The effectiveness of psychographic profiling as inputs to marketing decisions rely heavily

on the degree of reliability of the psychographic profiles in describing, in this case, the consumers' decision-making style dimensions. Wells (1975) indicates that "reliability is particularly important in studies of relationships (such as correlation) because unreliable measurements can, in and of themselves make strong relationship appears to be weak." This issue was also mentioned by Burns and Harrison (1979) in their study on "A Test of the Reliability of Psychographics," where they claim that "decisions to segment markets (using psychographic profiles) must be based on an assumed degree of aggregate stability (of the psychographic profiles) over a period of time." Therefore, the description provided by a psychographic profile needs to be reliable at least over a period of time which is sufficient enough for the marketers to implement the marketing strategy based on this input.

With respect to the concern given on the reliability of psychographic variables, a number of studies have been done in the literature on psychographic profiling in the aspect of its reliability. In a study by Tigert (1969), mentioned in Gunter and Furnham (1992), has found out that some of the psychographic dimensions consist of the more stable factors than the others. The more stable factors are fashion consciousness, price or 'specials' shopping and weight watching. While the less stable factors are new brand trier, brand loyalty and satisfaction with life and income. However, this study by Tigert (1969) was done in a rather general product approach. Thus, questions such as whether those stable factors will remain stable for all product classes or differ for different product classes cannot be answered by such general approach study.

Such limitation occurs because there was no emphasis given to relate the psychographic dimensions to specific product class. By right, these psychographic

dimensions can be related to general or specific product class. For example, price or 'specials' shopping, new brand trier, brand loyalty and satisfaction with life and income can be related to all product classes in general. On the other hand, fashion consciousness is more related to clothing, while weight watching is more related to food. This study by Tigert (1969) was done using a test-retest reliability analysis for 16 psychographic dimensions. In this process, Tigert (1969) discovered that 11 of the 16 dimensions had a reliability of at least 0.7 with the overall lowest of 0.59 for the whole dimensions.

In another study using a median test-retest method, Bruno and Pessemeier (1972) found the reliability coefficient in a range of 0.6 to 0.69 for psychographic items and about 0.8 for multi-item scales. Burns and Harrison (1979) found out that half of the 36 items are consistent over a period of one year. Therefore, based on the finding of the Burns and Harrison's (1979) research work, it can be concluded that psychographic profiles are relatively stable at least over a period of one year.

Wells (1975) mentions in detail the aspects of reliability of psychographic profiles in his review of the literature. He states that in terms of reliability of dependent variables, psychographic profiles face some limitations due to the nature of the dependent variables themselves. The dependent variables usually consist of consumer behaviour which is unreliable when measured repeatedly. That is, even though the same measurement was used to measure these variables, the data collected will not show the same result due to the instability of the dependent variables being measured.

An example of this is in measuring how much a consumer will buy the product of a particular brand they like most. When the consumer is asked for the first time, he or she may indicate that he or she will buy 20 units. However, when asked for the second time, he or she may indicate 25 unit, maybe during the second time he or she may have more money to spend. This can happen due to the fact that most of the consumer behaviour variables are subjective in nature. The situation will be worst when it involves measurement of variables across different consumers.

The preceding example illustrates the reliability of the variables used in a model is vital for the reliability of relationship, such as correlation, between the dependent and the independent variables to exist. Reliability of relationship is said to exist when the same relationship between variables occurs from study to study. This can be illustrated using the following example. Suppose that in a study it is found that the majority of consumers in the Brand Conscious psychographic dimension are female consumers. If the same study is done repeatedly and the results consistently show that the majority of consumers in the same dimension are found to be female consumers, then it can be said that the reliability of relationship occurs in these studies. The lower the reliability of these variables, the more difficult for us to get a more consistent result in the research using the same variables, from study to study.

A high level of reliability of relationship can be reflected by the consistency of prediction of the dependent variables using those independent variables. That is the more consistent the prediction made by a model, the more reliable the relationship between the variables used in that particular model. For example, from the result of a study, it is found that the psychographic profile of a higher income consumers shows

that it consists of Perfectionistic and Brand Conscious decision-making styles. If similar study is done repeatedly and consistently indicate the same findings, then it can be concluded that the psychographic profile has a high degree of reliability.

Consequently, these findings can be relied on to predict that the psychographic profiles of higher income consumers will consist of Perfectionistic and Brand Conscious consumers' decision-making style dimensions. Unfortunately, this is not always been the case for most prediction involving behavioural variables because some parts of the correlation among variables are subject to chances. Relatively speaking, this limitation is not only faced in psychographic profiling, but in almost all aspects of behavioural sciences which deals with variables consisting of behavioural factors in their measurement.

The examples above show that a large number of studies (Burns and Harrison, 1979; Wells, 1975; Tigert, 1969; Bruno and Pessemeier, 1972) were done on the aspects of reliability of psychographic variables. In most cases, psychographic variables are said to be reliable. This supports the statement by Pessemier and Bruno (1971) which says, "the wide range of variables employed and the constructs to which they (psychographic variables) relate appear to be sufficiently reliable for both practical and theoretical purposes."

On the whole, psychographic profiles can be considered as having sufficient degree of reliability, which means they can be used to predict buyer behaviour. This is supported by Wells (1975) who concludes that "The available data (from his review) indicate that psychographic measurements and analytic procedures (in most cases) can have satisfactory reliability." Satisfactory degree of reliability here means

that the psychographic variables, on average, show a good correlation with each other in most of the tests carried out on the model containing these variables.

2.4.2. Reliability across Product Classes

Despite the volume of development of psychographic profiles, there has been little research done on the reliability of such profiles across product classes. This may be due to the assumption that consumers will engage in the same purchase behaviour regardless of what type of product they purchased in the market. In other words, that most of the researchers assumed that there is no significant product class effect that can influence the formations of psychographic profiles of consumers' decision-making style dimensions across product classes. For the purpose of the present study, the product classification used will be the one which deals with consumer goods; convenience, speciality and shopping products, as proposed by Copeland (1923). In a review of the product classification, Murphy and Enis (1986) argue that there are differences in terms of effort and risk taken by consumers whenever they buy products from different product classes. They define effort as "the amount of money, time and energy the buyer is willing to expend to acquire a given product", and risk as the possibility "that the product will not deliver the benefits sought".

Given these differences, it is justifiable for a study to be carried out in order to test the reliability of the consumers' decision-making styles across product classes. This should be reflected by the psychographic profiles of consumers' decision-making style dimensions developed in each product class. Findings from the study of reliability should indicate whether consumers have a consistent psychographic profile across product classes or differ according to what type of product class with which

they are dealing. Psychographic profiles which can be said as consistent across product classes are those which contain the same number, type and order of dimensions for each product class.

For example, if the psychographic profile of product class A consists of dimensions 'perfectionism or high quality consciousness', 'brand consciousness' and 'novelty fashion consciousness', then product class B and C should also have similar psychographic profiles which contain the same number, type and order of dimensions, as shown in Table 2.2. Knowledge of the reliability of consumers' psychographic profiles will then enable researchers to develop an appropriate strategy in marketing products of various product classes. If it is found that the consumers' psychographic profiles are reliable across product classes, then a single marketing strategy can be used for all products regardless of which product class they come from.

	Product Class A	**Product Class B**	**Product Class C**
1st. Dimension	perfectionism or high quality consciousness	perfectionism or high quality consciousness	perfectionism or high quality consciousness
2nd. Dimension	brand consciousness	brand consciousness	brand consciousness
3rd. Dimension	novelty-fashion consciousness	novelty-fashion consciousness	novelty-fashion consciousness

Consistent Profile of Dimensions against Product Class

Table 2.2

Therefore, to enable an accurate judgement be made on such issue, a study on the reliability of psychographic variables across different product classes needs to be carried out in order to investigate the validity of such assumption. If it is found that the consumers' psychographic profiles are stable across various product classes, then

only a single marketing strategy would be required for all the product classes. If this is true, then it will result in great reduction in marketing cost required to implement three different marketing strategy mix .This is because only one marketing strategy mix is required for the three product classes due to the insignificance of the product class effect on the consumers' decision-making style dimensions across product classes.

2.4.3. Validity

A valid construct is the one which really exists in the real world. For this case, a consumers' decision-making style dimension is said to be valid if it really being involved by consumers in their purchase behaviour. For example, if the brand-conscious dimension appear in the profile of the convenience product class, and in practice there are indeed consumers who are brand conscious when purchasing convenience product, then this dimension can be considered as a valid dimension which explain the consumers' purchase behaviour in the convenience product class. There is no easy way of ensuring the validity of a dimension in explaining consumer covert behaviour. However, psychographic profiles can offer some useful insights in guiding marketers to formulate marketing strategy which needs to be taken when they cannot afford to wait for the legitimacy of the validity of the particular construct. The example provided by Wells (1975) can best explain the point here.

A copywriter confronted a deadline for creating an advertisement. He could sit in his office and imagine his audience. But he might be wrong if he rely just on his own experience. He might do his own informal psychographic study – trudge all the way around the block talking to neighbours. But to the degree that his neighbours are different from his customers, this informal research might be misleading. The copywriter might depend upon a qualitative motivation study. If he did he would be looking at findings from a small unrepresentative sample and he would be depending on the subjective

judgement of the motivation research analysis. He might examine a demographic profile obtained from a large scale quantitative market survey. But he would almost surely miss some valid relationships and he would almost surely make some false inferences. Given these alternatives, it is easy to see why psychographic profiles have seen wide use in spite of legitimate questions as to reliability and validity. The copy writer cannot wait for convergent and discriminant validation. He must produce an advertisement based on whatever information he can get.

The same basic problem confronts product designers, package designers, product managers and media analysts. What product features will fit the lifestyle of the potential customers? To what sort of person should the package be designed to appeal? Is the customer for this product or service unusually price conscious? Fashion conscious? Concerned about pollution? Concerned about his health?...All of this question are regularly answered by some combination of intuition and quantitative and qualitative research. In many cases psychographic profiles add information that would not otherwise be available.

(Wells, 1975)

As for this study, the validity of the consumers' decision-making style can be rationalised based on the findings from previous studies, sensible relationship with the demographic variables, theoretical judgement obtained from the consumer behaviour theories, and researcher's justification.

2.4.4. Generalisability

Besides the issues of reliability and validity, psychographic profiling has also been tested in terms of its generalisability across geographic locations. The term "generalisability" refers to the extent to which one can generalise from the observations at hand to the universe of generalisations (Malhotra, 1993). In other words, generalisability exists if the observation is reliable to the universe of generalisations. For example, Lesser and Hughes (1986) find that psychographic profile found in one location can be generalisable to other locations across the United States. Their research involved 17 selected locations across the USA.

This finding adds to another dimension of usefulness of psychographic profiling. Although psychographic profiles can be generalised across geographic locations, most likely this may not be true if they are to be generalised across product classes. The reason is that products from different product classes may differ in terms of their characteristics such as price, frequency of usage and need priority. Sproles and Kendall (1986) suggest that "a consumer may have different consumer styles (a form of psychographic profile) for each product category." Another argument from the literature saying that lifestyle and psychographic dimensions may have added to the predictive ability of demographics, but the correlation with consumer behaviour has been far from impressive (Frank, Massy, and Wind 1972; Wells and Tigert 1971). However, this is no worse than the problem of other predictors of consumer behaviour such as intention and attitude.

In general, despite the limitation due to low validity of psychographic variables, it can be said that psychographic variables are more related to the consumers' behaviour being studied compared to personality and demographic measures (Gunter and Furnham, 1992). Using this argument, it can be concluded that psychographic analysis in general is relatively more useful than personality and demographic analyses in providing explanation for consumer behaviour. It is intended in the present research to replicate the methodology of profiling consumers' decision-making styles initiated by Sproles and Kendall (1986) on a more specific approach by looking at it in a specific product class basis.

2.5. Consumers' Decision-Making Styles In Purchase Behaviour.

The concept of consumers' decision-making style dimensions in their purchase behaviour has been briefly introduced earlier in this chapter. In this section, the concept will be further elaborated in order to provide a better understanding of the consumers' decision-making styles. As mentioned earlier, the consumers' decision-making styles were commonly referred to as consumers shopping orientation in the much earlier studies (Darden and Ashton, 1974; Stone, 1954; Moschis, 1976). However, in the more recent studies (Durvasula et al 1993, Hafstrom et al 1992, Sproles and Kendall 1986, Sproles 1985) the term consumer decision-making styles are used to refer to the similar thing as consumers shopping orientations.

Both terms refer to the ways consumers make decisions on choosing the product they intend to purchase in the market. For example, some consumers may go for product perfection as the main criteria when choosing a product within a group of product alternatives, and therefore they are said to be perfectionistic consumers. Others may prioritise on price or value for money when choosing products that they wanted to buy in the market, and thus they are termed as price-value conscious consumers. Some may just decide on adhoc basis when confronted with alternatives of choice of product that they intend to buy, and these consumers are labelled as the impulsive and careless consumers.

Sproles (1985), Sproles & Kendall (1986), Hafstrom et al (1992), Durvasula et al (1993).	Herrman & Warland (1990).	Stone (1954), Darden & Ashton (1974).	Moschis (1976)
1.Perfectionistic 2.Value Conscious 3.Brand Conscious 4.Confused by Overchoice 5.Novelty-Fashion Conscious *a* 6.Shopping Avoider (-ve) *b* 6.Recreational, Hedonistic Consumer *c* 7.Impulsive Consumer *c* 8.Habitual, Brand-Loyal Consumer *c* 9.Time-Energy Conserving Consumer *d*	1.Complete consumers 2.Almost complete consumers 3.Economy specialists 4.Planning specialists 5.Disinterested consumers	1.Apathetic Shopper 2.Demanding Shopper *e* 3.Quality Shopper *e* 4.Fastidious Shopper *e* 5.Stamp Preferrer *e* 6.Convenient Location Shopper *e* 7.Stamp Haters *e* 8.Economic *f* 9.Personalizing *f* 10.Ethical *f*	1.Special Shopper 2.Brand-Loyal Shopper 3.Store-Loyal Shopper 4.Problem-Solving Shopper 5.Psycho-Socializing Shopper 6.Name Conscious Shopper

a Sproles & Kendall (1986) and Durvasula et al (1993) only
b Sproles (1985) only
c Sproles & Kendall (1986), Durvasula et al (1993) and Hafstrom et al (1992) only
d Hafstrom et al (1992) only
e Darden & Ashton (1974) only
f Stone (1954) and Darden & Ashton (1974) only

Examples of Consumers' Decision-Making Style/Shoppers' Orientation Dimensions

Table 2.3

From these illustrations, therefore, it can be seen that there are several types of consumers that can be categorised based on their styles of making choices about the product they are about to acquire from the market. Table 2.3 summarises the consumers decision-making styles and shoppers' orientations by the respective researchers. The examples of consumers decision-making styles are the ones that provided by Sproles and Kendall's (1986) study. The finding from this study suggests that consumers can be classified according to their styles in making-decision on products they intend to buy in the market.

To further understand the concept of decision-making style dimensions, let us begin by discussing the Perfectionistic dimension. The perfectionistic consumers refer to those consumers who go for the best quality or top of the line products and they are most unlikely to settle for products which are just good enough. Consumers of this type will be more likely to shop more carefully and systematically and are involved in comparison of the products before deciding on buying any particular product. While, the Brand Conscious consumers will decide their selections of products that they buy on the products brand name. They usually choose products of which the brands are familiar to them or brands of products which are well known or popular among the general consumers. Brand names such as Levi's (casual wear), Nike (sporting goods), Kellogg's (breakfast cereal), Sony (electrical appliances), Parker (pen) and YSL (designer shirt) which are well known in the market will be their most probable choices.

The Price Conscious consumers will use price and saving opportunities associated with the products, as their base of choice for products that they intend to

buy. This category of consumers is most likely to go for low price products of acceptable quality, look for bargains, discounts and special offers which come with the products. One thing that have to be bear in mind about this dimension of consumers decision-making styles is that they are not after the cheap products per se, but they are after products that can give more value for the money. While, the Impulsive consumers will be those who do not plan their shopping and usually decide on their purchase on ad hoc basis. They are most likely to be attracted by the in store stimulus, such as attractive display of the product which motivates them to buy the product. This type of consumers will also most likely to end up buying more products than they initially intend to buy.

Another category of consumers is the Novelty-Fashion Conscious consumers. This type of consumers put greater weight on product trend, fashion, style and appearance more than any other attributes of the product they intend to buy. They are more likely to have ever changing tastes and preferences according to the changing trend, fashion or technology of the products available in the market. The consumers can also be categorised as the Recreational and Hedonistic Shopping Conscious. This type of consumers is most likely to purchase products just for the fun of it, not much on the actual need of the product. For example, they just buy a product because they see it during window shopping, not because they purposely go to shop for that product. In other words, this type of consumers often buy products because of the enjoyment they get from buying the product, more than the utility offered by the products to them.

The last two categories of consumers suggested by Sproles and Kendall (1986) are the Confused by Overchoice consumers and the Habitual and Brand-Loyal consumers. The Confused by Overchoice consumers are those consumers who will avoid going to large retail outlets where they have to choose from too many items of products or which require them to locate the types of product they are looking for. This type of consumers is most likely to shop at smaller shops or avoid shopping whenever possible. This is the opposite of the recreational and hedonistic shopping conscious consumers.

Finally, the Habitual and Brand-Loyal consumers are those consumers who routinely buy products of the same brand that they are familiar with. Unlike the Brand Conscious consumers, the brands of product which the Habitual and Brand-Loyal consumers most likely to buy do not necessarily be the well-known brands. They can just settle for those brands of product which they are familiar and comfortable with.

In short, consumers can be profiled and categorised in terms of their decision-making styles in their purchase behaviour. These categories of consumers suggested by Sproles and Kendall (1986) may or may not appear exactly the same in terms of the order and the number of dimensions as in their study if repeated using different samples. Moreover, the present study intends to use the general consumers as against the student samples used in the earlier studies (Durvasula et al 1993, Hafstrom et al 1992, Sproles and Kendall 1986, Sproles 1985). In addition, the study will be done on three different product classes, instead of one general product class used in those studies mentioned above.

The present study intends to address the question on whether this categorisation, according to consumers decision-making styles in their purchase behaviour, is consistent among the consumers when purchasing products from different product classes. Therefore, the next step will be the construction of a relevant model that will be used to investigate the relationship between those variables in the effort to fulfil the research objectives outlined in the introductory chapter.

Summary

This chapter outlines the definition of psychographic profiling both conceptually and practically. In general, psychographic profiling can be defined as a method of illustrating individuals inner attributes to understand their behaviour. This is done based on their activities, interests and opinions statements in aggregate terms. From the conceptual definition, the researcher then proceeds in discussing on how psychographic profiling is put into practice. To get a better understanding of the foundation of psychographic analysis, some of the earlier studies done in this area are reviewed.

The more recent studies are also reviewed in order to discuss the development of psychographic profiling. Having understood the concept of psychographic analysis, some of the common theories of consumer behaviour are reviewed and synthesised with psychographic analysis in order to discuss the relevance of psychographic analysis in consumer behaviour. Psychographic profiles are found to be relatively reliable and useful in indicating the consumers' inner attributes in the effort to provide an explanation for the consumer behaviour in purchasing consumer products. On the other hand, the generalisability of psychographic profiles across different product classes remains to be tested. It is doubtful that the consumers' decision-making styles

can be generalised across product classes due to the differing nature of the products from different product classes. Consequently, the consumers are more likely to involve in a different set of profiles of consumers' decision-making styles when dealing with product from different product classes.

Finally, the review on the studies of consumers' decision-making style dimensions provide better understanding on the eight dimensions initiated by the Sproles and Kendall's (1986) studies. These dimensions will be instrumental in indicating the consumers' purchase behaviour in different product classes, which will be the central theme of the present study. The construction of scales based mainly from the Consumer Styles Inventory developed by Sproles and Kendall (1986) will be elaborated in more detail in Chapter Four of this study.

Following these conceptualisations, the next chapter will explore the literature of the selected demographic variables that will be used in this study. This will be followed by a review of the literature of consumer product classification.

CHAPTER 3

Demographic Differences and Consumers' Decision-Making Styles, and Product Classification

3.0. Introduction

In the preceding chapter, the literature on the concept of psychographic profiling in relation to the consumer behaviour is overviewed. The thesis will then proceed with further discussions on other related issues within the scope of this study. It will commence by looking at some of the selected demographic variables and their relation to the consumers' decision-making styles within each product class. In this research, the relative differences of the selected demographic variables such as the consumers' age, household sizes, types of job, incomes, household types and gender, with the psychographic profiles of consumers decision-making styles in their purchase behaviour will specifically be investigated. These demographic variables are selected because they are believed they can be related to the consumers' decision-making styles in their purchase behaviour.

In the next section, an overview on the consumer product classification will be done to justify the selection of consumer product classification that will be used in this study.

3.1. Demographic Differences and Consumer Behaviour.

As mentioned earlier, the demographic variables which are selected as variables in this study are the consumers' age, household sizes, types of job, incomes, household types and gender. There are two main reasons for selecting these demographic variables for this study. Firstly, they are believed to have significant

relation to the consumers' decision-making styles because the consumers' household sizes, types of job and income, are income related variables. While, the other demographic variables, such as the consumers' age, household types and gender, are very much related to their spending behaviour and types of product requirements (Wilkes, 1995; Engel et. al., 1990; Schaninger and Danko, 1993; Douthit and Fedyk, 1988 & 90).

The consumers' income is the main economic resource which provides the purchasing power for the consumers, as argued by Engel et. al. (1990) "It takes money to be a consumer." Consequently, the consumers' income will determine their purchasing power or the ability to make a choice on the products that they intend to buy in the market. In other words, income will be the important determining factor of the consumers' decision-making style in their purchase behaviour. Therefore, demographic variables which are income related, are most likely to be able to determine the consumers ability to make choice of products in the market.

Meanwhile, those demographic variables which are related to the consumers spending behaviour and types of product requirement will most likely be able to influence the types of product bought by the consumers in terms of styles, fashions and other related product attributes. This will in turn lead to the determination of the dimensions of consumer's decision-making styles that will mostly be engaged by the consumers in obtaining the product they require in the market. In other words, the type of products required by the consumers will most likely determine the type of decision-making styles engaged by the consumers in getting those products.

For example, a consumer from the higher income group may require an antique chair, a speciality product for his or her living room, and most probably, this consumer will be a perfectionistic consumer. On the other hand, a consumer from the lower income group may require an ordinary chair for his or her living room and this consumer may be most probably he or she may be a price conscious consumer because he or she is purchasing an ordinary chair, which is a shopping product. This example clearly show that the different types of products purchased will lead to the different decision-making style dimensions engaged by the consumers involved.

The second reason is that because these demographic variables; consumers age, household sizes, types of job, incomes, household types and gender, are relatively easy to measure within the scope of the study. They can be measured directly using a single straightforward question for each of the demographic variables involved. The demographic variables which require a more complicated measures, such as social class, cannot be used because they will increase the complexity of the questionnaire for this study. To further illustrate the relationship of these selected demographic variables with consumer behaviour, this chapter will go on discussing each of these demographic variables individually.

3.1.1. Age

Age is one of the important demographic variables which is often used in the formulation of marketing strategies. Marketers need to consider age subcultures when developing marketing plans because every time the consumers pass through the age stages, their product requirements also change accordingly. Consequently, analysis of age trends will be important to marketers because highly accurate measures of age

composition of the population can be projected into the future (Mowen, 1990). Age is also considered as an important variable because it is one of the most helpful proxy variables for the determination of motivation and interest of consumers (Engel, Blackwell and Miniard, 1990). Consumers from the same age group usually share common requirements of product and indicate common interest to a particular fashions or trends of product in the market

Consequently, age differences may have significant relationship with the consumer's decision-making styles across product classes. For example, consumers from the younger age group (18-29 years old) will most probably have more interest on fashionable and trendier products than their older counterparts (65 years and above). Meanwhile, the older consumers may most probably be more confused by overchoice when dealing with products with many brands in the market than the younger groups of consumers. In relation to this, Beatty and Smith (1987) state that the consumer behaviour literature reports that as people age, they tend to limit the amount of information they obtain about products prior to a brand choice decision.

In supporting this notion, Cole and Balasubramanian's (1993) study find that age-related processing abilities or dispositions (such as information integration skills, working-memory capacity, and the tendency to satisfy) may impose natural constrains on how effectively a consumer searches for information. These limitations on part of the older consumers will most probably reduce their ability to make appropriate choice in the market especially when dealing with types of product with multiple brands available in the market. Consequently, this will most likely increase the tendency for older consumers to be more confused by overchoice in the market than

their younger counterparts. Therefore, age may most probably be an influential factor that can determine the consumers' decision-making styles in their purchase behaviour of multiple brands in the market.

Besides these factors, age also to some extent, determines how consumers will react to any changes to the new products offered in the market. Younger consumers are more likely to be adventurous to try new products in the market than the older or more mature consumers. For example, younger consumers may be more likely to adopt new fashion or trend products, thus engaging in the novelty-fashion conscious than the older consumers. While, older consumers in turn may be more price-value conscious as they will be more likely to spend more wisely than the younger consumers.

These propositions may be theoretically sensible, and surely need to be confirmed empirically in order for marketers to be more confident to use them as the basis for the formulation of the appropriate marketing strategy. This is part of what this study is intended to investigate. Nevertheless, those arguments brought forward indicate that consumers age group should be considered as one of the potentially significant demographic variables that will likely to have significant relationship with the dimensions of consumers decision-making styles, which will be engaged by consumers in their purchase behaviour.

However, caution need to be taken because several studies (e.g. Gunter, 1998; Gunter and Furnham, 1998) have found that consumers from the older age category may behave similarly as other consumers from younger categories. Gunter (1998) mentioned that "the grey market (market consisting of people above 50 years of age)

comprises a heterogeneous mix of people who can be distinguished in terms of their age, gender, education, financial circumstances and consumer behaviour patterns." Hence, there may be variation among consumers within the particular age category. For example, some of the older consumers can be as fashion conscious as younger consumers. Also, within the older consumers' category, there may be some who are confused by overchoice and at the same time there may be some who are not. This is also true in the children age group in which Gunter and Furnham (1998) mentioned that the market segment for children is also found to be a "heterogeneous one in terms of demographic and psychological character, and respect to purchase patterns." Therefore, the heterogeneity factor of the consumers' age groups need to be considered whenever generalisation is to be made in relation to consumers' age groups.

3.1.2. Household Size

Before proceeding to discuss this issue, it is better to first justify the decision to use the term 'household' instead of 'family' in this study. Although sometimes used interchangeably, the term 'household' and 'family' differs in the sense that "'household' includes the related family members and all the unrelated persons who occupy a housing unit" (Loudon and Della Bitta 1993). On the other hand, the term family consists of groups of two or more people related by blood, marriage, or adoption and residing together in a household. The term household also covers all types of household whether they have traditional or non-traditional relationship. In other words, the term household seems to cover a wider scope, as compared to the

term family. This is because the term household consists of both the family members and non-family members within units of household.

The term 'family' on the contrary, is usually used to refer to the traditional family. The traditional family here means that the members of the household are bonded by traditional relationship such as relation by blood, marriage, or adoption. While a non-traditional relationship consists of relationship other than the traditional one such as cohabiting couples (of any sexual orientations), single parents and other non-related individuals staying together in units of households.

Related to this issue, Engel, Blackwell and Miniard (1990) suggest that 'household life-cycle' should be used to replace the term family life-cycle which was first advocated by Wells and Gubar (1966) to represent the contemporary society, especially for the western society. This is due to the fact that in the contemporary society, the proportion of the non traditional family such as the single parents, cohabiting couples and other forms of non-related people living together as units of household, have become increasingly significant. This is supported by Peter and Olson (1994) who state that in 1990, three out of ten American households consists of non-traditional families. As for the UK, in the 1990's there has been a continuing trend away from the traditional nuclear family (consisting of husband, wife and children) or household (Baker, 1996), and in 1993 about 60% of the population are from married households.

Another supporting evidence was provided by Engel et. al. (1990) stating that the term "household is becoming a more important unit of analysis for marketers because of the rapid growth in non-traditional families and non-family households."

Related to this argument, the household life-cycle as proposed by Engel, Blackwell and Miniard (1990) seems to be more appropriate after taking into account the non-traditional forms of family which has becoming more significant in their numbers. For this, the term family life cycle by Gubar (1966) which only refer to the traditional family, does not seem to be accurate enough in explaining the consumer behaviour at present. As the non-traditional household types are increasing, the term household seems to be more appropriate for this study.

Differences in the households size can most likely be related to the differences in the consumers' decision-making style dimensions. The bigger the size of a household, the lower will be the per-capita income of the consumers who belong to that household, given the situation that the amount of the household income remains the same. As for the UK case, this assumption may apply because about two thirds of the households have only one or none of the household members who are economically active during 1994-95 period (Compiled by Baker, 1996). As the consumers' incomes are effected by the number of members in the household, the purchasing power of the household members will also be directly effected by the household size, given the assumption that the number of economically active members in the household remains the same. This will then effect the decision-making styles in the purchase behaviour of the household members.

For example, for a given amount of household income say £10,000 per annum, the household with ten members will have per capita income of £1,000 per annum for each of its members. On the other hand, a household of the same amount of income but with five household members will have £2,000 of per capita annual income for

each of its members. Here it can be can seen that consumers of the smaller size households will have relatively higher per capita income, which then leads them to have a greater purchasing power. In relation to this, the resulting psychographic profiles of the consumers' decision-making style dimensions should also differ, as the household size from where they come differ. Therefore, the size of a household can most likely be related to the differences in the dimensions of consumers decision-making styles engaged by the consumers in their purchase behaviour.

3.1.3. Type of Job

The consumers' type of job is very much related to their income and lifestyles. In most of the cases, the consumers' occupation or type of job is used as a variable to specify consumers' social class. Examples of those social class specifications are Hollingshead's Index of Social Position, Warner's Index of Status Characteristics, Census Bureau Index of Socioeconometric Status, and Coleman's Index of Urban Status (Mowen, 1990). In fact, occupation is the best single proxy indicator of social class because people who have similarly ranked (or prestige) occupations often share similar access to the means of achieving a lifestyle (Engel, Blackwell and Miniard, 1990).

Consequently, if the consumers' type of job or occupation is used in most of the social class measurements, then it is most likely to be a significant demographic variable which can determine the consumers decision-making styles in their purchase behaviour. This is because the consumers' type of job is very much related to their purchasing power, the society they belong to and the level of education or skill that

they have. These factors in turn may be influential in shaping the consumers decision-making styles in the market.

For example, consumers who are managers of big companies are most likely to dress with clothings that can convey their image as leaders to their subordinates. This may be a form of strategy to gain respect and attention from their subordinates. For this, they may go for highly regarded brands of clothing, most probably, the designer label clothes. While, those who work as low-grade technicians may go for the cheaper brands of clothing because obviously they do not need to spend unnecessary large amount of money for the purpose of impressing any of their subordinates during their working hours, which is nonessential to them.

Given this situation, those consumers who are managers are most likely to be more brand-conscious than the low-grade technician consumers. On the other hand, the low-grade technician consumers may most probably be more price conscious than the managerial consumers when they are dealing with clothings in the market. Therefore, the consumers' type of job can potentially be a significant variable that can differentiate the consumers' decision-making style dimensions in their purchase behaviour.

3.1.4. Income

The consumers' incomes provide purchasing power to consumers. This is because incomes provide money to the consumers and the consumers' decisions concerning products and brands are heavily influenced by the amounts of economic resources which they have (Engel, Blackwell and Miniard, 1990). To most consumers, income provides the most bulk of their economic resources. The higher the income a

consumer has, the more the ability for the consumer to choose the type of products that he wants to buy from the market.

The level of consumers' income can also determine the categories of product sought. After they have satisfied their basic physiological needs, they will move towards the higher level of needs in the hierarchy of needs depending on their ability to purchase. Thus, the level of income will determine the types of need the consumer will be seeking for. This will in turn leads to the selection of products that can best satisfy those needs. This agrees with Engel, Blackwell and Miniard (1990) who state that buying is closely related to income because expenditures for major categories of consumer good vary greatly with income level.

This notion is supported by a survey result on consumers expenditures (1982-84), by the US Bureau of Labour Statistics, as shown in Table 3.1. For example, the expenditures on food, which is a necessity, declines as income rises. On the other hand, the expenditures on personal insurance, which is an investment item, rises with income. The similar argument is also supported by Maslow's Hierarchy of Needs theory in which it suggests that people would have different priorities in satisfying different types of need as their capacity to spend varies. These arguments support the conception that different level of income will generate different level of expenditure on certain categories of product.

Disposable income might be best used for the purpose of studying income and expenditure relationship, rather than gross income. However, for the purpose of this study, gross income is preferred over disposable income. This is because data on the consumers' gross income is much easier to obtain compared to disposable income.

Average Annual Expenditures in Quintiles of Income Before Taxes in % of Total Expenditures.	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%
Total Expenditures (US$)	8,324	12,155	16,733	22,425	35,171
Food	21.0%	19.2%	17.2%	16.1%	13.7%
Alcoholic beverages	1.6%	1.6%	1.6%	1.6%	1.3%
Housing	35.8%	32.7%	30.1%	28.8%	29.0%
Apparel and apparel services	5.2%	5.0%	5.2%	5.2%	5.8%
Transportation	14.8%	18.6%	20.6%	20.5%	19.8%
Health care	6.2%	6.6%	4.9%	3.9%	3.1%
Entertainment	3.4%	3.5%	4.2%	5.0%	5.3%
Personal care	1.0%	1.0%	0.9%	0.9%	0.9%
Reading	0.7%	0.7%	0.7%	0.7%	0.6%
Education	3.2%	1.0%	0.8%	0.9%	1.6%
Tobacco	1.5%	1.5%	1.3%	1.2%	0.7%
Miscellaneous	1.6%	1.3%	1.4%	1.5%	1.5%
Cash contributions	1.7%	2.2%	3.2%	3.1%	3.9%
Personal insurance and the likes	2.3%	4.7%	7.8%	10.5%	12.9%

Source: Engel et al (1990), page 231. (percentages of expenditures are calculated by author)

Consumers' Expenditure on Selected Items

Table 3.1

This is especially true with the use of mail survey in which the samples need to be given the most convenient way of responding to the questionnaires, in order to get better chances of participation. The data on gross income will be readily available to the samples compared to disposable income, because this is the amount which is usually shown on their payslips. The respondents do not have to go through many calculations to provide the data for their gross income as compared to disposable income. In most cases, the disposable income can safely be said as parallel to the gross income. Therefore, the use of gross income in place of disposable income in studying the consumers' income-expenditure relationship can be acceptably right because gross income can be the good proxy for consumers' disposable income. The acquisition of products of different categories will involve different decision-making styles on part of the consumers, because different categories of product demand different decision-making styles. The higher income consumers are expected to be more interested towards product of a better quality, which is more comfortable to use and with higher aesthetic value, than towards the product price, as compared to the consumers of the lower income group. This may be possible because the higher income consumers are more able to buy, and most likely will choose products with more of the better attributes.

This type of product usually cost more than what the lower income consumers can afford. Therefore, consumers of different level of income will most likely to have different decision-making styles in their purchase behaviour, which will then lead to the formation of different forms of psychographic profiles of their decision-making style dimensions, in their purchase behaviour. A study by Burns and Harrison (1979) finds that the economic factor, in which income is its major component, is the

important external factor which can influence the stability of the consumers psychographic profiling in their purchase behaviour.

A study by Burns and Harrison (1979), find that four out of the six least stable psychographic items are income-related items. The stability of these psychographic items is determined by the test-retest product moment correlation coefficients of the items' means measured at one-year time interval. The lowest correlation coefficient

Psychographic Items	Item Correlation
Our family income is high enough to satisfy nearly all our important desires	0.23
I will have more money to spend next year than I have now.	0.27
When I must choose between the two, I usually dress for comfort, not style.	0.29
A person can have a lot of money by shopping around for bargains.	0.37
I enjoy volunteer work for a hospital or service organisation on a fairly regular basis.	0.44
No matter how fast our income goes up, we never seem to get ahead.	0.45

Source: Burns and Harrisons (1979)

The Six Least Stable Psychographic Items

Table 3.2

indicates the least stable psychographic items over the one-year time interval. These six lowest psychographic items are summarised in Table 3.2.

The consumers of higher income can also come from those who need more time allocated to productive activities. This type of consumers will be most likely to place a premium on their time. Consequently, these consumers will be more interested towards products which can be acquired from the convenience outlets, will spent less time to shop, and uses more of the convenience products with high value added, such as pre-cooked food. They will also go for branded items in order to simplify their search in their purchasing activities.

This is so because product brands usually serve as the quick guide to quality and other attributes of that particular product. On the other hand, consumers of the lower income group may be able to spend more time for shopping in order to get the best value for their money. At the same time, the lower income consumers may also have a lower purchasing power, thus limiting their choice of products in the market. Therefore, consumers of different levels of income, will most probably have different psychographic profiles of their decision-making styles in their purchase behaviour.

Income can also be used to classify consumers into various sub-cultures. Peter and Alson (1994) describe that "...people with similar income tend to have similar cultural meanings, values, behaviours and lifestyles." Therefore, it is expected that the consumers of different levels of income will have different decision-making styles in their purchase behaviour. This situation will be reflected by the formation of different form of psychographic profiles of the consumers' decision-making styles in their purchase behaviour.

3.1.5. Household Type

Members of different types of household are most likely to have different types of relationships which exist among them within the households. Some of the differences can be seen according to the dimensions described by Engel et. al. (1990), which consists of cohesion (the sense of connectedness among household members), adaptability (a measure of how well the household members can change the power structure traditionally assigned to the members) and communication (a facilitating dimension for the two earlier dimensions).

In terms of cohesion, the traditional types of household are more likely to have their members to be more bonded among each other, compared to their non-traditional counterparts. At the same time, the traditional types of household tend to have a more rigid adaptability than the non-traditional type of households. For example in a married family, which is one form of traditional household, the parents usually have the final say on important purchase decisions for the family and this seldom can be changed. Finally, all types of household may vary in terms of the types of communication involved among the household members. Olson et. al. (1983) classifies household into 16 types according to their communication categories, as shown in Figure 3.1.

These categories are based on both the levels of cohesion and adaptability that exist among the household members, in order to classify them according to the communication categories of Balanced, Mid Range or Extreme. These categories of communication among the household members can probably influence the consumption decisions. For example, households with medium level of cohesion and
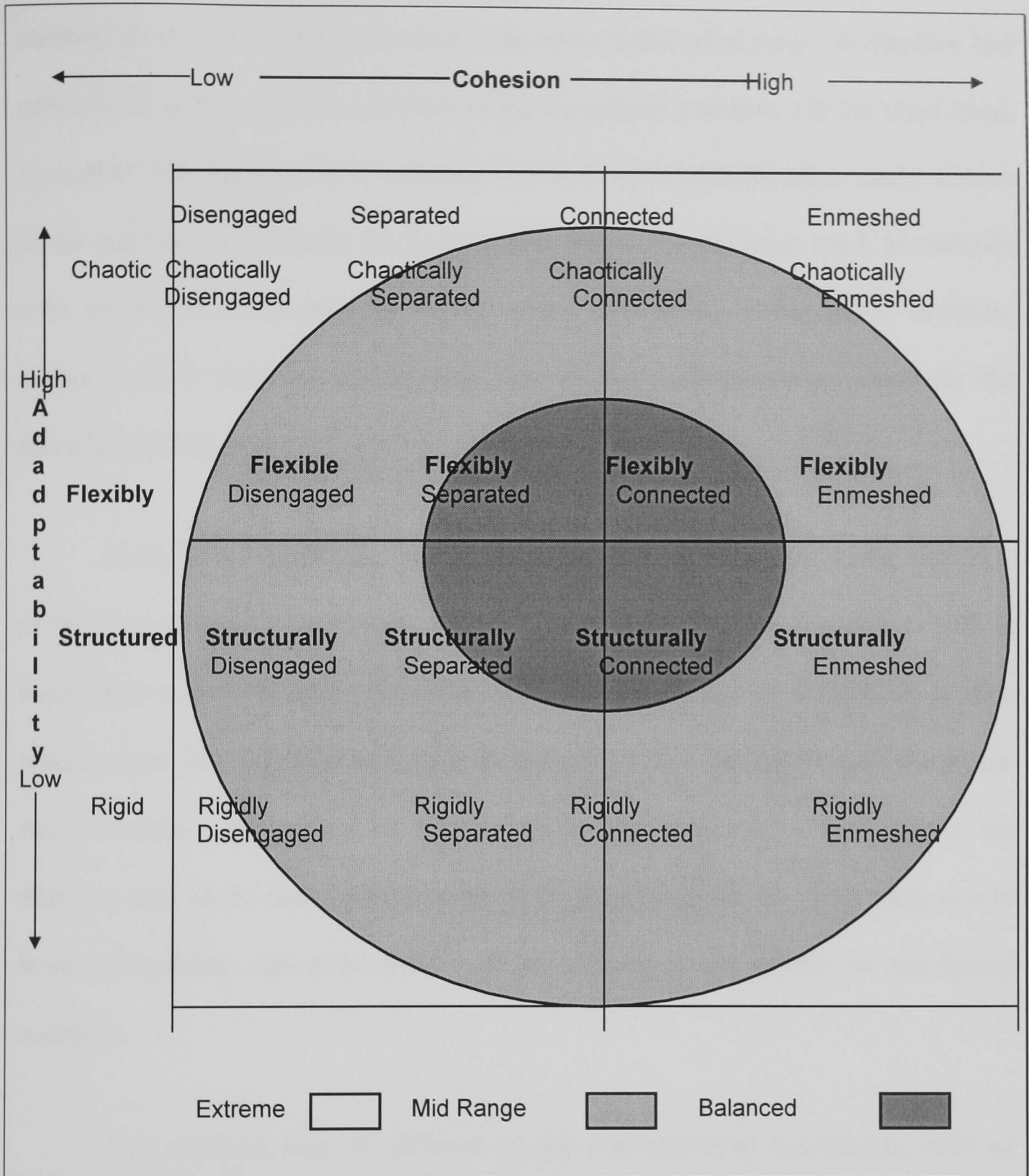
Households Classification In Terms of Cohesion and Adaptability

Figure 3.1

medium level of adaptability are said to be more balanced in terms of cohesion and adaptability in the purchase decisions of the household members. On the other hand, household with higher level of cohesion will have more joint decisions made in most of the purchase decisions by the household members. On the other hand, households with lower level of adaptability will have the same person acting as the decision-maker, most of the time, in deciding most of the purchases to be made for the household members.

In the more traditional types of household, the relationships among members of the household are usually more formal. Therefore, the household members will be more likely to have a higher level of cohesion and lower level of adaptability in their relationships. For example in a male dominated family, the father will act as the decision-maker and the rest of the household members will have to follow his decision most of the time, showing high level of cohesion. At the same time, due to lower adaptability, this relationship will be maintained consistently by the family members.

This situation may be different in the non-traditional households, such as cohabiting couples, where higher level of adaptability and lower level of cohesion among household members are more likely to prevail. These differences in relationship among different types of household may lead to different decision-making styles in their purchase behaviour. Related to this notion, therefore, it can be expected that different types of household will develop different forms of psychographic profiles of the dimensions, reflecting the differences in their decision-making styles, in their purchase behaviour.

A study by Wilkes (1995) found that the consumers of different stages of household life cycle have different spending pattern. Each stage of the household life cycle consists of different forms of household types. This supports the notion that different types of household will result in different forms of decision-making styles in the purchase behaviour among the household members. This is due to the differences in priorities of the needs for products and spending patterns among the household members.

Based on these findings, it is also expected that the consumers of different stages of household life cycle will also relate to different forms of psychographic profiles of their decision-making style dimensions in their purchase behaviour. Therefore, this study will look at the relationship between the types of household and the psychographic profiles of consumers decision-making styles, using the term household which is more relevant to the contemporary consumers, which consists of both the traditional and non-traditional households.

Another study by Schaninger and Danko (1993) indicates that the presence of pre-school age children versus those with the school age or older children in the full nest households can be the important determinant of the households consumption pattern. This can be mainly due to the differing needs of different types of children according to their age. Pre-school children may be more dependent on their parent in deciding purchases on their behalf. On the other hand, school age or older children may demand more freedom of choice when purchasing products from the market.

This may be due to the exposure of the environmental influences, such as from peer groups experienced by these older children, may make them more

demanding in determining their own choice of products, in order to adhere to those influences. Lastly, a study by Douthit and Fedyk (1988 & 90) reported that durable, meals eaten away from home and adult clothing are luxury goods for families with children still at home. In addition, Douthit and Fedyk (1988 & 90) also find out that the expenditure of families with children still at home on market goods increases steadily with the increase of their children's age.

3.1.6. Gender

Finally, the consumers' gender differences can also be related to the differences in the consumers' decision-making styles. This is because there still exist the differences between male and female consumers in their purchase behaviour. Although there is a general agreement that the gap between traditional male and female roles is becoming increasingly blurred, men do differentiate between male appeal and female appeal (Chisnall, 1995). This argument is well supported by Peter and Olson (1994) who state that despite the modern tendency to downplay differences between men and women, there is ample evidence that men and women differ in many respects besides physical characteristics.

Gender differences also exist in the information processing styles and emotion involved at the time of judgement in consumption (Dube and Morgan, 1996). It is also found that gender differences also occur in the processing strategy involving memory in the advertising contexts (Meyers-Levy and Maheswaran, 1991). It is also found that men may take Christmas shopping rather likely or even regard it as 'play', while women appear to be socialised to take it quite seriously as real and important work.

These arguments presented above indicate that the difference in gender among the consumers will most likely to result in different decision-making style dimensions engaged by consumers in their purchase behaviour. Therefore, gender differences can be related the differences of consumers' decision-making style dimensions engaged by the consumers when purchasing products from the market.

Those arguments brought forward justifies the selection of the six demographic variables which are chosen to be part of the variables that will be used in this study. As argued, differences in the six selected demographic variables; consumers' age, household sizes, types of job, incomes, household types and gender can be related to the differences in the consumers' decision-making styles dimensions, in their purchase behaviour. Having justified the demographic variables that will be used, this study will proceed by looking at the issue of consumer product classification that will be used, in the proceeding section.

3.2. Consumer Product Classification

3.2.1. General Overview.

According to the American Marketing Association Board (1985), the term 'products' includes goods, services and ideas. Products should also be seen by consumers as a bundle of benefits and costs (Murphy and Enis, 1986). Consumers expect the products that they bought can deliver more benefit than the price (cost) they paid for them. In other words, the consumers assess satisfaction (from the product purchased) in terms of benefits expected from the product, minus costs (price paid for) incurred in acquiring the product (Murphy and Enis, 1986).

Classification is termed as the ability to treat different objects or events as if they were equivalent (Alba and Hutchinson, 1987). In other words, if a consumer perceive two products belong to the same class, these products are perceived as having some form of a common basis. For example, television and microwave oven may be considered as products of the same class because they are seldomly purchased and about the same amount of information search is involved in their purchases. Products are classified in the literature (e.g. McCarthy and Perreault, 1990) into consumer products and industrial products. Consumer products are those products which are meant for the final consumer, while industrial products are those meant for use in producing other products (McCarthy and Perreault, 1990). Since this study is focused on consumer behaviour, it will only deal with the products classified under the consumer product classification. Murphy and Enis (1986) provide a comprehensive review on the study of product classifications. From this review, the studies which focus on consumer product classifications are summarised as shown in Table 3.3.

From the review of product classifications, it can be seen that the product classification initiated by Copeland (1923) using the convenience, shopping and speciality product classes, are consistently being used by other researchers (Holton, 1958; Luck, 1959; Bucklin, 1963; Kaish, 1967; Mayer, Mason and Gee 1971; Bucklin, 1976) and with the inclusion of 'preference goods' (Holbrook and Howard, 1977). The marketing texts also use the classification by Copeland (1923) (eg. Baker, 1992) and some with the inclusion of 'unsought goods' product class (eg. McCarthy and Perreault, 1990: Skinner, 1990).

Author and Year	Classification	Dimensions
Copeland 1923	Convenience goods are those customarily purchased at easily accessible store. Shopping goods are those for which the consumer desires to compare prices, quality and style at the time of purchase. Usually the consumer wishes to make this comparison in several stores. Speciality goods are those which have some particular attraction for the consumer, other than price, which induces them to put forth special effort to visit the store in which they are sold and to make the purchase without shopping.	Travel effort, brand comparison effort, degree of brand insistence.
Bourne 1956	Product-plus, brand-minus (instant coffee) Product-minus, brand-plus (clothes) Product-minus, brand-minus (soup) (reference group influence)	Degree of social and brand consciousness.

Holton 1958	Convenience, shopping Speciality	Distinction between convenience and shopping gain resulting from price and quality comparisons relative to searching costs of individual consumer. Necessity of making special purchase effort due to limited market demand.
Luck 1959	Convenience, shopping, speciality	Article directed at Holton (1958) and speciality good argument, consumer is willing to make special purchase effort for special brand
Bucklin 1963	Convenience, shopping, speciality (shopping-non shopping)	Degree of shopping effort, degree of prepurchase preference formation.
Miracle 1965	Group I - candy bars Group II - groceries Group III - Tvs Group IV - cars Group V - electronic office equipment	Product characteristics: unit value; significance of each individual purchase to consumer; time and effort spent purchasing by consumer; rate of technological change; technical complexity; consumer need for services; frequency of purchase; extent of usage
Kaish 1967	Convenience, shopping, speciality	Two types of effort identified: physical and mental Cont/

Mayer, Mason and Gee 1971	Convenience store-convenience goods, Convenience store-shopping goods, Convenience store-speciality goods, shopping store-shopping goods, Speciality store-speciality goods.	Locational convenience, merchandise suitability, value for price, sales effort and store service, congeniality of stores, post-transaction satisfaction
Raymond and Assael 1974	Psychophysical Distributive velocity, mental velocity	Number of rewards product provides, our knowledge of how to deliver these rewards Consumer: stimulus, intervening variables, response. Product: market distributive
Bucklin 1976	Convenience, speciality shopping (low intensity), shopping (high intensity),	Degree of brand similarity degree of consumer uncertainty in making a choice
Jolson and Proia 1976	(Searching behaviour continuum) - classification of a good subjectively tied to consumer's "comparative shopping"	Related to consumer's product awareness, comprehension, product importance, standard of taste
Holbrook and Howard 1977	Convenience, preference, shopping, speciality	Product characteristics (magnitude of purchase and clarity of characteristics), consumer characteristics (ego involvement and specific self-confidence), consumer responses (physical shopping and mental effort) Cont/

Enis and Roering 1980	Convenience, preference, shopping, speciality	Product is "total bundle of benefits" as seen by the buyer, marketer's strategy matches marketing mix decisions to buyer's perception of desired benefits
McCarthy and Perreault 1990*	Convenience, shopping, speciality, Unsought goods are those which potential consumers perceived they do not need them yet or do not know of their existence.	Degree of shopping effort, degree of prepurchase preference formation.

Source: Murphy and Enis (1986) except * from McCarthy and Perreault, Basic Marketing, 1990,

Approaches to Classifying Consumer Product

Table 3.3

From the definitions in the review, it can be seen that there is not much difference between the 'convenience goods' and the 'preference goods.' The only difference is that the 'preference goods' are slightly higher in terms of the consumer's willingness to pay higher price for them than the competing products (Murphy and Enis, 1986). This depends on how successful the marketers can influence theconsumers to perceived their products as more beneficial than their competitors'.

However, the ability to promote a product in order to gain a significant monopoly power, which in turn initiates the consumers to pay more for it than the

competing products (especially low price products), have begun to erode (Enis and Roering, 1980). This is due to the combined impacts of the more price-oriented consumers and new high-value retailer own-label products (Doyle, 1995). Therefore, for this study, the 'preference goods' will be considered as part of the convenience goods.

Another additional product class introduced in many of the marketing texts (eg. McCarthy and Perreault, 1990) is 'unsought goods' which are goods that the consumers themselves cannot see the needs prior to buying them, but only after being persuaded by the marketers. Accordingly, it is difficult for consumers to think of these products when responding to the self-administered questionnaires, which will be used in this study. In other words, it is difficult in practice to asked the consumers to respond to the statements which require them to think of the unthinkable.

Therefore, the 'unsought goods' product class will not be used in this study due to its practical limitation. Based on these arguments, in the context of this study, the product classification suggested by Copeland (1923) will be used to classify the consumer products. This is because the classification scheme is well established in the marketing literature and texts. By this, it will be easier and more useful for the purpose of further research and making comparison on the related issues be made in the future.

The definition of the product classification which is originally conceptualised by Copeland (1923), is as follows:

- **Convenience Products**

  Products which consumers need but are not willing to spend much time or effort shopping for. Examples of these products are toiletries, stationaries and food items.

- **Shopping Products**

  Products which consumers feel are worth the time and effort to compare with competing products. Examples of these products are electrical appliances, cars, ordinary furniture and clothing.

- **Speciality Products**

  Products which consumers really want and are willing to make special effort to find. In most cases, consumers are not willing to substitute them with other product of the same type. Examples of these products are antique furniture, specialised musical equipment and other products of special features.

Despite being the most widely referred consumer product classification, the classification pioneered by Copeland (1923) has not been commonly put into practice in studies dealing with issues related to product classifications. Instead, the more specific product examples or categories were used in most of the studies. For example, Grewal and Marmorstein (1994) used television and microwave ovens in studying market price variation, perceived price variation and consumer price search decision for durable goods. Menon and Kahn (1995) used two categories of product in their study of the impact of context on variety seeking in product choices. The first category used was snacks (Lays Potato Chips, Fritos Corn Chips, Doritos Tortilla Chips and Cheetos Cheese Snacks.) and the second one was soft drinks (Cola- Coke,

Pepsi, Diet Coke and Diet Pepsi; Lemon/lime- Sprite, 7-Up, Diet Sprite and Diet 7-Up; Fruit Juices- Snapple Mango, Madness Cocktail and Snapple Kiwi Strawberry Cocktail).

In a study on comparability and hierarchical processing in multialternative choice, Johnson (1988) used two product categories which consist of toasters and blowdriers. Capon and Burke (1980) in their study on individual, product class and task related factors in consumer information processing, used three types of products which are steam iron, toaster oven and microwave oven. A study by Clarke and Soutar (1982) on consumer acquisition patterns for durable goods, using Australian evidence, used examples of a variety of durable goods. These goods are refrigerator, washing machine, vacuum cleaner, colour television, power drill, lawn mower, hi-fi stereo system, deep-freeze unit, air conditioner, food processor, clothes dryer, video cassette recorder, built in swimming pool, electric dishwasher and microwave oven.

In another study, Gorn and Weinberg (1984) used toothpaste, low-tar cigarettes and golf balls as product examples in their study on the impact of comparative advertising on perception and attitude. Lastly, King and Summers (1970) also used a more specific product example, although their study on overlap of opinion leadership across consumer product categories deals directly with the more general categories of consumer products. In this study they used packaged foods, household cleaners and detergents, women's fashions, cosmetics and personal grooming aids, drugs and pharmaceutical products, clothing materials, and large and small appliances.

The King and Summers's (1970) study may be seen as using the more general categories of consumer product compared to the rest of the examples above, but still the product categorisation used is not standard enough as compared to the more standard consumer product classifications such as Copeland's (1923) convenience, shopping and speciality product classification. Based on the review by Murphy and Enis (1986), the Copeland's (1923) consumer product classification can be considered as the most established consumer product classification in the literature.

From the examples above, it can be seen that in most of the studies related to the issues of product classification, the researchers seem to prefer using the more specific product examples to represent the broader categories of product they are dealing with. None of them seems to use the more standardised product classifications which are broader in scope, even though their studies are on the broader scope of product classes. This can understandably be seen as their effort in trying to avoid the problem of misunderstanding the product classification concept they are dealing with, by their respondents. However, at the same time, this will limit the applicability of the findings from those studies, beyond the specific product examples or categories used in the studies.

Thus for this study, the more conceptual type of product clasification is preffered because of the wider scope of products covered by such classification compared to the more specific product classification which rely on specific product examples as the classification basis. To serve this purpose, the Copeland's convenience, shopping and speciality product classification is chosen based on its nature as an established product classification scheme in the marketing literature. Another reason for choosing this classification is because of its conceptual nature

which covers a wider scope of products as compared to the more specific type of product classifications. Finaly, Copelands' product classification is chosen because it is based on the manner in which a consumer buy a particular product. This is relevant to the study because this study deals with consumers' decision-making styles in their purchase behaviour. Moreover, Baker (1992) suggests that one of the possible ways of classifying products is by the manner in which they are bought. Therefore, the Copelands' product classification scheme is suitable to used in this study.

However, there are limitations associated with the Copeland's classification. Firstly, due to its conceptual nature, there may be a problem in terms of the ways people classify products, particularly in relation to the possibility that two consumers might place the same product in different classes. Besides, the possibility that the respondents face difficulties in making sense out of the product classification concept is greater if researchers use the more conceptual product classifications. This is true even though this classification had long been established in the literature. The difficulty in using the more conceptualised product classifications is well supported by Cohen and Basu (1987), who state that,

> It is difficult to talk meaningfully about product class boundaries; evoked sets, product substitutability and related ways of describing between product (or brand) homogeneity of response without recognising that these ideas are intimately linked to categorisation.

(Cohen and Basu, 1987)

The Copeland's (1923) consumer product classification can be considered as an example of the more conceptual form of product classification. Although it is difficult to use the more conceptualised product classifications, the use of the more specific product examples to represent product classes can be misleading. This is

because by using a specific product example in a study, one cannot simply assume that the respondents perceive the given examples as representing the product classes to which the findings of the studies will be generalised. In other words, when dealing with a more conceptualised product classification, it is more appropriate that the respondents be asked to respond to the product class itself, rather than relying solely on the particular product example given to represent the respective product class. Therefore, in this study, the respondents will be required to respond to the product class concept of the convenience, shopping and speciality product classes. To further examine the extent of the sensibility of the product class concept to the respondents, they will also be asked to provide examples of the product used as the basis to respond to the questionnaires, if they used products other than the examples provided.

From the method of responding provided to the respondents, it might be able for the researcher to have some idea of the consumers' perception on the product classification concept using the convenience, shopping and speciality product class. If they use the product examples provided or giving their own product examples which are within the respective product class, then it can be said that the product classification concept is sensible to them. If they give examples of product which do not match the respective product classes, then this will indicate that the product classification concept of convenience, shopping and speciality product classes does not seems to be sensible to them. Accordingly, it is intended in the study to explore the extent of the Copeland's (1923) product classification is sensible to the consumers. This is important because despite the establishment of this concept of product classification in the marketing literature and texts, the sensibility of this

particular consumer product classification to the consumers in general is yet to be explored.

Despite being considered as the established consumer product classification, the validity of the Copeland (1923) product classification as a basis for the strategy formulation is challenged by Winzar (1992). In his study, Winzar (1992) concludes that product classification is the outcome of the marketing strategy and not the other way round. As he iterates,

> Our examination ... has shown that attempts to derive a "cookery book" for marketing strategy based on product classification are undone by product/market contingencies and the assumption (implicit and explicit) of a particular style of consumer response.
>
> (Winzar, 1992)

Despite being critical of the Copeland (1923) product classification, Winzar did not suggest any alternative classification for consumer products.

However, product classification is necessary for the strategy formulation in marketing. This is because, the marketers need to work out a common strategy when dealing with the products which share some basic functions. It will not be sensible to adopt unique strategy for each type of products marketed. This situation is similar to the concept of market segmentation in which the targeted segment is grouped based on the similarities which are shared by the members of the segment. Synonymous to the market segmentation concept, product classification can be formed based on the findings of the similarities among the products of the same category outweigh the differences between them.

Similar to market segmentation, product classification can also be considered as essential for the marketing strategy formulation. This is because it will be costly and inefficient if different strategy is designed for each type of product marketed. Consequently, it seems that the argument which says product classification is irrelevant for marketing strategy formulation is inappropriate. The problem here is not whether the product classification is useful or not, but more on determining which product classification is more relevant for classifying consumer products. Therefore, it is hoped that the findings from this study can provide some insights regarding the usefulness of the Copeland's (1923) consumer product classification, from the consumers' perspective. In other words, an investigation is needed in order to have some understanding on whether consumers also perceived product differences along the line with the consumer product classification outlined by Copeland (1923) despite being seen as the most established consumer product classification, in the marketing literature.

3.2.2. Cognitive Aspects of Product Classification

The product classification process may also be involved in the consumers' decision-making process (a cognitive process) towards purchasing a product in the market. The principle function of cognitive structure is to differentiate various products in ways that are useful for decision-making (Alba and Hutchinson, 1987). Products may be readily classified by consumers according to the category structure which has already established in the consumers' mind.

Products can be spontaneously classified at the basic category level. At this level, the within-category similarity is maximised relative to between-category similarity (Mevis and Rosch, 1981; Jones, 1983; Medin, 1983; Murphy, 1982;

Murphy and Medin, 1985). For example, convenience products can be considered as a basic category level. Although there are many differences between them, the way consumers approach them in the market may be quite similar. A consumer may use the same approach to buy a bar of soap as he or she uses for a jar of peanut butter. That is he or she, goes to the nearest supermarket, go straight to the respective shelves, pick-up the familiar brand to the counter and drive home with it. However this basic category level depends much on the individual consumer and the basis of categorisation used as well as the category that is already established in the particular consumer's mind. However, the important point here is that consumers do make used of some form of product classification in their decision-making process.

Product classification process can also be divided into holistic and analytic classification processes (Alba and Hutchinson, 1987; also Brooks, 1978; Kemler, 1983; Kemler Nelson, 1984; Shepp, 1983; Garner, 1974; Jacoby and Brooks, 1984; Lockhead, 1972; Shepard, 1964). Holistic Processing refers to the classification that is based on overall similarity. On the other hand, Analytic Processing refers to classification that is rule-based, in the sense that particular attributes or attribute configurations that are diagnostic of class membership, are the sole basis for classification (Alba and Hutchinson, 1987).

For example, Rover is to establish a model which is intended for the economy segment of the market. It may come up with a model which is compact in size and fuel-efficient. This model may be advertised resembling a Volkswagen Golf, which is already established as the popular model in this segment. In terms of holistic classification, its similarity to the Volkswagen Golf may induce consumers to perceive it as the economical model. While, in terms of analytic classification, its

fuel-efficient attribute (as projected in the advertisement) may induce consumers to perceived this Rover model as the economical model. In this case, holistic and analytical classifications seem to compliment each other in convincing consumers that the new model by Rover is an economically efficient car.

However, this may not always be the case (Alba and Hutchinson, 1987). Let us assume that an independent test found that the fuel efficiency of the new Rover model is not as efficient as the dominant model (Volkswagen Golf). Then the analytical classification will not consider the new Rover model as in the same class as the Volkswagen Golf. The holistic classification, on the other hand may classify it as in the same class as the Volkswagen Golf due to the similarity in shape or size. However, the effectiveness of placing the new Rover model in the same class as the Volkswagen Golf depends very much on the effectiveness of the advertisement used in influencing consumers into perceiving that both the car models are in the same class. This may need to be emphasised by actually designing the new Rover model to be as fuel efficient as the Volkswagen Golf, if not better.

Applying this concept to Copeland's classification, the holistic classification process may be relevant to all the convenience, shopping and speciality product classes. On the other hand, the analytical classification process may be more relevant to the shopping and speciality product classes, but may be less relevant to the convenience product class. This is possible because convenience products involve lower value and bought more frequently than the shopping and speciality products. As for the distinction between shopping and speciality products, the analytical classification process may be more relevant to the speciality products than for the shopping products. This is because shopping products generally involve lower value

than speciality products. Therefore, consumers are likely to be more analytical in their decision-making when purchasing speciality products compared to convenience products, with shopping products lying in between them. This supports the notion that the consumers' decision-making style dimensions are likely to differ among the three product classes due to the differences in the relevancy of the analytical classification process among them.

The argument above serves as the basis for assumption that product classification can be part of consumers' decision-making process in their purchase behaviour. In other words, product classification can be assumed to have some impact on consumers' purchase decision, as illustrated by the examples above. Therefore, it can be rationalised that product classification can be used in this study as the basis to investigate the differences in consumers' decision-making style dimensions in their purchase behaviour.

Summary

In this chapter, the selection of the demographic factors which will be used as the variables with which their relationship with the consumers' psychographic profiles formed in each product class are discussed in more detail. The selection of the consumers' age, household sizes, types of job, incomes, household types and gender, has been justified on the ground that they might possibly be related to the consumers' purchasing power and their purchase behaviour. These two factors are considered as important in determining the consumers' decision-making style dimensions in their purchase behaviour.

Finally, the selection of the concept of consumer product classification which will be used in this study are justified as well. The Copeland's (1923) concept of consumer product classification using the convenience, shopping and speciality product classes is chosen because of its establishment in the marketing literature and texts. Although this concept has long been established in the marketing literature and texts, its usage in studies related to product classification can be considered as minimal. Therefore, it is intended in this study to use this established concept of consumer product classification. This is in order for the findings of this study to be more relevant to the marketing literature with the use of the product classification scheme which has been established in the marketing dicipline. With these arguments, the justification and selection of the relevant variables which will be used in this study have been completed in both chapter two and three of the present study. This study will then proceed to discuss the formulation of the research model that will be used in this study, in the next chapter.

CHAPTER 4

The Research Model

4.0. Introduction

In the previous three chapters, a review on psychographic profiling was done with a special emphasis given to its usage as determinant of the consistencies of consumers' decision-making styles in their purchase behaviour across product classes. From the review, it can be concluded that no published study has been done specifically in investigating the reliability of consumers' decision-making styles in their purchase behaviour across product classes of convenience, shopping and speciality, using psychographic profiles. In addition, no published study has specifically investigated the effectiveness of the consumer product classification by Copeland (1923) from the consumers' perspective. Copeland (1923) suggests that consumer products should be classified into three classifications; convenience, shopping and speciality products. According to Copeland's (1923) description,

Convenience Products – those products which are customarily purchased at easily accessible store. Examples are canned soup, tobacco products, electric light bulbs, safety razor blades, shoe polish and toothpaste.

Shopping Products – those products which the consumer desires to compare prices, quality and style at the time of purchase. Usually the consumer wishes to make this comparison in several stores. Examples are women's gloves, chinaware and novelty articles.

Speciality Products – those products which have some particular attraction for the consumer, other than price, which induces him to put forth special effort to visit the store in which they are sold and to make the purchase without shopping. Examples are men's clothing, men's shoes, high-grade furniture, vacuum cleaners and phonographs.

(Murphy and Enis, 1986)

However, whether or not consumers view products according to this classification is yet to be investigated.

In addition, the review in the earlier chapters also indicated that no research is carried out to investigate the effect of selected demographic factors namely the consumers age, household sizes, job types, incomes, marital status, existence of children in household and gender on the psychographic profiles of consumers' decision-making styles in each product class. This thesis is therefore intended to fill the gap in trying to provide the findings on those issues highlighted in the review. An appropriate research model needs to be formulated in order to achieve these underlined objectives.

4.1. Development of the Measurement Model

The main point in this chapter is to develop a measurement model that can measure the consumers' decision-making styles in their purchase behaviour for products in the three product classes. The consumers purchase behaviour will be indicated by the consumers' decision-making style dimensions. These dimensions are in the forms of latent variables, which are variables that cannot be measured directly. Therefore, a set of indicator variables needs to be developed for each latent variable, which are in the form of measurable variables. This is to enable the latent variables to be quantified. The set of indicator variables designed to measure a particular latent variable must be construct valid in order to get a more accurate measurement of the said latent variable.

The better way of selecting the appropriate measurement variables for the particular dimension is by adopting them from the relevant studies in the literature. From these studies, the appropriateness of the measurement variables to the dimensions can be determined by the consistencies in the performance shown by the measurement variables in measuring the particular dimension. With regard to this notion, the process of developing the measurement model for this study will be done in several stages, according to the steps in structural equation modeling by Hair et. al. (1995), as shown in Figure 4.1. The steps involved are :

1. Developing a theoretically based model. This first stage of the process will involve adoption of the measurement model from the relevant earlier studies. The model will consists of the Sproles (1985) and Sproles and Kendall (1986) studies on consumers' decision-making style dimensions. The measurement variables will also be adopted from the two studies, with some modifications made to it. Some of the measurement variables will also be taken from a study by Lesser and Hughes (1986) to supplement those from the Sproles (1985) and Sproles and Kendall (1986) studies.

2. Constructing a path diagram of causal relationship. For this study, this step is done by constructing the path diagram of the relationship between the measurement variables and the latent variables. In this case, the latent variables are the consumers' decision-making style dimensions.

3. Developing the path diagram into a set of structural equations and measurement equations. The structural equations which are required to be fed into the computer program prior to running the structural equation

modeling program using the computer are shown in Appendix 6, Appendix 7 and Appendix 8.

4. Choosing the input matrix type and estimating the proposed model. For this study, the input matrix chosen is the variance/covariance matrix. This is because the covariance matrix has the advantage of providing valid comparisons between the different populations or samples (Hair et. al., 1995).

5. Assessing the identification of the model equations. This need to be done so that the model can converge to produce the parameter estimates of the equation involved. For this, the number of free parameters to be estimated need to be minimised so that a sufficient degree of freedom is available for the iteration process to take place and result in convergence of the model run in the program. However, this need to be done in accordance to the underlying theory used in the study so that the solution can sensibly be interpreted.

6. Evaluating the result for goodness-of-fit. This is done by looking at the value of the fit indices provided by the computer program of the structural equation modeling.

7. Making the indicated modifications to the model if theoretically justified. This can be done by using the LaGrange Multiplier produce by the program, in accordance to the underlying theory used as the basis of the

STEP 1	Develop a Theoretically Based Model

STEP 2	Construct a Path Diagram

STEP 3	Covert the Path Diagram

STEP 4   Choose the Input Matrix Type

Correlations   Covariances

Research Design Issues

STEP 5	Assess the Identification of the Model

STEP 6	Evaluate Model Goodness-of-Fit

Evaluate Model Estimates

STEP 7	Model Interpretation

Model Modification   **YES**

NO

Final Model

Source: Hair et. al. (1995)

A Seven-Step Process for Structural Equation Modeling

Figure 4.1

study. This modification of the adopted measurement model is necessary to make it

more suitable with the situation involves in this study.

The modified model (measurement model) needs to be confirmed to the theoretical foundation of the study using the available data. This will be done after the data is collected and will be discussed later in Chapter Seven. Consequently, a more appropriate measurement model which are more suitable for the situation where this study is carried out need to be regenerated. This will also be discussed in Chapter Seven. In this chapter, the discussion will be done up to the development stage of the theoretical model.

4.1.1. The Adoption Process.

In this chapter, the measurement model for this study will first be developed based on the information gathered from the previous relevant studies. For the purpose of this study, the Consumers Styles Inventory developed by Sproles (1985) and Sproles and Kendall (1986) will be used. The original Consumers Styles Inventory developed by Sproles (1985) and Sproles and Kendall (1986) is shown in Table 4.1. The main reason for choosing to use the measurement model based on the Sproles (1985) and Sproles and Kendall's (1986) Consumers Styles Inventory is that it has been tested in another two studies, the first one was by Hafstrom et.al. (1992) and the second one by Durvasula et . al. (1993).

In all the four studies, by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993), most of the measurement variables used to measure the consumers' decision-making style dimensions show satisfactory degree of reliability in terms of the factor loading of the measurement

Dimension 1 - Perfectionistic, High-Quality Conscious Consumer

1. Getting very good quality is very important to me.

2. When it comes to purchasing products, 1 try to get the very best or perfect choice.

3. In general, 1 usually try to buy the best overall quality.

4. 1 make special effort to choose the very best quality products.

5. My standards and expectations for products 1 buy are very high.

6. 1 shop quickly, buying the first product or brand 1 find that seems good enough. (-ve)

7. A product does not have to be perfect, or the best, to satisfy me. (-ve)

8. 1 really don't give my purchases much thought or care. (-ve)

Dimension 2 - Brand Conscious, "Price Equals Quality" Consumer

1. The well-known national brands are best for me.

2. The more expensive brands are usually my choices.

3. The higher the price of a product, the better its quality.

4. Nice department and speciality stores offer me the best products.

5. 1 prefer buying the best-selling brands.

6. The most advertised brands are usually very good choices.

7. A product does not have to be perfect, or the best, to satisfy me. (-ve)

8. I generally buy product of the store's own brand. (-ve)*

Dimension 3 - Novelty- Fashion Conscious Consumer

1. 1 usually have one or more outfits of the very newest style.

2. 1 keep myself up-to-date with the changing fashions, types, trend of product in the market.

3. Fashionable, attractive styling, appearance or presentation is very important to me.

4. To get variety, 1 shop different stores and choose different brands.

5. lt's fun to buy something new and exciting.

6. I like to try new products when they come out on the market.*

7. I usually buy new products before my friends do.*

Dimension 4- Recreational, Hedonistic Consumer

1. Going shopping is one of the enjoyable activities of my life.

2. l enjoy shopping just for the fun of it.

3. l make my shopping trips fast. (-ve)

4. Shopping is not a pleasant activity to me. (-ve)

5. Shopping the stores wastes my time. (-ve)

6. I often make purchases from catalogue. (-ve)*

7. Convenience of location is of minor importance in selecting a place to shop.*

8. I'd rather go out of the way to look for bargains or a large variety of merchandise. (-ve)*

Dimension 5- Price Conscious, "Value for Money" Consumer

1. l buy as much as possible at sale prices.

2. The lower price products are usually my choice.

3. l look carefully to find the best value for the money.

4. I carefully compare prices before buying items.*

5. When I shop, I usually go to several different stores to get the best prices.*

6. I usually shop at discount stores.*

7. I usually use most of the coupons offered by stores.*

8. I pay attention to advertisements for sales.*

Dimension 6 - Impulsive, Careless Consumer

1. l should plan my shopping more carefully than l do.

2. l am impulsive when purchasing.

3. Often l make careless purchases l later wish l had not.

4. l take the time to shop carefully for best buys. (-ve)

5. l carefully watch how much l spend. (-ve)

6. I usually come home from store with more things than I intended to buy.*

Dimension 7 - Confused by Overchoice Consumer
1. There are so many brands to choose from that often l feel confused.
2. Sometimes it's hard to choose which stores to shop.
3. The more l learn about products, the harder it seems to choose the best.
4. All the information l get on different products confuses me.

Dimension 8 - Habitual, Brand-Loyal Consumer
1. l have favourite brands l buy over and over.
2. Once l find a product or brand l like, I stick with it.
3. l go to the same stores each time l shop.
4. l change the brands l buy regularly. (-ve)

Items marked (-ve) should be negatively related to the dimension underwhich it is placed.

Variable taken from Sproles and Kendall (1986), except for asterisk (*) are taken from Lesser and Hughes (1986).

Consumers' Decision-Making Style Dimensions and Measurement Variables (Original Adopted Version)

Table 4.1

variables onto the respective consumers' decision-making style dimensions. Therefore, most of the measurement variables should also be expected to perform considerably well for this study, although some necessary changes need to be done to them. This is in order to ensure that the measurement model will be more suitable to the condition which prevails in this study and able to give valid measures of the consumers' decision-making style dimensions.

4.1.2. The Modification Process.

Although most of the measurement variables for the respective consumers' decision-making style dimensions has been proven to be considerably consistent in

measuring those dimensions, some changes still need to be done. These changes are necessary because there are some differences in the condition in which this study will be conducted, compared to those earlier studies in which the model has been used. The major differences are in terms of the sample used and the additional emphasis given to the product class effects in this study. Besides this two differences, there are other differences which require some changes involving the length of the questionnaire, sentence constructions, selection of words to be used, the number and distribution of the measurement variables to each latent variables.

Firstly, from the original Consumers Styles Inventory in Table 4.1, it can be seen that each dimension is measured using between three to eight measurement variables. This shows the unevenness of the number of measurement variables allocated to each of the consumers' decision-making style dimensions. The reason for the unevenness of the number of measurement variables used for each dimension is because this model is generated using the exploratory factor analysis with varimax rotation and principle component factor extraction method. In this technique, the first factor will account for most of the variance of the variables, followed by the subsequent factors which will be generated to explain the remaining variances left unexplained by the earlier factors.

Therefore the first few factors usually will have more variables associated with them, compared to the later factors generated in the rotational process. This unevenness in the number of variables attached to each dimension will create potential bias towards the importance of each dimensions in this study, as well as uneven responses from the respondents. In order to reduce the effect of this problem, each

dimension is assigned with equal number of measurement variables associated with it. For this purpose, each dimension will be allocated with at least four measurement variables.

With regard to this argument, those dimensions which have less than four measurement variables will need to be supplemented with items from other relevant studies. This need to be used in order to overcome the shortcomings from the Sproles (1985) and Sproles and Kendall's (1986) Consumers Styles Inventory. For this, the measurement variables from the study by Lesser and Hughes (1986) are taken to supplement those measurement variables from Sproles (1985) and Sproles and Kendall's (1986) Consumers Styles Inventory. The measurement variables adopted from Lesser and Hughes (1986) study are also shown in Table 4.1. (marked with asterisk), together with those measurement variables taken from the Sproles (1985) and Sproles and Kendall' (1986) studies.

Another point needs to be taken into account is that some of the items of the dimensions are obviously too similar to each other. This situation can potentially cause respondents to feel uncomfortable having to respond to too many similar statements in a questionnaire. In addition, this will make the questionnaire unnecessarily long, which in turn may increase the possibility of obtaining lower response rate. This situation needs to be seriously considered because this study will be conducted for three product classes simultaneously. Therefore, any effort that can reduce the length of the questionnaire will give a multiple effect on the length of the questionnaire. For example, if one item can be removed without reducing the accuracy of measurement of the dimension, then effectively the length of the questionnaire can

be reduced by three statements. This is because each statement will be repeated three times for the reason that three product classes are involved in this study.

The next important factor to be looked upon is the choice of the more suitable wording and sentence constructions for the statements that will be used in the study. It has to be bear in mind that the original Consumer Style Inventory was used on students. Generally, students are in a better position to understand the statements with slightly complex words and sentences than most of the general public, especially consumers from the working class and less educated group. Therefore, it is important that the measurement variable statements to be constructed as simple and straightforward as possible for the respondents to easily grasp the point that are tried to be put across. This is in order to help the respondents to easily understand the statements which in turn will increase the chances of getting a more accurate responses and a higher response rate.

Statements which contain double-barrelled meaning need to be simplified or deleted if possible. An example of the double-barrelled statement from the original Consumer Style Inventory is the statement 'A product does not have to be perfect, or the best, to satisfy me.' For this, consumers may confused themselves whether to respond to the word perfect or best in the statement, because these words may be viewed as words of different meaning in this contact. Some consumers may not be able to differentiate whether the two words complement each other's meaning or they are carrying two entirely different meanings. Therefore, such statements need to be avoided wherever possible.

It is decided that all the measurement variables that will be used in this study will be selected after a pilot study is done on the questionnaires containing all the proposed items for the consumers' decision-making style dimensions. The proposed items that will be used in this study, which will be first piloted, are shown in Table 4.2. The selection process is discussed in detail later in Chapter Five of this study. Basically, it is intended that each consumers' decision-making style dimensions be measured by as equal number of items as possible. This is to give equal weight to all the dimensions as well as a way to indicate that all dimensions are being given equal emphasis in importance as far as this study is concerned. By doing it this way, it is hoped that the potential bias between dimensions can be minimised as much as possible.

After the pilot study on the proposed questionnaires been done, the resultant model for this study are constructed as in Figure 4.2. The piloting and selection process of the final measurement variables for all the dimensions is thoroughly discussed in Chapter Five of this study. The final measurement model will have four items for each dimension. Therefore for the three product classes, 96 statements will need to be included in the questionnaires.

The items will be randomly listed to eliminate the ordering effect. For example if the measurement variable statements for the dimensions are arranged according to the order of the dimensions, most probably the first dimension listed will be given more emphasis than the measurement variable statements of the dimensions listed towards the end of the questionnaires. In other words, the potential effect of positioning the measurement variables needs to be distributed evenly onto all the

Dimension 1: Perfectionistic, High-Quality Conscious

1. Getting very good quality of products is so important to me. (Var 1)

2. I always go for the best overall quality products. (Var 13)

3. My expectations for products I buy are always high. (Var 24)

4. I really don't give much thought on most of my purchase. (-) (Var 31)

Dimension 2: Brand Conscious, "Price Equals Quality"

1. I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods).* (Var 5)

2. The higher the product price, the its quality.(Var 16)

3. I prefer buying products of the best selling brand. (Var 28)

4. I usually choose products of the most advertised brands. (Var 30)

Dimension 3: Novelty-Fashion Conscious

1. I always buy new products before my friends do.* (Var 4)

2. I am up-to-date with the changing trends of products in the market. (Var 17)

3. Fashionable, attractive styling and appearance is important to me. (Var 20)

4. I like to try new products when they come out in the market.* (Var 29)

Dimension 4: Recreational, Hedonistic

1. Closeness of location is not important when selecting a place to shop.* (Var 8)

2. I usually buy products from catalogues.* (-)(Var 18)

3. I enjoy shopping just for the fun of it. (Var 22)

4. Going shopping is just a waste of time. (-)(Var 32)

Dimension 5: Price Conscious, "Value for Money"

1. I always make use of special offers (eg. Coupons, free gifts and discounts).* (Var 3)

2. I take the time to shop carefully for best buys. (Var 12)

3. I prefer shopping at discounts stores.* (Var 14)

4. I buy as much as possible at bargain prices. (Var 21)

Dimension 6: Impulsive, Careless
1.   I usually come home from shopping with more things than I intended to buy.* (Var 7)
2. I am impulsive when buying things. (Var 15)
3. I watch carefully how much I spend whenever I shop. (-)(Var 19)
4. I should plan my shopping more carefully than I always do. (Var 26)
Dimension 7: Confused by Overchoice
1. The more I learn about products, the harder for me to make the best choice. (Var 2)
2. It is confusing to buy products with so many brands in the market. (Var 6)
3. It is always difficult for me to choose which stores to shop at. (Var 10)
4. All the information I get on different products confuses me. (Var 23)
Dimension 8: Habitual, Brand-Loyal
1. Once I find a brand of product of product I like, I stick with it. (Var 9)
2. I go to the same stores whenever I shop. (Var 11)
3. I regularly change the brands of product I buy. (-)(Var 25)
4. I have favourite brands of products I buy over and over. (Var 27)

- *Variable from Sproles and Kendall (1986), except for asterisk (*) are taken from Lesser and Hughes (1986).*

- *Variable listing number is in the most end bracket of each measurement variable statement*

- *(-ve) Variables should have negative loading to the particular dimension.*

**The Consumers' Decision-Making Style Dimensions and Measurement Variables
(Modified Version)**

Table 4.2

consumers' decision-making style dimensions, by randomly listing the measurement variables in the proposed questionnaire. By doing this, it is meant that one of the four items from each dimension will be placed among the first eight, the next item among the second eight of the statements and so on. In other words, all the four items of each dimension will be distributed as evenly as possible between each other in the effort to distribute the positioning effect on the measurement variables throughout the questionnaire. The numbering of the measurement variable statements in the measurement model, as shown in Table 4.2., are given according to the random listing of those variables in the questionnaire.

The measurement model in this study follows the structural equation modeling convention, as specified in Figure 4.2. The ellipse components refer to the consumers' decision-making style dimensions, the rectangular components refer to measurement variable statements, and the error terms are indicated by E. The number assigned to each measurement variable and error term indicates the listing of the variables in the questionnaire. For example, Variable 24 is listed as the twenty-fourth variable statement in the questionnaire. In this case, the one-way arrows between the oval and the rectangular components indicate the factor loading of the rectangular components onto the ellipse components. While, the one-way arrows between the rectangular components and the E's refer to the error-variable covariance.
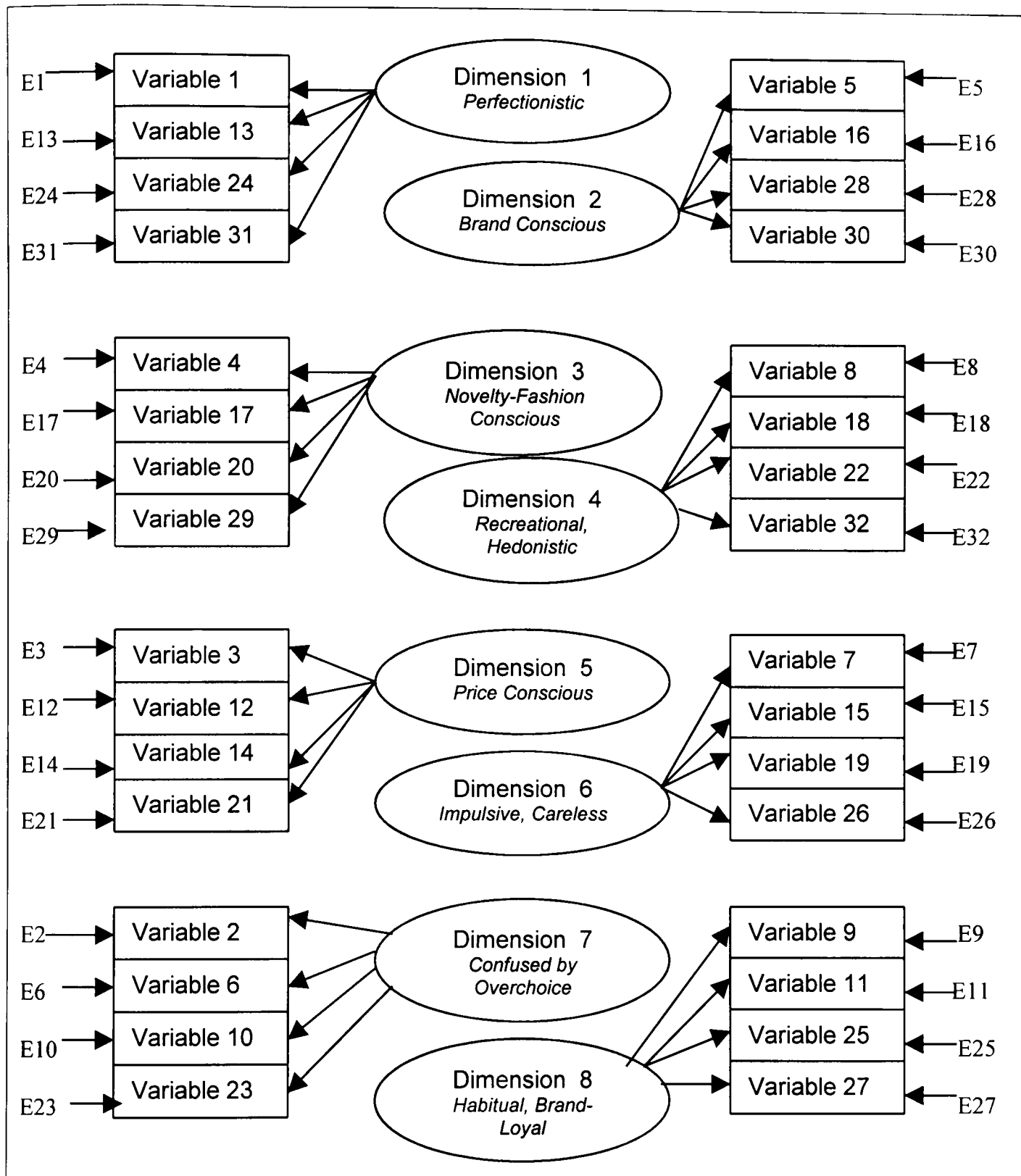
The Proposed Measurement Model for Consumers' Decision-Making Style Dimensions

Figure 4.2

Summary

In this chapter, the measurement model is developed for the purpose of obtaining the required data for this study. The measurement model is shown in Table 4.2., and transformed into the structural model as shown in Figure 4.2. This measurement model will be transformed into item statements that will be included into the research questionnaire. The development of the research questionnaire will be presented in detail in Chapter Five. Meanwhile, the modification of the measurement model using the available data will be discussed in detail, in Chapter Seven.

CHAPTER 5
Research Methodology

5.0. Introduction

In this chapter, the focus will be on the research methodology issues, which will be utilised to achieve the research objectives stated in the introductory chapter. The research objectives are:

- To study the product class effects on consumers' decision-making style dimensions in different product classes.

- To investigate the effects of selected demographic variables on consumers' decision-making style dimensions.

- To investigate the validity of the Copeland's (1923) consumer product classification schema (convenience, shopping and speciality) from the consumers' perspective.

The study will be structured in the form of seven steps of processes, which will be carried out consecutively. The research methodology will be done through the stages as follows:

1. Problem formulation and research objectives.

2. Formulation of the research variables and hypotheses.

3. Formation of research design.

4. Data collection method.

5. The process of sampling.

6. Construction of questionnaire.

7. Fieldwork Administration

5.1. Problem Formulation and Research Objectives

In the earlier chapters, some of the main issues concerning the nature of consumers' psychographic profiles of their purchase behaviour across product classes have been highlighted. The main issue of concern in this research is whether or not the consumers' decision-making style dimensions are consistent across product classes. This will be reflected by the profiles of the consumers' decision-making style dimensions formed in each product class. If the psychographic profiles from each product class contain the same dimensions and are formed in the same order of priorities, then it can be said that consumers' decision-making style dimensions are reliable across product classes. This condition is illustrated in Table 5.1. If otherwise, then it can be concluded that consumers employ different decision-making style dimensions when purchasing products from different product classes.

This investigation is important because if the findings indicate that the consumers' decision-making style dimensions are reliable across product classes, then the earlier studies on consumers' decision-making styles (Sproles, 1985; Sproles and Kendall, 1986; Hafstrom et al, 1992; and Durvasula et al, 1993) which were done on the general product class basis can be accepted. If not, then the findings from those studies need to be reconsidered because they are not taking into account the differences of consumers purchase behaviour in different product classes, in which different decision-making styles are involved. In other words, if the product class

effect is found to be significant in this study, then the findings from the earlier studies need to be revalidated because the product class effect has been overlooked in those earlier studies.

Convenience Product Class	Shopping Product Class	Speciality Product Class
1. Perfectionistic	1. Perfectionistic	1. Perfectionistic
2. Value Conscious	2. Value Conscious	2. Value Conscious
3. Brand Conscious	3. Brand Conscious	3. Brand Conscious
4. Impulsive Consumer	4. Impulsive Consumer	4. Impulsive Consumer

Example of Consumers' Decision-Making Style Dimensions In Each Product Class

Table 5.1

Secondly, the relationship between demographic factors that may affect the consumers' purchasing power and spending behaviour, and the consumers' decision-making style dimensions will also be investigated in this study. It is believed that consumers' decision-making style dimensions will be affected by the consumers' purchasing power and spending behaviour. Consequently, if a factor can affect the consumers' purchasing power or spending behaviour, it will also presumably affect the consumers' decision-making styles in their purchase behaviour. This is because the flexibility of the consumers' decision-making styles very much depend on the consumers' ability to spend, as well as their behaviour in spending (such as are they fashion conscious, impulsive or confused type of consumers).

For the purpose of this study, the consumers' income, household size and type of job are selected because these demographic variables are believed to have significant impact on the consumers' purchasing power. In addition, the consumers' age, gender and household types are also selected because these demographic variables are believed to be able to influence the consumers' spending behaviour. For practical reason, these demographic variables are also chosen because they are relatively easy to measure within the scope of this research.

The term "household" is used here instead of "family" because household covers all the persons; the whole housing unit, both related and unrelated. Futhermore, the term household includes both the "traditional family" (related through blood and marriage) and "non-traditional family" (such as cohabiting couples and homosexual couples) (Engel, Blackwell and Miniard, 1990). In other words, the term "household" is chosen because it has a wider scope, if compared to the term "family" which usually only includes married households.

Based on the two research objectives, mentioned above, the two research questions which need to be answered respectively in this study are:

- Do the consumers engage in a different set of decision-making style dimensions, as depicted by the differences in the psychographic profiles, when purchasing products from different product classes? This point has been discussed earlier in chapter two.

- Do the differences in the consumers' age, household size, type of job, income, household types and gender be related to their decision-making

style dimensions in their purchase behaviour across the three product classes? This issue has been discussed earlier in chapter three.

5.2. Formulation of the Research Variables and Hypotheses.

Given the background of this study, the main theme of this research is to measure consumers' attitude towards their purchase behaviour in different product classes. From this, the profiles of the consumers' decision-making styles based on this attitude measurement will be developed and compared. Next, the relationships of the selected demographic variables; consumers' age, household size, type of job, income, household types and gender with the consumers' decision-making style dimensions across the three product classes will be investigated. To achieve these objectives, the research variables need to be specified and the research propositions or better known as hypotheses, need to be constructed. This is to ensure the researcher will have a clear direction of the research to be undertaken towards achieving those specified objectives.

Several of the more recent studies on consumers' decision-making styles were done by profiling the consumers psychographically according to their decision-making style dimensions. This was done using the variables used in the form of Consumers Styles Inventory, adopted from the research by Sproles and Kendall (1986). Some of the studies using the Consumer Styles Inventory are "Cross Cultural Generalisability of a Scale for Profiling Consumers' Decision-Making Styles" by Durvasula, Lysonsky and Andrews (1993), "Consumer Decision Styles: Comparison Between United States and Korean Young Consumers," by Hafstrom, Chae and Chung (1992) and "From Perfectionism to Fadism: Measuring Consumers' Decision-Making Styles," by Sproles (1985).

These studies, together with the one by Sproles and Kendall (1986), have shown an acceptable degree of consistencies in the findings in which all the four studies confirm the existence of at least six dimensions of the consumers' decision-making styles in the profiles of consumers' decision-making styles as the original study by Sproles (1985). Two of them (Sproles and Kendall, 1986; Durvasula et al, 1993) confirmed the existence of all the eight consumer decision-making style dimensions. Another study by Hafstrom et all (1992) confirms the existence of seven dimensions of the consumers' decision-making styles. On the whole, the findings from those earlier studies show some degree of consistency in the consumers' decision-making style dimensions in explaining consumers' dimensionality in their purchase behaviour. Table 5.2 shows the summary of the profiles of the consumers' decision-making styles from those studies.

In other words, these findings indicate that the Consumers Styles Inventory is a reasonably reliable instrument to be used to measure consumers' decision-making styles for the purpose of this study. Although these findings show a high degree of consistencies of the consumers' decision-making style dimensions in the psychographic profiles at the general product class level, their consistencies at the more specific product class level are yet to be tested. Consequently, it is intended in this research to provide the answer to this question.

Another advantage of choosing to use the Consumers Styles Inventory is that this inventory focuses only on the consumers' decision-making styles as against the general AIO inventory which has a very broad scope. The (general) psychographic approach (such as VALS and LOV) identifies over 100 characteristics relevant to consumer behaviour (Sproles and Kendall, 1986). On the other hand, the Consumers

Styles Inventory deals with 40 items which is more manageable given the limitation of resources made available for this study.

Sproles (1985)	Sproles & Kendall (1986)	Hafstrom et al (1992)	Durvasula et al (1993)
1.Perfectionistic	1.Perfectionistic	1.Perfectionistic	1.Perfectionistic
2.Value Conscious	2.Price-Value Conscious	2.Price-Value Conscious	2.Price-Value Conscious
3.Brand Conscious	3.Brand Conscious	3.Brand Conscious	3.Brand Conscious
4.Confused by Overchoice	4.Confused by Overchoice	4.Confused by Overchoice	4.Confused by Overchoice
5.Novelty-Fashion Conscious	5.Novelty-Fashion Conscious	5.Time-Energy Conserving Consumer	5.Novelty-Fashion Conscious
6.Shopping Avoider (-ve)	6.Recreational, Hedonistic Consumer	6.Recreational, Hedonistic Consumer	6.Recreational, Hedonistic Consumer
	7.Impulsive Consumer	7.Impulsive Consumer	7.Impulsive Consumer
	8.Habitual, Brand-Loyal Consumer	8.Habitual, Brand-Loyal Consumer	8.Habitual, Brand-Loyal Consumer

Consumers' Decision-Making Style Dimensions

Table 5.2

Finally, another point worth considering is that, it is better to use published psychographic items because they are more systematically constructed with 'built-in' variables for the purpose of cross-checking the reliability of responses. 'Built-in' variables here mean those item statements, which are similar but constructed differently. They are incorporated in the measurement item inventory in order to check for the consistencies of respondents in responding to similar statements. This is

in order to enhance the reliability of the data obtained from the samples. This may not be available for 'home-made' psychographic items which are constructed on an ad hoc basis for the use of an individual research and not being tested prior to that particular research. This issue has been raised by Gunter and Furnham (1992) in which they propose the use of tested variable items as against of the use of the 'home-made' variable items in order to obtain a more reliable data for this study.

Despite those advantages from using the Sproles and Kendall's (1986) Consumers Style Inventory, there are some shortcomings that may arise from it as well. Firstly, since the inventory is developed in different environment (developed in the USA), there might be a possibility that some of the consumers' decision-making style dimensions will not be covered by those in the inventory. The decision-making style dimensions used in Sproles and Kendall (1986) study were obtained from the work by other researchers (Bettmen, 1979; Jacoby and Chestnut, 1978; Maynes, 1976; Miller, 1981; Sproles, 1979 and 1983; Thorelli, Becker and Engeldow, 1975). The focus of Sproles and Kendall (1986) study is more on providing a methodology for profiling the dimensions established by the previous researchers rather than exploring the full possible range of the consumers' decision-making style dimensions. Hence, there was no indication that Sproles and Kendall (1986) try to explore the full range of consumers' decision-making style dimensions in their study. Neither did the other researchers (Hafstrom et. al., 1992; and Durvasula et. al., 1993) who replicate the method used by Sproles and Kendall (1986).

The implication from this is that there is a possibility that some of the consumers' decision-making style dimensions will not be covered by this study. Therefore, this should be taken into consideration when the finding is to be

generalised onto the UK consumers. However, the eight consumers' decision-making style dimensions adopted from Sproles and Kendall's study seems sufficient for comparing consumers' decision-making styles across different product classes. Secondly, the study by Sproles and Kendall was intended for the study of consumers' purchase behaviour for general product class. This opposed to the present study, which is intended for the study of the consumers' purchase behaviour in three specific product classes. Therefore, some modifications need to be done on Sproles and Kendall's Consumers Style Inventory in order to make it more suitable for the application in multiple product classes, for this particular research.

In this study, it is intended that the dimensions of consumers' decision-making styles developed by Sproles (1985) and Sproles and Kendall (1986) be used to indicate differences in consumers' decision-making styles in different product classes. This is to limit the scope of study as well as to relate it to those studies which have used the same consumers' decision-making style dimensions. However, doing so might limit the coverage of the actual dimensions of consumers' decision-making styles that might be relevant to the UK environment. In addition there is a possibility that other dimensions may not be covered by Sproles (1985) and Sproles and Kendall's (1986) studies. This possibility can be confirmed by an investigation using focus groups or in-depth interviews on the UK consumers. Doing so might increase the coverage as well as the relevance of this study on the dimensionality of consumers' decision-making styles in the UK environment.

Based on these arguments, it is justifiable to use the Consumers Style Inventory based on Sproles and Kendall's (1986) work as the measurement variables in this research. Having introduced the research problems and the variables, the

relevant hypotheses on what to expect from this research need to be constructed. Derived from the research questions outlined earlier, the following hypotheses will form the guide for this research.

5.2.1. Hypothesis 1

Murphy and Enis (1986) have argued that products of different product class are being viewed by consumers differently in terms of effort and risk in obtaining and consuming them. Effort here refers to the resources needed to acquire the products, while risk refers to the chances of the products purchased unable to deliver the benefit sought. In other words, consumers view products of different product class differently according to the effort and risk they perceive from buying and consuming the products. If they view them differently, then it is most likely that they engage different decision-making style dimensions when purchasing products from different product class. In addition, Sproles and Kendall (1986), in their concluding remarks in the earlier general approach study, state that indeed a consumer may have different decision-making styles for different product categories. Therefore, based on these arguments, the first hypothesis for this study is:

The different profiles of consumers' decision-making style dimensions (which are the list of consumers' decision-making style dimensions) will be formed in each of the three product classes, depicting the significant product class effect on consumers' purchase behaviour for products from different product classes.

5.2.2. Hypothesis 2

Consumers demand for goods very much depending on their willingness to buy as well as their ability to buy such goods (Solomon, 1996). This demand for goods differs according to the category of goods the consumer wanted to buy. As stated by Carroll (1994), the demand for necessities tends to be stable over time. On the other hand, purchase for other categories of product may be postponed or even eliminated if the consumers are not in the position to spend their money at a particular time. Therefore, the consumers' willingness to buy will not result in purchases if they are not able to buy the products at that time. The consumers' ability to buy very much determined by their income. Therefore, the consumers' income is the important factor in determining their ability to buy or commonly termed as the purchasing power. If income can affect the consumers' purchasing power, it can also affect the consumers' decision-making styles in their purchase behaviour.

Given the same income level, households of different sizes will have different level of purchasing power or ability to buy. Bigger households will more likely to have to divide the same amount of income over more members, thus resulting in less income available to each of them, as compared to the smaller households. In addition, household's needs and expenditures are effected by factors such as the number of people in the household, the ages of household's members and whether one or more adults are employed outside of the home (Solomon, 1996). Therefore, the size of the household can also affect the purchasing power of the consumers.

The types of households from where the consumers come from will also determine their decision-making styles. Types of household reflect the responsibilities and the priority of spending which the consumers will undertake. The age of the head

of the household, their marital status, presence of children and employment status can have an impact on the purchasing decisions of the household (Engel, Blackwell and Miniard, 1990). For example, the presence of children in the household can increase demand for clothing, food, furniture, homes, medical care and education and decreased demand for travel, cosy restaurants, adult clothing and other discretionary items (Engel, Blackwell and Miniard, 1990). Based on these arguments, the second hypothesis for this study is:

The differences in the consumers' age, household size, type of job, income, household types and gender will be significantly related to the differences in the means of the consumers' decision-making style dimensions.

Once the variables for the study and the research propositions have been determined, the next step will be the selection of the research design. This research design in turn will influence the tasks involved in the remainder of this methodological chapter.

5.3. Formation of Research Design.

A research design is "simply the framework or plan of study, used as a guide in collecting and analysing data." (Churchill, 1995). It is also viewed as "the detailed blueprint used to guide the implementation of a research study towards the realisation of its objectives." (Aaker and Day, 1986). Therefore, a well-defined research design is a prerequisite to a successful research process. In general, research design can be classified as exploratory, descriptive and experimental. Churchill (1995) provides a summary of uses and types of studies, which are more appropriate for each research design, as in Table 5.3. The choices among these three research designs are subjective in nature and very much depending on the research objectives, the nature of the

problem that the research is related to and the perception of the researcher on the research.

Parasuraman (1991) classifies a research design into exploratory and conclusive research. Exploratory research is intended to develop insights for the direction of further research while conclusive research is intended to verify those insights. He then divides conclusive research into descriptive and experimental research. As a guide, Parasuraman (1991) provides a diagrammatic illustration on how the selection of the appropriate research design can be made as shown in Figure 5.1.

To reiterate, the main purpose of this research is mainly to describe consumers' decision-making styles when purchasing products from different product classes. Secondly, it is also intended to describe the decision-making style of consumers from different level of age, household size, type of job, income, household type and gender within the same product class. Referring to Table 5.3, the exploratory research design only applicable to this study at the questionnaire design level. This is because at this stage, the process of trying to "eliminate impractical ideas" embedded in the questionnaire is being done. Some of the impractical ideas for the case of this study are in terms of the improper choice of wording, double-barrelled statements, ambiguous statements and the usage of obviously similar statements. Besides, the researcher is also trying to "clarify the concepts" of the study by responding to the feedback received during the piloting of the questionnaires. The uses of "eliminating impractical ideas" and "clarifying the concepts" correspond to the exploratory research design, as depicted in Table 5.3.

Types of Research Designs	Uses	Types of Studies
Exploratory Research	Formulate problems more precisely Develop hypotheses Establish priorities for research Eliminate impractical ideas Clarify concepts	Literature search Experience survey Focus groups Analysis of selected cases
Descriptive Research	Describe characteristics of certain groups Estimate proportion of people in a population who behave in a certain way Make specific predictions	Longitudinal study - True panel - Omnibus panel Sample survey
Causal Research	Provide evidence regarding the causal relationship between variables by means of: - Concomitant variation - Time order in which variables occur - Elimination of other possible explanations	Laboratory experiment Field experiment

Classification of Research Design

Table 5.3

Following Parasuraman (1991), this study does not fall into the exploratory research because it has a specific purpose, as outlined in the research objectives earlier in this chapter. It also has a clear data requirement, as argued earlier in this chapter. Due to this two reasons, this study can be termed as a conclusive research.Therefore, a choice between descriptive and experimental design needs to be made. Since this research provides a 'no' answer to the question whether or not the research purpose calls for testing cause-and-effect relationship between variables and given the purpose of the research, according to the flow diagram in Figure 5.1, the study should employ a descriptive research design in its approach. This supports Churchill's (1995) description of descriptive research, as shown in Table 5.3, on the classification of research.

The second objective of this study are intended to investigate the relationships of the differences of consumers' age, household size, type of job, income, household type and gender and the profiles of the consumers' decision-making styles in each product class. The study of relationships may also be relevant to some element of cause and effect, therefore the causal relationship will also be relavant to this study.This supports Parasuraman's (1991) argument where he suggests that a conclusive research should be viewed as a continuum between purely descriptive and purely experimental, rather than as a clear-cut dichotomy of the two extremes. Although this study will mainly be conducted as a descriptive research, it may also provide some findings related to the cause and effect elements of the experimentalresearch design. In other words, this study lies between the continuum of descriptive and experimental, but more inclined towards the descriptive side.
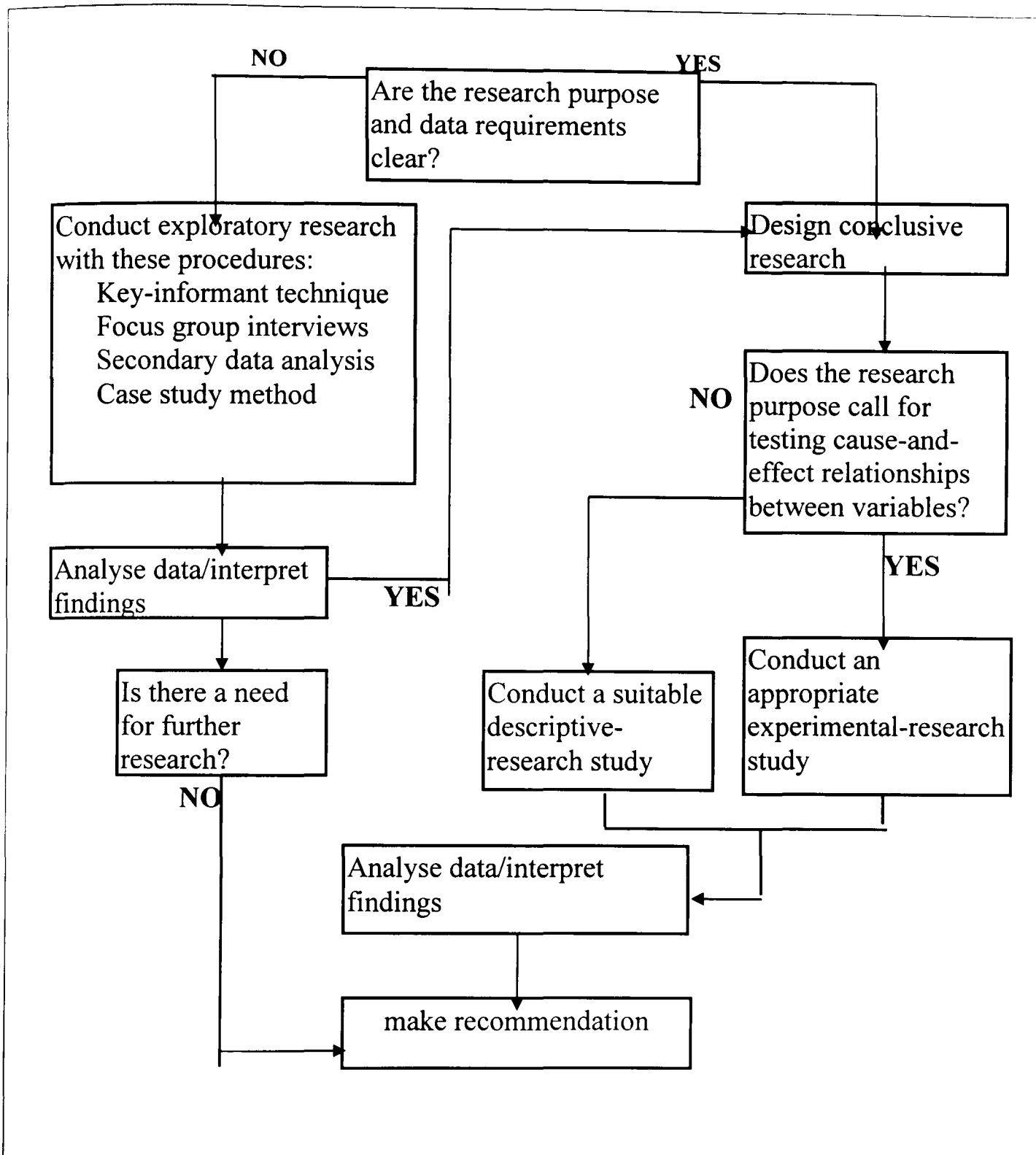
Flow Diagram for Selecting the Appropriate Research Design

Figure 5.1

5.3.1. Classifications of Descriptive Studies

The preceding section provides the justification of choosing descriptive research design as the main research design for the purpose of this study. Under the descriptive research design, one needs to decide between longitudinal and cross-sectional study. This classification of descriptive study is summarised by Churchill (1995) as in Figure 5.2.
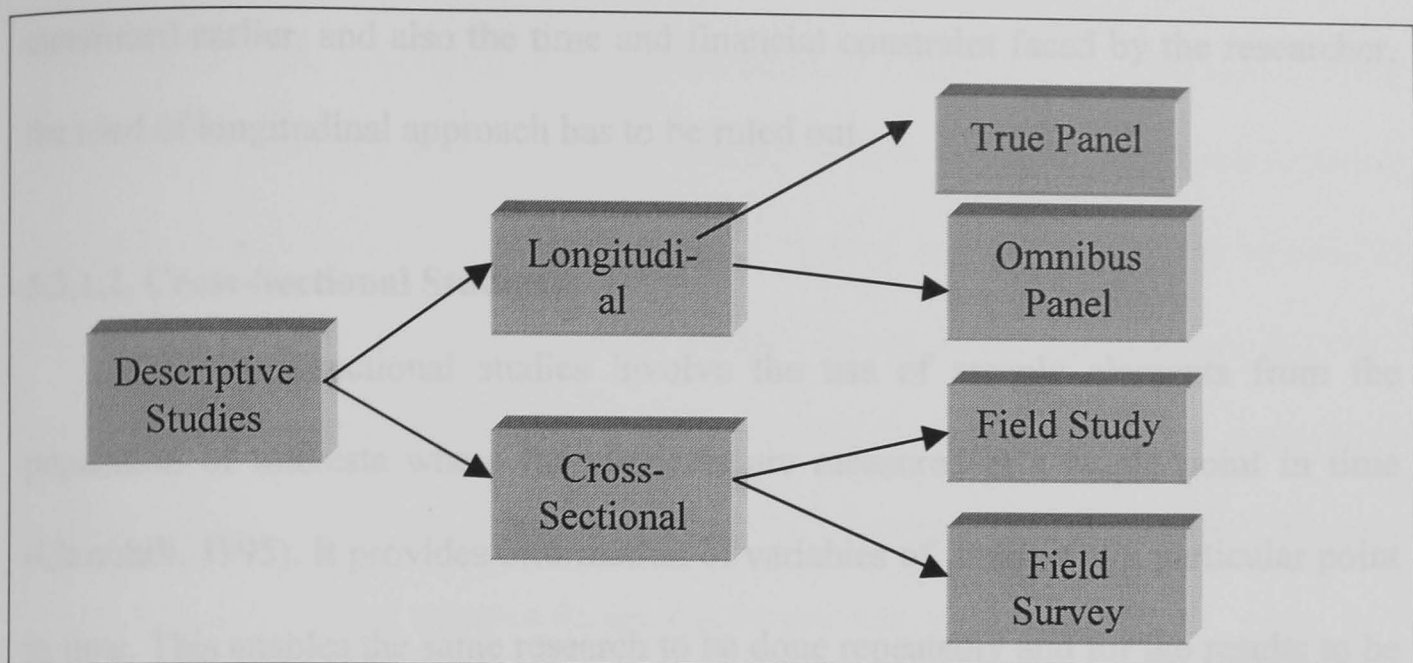
Classification of Descriptive Studies

Figure 5.2

5.3.1.1. Longitudinal Studies

Longitudinal studies rely on panel data and method, where the panel is a fixed sample of subjects that is measured repeatedly (Churchill, 1995). There are two types of panel; true panel which involves repeated measurements of the same variables, while omnibus panel involves repeated measurements of different variables. These type of studies enable researchers to investigate the dynamic aspects of a phenomenon. Panel data are believed to be more accurate than cross-sectional data, but at the same time they suffer the disadvantage of being non-representative (Churchill, 1995). This is due to some participants who are not consistently committed to take part as member of the panel throughout the period of study.

This particular study could have also been conducted using longitudinal study approach. Using this approach, the dynamic aspect of the consumers' decision-making style in purchasing products from different product classes may be able to be investigated. However, due to the problems associated with longitudinal studies as

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mentioned earlier, and also the time and financial constraint faced by the researcher, the used of longitudinal approach has to be ruled out.

5.3.1.2. Cross-Sectional Studies

The cross-sectional studies involve the use of sample elements from the population of interests where the elements are measured at a single point in time (Churchill, 1995). It provides information of variables of interest at a particular point in time. This enables the same research to be done repeatedly and for the results to be compared between studies. Since the purpose of this study is to compare consumers' decision-making styles in purchasing products from different product classes, the cross-sectional approach seems appropriate to serve the purpose of this study. This is because information taken at a point in time can enable us to investigate the nature of the consumers' decision-making styles in purchasing products from the different product classes. The information on the dynamic aspects of consumer purchase behaviour is beyond the scope of this research. Consequently, the uses of the more costly and time-consuming longitudinal approach are considered to be unnecessary for this study.

There are two types of study, field study and field survey, that falls under the cross-sectional category as shown in Figure 5.2. Field study involves a more in depth study of a few typical situations and more concern with the interrelationship of a number of factors. On the other hand, field survey involves a wider scope of study with more emphasis on the generation of summary statistics and their relationships (Churchill, 1995). In other words, field study is associated more with qualitative research, while field survey is associated more with quantitative research. The purpose of this study is to profile consumers' decision-making style dimensions in

each product class according to the predetermined dimensions of decision-making styles. It is not intended to probe into looking at new consumers' decision-making style dimensions. Hence, the more appropriate type of descriptive study to be used in this study is the field survey descriptive study. Based on the justifications provided earlier in this section, the research design chosen for this study is the descriptive research design, using the field survey type of cross-sectional approach. The main reason for selecting this research design can be summarised as follows;

- This study is intended to describe the nature of consumers' decision-making styles, depicted by the profiles of consumers purchase behaviour in three different product classes. Therefore, it is more appropriate to use the descriptive research design.

- More emphasis will be given in this study towards comparing psychographic profiles among the three different product classes, as well as the means of consumers' decision-making style dimensions within each product class with respect to different levels of consumers' age, household size, type of job, income, household type and gender. Therefore, the cross-sectional study approach is sufficient enough for the purpose of this study.

- Basically, this study will be using psychographic analysis that requires quantitative data which need to be collected in large numbers. Due to this, the field survey method of data collection is more suitable for the purpose of collecting data from a wider scope of population as required in this study.

Having selected the research design, the next section will deal on the issue of data collection method that will be used for this study. In principle, the data collection method chosen should support the chosen research design justified earlier in this section. Since the chosen research design is of a descriptive kind, the method of data collection most appropriate with the design will be the survey method. The following section more on the survey method of data collection.

5.4. Data Collection Method

Having selected the appropriate research design for the research, the following task will be to determine the most effective way of collecting the required data for this research. In this section, the data collection method will first be discussed from the aspects of research paradigm used, that is either the qualitative or the quantitative research approach. This will then follow by the discussion on the issue of types of data to be collected, that is either the primary or the secondary data. Lastly, a more detailed discussion will be done on the methodology used in the chosen data collection method.

5.4.1. The Issue of Quantitative and Qualitative Research

One of the main issues which needs to be addressed in the data collection methodology is whether to use the quantitative or the qualitative research approach. However, the view on quantitative research and qualitative research as two competing alternatives has slowly subsided in the more recent period. As suggested by Parasuraman (1991), "the proper position to take in a qualitative-versus-quantitative debate is to view both types of research as playing a legitimate and important role in marketing research." Consequently, both alternatives need to be used in order to supplement each other whenever possible.

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Quantitative research concern with a large number of subjects, usually members of some carefully drawn sample that is representative of a larger population (Sampson, 1986). On the other hand, qualitative research involves a small number of

Qualitative Paradigm	Quantitative Paradigm
* Concerned with understanding behaviour from the actor's frame of reference	* Seeks the facts of social phenomena without advocating subjective interpretation
* Phenomenological approach	* Logical - positivistic
* Uncontrolled, naturalistic observational measurement	* Obtrusive, controlled measurement
* Subjective; "insider's" perspective; close to the data	* Objective; "outsiders", distanced from the data
* Grounded, discovery-orientated, exploratory, descriptive, deductive	* Ungrounded, verification-orientated, confirmatory and inferential
* Validity is critical, "real", and deep data	* Reliability is critical; "hard" and replicable data
* Holistic - attempt to synthesise	* Particularistic - attempt to analyse

Source: Deshpande (1983)

Characteristics of Quantitative and Qualitative Paradigms

Table 5.4

subjects with a more in-depth type of study. It is impressionistic rather than conclusive and probes rather than counts. It is also intrinsically subjective where its findings cannot produce statistical evidence based on probabilistic sampling (Chisnall, 1986). For further understanding on the characteristics of both qualitative and quantitative research, Deshpande (1983) provides a summary of characteristics of both research paradigms as in Table 5.4.

In the discussion of these two research paradigms, both have been argued to posses their own strengths and weaknesses, as shown in Table 5.5. As for this study, it will mainly be using the quantitative research paradigm. This is mainly due to the nature of this study which will be on psychographic analysis that is described as quantitative investigation of consumers' lifestyles, personalities and sometimes combined with demographic characteristics (Mowen, 1990; Wells, 1975 and Demby, 1974).

Qualitative Research	Quantitative Research
* Open-ended, dynamic, flexible	* Statistical and numerical
* Depth of understanding	* Subgroup comparison
* Taps consumer creativity	* Survey can be repeated in future and results compared
* Data base - broader and deeper	* Taps individual responses
* Penetrates rationalised or superficial responses	* Less dependent on research executive skills
* Richer source of ideas for marketing and creative terms	

Source: Gordon and Langmaid (1988)

Strengths of Qualitative and Quantitative Research

Table 5.5

Although the main theme of the study will be quantitative in nature, some part of the study will also employ the qualitative research paradigm. The qualitative research approach will be used at the questionnaire design stage, specifically at the piloting stage. This needs to be done to ensure that the questionnaire designed is effective in order to increase its ability in providing the accurate data required for this

study. Since the piloting of the questionnaire is done to explore the potential problems that may reduce its ability to obtained the required data, an in depth study needs to be carried out to probe into the potential problems that may arise from the modified version of the questionnaire. This is done through in depth interviews on those samples involved at the piloting stage, which is one of the techniques used in qualitative research.

The questionnaire used will mainly be using item statements from the Sproles and Kendall's (1986) work with some additional items taken from Lesser and Hughes's (1986). Since both studies were used for the purchase behaviour on general product categories, some modification is needed to be done to make it suitable for the more specific product category basis. As most of the studies were done in the USA, some modifications are also necessary in order to make the questionnaire be more compatible to the UK environment. Therefore, some of the words used need to be changed to make them more appropriate for UK samples. For this, an in depth study needs to be carried out on the suitability of the modified questionnaires which are to be used in this study.

5.4.2. The Issue of Primary and Secondary Data.

Secondary data are data that have been collected and are readily available because they are collected earlier for some other purpose than the present problem. On the other hand, primary data are data which are collected especially to address a specific research objective (Aaker and Day, 1986). The source of the required data, primary or secondary, depends on the nature and the availability of the data. In most cases, factual data which are common, such as product prices and market shares, can usually be obtained from the secondary data source (Parasuraman, 1991). While data

such on attitudes, feelings, beliefs, past and intended behaviours, knowledge, ownership, personal characteristics, and other descriptive items are usually considered as primary data.

Aaker and Day (1986) summarise some of the data collection method which suit certain category of research, as in Table 5.6. Out of the three sources of secondary data listed, only the syndicated service is the relevant secondary data source for this study. This source is used in the sample selection, in which respondents are chosen from the electoral register of the City Council of Glasgow. The other two, information system and data banks of other organisations are not relevant because this study deals with the consumers' decision-making styles, which are not made available from these sources.

As for the primary data, three sources are listed here as qualitative research, surveys and experiments. The qualitative research is employed in the development of the questionnaire, as mentioned earlier. An experiment source is not used in this study to generate data because no variable can be manipulated. A survey source is the most likely source of data generation to be used in this study. This is because a survey is the most common method of primary data collection used for marketing decisions (Tull and Hawkins, 1993).

The present research basically deals with psychographic variables which mostly involved descriptive data. The psychographic studies have to rely mostly on primary data due to its nature involving the consumers' attitudes, opinions and interests. Examples of the descriptive data, which are required for this study, are the consumers' attitudes towards products, past and intended purchase behaviours, personal characteristics. These types of data are usually obtained from primary

sources. The secondary data needed for this study will be for the sample selection for the survey purpose. In other words, the present research will mainly be using primary data, although secondary data will also be used especially in the sampling process, which will be discussed in another section of this chapter.

5.4.3. Methods of Primary Data Collection.

There are three ways of collecting primary data. Primary data can be collected through an observation, experimentation or a survey. These method of collecting primary data will be discussed as follows.

5.4.3.1. Observation

An observation is termed by Cox (1979) as the process of noting and recording information on people's behaviour without asking questions. It is a non-reactive research technique which can be used alone or in conjunction with other forms of research to supplement the data collected (Chisnall, 1986). Nevertheless, there are some severe limitations that make it unsuitable for this research. One of them is that observations cannot be used in the case in which people's attitudes or opinions are being dealt with (Churchill, 1995) simply because the covert nature of these attributes. Since the present study mainly involves the measurement of the consumers' attitudes, opinions and interests, this method of data collection will not be appropriate.

5.4.3.2. Experimentation

An experimentation is the manipulation of one or more variables in order to test hypotheses regarding cause-and-effect relationship (Cox, 1979). Although this method of data collection is found useful in most field of scientific enquiry, its usage in the marketing discipline is somehow limited. This is because marketing involves

human behaviour and the reaction of people as consumers. These factors occur in a complex environment involving intervening factors and impossible to be isolated and controlled individually (Chisnall, 1986). Due to these factors, an experimentation does not seem to be a suitable method of data collection for the present research.

5.4.3.3. Survey

A survey research is termed by Tull and Hawkins (1993) as the systematic gathering of information from respondents for the purpose of understanding and/or predicting some aspect of the behaviour of the population of interest. It is the most common method used for data collection in marketing because of its flexibility and capability of yielding a very wide range of valuable new data as compared to an observation and experimentation (Chisnall, 1986). In other words, a survey method has a higher degree of versatility in terms of its ability of collecting information (Churchill, 1995).

Apart from that, a survey research can provide data on attitudes, feelings, beliefs, past and intended behaviours, knowledge, ownership, personal characteristics and other descriptive items (Tull and Hawkins, 1993). Therefore for this study, which involves characterising consumers' decision-making styles, a survey method will be used because it is the most appropriate data collection method. This study is categorised as descriptive research and for this category of research, the survey method seems to be the most suitable method to be used here. This argument is well supported by Aaker and Day (1986), as illustrated in Table 5.6. Churchill (1995), in his suggestion on types of study suitable for research design, also support the argument, as shown in Table 5.3.

Data Collection Method	Category of Research		
	Exploratory	Descriptive	Causal
Secondary Sources			
Information System	@@	@	
Data Banks	@@	@	
Syndicated Services	@@	@	@
Primary Sources			
Qualitative	@@	@	
Surveys	@	@@	@
Experiments		@	@@

@@ Very appropriate method

@ Somewhat appropriate method

Source: Aaker and Day (1986: 55)

Data Collection Method and Research Category

Table 5.6

5.4.4. Types of Survey Chosen – Mail Survey

The types of survey that can be carried out in research are classified according to the method of communication used by the researcher in reaching the respondents. The most commonly used methods of survey are the personal interviews, telephone surveys, computer surveys and mail surveys. Mail survey is chosen for this study because it satisfies most of the requirements and limitations faced in this study.

A mail survey involves the distribution of questionnaires to respondents and the collection or returning of questionnaires back to the researchers. No personal

interaction occurs in mail surveys between interviewers and respondents. The main advantage of mail survey is that it can avoid most of the problems associated with hiring interviewers, such as high administrative cost, interviewer effects and biases. Baker (1992) has raised some of the advantages associated with mail surveys. Among them is the ability of the mail questionnaires to reach named individuals, households or business establishments anywhere in the country at very low cost. A mail survey is the most suitable method for this study because the questionnaire used is too long for telephone survey but consists of straightforward and multiple choice responses, using the five-point Likert scale. Besides, the length of the questionnaires does not appear to have a major impact on the response rate for mail surveys (Tull and Hawkins, 1993). The questionnaires used are not so complex and thus, they do not need the use of personal interview.

However, a mail survey is said to suffer relatively low response rate compared to the other methods of survey. Chisnall (1986) says that this method is superficially attractive on account of its cheapness. However, this should be justified with the relatively lower response rates commonly associated with mail surveys. According to Baker (1992), low response rates are typical of mail surveys and 20% to 30% would be considered good. However, a higher response rate can be achieved if the research subject is of interest to the respondents. Since the subject of this study is about the respondents themselves as consumers, it is assumed that this will, to some extent, attract them to participate. On top of these, several ways of increasing the response rate for mail surveys have also been suggested in the literature. Among them is to remind the respondents through repeat mailing or other contact such as telephone whenever applicable. Table 5.7 is a summary of the comparative analysis of the four survey methods as suggested by Tull and Hawkins (1993).

On the whole, mail survey seems to suit this study better especially due to the budget constraint faced by the researcher. The main reasons for choosing this method will be discussed further in the following sections.

Criterion	Mail	Telephone	Personal	Computer
Ability to handle complex questionnaires	Poor	Good	Excellent	Good
Ability to collect large amounts of data	Fair	Good	Excellent	Good
Accuracy on sensitive questions	Good	Good	Fair	Good
Control of interviewer effects	Excellent	Fair	Poor	Excellent
Degree of sample control	Fair	Excellent	Fair	Fair
Time required	Poor	Excellent	Good	Good
Probable response rate	Fair	Fair	Fair	Fair
Cost	Good	Good	Fair	Fair

Source:Tull and Hawkins (1993)

Strengths of the Four Survey Methods

Table 5.7

5.4.4.1. The Nature of the Questionnaire

The questionnaire used for this study will contain 96 (32 statements repeated in three sections), five-point Likert scale statements plus six background questions. Out of the six questions, only two questions are open ended while the rest are close ended which require respondents to tick the appropriate boxes. On top of that, a space is provided for respondents to indicate the product used as examples, on which they base their responses for each product class. This is only necessary if they use

examples other than those provided in the questionnaire. Besides, this type of questionnaire will be too long for the telephone survey.

5.4.4.2. Cost Consideration

A mail survey is the cheapest method which can best suit the nature of the questionnaire used for the study. Although a personal interview or a computer survey may better suit a questionnaire of this length, but due to the higher cost requirement associated with it, a mail survey is still the best choice. Since the questionnaires used will require mostly closed end responses, it will not be too troublesome for the respondents to deal with it despite its length.

5.4.4.3. Convenience for the Respondents

A mail survey will allow respondents to respond to the questionnaires at their own pace. This is important to ensure that they have enough time to understand the concept of the product classification used in order for them to respond correctly. They also need time to recall their recent purchases made for each product class to enable them to give correct responses. On the other hand, a mall intercepts personal interview, a telephone survey and a computer survey will not be appropriate for this study because all these methods require the respondents to respond in a shorter time period.

5.5. The Process of Sampling

Having justified the selection of data collection method in the preceding section, a sampling process by which the survey is conducted will be discussed next. The procedure involves in the sampling process is outlined by Tull and Hawkins

(1993) as in Table 5.8. It starts with defining the targeted population and ends with the actual process of selecting the samples involved in this study.

No	Step	Description
1	Define the population	The population is defined in terms of element, units, extent and time.
2	Specify sampling frame	The means of representing the elements of the population - e.g. electoral register, telephone book, map or city directory - are described.
3	Specify sampling unit	The unit for sampling - e.g. city block, district, company or household - is selected. The sampling unit may contain one or several population elements.
4	Specify sampling method	The method by which the sampling units are to be selected is described.
5	Determine sample size	The number of elements of the population to be sampled is chosen.
6	Specify sampling plan	The operational procedures for selection of the sampling units are selected.
7	Select the sample	The office and fieldwork necessary for the selection of the sample carried out.

Source: Tull and Hawkins (1993:536)

Steps Involved in the Sampling Process

Table 5.8

5.5.1. Defining the Population

A population is referred to as any group of people or objects which are similar in one or more ways, and which forms the subjects of study in a particular survey (Chisnall, 1986). Therefore, before any research is to be carried out, the fundamental element which needs to be clearly specified first is the population on which the research will be based. The findings from the study will then be generalised onto that particular population, as well as the other populations of similar characteristics. Defining the population incorrectly may make the results of the study meaningless or even misleading for the decision at hand (Tull and Hawkins, 1993). Consequently, the population, from which the samples for the study will be drawn, need to be clearly defined.

For the present research, the target population will comprise of the general consumers who reside in the city of Glasgow. This is to make sure that the population of the consumers studied face the similar shopping environment. In other words, this is to make sure that they enjoy the same urban shopping facilities of a developed country. With this type of urban environment, the consumers can have the maximum choice for product variety and shopping outlets. They also benefit from the marketing information and promotional offers made available in an urban shopping environment. This situation is almost similar to those situations where most of the earlier studies on profiles of consumers' decision-making styles in their purchase behaviour were done. Therefore, the findings from this study will be comparable to the findings from the earlier studies.

Population Term	Population of Study
Element	General consumers,
Sampling Unit	that reside in City of Glasgow Electoral Constituencies,
Extent	who are registered as electorate for the City of Glasgow Electoral Constituencies,
Time	during the 1995 to 1997 electoral register.

Population of Study According to the Population Term

Table 5.9

The main reason for selecting samples from the City of Glasgow is for the convenience of survey administration, because the researcher is based in Glasgow. Statistically the sample taken from the population of Greater Glasgow by a cluster sampling method can strictly be claimed to represent the population of Glasgow. However, this sample can also be said to be representative of the Scottish urban population well due to the fact that Glasgow is the largest city in Scotland where its population of 662,954 (1991 Census) representing 15% of the Scotland population. The majority of the urban population in Scotland reside in the central belt comprising of the city of Glasgow, Edinburgh and Stirling. Among them, Glasgow is the most populous city. Based on these facts, the researcher is quite confident that the samples taken from the city will represent the urban population of Scotland well. Therefore, the sample profile can be generalised onto urban Scotland population quite confidently. However, the relatively low response rate (28%) may reduce the

representativeness of the samples obtained in representing the urban Scotland population.

To summarise, it is useful to follow the way suggested by Tull and Hawkins (1993) in defining the population of study by defining its terms *of element, sampling unit, extent* and *time.* For the present study, the population is defined along these terms, as shown in Table 5.9.

5.5.2. Specify a Sampling Frame

A sampling frame, a means of representing the elements of the population, is required for probability sampling (Tull and Hawkins, 1993). In other words, the sampling frame is the instrument in which the elements of the population from which the study samples are to be drawn are listed (Churchill, 1995). Examples of such instrument are electoral register, telephone book, map or city directory in which most of the elements of the population are listed. Chisnall (1986) provides a criteria which can be used to evaluate and choose the most appropriate sample frame to be used as in Table 5.10.

For the present study, the sampling frame used will be the electoral register. The main reason for choosing the electoral register is its completeness. It covers the entire population of the City of Glasgow who are 18 years old and above, which is the population of this study. The electoral register is also adequate because it contains people who are consumers and reliable because it contains elements which are non-duplicative and accurate. Lastly, it is also convenience because it supplies the elements which can easily be reached as it provides a clear, accurate and current address of people.

Criteria	Brief Description
Adequacy	the sample frame should cover the population to be surveyed and adequately related to the purpose of the survey.
Completeness	the extent of the sample frame covers the entire population.
No Duplication	the sample frame should only enter the element of a population once.
Accuracy	the extent of which the sample frame listing the elements of a population consistently from the time the samples are chosen until the actual time when they are being reached.
Convenience	refer to both the accessibility of the list and to the suitability of its arrangement for the sampling purposes.

Criteria for Choosing a Sample Frame

Table 5.10

A telephone book or directory is another common instrument used for the purpose of sampling frame (Tull and Hawkins, 1993). Compared to the telephone directory, the electoral register is more complete and duplication free. The telephone directory may be more convenient than the electoral register because it also contains the telephone numbers together with the addresses of the elements. However, the advantage of electoral register for being more complete outweighs it disadvantage of not being as convenient as telephone directory. Another main setback for using the telephone directory as sampling frame is that it provides inaccurate listing of household, omitting some without telephone and unlisted numbers as well as double counting those that has multiple listing (Churchill, 1995).

Some other advantages of the electoral register are that it divides the population evenly in electoral districts. Also, by choosing samples randomly from each electoral district will enable the researcher to obtain a set of samples which evenly represent the whole area of the City of Glasgow. Electoral registers are fairly easily available, both locally and centrally (Chisnall, 1986). The electoral register also enables the researcher to select samples of consumers who are permanent resident of the City of Glasgow. This is also important because any consumers who are not permanent residents may bring with them other cultural factors that can increase the sampling bias Therefore for the present study the sampling frame used will be the electoral register due to the many advantages it has over other sampling frames such as the telephone directory.

5.5.3. Specify a Sampling Unit

The sampling unit is the basic unit containing the elements of the population to be sampled (Tull and Hawkins, 1993). The sampling unit for this study will be the individual consumer from each household. Meaning, only one consumer from each household will be selected as a sample. In other words, only one consumer per residential address will be chosen. Therefore, the sampling unit used in this study will be a consumer residing at a unique address than the rest of the samples.

5.5.4. Specify a Sampling Method

The sampling method is the way the sample units are to be selected (Tull and Hawkins, 1993). For this the choices involved in the sampling method are:

5.5.4.1. Probability vs Nonprobability

For the present study, the sampling method used will be the probability sampling. This is because the intention is for the samples to have equal chances to be selected and also because the main purpose of the study is to know the overall consumers orientation in purchasing product in different product classes. This will also minimise the error in characterising the consumers as well as minimising the error in the nonsampling. In addition, a higher population heterogeneity is also required in this study. In other words, these aspects of requirements are more appropriate for the use of probability sampling method.

5.5.4.2. Single-Unit vs Cluster Sampling

For this study, each of the samples will be selected separately using a single unit sampling method. This is to reduce the sampling error as much as possible. The single unit-sample usually produces less sampling error than the cluster sample because of less within- cluster variability than for the population as a whole (Tull and Hawkins, 1993).

5.5.4.3. Unstratified vs Stratified Sampling

The population used for this study consists of consumers who are registered electorate in the 11 constituencies of the City of Glasgow. The main reason for selecting the Glasgow population is to make it more manageable for the researcher to deal with a large single population, available near to the researcher's location. Therefore if, for example, the response rate of the intended mail survey happens to be too low, some follow-up actions such as arranged visits to the samples' homes can conveniently be done by the researcher. Otherwise, it would be very costly if it were to

be done on a wider scope of the population, such as the population of the entire United Kingdom or the European Union.

The electoral register used is evenly divided into electoral constituencies which represent the whole area of the city. To get a better representation, a random sample from each constituency is selected. By doing this, a set of samples which are evenly scattered over the whole city area can be obtained. A simple random sampling has the disadvantages of producing a skewed sample that does not adequately represent the population (Parasuraman, 1991). For example, if a simple random sampling is used in the present study, the chances will be obtaining sets of samples which are unevenly distributed throughout the city area. As a result, a stratified sampling method will be employed in the present study, based on the 11 electoral constituencies of the City of Glasgow, in order to get a better representation of the population for the whole city.

The sampling method used will be a stratified single-unit random sampling. This is in order to increase the chances of getting less error in characterising consumers and non-sampling, higher population heterogeneity and better representation of the population of the City of Glasgow.

5.5.5. Determine a Sample Size

The size of the sample depends on the basic characteristics of the population, the type of information required from the survey and the cost involved (Chisnall, 1986). As a guide, Tull and Hawkins (1993) provides a typical sample sizes for the studies of human and institutional populations as shown in Table 5.11. Although these typical sample sizes are based on the United States samples, it is still relevant as a

guide because the people in both the United Kingdom and the United States have a lot in common.

For the present study, the targeted required sample size is 250. This is within the number of samples suggested by Tull and Hawkins (1993) in Table 5.11 for cell of household and regional study. The sample of this size for Public Interest Opinion Research will have allowance for sampling error of between five to eight percent at 95% confidence interval (Tull and Hawkins, 1993) and this is justifiable with the limited resources of the researcher. However, due to the low expected response rate for

Number of Subgroup Analyses	People or Households		Institutions	
	National	Regional	National	Regional
None or Few	1,000 - 1,500	200 - 500	200 - 500	50 - 200
Average	1,500 - 2,500	500 - 1,000	500 - 1,000	200 - 1,000
Many	2,500 or more	1,000 or more	1,000 or more	1,000 or more

Typical Sample Sizes for Studies of Human and Institutional Populations

Table 5.11

mail survey, more samples need to be selected to get the targeted number of samples. From experience, the expected rate of response for similar studies is about

25%. Due to the fact that all of the electorates are consumers, the expected incidence will be 100%. Using the formula;

Where,

$$\text{Initial sample size} = \frac{\underline{\text{required response}}}{(\text{incidence X response rate})}$$

$$= 250/(1.0 \, X \, 0.25)$$

$$= 1,000$$

However, the rate of response can be increased by doing follow-ups and reminders for the initial non-response. This will be discussed further in the next section. Since there are 11 constituencies, 1,100 initial sample size will be used where 100 samples will be randomly chosen from each constituency.

5.5.6. Specify Sampling Plan

The mail survey will be conducted by sending 1,100 questionnaires to the randomly selected samples of 100 samples per constituencies. The first reminder will be sent to the non-responses after ten days, in order to increase the rate of response. This supports the argument that says the optimum length of time before the first reminder seems to be between a week and ten days (Harvey, 1988). The period of ten days is chosen before the first reminder to be sent out in order to give ample time for the respondents to respond to relatively long questionnaires.

The questionnaire for the present study will contain 96, 5-points Likert scale statements, three open-ended questions and six background questions. The use of follow-up reminder letters can help to increase response rate in mail surveys (Harvey, 1987). It is argued that the response rate between 60% to 70% can be achieved in a

mail survey by using two or three reminders (Gendall, Hoek and Esslemont, 1995). As for this study, two reminders will be used as the effort to improve response rate. The second reminder will be sent out to the non-responses after 20 days from the date of questionnaires were sent, if the response rate falls below the minimum expected level of response that is 25%.

5.5.7. Select the Sample

As stated earlier, the samples for this study will be chosen from the electoral register of the City of Glasgow constituencies. There are 11 electoral constituencies in

No.	Constituency	No. Electorate
1	Catchcart	43,419
2	Central	48,975
3	Garscadden	40,726
4	Govan	43,873
5	Hillhead	59,785
6	Maryhill	48,491
7	Pollok	44,434
8	Provanmill	34,501
9	Rutherglen	12,219
10	Shettleston	28,248
11	Springburn	45,098
	Total	**449,769**

Number of Registered Electorate in Each Constituency

Table 5.12

the City of Glasgow. The number of electorates registered in each constituency in 1995, for the effective date of February 1996 onwards is as shown in table 5.12. This accounts to a roughly 73% of the total consumers who are 18 years and above in 1996. This is calculated from the 1991 population census, after adjusting it by adding five years to the sample's age in 1991 when the census was taken.

5.6. Construction of Questionnaire

Questionnaire construction is the most vital part of a data collection process. It is especially important in the study which uses the mail survey as the method of collecting data. This is because the questionnaire is the only means of communication between the researcher and the respondents. Although the respondents can contact the researcher by telephone for clarification, but in most cases, a poorly constructed questionnaire will straight away kills the interest of the respondents to respond to it. It has to be bear in mind that in the data collection process, the researcher is asking for a favour from the respondents. Hence, anything that can assist the respondents in responding to the questionnaire should be given a top priority by the researcher.

A properly constructed questionnaire is the most important way of assisting the respondents in responding to the questionnaire. To be effective, the questionnaire must be as simple as possible so that the respondent can easily respond to it. At the same time, the questionnaire also needs to be as comprehensive as possible in order to obtain all the required data needed for the study. Therefore, an effective questionnaire must strike the optimum balance between the requirement of being simple and at the same time being comprehensive. In other words, the questionnaire must be as simple

as possible to be easily understood and must be comprehensive enough to capture the required data for the study.

5.6.1.Questionnaire Design

The questionnaire is designed to focus on the purchasing activities of the consumers in dealing with products from the convenience, shopping and speciality product classes. For this, the statements chosen to be used in the questionnaire will deal with the consumers' attitude towards brand selection, new product in the market, place of purchase, quality and price considerations and the consumer's style in the selection of product to buy. Since the respondents consist of consumers from the general public, the statements used in the questionnaire must be understandable to a wider range of consumers of the general public.

5.6.1.1. Construction of Item Statements of Measurement Variables

Most of the statements are taken from the Sproles and Kendall's (1986) Consumer Styles Inventory and the rest are taken from the research done by Lesser and Hughes (1986). Some modifications are made to ensure that the statements chosen are suitable to be used in a more specific product classes as proposed in this study. This is necessary because the earlier studies were done on the consumers' purchase behaviour in general product class, as opposed to the present research which is intended for the measurement of consumers' purchase behaviour in three different product classes.

Dimension 1 - Perfectionistic, High-Quality Conscious Consumer

1. Getting very good quality is very important to me.

2. When it comes to purchasing products, I try to get the very best or perfect choice.

3. In general, I usually try to buy the best overall quality.

4. I make special effort to choose the very best quality products.

5. My standards and expectations for products I buy are very high.

6. I shop quickly, buying the first product or brand I find that seems good enough. (-ve)

7. A product does not have to be perfect, or the best, to satisfy me. (-ve)

8. I really don't give my purchases much thought or care. (-ve)

Dimension 2 - Brand Conscious, "Price Equals Quality" Consumer

1. The well-known national brands are best for me.

2. The more expensive brands are usually my choices.

3. The higher the price of a product, the better its quality.

4. Nice department and speciality stores offer me the best products.

5. I prefer buying the best-selling brands.

6. The most advertised brands are usually very good choices.

7. A product does not have to be perfect, or the best, to satisfy me. (-ve)

8. I generally buy product of the store's own brand. (-ve)*

Dimension 3 - Novelty- Fashion Conscious Consumer

1. I usually have one or more outfits of the very newest style.

2. I keep myself up-to-date with the changing fashions, types, trend of product in the market.#

3. Fashionable, attractive styling, appearance or presentation is very important to me.#

4. To get variety, I shop different stores and choose different brands.

5. It's fun to buy something new and exciting.

6. I like to try new products when they come out on the market.*

7. I usually buy new products before my friends do.*

Dimension 4- Recreational, Hedonistic Consumer

1.Going shopping is one of the enjoyable activities of my life.

2.I enjoy shopping just for the fun of it.

3.I make my shopping trips fast. (-ve)

4.Shopping is not a pleasant activity to me. (-ve)

5.Shopping the stores wastes my time. (-ve)

6.I often make purchases from catalogue. (-ve)*

7.Convenience of location is of minor importance in selecting a place to shop.*

8.I'd rather go out of the way to look for bargains or a large variety of merchandise(-ve)*

Dimension 5- Price Conscious, "Value for Money" Consumer

1I buy as much as possible at sale prices.

2.The lower price products are usually my choice.

3.I look carefully to find the best value for the money.

4.I carefully compare prices before buying items.*

5.When I shop, I usually go to several different stores to get the best prices.*

6.I usually shop at discount stores.*

7.I usually use most of the coupons offered by stores.*

8.I pay attention to advertisements for sales.*

Dimension 6 - Impulsive, Careless Consumer

1.I should plan my shopping more carefully than I do.

2.I am impulsive when purchasing.

3.Often I make careless purchases I later wish I had not.

4.I take the time to shop carefully for best buys. (-ve)

5.I carefully watch how much I spend. (-ve)

6.I usually come home from store with more things than I intended to buy.*

Dimension 7 - Confused by Overchoice Consumer
1.There are so many brands to choose from that often 1 feel confused. 2.Sometimes it's hard to choose which stores to shop. 3.The more 1 learn about products, the harder it seems to choose the best. 4.All the information 1 get on different products confuses me.
Dimension 8 - Habitual, Brand-Loyal Consumer
1.1 have favourite brands 1 buy over and over. 2.Once 1 find a product or brand 1 like, I stick with it. 3.1 go to the same stores each time 1 shop. 4.1 change the brands 1 buy regularly. (-ve)

- *Variable statements are taken from Sproles and Kendall (1986), except for asterisk (*) are taken from Lesser and Hughes (1986).*
- *Items marked (-ve) should be negatively related to the dimension underwhich it is placed.*
- *Items marked # has been modified to suit the four product classes used in the questionnaire.*

Original Measurement Variables for the Consumers' Decision-Making Style Dimensions

Table 5.13

The original form of item statements taken from the Consumer Styles Inventory of Sproles and Kendall's (1986) work and the work by Lesser and Hughes (1986) are listed as in Table 5.13. The consumers are expected to indicate their responses towards the item statements which will be provided in the questionnaire using the five-point Likert scale for each statement. This process will be repeated in all the three different product classes.

5.6.1.2. Background Information Questions

Apart from the item statements, several questions on the respondents' background are also included. This is in order to enable the profile of the samples be

constructed as well as to provide inputs for the selected variables for the study. The relationships between the selected variables; the consumers' age, gender, occupation, income, household types and household size and the consumers' psychographic profiles formed in each product class will be studied. It is believed that these variables will have strong influence on the consumers' decision-making styles in their purchase behaviour. The questions included in the questionnaire will be discussed in the following sections.

5.6.1.2.1. Age

The information on the consumers' age is required in order to profile the samples obtained in the study. This is needed to make sure that the samples taken are representative of the population surveyed in this study. The range of ages of the

Age Range (years)	Number of People	Age Range(years)	Number of People
Under 1	64,000	30 - 44	1,100,000
1 - 4	260,000	45 - 59	889,000
5 - 9	324,000	60 - 64	262,000
10 - 14	324,000	65 - 74	451,000
15 - 19	312,000	75 - 84	249,000
20 - 29	812,000	Above 84	73,000

Source: Annual Abstract of Statistics 1995

Age Distribution of the Resident Population (Scotland)

Table 5.14

samples used in this study follows the one used in the Annual Abstract of Statistics published annually by the Central Statistical Office of the United Kingdom. The age ranges below 15 years old is discarded because it is assumed that the decision-making styles for the consumers of this range of age are very much influenced by their parents. Therefore, the range of age used ranges from 15 to more than 85 years old. The mode range of age for consumers in Scotland as shown in the 1995 Annual Abstract of Statistics is between 30 to 44 years. The full number of people for each range of age for Scotland (based on 1993 figures) is as shown in Table 5.14.

5.6.1.2.2. Gender

This information is required to profile the samples according to their gender. The distribution of the resident population for Scotland according to gender is 2,479,000 male to 2, 642,000 female, at the ratio of approximately 1:1. This is according to the 1993 figure provided in the Annual Abstract of Statistics 1995.

5.6.1.2.3. Occupation

The consumers' occupation can have a strong influence on the consumers' purchasing power. This is because it can roughly determine their income, the type of society they are in and to some extent, their lifestyles. This information can also be used to justify their responses on the question of income. By looking at the occupations, the responses for the question of income, to some extent can be validated as true or not. Some respondents might consider information on their income as confidential, therefore the information on their occupations can then be used to provide an estimate for their income. The question on the respondents' occupation comprises of their job tittles and a brief statement on the tasks for the

given job tittles. This information can help to give a better ground for making an estimation for the respondents' income whenever necessary.

5.6.1.2.4. Total Household Before Tax Income

This information is required for one of the selected variables which is believed to have some influence on the profiles of the consumers' decision-making styles in their purchase behaviour. As this information is considered as confidential, it will be more convenient to provide the respondents with ranges of income for them to respond to. From the Annual Abstract of Statistics 1995, it is calculated that the average individual before tax annual income according to 1992/93 survey is approximately £15,000. Since the present study involved the household income instead of the individual income, this average is inflated by 60%. This is in order to take into account for the households with more than one-income earners.

Therefore, the working average annual household before tax income is approximately £24,000, which is in the middle range of income. From this, the income ranges are expanded to another four ranges for both ends. The lowest range is less than £6,000 and £69,012 for the higher end. For the respondents' convenience, the monthly income ranges are also provided for those respondents with regular monthly income. Before tax income is used instead of after tax income because it is easier for the respondents to provide the before tax income amount because the before tax income amount is readily available.

5.6.1.2.5. Household Types

This information is also required for another selected variable which is believed to have some influence on the profiles of the consumers' decision-making

styles in their purchase behaviour. It is believe that most of the married respondents will make joint decisions on their purchases as compared to their unmarried counterparts. It is also believed that the married respondents will have a longer perspective in their purchase decisions than unmarried respondents. Therefore, both married and unmarried respondents should have different decision-making styles in their purchase behaviour.

5.6.1.2.6. Number of People in the Household

It is believed that the size of household may influence the decision-making styles of the respondents' purchase behaviour. Consumers with the same amount of income but with bigger households will have different decision-making styles than those respondents with smaller households. With the same amount of income, those with bigger households size will have relatively more limited choice than those with smaller households size in terms of their purchasing power. Therefore, the respondents with different size of households should show differences in their decision-making styles.

5.6.1.3. Piloting of Questionnaires

The purpose of piloting the questionnaires is to improve their ability to provide data which as much as possible reflects the actual decision-making styles of the consumers in their purchase behaviour for different product classes. For this, the questionnaire need to be easily understood by the general public, who will be the samples for this study. The piloting of the questionnaires was done in two stages to ensure that they can effectively obtain the required data from the samples. Comments from the respondents of this pilot study will be used as inputs to improve the

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questionnaire design in order for them to be more effective in providing the more accurate data needed for the study.

5.6.1.3.1. Profile of the Respondents

For piloting the proposed questionnaire, a number of people were approached to participate. However, only eight of them, which consist of two lecturers, two clerical staffs, two research students and two council residents, agreed to participate. Therefore, the questionnaires were distributed to the eight respondents. It will be much better if more could participate so that more information could be gathered to establish a more effective questionnaire in obtaining the required data for the study. Therefore, this limitation should be acknowledged as a shortcoming in the process of piloting the proposed questionnaire.

The questionnaires were first distributed personally to the eight respondents. They were given about a week to complete the questionnaire on their own. After that, the respondents were asked for their comments especially on the readability, understandability and other aspects of the questionnaires which need to be changed or modified. This is in order to make them more suitable for the British samples in general and Glaswegian in particular.

5.6.1.3.2. First Stage Piloting

For the first stage piloting, the format of the questionnaire used is as follows:

1. Getting very good quality is very important to me.

Convenience					Shopping					Speciality				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

2. I am impulsive when purchasing.

Convenience					Shopping					Speciality				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

3. I often make purchases from a catalogue.

Convenience					Shopping					Speciality				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

The comments received through the process of piloting the questionnaires will be discussed in the following section.

5.6.1.3.2.1. Comments by the Respondents (First Stage Piloting).

The comments by those respondents are presented below, starting with the most common one:

1. Examples provided, especially for the shopping and speciality product classes were inappropriate. For example, computer is the more suitable example for speciality products than for shopping products. While television sets are the best example for shopping goods because almost everybody has experienced buying them in the way where most shopping goods are bought i.e. through a selection among selected brands that the consumers have in mind before actually purchasing it.

2. The level of language used should be made simpler. This will be more important especially for those samples involving working class people. For example the word 'buy' is more appropriate than the word 'purchase' and the word 'impulsive' should be replaced with the word 'careless'.

3. Some statements are found to be too similar to another statements which results in the questionnaires being unnecessarily long.

4.There are a few comments on income (question 4 of Section II).

a)The income brackets should be expanded downward i.e. more towards the lower income group.

b)The researcher need to specify whether personal or household income is required for this study.

c)There are suggestions to provide for both monthly and annual incomes because some people do not earn fixed monthly income.

d)It is better to ask for gross income to cater for those who receive income from spouse (housewives) and parents (students) which are not taxable.

5. The fifth statement should be done using the more popular examples i.e. e.g. Tesco, Asda, Marks & Spencer and Littlewoods, instead of 'no frills' from Kwik-Save.

6. Some statements for example those of number 9, 11, 12, 28 and 28 were said to contain ambiguous words.

7. It is better to ask respondents to tick their responses instead of circling them because with the boxes provided, it will be easier for them to tick rather than circle.

8. The questionnaire looks too crowded and less readable.

5.6.1.3.2.2. Researcher's Observation

Besides, the abovementioned comments given by the respondents, the researcher has also observed that there are tendencies of bias among respondents to give the same response for different product classes. This may be due to the 'laziness' of the respondents to think differently for different product classes. Instead, they just decided the response for the first product class and generalised it to the other two product classes.

5.6.1.3.2.3. Steps Taken to Improve the Questionnaire

Several steps are taken after considering the comments received from the first piloting. This is in order to improve the questionnaire so that it will be user-friendlier to the respondents and thus increase the chances of getting a better response rates. Those steps are:

1. To minimise the effect of biases of generalising response of one product class to another product class.

    a) To provide examples of the common items and state them in each page of the product classes as shown in the modified version of the questionnaire sample, in the Appendix-1.

    b) To change the format of the statements into a single line statements and stated in each of the three product classes as follows;

that is from,

1. Getting very good quality is very important to me.

Convenience					Shopping					Speciality				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

2. I am impulsive when purchasing.

Convenience					Shopping					Speciality				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

3. I often make purchases from a catalogue.

Convenience					Shopping					Speciality				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

to,

1. Getting very good quality products is so important to me.	**SD D N A SA**

| 2. The more I learn about products, the harder for me to make the best choice. | **SD D N A SA** |
| 3. I always make use of special offers (e.g. coupons, free gifts and discounts). | **SD D N A SA** |

under each product class, where SD, D, N, A and SA are used as Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree and Strongly Agree, respectively.

c) To provide a reminder on each page on which product class they supposed to base their responses.

2. To change the examples used in each product class to the more appropriate examples.

a) For the Convenience Product Class; eggs, flour, sugar, garbage bags, bleach and toilet paper are added to the existing examples to expand the scope to non-food examples. This is to help the respondents to have a clearer idea on the product class.

b) For the Shopping Product Class; soft drink, wine, computers and watches are changed to television sets, microwave ovens, cameras, furniture and washing machines. This is because the previous examples are said to be less accurate in potraying this product class as compared to the later examples.

c) For the Speciality Product Class; luxury furniture is discarded because this can confuse respondents with the furniture example used in Shopping Product Class. More examples are included to help respondents to have a clearer idea on the product class. The examples used are jewellery, computers and original paintings.

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3. To change the language used in order to make it more understandable to the local public.

4. The statements which are found to be too similar are discarded. This is to prevent the respondents from boredom as well as to reduce the number of questions wherever possible.

1. Question on income (question 4 of Section II) is formatted;

from,

TOTAL HOUSEHOLD MONTHLY AFTER TAX INCOME (Sterling Pounds per Month).

☐ less than 1000 ☐ 1000-1749 ☐ 1750-2499 ☐ 2500-3249

☐ 3250-3999 ☐ 4000-4749 ☐ 4750-5499 ☐ above5500

to,

TOTAL HOUSEHOLD GROSS INCOME (In Sterling Pounds).

☐ less than 500/mth ☐ 501-1,250/mth ☐ 1,251-2,000/mth
or (6,000/yr) *or (6,012-15,000/yr)* *or (1,5012-24,000/yr)*

☐ 2,001-2,750/mth ☐ 2,751-3,500/mth ☐ 3,501-4,250/mth
or (24,012-33,000/yr) *or (23,012-42,000/yr)or (42,012-51,000/yr)*

☐ 4,251-5,000/mth ☐ 5,001-5,750/mth ☐ above 5,751/mth
or (51,012-60,000/yr) *or (60,012-69,000/yr)* *or (69,012/yr)*

These changes are done to overcome the problem outlined from the earlier comments.

6. The examples provided for statement number 5 are changed from 'no frills' brand of Kwik-Save, to ASDA, Tesco and Littlewoods which are said to be more familiar to the respondents.

7. The statements which are found to be ambiguous are also discarded. This is to prevent the respondents from becoming confused as well as to reduce the number of questions wherever possible.

8. To ease the respondents indicating their responses, they are asked to tick their responses instead of circling them.

9. To make the questionnaire looks less crowded and readable, new format is used which is more spacious with less usage of bold letter words.

5.6.1.3.3. Second Stage Piloting

After the first piloting, the questionnaires were thoroughly modified to take into account, as much as possible, the comments given in the first piloting. The questionnaire design is modified as follows;

1. Getting very good quality products is so important to me. SA	SD D N A
2. The more I learn about products, the harder for me to make the best choice.	SD D N A SA
3. I always make use of special offers (e.g. coupons, free gifts and discounts). SA	SD D N A

The modified versions of the questionnaires were given back to most of the earlier samples during the first stage piloting. The comments received after the second piloting are as below;

5.6.1.3.3.1. Comments by the Respondents (Second Stage Piloting).

1. The questionnaire is still regarded as unnecessarily long. More space should be saved to make it look less lengthy.

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2. It is intended to reduce the number of statements in the questionnaire wherever possible. As explained earlier, each statement reduced will have the effect of the reduction of three statements from the questionnaire, as each statement will be repeated three times for the three product classes. One way to do it is by deleting statements which are too similar to another statement in the questionnaire. The decision to delete statements which are too similar also comes from the feedback of the pilot study done. Comments from the pilot study suggest that it will be irritating for the respondents to respond to more than one statements found to be too similar to each other. More irritatingly if they can sense that the similar statements are used as a way of checking the integrity of their responses. Removing the almost similar statements may runs counter to attitude scaling practice. However, the researcher still think that the benefit from making the questionnaire more respondent-friendly outweighs the shortcoming resulting from violating the attitude scaling practice. This is as far as deleting the similar statements is concerned. It is found that there are six statements which are too similar to each other in the piloting of the questionnaires. Examples of the statements are:

a. 'Getting very good quality is very important to me' and ' When it comes to purchasing products, I try to get the very best or perfect choice.'

b. 'The most advertised brands are usually very good choices' and 'The well-known national brands are best for me.'

In both cases, the second statements were dropped.

3. Some of the examples of products used is still not suitable to describe the product class to the consumers. For example, prescribed medicine is not a good example of speciality product because it can be viewed as necessities instead of speciality product.

4. Some of the words used is too high for the level of understanding of the general public. Words such as 'aesthetic' should be replaced with a simpler word of similar meaning.

5. A more relevant example should be used to guide the respondents on how to respond to the provided statements. For example, using an example statement like 'I love travelling abroad very much' should be replaced with an example which is more related to the shopping situation, and the present study.

6. One set of examples is enough because the responses required are quite straightforward and can easily be understood. More spaces can be saved by not repeating the example in each product class section.

7. Question on marital status is unnecessary because this information can be drawn from the information given on household types

5.6.1.3.3.2. Steps Taken to Improve the Questionnaire

Several steps are taken after considering the comments received from the second piloting,. This is to further improve the questionnaire so that it will be user-friendlier to the respondents in order to increase the chances of getting a better response rates. Those steps are:

1. The examples used to explain the way to respond to the statements in the questionnaire is reduced from three (one in each product class section) to only one throughout the questionnaire. This is done to reduce the length of the questionnaire.

2. Six more five-points, Likert scale statements which seem to be ambiguous or too similar to other statements are dropped, reducing the number of statements from 114 to 96. This is also done to reduce the length of the questionnaire.

3. The example used to explain the way to respond to the statements is changed to a more relevant example to the study, as shown in the final version of the questionnaire.

4. A more suitable words and examples to describe the product class are used to replace those words and examples which are less suitable.

5. For this study the widowed, divorced or separated are not included under 'Marital' status, instead they are categorised under the 'Single' category. This decision is driven by the questionnaire's length constraint. Besides, the researcher's intuitive expectation of effect did not distinguish widowed, divorced and separated distinctions. This is because the widowed, divorced or separated refers more to the structure of household which is less bonded and resembles more of the single category. On the other hand married consumers refers more to those who live in a more bonded household structure. This difference in household structure is expected to have some impact on the decision-making styles of those categories of consumers. Therefore in this study, widowed, divorced or separated consumers are categorised under the 'Single' category. Based on this justification, the question on marital status is dropped. While, responses for the question on household types are expanded from four to six, to take

into account for cohabiting couples with or without children. The change helps to further simplify the questionnaire. This is as the principle reaction to the comment obtained from the pilot study saying that the questionnaire is relatively long.

6. Wherever possible, all the empty spaces between lines and paragraphs were deleted to reduce the length of the questionnaire.

5.6.1.4. The Final Version of the Questionnaire

From the changes made after two stages of piloting, the new questionnaire now contains 32 statements as compared to 52 previously. The number of pages is also reduced from 12 to 9. The number of item statements for each dimensions of

Dimensions	Initial No. of Items	Final No. of Items	Reduction
Perfectionistic, High-Quality Conscious	8	4	4
Brand Conscious, "Price Equals Quality"	8	4	4
Novelty- Fashion Conscious	7	4	3
Recreational, Hedonistic	8	4	4
Price Conscious, "Value for Money"	8	4	4
Impulsive, Careless	6	4	3
Confused by Overchoice	4	4	0
Habitual, Brand-Loyal	4	4	0

Changes to the Number of Item Statements per Dimension

Table 5.15

consumers' decision-making styles are also made more balance. The changes done are as shown in Table 5.15. After two stages of piloting, the final set of item statements

which will be included in the questionnaires according to the consumers' decision-making style dimensions are as shown in Table 5.16.

Summary

In general, the questionnaires are said to be more straightforward and relatively easier to be understood. The concept of three different product classes, which is the main theme of the study, as explained in the introduction of the questionnaire can be understood quite easily by the respondents. Most of the comments made by the respondents and the researcher's own observation have been taken into account in designing the final outlay of the questionnaire, as shown in the Appendix-1. At this stage of the study, it cannot be known for sure whether the range of products covered in the three product classes is the same or not. For example, if the three product classes cover similar range of products in terms of the criteria important to brand identification and selection, then the brand conscious dimension will appear in the profile of consumers' decision-making styles, in all the three product classes. If the three product classes cover different range of products, then the profile of consumers' decision-making styles in each product class may be much different from each other.

In addition, some overlaps of products are expected, as the classification used in this study is conceptual in nature. For example, there is a possibility that the same product may be classified differently by different consumers. For example, a shirt

Perfectionistic, High-Quality Conscious
1. Getting very good quality of products is so important to me.
2. I always go for the best overall quality products.
3. My expectations for products I buy are always high
4. I really don't give much thought on most of my purchase.

Brand Conscious, "Price Equals Quality"
1. I prefer retailer's brands of product (e.g. Asda, Tesco and Littlewoods).
2. The higher the product price, the its quality.
3. I prefer buying products of the best selling brand.
4. I usually choose products of the most advertised brands.

Novelty- Fashion Conscious
1. I always buy new products before my friends do.
2. I am up-to-date with the changing trends of products in the market.
3. Fashionable, attractive styling and appearance is important to me.
4. I like to try new products when they come out in the market.

Recreational, Hedonistic
1. Closeness of location is not important when selecting a place to shop.
2. I usually buy products from catalogues.
3. I enjoy shopping just for the fun of it.
4. Going shopping is just a waste of time.

Price Conscious, "Value for Money"
1. I always make use of special offers (eg. coupons, free gifts and discounts).
2. I take the time to shop carefully for best buys.
3. I prefer shopping at discounts stores.
4. I buy as much as possible at bargain prices.

Impulsive, Careless
1. I usually come home from shopping with more things than I intended to buy.
2. I am impulsive when buying things.
3. I watch carefully how much I spend whenever I shop.
4. I should plan my shopping more carefully than I always do.

Habitual, Brand-Loyal
1. Once I find a brand of product of product I like, I stick with it.
2. I go to the same stores whenever I shop.
3. I regularly change the brands of product I buy.
4. I have favourite brands of products I buy over and over.

**Final Version of the Measurement Variables for each of the Consumers'
Decision-Making Style Dimensions**

Table 5.16

may be classified as a convenience product by a consumer, while another consumers might classify a shirt as a speciality product. The number of overlaps will determine how well this classification distinguishes different products of different product classes. If there is a large number of types of product overlap between the three product classes, then it can be said that the product classification is less effective in segregating the products according to the relevant product classes. In other words, the differences expected in the consumers' decision-making styles across the three product classes will not be illustrated effectively by the convenience, shopping and speciality product classes, if there is a large number of types of product overlap between the three product classes. It is expected that product class to differ based on the different nature of products. Product class represents the variation among products in which psychographic can be applied to it. Consequently, this study tries to test the reliability of decision-making styles over such variation.

5.7. Fieldwork Administration

This study was carried out in the City of Glasgow. The sending, reminding and receiving of the questionnaires will be done by the researcher. In addition, the researcher will also handle any question raised by the respondents by telephone or arranged house visits wherever necessary. The mailing of the questionnaires was done with the help of the University of Strathclyde Mailing Centre, and all the returned mail by the respondents were collected from the Department of Marketing mailbox.

Summary

In this chapter, the research methodology chosen for the study is quantitative research. This is because the nature of the subject, psychographic analysis, is more

appropriate with such approach. Despite that, the qualitative research will still be used at the questionnaire designing stage, in order to ensure it is effective enough to provide the required data for the study. The population of the study is basically consisting of the general consumers residing at the City of Glasgow. For this, the electoral register of the City of Glasgow 11 constituencies will be used as the sampling frame.

The sampling procedure used will be the stratified random sampling, in order to get a better representation of the population over the whole of City of Glasgow. The data will be collected via mail survey as this is the most appropriate method available to the researcher, given the limited resources that are made available to him. Lastly, the designed questionnaire is also presented to show how much changes has been made from the original inventory of item statements used in the study pioneered by Sproles and Kendall (1986).

CHAPTER 6
Data Analysis

6.0. Introduction

The development of the measuring instruments for investigating the psychographic profiles (which consist of individual's scores on series of dimensions) of consumers' decision-making styles has been thoroughly discussed in Chapter Four. This is then followed by the discussion on the research methodology required to pursue this study. In this chapter, this study will proceed with the discussion on the analysis of the data collected from the survey carried out on the targeted sample population. Two hundreds and fifty-nine responses were collected out of the possible 995 questionnaires sent out from a mail survey.

In this chapter, the data collected will first be looked at in terms of the survey response and the demographic characteristics of the respondents who participated in this study. The demographic characteristics of the samples obtained will be analysed in terms of how well they represent the population. Next, the scale used in measuring and obtaining the profiles of consumers' decision-making styles across each product class will be analysed. Here, the issue of validity and reliability of the data obtained from the collected samples will be addressed. Lastly, the performance of the items assigned to measure the dimension of consumers' decision-making styles in their purchase behaviour will be analysed.

6.1. Survey Response

A total of 995 questionnaires were sent out using a mail survey method to the selected samples among the consumers who reside within the City of Glasgow. An

example of the cover letter used enclosed with the questionnaires is shown in Appendix 2. The justification of the samples selection has been earlier discussed in section 5.5.7. in the preceding chapter. Out of the total number of questionnaires, 63 failed to reach the targeted respondents. Among the reasons for this failure are the unknown addressees or addressee has ceased living at that particular address. This left with 932 respondents available to participate in the survey. Within two months time duration, one reminder was sent out on the tenth day after sending out the questionnaires, a total of 259 responses have managed to be collected from the participating respondents. After taking account into those 63 questionnaires that failed to reach the targeted respondents, this gives the response rate of 27.8%. The copy of the reminder letter is shown in Appendix 3.

Researcher	Year	Sample Size	Response Rate	Population
Durvasula et al	1993	210	n.a.	University Students
Hafstrom et al	1992	369	77.5%	University Students
Sproles and Kendall	1986	501	96.2%	High School Students
Moschis	1976	217	53.2%	Mall Shoppers*.

*Questionnaires were distributed to agreed shoppers only

Summary of Sample Size and Response Rate of Similar Studies

Table 6.1

The second reminder, which is planned earlier, might have improved the response rate. However, due to budget constraint, the second reminder is not feasible. Other effort such as visiting the non-response respondents might also increase the response rate, which need to be done to all respondents who did not respond. But again, the cost required for this will be beyond what has been allocated to the researcher. Therefore, given this constraint, the researcher has to be satisfied with the rate of response of 27.8%, achieved after the sending of the first reminder to the respondents. Several disadvantages may be associated with the lower response rate. This includes the reduction of the degree of robustness of the sample, the possibility of losing important information and the possibility of bias between the respondents who responded and those who do not. Besides, the relatively low response rate may reduce the representativeness of the samples in representing the population of study.

Other similar studies conducted earlier in profiling consumers according to their shopping orientation showed the response rate as summarised in Table 6.1. Those earlier studies using the same mail survey method showed that the sample sizes obtained were between 150 to 369 samples. Therefore, the sample size of 259 obtained for this study seems satisfactory.

Literature shows that the response rate of mail survey recorded were between 10 to 50 percent (Harvey 1988). Much higher response rates were achieved by Sproles and Kendall, 1986 (96.2%) and Hafstrom et.al., 1992 (77.5%) as shown in Table 6.1. However, these two cases were exceptional because they were carried out on student samples that seemed more enthusiastic to respond to such studies, compared to a wider spectrum of the general public samples who have differing

interests. Considering that this study deals with the population of general public which are more heterogeneous than university students and no incentive was being offered to respondents, the response rate of 27.8% looks reasonably good.

6.2. Characteristics of the Samples

Before going any further analysing the data provided by the samples, it is important to analyse the demographic characteristics of the samples obtained from the survey. This is to enable the extent of coverage on the targeted population obtained from the samples being acknowledged. This will justify the degree of representativeness of the gathered samples have on the targeted population. This information is important as the findings of the population under study need to be reflected. The analysis will begin by looking at the distribution of the samples according to the locations, age, gender, types of occupation, total household income, household types and household size from where the samples are obtained.

6.2.1. Location Analysis

For this analysis, the whole Glasgow area is divided into five regions. These regions are; Central Glasgow, consisting of the post code number 1, 2, 3, 4 and 5; Northern Glasgow, consisting of the post code number 12, 20, 21, 22, 23, 64 and 69; Western Glasgow, consisting of the post code number 11, 13, 14, 15, 51, 52 and 53; Southern Glasgow, consisting of the post code number 41, 42, 43, 44, 45, 46 and 76; and Eastern Glasgow consisting of the post code number 31, 32, 33, 34 and 40. The summary of the location analysis is shown in Table 6.2. From the summary in Table 6.2, it can be seen that the respondents response rates for all the regions in Glasgow are between 21.7% to 32.2%, with the average response rate of 27.8%.

Area	Post Codes (Number Sent Out)	Sent Out	Returned#	Total Possible Responds	Responded	Response Rate (%)
Central	1 (5), 2*(3), 3 (25), 4 (19), 5 (17).	69	10	59	19	32.2
Northern	12 (30), 20 (53), 21(43), 22 (34), 23 (11), 64*(2), 69 (24).	197	13	184	40	21.7
Western	11 (31), 13(58), 14(26), 15 (33), 51 (37), 52 (50), 53 (47)	282	14	268	86	32.0
Southern	41 (54), 42 (60), 43 (46), 44 (50), 45 (7), 46 (16) 76*(1)	234	10	224	59	26.4
Eastern	40 (22), 31 (45), 32 (65), 33 (57), 34 (24)	213	16	197	55	27.9
Total		**995**	**63**	**932**	**259**	**27.8**

#Returned due to addressee not at the address or unknown
*Zero Response Rate for the Post Code [Only three of the post code area in which no response was received, which consists of six respondents].

Summary of Location Analysis

Table 6.2.

Calculated Chi-square of the difference between the actual number of responds and the expected number of responds (at 27.8% response rate) in all the area is 4.8, which is insignificant at 5% level of significance and degree of freedom of 4 (9.49). This indicates that there is insignificant difference in the respondents' response rate between the entire region in Glasgow. In terms of postcode area, only in three areas which are G2 (Central Region) with three samples, G64 (Northern Region) with

two samples and G76 (Southern Region) with one sample, in which no response being received. Nevertheless, this account for only six samples out of 932 possible responses or 0.6%. Therefore, it can safely be concluded that there is an insignificant bias in term of the response rate of the samples between each region. This indicates that the population under study is well represented by the samples received in term of the samples' location of residents.

6.2.2. Age Analysis.

The age profile of respondents is as shown in Table 6.3. The population covered in this study is all the people who are 18 years old and above in 1997 residing in any one of the City of Glasgow constituencies. The age profiles of the respondents, in percentage, are then compared to the age profiles of the Scotland population taken from the published figure (1995) who are 15 years old and above in the form of percentage.

From the comparison it can be seen that the difference between the percentage of age profiles of the respondents in this study and the percentage of the Scotland population (15 years and above) using the 1993 published figure are between -3.6% and 5.1%, and all the age groups (15 years and above) are represented in this study. Calculated Chi-square is 5.86, which is insignificant at 5% level of significance and degree of freedom of 7 (14.07). Therefore, it can be concluded that in terms of age distributions, the population is well represented by the samples used in this study.

Value Label	Frequency	Percentage	1993 Scotland Population Distribution Percent	Differences
18-19	4	1.6	1.9*	-0.3
20-29	41	16.0	19.6	-3.6
30-44	81	31.6	26.5	5.1
45-59	54	21.1	21.4	-.03
60-64	22	8.6	6.3	2.3
65-74	41	16.0	10.9	5.1
75-84	10	3.9	6.0	-2.1
ABOVE 84	3	1.2	1.8	-0.6
Total	256	100.0		

The Age Profile of the Respondents

Table 6.3

6.2.3. Gender Analysis

The summary of the respondents' gender proportion is shown in Table 6.4. It is shown that the female respondents, which consists of 57.9 percent of the total respondents, are 15.8 percent more than their male counterparts, at 42.1 percent. The Scotland 1993 figure shows that the female population is 3.2 percent more than the male population. Although the magnitude of difference is larger for this study than the 1993 figure, the direction of difference remain the same, that is the female population is more than the male population. Calculated Chi-square is 1.69, which is insignificant at 0.5 level of significance and degree of freedom of 1 (3.84). Therefore the samples that are obtained in this study are representative of the true population gender distribution.

Value Label	Frequency	Percentage	1993 Population
Male	109	42.1	48.4
Female	150	57.9	51.6
Total	259	100.0	

Summary of Gender Distribution

Table 6.4

6.2.4. Income Analysis

The annual income (before tax) of the people in Scotland is approximately £15,000 per year, or £1,250 per month, according to 1992/93 survey. Since this study

Value Label	Frequency	Valid Percent
LESS THAN £500/MTH	64	27.7
£501 - £12501MTH	82	35.5
£1251 - £2000/MTH	38	16.5
£2001 - £2750/MTH	22	9.5
£2751 - £3500/MTH	15	6.5
£3501 - £4250/MTH	9	3.9
£4251 - £5000/MTH	1	0.4
Total	231	100.0

Summary of the Respondents' Before Tax Income

Table 6.5

involved household income instead of individual income, this average is inflated for 60%. This is to take into account for households with more than one-income earners. Therefore, the working average of the annual households' before tax income is approximately £24,000 per year, or £2,000 per month.

The summary of the profile of respondents' income (before tax) is shown in Table 6.5. From here, the average before tax income obtained is £1,588 per month, which is slightly less than the estimated figure of £2,000 per month obtained. However, with this it can still be considered that the respondents income distribution is representative of the population income distribution.

6.2.5. Job Type Analysis

In term of job types, the respondents in this study can be classified as shown in Table 6.6. Basically, there are four non-working groups; housewives, unemployed, students and retirees, and four working groups; lower white-collar workers, higher white-collar workers, lower blue-collar workers and higher blue-collar workers. The lower white-collar group consists of normally lower paid clerical or office worker such as clerks, administrative assistants, sales representatives, teachers, library assistants and bookkeepers. The higher white-collar group consists of higher paid worker such as managers, senior teachers, lecturers and doctors.

On the other hand, lower blue-collar group consists of lower paid technical workers, which includes joiners, nurses, painters, drivers and tugboat operators. Lastly, the upper blue-collar group consists of engineers, interior designers, staff nurses and surveyors. On the whole, it shows that the sample consists of 114 (44.5%)

non-working group and 142 (55.5%) working group. As far as the researcher is aware, there is no published statistics in allocating people according to their job types for the

Value Label	Frequency	Valid Percent
HOUSEWIFE	29	11.3
UNEMPLOYED	18	7.0
STUDENT	17	6.6
RETIRED	50	19.5
WHITE COLLAR LOWER	54	21.1
WHITE COLLAR UPPER	30	11.7
BLUE COLLAR LOWER	47	18.4
BLUE COLLAR UPPER	11	4.3
Total	**259**	**100.0**

Profiles of the Respondents Job Types

Table 6.6

City of Glasgow or Scotland, which is suitable for this purpose. Therefore, no comparison can be made between the job types of the respondents and the whole of City of Glasgow population. From the profiles of the respondents' job types, it can be concluded that the samples obtained represent the population acceptably well.

6.2.6. Household Types Analysis

The types of household from which the respondents come from are also included in this study. Table 6.7 shows the profiles of the household types of the respondents. The majority (43%) of the respondents are married with children, and followed by respondents who are single without children (30.7%). Respondents from both household types account for about 74% of the whole samples. There is no

Value Label	Frequency	Valid Percent
MARRIED WITH CHILDREN	108	43.0
MARRIED WITHOUT CHILDREN	34	13.5
SINGLE WITH CHILDREN	14	5.6
SINGLE WITHOUT CHILDREN	77	30.7
COHABITING COUPLE WITH CHILDREN	4	1.6
COHABITING COUPLE W/O CHILDREN	14	5.6
Total	259	100.0

Profiles of the Respondents Household Type

Table 6.7

published statistic on the population household types for the Glasgow residents to enable any comparison to be made. However, a larger portion of the traditional types of household, married with children and single without children tally with the more conservative type of the majority of the Glasgow people. Therefore, the respondents' household types obtained in this study represent the population of the whole residents of Glasgow.

6.2.7. Total Household Size Analysis

The majority of respondents come from the household size of four or less members, which make up 94.4% of the total respondents. The profiles of the respondents' household size are shown in Table 6.8. Table 6.9 shows the composition of the household size consisting of adult (18 years and above) household members, while Table 6.10 shows the composition of the household size consisting of children (below 18 years) household members. The average household size is the two-member households. This agrees with the typical type of western culture to have smaller size households. The two-member households are mostly consists of married without children's couples, cohabiting couple without children and married couples with empty nest. This is confirmed by both Tables, 6.9 and 6.10 which show that the majority of the respondents come from households of two adult family members (46.8% in Table 6.9), and most of the households are childless household members in them (76.496 in Table 6.10). Therefore, obviously the size of household with two members should be the majority

Number of Member per Household	Frequency	Valid Percent
1	68	27.2
2	83	33.2
3	54	21.6
4	31	12.4
5	2	.8
6	6	2.4
7	3	1.2
8	3	1.2
Total	259	100.0

Profiles of the Respondents Household Size (Total)

Table 6.8

Number of Adult Member per Household	Frequency	Valid Percentage
1	75	30.0
2	117	46.8
3	41	16.4
4	11	4.4
5	2	8
6	4	1.6
Total	259	100.0

Profiles of the Respondents Household Size (Adult 18 years old and above)

Table 6.9

of the whole respondents' household size. There is no available statistics of the Glasgow resident household size that is suitable for this purpose to enable comparison to be made. This in order to justify how well the respondents' household sizes represent

Number of Children Member per Household	Frequency	Valid Percentage
0	191	76.4
1	28	11.2
2	23	9.2
3	4	1.6
4	3	1.2
6	1	.4
Total	**259**	**100.0**

Profiles of the Respondents Household Size (Children less than 18 years old)

Table 6.10

the true population household sizes. From the profile, it can be concluded that the household sizes of the respondents represent the population household sizes for the consumers in Glasgow.

Summary

The analysis on the respondents' demographic characteristics shows that they represent the true population of the whole consumers who are residing in the Glasgow constituencies. The analysis on the respondents' locations of resident, age, gender, job types, total household income before tax, household types and sizes confirmed that the population of Glasgow's consumers is well represented by the respondents participated in this study. Therefore, findings from this study can safely be generalised for all consumers who reside within the Glasgow's constituencies.

6.3. Scale Reliability and Validity

Two things that concern researchers most when dealing with measurements are the reliability and validity of the measuring instruments used to measure research variables. This is more of a problem to the researchers who are dealing with measures of interior attitudes or predisposition such as consumer's personality, buying motives, interests, attitudes, beliefs and values, due to the subjective nature of these variables. A measured value consists of the true value of the characteristics being measured plus measurement error, which is the difference between the measured value and the true value of a characteristic being measured. Tull and Hawkins (1993) have summarised the components of measurements as:

1. True characteristic: direct reflection of the characteristic of interest.

2. Additional stable characteristics of the respondent: reflection of other permanent characteristics, such as social class or intelligence.

3. Short-term characteristics of the respondent: reflection of temporary characteristics, such as hunger, fatigue or anger.

4. Situational characteristics: reflection of the surroundings in which the measurement is taken, such as the present of other people, noise and distractions.

5. Characteristics of the measurement process: reflection of the interviewer, interviewing method and the like.

6. Characteristics of the measuring instrument: reflection of ambiguous or misleading questions.

7. Characteristics of the response process: reflection of mistaken replies caused by checking the wrong response, and the like.

8. Characteristics of the analysis: reflection of mistakes in coding, tabulating, and the like.

(Tull and Hawkins, 1993)

The accuracy of measurement is best illustrated by the True Score Model (Lord and Novick, 1968):

$$X_0 = X_T + X_S + X_R$$

where,

X_0 = the observed score or measurement

X_T = the true score of the characteristic

X_S = systematic error

X_R = random error

The reliability and validity of the scale used in research are vital issues in justifying the usefulness of the findings obtained from the particular study. In this study the reliability and, to some extent, the validity (which is more on the effectiveness) of the scale will be justified in its ability to measure consumers' decision-making styles across different product classes. The scale developed by

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Sproles (1985) and Sproles and Kendall (1986) using the Consumer Styles Inventory had been used to measure and profile consumers according to their decision-making style dimensions.

This measurement scale had also been used by Hafstrom et. al. (1992) on Korean university students and by Durvasula et. al. (1993) on New Zealand university students. Both studies found that the scale is consistent with the findings by Sproles (1985) and Sproles and Kendall (1986) earlier studies, which also used student samples. All these studies used student samples and in a general product category basis, that is without giving any emphasis on the product class effects on consumers' decision-making styles. Therefore, the scale reliability on a more heterogeneous sample and a more specific product class still remained to be tested. Therefore in this study, the sample from the general public is used and the scale is tested on the three product classes; convenience, shopping and speciality product classes.

To test for the scale validity and reliability across the product classes, the Sproles (1985) and Sproles and Kendall (1986) Consumer Styles Inventory were used with some modifications to suit the Glaswegian consumers. To get a better mixed of items, some items used by Lesser and Hughes (1986) are also taken for this study. The items selected from Lesser and Hughes (1986) are those which complements with those of Sproles (1985) and Sproles and Kendall (1986) Consumer Styles Inventory. The development of this scale has been thoroughly discussed earlier in both Chapter Four and Five.

The scales of measurement will initially be analysed in two stages. First, the validity of the scales will be analysed in two ways. Firstly is by looking at the exploratory factor solution of the scales across product classes. For this, the measurement scales are then factor analysed without prior allocation of the three product classes. In other words, the measurement scales are let free to load on any common factor. If the scales allocated to a particular dimension load significantly on a common factor, then it can be said that those scales are valid items for that particular dimension. Secondly, the correlation coefficients among those item statements used to measure each particular dimension of the consumers' decision-making styles will be analysed.

Then, the reliability of the measuring scales will be analysed by looking at the scale performance of those item statements at the product class stage. That is the performance of the item statements used to measure consumers' decision-making styles in their purchase behaviour will be analysed separately for each product class. This is the initial step required in the process of developing the profiles of consumers' decision-making style dimensions. This is done by looking at the reliability coefficients of the item statements used to measure the decision-making style dimensions. The types of validity will be discussed first prior to analysing the validity of the item statements.

6.3.1. Analysing the Validity of the Items.

Validity, according to Churchill (1995), is the term applied to;

> measuring instruments reflecting the extent to which differences in scores on the measurement reflect true differences among individuals, groups, or situations in the characteristic that it seeks to measure, or reflect true differences in the same individual, group, or situation from one occasion to another, rather than constant or random errors.

(Churchill, 1995)

Technically, validity can be defined as the extent to which measures are free from error, that is, $Xs = 0$ in the True Score Model (Lord and Novick, 1968); if $Xo = X_T + X_R$, the measure is perfectly valid (Malhotra, 1993).

6.3.2.1. Types of Validity

Validity can be viewed in three basic types; content validity, construct validity and criterion-related validity, which consist of predictive validity and concurrent validity (Tull and Hawkins, 1993).

6.3.2.1.1. Content Validity

Content validity is a type of validity which consists of a subjective but systematic evaluation of the representativeness of the content of a scale for the measuring task at hand (Malhotra, 1993). This type of validity is also known as face validity. For this study, this type of validity applies to the set of indicator variables, consisting of psychographic item statements, intended to measure each of the consumers decision-making styles dimension (construct). This set of indicator variables is said to be content valid if it can really indicate the intended dimension of consumers' decision-making styles.

This is justified by looking at the suitability of the particular statement to the intended dimension. For example, statement 'I am impulsive when buying things' is most suitable for measuring the Impulsive and Careless dimension than any other dimensions. Therefore, the inclusion of this statement will most likely improve the content validity of the set of indicator variables intended to measure the Impulsive and Careless dimension. The justification of the selection of item statements to be included in the sets of scales intended to measure a construct that is content valid is very much subjective in nature. As for this study, the experience from previous relevant studies and the finding from the piloting of the proposed questionnaires will be used as the basis for justification.

6.3.2.1.2. Construct Validity

Construct Validity is the approach to validating a measure by determining what construct, concept, or trait the instrument is in fact measuring. (Churchill, 1995). Construct validity can further be divided into convergent validity, discriminant validity and nomological validity. Convergent validity ensures that a measure correlates positively with another measures of the same construct. Discriminant validity ensures that a measure does not correlate (highly) with theoretically unrelated construct. Nomological validity ensures that a measure correlates in the theoretically predicted way with measures of different but related constructs (Tull and Hawkins, 1993).

Very few studies are published on the validity issue of psychographic profiling. A review by Lastovicka (1982) indicated that:

Despite the popularity of lifestyle research, only 14 studies were found to examine factor and trait validity. Only four of these studies considered measurement and concept validity as main topics.

(Lastovicka, 1982)

Among few studies, Pessemier and Bruno (1971) have provided some evidence on construct validity based on "the fact that similar factors did indeed emerged when similar sets of items were answered by independent samples of respondents, provides some assurance that individual psychographic items tend to relate to each other in consistent ways." Wells, 1975 study has also looked into the validity of psychographic profiling. First he looked at construct validity (which is more appropriate to be termed as convergent and discriminant validity) (Churchill, 1995), which shows how a measurement indicates that a variable relates to another variable/s where they should be related and a variable does not relate to another variable/s where they should not be. Based on the evidence that internal consistency was found in the psychographic and demographic variables, he concluded that psychographic profiles have some degree of construct validity (convergent and discriminant validity).

6.3.2.1.3. Criterion Validity

Criterion Validity reflects whether a scale performs as expected in relation to other variables selected (criterion variables) as meaningful criteria and based on the time period involved, it can take in the forms of concurrent and predictive validity (Malhotra, 1993). Concurrent validity is the extent to which one measure of a variable can be used to estimate an individual's current score on a different measure of the same, or closely related, variable (Tull and Hawkins, 1993).

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Predictive validity is the extent to which an individual's future level on some variable can be predicted by his or her performance on a current measurement of the same or a different variable (Tull and Hawkins, 1993). In summary, these validity requirements are mostly subjective in nature. Therefore, they require justification to be made based on the experience and knowledge of the researcher on the topic under study. One of the ways available to the researcher is to refer to the experience from those relevant studies conducted earlier as the basis for justifications.

6.3.2.2. Validity Analysis Using Exploratory Factor Solution

At this stage of analysis, the averages of the scores of the items under each decision-making style dimension are taken as the score for each dimension in each product class. Prior to this, the scores of the negative items statements are reversed to make sure that the averages are calculated based on the absolute values of those items. These scores which are treated as the score for each dimension of the consumers' decision-making styles are then factor analysed. This is to see whether the same dimension of the consumers' decision-making styles in each product class is grouped under one common factor in the factor solution.

The method used to factor analysed these dimensions are the principle component factor extraction with varimax rotation and using the eight factor solutions. This method is used here because it is the same method used in the item analysis stage in those earlier studies by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al (1992) and Durvasula et. al. (1993). Therefore, to make comparison possible for this study with those earlier studies, it will be better to conform to the similar method used by those researchers in the earlier studies. The factor analysis solution of the consumers' decision-making style dimensions (based on the factor

loadings of 0.5 and above) is shown in Table 6.11. The full factor solution is shown in the Appendix 2.

In this table, each factor will be treated as the dimension of the consumers' decision-making styles and the variables from the three product classes that have high factor loading on each factor measures this particular dimension. If the variables from each product class; convenience, shopping and speciality which measure the common dimension of the consumers' decision-making styles conforms to one common factor of the factor analysis solution, then it can be said that those variables are measuring the same dimension of the consumers' decision-making styles. This provides some evidence of construct validity for those variables used to measure the particular dimension of consumers' decision-making styles in each product class.

From table 6.11, it can be seen that the same dimension from the three product classes appears under the same factor group from the factor analysis solution. The factor loading for the dimensions from the three product classes are between 0.46 and 0.88, with 83% of the loading are 0.75 and above. This indicates that the items of each dimension, in average, measure the same dimension in the three product classes, with the slight exception of the Habitual, Brand-Loyal (Convenience) which loads slightly higher on the Perfectionistic dimension (0.52) as against to the Habitual, Brand-Loyal dimension (0.46). In other words, on average, the scales which use the items to measure each dimension of the consumers' decision-making styles for the three product classes provide some evidence of construct validity.

Dimension	Factor Loading
Factor 1	
1. Novelty-Fashion Conscious (Speciality)	0.87
2. Novelty-Fashion Conscious (Shopping)	0.85
3. Novelty-Fashion Conscious (Convenience)	0.72
Factor 2	
1. Price Conscious, "Value for Money" (Convenience)	0.87
2. Price Conscious, "Value for Money" (Shopping)	0.84
3. Price Conscious, "Value for Money" (Speciality)	0.81
Factor 3	
1. Confused by Overchoice (Speciality)	0.88
2. Confused by Overchoice (Shopping)	0.87
3. Confused by Overchoice (Convenience)	0.79
Factor 4	
1. Brand Conscious, "Price = Quality" (Shopping)	0.83
2. Brand Conscious, "Price = Quality" (Convenience)	0.83
3. Brand Conscious, "Price = Quality" (Speciality)	0.78
Factor 5	
1. Perfectionistic, High-Quality Conscious (Shopping)	0.85
2. Perfectionistic, High-Quality Conscious (Convenience)	0.71
3. Perfectionistic, High-Quality Conscious (Speciality)	0.65
Factor 6	
1. Recreational, Hedonistic (Shopping)	0.83
2. Recreational, Hedonistic (Speciality)	0.81
3. Recreational, Hedonistic (Convenience)	0.75
Factor 7	
1. Impulsive, Careless (Shopping)	0.80
2. Impulsive, Careless (Speciality)	0.76
3. Impulsive, Careless (Convenience)	0.76
	Cont

Factor 8	
1. Habitual, Brand-Loyal (Shopping)	0.87
2. Habitual, Brand-Loyal (Speciality)	0.81
3. Habitual, Brand-Loyal (Convenience)	0.46*

(Total Variance Explained By The Eight Factors = 73.8)
*Habitual, Brand-Loyal (Convenience) loads 0.52 on the Factor 5.

Factor Solution of the Consumers' Decision-Making Dimensions

Table 6.11

In a more specific definition, the items used to measure the same construct (dimension) of consumers' decision-making styles, in average, did measure the same construct in the three product classes. Therefore, it can be said that the scale of measurement used to measure the consumers' decision-making styles have the evidence of construct validity. This has been expressed by Kaplan and Saccuzo (1997), that evidence of construct validity shows that measures of the same construct 'converge', or narrow in, on the same construct, which is intended to be measured.

The situation is similar as in this study because from the factor analysis solution of the consumers' decision-making styles dimension, the measuring scales which consist of the items intended to measure the particular dimension of the consumers' decision-making styles appear to measure the same dimension in each product class. It is suggested in the literature that construct validity is the major category of validity that should be concerned in a research (Churchill, 1995: Peter, 1981). Therefore, it is safe for us to say that the measuring scales used to measure the consumers' decision-making styles in this study are sufficient in terms of their validity because to some extent, they are proven to be construct valid.

6.3.2.3. Validity Analysis Using Correlation Coefficient

Besides looking at the factor analysis solution of the dimensions of consumers' decision-making styles, the validity of the measuring scales is also need to be investigated. This can be done by assessing the correlation among the items, which are assigned to measure the particular dimension of the consumers' decision-making styles. Those items that correlate well among each other in measuring a latent dimension to some extent may be considered as the content valid measuring scale for that dimension.

The Spearman Correlation Coefficient is more appropriate to be used for ordinal data such as those data, which deals with ranking of choice, by the respondents. Therefore for this purpose, the Spearman Correlation Coefficient will be used because in this study, the data which are dealt with involved ranking of choice by the respondents. The correlation coefficients of the items used to measure all the consumers' decision-making style dimensions are shown in Table 6.12 to Table 6.19.

6.3.2.3.1. Perfectionistic Dimension

In this dimension, all items correlate significantly among each other in all the three product classes. On average (based on the Root Mean Square of the correlations), items in the speciality product class has the highest correlation coefficient (0.32) followed by items in the shopping product class (0.30) and items in the convenience product class (0.25), as shown in Table 6.12. The negative

Correlation of Item Pairs	Convenience	Shopping	Speciality
1/13	.35*	.41*	.46*
1/24	.18*	.22*	.30*
1/31	-.13*	-.16*	-.25*
13/24	.36*	.39*	.41*
13/31	-.18*	-.21*	-.22*
24/31	-.17*	-.32*	-.17*
Root Mean Square	**.25**	**.30**	**.32**

* Significant at .5%

Correlation Among Items of the Perfectionistic Dimension

Table 6.12

correlation coefficients between item 31 (I really don't give much thought on most of my purchase) with other items of the Perfectionistic dimension are as expected. From this analysis, it can be concluded that on average, all the four items have construct validity in measuring the Perfectionistic dimension.

6.3.2.3.2. Brand Conscious Dimension

For the Brand Conscious dimension, different performance is obtained in terms of the correlation among the items. Item 5 [I prefer retailer's brands of product (eg. Asda, Tesco and Littlewoods)] does not seems to correlate well with other items especially in the convenience and speciality product classes. In the shopping product class, this item correlates significantly well with item 28.

Correlation of Item Pairs	Convenience	Shopping	Speciality
5/16	.07	-.03	-.05
5/28	-.05	.22*	.11
5/30	-.09	-.16*	.08
16/28	.26*	.31*	.29*
16/30	.34*	.34*	.38*
28/30	.48*	.54*	.51*
Root Mean Square	**.27**	**.31**	**.29**

* Significant at .5%

Correlation Among Items of the Brand Conscious Dimension

Table 6.13

On the contrary, Item 5 correlates significantly well with the item 30, but negatively, which should not be the case. The other three items correlate significantly well among each other, as shown in Table 6.13. On average (based on the Root Mean Square of the correlations), all the items correlate well among each other. From Table 6.14, it can be seen that the average correlation coefficients are the highest for the shopping product class (0.31) followed by the speciality product class (0.29) and the convenience product class (0.27). Therefore, it can be said that on average, all the items have construct validity in measuring the Brand Conscious dimension.

6.3.2.3.3. Novelty-Fashion Conscious Dimension

In this Novelty-Fashion Conscious dimension, all the items correlate significantly among each other for the three product classes. On average (based on the Root Mean Square of the correlations), items in the shopping product class have a higher correlation coefficient (0.29) followed by items in the speciality product class (0.26) and items in the convenience product class (0.23), as shown in Table 6.14.

From this analysis, it can be concluded that on average, all the four items have construct validity in measuring this dimension.

Correlation of Item Pairs	Convenience	Shopping	Speciality
4/17	.22*	.22*	.25*
4/20	.23*	.26*	.22*
4/29	.21*	.30*	.26*
17/20	.27*	.33*	.33*
17/29	.21*	.34*	.24*
20/29	.25*	.28*	.27*
Root Mean Square	**.23**	**.29**	**.26**

*   Significant at .5%

Correlation Among Items of the Novelty-Fashion Conscious Dimension

Table 6.14

6.3.2.3.4. Recreational and Hedonistic Dimension

For this dimension, the majority of the items do not correlate well among all the four items. As shown in Table 6.16 all of the correlation coefficients achieved are between 0.0 to 0.18. Only seven out of 18 (40%) of the correlations are significant. On average, the items in all the product classes show low correlation coefficients. As shown in Table 6.15, on average, the convenience product class have slightly higher correlation coefficient (0.12) followed by items in the speciality product class (0.11) and items in the shopping product class (0.11). For the Recreational and Hedonistic dimension, it is expected that item 18 (I usually buy products from catalogues) should correlate negatively with item 8 (Closeness of location is not important when

Correlation of Item Pairs	Convenience	Shopping	Speciality
8/18	.03	.13*	-.01
8/22	.12	.04	.16*
8/32	-.12	.00	-.01*
18/22	.17*	.12	.19*
18/32	.08	.02	.08
22/32	-.14*	-.18*	-.10
Root Mean Square	**.12**	**.11**	**.11**

*   Significant at .5%

Correlation Among Items of the Recreational and Hedonistic Dimension

Table 6.15

selecting a place to shop) and item 22 (I enjoy shopping just for the fun of it). Item 32 (Going shopping is just a waste of time) is also expected to correlate negatively with item 8 and item 22 of this dimension, and correlate positively with item 18. From Table 6.15, it can be seen that not all of these expectations are being reflected by the correlation coefficients. Therefore, from this analysis it can be said that the four items assigned to measure this dimension have low construct validity.

6.3.2.3.5. Price-Value Conscious Dimension

In the Price Conscious dimension, almost all of the items correlate significantly among each other in all the three product classes. The only exception is the correlation between variables 12 and 21 in the shopping product class. On average (based on the Root Mean Square of the correlations), items in the convenience product class have higher correlation coefficient (0.36) followed by items in the speciality product class (0.34) and items in the shopping product class (0.28), as

shown in Table 6.16. From this analysis, it can be concluded that on average, all the four items have construct validity in measuring the Price Conscious dimension.

Correlation of Item Pairs	Convenience	Shopping	Speciality
3/12	.36*	.38*	.31*
3/14	.24*	.27*	.40*
3/21	.38*	.27*	.38*
12/14	.26*	.13*	.18*
12/21	.38*	.10	.15*
14/21	.49*	.41*	.50*
Root Mean Square	**.36**	**.28**	**.34**

* Significant at .5%

Correlation Among Items of the Price Conscious Dimension

Table 6.16

6.3.2.3.6. Impulsive and Careless Dimension

In the Impulsive and Careless dimension, almost all of the items correlate significantly among each other in all the three product classes, except for some of those negative correlations. Those negative correlations which are insignificant are the correlations between items 19 and 26 in convenience product class, 7 and 19, and 19 and 26 in both shopping and speciality product class, shown in Table 6.17. On average (based on the Root Mean Square of the correlations), items in both the convenience and the shopping product classes have slightly higher correlation coefficient (0.29) followed by the item in the speciality product class (0.28), as shown in Table 6.17. It is expected that item 19 (I watch carefully how much I spend

Correlation of Item Pairs	Convenience	Shopping	Speciality
7/15	.34*	.47*	.50*
7/19	-.28*	-.11	-.12
7/26	.33*	.28*	.25*
15/19	-.35*	-.23*	-.16*
15/26	.24*	.35*	.33*
19/26	-.12	-.02	-.07
Root Mean Square	**.29**	**.29**	**.28**

* Significant at .5%

Correlation Among Items of the Impulsive and Careless Dimension

Table 6.17

whenever I shop) to correlate negatively with other items of the Impulsive and Careless dimension. From this analysis, it can be concluded that on average, all the four items have construct validity in measuring the Price Conscious dimension.

6.3.2.3.7. Confused by Overchoice Dimension

In the Confused by Overchoice dimension, all the items correlate significantly well among each other in all the three product classes. On average (based on the Root Mean Square of the correlations), items in the speciality product class have the highest correlation coefficient (0.43) followed by items in the shopping product class (0.42) and items in the convenience product class (0.30), as shown in Table 6.18. From this analysis, it can be concluded that on average, all the four items have construct validity in measuring this Confused by Overchoice dimension.

Correlation of Item Pairs	Convenience	Shopping	Speciality
2/6	.36*	.47*	.53*
2/10	.25*	.26*	.27*
2/23	.29*	.52*	.48*
6/10	.27*	.31*	.38*
6/23	.51*	.57*	.55*
10/23	.30*	.30*	.28*
Root Mean Square	**.34**	**.42**	**.43**

* Significant at .5%

Correlation Among Items of the Confused by Overchoice Dimension

Table 6.18

6.3.2.3.8. Habitual and Brand-Loyal Dimension

In the Habitual and Brand-Loyal dimension, almost all the measurement variables correlate significantly among each other in all the three product classes, except for a couple of those negative correlations. Those negative correlations, which are insignificant, are the correlations between items 11 and 25, and 25 and 27, both in the speciality product class, shown in Table 6.19. On average (based on the Root Mean Square of the correlations), items in both the shopping and speciality product classes have higher correlation coefficients (0.32) followed by item in the convenience product class (0.30) as shown in Table 6.19. It is expected that item 25 (I regularly change the brands of product I buy) to correlate negatively with other items of the Habitual and Brand-Loyal dimension. From this analysis, it can be concluded that on average, all the four items have construct validity in measuring the Price Conscious dimension.

Correlation of Item Pairs	Convenience	Shopping	Speciality
9/11	.27*	.36*	.44*
9/25	-.35*	-.23*	-.19*
9/27	.41*	.55*	.46*
11/25	-.26*	-.18*	-.04
11/27	.24*	.27*	.39*
25/27	-.24*	-.17*	-.03
Root Mean Square	.30	.32	.32

* Significant at .5%

Correlation Among Items of the Habitual and Brand-Loyal Dimension

Table 6.19

Summary

On the whole, the items used to measure each of the eight dimensions of consumers' decision-making style dimensions correlate well among each other in this study. The exception is for Dimension 4 (Recreational and Hedonistic dimension), where the correlation coefficients between the four items used to measure this dimension are relatively low, which are between 0.11 to 0.12. For the rest of the consumers' decision-making style dimensions, the correlation coefficients among their items range between 0.23 and 0.43.

Here, it can be concluded that the correlation coefficients of those items intended to measure each of the consumers' decision-making style dimensions show some evidence of content validity. The exception is for those items intended to measure the Recreational and Hedonistic dimensions. After studying the correlation coefficients of the items for dimensions of consumers' decision-making styles, this

study will proceed to investigate the resulting profiles of these dimensions across the three product classes.

6.3.2. Analysing the Reliability of the Measurement Scales

Technically, reliability can be defined as the extent to which measures are free from random error, that is, X_R in the True Score Model (Lord and Novick, 1968); if $X_R = 0$, the measure is perfectly reliable (Malhotra, 1993). A reliable measure will yield the same finding on repeated occasions if the phenomenon has not changed (Burns and Harrison, 1979).

Dimension	Convenience	Shopping	Speciality
1. Perfectionistic	0.57	0.60	0.54
2. Brand Conscious	0.41	0.53	0.54
3. Novelty-Fashion Conscious	0.56	0.63	0.61
4. Recreational and Hedonistic	0.19	0.02	0.13
5. Price Conscious	0.34	0.60	0.60
6. Impulsive and Careless	0.61	0.54	0.56
7. Confused by Overchoice	0.67	0.72	0.75
8. Habitual and Brand-Loyal	0.58	0.61	0.58

Summary of the Reliability Coefficients of the Dimensions for Each Product Class, of the Original Measurement Model

Table 6.20

For the purpose of this study, the Cronbach's alpha reliability coefficient (Cronbach, 1951) is used to measure the reliability of items used to measure the dimensions of consumers' decision-making styles. This is chosen because the coefficient alpha by Cronbach is the most general case of internal consistency reliability (Kaplan and Saccuzzo, 1997). The "coefficient alpha would be the correct measure of reliability for any type of item" (Nunnally, 1978). The result of the analysis done on the items of consumers' decision-making styles shows that the reliability coefficients (alpha) for each decision-making dimension range between 0.75 to as low as 0.02. To improve this low reliability, it is suggested that the number of items to be increased and to delete the items that reduced the reliability (Kaplan and Saccuzzo, 1997).

The finding from the analysis also suggested the some of the items need to be deleted in order to improve the reliability coefficients to a more acceptable level (0.6 or better). The summary of the reliability coefficients of the eight dimensions for each product class is as per Table 6.20.

6.3.3. Improving the Reliability of the Original Model

For the First Dimension, it is shown that by deleting item 31 "I really don't give much thought on most of my purchase (negative) " the reliability coefficients can be improved for the Convenience Product Class (from 0.57 to 0.60) for the Shopping Product Class (from 0.60 to 0.61) and for the Speciality Product Class (from 0.54 to 0.56)". For the Second Dimension, item 5 "I prefer retailer's brands of products (eg. Asda. Tesco and Littlewoods)" needs to be deleted in order to improve the reliability coefficients for the Convenience Product Class (from 0.41 to 0.59). for the Shopping

Product Class (from 0.53 to 0.67) and for the Speciality Product Class (from 0.54 to 0.66).

For the Third Dimension, no change is required because deleting any of the items cannot improve the reliability coefficients of any product class, although the one for the Convenience Product Class is still below the 0.6 level (0.56). For the Forth Dimension, the reliability coefficients are very low for the three product classes, (convenience 0.19, shopping 0.02, and speciality 0.13). Therefore, it is better to delete this dimension totally. For the Fifth Dimension, the reliability coefficient for the Convenience Product Class can be improved by deleting item 21 "I buy as much as possible at bargain prices", from 0.34 to 0.56. No changes required for the other two product classes as the reliability coefficients are good enough.

For the Sixth Dimension, the reliability coefficient for the Convenience Product Class is sufficient at 0.61. However, the reliability coefficients for the Shopping Product Class can be improved from 0.54 to 0.62, and for the Speciality Product Class from 0.56 to 0.63 by deleting item 19 "I watch carefully how much I spend whenever I shop (negative)". For the Seventh Dimension, the reliability coefficients for all the three product classes are sufficiently good; convenience Product Class 0.67, Shopping Product Class 0.72, and Speciality Product Class 0.75. Therefore, no change is required.

For the Eighth Dimension, the reliability coefficient for the Convenience Product Class at 0.58 cannot be improved. However, the reliability coefficients for the Shopping Product Class can be improved from 0.61 to 0.64, and for the Speciality

Product Class from 0.58 to 0.69 by deleting item 25 "I regularly change the brands of product I buy"(negative).

Dimension	Convenience	Shopping	Speciality
1. Perfectionistic	0.60	0.61	0.56
2. Brand Conscious	0.59	0.67	0.66
3. Novelty-Fashion Conscious	0.56	0.63	0.61
5. Price Conscious	0.55	0.60	0.71
6. Impulsive and Careless	0.61	0.62	0.63
7. Confused by Overchoice	0.67	0.75	0.75
8. Habitual and Brand-Loyal	0.58	0.64	0.69

*The Recreational and Hedonistic Dimension is suggested to be deleted in the Improved Version of the Original Measurement Model

Summary of the Reliability Coefficients of the Dimensions for Each Product Class, of the Improved Version of the Original Measurement Model

Table 6.21

These suggestions for the deletion of some of the items are recommended for future research which are relevant to this study. As for this study, the data will be further analysed using other method, such as the confirmatory factor analysis of the structural equation modeling, before any changes can be made on the development of the measurement model for this study. This is done in Chapter Four of this study. The summary of improvement on the alpha coefficient of reliability is shown in Table 6.21.

Summary

On the whole, those sets of items can be considered as reliable to be used in measuring each of the consumers' decision-making style dimensions, except for the set of items intended to measure the fourth dimension (Recreational and Hedonistic). This set of items which reliability coefficients are between 0.02 to 0.19, are relatively low in order to be considered as a set of reliable items.

For the rest of the dimensions, the reliability coefficients of the sets of item range between 0.34 to 0.75, with the root mean square of the reliability coefficients of 0.55. These sets of items for the dimensions can be improved to between 0.56 to 0.75 by deleting some of the items that contribute to the low reliability coefficients of the sets of items assigned to measure those consumers' decision-making style dimensions. After taking into account the suggestions to improve the reliability by deleting some of the items, the reliability coefficients of the sets of items have improved to a range of between 0.56 to 0.75, with the root mean square of the reliability coefficient of 0.63.

It is suggested that for the purpose of basic analysis the Cronbach's alpha should be at least 0.70 (Benardi, 1994). Nevertheless, this depends very much on the nature of the study such as the type of sample used. It can be expected that the coefficient alpha to be lower than if the samples are taken from the more homogeneous nature.

Reliability was found to be dependent on sample heterogeneity (Lehman, 1985; Anastasi, 1982). Therefore, it is inappropriate to quote the reliability coefficient achieved in the experiment using university student samples with the study using general public samples, as the case for this study. This is because student samples are

less heterogeneous than samples from general public. It is expected that samples which are more heterogeneous should show relatively lower reliability coefficient than the more homogeneous samples. Therefore, the level of reliability achieved by the set of items used to measure each of the consumers' decision-making styles in this study may be considered as acceptable. The only exception for the forth dimension (Recreational and Hedonistic dimension) whereby the reliability coefficients of the set of its items are between 0.02 to 0.19.

From the product class point of view, it can be seen that there are some differences between the three product classes, in terms of the correlation coefficients of the items, as well as the root mean squares of each dimension. This indicates that the consumers' decision-making style dimensions, to some extent, are different between each product class. These differences will be discussed in more detail in the next chapter when special emphasis will be given to study the differences of consumers' decision-making style dimensions across the three product classes.

From the preceding discussions, the validity and the reliability of the items used to measure those dimensions of consumers' decision-making style have been investigated and satisfied. Having discussed the issues of validity and reliability of the sets of items used to measure the dimensions of consumers' decision-making styles, this study will proceed by analysing the profiles of consumers' decision-making styles in their purchase behaviour, across the three product classes.

CHAPTER 7

Confirmation of the Measurement Model

7.0. Introduction

In Chapter Four, the measurement model for this study has been developed. The measurement variables for the model were adopted from previous study by Sproles and Kendall (1986) in addition to the measurement variables adopted from Lesser and Hughes (1986) study. This measurement model was developed for the purpose of data collection.

The objective of this chapter is to provide necessary modifications to the proposed measurement model (the measurement model developed earlier in Chapter Four) in the effort to develop a measurement model more suitable to the data obtained in this study. This is to ensure that the construct validity of the measurement model is well enhanced for the observed data. It will be started by analysing the fit of the suggested model developed earlier in this chapter using the data obtained from the survey. This is in line with the common practice employed by most of the researchers using this method as mentioned by MacCallum (1995).

7.1. Confirmation of the Proposed Measurement Model

In this study, a factor analytic model will be used to measure consumers' decision-making style dimensions. The accuracy of the measurement for these dimensions (latent variables) relies heavily on the ability of the measurement variables (measured variables) to measure these dimensions. In other words, the accuracy of the measurement of the consumers' decision-making style dimensions depends on the construct validity of the measurement provided by the measurement

variables for the dimensions they are intended to measure. In order to know the extent to which these measurement variables is able to provide the valid measurements of the dimensions, the measurement of the model fit needs to be tested using the available observed data. Therefore at this stage, the proposed measurement model which has been developed after the process of piloting the questionnaire, will be tested.

For this reason, the confirmatory factor analysis technique from the structural equation modeling method needs to be used. This method is chosen because structural equation modeling is a statistical method that enables hypothesis testing be done in multivariate analyses (Bentler, 1983). The structural equation modelling method is the most appropriate method for this purpose because it enables the testing of hypothesis on the existence of linkages between measured variables and latent variables be made.

As mentioned by Hoyle (1995), structural equation modeling is a comprehensive statistical approach to testing hypotheses about relations among measured and latent variables. It is widely used in dealing with factor analytic model, especially the confirmatory factor analysis technique. Therefore, this structural equation modeling method is chosen here because it suits the purpose of testing the construct validity of the measurement model adopted from the Sproles (1985) and Sproles and Kendall's (1986) studies to the data collected in this study.

To enable us to use the structural equation modeling technique, the proposed measurement model needs to be transformed into a model format that follows the structural equation modeling convention. Algebraically the model can be illustrated as;

$$MVij = *aLVj + Ei,$$

Where,

MV = measured variable

LV = latent variable

E = error term

i = the number of MV intended to measure the jth LV

j = the number of LV, among the eight LV suggested by Sproles and Kendall (1986)

* = the free parameter to be estimated, which are the factor loading

a = the proposed starting value of the free parameter

This model can also be presented graphically, as shown in Figure 7.1., following the structural equation modeling convention. The ellipses components refer to latent (unmeasured) variables, which are independent variables in this model. The rectangular components refer to observed (measured) variables, which are dependent variables in this model, while the E's refers to errors in predicting the observed variables (V's). The one-way arrows indicate the impact of one component onto the pointed components.

As for the measurement model in this study, following the convention specified in Figure 7.1, the ellipse components refer to consumers' decision-making
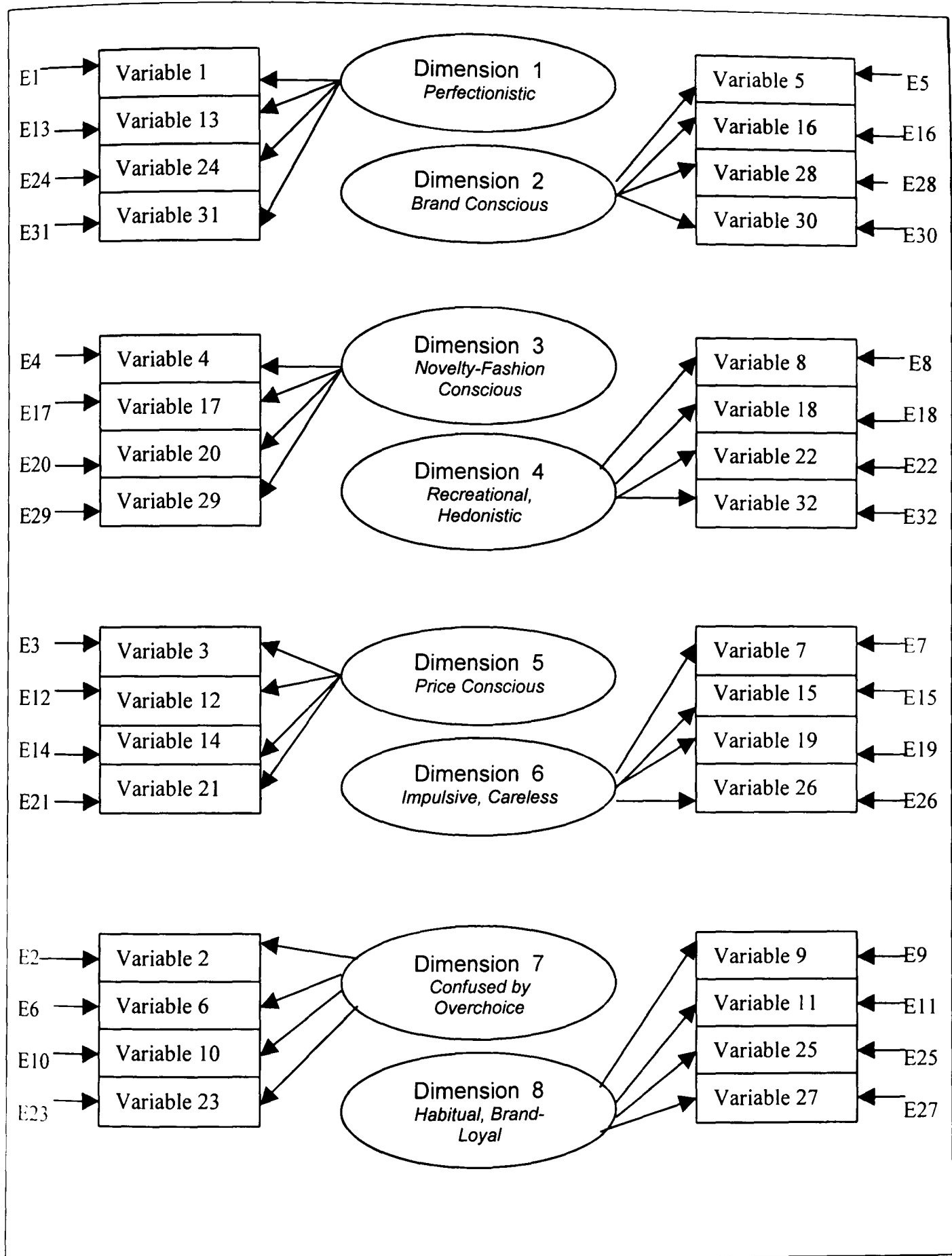
The Proposed Measurement Model for Consumers' Decision-Making Style Dimensions

Figure 7.1

style dimensions. While, the rectangular components refer to measurement variable statements and the error terms are indicated by E. The number assigned to each measurement variable and error term indicates the listing of the variables in the questionnaire. For example, Variable 24 is listed as the twenty-fourth variable statement in the questionnaire. In this case, the one-way arrows between the oval components and the rectangular components indicate the factor loading of the rectangular components on the ellipses components. While, the one-way arrows between the rectangular components and the E's refer to the error-variable covariance.

The purpose of this test is to investigate how well the proposed or hypothesised measurement model fits the available observed data. A model is said to fit the available data to the extent that the covariance matrix it implies is equivalent to the observed covariance matrix (Hoyle, 1995). In other words, the model is said to fit the data well if the residual matrix between the implied covariance matrix and the observed covariance matrix approaches zero. This can be illustrated as;

$$S(\Phi) = \Sigma(\Phi) + E(\Phi)$$

Where;

$S(\Phi)$ is the observed covariance matrix

$\Sigma(\Phi)$ is the implied covariance matrix

$E(\Phi)$ is the error covariance matrix

(Φ) is the covariance matrix

Here it can be seen that if the $E(\Phi)$ approaches 0, $S(\Phi)$ and $\Sigma(\Phi)$ will be approaching equality. In other words, the more the $E(\Phi)$ approaches zero, the better will the implied model fit the observed data.

This proposed measurement model needs to be tested by using the available observed data in order to know the extent to which it fits the available data. This needs to be done before it can be used for further analysis on investigating the product class effects on consumers' decision-making style dimensions. The tested measurement model will also be used as the basis for investigating the effect of selected demographic variables; consumers age, household sizes, job types, incomes, marital status, existence of children in households and gender on consumers' decision-making style dimensions across product classes. Therefore, it is important to ensure that the measurement model has an acceptable fit to the obtained data before it can be used for further analyses in this study.

The measurement variable will then be tested on its fitness to the data collected in order to ensure its construct validity in measuring the dimensions of consumers' decision-making styles. For this, an optimum balance between considerable model fit and the underlying theoretical foundations needs to be developed. After achieving the best model that has a considerable fit to the proposed model without significantly violating the underlying theoretical foundation, then only the structural model will be developed. This structural model is developed to investigate the relationships between dimensions, which is assumed to be orthogonal in all the previous studies cited.

The measurement model, with necessary modifications, will be used as the basis for the following analyses:

Analysis A – to investigate the consistency of the profiles of consumers' decision-making style dimensions across the convenience, shopping and speciality product class.

Analysis B – to investigate the structural relationships between the consumers' decision-making style dimensions.

Analysis C – to investigate the effect of selected demographic variables; consumers' age, household sizes, job types, incomes, marital status, existence of child in households and gender on the psychographic profiles of consumers' decision-making styles in each product class.

Analysis D – to investigate the product class effects within each of the selected demographic variables; consumers' age, household sizes, job types, incomes, marital status, existence of child in households and gender in each of the consumers' decision-making style dimensions.

Besides those analyses listed above, this measurement model can also be used for further validation of the consumers' decision-making style dimensions using the new set of data. The validation of a regenerated model is strongly suggested by MacCallum (1995) in order to give more substantive meaning to the parameters estimated using this model. However, this validation exercise is beyond the scope of this study due to the limitation of resources available for this study.

For each product class, the measurement model will consist of eight latent variables, each will be measured by four measurement variables, which are also considered as the indicators for the latent variables. According to MacCallum (1995), the free parameters that need to be estimated must be less than the total number of variances and covariances in a particular structural equation model. The number of variances and covariances is equal to $p(p + 1)/2$, where p is the number of measured variables in the model. For this model, the number of variances and covariances is 528. For this model, the number of free parameter to be estimated should not be more than 88, and this is within the limit imposed by the guideline based on the number of variances and covariance involved.

Another important issue which relates to the used of structural equation modeling is the sample size available for the study. The number of cases available for this study which is 259 is relatively low to the structural equation modeling standard. Chou and Bentler (1995) mentioned that sample size has always been a major concern in the application of structural equation modeling because small sample sizes are more likely to yield unreliable results. Anyhow, the structural equation modelling will still be used as long as the model converges during the iteration process, with the given number of sample. With the smaller number of sample size available, the number of free parameters to be estimated needs to be minimised as much as possible. In addition, the most accurate starting values available need to be used for the estimation of the free parameters. This is in order to help the model to converge easier during the iteration process.

In this study it has been the interest of the researcher, at the measurement model level, to investigate the factor loading of each item with the corresponding

dimension of consumers' decision-making styles that they theoretically should load on. Therefore, 32 free parameters of the factor loading of the four measured variable with each of the eight consumers' decision-making style dimensions are intended to be estimated. This will be done using the structural equation model as shown in Figure 7.1. Importantly, these adjustments will be made within the boundary of the theoretical foundation used throughout this study. Adjustment of the proposed model is commonly done by most of the structural equation modeling users. As stressed by MacCallum (1995),

> ...that in practice a solution cannot usually be found so as to yield exact fit of the model to the observed data. Therefore, parameter values are estimated from the sample data so as to obtain a solution wherein the variances/covariance reconstructed from the parameter estimates for the specified model match the corresponding sample values as closely as possible.

(Robert C. MacCallum, 1995)

In conjunction to this model, Dunn et. al. (1993) suggested that although ideally such model modifications should be based solely on theoretical arguments, but failing these, sensible changes may be done to the existing model. These changes can be done based on the Lagrange Multiplier test of the Structural Equation Modeling program as a guideline to determine the degree to which fit would improve if any selected subset of fixed parameters were converted into free parameters (MacCallum, 1995).

With regard to this study, some adjustments to the measurement model are deemed necessary because there are differences between situation involved in those earlier studies by Sproles (1985) and Sproles and Kendall (1986), Hafstrom et. al.

Sproles (1985)	Sproles & Kendall (1986)	Hafstrom et al (1992)	Durvasula et al (1993)
1.Perfectionistic	1.Perfectionistic	1.Perfectionistic	1.Perfectionistic
2.Value Conscious	2.Price-Value Conscious	2.Price-Value Conscious	2.Price-Value Conscious
3.Brand Conscious	3.Brand Conscious	3.Brand Conscious	3.Brand Conscious
4.Confused by Overchoice	4.Confused by Overchoice	4.Confused by Overchoice	4.Confused by Overchoice
5.Novelty-Fashion Conscious	5.Novelty-Fashion Conscious	5.Time-Energy Conserving Consumer	5.Novelty-Fashion Conscious
6.Shopping Avoider (-ve)	6.Recreational, Hedonistic Consumer	6.Recreational, Hedonistic Consumer	6.Recreational, Hedonistic Consumer
	7.Impulsive Consumer	7.Impulsive Consumer	7.Impulsive Consumer
	8.Habitual, Brand-Loyal Consumer	8.Habitual, Brand-Loyal Consumer	8.Habitual, Brand-Loyal Consumer

Consumers' Decision-Making Style Dimensions From the Earlier Studies

Table 7.1

(1992) and Durvasula et. al. (1993), with the situation involving this study. First, these

studies were conducted on consumers' purchase behaviour for the general consumer

products, that is without giving any emphasis on the potential product class effect on

the consumers' decision-making style dimensions, as this study is intended to investigate. Secondly, those studies used student samples, which are more homogeneous than the general public samples, which will be used in this study. Lastly, those studies used exploratory factor analysis to derive the dimensions of consumers' decision-making styles, without trying to investigate the model fit between each of the model as used in the study.

Therefore, it is the intention of this study that the model fitness is to be compared to those of earlier studies using the confirmatory factor analysis technique of the structural equation modeling. Even though those earlier studies were conducted under similar conditions (product basis and student samples), not all dimensions appeared consistently in those similar studies. There were only six out of the possible eight consumers' decision-making style dimensions appeared consistently in the four studies, as shown in Table 7.1. Therefore, this model needs to be confirmed using the confirmatory factor analysis technique in order to see how close it is compared to those models in the earlier studies. Here the right balance needs to be achieved between the model fit index obtained, as well as the theoretical foundation of the model, using the samples obtained from the survey.

7.2. Analysing the Model Fit

For the purpose of analysing the measurement model fit to the observed data, the fit indexes will be used instead of the Chi-square test value. This follows the suggestion by Hu and Bentler (1995), who argue that fit indexes were designed to avoid some of the problems of sample size and distributional misspecification in the evaluation of a model. Among various fit indexes available for the purpose of

evaluating model fit, three of them are supplied by the EQS program (Bentler and Wu, 1993).

The three indexes are Bentler-Bornett Normed Fit Index (NFI), Bentler-Bornett Nonnormed Fit Index (NNFI), and Comparative Fit Index (CFI). Among these three, both the NFI and NNFI are not good indicators for evaluating model fit when sample size is small. On the other hand the CFI, based on Maximum Likelihood estimation, is independent of sample size when the latent variables are independent (Hu and Bentler, 1995). For this reason therefore, the CFI will be used for the purpose of evaluating model fit to the observed data.

Another point of concern regarding the used of fit index is the cut-off point or critical value that will indicate acceptable fit of the proposed model to the observed data. Although Bentler and Bornett (1980) proposed 0.90 for normed indexes, Hu and Bentler (1995) reported that emerging evidence that 0.90 might not always be a reasonable cut-off point for all adjunct fit indexes under all modelling circumstances (Hoyle and Panter, 1995). Therefore, cut-off point that is slightly below the agreed-upon cut-off point should also be considered, depending on the nature of the underlying theory used in the study. As such choice of an alternative cut-off value, particularly a lower one, should be justified in the manuscript (Hoyle and Panter, 1995).

7.2.1. Using the Parallel Method

The model will be analysed using the confirmatory factor analysis technique of the EQS computer program. First, the same model for the three product classes was applied. This is to test if the same measurement factor structure can fit all the three

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product classes. Then a measurement model that fits the data optimally is derived and interpreted. Finally, an attempt is made to construct a structural model for the profile of consumers' decision-making styles in the three product classes using the common model.

Following the advice by Muthen (1989), the global test of the equality of covariance structure across groups as suggested by Joreskog (1971) is not done as the preliminary overview of the model. This is due to the reason that such a test provides little guidance in testing the equality of covariance structure across groups. Therefore, it should not be regarded as a necessary prerequisite for the testing of group invariance in multigroup analyses (Muthen, 1988). With respect to this point, it will be proceeded by first performing a parallel analysis for the three groups; Convenience, Shopping and Speciality Product Class. This is started with a model that simply had each item loading on a single factor on the basis of the earlier model suggested in this chapter. This model is based mainly on the work by Sproles and Kendall (1986) and supplemented by the work of Lesser and Hughes (1986) as shown in Table 7.2.

A parallel approach is used here because of the insufficient number of cases available for the integrated model to be used initially. The parallel approach refers to the approach in which one common model is run in each product class individually. The fits of the common model in each product class will then be compared. Meanwhile, the integrated approach refers to the approach in which the same common model is run simultaneously in the form of multiple group analysis model. One important advantage of using the integrated model approach is that constraints that equalised relevant parameters across the groups involved can be imposed. Another

Dimension 1: Perfectionistic, High-Quality Conscious

1. Getting very good quality of products is so important to me. (Var 1)

2. I always go for the best overall quality products. (Var 13)

3. My expectations for products I buy are always high. (Var 24)

4. I really don't give much thought on most of my purchase. (-) (Var 31)

Dimension 2: Brand Conscious, "Price Equals Quality"

1. I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods).* (Var 5)

2. The higher the product price, the its quality.(Var 16)

3. I prefer buying products of the best selling brand. (Var 28)

4. I usually choose products of the most advertised brands. (Var 30)

Dimension 3: Novelty-Fashion Conscious

1. I always buy new products before my friends do.* (Var 4)

2. I am up-to-date with the changing trends of products in the market. (Var 17)

3. Fashionable, attractive styling and appearance is important to me. (Var 20)

4. I like to try new products when they come out in the market.* (Var 29)

Dimension 4: Recreational, Hedonistic

1. Closeness of location is not important when selecting a place to shop.* (Var 8)

2. I usually buy products from catalogues.* (-)(Var 18)

3. I enjoy shopping just for the fun of it. (Var 22)

4. Going shopping is just a waste of time. (-)(Var 32)

Dimension 5: Price Conscious, "Value for Money"

1. I always make use of special offers (eg. Coupons, free gifts and discounts).* (Var 3)

2. I take the time to shop carefully for best buys. (Var 12)

3. I prefer shopping at discounts stores.* (Var 14)

4. I buy as much as possible at bargain prices. (Var 21)

Dimension 6: Impulsive, Careless

1. I usually come home from shopping with more things than I intended to buy.* (Var 7)

2. I am impulsive when buying things. (Var 15)

3. I watch carefully how much I spend whenever I shop. (-)(Var 19)

4. I should plan my shopping more carefully than I always do. (Var 26)   Cont'

Dimension 7: Confused by Overchoice
1. The more I learn about products, the harder for me to make the best choice. (Var 2)
2. It is confusing to buy products with so many brands in the market. (Var 6)
3. It is always difficult for me to choose which stores to shop at. (Var 10)
4. All the information I get on different products confuses me. (Var 23)

Dimension 8: Habitual, Brand-Loyal
1. Once I find a brand of product of product I like, I stick with it. (Var 9)
2. I go to the same stores whenever I shop. (Var 11)
3. I regularly change the brands of product I buy. (-)(Var 25)
4. I have favourite brands of products I buy over and over. (Var 27)

- *Variable from Sproles and Kendall (1986), except for asterisk (*) are taken from Lesser and Hughes (1986).*
- *Variable listing number is in the most end bracket of each measurement variable statement*
- *(-ve) Variables should have negative loading to the particular dimension.*

The Consumers' Decision-Making Style Dimensions and Measurement Variables

Table 7.2

advantage of using the integrated approach is that multiple group comparison can be done easier than the parallel approach. However, this can only be workable provided that sufficient number of cases is available for this type of analysis.

Unfortunately, these models of the parallel approach show low fit indices (CFI) of the order of 0.65. The detail of the structural equation modeling output is shown in Appendix 5. Therefore, a joint relaxation exercise as suggested by Byrne (1994) was conducted. For this, the Lagrange Multiplier parameter test (equivalent of Lisrel Modification indices) was examined as a guide for the releasing of constraint parameters. This practice is also mentioned by MacCallum (1995), in which he stated that the Largrange Multiplier test can be employed to determine the degree to which

fit would improve if any of the selected fixed parameters were converted into free parameters.

The process of releasing the fixed parameters were done only if the univariate Chi-square value for the release of a particular constraint parameter was significant for all the three product groups. This is done in the manner of Byrne's (1994) Chapter Nine. However, as cautioned by MacCallum (1995), the process of freeing these initially fixed parameters needs to be carried out with extra care, in which the effort to attach substantive meaning to model modifications needs to be done. Perhaps this should be done by referring to the underlying theory used in order to justify any changes made to the proposed model.

Unfortunately after releasing approximately 20 parameters, the CFI's were increased only up to 0.856, 0.861 and 0.828 for the Convenience, Shopping and Speciality product class respectively. Detail of the structural equation modeling output is shown in Appendix 7. With this substantial number of fixed parameter released, the problem of non-conformity of the model to the underlying theory used in this study will have to be confronted. In addition, some of those fixed parameters released are not the same parameters among the three product classes. This shows that a single common model for the three product classes cannot be fitted using the parallel method.

7.2.2. Using the Integrated Method

The second alternative is to go on running the three parallel models as an integrated group model according to the model illustrated in Chapter Eight of Byrne (1994) in which partial measurement invariance strategy is possible. This strategy of multigroup modeling allows for the specification of separate baseline models, which

may not be identical for all the groups involved (Kaplan, 1995). After some relaxation of constraints on the restriction of the factor loading of variables on the appropriate factors, the joint model managed to reach the CFI of 0.914, but not without a problem.

The relaxation of constraint was also done based on the consideration given on the theoretical foundation of the Consumers Styles Inventory, indicated in Table 7.2, which is the basis for this measurement model. The joint model faces the problem of non-convergence after 30 iterations allowed by the EQS program, making the model unreliable for further analyses. This may be due to the problem of insufficient number of degree of freedom due to insufficient number of cases available for the analysis.

To overcome the problem of non-convergence of the integrated model, the size of the model needs to be reduced so that it can be run using the EQS program within the given number of cases available. For this reason, the number of variables needs to be reduced from the original 32, or the number of factors from the original eight. Reduction of the model size can be done by deleting the problematic measuring variables from the model. This deletion of problematic measuring variables has also been done by earlier researchers, such as Byrne (1994). Besides simplifying the model, this deletion of problematic measuring variables may also improve the model fit when using the structural equation modeling technique. This is possible because those problematic variables are the contributing factor towards worsening the fit of the model.

From the standardised solution obtained earlier using the structural equation technique, the value of factor loading of the variables on the respective factors were

analysed to look for the most problematic variables as far as loading value is concerned. As a guideline, variables which factor loading are less than 0.3 or do not load consistently on to at least one factor, based on Table 7.2, across the three product classes will be looked at. From the summary of factor loading, variable eight and 18 do not load consistently on any of the factors across the three product classes. Variable 32 although loads on dimension one and dimension four, the value of the loading are well below 0.3. From this, it is decided that variables eight, 18 and 32 need to be deleted from this measurement model.

Coincidentally, these three variables were among the four measurement variables originally intended to measure dimension four of the model. This deletion will result in dimension four having only one measurement variable, which does not seem sensible for it to be retained in this measurement model. The fourth variable of this dimension four, which is variable 22, does not load on dimensions other than dimension four. This means that the deletion of these variables resulting from the deletion of the entire factor four will not effect other dimensions because variable 22 only concern with dimension four. The correlation between the four items in Dimension Four was also found to be low and insignificant (please refer to Chapter Six, Section 6.3.4). Based on this argument, it is decided that the entire dimension four from this measurement model to be deleted by deleting variables eight, 18, 22 and 32 as an effort to simplify the measurement model.

After the deletion exercise, the model managed to be simplified to seven dimensions with 28 measuring variables, as shown in Table 7.3. This modified version of the measurement model will then be run using the integrated model approach. After a few simulations, the best fit that can be obtained for the model that

is common to all the three product classes is 0.84. The simulation is based on the earlier technique, which is using the Lagrange Multiplier parameter test as a guide for the releasing of constraint parameters.

This is done subject to a careful consideration given with respect to the theoretical foundation used in this study. That is, suppose the Lagrange Multiplier parameter test suggests the release of a particular parameter will improve the model fit. However, if the release of that parameter will result in a measurement variable to be associated with conflicting dimension, then this suggestion will not be considered. To illustrate this point, let say if the Lagrange Multiplier parameter test suggests to release a parameter that will end up with a measurement variable "I am impulsive when buying things" to be associated with dimension "Perfectionistic" which is obviously contradicting, then this parameter will not be released.

The model fit that is achieved by relaxing all the constraints are around 0.98, which means that differences are allowed between the models from each product class. This also means that the theoretical basis used in specifying the proposed model is becoming less relevant if no specification is made to the model by not imposing any constraint to the model. In other words, by freeing all parameters, the merely exploratory type of model development is engaged here. Besides, some association between measurement variables with irrelevant dimensions will occur if all the constraint parameters to be released as suggested by the Largrange Multiplier test. As argued by MacCallum (1995);

> If a model can fit any set of Measurement Variable variances or covariance perfectly, then the model is not disconfirmable at all. Such a model of this type is not very interesting scientifically. It is as complex as the observed data and thus serves no useful purpose in terms of explaining the structure underlying

the data in a parsimonious way. ...researchers are very strongly encouraged to keep in mind the principle of disconfirmability and to construct models that are not highly parameterised.

(MacCallum, 1995)

Therefore, in order to remain within the theoretical justification boundary, this study has to settle with the best common model specified based on theoretical foundation set up earlier, which is obtainable using the observed data. To make the model more meaningful, those variables which load less than 0.4 to any of the seven factors need to be further deleted. This is in order to be consistent with the earlier researchers (Sproles, 1985; Sproles and Kendall, 1986; Hafstrom et. al., 1992; Durvasula et. al., 1993) who only consider those variables which load 0.4 or more as measuring variables for the dimensions of consumers' decision-making styles.

The poor fit for the common model in itself suggests that the structure of the consumers' decision-making styles in buying behaviour is not invariant across the three product classes. This support the notion that there is product class effect that to some extent influence consumers to engage in different decision-making styles when purchasing products from different product classes.

As mentioned earlier, the suggested model is adopted from studies which used mostly student samples. These student samples are more homogeneous as compared to the samples obtained from the general public, which are relatively more heterogeneous. Therefore, the poor model fit obtained in this study seems inevitable. On the contrary, using the general public samples will give more applicability to the finding from this study, compared to the finding from studies that used a more controlled form of student samples. Because in reality, consumers are made up of

general public, in which students are only a component of that general public. Therefore, studies using samples obtained from the general public should yield relatively more rigorous findings than those studies using student samples, as far as consumer behaviour studies are concerned.

7.3. The Modified Measurement Model

The best common model obtainable using the observed data, which measure of fit is the highest obtainable (CFI=.84) without being conflicting with the underlying theory used as the basis for the model is shown in Table 7.3. The detail of the structural equation modeling output is shown in Appendix 6, and the full summary of the standardised solution from which the model in Table 7.3 is obtained is shown in Appendix 8. The model obtained differs slightly from the original proposed model as shown in Table 7.4. From Table 7.4 it can be seen that only two dimensions; Perfectionistic and Brand Conscious, in which one of their original measurement variables was deleted because of low factor loading on the respective dimensions which they should load on.

For the Perfectionistic Dimension, the negative measurement variable "I really don't give much thought on most of my purchase", loads just below the 0.4 cut-off level of acceptance of a measurement variables for each of the consumers' decision-making style dimensions. Therefore, this variable needs to be deleted as one of the measurement variables designated to measure this dimension. On the other hand, this measurement variable loads better (positively) on the Impulsive and Careless Dimension.

Dimension 1: Perfectionistic, High-Quality Conscious

1. Getting very good quality of products is so important to me. (Var 1)

2. I always go for the best overall quality products. (Var 13)

3. My expectations for products I buy are always high. (Var 24)

4. I take the time to shop carefully for best buys. (Var 12)@

Dimension 2: Brand Conscious, "Price Equals Quality"

1. I usually choose products of the most advertised brands. (Var 30)

2. The higher the product price, the its quality. (Var 16)

3. I prefer buying products of the best selling brand. (Var 28)

4. Fashionable, attractive styling and appearance is important to me. (Var 20)#

Dimension 3: Novelty-Fashion Conscious

1. I always buy new products before my friends do. (Var 4)

2. I am up-to-date with the changing trends of products in the market. (Var 17)

3. Fashionable, attractive styling and appearance is important to me. (Var 20)#

4. I like to try new products when they come out in the market. (Var 29)

Dimension 5: Price Conscious, "Value for Money"

1. I always make use of special offers (eg. Coupons, free gift and discounts). (Var 3)

2. I take the time to shop carefully for best buys. (Var 12)@

3. I prefer shopping at discounts stores. (Var 14)

4. I buy as much as possible at bargain prices. (Var 21)

5. I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods). (Var 5)

Dimension 6: Impulsive, Careless

1. I usually come home from shopping with more things than I intended to buy. (Var 7)

2. I am impulsive when buying things. (Var 15)

3. I watch carefully how much I spend whenever I shop. (-) (Var 19)

4. I should plan my shopping more carefully than I always do. (Var 26)

5. I really don't give much thought on most of my purchase. (Var 31)

Dimension 7: Confused by Overchoice
1. The more I learn about products, the harder for me to make the best choice. (Var 2)
2. It is confusing to buy products with so many brands in the market. (Var 6)
3. It is always difficult for me to choose which stores to shop at. (Var 10)
4. All the information I get on different products confuses me. (Var 23)

Dimension 8: Habitual, Brand-Loyal
1. Once I find a brand of product of product I like, I stick with it. (Var 9)
2. I go to the same stores whenever I shop. (Var 11)
3. I regularly change the brands of product I buy. (-) (Var 25)
4. I have favourite brands of products I buy over and over. (Var 27)

@ and # indicate Measurement Variables Load on Two Dimensions

Dimensions and Variables of the Modified Version of the Measurement Model

Table 7.3

The inclusion of the variable "I really don't give much thought on most of my purchase" as another measurement variable for the Impulsive and Careless Dimension does not seems to be conflicting with the underlying theory used as the basis for this study. This is because this measurement variable positively support the characteristic of Impulsive and Careless consumers who usually do not think much when purchasing products. This type of consumers is indeed the impulsive and careless type of consumers. Therefore, this change does not seem to be conflicting with the underlying theory, because positively this measurement variable supports the Impulsive and Careless dimension of the consumers' decision-making styles perfectly.

Dimension	Proposed Measurement Model	Confirmed Measurement Model
1. Perfec- tionistic	1. Getting very good quality of products is so important to me. (Var 1) 2. I always go for the best overall quality products. (Var 13) 3. My expectations for products I buy are always high. (Var 24) *4. I really don't give much thought on most of my purchase. (Var -31)*	1. Getting very good quality of products is so important to me. (Var 1) 2. I always go for the best overall quality products. (Var 13) 3. My expectations for products I buy are always high. (Var 24) **4. I take the time to shop carefully for best buys. (Var 12)@**
2. Brand Conscious	1. I usually choose products of the most advertised brands. (Var 30) 2. The higher the product price, the its quality. (Var 16) 3. I prefer buying products of the best selling brand. (Var 28) *4. I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods). (Var 5)*	1. I usually choose products of the most advertised brands. (Var 30) 2. The higher the product price, the its quality. (Var 16) 3. I prefer buying products of the best selling brand. (Var 28) 4. Fashionable, attractive styling and appearance is important to me. (Var 20)#
3. Novelty- Fashion Conscious	1. I always buy new products before my friends do. (Var 4) 2. I am up-to-date with the changing trends of products in the market. (Var 17) 3. Fashionable, attractive styling and appearance is important to me. (Var 20) 4. I like to try new products when they come out in the market. (Var 29)	1. I always buy new products before my friends do. (Var 4) 2. I am up-to-date with the changing trends of products in the market. (Var 17) 3. Fashionable, attractive styling and appearance is important to me. (Var 20)# 4. I like to try new products when they come out in the market. (Var 29)

| 5. Price Conscious | 1. I always make use of special offers (eg. Coupons, free gift and discounts). (Var 3)

2. I take the time to shop carefully for best buys. (Var 12)@

3. I prefer shopping at discounts stores. (Var 14)

4. I buy as much as possible at bargain prices. (Var 21) | 1. I always make use of special offers (eg. Coupons, free gift and discounts). (Var 3)

2. I take the time to shop carefully for best buys. (Var 12)@

3. I prefer shopping at discounts stores. (Var 14)

4. I buy as much as possible at bargain prices. (Var 21)

5. I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods). (Var 5) |
|---|---|---|
| 6. Impulsive and Careless | 1. I usually come home from shopping with more things than I intended to buy. (Var 7)

2. I am impulsive when buying things. (Var 15)

3. I watch carefully how much I spend whenever I shop. (-) (Var 19)

4. I should plan my shopping more carefully than I always do. (Var 26) | 1. I usually come home from shopping with more things than I intended to buy. (Var 7)

2. I am impulsive when buying things. (Var 15)

3. I watch carefully how much I spend whenever I shop. (-) (Var 19)

4. I should plan my shopping more carefully than I always do. (Var 26)

5. I really don't give much thought on most of my purchase. (Var 31) |
| 7 Confused by Over-choice | 1. The more I learn about products, the harder for me to make the best choice. (Var 2)

2. It is confusing to buy products with so many brands in the market. (Var 6)

3. It is always difficult for me to choose which stores to shop at. (Var 10)

4. All the information I get on different products confuses me. (Var 23) | 1. The more I learn about products, the harder for me to make the best choice. (Var 2)

2. It is confusing to buy products with so many brands in the market. (Var 6)

3. It is always difficult for me to choose which stores to shop at. (Var 10)

4. All the information I get on different products confuses me. (Var 23) |

8. Habitual and Brand-Loyal	1. Once I find a brand of product of product I like, I stick with it. (Var 9)	1. Once I find a brand of product of product I like, I stick with it. (Var 9)
	2. I go to the same stores whenever I shop. (Var 11)	2. I go to the same stores whenever I shop. (Var 11)
	3. I regularly change the brands of product I buy. (-) (Var 25)	3. I regularly change the brands of product I buy. (-) (Var 25)
	4. I have favourite brands of products I buy over and over. (Var 27)	4. I have favourite brands of products I buy over and over. (Var 27)

- Variables in **Bold** are added in to the dimensions, while variables in *Italics* are taken off from the dimensions.
- @ and # indicate Measurement Variables Load on Two Dimensions

Comparison Between the Proposed Measurement Model with the Confirmed Measurement Model.

Table 7.4

Another change involving the Perfectionistic dimension is the inclusion of the variable "I take the time to shop carefully for best buys". The empirical reason for the inclusion of this new item to Perfectionistic dimension come from the factor analysis solution, which shows that the new item loads relatively high (i.e. 0.5 which is above 0.4, which is the cut-off point) on the Perfectionistic dimension. This variable also loads relatively high (0.52) on the Price Conscious dimension, which it supposed to load. This variable also can be denoted as a criterion for a 'perfect' shopping behaviour. In order to be a perfect shopper who shop perfect products, he or she needs to be more careful in their selection of products and this can means more time is

needed for it. Therefore, it seems to be theoretically appropriate for the measurement variable "I take the time to shop carefully for best buys" to be included as an additional measurement variable for the Perfectionistic dimension.

While for the Brand Conscious Dimension, the measurement variable " I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods)" is deleted due to low factor loading with this dimension. However, this factor loads well with the Price Conscious dimension. The reason might be, in most cases retailers brands are usually priced slightly lower than the price of the leading manufacturers brands. This situation will build consumers perception that retailers' brands of products are sold as the cheaper alternatives for the leading manufacturer's brands. This issue has been raised by Richardson et. al. (1996) who found that retailer brands of product oftenly promoted more as value for money product than more on the quality basis. This low price strategy themselves, to some extent, hurts the value for money perceptions because the lower retailer brand prices may signalled poorer quality for the retailer brand products.

For example, men's shirts which bear the St. Michael (Marks and Spencer's) brand or Debenham brand are priced lower than the men's shirt bearing manufacturers brand such as Van Heusen or Ben Sherman. In the end, this makes the retailers' brands of products very much associated with the low price image which is more appealing to the Price Conscious dimension than the Brand Conscious dimension. Therefore, this might be the strong reason why consumers view the measurement variable statement "I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods)," as more associated with price consciousness more than brand

consciousness. Again, this change does not violate the underlying theory used as the basis for this study.

Finally, another change involving the Brand Conscious dimension is the addition of measurement variable "Fashionable, attractive styling and appearance is important to me" to this dimension. This variable also loads on the Novelty-Fashion Conscious, the dimension on which it is assigned to measure. The inclusion of this variable also seems suitable for the Brand Conscious dimension because consumers who are brand minded also might include the element of fashion and style of the brands of product as an important criteria for considering whether or not a brand of product is preferred.

For example, designer brands of product such as Versace, Giorgio Armani or Dunhill or even other normal brands such as Levi Strauss or Adidas are chosen as preferred brands of product because of their styling and fashionable appeal. These might be the important attributes of the products which are considered as attractive to a particular group of consumers. In other words, some of the consumers might become attracted to certain brands of product because of the fashionable or stylish appearance of such brands of products. Therefore, the inclusion of the variable "Fashionable, attractive styling and appearance is important to me" as another measurement variable for the Brand Conscious dimension does not seem to be theoretically conflicting.

7.4. Reliability Improvement by the Modified Model.

In Chapter Six, the improvement of the scale reliability was done by deleting some of the measurement variables that contribute to the low reliability coefficients of

the set of measurement variables assigned to measure those consumers' decision-making style dimensions. These set of measurement variable for the dimensions can be improved of between 0.56 to 0.75, with the root mean square of the reliability coefficients of 0.63. Using the structural equation modeling technique, a modified version of the measurement model of consumers' decision-making style dimensions is generated. The scale reliabilities, based on the alpha coefficient of reliability, obtained from the modified measurement model are shown in Table 7.5.

Dimension	Convenience	Shopping	Speciality
1. Perfectionistic	0.61	0.65	0.60
2. Brand Conscious	0.59	0.69	0.67
3. Novelty-Fashion Conscious	0.56	0.63	0.61
5. Price Conscious	0.68	0.61	0.71
6. Impulsive and Careless	0.61	0.59	0.59
7. Confused by Overchoice	0.67	0.75	0.75
8. Habitual and Brand-Loyal	0.58	0.61	0.58

*The Recreational and Hedonistic Dimension is deleted in the Modified Measurement Model

Summary of the Reliability Coefficients of the Dimensions for Each Product Class, of the Modified Measurement Model

Table 7.5

With the modified measurement model generated using the structural equation modeling technique, the root mean square of the reliability coefficients is further

improved to 0.64, with the same range of sets of measurement variable reliability of between 0.56 to 0.75. Although there are only slight improvement made using the structural equation modeling, it is more preferred because most of the measurement variables are still retained, compared to the earlier suggestion of improvement to the original model by deleting some of the measurement variables. More of the measurement variables retained means more of the information obtained from the survey will also be retained.

However, the regenerated measurement model will not be validated using the same data used for this study. This is due to the reason that, the measurement model are data generated model, therefore it is inappropriate for the regenerated model to be validated using the same data used to regenerate the same measurement model. For this purpose, the regenerated measurement model need to be validated using the new set of data. This point has been stressed by MacCallum (1995),

> Because the model generation process is data driven, with models modified to fit a particular set of data better and then refit to the same data, a modified model must be validated using data from a new sample. If the model generation strategy is employed without attending to these warnings, the generated model has relatively little meaning or value.

(MacCallum, 1995)

As for this study, the process of the structural equation modeling will stop at the regeneration of the measurement model, which can be validated using the new set of data to be collected in future research. This is due to the resource limitation on the part of the researcher to provide the new set of data for the validation of the regenerated measurement model. However, this measurement model will still be used

as the basis for further analyses of this study, using statistical techniques other than the structural equation modeling.

Summary

The thesis is intended to disprove that the same model will fit all the three product classes. Hence, the researcher started with the structural equation model which was parallel (i.e. three models for the three product classes). However, due to the low fit obtained, the integrated approach was done so that some constraints can be done simultaneously for the three product classes, which cannot be done using the parallel approach. In other words, different product classes require a different structural equation model to explain consumers' decision-making style dimensions for a particular product class. This suggests that the lists of consumers' decision-making style dimensions differ between different product classes. This notion supports the first hypothesis of this study, that "different profiles of consumers' decision-making style dimensions (which are the list of consumers' decision-making style dimensions) will be formed in each of the three product classes, depicting the significant product class effect on consumers' purchase behaviour for products from different product classes." Based on this notion, further analyses of all dimensions of the consumers' decision-making styles need to be treated independently in the three product classes.

Those arguments illustrated in this chapter show that all the changes made to the proposed model are well justified. This agrees with the suggestion by MacCallum (1995) that any modifications to the originally proposed model must be made in a substantively meaningful and justifiable manner. Therefore, although the regenerated model fit to the observed data is slightly below the generally agreed 0.90 level, which
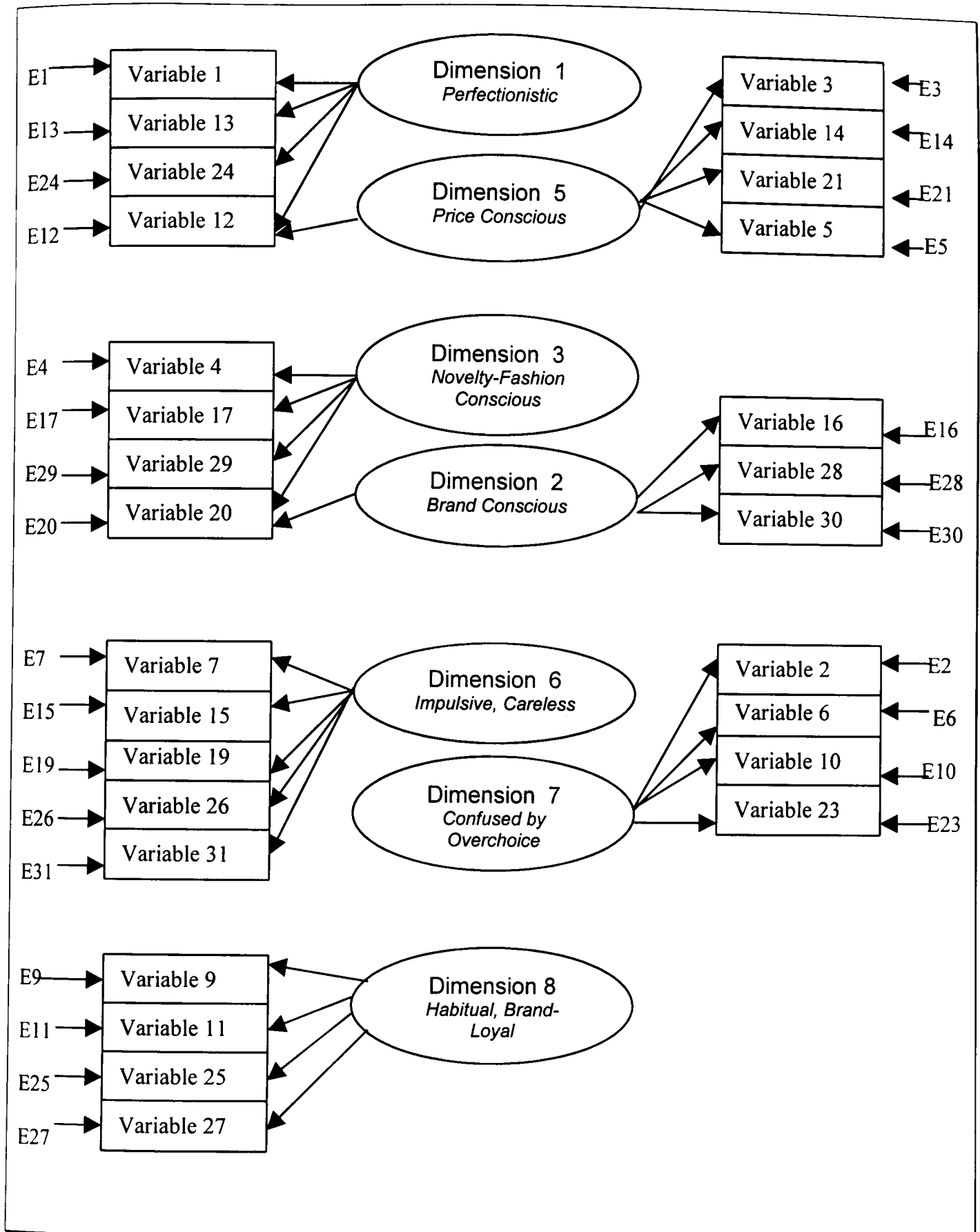
The Modified Measurement Model for Consumers' Decision-Making Style Dimensions

Figure 7.2

in this case the CFI is equal 0.84, it can still be considered plausible because the measurement model still conformed to the underlying theory on which this study is based. More importantly, the changes made to the originally proposed model not only increase the fit of the model to the observed data, but was also was done with proper justifications and meanings attached to it in order to preserve its theoretical correctness. In other words, the modified model seems to have a better fit to the observed data for the three product classes, in general.

For the analyses on the product class effect and the relationship between the differences in demographic effect on consumers' decision-making style dimensions, the best common model obtainable from this analysis, as shown in Figure 7.2 will be used. Having done this, this study will further proceed by analysing the effect of product class on consumers' decision-making style dimensions in Chapter Eight. This will be followed by the analysis on the effects of selected demographic variables (consumers age, household sizes, job types, income levels, marital status, existence of children in household, and gender) on consumers' decision-making style dimensions, across the three different product classes. This will be evaluated in Chapter Nine of this study.

CHAPTER 8

Analysis of Consumers' Decision-Making Styles Across Product Classes

8.0. Introduction

In Chapter Seven, it can be seen that the same measurement model does not fit well for the three product classes. This means different measurement models are required for each product class for a better fit. This provides the indication that there is a significant product class effect, which leads to the requirement of different measurement models for different product classes. Therefore, in this chapter, the differences of consumers' decision-making style dimensions across product classes will further be investigated to justify the extent of product class effect on those dimensions. In other words, this chapter will emphasis on the investigation of product class effect on consumers' decision-making style dimensions.

The investigation on the product class effect on consumers' decision-making style dimensions will also provide some justification on the compatibility of this study with those previous studies on consumers' decision making style dimensions. If the product class effect is found to be insignificant on those dimensions, then this study seems to be more compatible with those studies. Otherwise, the ignorance of the product class effect on consumers' decision-making style dimensions needs to be reconsidered by those earlier researchers.

The investigation on the product class effect on the dimensions will be done using the exploratory factor analysis, as well as the analysis of variance. The structural equation modeling technique will not be used for this purpose because the

data has already been used in the generation of the measurement model. If the structural equation modeling technique is to be used, a new data set needs to be used to avoid the problem that had been raised earlier by MacCallum (1995) of using the same data which is used both for the generation of the measurement model and estimation of the parameters using the structural equation modeling technique. For this study, the new data set cannot be made available due to the limited resources. Therefore, structural equation modeling is only used in Chapter Seven for the measurement model generation, while exploratory factor analysis and analysis of variance will be used in this chapter for investigating the product class effect on the dimensions.

8.1. Analysis of the Effect of Product Class.

In this chapter, the consumers' decision-making style dimensions across the convenience, shopping and speciality product classes will be analysed. Firstly, the list of the consumers' decision-making styles developed in each product class will be examined. For this reason, those dimensions which emerge from the factor solution will be observed. Besides, the order of the dimensions from the factor solution according to the order of the alpha coefficient of reliability will also be assessed. This is to be consistent with the method used in the earlier studies on consumers' decision-making style dimensions. A high reliability alpha coefficient indicates that the measurement variables used to measure the particular dimension are more reliable.

A dimension which is reliably measured (with alpha coefficient of reliability 0.4 and above) in the list of consumers' decision-making styles of a particular

product class can be considered as a more consistent dimension in that product class. Using alpha coefficient of reliability 0.4 as the value of cut-off point may be slightly on the lower side. However, this is the cut-off point value used in the earlier studies by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al. (1992), Durvasula et. al. (1993). Therefore, to make the finding of this study comparable to those of the earlier studies, the same cut-off point value will be used. As mentioned in the earlier chapters of this study, those measurement variables used to measure each dimension are adopted from earlier studies (Sproles, 1985; Sproles and Kendall, 1986; Lesser and Hughes, 1986; Hafstrom et. al., 1992; Durvasula et. al., 1993). The findings from these studies indicate that the item variables used in measuring the consumers' decision-style dimensions are content and construct valid. These findings may be considered sufficient to establish the credibility of a test of a construct (Gay and Diehl, 1992).

Therefore, based on the reliability (alpha reliability coefficient 0.4 and above) of the item used to measure consumers' decision-making style dimensions, it can be argued that the measurement variables used in this study are reliable. Consequently, it can be concluded that the dimensions which appeared on the lists of consumers' decision-making styles can be considered as reliable dimensions. In addition, the appearance of the dimensions on the list of consumers' decision-making styles indicate that these dimensions are construct valid in explaining consumers' purchase behaviour across the product class. In other words, consumers differ in their reported purchase behaviour across the three product classes on those dimensions which are shown as construct valid and reliable.

The correlations will be examined by looking at exploratory factor analysis solution. From the exploratory factor analysis solution, the factor loadings of the measurement variables as well as the alpha coefficient of reliability of the sets of measurement variables used to measure the consumers' decision-making style dimensions will be analysed. Comparison will be made between the exploratory factor analysis solution obtained in this study and the findings from those earlier studies on consumers' decision-making styles exploratory factor analysis solutions. This is to see whether there is any difference between factor solutions of the general product approach of the earlier studies with the specific product class approach in this study. Any difference will indicate the existence of product class effect on consumers' decision-making styles.

However, caution needs to be taken when comparing exploratory factor analysis solutions across population. Mulaik (1972) has suggested several practices to avoid inappropriate comparisons of factors as follows:

1. The factors compared must be derived from the variance-covariance matrices instead of correlation matrices computed for samples across different populations. This is not to violate the principle that the analyses must be in the same metric for the factor-pattern-metric coefficients to be comparable across populations. In this study, the variance/covariance matrices are used as the basis for factor analysing the consumers' decision-making style dimensions.

2. Factor-pattern coefficients instead of factor-structure are compared. This is to avoid the error when making comparison between factors that are

mutually orthogonal in one population, and the factors that are also mutually orthogonal in another population. This is due to the selection theory that two orthogonal-factor solutions normally do not represent the same factors across different population. For this study, the oblique method as suggested by Mulaik (1972) cannot be used because it is intended that the same method used in the earlier studies to be maintained for comparability purpose. However, to overcome the problem that may arise from comparing factors from different population, the confirmatory factor analysis of the structural equation modeling technique is used to investigate whether or not the list of dimensions (factors) formed in the three product classes are different between each other. For this reason, a similar measurement model is specified in the three product classes. The structural equation program from EQS is run on the model in each of the three product classes. The results show insufficiently low fit indices (CFI) of the order of around 0.65 (please refer to Chapter Four – Section 7.2). These low fit indices suggest that the lists of factors formed in the three product classes are indeed different between each other. The confirmatory factor analysis technique involves the fixing of factors in such a way that both list of factors contain the same structure between the population compared. Therefore, the problem of the possibility that the factors to be unorthogonal between different population can be avoided.

3. The same criteria of rotation should be used in obtaining the compared factors. In this study, the same criterion of rotation (varimax rotation) is used for the three product classes involved.

4. The same method of extracting the factors should be used before rotating factors. In this study, the same method of factor extraction (principal component method) is used for the three product classes involved.

5. Sufficient number of factors should be extracted to get the accurate fix of the common factors in the variables. In this study, the extracted factor is fixed at eight factors for all the three product classes. This is considered as sufficient because slightly less than eight factors are found to be interpretable in all the three product classes (six for convenience product class, seven for shopping product class and six for speciality product class).

6. The factors to be compared must not come from analyses in which the unique portions of the observed variables in the analyses are not independent of the selection variables. To avoid this problem, the true variances, instead of the traditional communalities should be inserted in the principal diagonal of the variance-covariance matrix. According to the SPSS manual, the computed estimates used in the factor analysis are based on the assumption that all unique factors are uncorrelated with each other and with the common factors. As this study is using the factor analysis program from SPSS, the problem associated with the unique portion of the observed variables can therefore be assumed as insignificant.

7. The factors compared must initially be transformed to make them as much alike as possible. In this study, all the same factors are being measured by the same items and effort has been made to treat those factor in the same

manner for the three product classes. However, as indicated in Chapter Seven, all the structural equation modeling analyses show that the same model cannot be fitted to all the three product classes. In fact, it is the purpose of this study to investigate and proof that the differences are due mainly to the effect of product class.

Therefore, in this study the guideline provided by Mulaik (1972) seems to be well adhered. This is an effort in order to ensure that differences between the list of factors obtained from the exploratory factor analysis solutions from the three product classes reflect the true differences between those factors compared. In other words, the comparison of factor analysis solution between the three product classes can be considered as appropriate. Despite the caution raised by Mulaik (1972), still there are studies which utilised the technique of comparing factors between different populations being published in the literature. The most recent example is a study on comparing consumers' location specific shopping values between shopping in the mall and high street shops by Hackett and Foxall (1994). Therefore, the finding obtained from this comparison can also be considered as useful and reliable.

In addition to the exploratory factor analysis, analysis of variance of the scale scores will be done along with comparisons across the three product classes. After the comparison of the factor analyses with those earlier studies is made, the consumers' decision-making style lists from the three product classes will then be compared.

8.2. Exploratory Factor Analysis.

In this section, the consumers' decision-making style dimensions developed in each product class using the exploratory factor analysis solutions will be observed. The exploratory factor analysis will be performed on all the measurement variables for all the consumers' decision-making style dimensions. For this, the principle component method of factor extraction and varimax rotation option of the factor analysis from the SPSS program (version 7.5.1) was used. This method is used because it was also used by the earlier similar studies by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993). Besides, this method of factor extraction and rotation are the popular choice by the factor analysis practitioners for some obvious reasons.

In general, the factor pattern obtained by varimax rotation tends to be more invariant and give clearer separation of the factors than the quartimax rotation (Kaiser, 1958). In other words, the factor solution using varimax rotation is more likely to produce an even distribution of variables over factors. This resembles more of the factor solutions hypothesised in this study, in which a set of four measurement variables are assigned to measure the consumers' decision-making style dimensions . However, the choice of factor extraction and rotation method does not seem to be the important criteria for this type of study. This is because as the number of variables increase, the method by which exploratory factors are extracted become less important (Gorsuch, 1974). As for this study, the total number of variables used is 96 (32 for each group), which can be considered as large enough that the choice of factor extraction and rotation method to be less important. In other words, whichever

method of factor extraction or rotation chosen for this study will not effect much on the result because of the large number of variables involved in this study.

Sproles and Kendall (1986) also found that the principle component method of extraction yielded a factor solution which provides the most interpretable solution. Besides, the same method of factor extraction and rotation used in the earlier studies will be used in this study to adhere to the caution made by Mulaik (1972) in order to make appropriate comparison of factors between different populations. Therefore, based on the argument presented above, it is more appropriate for this study to use the principal component factor extraction method with varimax rotation for this study. This is based merely on the reasons that this method is used by earlier researchers (Sproles, 1985; Sproles and Kendall ,1986; Hafstrom et. al., 1992; and Durvasula et. al., 1993), and it is more suitable for this type of study. To be consistent with those earlier studies by Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993), these requirements need to be fulfilled for this study:

1. The eight factor solutions from the factor analysis will be used in this study (as there are eight factors in these orders.)

2. The acceptable factor loading cut-off point of a measurement variable to a particular dimension is 0.4. (As to adhere to the method done in those earlier relevant studies).

In addition to the three requirements stated above, any dimensions with only one measurement variable which factor loading is 0.4 and above will also be deleted. This is because each dimension of consumers' decision-making style is assumed to be

a latent variable which should be indicated by a set of multiple measurement variables. This is also in order for us to be able to measure the alpha reliability coefficients, which can only be obtained from a scale with at least two measurement variables, using the SPSS program. Those scales are formed by averaging the response value of the selected items used to measure consumers' decision-making styles in order to maintain comparability of measurement. This is in line with the guideline provided by Sproles and Kendall (1986) who mentioned that the three item subscales are preferable to build reliability and (construct) validity. However, the two-item scale may be appropriate for many applications.

For the purpose of labelling the extracted dimensions of consumers' decision-making styles, the guideline by Sproles and Kendall (1986) can also be followed. According to this guideline, the extracted dimensions may be labelled based on the top three measurement variables in the descending order of their factor loading, provided the factor loading is 0.4 and above. As for this study, all the measurement variables with factor loading values of 0.4 and above will be used instead of only the top three suggested by Sproles and Kendall (1986). This is in order not to sacrifice the reduction in the value of alpha coefficient of reliability of the sets of measurement variables for each dimensions resulting in the reduction of the number of measurement variables associated with each dimension.

In this analysis, the lists of consumers' decision-making styles that fulfil the criteria stated earlier, in each of the convenience, shopping and speciality product classes will be looked at. The alpha coefficient of reliability of the measurement scales of those dimensions will be used to analyse those dimensions, in terms of their reliabilities in the study of consumers purchase behaviour in different product classes.

The higher the alpha coefficient of reliability for a particular dimension indicates the more reliable this dimension in indicating consumers' decision-making styles in purchasing product from different product classes.

Besides, those dimensions with high alpha coefficient of reliability are those dimensions which are more likely to be prominent in the particular product class. In other words, those dimensions with higher alpha coefficient of reliability indicate that most of the time, consumers will consistently differ on those dimensions when purchasing products from that particular product class. While those dimensions with lower alpha coefficient of reliability indicate that the occurrence of those dimensions in a particular product class may be due to chance. Therefore, those dimensions of consumers' decision-making styles which will be considered for the purpose of this study are those which are construct valid (appeared in the lists of consumers' decision-making styles in each product class) and reliably measured (with alpha coefficient of reliability of at least 0.4). This study will then proceed by comparing the finding from this study with the findings obtained in the earlier studies by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993).

8.2.1. Comparison with the Earlier Studies

To justify the construct validity of the consumers' decision-making style dimensions, the finding from this study is compared to those finding obtained from Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993). The summary of those lists of consumers' decision-making style dimensions by these researchers together with the lists of consumers' decision-making

style dimensions obtained from the three product classes in this study are shown in Table 8.1. Consumers' decision-making style dimensions which appeared in the lists of dimensions in each product class are considered as construct valid dimensions for indicating consumers' purchase behaviour in dealing with the particular class of products in the market.

From the Table 8.1, it can be seen that four of the consumers' decision-making style dimensions appear in all the studies and product classes. Those dimensions are the Brand Conscious dimension, Confused by Overchoice dimension, Price-Value Conscious dimension and the Perfectionistic dimension. Out of these only two dimensions, the Brand Conscious dimension and the Confused by Overchoice dimension, appear consistently (alpha reliability coefficient 0.4 or greater) in all the studies and product classes. However, the Price-Value Conscious dimension appears to be consistent in all the studies and product classes except in the Hafstrom et. al. (1992) study, while the Perfectionistic dimension appears to be consistent in all the studies and product classes except in the convenience and shopping product classes.

For the rest of the dimensions, the Impulsive and Careless dimension did not appear at all in the Sproles (1985) study and did not appear consistently in the convenience product class. While another dimension, Habitual and Brand-Loyal dimension did not appear at all in the Sproles (1985) study and also in the convenience product class. In addition, the Novelty-Fashion Conscious dimension did not appear at all in the Hafstrom et. al. (1992) study and in any of the product classes, while the Recreational and Hedonistic dimension only appear in the Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993). Finally, the Shopping Avoider dimension, Time-Energy Conserving dimension, Retailers' Brand

Prone and Brand and Store Disloyal dimension only appear in the Sproles (1985) study, Hafstrom et. al. (1992) study, the shopping product class and the convenience product class, respectively.

From the comparison, it can be concluded that the finding from this study partially supports the finding from the study by Sproles and Kendall (1986). This is because only three of the consumers' decision-making style dimensions (Price-Value Conscious, Brand Conscious and Confused by Overchoice) appeared to be construct valid and reliably measured across the three product classes. While, the other five dimensions are either appearing in two or less product classes or did not appear at all in any of the product class. Therefore, the hypothesis saying that the lists of consumers' decision-making style dimensions are different across the convenience, shopping and speciality product classes is supported by the finding from this study.

Another important point apparent in Table 8.1 is that the lists of consumers' decision-making styles of the speciality product class from this study is closer to those obtained from the earlier studies, which used the general product approach. From this point, it can be argued that in the study of consumers purchase behaviour for general products, consumers will be more likely to give their response based on their experience in purchasing products with higher proportion of intangible attributes. This is because this type of product involved more decision-making style dimensions on which consumers will differ in their purchase behaviour.

Suppose that consumers have a consistent position on each consumers' decision-making styles dimension. It may be that the dimensions that come into action depend on the types of products involved in their purchase behaviour. The finding

Sproles (1985)	Sproles & Kendall (1986)	Hafstrom et al (1992)	Durvasula et al (1993)	Convenience Product Class (1998)	Shopping Product Class 1998)	Speciality Product Class (1998)
Brand Conscious	Brand Conscious (α=0.75)	Brand Conscious (α=0.84)	Brand Conscious (α=0.59)	Brand Conscious (α=0.58)	Brand Conscious (α=0.71)	Brand Conscious (α=0.66)
Confused by Overchoice	Confused by Overchoice (α=0.55)	Confused by Overchoice (α=0.54)	Confused by Overchoice (α=0.66)	Confused by Overchoice (α=0.67)	Confused by Overchoice (α=0.75)	Confused by Overchoice (α=0.75)
Value Conscious	Price-Value Conscious (α=0.48)	*Price-Value Conscious (α=0.31)*	Price-Value Conscious (α=0.50)	Price-Value Conscious (α=0.68)	Price-Value Conscious (α=0.59)	Price-Value Conscious (α=0.74)
Perfect-ionistic	Perfect-ionistic (α=0.74)	Perfect-ionistic (α=0.77)	Perfect-ionistic (α=0.75)	*Perfect-ionistic (α=0.35)*	*Perfect-ionistic (α=0.25)*	Perfect-ionistic (α=0.53)
n.a	Impulsive and Careless (α=0.48)	Impulsive and Careless (α=0.54)	Impulsive and Careless (α=0.75)	*Impulsive and Careless (α=0.32)*	Impulsive and Careless (α=0.63)	Impulsive and Careless (α=0.65)
n.a	Habitual, Brand-Loyal (α=0.53)	*Habitual, Brand-Loyal (α=0.34)*	Habitual, Brand-Loyal (α=0.58)	n.a	*Habitual and Brand Loyal (α=0.33)*	Habitual and Brand Loyal (α=0.67)
Novelty-Fashion Conscious	Novelty-Fashion Conscious (α=0.74)	n.a	Novelty-Fashion Conscious (α=0.70)	n.a	n.a	n.a
n.a	Recreational and Hedonistic (α=0.76)	Recreational and Hedonistic (α=0.70)	Recreational and Hedonistic (α=0.82)	n.a	n.a	n.a
n.a	n.a	n.a	n.a	n.a	Retailers' Brand Prone (α=0.52)	n.a
n.a	n.a	n.a	n.a	*Brand and Store Disloyal (α=0.08)*	n.a	n.a
Shopping Avoider	n.a	n.a	n.a	n.a	n.a	n.a
n.a	n.a	*Time-Energy Conserving (α=0.35)*	n.a	n.a	n.a	n.a

- n.a implies that the dimension did not appear in the particular study or product class
- The alpha reliability coefficient of each dimension is shown in brackets
- Dimensions in italic are those with alpha reliability coefficient below 0.40

Summary of Lists of Consumers' Decision-Making Style Dimensions from the Earlier Studies plus those from the Three Product Classes in this Study.
Table 8.1

from this study suggests that product with a higher proportion of intangible benefits will involve more of the consumer's decision-making style dimensions, in the consumer purchase behaviour. On the other hand, product with a lower proportion of intangible benefits will involve fewer of the consumer's decision-making style dimensions in their purchase behaviour. The reason for this could be the nature of some of the dimensions that they only apply to products with more proportion of intangible benefits or even services. This will be further discussed in the section where the consumers' decision-making styles across the three product classes will be compared. However, this study will first analyse the construct validity and reliability of the consumers' decision-making style dimensions in each of the three product classes.

8.2.2. Analysis for the Convenience Product Class

The exploratory factor analysis solution obtained for the convenience product class is shown in the solution extracted, in which 51% of the variance is explained by the eight factors extracted. Out of the eight factors, only six dimensions (factors) of consumers' decision-making styles are interpretable and suit the requirements of the 0.4 factor loading cut-off point, and at least two indicator variables associated with each dimension. These six factors explained 43% of the total variance. The dimensions extracted in descending order of the alpha reliability coefficients are Price-Value Conscious (Reliability $\alpha=0.68$), Confused by Overchoice (Reliability $\alpha=0.67$), Brand Conscious (Reliability $\alpha=0.58$), Perfectionistic (Reliability $\alpha=0.35$), Impulsive and Careless (Reliability $\alpha=0.32$), Brand and $\alpha=0.67$), Brand Conscious (Reliability $\alpha=0.58$), Perfectionistic (Reliability $\alpha=0.35$), Impulsive and Careless

Measurement Variable and Dimension	Factor Loading
Price-Value Conscious (Reliability α=0.68)	
I always make use of special offers (eg. coupons, free gifts and discounts).	.70
I buy as much as possible at bargain prices.	.70
I prefer retailer's brands of product (e.g. Asda, Tesco and Littlewoods).	.59
I take the time to shop carefully for best buys.	.52
I prefer shopping at discounts stores.	.51
Confused by Overchoice (Reliability α=0.67)	
It is confusing to buy products with so many brands in the market.	.77
All the information I get on different products confuses me.	.72
The more I learn about products, the harder for me to make the best choice.	.60
It is always difficult for me to choose which stores to shop at.	.47
Brand Conscious (Reliability α=0.58)	
I always buy new products before my friends do.	.63
I usually choose products of the most advertised brands	.61
I prefer buying products of the best selling brand.	.54
Fashionable, attractive styling and appearance is important to me.	.47
I enjoy shopping just for the fun of it.	.45
Perfectionistic (Reliability α=0.35)	
I always go for the best overall quality products.	.60
I really don't give much thought on most of my purchase.	-.60
My expectations for products I buy are always high	.50
I take the time to shop carefully for best buys.	.50
Going shopping is just a waste of time.	-.49
I am up-to-date with the changing trends of products in the market.	.49
Getting very good quality of products is so important to me.	.46
Fashionable, attractive styling and appearance is important to me.	.45
I have favourite brands of products I buy over and over.	.42

Cont/

Impulsive and Careless (Reliability α=0.32)	
I usually come home from shopping with more things than I intended to buy.	.76
I am impulsive when buying things.	.64
I should plan my shopping more carefully than I always do.	.56
I watch carefully how much I spend whenever I shop.	-.50
I enjoy shopping just for the fun of it.	.42
Brand and Store Disloyal (Reliability α=0.08)	
I go to the same stores whenever I shop.	-.70
I regularly change the brands of product I buy.	.64
Once I find a brand of product, I stick with it.	-.47
I prefer shopping at discounts stores.	.51
It is always difficult for me to choose which stores to shop at.	.47
Equate Price with Quality (Reliability n.a)	
The higher the product price, the better its quality.	.76
Recreational (Reliability n.a)	
Closeness of location is not important when selecting a place to shop.	.95

n.a. = not applicable because only one measurement variable available for the dimension

Measurement Variables and Dimensions of Consumers' Decision-Making

Styles for the Convenience Product Class

Table 8.2

(Reliability α=0.32), Brand and Store Disloyal (Reliability α=0.08). While the other two dimensions, Equate Price with Quality, and Recreational dimensions cannot be accepted here because these dimensions have less than two measurement variables that have factor loading 0.4 and above. To be considered as reliable, a dimension needs to have alpha reliability coefficient of 0.4 and above (Sproles and Kendall, 1986). This is to adhere to the method used by Sproles and Kendall (1986) for

comparability. Therefore, out of the six interpretable dimensions which also follows the underlined requirements, only three dimensions can be considered as reliable. Those dimensions are Price-Value Conscious (Reliability α=0.68), Confused by Overchoice (Reliability α=0.67), Brand Conscious (Reliability α=0.58). From this it can be concluded that these dimensions; Price-Value Conscious, Confused by Overchoice and Brand Conscious, are the dimensions of consumers' decision-making style which are construct valid and can be reliably used by most consumers in their purchase behaviour for convenience products.

8.2.3. Analysis for the Shopping Product Class

Table 8.3 shows the exploratory factor analysis solution obtained for the shopping product class, in which 54% of the variance is explained by the eight factors extracted. From this table it can be seen that from the eight factor solution extracted, seven dimensions (factors) of consumers' decision-making styles are interpretable and suit the requirements of the 0.4 factor loading cut-off point, and at least two indicator variables associated with each dimension. These six factors in turn explained 43% of the total variance. The dimensions extracted according to the descending order of the alpha reliability coefficients are Confused by Overchoice (Reliability α=0.75), Brand Conscious (Reliability α=0.71), Impulsive and Careless (Reliability α=0.63), Price-Value Conscious (Reliability α=0.59), the Retailers' Brand Prone (Reliability α=0.52), Habitual and Brand Loyal (Reliability α=0.33) and Perfectionistic (Reliability α=0.25). Another dimension, Recreational dimension, is not acceptable

Measurement Variable and Dimension	Factor Loading
Confused by Overchoice (Reliability α=0.75)	
It is confusing to buy products with so many brands in the market.	.80
All the information I get on different products confuses me.	.80
The more I learn about products, the harder for me to make the best choice.	.79
It is always difficult for me to choose which stores to shop at.	.45
Brand Conscious (Reliability α=0.71)	
The higher the product price, the better its quality.	.78
I prefer buying products of the best selling brand.	.67
I usually choose products of the most advertised brands.	.65
Fashionable, attractive styling and appearance is important to me.	.56
I always buy new products before my friends do.	.48
Impulsive and Careless (Reliability α=0.63)	
I should plan my shopping more carefully than I always do.	.70
I am impulsive when buying things.	.59
I usually come home from shopping with more things than I intended to buy.	.57
I like to try new products when they come out in the market	.47
Price-Value Conscious (Reliability α=0.59)	
I prefer shopping at discounts stores.	.86
I buy as much as possible at bargain prices.	.70
I always make use of special offers (eg. coupons, free gifts and discounts).	.48
Retailers' Brand Prone (Reliability α=0.52)	
I prefer retailer's brands of product (e.g. Asda, Tesco and Littlewoods).	.66
I enjoy shopping just for the fun of it.	.55
I usually come home from shopping with more things than I intended to buy.	.50
I always make use of special offers (eg. coupons, free gifts and discounts).	.44

Habitual and Brand Loyal (Reliability α=0.33)	
Once I find a brand of product, I stick with it.	.78
I have favourite brands of products I buy over and over.	.68
I go to the same stores whenever I shop.	.64
I regularly change the brands of product I buy.	-.51
Perfectionistic (Reliability α=0.25)	
I take the time to shop carefully for best buys.	.67
I really don't give much thought on most of my purchase.	-.61
I always go for the best overall quality products.	.58
My expectations for products I buy are always high	.56
I watch carefully how much I spend whenever I shop.	.48
I am up-to-date with the changing trends of products in the market.	.42
Recreational (Reliability n.a)	
Closeness of location is not important when selecting a place to shop. (V8)	.96

n.a. = not applicable because only one measurement variable available for the dimension

Measurement Variables and Dimensions of Consumers' Decision-Making Styles for the Shopping Product Class

Table 8.3

because it has only one measurement variable with factor loading 0.4 and above associated with it.

Based on the Sproles and Kendall (1986) measure of reliability, five of these dimensions can be considered as reliably measured dimensions for the shopping product class. These dimensions are Confused by Overchoice (Reliability α=0.75), Brand Conscious (Reliability α=0.71), Impulsive and Careless (Reliability α=0.63), Price-Value Conscious (Reliability α=0.59), and Retailers' Brand Prone (Reliability α=0.52). Therefore it can be concluded that these dimensions, Confused by

Overchoice, Brand Conscious, Impulsive and Careless, Price-Value Conscious and Retailers' Brand Prone are the decision-making style dimensions which are construct valid and can be reliably used by consumers when dealing with shopping products.

8.2.4. Analysis for the Speciality Product Class

The exploratory factor analysis solution obtained for the speciality product class is shown in Table 8.4., in which 55% of the variance is explained by the eight factors extracted. The table shows that from the eight factor solution extracted, only six dimensions (factors) of consumers' decision-making styles are interpretable and suit the requirements of the 0.4 factor loading cut-off point, and at least two indicator variables associated with each dimension. These six factors explained 47% of the total variance. The dimensions extracted according to the descending order of the alpha reliability coefficients are Confused by Overchoice (Reliability $\alpha=0.75$), Price-Value Conscious (Reliability $\alpha=0.74$), Habitual and Brand Loyal (Reliability $\alpha=0.67$), Brand Conscious (Reliability $\alpha=0.66$), Impulsive and Careless (Reliability $\alpha=0.65$), and Perfectionistic (Reliability $\alpha=0.53$). While the other two dimensions Hedonistic and Recreational dimensions cannot be accepted because these dimensions have only one measurement variable with factor loading 0.4 and above associated with them.

Unlike in the convenience and shopping product classes, all the six interpretable dimensions, which also satisfy the requirements imposed earlier, are reliably measured according to the Sproles and Kendall (1986) standard. This indicates that the six dimensions of decision-making styles; Confused by Overchoice,

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Measurement Variable and Dimension	Factor Loading
Confused by Overchoice (Reliability α=0.75)	
All the information I get on different products confuses me.	.79
It is confusing to buy products with so many brands in the market.	.78
The more I learn about products, the harder for me to make the best choice.	.77
It is always difficult for me to choose which stores to shop at.	.46
Price-Value Conscious (Reliability α=0.74)	
I prefer shopping at discounts stores.	.78
I buy as much as possible at bargain prices.	.73
I always make use of special offers (eg. coupons, free gifts and discounts).	.68
I watch carefully how much I spend whenever I shop.	.61
I prefer retailer's brands of product (e.g. Asda, Tesco and Littlewoods).	.55
I take the time to shop carefully for best buys.	.46
Habitual and Brand Loyal (Reliability α=0.67)	
I go to the same stores whenever I shop.	.77
Once I find a brand of product, I stick with it.	.75
I have favourite brands of products I buy over and over.	.69
Brand Conscious (Reliability α=0.66)	
The higher the product price, the better its quality.	.82
I usually choose products of the most advertised brands.	.61
I prefer buying products of the best selling brand.	.51
Impulsive and Careless (Reliability α=0.65)	
I am impulsive when buying things.	.73
I usually come home from shopping with more things than I intended to buy.	.72
I should plan my shopping more carefully than I always do.	.58
I like to try new products when they come out in the market.	.50
I regularly change the brands of product I buy.	.45
	Cont/

Perfectionistic (Reliability α=0.53)	
I always go for the best overall quality products.	.65
Fashionable, attractive styling and appearance is important to me.	.61
I take the time to shop carefully for best buys.	.52
Getting very good quality of products is so important to me.	.52
My expectations for products I buy are always high	.45
I am up-to-date with the changing trends of products in the market.	.42
I really don't give much thought on most of my purchase.	-.41
Hedonistic (Reliability α=n.a)	
I enjoy shopping just for the fun of it.	.80
Recreational (Reliability α=n.a)	
Closeness of location is not important when selecting a place to shop.	.95

n.a. = not applicable because only one measurement variable available for the dimension

Measurement Variables and Dimensions of Consumers' Decision-Making Style for the Speciality Product Class

Table 8.4

Price-Value Conscious, Habitual and Brand Loyal, Brand Conscious, Impulsive and Careless, and Perfectionistic, are the decision-making style dimensions which are construct valid and can be reliably used by consumers when dealing with speciality products.

In the three product classes, the factor solutions show that about 50% of the variance remain unexplained. This indicates the possibility that there may be other consumers' decision-making style dimensions which are not covered in this study. However, the eight dimensions adopted from the Sproles and Kendall's (1986) study are sufficient to show differences in consumers' decision-making styles across the three product classes.

8.2.5. *The Comparison across Product Classes*

Having discussed the exploratory factor analysis solution in each of the three product classes, this study will proceed with the analysis of consumers' decision-making style dimensions across the three product classes, using the exploratory factor analysis solutions. Comparing the findings obtained from the earlier analyses on each of the three product classes will justify this. The lists of consumers' decision-making styles obtained from the factor analysis solutions from the convenience, shopping and speciality product classes can be summarised as in Table 8.5.

The analysis will be done by first discussing the dimensions of consumers' decision-making style which appear consistently in all the three product classes. This will followed by the analysis on those dimensions which do not appear from the three product classes. The more detail justification of those dimensions, which appeared in the lists based on the selected demographic variables, will be done in the next chapter.

8.2.5.1. Analysis on the Common Dimensions Across Product Class

From Table 8.5, it can be seen that only three of the original eight consumers' decision-making styles obtained earlier by Sproles and Kendall (1986) appeared consistently across the three product classes. In other words, these three dimensions can be considered as construct valid and reliable for explaining consumer purchase behaviour in the market. Those dimensions are the Price-Value Conscious, Confused by Overchoice, and the Brand Conscious dimensions. This also indicates that the three dimensions are those on which consumers differ in their purchase behaviour regardless of which class of product they are dealing with. In other words, consumers can be either price-value conscious, confused by overchoice, brand conscious or involved with any combinations of these three dimensions when purchasing product

from any of the three product classes. Now let us justify these three dimensions with regards to the consumers purchase behaviour.

Product Class		
Convenience	**Shopping**	**Speciality**
Price-Value Conscious (Reliability α=0.68)	Confused by Overchoice (Reliability α=0.75)	Confused by Overchoice (Reliability α=0.75)
Confused by Overchoice (Reliability α=0.67)	Brand Conscious (Reliability α=0.71)	Price-Value Conscious (Reliability α=0.74)
Brand Conscious (Reliability α=0.58)	Impulsive and Careless (Reliability α=0.63)	Habitual and Brand Loyal (Reliability α=0.67)
Perfectionistic (Reliability α=0.35)	Price-Value Conscious (Reliability α=0.59)	Brand Conscious (Reliability α=0.66)
Impulsive and Careless (Reliability α=0.32)	Retailers' Brand Prone (Reliability α=0.52)	Impulsive and Careless (Reliability α=0.65)
Brand and Store Disloyal (Reliability α=0.08)	*Habitual and Brand Loyal (Reliability α=0.33)*	Perfectionistic (Reliability α=0.53)
	Perfectionistic (Reliability α=0.25	

Dimensions in *italic* are considered as unreliable according to the Sproles and Kendall (1986) method.

Summary of Consumers' Decision-Making Style Dimensions which Appear in the Three Product Classes.

Table 8.5

This comparative analysis will start by looking at those dimensions which appeared consistently in all the three product classes. First, the Price-Value Conscious dimension will be observed. The summary suggests that regardless of which class of products they are buying, either convenience, shopping or speciality, most consumers differ consistently on the Price-Value Conscious dimension. This may be true because to most consumers, the basic economic theory of limited resources to satisfy unlimited needs prevails in their daily life. In other words, most of the time, consumers are confronting with the situation where their needs are always in excess of what they can afford to have in terms of their product requirements.

In order to reduce the problem of trying to match limited resources to unlimited needs, consumers need to engage in the economising behaviour when purchasing their daily requirements. This is in order to maximise the benefit they can possibly acquired from their limited resources. Some of this behaviour include choosing for products of the best value money can buy, and taking advantage of special offers such as price discounts, free gifts, and coupons. These behaviours are presented by the measurement variables for the Price-Value Conscious dimension.

Consumers are likely to have different resource endowments that they will differ in their reaction to this dimension. This differences in resource endowments will most likely cause different consumers' reaction towards the Price-Value Conscious dimension in their purchase behaviour across the three product classes. In other words, factors which can affect consumers spending power such as incomes, household sizes and types of job will determine the extent of consumers' involvement in this dimension in their purchase behaviour. Therefore, it is well justified that

consumers will more likely to differ on the Price-Value Conscious dimension in dealing with products. regardless of product class.

The Confused by Overchoice dimension is another dimension that is very much related to the numerous numbers of offerings of the same type of products made available to consumers in the market. To be precise, the number of brands of products, which are basically representing the same types of products available for the consumers to choose from, for most product types, are too much for some consumers to bear. Often the search processes involved are too excessive, especially when dealing with technically complicated product such as electrical appliances, motor vehicles, computers and audio-video equipment.

Sometimes, buying necessity products such as processed food, detergents, dry cell batteries and baby food can involve a lengthy information search, especially for the first time buyers. Consumers who come from different backgrounds will react differently with regard to this dimension. For example, consumers of different age will react differently towards being confused by overchoice when dealing with products in the market. Other factors such as educational background, which can be reflected by the profession status, can also determine the extent these consumers are confused by overchoice in their purchase behaviour. Therefore, the argument that consumers will more likely to differ on the Confused by Overchoice dimension from the three product classes as indicated by the finding is also well justified.

The Brand Conscious dimension is a differential reaction to frequently advertised brands of product. well known brands of product, best selling brands of products and product brands which are perceived as being of highly quality products. The more brand conscious consumers are more aware of what brands of product they

are looking for in the market when they are about to purchase that particular type of product. The creation of brand names to a type of product is the effort of a particular manufacturer or retailer to differentiate its products from the rest of the products of the same type which is available in the market.

Due to this reason, the use of product brands is considered as essential as an effort to guide consumers into buying the product offered by manufacturers in the market. Therefore, this situation is causing a widespread use of product branding in marketing. To ease the search of a particular product in the market, some consumers may go for certain brands which they perceived as the most suitable to their needs and requirements. The consumers' requirements can be the cheapest brand, highest quality brand, most expensive brand (for those consumers who equates price to quality), the latest brand, the most popular brand or the most unique brand available in the market.

The importance of product brands to consumers has been reiterated by Ramsay (1996), stating that far from loosing their power in the marketplace, brands were shown to serve as powerful repositories of meaning purposively and differentially employed in the substantiation, creation, and (re)production of concepts of self in the marketing age. This notion can be the reason for why almost all types of products currently being marketed are excessively branded when sold in the market.

This situation applies to the entire range of products, from the most basic needs products, such as table salt, baby nappies and toilet rolls to the sophisticated ones such as computers, digital cameras, home cinemas and high performance sportcars. In anticipation to this situation, it is not surprising that most consumers are becoming more brand conscious as ever in their purchase behaviour for all types of products. Therefore, based on these arguments, it can be concluded that consumers

are more likely to involve with the Brand Conscious dimension for all the three product classes is also well supported in this study.

Despite this evidence of brand proneness among some consumers, there are also consumers who view product brands as no more than a marketing gimmick, as part of the effort of creating differences among products of the same type which do not really exist. For example, jeans are still made of blue denim cloth regardless of whether they are Levi's, Versace or George of ASDA. In other words, once all the labels and marking are removed, jeans from whatever makes will become a commodity with no significant difference between them except their prices. For the same argument, sugar will still taste sweet and in the granular form, be it Tate and Lyle, Silver Spoon, ASDA or Tesco. In relation to this argument, Van Trijp et. al. (1996) has indicated that consumers may switch brands because of combination of motivations, such as curiosity and the price motive.

Doyle (1995) has indicated that the assumption that core brands convey significant monopoly power, that is consumers would pay more for them than generics has began to erode. This is due to the combined impacts of more price-oriented consumers, new high-value retailer own-label products and reduced investment by manufacturers in brand support. This evidence support the notion that brand consciousness has began to fade to some consumers in their purchase behaviour. Therefore, from the two extreme perspectives regarding brand consciousness in the market support the argument that most consumers are more

likely to differ consistently on the brand conscious dimension when buying products, regardless of which product class they are dealing with.

Based on the justifications provided above, it can be safely concluded that the consistent appearance of the three consumers' decision-making style dimensions; Price-Value Conscious, Confused by Overchoice, and Brand Conscious dimensions, in the three product classes is very much agreed with the consumers purchase behaviour for all products regardless from which product class they come from. Thus, this partially supports the earlier findings by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al., (1992) and Durvasula et. al., (1993), that those three dimensions are among the consumers' decision-making style dimensions on which consumers consistently differ, when dealing with any product in general.

8.2.5.2. Analysis on the Unique Dimensions Across Product Classes

Besides those three common dimensions discussed earlier, Table 8.5 also shows that four of the consumers' decision-making style dimensions do not appear in all the three product classes. In order words, these dimensions are not being reliably measured (thus, their construct validity cannot be determined) in all the three product classes. Among these dimensions is the Impulsive and Careless dimension which only appears consistently in shopping and speciality product classes, but not in the convenience product class. While the other two dimensions, the Habitual and Brand-Loyal dimension and the Perfectionistic dimension, only appear consistently in the speciality product class, but not in the other two product classes. On the other hand, the Retailers' Brand Prone (a new dimension) only appear consistently in the shopping product class.

The Impulsive and Careless decision-making style dimension, which appears consistently in both the shopping and speciality product classes, relates to purchase behaviour which is very much associated with unplanned purchases, non-budgeted purchases and purchase decisions which are more likely to be influenced by situational factors within the purchase environment. Thus, consumers who are highly involved in the Impulsive and Careless dimension are often resulted in themselves buying products which are not really needed. In other words, consumers with high degree of involvement with this decision-making style are more likely to engage in the purchase behaviour which are not need driven. On the other hand, consumers with a lower degree of involvement with this dimension are more likely to engage in a better planned purchase behaviour which are need driven.

Consumers are more likely to plan their purchase for necessities such as food, bin liners, baby nappies and detergent, which are examples of convenience products. No doubt that consumers may buy more quantity of necessity products during discounted price offer period, for example, but the types of product involved are usually the types of product which they will eventually buy in the near future. However, this often does not lead to overstocking of those products by consumers. On the other hand, consumers are more likely prepared to rate themselves as impulse and careless shoppers in purchasing clothes or small electrical appliances (shopping products) and high quality perfume, designer apparel or original painting (speciality products) if they encounter any special offer for these products.

This is more likely to happen because shopping products and speciality products are valued relatively higher than the convenience products. Therefore consumers are more likely to take advantage on the greater amount of saving they can

make from buying higher valued products on offer than the lower valued product on offer. This argument should justify why the impulsive and careless dimension is more relevant to the shopping and speciality products than to the convenience products. In other words this argument should provide the reason why this dimension is construct valid and reliable for the shopping and speciality products but not for the convenience products.

Table 8.5 also shows that there are two other dimensions; Habitual and Brand-Loyal dimension, and Perfectionistic dimension, which are more construct valid and reliable with the speciality product class. Habitual and Brand-Loyal dimension usually involves types of product which are not substitutable and are usually purchased from outlets which exclusively sell those special types of products. This situation is associated with speciality products, which consumers are not willing to seek for other substitutes and will purchase them from special outlets which exclusively carry such types of product. For most of the branded speciality products, their purchases are very much associated with the product image more than the basic function of the product. This is because brands cohere into the systems that consumers create not only to aid in living but also to give meaning to their lives. Put simply, consumers do not choose brands, they choose lives (Fournier, 1998). On the other hand, there may be consumers who do not choose extensively, due to too much choice available. This type of consumers are indicated by the confused by overchoice dimension.

An example to illustrate this point will be the purchase of a Rolex watch. Consumers who intended to buy this brand of watch will not likely to settle for another brands of watch. Therefore, the Rolex watch is not substitutable as far as they

are concerned. In case the consumers want to maintain the status quo, they may continue to purchase their next pair of watch for themselves or their partners from the same brand. Supporting this notion, Fournier (1998) indicated that the present study reveals the inextricable character of brand and category meanings, suggesting that that once a significant relationship is established, the meaning of the brand becomes inseparable from the value of the product class per se. Therefore, this supports the argument that the habitual and brand-loyal decision-making style is more relevant for speciality products than they are with products from other two product classes. This also should provide explanation on why this decision-making style dimension is more construct valid and reliable in the speciality product class than the convenience and shopping products.

Speciality products are also synonymous with perfectionism. Usually consumers will be perfectionists when they are involved in purchasing speciality products such as hi-fi equipment or musical instruments. This is because these products often involved a high level of precision in their craftsmanship and sound reproduction. Another example will be the designer label items which usually are synonymous with high perceived quality, which is part of the attributes of perfectionism. Therefore, consumers who purchase such products are more likely to be involved in Perfectionistic decision-making dimension. These arguments support the finding in this study, as indicated by Table 8.5, on the lists of consumers' decision-making styles that the Perfectionistic decision-making style seems to be more construct valid and reliable in the speciality product class, than in the convenience and shopping product classes.

8.2.5.3. Overall Analysis on the Dimensions across Product Classes.

On the whole, it can be seen that the convenience product class has the least number of consistent consumers' decision-making style dimensions (three dimensions), shopping product class has five dimensions. Meanwhile, the speciality product class has the most number of dimensions (six dimensions) among the three product classes. From this it can be concluded that there are more diversity of consumers' decision making style dimensions occurring in the speciality product class and less diversity in the convenience product class. While the diversity of consumers' decision making style dimensions in the shopping product class lies in between the two product classes.

The most likely reason for this phenomenon to happen is due to the nature of the products comprised in each product class. Product is defined as a combination of objective (tangible) and subjective (intangible) properties designed or intended to provide need satisfying experience to consumers (Baker, 1992). As defined, the tangible attributes of a product consist of physical reality of the product which can be objectively judge by consumers who consumed it. Peter and Olson (1994) have termed the tangible attribute of product as the concrete attributes, which they refer to as physical product characteristics of the product. While, the benefit obtained from the tangible attributes of the product is termed as the functional consequences.

For example when a consumer purchases a pack of sugar (convenience product), what he or she wants from the sugar is the sweet taste (functional consequences) than it can produce or add to their food. For such product, not many choices of attributes are sought by consumers in obtaining the sugar from the retail outlet. This is because this product has more of the tangible attributes and less (if any)

of the intangible attributes attached to it. Due to this reason, the most likely dimensions on which consumers differ in purchasing sugar will be to look for the cheapest one offered in the market (price-value conscious), or looking for brands that they are familiar with (brand conscious).

There may be consumers who just pick any pack of sugar they found first to avoid the bewilderment of having to go through various brands of sugar offered in the market (confused by overchoice). Therefore, consumers will be more invariant in their purchase behaviour for convenience products which consists of mainly basic products with more tangible attributes than the intangible attributes attached to them. Therefore, products which mainly have tangible attributes attached to them (which resembles most of the convenience product) will likely involve less variety of decision-making style dimensions in the purchase behaviour of the consumers who deal with these products.

On the other hand, products with higher proportion of intangible attributes are more likely to be judged subjectively by consumers who deal with them in the market. Peter and Olson (1994) have termed the intangible attributes of products abstract attributes, which they defined them as nonmaterial product characteristics. While the benefit seek from the intangible attributes of the products is termed as the psychosocial consequences. This subjective nature of evaluation on these abstract attributes is likely to create more variety in the ways consumers' view the product in the market.

For example, when a consumer purchases a bottle of top end perfume (speciality product), he or she may want more than the good smell (functional

consequences) that the perfume can offer to him or her. Besides the good smell, there will also be intangible attributes of the perfume that different consumers will consider differently when buying it. Some consumers may seek perfume that can project the particular image (psychosocial consequences) that they think suitable for them. The consumers who are high on the Perfectionistic dimension may look for the special smell or image that is perceived to be embedded into the perfume and nothing less than this. Consequently, they will differ on the Perfectionistic dimension when purchasing this type of perfume. The other consumers who are high on habitual and brand-loyal dimension may view perfume as part of his or her identity (psychosocial consequences), which they want to preserve. This type of consumers will likely to maintain the same brand of perfume for their use, thus will likely to differ on the habitual and brand-loyal dimension when purchasing perfume in the market.

Besides those decision-making styles, there are also consumers who may still view perfume as something that can give them good smell (functional consequences) and nothing beyond that. This type of consumers may differ on the Price-Value Conscious dimension. For example, these price-value conscious consumers will settle for any brand of perfume, which are on special price offer in the market. In short, there are more dimensions on which consumers' purchase behaviour differ when dealing with perfume (speciality product) than when they are when dealing with sugar (convenience product). This argument may provide explanation for the finding from this study that indicates more dimensions of consumers' decision-making styles appeared in the speciality product class than those in the convenience product class, with shopping product class lying in between. In other words, more dimensions are found to have items load expectedly high on them in the speciality product class, and

less in the convenience product class. While, shopping product class lying in between the speciality and convenience product classes, in terms of the number of dimensions with items load expectedly high on them.

Therefore, from the finding on this study, there is indication that the more basic the product is (the fewer intangible attributes attached to it), the fewer the dimensions on which consumers' decision-making styles will differ in their purchase behaviour for this product. In other words, from the finding of this study, it can be hypothesised that intangible benefits increase the dimensionality or complexity of consumer response.

Besides the points discussed above, attention need to be taken on the variance explained by the extracted factors in the three product classes. It can be seen that the percentage of the variance explained is about 50% of the total variance. This indicates that not all dimensions of consumers' decision-making styles are covered by the study. Therefore caution need to be taken when using the finding from this study to explain U.K. consumers' decision-making styles because not all of the dimensions of the U.K. consumers' decision-making styles are covered by the finding of this study. However, the main theme of the study is to compare the consumers' decision-making styles across different product classes more than researching the extent of consumers' decision-making styles in the U.K. Based on this argument, the finding may be considered sufficient as far as the comparison of the consumers' decision-making styles across the three product classes is concerned.

Another point need to be addressed is the fact that even though there are common factors across the three product classes, the item composition of certain

factors may vary across the three analyses. Therefore, caution need to be taken when mentioning the common factors across the three product classes, because some of the items contain in the common factors may not be exactly the same among each other. In other words, some of the common factors may not contain exactly the same item composition. However, the similarities of the item compositions among the common factors outweigh the differences between them. This is the limitation for exploratory factor analysis, but not in structural model or confirmatory factor analysis.

Summary

The finding obtained from the analysis of the consumers decision-making style dimensions across product classes, using exploratory factor analysis suggests that different lists of consumers' decision-making styles will appear in different product classes. Although three of the dimensions; Price-Value Conscious, Confused by Overchoice, and Brand Conscious dimensions appear to be construct valid and reliably measured in the three product classes, the rest of the dimensions do not appear to be construct valid and reliably measured in all the convenience, shopping and speciality product classes simultaneously. This indicates that there is a significant product class effect which cause the lists of consumers' decision-making style formed in the three product classes to differ. In other words, there is an indication that the construct validity and reliability of the consumers' decision-making styles can be affected by the product class effect.

From the justification provided, these differences in the formations of the lists of consumers' decision-making style dimensions occur because of the differences embedded in the attributes of the products from the different product classes. Convenience products are mostly necessities and very much associated with

consumers' basic needs (tangible attributes). Therefore, consumers who deal with the convenience products are more likely to differ on fewer consumers' decision-making style dimensions. On the contrary, shopping products involve more choices of brands and product types which are perceived to be associated with styles, images and other intangible attributes which can be considered as secondary to the basic needs, than the convenience products.

Similar to shopping products, speciality products are also very much associated with those intangible attributes which are secondary to consumers' basic needs. In addition, they are also very much associated with perfectionism, habitual and brand-loyalty of certain brands or types of product available in the market. This may be due to the aspects of perceived high degree of quality, precision and uniqueness which are very much associated with the speciality products. Therefore, consumers who deal with speciality products, and to some extent shopping products, will likely to differ on more consumers' decision-making style dimensions than when they are dealing with convenience products.

Based on the nature of the products, it can be hypothesised that the degree of intangibility of the product dealt by the consumers is positively related to the dimensionality of the consumers' decision-making styles in purchasing the particular product. This requires further investigation to confirm the notion. The differences embedded in the products from the three product classes are more likely to contribute to the significance of the product class effect on consumers buying behaviour. Consequently, different lists of consumers' decision-making style are more likely to develop in the convenience, shopping and speciality product classes.

8.3. Analysis Using Analysis of Variance

In this section, analysis of variance will be performed on the data. This is done using the means of the items on each scale, using the same scales for each product class. In other words, the value of the dimensions are derived from the means of the scales used to measure each particular dimensions. The scales' means are in turn derived from the means of the items of each scale. This should show whether there are differences, not in the correlation between dimensions, but in the actual ratings of the dimensions.

These items and scales of the dimension are obtained from the measurement model specified in the confirmatory factor analysis solution, performed using the EQS program. The development of this measurement model of consumers' decision-making styles has been thoroughly discussed in the Chapter Four of this study. The measurement variables associated with each of the dimensions are shown in Table 8.6. Before taking the mean values of the scales, those items in the scales with negative values are transposed to positive in order to get additive value of those items. This is done in order to maintain comparability for correct interpretation of the analysis. This study will then be continued by performing analysis of variance on the dimensions to investigate whether or not the variability of those dimensions is significant between the three product classes.

8.3.1. Analysis of the Dimensions Across Product Classes.

From Table 8.7, it can be seen that the respondents' measured responses on the decision-making styles across product classes are significantly different, except for the Novelty-Fashion Conscious dimension. The exception is only with the

Novelty-Fashion Conscious dimension in which the probability that the dimension means to be different between product classes for this dimension is 0.25.

The finding from the analysis suggests that in general, the means of the dimensions of consumers' decision-making style differ significantly between the three product classes. This indicates that the product class effect is significant in determining the level of consumers' decision-making style dimensions on which consumers differ when they are dealing with products from different product classes. Therefore, the finding from this analysis supports the argument raised from the findings of the earlier analyses.

Those findings indicated the significance of product class effect in influencing consumers' decision-making styles, in their purchase behaviour across the three product classes. This analysis will be continued by analysing the differences between the dimension means, as well as the magnitude of these means. This is in order to evaluate the average response given by the respondents towards each dimension of consumers' decision-making styles in each product class. The mean values of the consumers' decision-making style dimensions for the three product classes in each dimension are shown in Table 8.8.

As shown in Table 8.8, for the Perfectionist dimension, the mean for convenience product class (3.7) is lower than both the means for shopping (4.1) and speciality (4.1) product classes. While, the means for both the shopping and speciality product classes are the same. This indicates that the majority of the consumers' are less Perfectionistic when dealing with convenience products than they are when dealing with the shopping and speciality products. However, the interpretation of the

Dimension 1: Perfectionistic, High-Quality Conscious
1. Getting very good quality of products is so important to me.   2. I always go for the best overall quality products.   3. My expectations for products I buy are always high.   4. I take the time to shop carefully for best buys.
Dimension 2: Brand Conscious, "Price Equals Quality"
1. I usually choose products of the most advertised brands.   2. The higher the product price, the its quality.   3. I prefer buying products of the best selling brand.   4. Fashionable, attractive styling and appearance is important to me.
Dimension 3: Novelty-Fashion Conscious
1. I always buy new products before my friends do.   2. I am up-to-date with the changing trends of products in the market.   3. Fashionable, attractive styling and appearance is important to me.   4. I like to try new products when they come out in the market.
Dimension 5: Price Conscious, "Value for Money"
1. I always make use of special offers (eg. Coupons, free gift and discounts).   2. I take the time to shop carefully for best buys.   3. I prefer shopping at discounts stores.   4. I buy as much as possible at bargain prices.   5. I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods).
Dimension 6: Impulsive, Careless
1. I usually come home from shopping with more things than I intended to buy.   2. I am impulsive when buying things.   3. I watch carefully how much I spend whenever I shop. (-)   4. I should plan my shopping more carefully than I always do.   5. I really don't give much thought on most of my purchase.
Dimension 7: Confused by Overchoice
1. The more I learn about products, the harder for me to make the best choice.   2. It is confusing to buy products with so many brands in the market.   3. It is always difficult for me to choose which stores to shop at.   4. All the information I get on different products confuses me.
Dimension 8: Habitual, Brand-Loyal
1. Once I find a brand of product of product I like, I stick with it. (Var 9)   2. I go to the same stores whenever I shop. (Var 11)   3. I regularly change the brands of product I buy. (-) (Var 25)   4. I have favourite brands of products I buy over and over. (Var 27)

Measurement Variables for Each Consumers' Decision-Making Style Dimension

Table 8.6

Dimension of Consumers' Decision-Making Styles	F Statistics	Probability
Perfectionistic	55.6	0.000
Brand Conscious	24.0	0.000
Novelty-Fashion Conscious	1.4	0.250
Price-Value Conscious	21.8	0.000
Impulsive and Careless	87.2	0.000
Confused by Overchoice	27.6	0.000
Habitual and Brand-Loyal	97.3	0.000

The F Statistics from the Analysis of Variance of the Measured Responses

Table 8.7

means for both the shopping and speciality product classes need to done more cautiously. This is because these high mean values of 4.0 might be the indication of the end-effect of the measuring scale (1 to 5) used in this study.

The same situation also occurs in the Brand Conscious dimension in which the mean for the convenience product class (2.7) is lower than both the means for shopping (2.9) and speciality (2.9) product classes. However, the means for both the shopping and speciality product classes are the same. This indicates that the majority of the consumers are less brand conscious when dealing with convenience products than they are when dealing with the shopping and speciality products.

Unlike in the earlier two dimensions, for the Novelty-Fashion Conscious dimension, the means of the three product classes; convenience (2.9), shopping (2.8) and speciality (2.9) are insignificantly different between each other. This indicates

Consumers' Decision-Making Styles Dimension	Means of Dimensions in each Product Class		
	Convenience	*Shopping*	*Speciality*
Perfectionistic	3.7	4.1	4.1
Brand Conscious	2.7	2.9	2.9
Novelty-Fashion Conscious	2.9	2.8	2.9
Price-Value Conscious	3.1	3.1	2.9
Impulsive and Careless	2.9	2.4	2.4
Confused by Overchoice	2.5	2.9	2.7
Habitual and Brand-Loyal	3.7	3.2	3.1

The Significant Differences of the Consumers' Decision-Making Style Dimension Means Across Product Classes.

Table 8.8

that consumers are indifferent when dealing with products from the three product classes, as far as the Novelty-Fashion Conscious dimension is concerned.

For the Price-Value Conscious dimension, the mean for the speciality product class (2.9) is lower than both the means for convenience (3.1) and (3.1) shopping product classes. While, the means for both the shopping and speciality product classes are the same. This indicates that most consumers are significantly more price-value conscious when dealing with the convenience and shopping products, than they are when dealing with speciality product class.

In the Impulsive and Careless dimension, the mean for the convenience product class (2.9) is greater than both the means for shopping (2.4) and speciality (2.4) product classes. On the other hand, the means for both the shopping and speciality product classes are the same. This indicates that the majority of the consumers are more Impulsive and Careless when dealing with convenience products than they are when dealing with the shopping and speciality products.

For the Confused by Overchoice dimension, the mean for the shopping product class (2.9) is the highest, followed by the average mean for the speciality product class (2.7) and the average mean for the convenience product class (2.5). This indicates that most consumers are significantly more confused by overchoice when dealing with shopping products than they are with speciality products, and least confused by overchoice when dealing with convenience products.

Lastly, for the Habitual and Brand-Loyal dimension, the mean for the convenience product class (3.7) is greater than both the means for shopping (3.2) and speciality (3.1) product classes. While, the means for both the shopping and speciality product classes are about the same. This situation indicates that the majority of the consumers are more habitual and brand-loyal when dealing with convenience products than they are when dealing with the shopping and speciality products.

Summary

The findings from the analysis of the consumers' decision-making style dimension means differences can be summarised as follows. Three of the dimensions; Perfectionistic dimension, Brand Conscious dimension and Price-Value Conscious dimension, have the means for convenience product class lower than both

the shopping and speciality product classes. While, the means for the shopping product class about equal to the means of the speciality product class. In addition, two of the dimensions; Impulsive and Careless dimension and Habitual and Brand-Loyal dimension, have the means for convenience product class greater than both the shopping and speciality product classes. While, the means for the shopping product class are also about equal to the means of the speciality product class.

On the other hand, the Novelty-Fashion Conscious dimension has the means for the convenience, shopping and speciality product classes about equal among each other. While the Confused by Overchoice dimension has the mean for shopping product class greater than the mean for speciality product class, and the mean for this speciality product class is greater than the mean for convenience product class.

Here it can be seen that six out of the seven dimensions, the means for the convenience product class differ with the means of both the shopping and speciality product classes. At the same time, six out of the seven dimensions, the means between shopping and speciality product classes are seen to be almost equal. From this summary, it can be concluded that the difference between the convenience product class and both the shopping and speciality product classes are more obvious than the difference between the shopping and speciality product classes.

Since the mean values are obtain from the respondents measured response towards their decision-making styles, it can be deduced that consumers view convenience products as more different from both shopping and speciality products. On the other hand, shopping and speciality products are viewed by consumers as less different. In other words, convenience product class is perceived to be more

distinguishably different than shopping and speciality product classes, while the difference between shopping and speciality product classes are perceived to be less distinguishably different. Figure 8.1 will give a better illustration on this argument on the differences in the consumers' decision-making style dimension means between the three product classes.

Another point that can be made from Table 8.8 is that perfectionism is seen to be associated more with higher cost products (shopping and speciality products), while impulsivity is seen to be associated more with lower cost products (convenience products). This appear to be sensible because consumers should be more cautious when buying higher value product which are usually more costly. Costliness will motivate consumers to be more careful in allocating their limited resources in order to maximise the benefit from product purchased involving higher cost. Therefore, more cognitive process should be involved in purchasing such product, which are in line with perfectionism. On the other hand, consumers may involve less cognitive process in buying lower value products which are usually found in the convenience product class. This is because the time and effort spent on lower cost products should be justified with the value of the product that will be purchased. This may be implied by the more impulsivity associated with the lower cost products. Although this is not hypothesised earlier, this point can be taken as a contribution from the finding of this study, which need to be studied further.

Conclusion

All the analyses reported in this chapter show that consumers differ on different decision-making style dimensions in their purchase behaviour when dealing with products from different product classes. Those analyses are the exploratory

factor analysis, the analysis of variance of the scales, and the comparative analysis on the consumers' decision-making style dimension means. These differences in consumers' purchase behaviour across the three product classes are shown to be influenced by the significant product class effect on those consumers' decision-making style dimensions. Those differences are reflected by the differences in the lists of consumers' decision-making styles developed in convenience, shopping and speciality product classes. This means that the first hypothesis of this study, "Different lists of consumers' decision-making style dimensions will be formed in each of the three product classes, depicting the significant product class effect on consumers' purchase behaviour for products from different product classes" is supported by the finding of this study.

The exploratory factor analysis solution indicates that three of the dimensions; Brand Conscious, Confused by Overchoice and Price-Value Conscious dimensions, appear consistently across the three product classes. While, the other five dimensions either appear consistently across the three product classes. Therefore, it can be concluded that the overall list of the consumers' decision-making style dimensions formed in each product class are different between each other. In addition, the exploratory factor analysis solution also suggests that product intangibility is positively related to the dimensionality of consumers' decision-making styles in their purchase behaviour.

This is because fewer dimensions are found to be construct valid and reliably measured in the convenience product class (lower product intangibility) than those found in the speciality product class (higher product intangibility). At the same time,
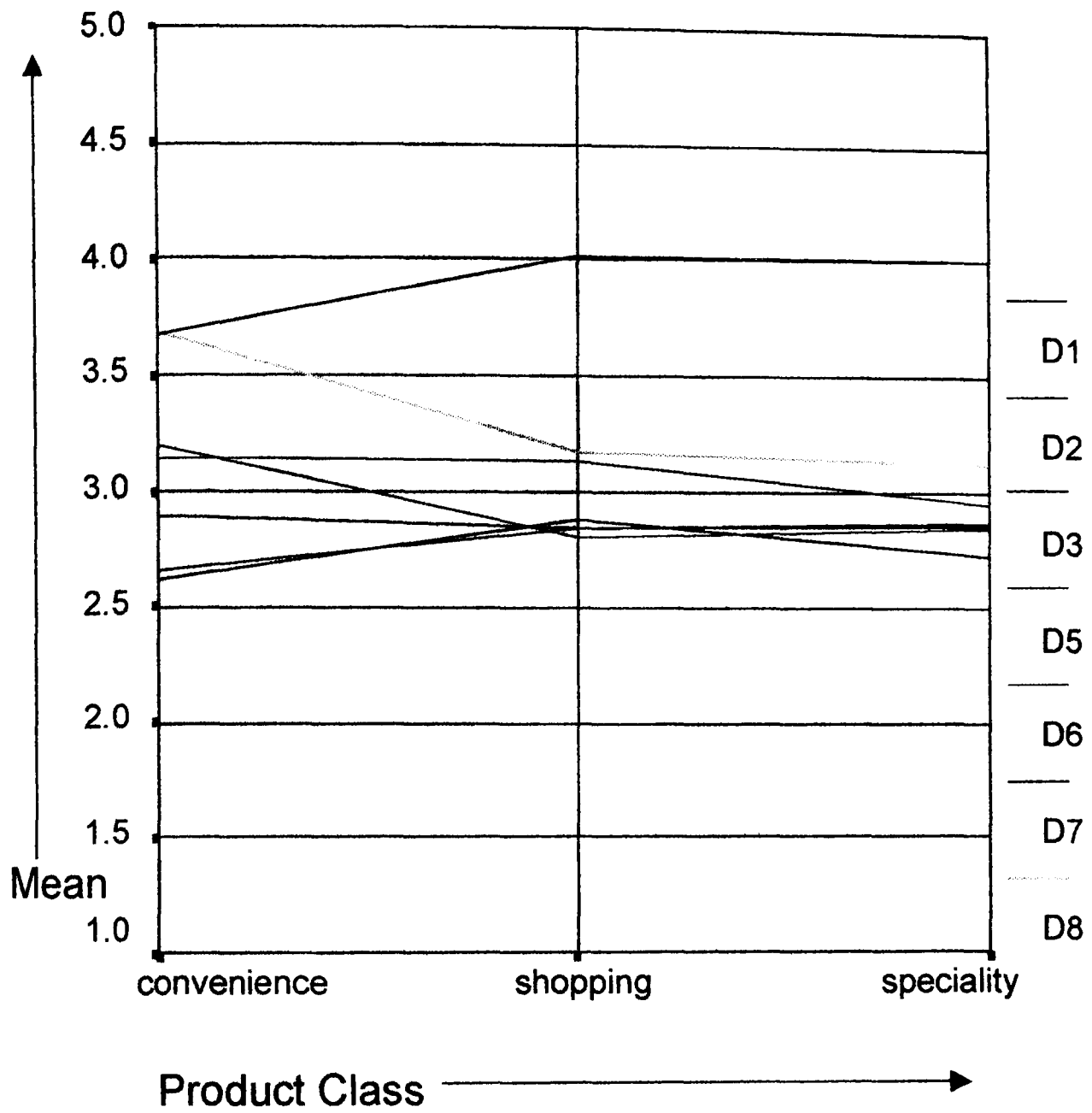
D1 = Perfectionistic Dimension

D2 = Brand Conscious Dimension

D3 = Novelty-Fashion Conscious Dimension

D5 = Price-Value Conscious Dimension

D6 = Impulsive and Careless Dimension

D7 = Confused by Overchoice Dimension

D8 = Habitual and Brand Loyal

Means of Consumers' Decision-Making Style Dimensions across Product Classes

Figure 8.1

the shopping product class (product intangibility between convenience and speciality product classes) has the number of construct valid and reliably measured dimensions lying in between the convenience and speciality product classes.

Analyses of variance were performed separately on the seven consumers' decision making style dimensions. The majority of the consumers' decision making style dimensions showed significant differences for the three product class. This suggests that the product class effect has a substantial influence on consumer's decision-making style. In other words, product class has a prominent effect on consumers' decision-making styles in their purchase behaviour across different product classes. From this, it can be deduced that the means of consumers' decision-making style dimensions differ more between product classes than within each product class.

Finally, the comparative analysis on the consumers' decision-making style dimension means in each product class suggests that the consumers' decision-making style dimensions across the three product classes are different. In addition, the finding from this analysis indicates that on the whole consumers view the convenience products as more distinct than both the shopping and speciality products. While, the shopping products are viewed to be less distinct than the speciality product class. In other words, the boundary which separates the convenience products from both the shopping products and the speciality products seems to be more clearer than the boundary which separates the shopping products from the speciality products.

In conclusion, it is shown in this chapter that the lists of consumers' decision-making style dimensions are indeed different across the convenience,

shopping and speciality product classes. This has been indicated by the differences in the correlation among the items of the dimensions in each product class, in the exploratory factor analysis. In addition, the dimension means are also shown to be different across the three product classes, in the analysis of variance.

In this chapter, it has been illustrated that the lists of consumers' decision-making styles differ in each of the three product classes due to the significant product class effect. Having done that, this study will proceed to the next chapter in which the effects of selected demographic variables which can influence consumers to differ along the consumers' decision-making style dimensions will be investigated.

CHAPTER 9

The Relationship of Demographic Differences with Consumers' Decision-Making Style Dimensions

9.0. Introduction

In Chapter Four, the measurement model that fits the data which is better than the earlier suggested measurement model adopted from the literature has been generated. Using this modified measurement model, the relationships of the differences of the selected variables and the consumers' decision-making styles in purchasing products from different product classes will then be analysed. The selected variables are the consumers' age, household sizes, job types, income levels, household types and gender. These demographic variables are also selected to provide an explanation on why consumers differ on those decision-making style dimensions, as discussed in the previous chapter.

The selection of these variables has been thoroughly discussed in Chapter Three. The household types variable need to be divided into two dichotomy variables; marital status (married or unmarried), and the existence of children in the household (household with or without children). The reason for this division is that from the frequency of responses obtained for the household types variable suggest that the number of responses can feasibly be divided into these two subdivisions. Other form of divisions will result in uneven or insufficient number of cases in one or more subsections which make them difficult to be analysed using the relevant statistical analysis. Therefore, the household types demographic variable will be represented by the two new demographic variables which are marital status and child existence in the household. The first four variables; consumers' age, household sizes, job types and

income levels, will be analysed in four levels. Meanwhile, the other three variables: marital status, the existence of children in the household and gender, will be analysed in two levels. The number of levels in each variable is determined by the number of cases for each level and the nature of variables to be analysed.

The guideline used in determining the levels are firstly, the number of cases that formed at each level are to be set as equal as possible. Secondly, the number of cases at each level is to be set at around 20% of the total usable samples. The levels of selected measurement of variables are illustrated in Table 9.1. To analyse the relationships of the differences of these variables and the consumers' decision-making styles in purchasing products from different product classes, the differences in means of the measurement variables from the three product classes will be analysed. The means are derived by aggregating the values from all the measurement variables of each dimension of consumers' decision-making styles. Two types of methods will be used in analysing the means differences of the measurement variables provided by the samples.

For the purpose of analysing the relationships of the differences of variables and the consumers' decision-making style dimensions at four levels of scale (consumers' age, household sizes, job types and incomes), the Repeated Measures Analysis of Variance method available in the SPSS statistical program will be employed. Under this method, the Bonferroni Multiple Comparison test will be used to analyse the significance of differences between the means of the measurement variables. The Bonferroni Multiple Comparison test is chosen because it adjusts the level of observed significance of the fact that multiple comparisons are made. It is

Factor	Sub Group (Level)	Frequency	% of Total
Age	18-29 yr	45	18
	30-44 yr	81	32
	45-59 yr	54	21
	60 and above	76	29
	Total	256	100
Household Size	1	68	27
	2	83	33
	3	54	22
	4 and above	45	18
	Total	250	100
Job Type	White Collar	84	33
	Blue Collar	58	23
	Retired	50	20
	Non-Income Earner	64	24
	Total	256	100
Income Level (mth)	£500 and less	64	28
	£501-£1250	82	35
	£1251-£2000	38	17
	£2000 and above	47	20
	Total	231	100
Marital Status	Married	142	57
	Non-Married	109	43
	Total	251	100
Child Existence	With Child	126	50
	Without Child	125	50
	Total	251	100
Gender	Male	109	42
	Female	150	58
	Total	259	100

Measurement Levels of the Selected Variables

Table 9.1

also the best test to be used when the number of pairs to be compared is small (SPSS Manual, 1996).

In order to analyse the relationships of the differences of variables and the consumers' decision-making style dimensions on two levels of scale (consumers' marital status, existence of children in household and gender), the Independent Sample t-test method of means comparison will be used. This method of means comparison is used because this study deals with means from random cases in each group involved in the comparisons.

After deciding on the categories of levels of measurement for each demographic variable, this study will proceed by analysing the relationships of the differences of each selected demographic variable and the consumers' decision-making style dimensions in purchasing products from different product classes. The analysis on these selected variables will be done at the between subgroup levels of the particular demographic variable. This is in order to see the relationships of the differences of each selected demographic variable, at predetermined levels, with the consumers' decision-making styles in their purchase behaviour, across the three product classes.

The significant differences in means between the three product classes, as well as between the selected demographic variable subgroups will indicate that the relationship of the differences of the particular demographic variable is significant with the differences of the consumers' decision-making styles when purchasing products from the different product classes. In other words, this demographic variable

provides the basis for consumers to differ along a particular dimension of consumers' decision-making style when purchasing products from different product classes.

9.1. Age Group

For the analysis of consumers' decision-making styles according to age group, consumers are categorised into four levels of age subgroups. They are categorised as 15 to 29 years old which consists of young consumers, 30 to 44 years old which consists of matured consumers, 45 to 59 years old which consists of middle-aged consumers, and 60 years old and above which consists of old consumers.

This classification of consumers' age is close to the ACORN (A Classification of Residential Neighbourhoods) classification by Webber (1977). He Classified consumers into four age structures; Youngest Adult (often between 18-24 years old), Maturing Adult (often between 25-44 years old), Established Adult (often between 45-64 years old) and Retired Adult (oftenly 65 years old and above). These consumers' age subgroups will then be analysed according to each dimension of consumers' decision-making styles.

9.1.1. Perfectionistic Dimension

For the Perfectionistic dimension, there are significant differences in means between the age subgroups of 15 to 29 years old and 30 to 44 years old, and the 60 years old and above subgroup, for the convenience product class as shown in Table 9.2. This indicates that when dealing with the convenience products, younger consumers are significantly less perfectionistic than the older consumers.

9.1.2. Brand Conscious Dimension

Unlike the first dimension, Brand Conscious dimension has no significant difference in means that occurs between the age subgroups, as shown in Table 9.2. In this dimension, it is indicated that the age variable does not significantly affect the consumers' decision-making styles. In other words, this situation indicates that there is no significant evidence that shows consumers' age differences will affect their decision-making styles in their purchase behaviour regardless of product class.

9.1.3. Novelty-Fashion Conscious Dimension

In the Novelty-Fashion Conscious dimension, there are significant differences in the means for the shopping and speciality product classes, but not in the convenience product class. Table 9.2 shows that the mean for the 15 to 29 years old consumers is significantly greater than the mean for consumers in the 45 to 59 years old subgroup. While for the speciality product class, the mean for 15 to 29 years old consumers is significantly greater than the mean for the 45 to 59 years old and 60 years old and above consumers. This indicates that the younger consumers are significantly more novelty–fashion conscious than their older counterparts in both the shopping and speciality product classes, but not in the convenience product class.

9.1.4. Price-Value Conscious Dimension

For the Price-Value Conscious dimension, there are significant differences in the means for all the three product classes between the age subgroups, as shown in Table 9.2. For convenience products, the means for subgroups 15 to 29 years old and 30 to 44 years old consumers are significantly lower than the mean for subgroup 60 years and above consumers. While the mean for subgroup 15 to 29 years old

Dimension	Product Class	1 15–29 years	2 30–44 years	3 45–59 years	4 60 yr plus	Significant Difference (F probability that means are indifferent)
Perfectionistic	CONV	3.53	3.50	3.76	3.88	1&4 (.02); 2&4 (.00)
	SHOP	4.03	3.99	4.11	4.00	Nil
	SPEC	4.10	3.98	4.02	3.96	Nil
Brand Conscious	CONV	2.76	2.63	2.47	2.75	Nil
	SHOP	3.09	2.83	2.74	2.79	Nil
	SPEC	3.08	2.85	2.80	2.84	Nil
Novelty-Fashion Conscious	CONV	2.97	2.89	2.81	2.92	Nil
	SHOP	3.05	2.83	2.69	2.85	1&3 (.03)
	SPEC	3.16	2.87	2.70	2.77	1&3 (.00); 1&4 (.01)
Price-Value Conscious	CONV	2.97	2.97	3.27	3.33	1&4 (.04); 2&4 (.01)
	SHOP	2.80	3.03	3.14	3.24	1&4 (.00)
	SPEC	2.62	2.77	2.90	3.17	1&4 (.00); 2&4 (.01)
Impulsive and Careless	CONV	2.95	3.03	2.70	2.70	2&3 (.03); 2&4 (.01)
	SHOP	2.33	2.44	2.41	2.40	Nil
	SPEC	2.52	2.47	2.30	2.33	Nil
Confused by Overchoice	CONV	2.42	2.41	2.46	2.83	1&4 (.02); 2&4 (.00); 3&4 (.03)
	SHOP	2.79	2.81	2.82	2.97	Nil
	SPEC	2.56	2.67	2.74	2.90	Nil
Habitual and Brand-Loyal	CONV	3.69	3.60	3.83	3.69	Nil
	SHOP	3.08	2.97	3.26	3.42	1&4 (.05); 2&4 (.00)
	SPEC	3.24	2.99	2.94	3.30	2&4 (.03); 3&4 (.02)

Significant Differences of the Product Class Means for Each Dimension in Different Age Groups

Table 9.2

consumers are significantly lower than the mean for subgroup 60 years and above consumers for the shopping product class. Also, the means for subgroups 15 to 29 years old and 30 to 44 years old consumers are significantly lower than the mean for subgroup 60 years and above consumers for the speciality product class. This indicates that older consumers are significantly more Price-Value Conscious than their younger counterparts in all the three product classes.

9.1.5. Impulsive and Careless Dimension

For the Impulsive and Careless Consumer dimension, there are significant differences between the mean for the 30 to 44 years old subgroup with the means for the 45 to 59 and the 60 years old and above subgroups, as shown in Table 9.2. In both cases, the means for the 30 to 44 years old subgroup is greater than the means for the 45 to 59 and the 60 years old and above subgroups. This indicates that matured consumers (30 to 44 years old) are significantly more impulsive and careless than their older counterparts when dealing with the convenience products.

9.1.6. Confused by Overchoice Dimension

In the Confused by Overchoice dimension, there are significant differences in the means for the convenience product class as shown in Table 9.2. In this case it can be seen that the means for subgroups 15 to 29, 30 to 44 and 45 to 59 years old are significantly greater than the mean for the 60 years old and above subgroup. This indicates that younger consumers (15 to 59 years old) are significantly less confused by overchoice than older consumers (60 years old and above) when dealing with convenience products.

9.1.7. Habitual and Brand-Loyal Dimension

Lastly, for the Habitual and Brand Loyal dimension, there are significant differences in the means for consumers at the inter subgroup level. From Table 9.2 it can be seen that the means for the subgroups 15 to 29 and 30 to 44 years old are significantly lower than the means for the subgroups 60 years old and above, for the shopping product class. While for the speciality product class, the means for the subgroups 30 to 44 and 45 to 59 years old are significantly lower than the subgroups 60 years old and above. This indicates that younger consumers are significantly less habitual and brand-loyal the than older consumers when dealing with shopping products. For the speciality product class, matured consumers are significantly less habitual and brand-loyal than the older consumers.

Summary

The relationships of the differences of consumers' age and their decision-making styles in different product classes can be summarised by making comparison between the subgroups. For the comparison between the age subgroup, all dimensions, except the Brand Conscious dimension, show significant differences in the means between product classes. Among all, the Price-Value Conscious dimension shows the differences in the means involving all the three product classes. While, Habitual and Brand-Loyal dimension, and Novelty-Fashion Conscious dimension show significant differences in the means involving shopping and speciality product classes. The Perfectionistic dimension, Impulsive and Careless dimension, and the Confused by Overchoice dimension show significant differences in the means involving convenience product class only.

In other words, age is a significant demographic variable by which consumers differ along the dimensions of decision-making style, except for the Brand Conscious dimension. Therefore, from the inter subgroup level analyses, it can be concluded that age is one of the important factors that influences the determination of consumers decision making styles in their purchase behaviour across the three product classes.

9.2. Household Size

In the analysis of consumers' decision-making styles according to household size, consumers are categorised into four levels of subgroups according to the number of people living together as household members. They are categorised as one-member household subgroup, two-member household subgroup, three-member household subgroup and four-member and above household subgroup. The average number of household members in the four subgroups is 4.07 with eight as a maximum number of household member. These household subgroups will then be analysed according to each dimension of consumers' decision-making styles.

9.2.1. The Relationships of the Differences of Household Size Variable with all Dimensions

From Table 9.3, it can be seen that there is no significant difference in the means that occur between the household size subgroups in all the consumers' decision-making style dimensions. This indicates that the household size variable does not significantly affect the consumers' decision-making style dimensions. In other words, household size does not provide a significant basis by which consumers differ along any of the dimensions of consumers' decision-making styles. Consequently, this situation indicates that there is no significant evidence that shows

Dimension	Product Class	1 member h/hold	2 member h/ hold	3 member h/hold	4 member h/hold plus	Significant Difference (F probability of indifferent means)
Perfectionistic	CONV	3.68	3.66	3.82	3.51	Nil
	SHOP	4.06	4.02	3.97	4.06	Nil
	SPEC	3.93	4.02	3.96	4.11	Nil
Brand Conscious	CONV	2.57	2.68	2.69	2.61	Nil
	SHOP	2.80	2.92	2.79	2.82	Nil
	SPEC	2.73	2.93	2.83	2.94	Nil
Novelty-Fashion Conscious	CONV	2.78	2.94	2.91	2.89	Nil
	SHOP	2.71	2.93	2.87	2.80	Nil
	SPEC	2.72	2.92	2.88	2.87	Nil
Price-Value Conscious	CONV	3.12	3.12	3.12	3.20	Nil
	SHOP	3.11	3.08	3.07	3.00	Nil
	SPEC	2.95	2.82	2.90	2.84	Nil
Impulsive and Careless	CONV	2.80	2.81	2.85	3.00	Nil
	SHOP	2.41	2.35	2.42	2.42	Nil
	SPEC	2.35	2.36	2.51	2.36	Nil
Confused by Overchoice	CONV	2.58	2.52	2.56	2.49	Nil
	SHOP	2.96	2.78	2.86	2.85	Nil
	SPEC	2.85	2.61	2.77	2.71	Nil
Habitual and Brand-Loyal	CONV	3.59	3.71	3.75	3.76	Nil
	SHOP	3.18	3.21	3.07	3.19	Nil
	SPEC	3.07	3.15	3.07	3.13	Nil

Significant Differences of the Product Class Means for Each Dimension in Different Household Size Groups

Table 9.3

consumers' household size differences will affect their decision-making styles in their purchase behaviour regardless of product classes.

As discussed in Chapter Three, theoretically consumers' household size should have some influence on the decision-making styles in their purchase behaviour, but here this is not the case. This reason might be that the range of differences in the household size (one to four household members) is not big enough to enable significant differences in the means between the household size subgroups to be realised in this analysis. This small variation in the household size is contributed by the larger increase in the number of households compared to the increase in the number of inhabitants, which is a common scenario among the European Union countries for the last 20 years period (Antonides and van Raaij, 1998).

9.3. Types of Job

In the analysis of consumers' decision-making styles according to the types of job, consumers are categorised into four levels of subgroups, according to the types of professions or occupations they are engaged in. They are categorised as non-income earners subgroup, white-collar subgroup, blue-collar subgroup and retired subgroup. The non-income earner subgroup consists of consumers who are not paid for their engagements. This subgroup includes students, unemployed consumers and housewives.

The white-collar subgroup consists of consumers who work mainly in non-technical jobs such as administrators, teachers, clerks and lawyers. On the other hand, the blue-collar subgroup consists of consumers who work mainly in technical jobs such as technicians, nurses, engineers, bus drivers and general labourers. Finally, the retired subgroup consists of consumers who are mainly pensioners. They receive

income in terms of pension or other forms of retirement benefits. These types of job subgroups will then be analysed according to each dimension of consumers' decision-making styles.

9.3.1. Perfectionistic Dimension

There are significant differences in the means between the job types subgroup levels as shown in Table 9.4 for the convenience product class. These significant differences in the means for the convenience product class are between the white-collar and the blue-collar subgroup, as well as the white-collar and the retired subgroup. This indicates that the consumers from the blue-collar and retired subgroups are significantly more perfectionistic in dealing with convenience products than the white-collar consumers.

9.3.2. Price-Value Conscious Dimension

From Table 9.4, it can be seen that there are significant differences in the means for the convenience and the speciality product classes. For the convenience product class, the mean for the white-collar subgroup is significantly lower than the means for the non-income earners and the retired subgroups. This indicates that the white-collar consumers are less Price-Value Conscious than the non-income earners and the retired consumers when dealing with convenience products. While for speciality products, the mean for the white-collar subgroup is significantly lower than the mean for the retired subgroup. This indicates that white-collar consumers are significantly less Price-Value Conscious than the retired consumers when dealing with speciality products.

Dimension	Category	1 Non Income Earner	2 White Collar	3 Blue Collar	4 Reti-red	Significant Difference (F probability that means are indifferent)
Perfectionistic	CONV	3.69	3.45	3.76	3.91	2&3 (.02); 2&4 (.00)
	SHOP	3.98	4.05	4.04	4.04	Nil
	SPEC	3.96	4.09	3.99	3.93	Nil
Brand Conscious	CONV	2.64	2.63	2.63	2.76	Nil
	SHOP	2.77	2.91	2.84	2.87	Nil
	SPEC	2.85	2.89	2.89	2.86	Nil
Novelty-Fashion Conscious	CONV	2.93	2.89	2.92	2.83	Nil
	SHOP	2.81	2.90	2.84	2.78	Nil
	SPEC	2.82	2.93	2.90	2.73	Nil
Price-Value Conscious	CONV	3.27	2.92	3.16	3.34	1&2 (.02); 2&4 (.00)
	SHOP	3.14	2.92	3.10	3.23	Nil
	SPEC	2.94	2.65	2.94	3.19	2&4 (.00)
Impulsive and Careless	CONV	2.80	2.94	2.95	2.64	Nil
	SHOP	2.32	2.45	2.44	2.40	Nil
	SPEC	2.37	2.39	2.50	2.34	Nil
Confused by Overchoice	CONV	2.63	2.30	2.62	2.78	1&2 (.04); 2&4 (.00)
	SHOP	2.87	2.74	2.92	2.99	Nil
	SPEC	2.80	2.54	2.84	2.87	Nil
Habitual and Brand-Loyal	CONV	3.58	3.77	3.65	3.75	Nil
	SHOP	3.10	3.10	3.26	3.35	Nil
	SPEC	3.11	3.09	3.07	3.22	Nil

Significant Differences of the Product Class Means for Each Dimension in Different Job Type Groups

Table 9.4

9.3.3. Confused by Overchoice Dimension

For the Confused by Overchoice dimension, there are significant differences in the means that occur between the subgroups as shown in Table 9.4 for the convenience product class. These significant differences in the means for the convenience product class are between the white-collar subgroup and the non-income earner subgroup, and also between the white-collar subgroup and the retired subgroup. This indicates that consumers from the non-income earner and retired subgroups are significantly more confused by overchoice in dealing with convenience products than the white-collar consumers.

9.3.4. Dimension with Insignificant Mean Differences

From Table 9.4, it can be seen that four out of seven consumers' decision-making style dimensions have no significant difference in the means that occur between the job type subgroups. Those dimensions are the Brand Conscious dimension, Novelty-Fashion Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension. This indicates that the types of job is not a significant variable that can affect consumers' decision-making styles in those consumers' decision-making style dimensions. In other words, this situation indicates that differences in consumers' type of job is not significant for the determination of their decision-making styles in their purchase behaviour regardless of product classes, for the Brand Conscious dimension, Novelty-Fashion Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension.

Summary

For the consumers' types of job variable, it can be summarised that three dimensions; Price-Value Conscious, Perfectionistic and Confused by Overchoice dimensions, show significant differences in the means between product classes. Among all, the Price-Value Conscious dimension shows differences in the means involving all convenience and speciality product classes in the job types subgroups. However, Perfectionistic and Confused by Overchoice dimensions show significant differences in the means involving convenience product class only.

On the other hand, the other four dimensions show insignificant differences in the means of all the three product classes in the types of job subgroups. Those are the Brand Conscious dimension, Novelty-Fashion Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension. In other words, it can be concluded that consumers' types of job provide a significant basis for consumers to differ along the three dimensions; Price-Value Conscious, Perfectionistic and Confused by Overchoice dimensions, in their purchase behaviour across the product classes. Therefore, from the between subgroup level analysis, it can be concluded that consumers' types of job is also one of the important factors that influences the consumers' decision-making styles in their purchase behaviour across product classes.

9.4. Income

In the analysis of consumers' decision-making styles according to their gross monthly income, consumers are categorised into four levels of monthly income subgroups. They are categorised as less than £500 per month subgroup. £501 to £1250 per month subgroup, £1251 to £2000 per month subgroup and £2001 per month and

above subgroup. These consumers' monthly income subgroups will then be analysed according to each dimension of consumers' decision-making styles.

9.4.1. Price-Value Conscious Dimension

For the Price-Value Conscious dimension, as shown in Table 9.5, it can be seen that there are significant differences in the means of the convenience and the speciality product classes that occur between the income subgroups. For the convenience and speciality product classes, the mean for the £2001 and above monthly income subgroup is significantly lower than the means for the less than £500 per month and the £501 to £1250 per month subgroups. This indicates that the consumers with monthly income of £2001 and above are significantly less Price-Value Conscious than the consumers with monthly income less than £500 per month and £501 to £1250 per month, when dealing with convenience and speciality products.

9.4.2. Confused by Overchoice Dimension

There are significant differences in the means that occur between the subgroups as shown in Table 9.5 for the convenience product class of the Confused by Overchoice dimension. These significant differences in the means for the convenience product class are between the £501 to £1250 per month subgroup with the £2001 per month and above subgroup, and also between the £1251 to £2000 per month income and the £501 to £1250 per month subgroup with the £2001 per month

Dimension	Category	1 less £500	2 501-1250	3 1251-2000	4 2001 plus	Significant Difference (F probability that means are indifferent)
Perfectionistic	CONV	3.75	3.67	3.57	3.51	Nil
	SHOP	3.92	4.01	4.08	4.08	Nil
	SPEC	3.93	4.03	4.03	4.12	Nil
Brand Conscious	CONV	2.67	2.63	2.50	2.71	Nil
	SHOP	2.76	2.84	2.76	3.03	Nil
	SPEC	2.87	2.83	2.88	2.99	Nil
Novelty-Fashion Conscious	CONV	2.85	2.86	2.80	3.04	Nil
	SHOP	2.76	2.85	2.74	3.13	Nil
	SPEC	2.80	2.85	2.78	3.17	Nil
Price-Value Conscious	CONV	3.30	3.20	3.03	2.62	1&4 (.00); 2&4 (00)
	SHOP	3.12	3.16	2.93	2.78	Nil
	SPEC	3.06	2.94	2.77	2.35	1&4 (.00); 2&4 (00)
Impulsive and Careless	CONV	2.75	2.98	2.73	3.02	Nil
	SHOP	2.49	2.39	2.31	2.44	Nil
	SPEC	2.50	2.43	2.25	2.42	Nil
Confused by Overchoice	CONV	2.80	2.60	2.36	2.21	1&4 (.00); 2&4 (00)
	SHOP	2.95	2.92	2.79	2.48	Nil
	SPEC	2.85	2.82	2.59	2.39	Nil
Habitual and Brand-Loyal	CONV	3.59	3.64	3.82	3.83	Nil
	SHOP	3.19	3.14	3.20	3.06	Nil
	SPEC	3.15	3.00	3.09	3.15	Nil

Significant Differences of the Product Class Means for Each Dimension in Different Income Groups

Table 9.5

and above subgroup. This indicates that consumers from the subgroups £501 to £1250 per month and £1251 to £2000 per month are significantly more confused by overchoice when dealing with convenience products than consumers whose earning is £2001 per month and above.

9.4.3. Dimension with Insignificant Mean Differences

From Table 9.5, it can be seen that five of the seven consumers' decision-making style dimensions have no significant difference in the means that occur between the job type subgroups. Those dimensions are the Perfectionistic dimension, Brand Conscious dimension, Novelty-Fashion Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension. This indicates that the consumers' income level is not a significant variable that can affect the consumers' decision-making styles in these dimensions. In other words, this situation indicates that the differences in consumers' income level is not significant in determining their decision-making styles in their purchase behaviour regardless of product classes for the Perfectionistic dimension, Brand Conscious dimension, Novelty-Fashion Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension.

Summary

The relationships of the differences of income variable and the consumers' decision-making styles on different product classes can be summarised by looking at the between income subgroup comparisons. At the inter subgroup level. two dimensions; Price-Value Conscious and Confused by Overchoice dimensions, show significant differences in the means between product classes in the income subgroups.

Among all, the Price-Value Conscious dimension shows differences in the means involving convenience and speciality product classes. While, Confused by Overchoice dimension shows significant difference in the means involving convenience product class only.

On the contrary, five of the seven consumers' decision-making style dimensions show insignificant differences in the mean that occurs between the job type subgroups. Those dimensions are the Perfectionistic dimension, Brand Conscious dimension, Novelty-Fashion Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension. In other words, it can be concluded that consumers' income level provides a significant basis for consumers to differ along the two dimensions; Price-Value Conscious and Confused by Overchoice dimensions, in their purchase behaviour across product class. Therefore from the inter subgroup level analysis, it can be considered that consumers' income is also one of the important factors that influences the consumers' decision making styles in their purchase behaviour across product classes.

9.5. Marital Status

In this subsection, consumers' decision-making styles in purchasing products from different product classes will be analysed, based on their marital status. For this analysis, consumers will be divided into two subgroups; married and unmarried subgroup. Married subgroup consists of households that have formal marital relationship, while unmarried subgroup consists of households which are not related by formal marriage. This includes cohabiting couples, single parents or group of

unrelated people living together as household units than their unmarried counterparts when dealing with convenience products and shopping products.

9.5.1. Habitual and Brand-Loyal Dimension

For the Habitual and Brand-Loyal dimension, there are significant differences in the means that occur between the subgroups as shown in Table 9.6. These significant differences in the means between the marital status subgroups occur in the convenience product class and the shopping product class. In both the convenience and shopping product classes, the means for the married subgroup are greater than those of the unmarried subgroup. This implies that married consumers are more habitual and brand-loyal when dealing with both the convenience and shopping products in their purchase behaviour.

9.5.2. Dimension with Insignificant Mean Differences

From Table 9.6, it can be seen that six out of the seven consumers' decision-making style dimensions have no significant difference in the means that occur between the three product classes in the marital status subgroups. Those dimensions are the Perfectionistic dimension, Brand Conscious dimension, Novelty-Fashion Conscious dimension, Price-Value Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension.

This indicates that the consumers' marital status is not a significant variable that can affect the consumers' decision-making styles in these dimensions. In other words, this situation indicates that the differences in consumers' marital status is not significant in determining their decision-making styles in their purchase behaviour regardless of the product classes for the Perfectionistic dimension, Brand Conscious

Dimension	Product Class	1 Married	2 Unmarried	Mean Diff	2 tail significance
Perfectionistic	CONV	3.71	3.61	.10	.22
	SHOP	4.06	3.98	.08	.23
	SPEC	4.04	3.97	.07	.35
Brand Conscious	CONV	2.66	2.62	.04	.68
	SHOP	2.83	2.85	.02	.83
	SPEC	2.83	2.90	.13	.47
Novelty-Fashion Conscious	CONV	2.88	2.88	.00	.96
	SHOP	2.83	2.83	.00	.96
	SPEC	2.81	2.88	.07	.43
Price-Value Conscious	CONV	3.16	3.12	.04	.66
	SHOP	3.12	3.00	.12	.18
	SPEC	2.93	2.81	.12	.22
Impulsive and Careless	CONV	2.78	2.94	.16	.06
	SHOP	2.40	2.40	.00	.94
	SPEC	2.37	2.41	.04	.69
Confused by Overchoice	CONV	2.57	2.52	.05	.61
	SHOP	2.88	2.84	.04	.70
	SPEC	2.75	2.71	.04	.75
Habitual and Brand-Loyal	CONV	3.80	3.54	.26	.00*
	SHOP	3.27	3.04	.23	.01*
	SPEC	3.16	3.03	.13	.12

Significant Differences of the Product Class Means for Each Dimension in Different Marital Status Groups

Table 9.6

dimension, Novelty-Fashion Conscious dimension, Price-Value Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension.

Summary

The relationships of the differences of consumers' marital status and the consumers' decision-making styles in different product classes can be summarised by looking at the differences in the means of the three product classes at the inter subgroup level of consumers' marital status. From this analysis, only one dimension, that is the Habitual and Brand-Loyal dimension shows significant differences in the means between product classes. In this dimension, the means for both the convenience and shopping product classes are significantly greater for married consumers than unmarried consumers.

While, the rest of the dimensions have insignificant mean differences between product classes at the inter subgroup level of the marital status variable. These dimensions are the Perfectionistic dimension, Brand Conscious dimension, Novelty-Fashion Conscious dimension, Price-Value Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension. In other words, consumers' marital status provides a significant basis by which consumers differ only on the Habitual and Brand-Loyal dimension in their purchase behaviour across product class. Therefore from the inter subgroup level analyses, it can be concluded that consumers' marital status is not a very important variable that can influence the consumers' decision making styles in their purchase behaviour across product classes.

9.6. Child Existence in Household

Subsequently, this study will proceed by analysing consumers' decision-making styles in purchasing products from different product classes based on the existence of child in their households. For this analysis, consumers will be divided into two subgroups; household with children and household without children subgroup. Household with children subgroup consists of consumers who have at least a child in their households. While household without children, subgroup consists of consumers who do not have any child in their households.

9.6.1. Perfectionistic Dimension

In the Perfectionistic dimension, Table 9.7 shows that there is a significant difference in the means of the three product classes for the convenience product class which occur between the child existence in the household subgroups. It is shown that the means for household with children are significantly greater than the childless household. This implies that when dealing with convenience products, the consumers with children are more perfectionistic than the childless household consumers.

9.6.2. Habitual and Brand-Loyal Dimension

For the Habitual and Brand-Loyal dimension, Table 9.7 shows that there is a significant difference in the means of the convenience product class which occur between the subgroups of child existence in the household. It is shown that the means for household with children are significantly greater than the childless household. This implies that when dealing with convenience products, the consumers with children are more habitual and brand-loyal than the childless household consumers.

Dimension	Product Class	1 With Child	2 W/o Child	Mean Diff	2 tail significance
Perfectionistic	CONV	3.75	3.58	.17	.03*
	SHOP	4.05	4.00	.05	.51
	SPEC	4.03	3.98	.05	.54
Brand Conscious	CONV	2.68	2.60	.08	.38
	SHOP	2.83	2.84	.01	.89
	SPEC	2.86	2.87	.01	.89
Novelty-Fashion Conscious	CONV	2.89	2.87	.02	.82
	SHOP	2.84	2.82	.02	.80
	SPEC	2.80	2.89	.09	.30
Price-Value Conscious	CONV	3.21	3.07	.14	.12
	SHOP	3.11	3.02	.09	.34
	SPEC	2.93	2.82	.11	.28
Impulsive and Careless	CONV	2.87	2.82	.05	.57
	SHOP	2.40	2.40	.00	1.0
	SPEC	2.39	2.38	.01	.91
Confused by Overchoice	CONV	2.58	2.51	.07	.46
	SHOP	2.93	2.79	.14	.21
	SPEC	2.81	2.66	.15	.15
Habitual and Brand-Loyal	CONV	3.80	3.66	.14	.00*
	SHOP	3.21	3.13	.08	.40
	SPEC	3.13	3.07	.06	.51

Significant Differences of the Product Class Means for Each Dimension in Different Child Existence in the Household Groups

Table 9.7

9.6.3. Dimensions with Insignificant Mean Differences

From Table 9.7, it can be seen that five out of seven consumers' decision-making style dimensions have no significant difference in the means that occur between the three product classes in the child existence in household subgroups. Those dimensions are the Brand Conscious dimension, Novelty-Fashion Conscious dimension, Price-Value Conscious dimension, Impulsive and Careless dimension, and Confused by Overchoice dimension. This indicates that the consumers' existence of children in their household is not a significant variable that can affect the consumers' decision-making styles in these consumers' decision-making style dimensions. In other words, this situation indicates that the differences in whether or not consumers have children in their household is not significant in determining their decision-making styles in their purchase behaviour regardless of product classes for those five dimensions.

Summary

As previously mentioned, the relationships of the differences of child existence in the consumers' household with their decision-making styles, in different product classes can also be summarised, by looking at the inter subgroup level of this variable. At the inter subgroup level, only two dimensions; Perfectionistic dimension and Habitual and Brand-Loyal dimension show significant differences in the means between product classes. In these dimensions, the means for the convenience product classes are significantly greater for the consumers with children in their household than the childless household consumers.

On the other hand, five of the consumers' decision-making style dimensions show insignificant differences in the means of the three product classes for the child

existence status in the consumers' household subgroups. These dimensions are the Brand Conscious dimension, Novelty-Fashion Conscious dimension, Price-Value Conscious dimension, Impulsive and Careless dimension, and Habitual and Brand-Loyal dimension. In other words, the child existence status in the consumers' household provides a significant basis by which consumers differ only on the Perfectionistic and Habitual and Brand-Loyal dimension in their purchase behaviour, in the convenience product class. Therefore, from the inter subgroup level analyses, it can be concluded that the child existence status in the consumers' household is not a very important factor that can be influential in determining consumers' decision making styles in their purchase behaviour across the product classes.

9.7. Consumers' Gender

Finally, this study will proceed by analysing consumers' decision-making styles in purchasing products from different product classes based on the consumers' gender. For this analysis, consumers will be divided into two subgroups; the male consumers' subgroup and the female consumers' subgroup. In this case, the consumers' gender depends on the members of the household contacted who have been randomly selected in the survey.

9.7.1. Confused by Overchoice Dimension

For the Confused by Overchoice dimension, Table 9.8 shows that there are significant differences in the means for both the shopping product class and the speciality product class which occur between the gender subgroups at the inter subgroup level. It is shown that the means for female consumers are significantly greater than for the male consumers for both the shopping product class and the

speciality product class. This implies that the female consumers are significantly more confused by overchoice than the male consumers, when dealing with both the shopping and speciality products.

9.7.2. Dimensions with Insignificant Mean Differences

From Table 9.8, it can be seen that six out of seven consumers' decision-making style dimensions have no significant difference in the means that occur between the three product classes in the consumers' gender subgroups. Those dimensions are the Perfectionistic dimension, Brand Conscious dimension, Novelty-Fashion Conscious dimension, Price-Value Conscious dimension, Impulsive and Careless dimension, and the Habitual and Brand-Loyal dimension. This indicates that consumers' gender is not a significant variable that can affect the consumers' decision-making styles in these dimensions. In other words, this situation indicates that the differences in the consumers' gender is not significant in determining their decision-making styles in their purchase behaviour, regardless of product classes for these six dimensions.

Summary

For the last selected demographic variable, the relationships of the differences of consumers' gender and their decision-making styles in different product classes can also be summarised by looking at the inter subgroup level of this variable. At the inter subgroup level, only one dimension, Habitual and Brand-Loyal dimension, shows significant differences in the means between product classes. In this dimension, the means for both the shopping product class and the speciality product class are significantly greater for the female consumers than the male consumers.

Dimension	Product Class	1 Male	2 Female	Mean Diff	2 tail significance
Perfectionistic	CONV	3.69	3.66	.03	.70
	SHOP	4.00	4.04	.04	.55
	SPEC	3.99	4.01	.02	.78
Brand Conscious	CONV	2.67	2.64	.03	.72
	SHOP	2.82	2.87	.05	.57
	SPEC	2.83	2.90	.07	.40
Novelty-Fashion Conscious	CONV	2.91	2.88	.03	.70
	SHOP	2.90	2.80	.10	.25
	SPEC	2.88	2.84	.04	.65
Price-Value Conscious	CONV	3.18	3.11	.07	.47
	SHOP	3.05	3.09	.04	.67
	SPEC	2.88	2.89	.01	.98
Impulsive and Careless	CONV	2.80	2.89	.09	.32
	SHOP	2.42	2.40	.02	.80
	SPEC	2.41	2.40	.01	.93
Confused by Overchoice	CONV	2.44	2.62	.18	.07
	SHOP	2.65	3.01	.36	.00*
	SPEC	2.62	2.82	.20	.05*
Habitual and Brand-Loyal	CONV	3.66	3.71	.05	.52
	SHOP	3.20	3.16	.04	.61
	SPEC	3.11	3.11	.00	.97

Significant Differences of the Product Class Means for Each Dimension in Different Gender Groups

Table 9.8

On the contrary, the other six show insignificant differences in the means of the three product classes in the consumers' gender subgroups. Those dimensions are Perfectionistic dimension, Brand Conscious dimension, Novelty-Fashion Conscious dimension, Price-Value Conscious dimension, Impulsive and Careless dimension, and the Habitual and Brand-Loyal dimension. In other words, consumers' gender provides a significant basis by which consumers differ only on the Confused by Overchoice dimension in their purchase behaviour for the shopping and speciality product classes. Therefore, from the inter subgroup level analysis, it can be concluded that the differences in consumers' gender is weakly related to the differences in the consumers' decision making styles in their purchase behaviour across product classes.

Conclusion

In this chapter, conclusion will be made from the findings obtained from the analysis of the seven selected factors; consumers' age, household sizes, job types, income levels, marital status, child existence in household and gender, at the inter subgroup levels of the selected factors. At the inter subgroup levels the relationships of the differences of each selected demographic variables and the consumers' decision-making style dimensions across the convenience, shopping and speciality product classes will be looked at. Each variable will be analysed in terms of the number of consumers' decision-making style dimensions with which the variables seems to have significant relationships. The more the number of dimensions it is related significantly, means the stronger the relationships of the differences of the particular variable is with the consumers' decision-making style dimensions. Therefore, those demographic variables which differences are significantly related with the differences of consumers' decision-making styles can also be seen as

providing the significant basis by which consumers differ on the particular consumers' decision-making style dimension.

At the inter subgroup levels, the consumers' age seems to be relatively the strongest demographic variable which differences are significantly related to the differences in the consumers' decision-making style dimensions. This variable seems to have significant relationships with all the consumers' decision-making style dimensions, except for the Brand Conscious dimension. Second, comes the consumers' job type variable. This demographic variable seems to have significant relationships with three dimensions; Perfectionistic, Price-Value Conscious and Confused by Overchoice dimensions out of the seven consumers' decision-making style dimensions.

Next is the consumers' income levels and child existence in household variables. Both variables variable seems to have significant relationships with two out of the seven consumers' decision-making style dimensions. The two dimensions influenced by the consumers' income level variable are the Price-Value Conscious dimension and the Confused by Overchoice dimension. Whereas, the child existence in household variable has significant relationships with the Perfectionistic dimension and the Habitual and Brand-Loyal dimension.

The other two selected variables; consumers' marital status and consumers' gender have only seems to have significant relationship with one of the seven consumers' decision-making style dimensions. Consumers' marital status has managed to influence the Habitual and Brand-Loyal dimension, while consumers' gender has managed to influence the Confused by Overchoice dimension. Finally, the

consumers' household size does not appear to have significant relationship with any of the seven consumers' decision-making style dimensions.

In discussing the relationship of the selected demographic variables with the consumers' decision-making style dimensions, so far the analyses are done on the assumption that each demographic variable is independent of each other. However in the true sense, it is important to acknowledge the possible confounding effects between the demographic variables that may effect the relationships of those demographic variables with consumers' decision-making style dimensions. This is difficult to be determined solely from the findings of this study. For example, the finding indicates that older consumers are fussier about convenience products. This may also be due to the fact that they are retired, which is included as one of the job type category. Job type effect may also confounded with age effect because the 'retired' category under the job type variable appears to exhibit similar responses to older age consumers, which is a category under the age variable.

Another example, lower income consumers are found to be more price conscious with convenience goods and speciality goods, and they are also more confused by overchoice. Nevertheless, these may reflect an age effect, with retired consumers represent relatively more of the lower income consumers. Therefore, the confounding effect of job type and income cannot be ruled out here. Married consumers are found to be more brand loyal with convenience and shopping goods, may also be the result of a confound between marital status, income and age variables. Lastly, consumers with children are found to be more perfectionist as well as brand loyal with convenience goods. This may be also due to the confounding effect between existence of children in household and marital status variable. Therefore, the

possible confounding effect between the selected demographic variables need to be taken into consideration. This is required if the findings from the study on the relationships of the differences of the selected demographic variables and the consumers' decision-making style dimensions are to be used as the basis for marketing strategy formulation or reviewed for other related studies.

In conclusion, this chapter managed to analyse the significance of the relationships of the differences of consumers' age, household sizes, job types, income levels, marital status, child existence in the household and gender and the seven consumers' decision-making styles dimensions. It shows that the differences of all selected demographic variables can be related to the differences of the consumers' decision-making style dimensions, except for the household sizes. This implies that those variables can serve as the basis by which consumers differ on the dimensions of their decision-making styles. Thus, the second hypothesis which states that, "The differences in consumers' age, household sizes, types of job, incomes, household types and gender will be significantly related to the differences in the means of the consumers' decision-making style dimensions", is supported by the findings of this study.

CHAPTER 10

Conclusion and Recommendation

10.0. Introduction

In this chapter, firstly a link between the theoretical discussion done in Chapter Two and Three, the model developed in Chapter Four and Seven, and the empirical findings in Chapter Six, Eight and Nine will be established. Next, the salient implications of this synthesis will be discussed, followed by the discussion of the limitation faced by the researcher. Lastly, to conclude, the discussion of the various possible avenues for future related research will be suggested.

Before discussing further the implications of the findings of the study, it will be helpful if the main objectives of the study are once again reviewed. To refresh, the objective of the study carried out is to investigate the effects of product class, and the relationships of the differences of the selected demographic variables and the consumers' decision-making styles in their purchase behaviour.

Consequently, the discussion on the implications suggest by the findings of the study will revolve around those main objectives. Also, the theoretical, managerial and policy implications of the study on the consumer behaviour literature in particular, and other relevant disciplines of science, in general will specifically be looked at. In other words, the findings of the study will benefit both the academic and real world marketing domains. This is because according to Brinberg and Hirschman (1986),

> for the field of marketing to advance, however, multiple perspectives are needed so that the strengths of one may compensate for the weaknesses of the other. The strength of the academic orientation is the rigour brought to bear on the concepts and their relations. The strength of the practitioner orientation is

the pragmatic relevance of the problem under study and the sophistication used to articulate that problem.

<div align="right">(Brinberg and Hirschman, 1986)</div>

Based on this notion, what the implications of the study can offer to the theoretical, managerial and policymakers' perspectives will be drawn.

10.1. Theoretical Implications

In this section, the theoretical implications of the study will be highlighted.

10.1.1. The Replication of Earlier Studies

From the theoretical viewpoint, the present study has replicates the findings from the relevant studies done by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993) with a representative sample of the population of Glasgow. The findings from of the present study indicate that three of the consumers' decision-making style dimensions are consistent for all products in general, regardless of the product class. This partially supports the findings by the researchers mentioned earlier. Their studies suggest that these three dimensions of consumers' decision-making styles are among those dimensions which consistently emerge as to be the dimensions on which the consumers differ in their purchase behaviour (except for the Price-Value Conscious dimension in Hafstrom et. al. (1992) which has alpha coefficient of reliability of 0.31). The rest of the dimensions appear inconsistent or does not appear at all in two or more studies or product classes. Therefore, the findings of this study, together with those found in earlier studies, suggest that the three consumers' decision-making style dimensions (Brand Conscious dimension, Confused by Overchoice dimension and Price-Value Conscious

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dimension) are the consistent decision-making style dimensions on which consumers differ in their reported purchase behaviour for all product classes.

From the exploratory factor analysis, it can also be deduced that the three consumers' decision-making style dimensions appear to be useful indicators of consumers' purchase. In other words, psychographic profiling, which in this case are in the form of consumers' decision-making style dimensions, can be utilised to some extent, in illustrating consumers' purchase behaviour in marketing. This is based on the findings as discussed in both Chapter Seven and Eight of this thesis. One of the most important uses of psychographic profiling is in the area of market segmentation. Thus, this supports the significance of psychographic theory in marketing, and in agreement with Gunter and Furnham's (1992) statement,

> Psychographic (profiling) is neither the panacea for all marketing woes, nor is it a trivial fad that will pass away. It is based on sensible and sensitive assumptions that by understanding the values and lifestyles of consumers better, their behaviour will be more predictable.

(Gunter and Furnham, 1992)

10.1.2. Methodological Improvement in the Study of Consumers' Decision-Making Style Dimensions.

A significant improvement has been made on the research methodology of consumers' decision-making style dimensions as compared to those studies by Sproles (1985), Sproles and Kendall (1985), Hafstrom et. al. (1992) and Durvasula et. al. (1993). First, the sample used is taken from the general public, rather the students as used by the earlier studies. This is to add more vigour to the findings because the samples used are more representative of the actual consumers, compared to those findings using student samples.

On the contrary, Calder et. al. (1981) argues that using relatively more homogenous group such as undergraduates will minimises random error that might occur by using heterogeneous sample such as the general public. Despite the point, there is no indication of such an effect as far as this study is concerned. Therefore, the benefit in terms of the finding being more useful, because of it being more representative of the general consumers, from using heterogeneous samples outweigh the benefit of minimisation of random error from using homogenous sample.

Secondly, in this study, the initial factor solution used contains equal number of items assigned to each dimension, unlike in those earlier studies. Using an equal number of items implies that equal weight is given to all of the dimensions involved in the study. As a result, the rotated factor solutions (exploratory factor analysis) obtained are also more balanced compared to those of the earlier studies. The more uniform number of items used for each dimension will reduce the bias that may result from the use of unequal number of items, when alpha reliability coefficient is measured. This is because the number of items used to measure a construct can effect the value of the alpha coefficient of reliability (Rosenthal and Rosnow, 1984).

For example, a dimension which has eight items has more opportunities to increase the alpha coefficient of reliability (such as the deletion of problematic measurement variable). On the other hand, a dimension which has three items has less opportunities for such an adjustment. Therefore, by using a similar number of items for each construct will reduce the possible bias effect that may arise from the use of unequal number of items assigned to each construct.

10.1.3. Using the Product Class Element in the Study of Consumers' Decision-Making Style Dimensions.

This study is also done to investigate the product class effects on the profiles of the consumer's decision-making style scales. The previous studies assumed that the consumers would approach the market with the same decision-making styles when purchasing products regardless of which class of products they were dealing with. This is because no emphasis was given to take into account the potential effects that the product class might have on the consumers' decision-making styles. On the other hand, this study has proven that partially, the product class effect does have some influences on the consumers' decision-making styles towards purchasing products from different product classes. Therefore, with the inclusion of the product class factor into the consumers' decision-making styles framework, the study has managed to enrich the model of the consumers' decision-making styles by replicating the model of the consumers' decision-making style dimensions initiated by the earlier studies.

In addition, the study also provides some insights on the consumers' awareness with the Copeland's (1923) convenience, shopping and speciality product classification. Although this classification of products has been well established in the marketing texts and concept, surprisingly very few attempts, if any, have been made to make use of this product classification in related studies. The findings from the present study have to some extent managed to provide some insights on consumers' awareness with the Copeland (1923) product classification scheme. From the consumers' responses, it can safely be assumed that they at least can make sense of the basic concepts of classifying products according to the convenience, shopping and speciality product classes by the way they responded to the examples of products provided to represent each product class.

As mentioned earlier, the findings also suggest that the boundary between convenience and shopping, and between convenience and speciality products are more distinct compared to the boundary between the shopping and speciality products. Therefore, the marketing practitioners need to take into account the product class effect when dealing with the consumers' decision-making style dimensions, especially between the convenience products and both the shopping and speciality products.

10.1.4. Investigation of the Relationships of the Differences of the Selected Demographic Variables and the Consumers' Decision-Making Style Dimensions.

In addition to the product class effect, the effects of selected demographic variables are also investigated in the study. The selected demographic variables are the consumers' age, gender, household size, types of job, income, marital status, and the existence of children in the household. The findings are able to furnish the consumers' decision-making style dimensions study model with more theoretical insights, regarding the effects of the demographic variables on consumers' decision-making styles, in their purchase behaviour.

The finding suggests that the consumers' age is the most significant demographic variable which differences have significant relationships with the differences of consumers' decision-making styles. Meanwhile, the consumers' types of job, income and the existence of children in the household are relatively moderate demographic variables, while the consumers marital status, household size and gender are relatively weak in terms of the relationships of their differences with the differences of the consumers' decision-making styles in their purchase behaviour. This enriches the scope of studying consumers' decision-making styles by

interpolating more elements of the consumers' characteristics into it. As a result, this can add to the usefulness of this study for the real world situation.

However, caution need to be taken when using the finding on the relationship of the differences of individual demographic variables and consumers' decision-making style dimensions. This is because the relationship might be subject to the confounding effects of other demographic variables. For example, older (age variable) consumers may also belong to retired (job type variable). As a result, the old age factor may intervene with the relationships of the difference of the job type factor in influencing the consumers' purchase behaviour. A multi-variate analysis with appropriate statistical control might be able to overcome the problem arising from confounding effects between demographic variables. However, such analysis is beyond the scope of this study.

10.1.5. Development of the Measurement Model for Consumers' Decision-Making Style Dimensions.

Last but not least, this study has also managed to provide a more appropriate measurement model for measuring the consumers' decision-making styles. The development of the measurement model is done using the structural equation modeling of the EQS program. Using this technique, the originally hypothesised measurement model is harmonised closely to the available observed data in order to give it a better fit. This produces a measurement model that is more representative to the circumstances of the study. The technique is more contemporary compared to the use of exploratory factor analysis alone, as had been done in the previous studies. The structural equation model technique also helps to partially replicates the consumers' decision-making style dimensions adopted from the previous studies. This adds more

vigour to the method of studying consumers' decision-making styles in their purchase behaviour.

Summary

From the arguments provided above, it can safely be said that the present study has theoretically managed to bring about some significant improvements to the study of consumers' decision-making styles. These improvements cover right from the type of sample used, to the development of a more appropriate measurement model that can be used as a better starting point for the study of consumers' decision-making styles especially in the UK environment. What is more important is that the study is instrumental in appending more actualisation into the previously more experimental types of studies of the consumers' decision-making styles, as depicted by the method used in those earlier studies. This undoubtedly increases the applicability and usefulness of the finding from the more real world kind of study to the marketing practitioners, than just circulating those finding within the academic circle.

10.2. Managerial Implications

The previous section has illustrated that this study manages to add more elements of reality to the study of consumers' decision-making styles. In other words, the study to some extent has managed to bridge the gap between the theoretical world of academics and the real world of marketing practitioners. This will managerially enhance the usefulness of the findings to the more real world situation of marketing practices. However, the contribution of the findings will be more on providing theoretical insights to those marketing strategies that are already being practised in the real world rather than suggesting new strategies. This is because the formulation of

new marketing strategies may requires more dedicated resources and specialised type of study, which are beyond the capacity of the present study.

10.2.1. Cross National Comparison of Consumers' Decision-Making Style Dimensions.

Studies on consumers' decision-making style dimensions using various national samples were done by Sproles and Kendall (1986) using US samples, Hafstrom et. al. (1992) using Korean samples, Durvasula et. al. using New Zealand samples and the present study using UK samples. The finding from these studies are summarised in Table 10.1. From the table, it can be seen that six out of the eight dimensions appeared in all the studies. The dimensions are Brand Conscious, Confused by Overchoice, Price-Value Conscious, Perfectionistic, Impulsive and Careless, and Habitual and Brand Loyal (except in Convenience Product Class of the Present study). This indicates that consumers from this four nations generally differs in most of the consumers' decision-making style dimensions in their purchase behaviour. In other words, consumers in these four nations are becoming more similar in their purchase behaviour with respect to the decision-making styles dimensions involved in their purchase behaviour.

This might be due to the availability of most of the brands of products in most of the countries in the world. This is possible because the marketing strategies adopted by most of the corporations are going more towards globalisation. Companies need to globalise their international strategy by formulating it across markets to take advantage of underlying market, cost, environmental, and competitive factors (Czinkota and Ronkainen, 1999). For example, Cadbury Chocolate, Coca-Cola Drinks, Ford Cars, IBM Computers, Mc Donald Hamburgers, Sony Televisions and Levi's Jeans are sold almost everywhere in the world. Consumers of the world are

STUDY	Sproles & Kendall	Hafstrom et al	Durvasula et al	Present Study		
COUNTRY	US	KOREA	N. ZEALAND	UNITED KINGDOM		
YEAR	1986	1992	1993	1998		
SAMPLE TYPE	Students	Students	Students	General Public		
PRODUCT CATEGORY	General	General	General	Convenience Product	Shopping Product	Speciality Product
D	Brand Conscious	Brand Conscious	Brand Conscious	Brand Conscious	Brand Conscious	Brand Conscious
I	Confused by Overchoice	Confused by Overchoice	Confused by Overchoice	Confused by Overchoice	Confused by Overchoice	Confused by Overchoice
	Price-Value Conscious	Price-Value Conscious	Price-Value Conscious	Price-Value Conscious	Price-Value Conscious	Price-Value Conscious
M	Perfectionis-tic	Perfectionis-tic	Perfectionis-tic	Perfectionis-tic	Perfectionis-tic	Perfectionis-tic
E	Impulsive and Careless	Impulsive and Careless	Impulsive and Careless	Impulsive and Careless	Impulsive and Careless	Impulsive and Careless
N	Habitual, Brand-Loyal	Habitual, Brand-Loyal	Habitual, Brand-Loyal	n.a	Habitual, Brand-Loyal	Habitual, Brand-Loyal
S	Novelty-Fashion Conscious	n.a	Novelty-Fashion Conscious	n.a	n.a	n.a
I	Recreational and Hedonistic	Recreational and Hedonistic	Recreational and Hedonistic	n.a	n.a	n.a
O	n.a	n.a	n.a	n.a	Retailers' Brand Prone	n.a
	n.a	n.a	n.a	Brand and Store Disloyal	n.a	n.a
N	n.a	n.a	n.a	n.a	n.a	n.a
S	n.a	Time-Energy Conserving	n.a	n.a	n.a	n.a

n.a. = not applicable

Cross National Comparison of Consumers' Decision-Making Style Dimensions

Table 10.1

also being more exposed to the same marketing promotions and culture with the advancement in the global communication system such as the use of internet. Therefore, consumers will most likely react similarly when confronting with similar products and shopping environment, thus involving similar decision-making style

dimensions in their purchase behaviour. However, these are all ideas which are subject to empirical test.

10.2.2. Relationship Between Product Attributes and Dimensionality of Consumers' Decision-Making Styles.

One salient point that may be deduced from the findings of this study is the relationship between the product attributes and the variability of the consumers' decision-making style dimensions involved in purchasing the product. The findings indicate that fewer dimensions of consumers' decision-making styles are involved in the consumers' attitudes towards the purchase of convenience products compared to those dimensions involved with the speciality products. Convenience products consist mostly of products with more tangible attributes and few or none of the intangible attributes attached to them. On the other hand, speciality products consist mostly of products with greater number of intangible attributes relative to the tangible attributes attached to them. Meanwhile, the shopping products lie in between the convenience and speciality products in terms of the number of intangible attributes attached to them and the number of consumers' decision-making style dimensions involved in their purchases.

From this, it can be seen that there may be a positive relationship between the product intangibility and the dimensionality of consumers' decision-making styles involved in the consumers' purchase behaviour for the product. The marketers can use this information as a basis to formulate the appropriate marketing strategy in dealing with a product according to the intangibility associated with the product attributes. For example, it will be more appropriate for the marketers to focus on the price-value conscious dimension, such as reducing the profit margin to make it cheaper than competing brands, when dealing with the basic product (less intangibility). On the

contrary, it will be less appropriate for the marketers to focus on the perfectionistic dimension, such as using a highly cost container or packaging to sell the basic product. Based on the finding of the study, the marketers should focus on a less variety of consumers' decision-making style dimensions when dealing with basic products (low intangibility). On the other hand, the marketers should focus more on a variety of consumers' decision-making style dimensions when dealing with sophisticated products (high intangibility).

However, caution also need to be taken on this point as it is not strongly supported by empirical evidence from this study. Perhaps further research is required in the future to test out typical brand attributes associated by consumers with specific product categories.

10.2.3. Consumers' Decision-Making Styles in Practice

The findings of the study have indicated that the consumers' decision-making style dimensions are substantial and the consumers differ on these dimensions in their attitudes to purchase. In other words, when purchasing products in the market, the consumers approach the market with any one or combinations of the decision-making style dimensions. According to the findings, three of the dimensions; Brand Conscious, Confused by Overchoice, and Price-Value Conscious, are those dimensions on which the consumers differ consistently in their purchase behaviour for all product classes. This implies that in whatever types of product, the marketers need to give special considerations to these three dimensions when formulating their marketing strategies.

Firstly, in order to have better chances for their products to be more successful in the market, the marketers need to ensure that their products are branded. This is

because the findings suggest that some of the consumers are brand conscious in their purchase behaviour on most of the types of product they buy. In other words, it is better for the products marketed to be introduced to the consumers through the product brand names. Unbranded products, which can be good products, will be difficult to be identified by the consumers for repeat purchases or be introduced to other potential consumers. An effective brand is the one which identifies the product of a particular organisation (can be manufacturer, supplier, retailer or any organisation related to the marketing of the product) as having a sustainable differential advantage (Doyle, 1989). In other words, an effective brand is the one that can enable the consumers to perceive the product carrying this brand as unique among the rest of the products in its type.

This concept of effective brand can also attract those consumers who are low on the Brand Conscious dimension. This is because excessive and unrealistic claims made by the supplier on the benefits of their branded products which are not reflected by the actual products may cause the consumers to distrust that particular brand product in the market. Therefore, it is important for the suppliers of a product to develop an effective product brand so that the consumers can trust it. This can boost the chances for their brand of products to be successful in the market for a longer period of time, as long as the consumers perceive the brand to live up to their expectations.

Product brand is also instrumental in advertising and promotion because consumers are more likely to remember products by their brand names rather than any other features of the products. In turn, advertising and promotion are important in providing information which can prompt consumers to information search which can

eventually leads to purchases (Baker, 1992). In other words, product brand, through advertising and promotion can increase the consumers' awareness towards the product and initiate them to purchase the product carrying that particular brand. This applies to all class of products, from the most basic usage (eg. table salt, flour and baby nappies) to the highly technical one (eg. computers, hi-fi equipment and mobile telephones).

Secondly, the findings of this study also suggest that some of the consumers can be characterised as confused by Overchoice with all the types of product they are dealing with in the market. Consequently, the marketers who can manage to ease the consumers' confusion by Overchoice are more likely to succeed in marketing their products. The marketers need to find effective ways to provide shortcuts for the consumers to bypass all the irrelevant processes of information search to reach the product that can best suit their requirements. One of the ways available is to provide technical help at the point of purchase in order to assist the consumers in their choice of what products to buy. This is especially valuable for those highly technical products such as personal computers, digital cameras, musical instruments and microwave ovens. Another way might be to have a special display unit to help to project their product better than the other competing brands. This can be helpful for convenience products such as cereals, canned food, cordial and sweeties, and smaller shopping products such as baby clothes, sports equipment and small electrical appliances.

On the other hand, the assistance provided for the confused by Overchoice consumers need to be applied to consumers selectively. This is because some of the consumers who are low on this dimension might view the assistance as an obstacle for

them to make the best choice of products on their own. To some extent if the assistance is done excessively, these consumers who are low on the confused by Overchoice dimension might view the effort by the assistant as 'pushy' and this could reduce their interests to shop at a particular shop. Therefore, the marketers need to be cautious in providing assistance to the consumers because not all consumers are high on the confused by Overchoice dimension. The best way for marketers to deal with this situation is to make aware to the consumers that help is available to those who required it. At the same time, the marketers need to leave those consumers who have indicated that they do not need such assistance in order to make the purchase decision.

Some of the consumers can also be characterised as price-value conscious when dealing with all class of products in the market as suggested by the findings of the study. This might be the result of the strong influence of the economic theory of limited resource to satisfy unlimited wants. The marketers can respond to this by introducing a price discounts, especially during festive seasons, when the quantity of products purchased are at their highest level. In other words, a slight reduction in prices is more likely to increase the quantity purchased by these price-value conscious consumers. Consequently, this will bring in more revenues to the marketers.

The price discounting strategy is applicable to all classes of products, and to be effective, it must be done in a specific period of time. This is because if the consumers perceive that the price discounting the product is offered most of the time, then the feeling of urgency to buy that particular products during the sales period will not be effectively felt by the price-value conscious consumers. If this happens, then the price reduction strategy will not bring in the anticipated increases in the products sold, and in turns become unprofitable to the marketers.

Another effective strategy with regards to the price-value conscious dimension will be the sales promotion. For examples, ' buy one get one free', 'three for the price of two', 'free gift with products sold', 'organising competition with product purchases' and 'free product samples offer'. These types of sales promotions must also be made periodically and, if possible, unpredictably in order to instill the feeling of urgency on part of the consumers. This is to increase the chances of getting a significant increase in the quantity of product sold to cover for the reduction in price of the product sold.

On the other hand, the marketers should also focus on those consumers who are low on the price-value conscious dimensions. In this case, they should concentrate more on cues other than the price in order to capitalise on them. This kind of situation is more relevant for the luxury product market where success can bring in a substantial margin of profit to the marketers. A good example is the marketing of designer label products where products within the same type can be priced substantially higher in the market. For example a watch by Cartier can be priced at around £10,000.00, which is very much higher than an ordinary brand watch which is sold at around a couple of hundred pounds. A clearer example will be the selling of a man shirt by George of ASDA which is made of 100% cotton, priced at about £10.00, while the same made and colour of shirt by Yves Saint Lauren is selling at £40.00. This indicates that if the marketers can position their brands of products well in the market, they can capitalise on these non-price cues profitably. The best way of doing this is to target on those consumers who are low on the price-value conscious dimension.

There are also other consumers' decision-making style dimensions on which the consumers are found to differ in certain product classes. Among them is the impulsive and careless dimension which is only found to be consistent in the shopping and speciality product classes. The marketers can capitalise on this dimension by putting up special display that can attract and persuade consumers into buying their products, which the consumers do not intend to purchase them in the first place. For example, an optical shop may put up a display of disposable contact lenses to inform the consumers of the existence of this form of contact lenses in the market (speciality product). Another example will be by putting on a display 'pay as you talk' for the selling of mobile telephone systems (shopping product). This may attract those consumers who are wanting to subscribe to a mobile telephone service but unable to obtain the normal mobile telephone system for reasons such as poor credit rating. These examples show how the marketers can make the consumers to involve with this dimension when dealing with the shopping and speciality products in the market.

For those consumers who are low on the impulsive and careless dimension are more likely to buy products purposefully. In other words, the consumers who are low on this dimension are more likely to plan their purchase before hand. One of the ways the marketers can tackle this type of consumers is by creating an awareness among them about the benefit of a product, which the marketers are offering in the market. For example, a published test reports on a particular product might help to attract the consumers who are low on this dimension to buy these products.

The habitual and brand loyal dimension is only found to be consistent in the speciality product class. The marketers can capitalise on this dimension by expanding the range of products under the established brand names. This may be the reason why

most of the designer labels for example Christian Dior, Yves Saint-Laurent, Gucci, Giorgio Armani, Gianni Versace, Ralph Lauren and Alfred Dunhill of London have successfully utilised this strategy to expand their product range to cover a wider range of products such as perfume, clothing, watches, sunglasses, handbags, and jewellery. In other words, these brand names have already established their names in the speciality product class, and thus makes it easier for new products to be marketed under the same labels rather than starting with a new one, which has a greater chance of failure.

On the other hand, the consumers who are low on this dimension are more likely to be variety seekers. One of the reasons the consumers are likely to engage on a variety seeking or brand disloyalty behaviour is because they want to try to increase stimulation in order to avoid boredom from consuming the same brand of products over a period of time (Menon and Kahn, 1995). In order to capture the interest of this type of consumers, the marketers may use the multiple brands strategy of the same type of products in order to offer them more choice.

Finally, the findings of the study suggest that the perfectionistic dimension is consistent for the speciality product class. For this reason, the marketers can put more emphasis on the presentation of the products in order to project the image that suits the perfectionistic consumers. For example, to market the high quality perfume, the marketers should put more emphasis on the packaging of the perfume. The bottles, wrappers and boxes that contain the perfume must be uniquely designed to project the desirable image that the perfectionistic consumers most probably are looking for from the products.

On the contrary, the consumers who are low on the perfectionistic dimension are more likely to settle for product brands which are considered as satisfactory or second best to the top of the line brand of products. These consumers may settle for those brands of product which resembles products of the leading brands, but priced less. The marketers who are targeting on this kind of consumers can employ the strategy which uses the packaging or product appearance which are nearly similar to those of the leading brands. This is in order to capture the market of this type of consumers.

From these illustrations, it can be seen how the information extracted from the findings of the study can be used as the basis for the formulation of the appropriate marketing strategies for the managerial inputs of marketing practitioners. The knowledge of the consumers' decision-making styles provided by the findings is indeed useful for the marketers to apply in their marketing practises. Indeed, most of the strategies outlined in this illustration are already being practised in real world marketing. However, the researcher is not in the strong position to provide new strategies for the marketers, given the limited resources available to him. Therefore, the arguments made based on the findings can only provide theoretical justifications for the marketing strategies as implemented by the marketers. Often, these strategies are formulated based on the syndicated research, which is specifically done for the interests of the clients who hire them, rather than being disseminated in the literature. If the formulations of these strategies are done based on marketing inputs other than the findings of the present study, then the arguments provided here may provide insights as well as to add to the confidence of the marketing practitioners to continue applying those strategies.

10.2.4. Consumers' Decision-Making Styles as Segmentation Basis.

As discussed in the earlier sections, the findings from this study indicate that the consumers consistently engaged with certain dimensions of the decision-making styles regardless of what types of products they are dealing with. However, there are also dimensions by which the consumers consistently involved in with certain product classes. The consistency of the consumers' involvement to these dimensions can enable the marketers to use these dimensions as the basis for segmenting consumers in the market.

According to the findings obtained from the study, the consumers can be segmented according to three decision-making style dimensions; Brand Conscious, Confused by Overchoice, and Price-Value Conscious, which are found to be consistently involved by consumers in the convenience, shopping and speciality product classes. This implies that these three dimensions can be used as the basis for segmenting consumers. The marketers who have limited resources can focus on any one of the segments, based on the dimensions which are indicated as consistent among the consumers when purchasing products, regardless of product classes.

If the marketers choose to target the brand conscious consumers segment, then they have to devote their resources more on establishing a perceived quality for their products, so that their products can be more appealing to their targeted consumers. This can be done through a massive advertising campaign. However for this, more information is required about how consumers, characterised by particular decision-making styles, respond to different advertising appeals. This could represent another way of testing the value of such marketing measures. On the other hand if the

marketers choose to target the 'confused by overchoice consumers', then they have to devote their resources more in developing a marketing strategy which can help or lead this type of consumers out of their confusion from overchoice. This can be done by establishing a team of trained sales personnel that can promote their products at the point of sale of these products. However, this strategy may be more appropriate in relation to speciality products, and to some extent, for shopping products. Convenience products seem to be more suitable with other strategy such as putting a special display for the particular convenience products, than the sales personnel strategy. Another way will be by creating a more attractive display for their products at the point of sale of the particular products in order to gain better attention from this type of consumers.

The marketers can also focus their target market on the segment of price-value conscious consumers by developing brands of product which are priced slightly less from the major competing brands. This needs to be done carefully so that the consumers perceive this product as cheaper than the competing brands, but at par with the standard of quality of those products which are sold at a higher price. It needs to be realised that the price-value conscious consumers are really seeking for products that can give them the best value for their money, not the cheapest product price per se. In other words, value for money does not only depend on the product price alone, but also there has to be a perception of value on part of consumers.

Consequently, the strategy of reducing the product price coupled with the reduction in quality is most likely to fail to capture this type of consumers because they are not only looking for low price tag, but also for the best value. This explains

why some retailers who use their own brand are not very successful in the market. The reason might be that the retailers are reducing the product price at the expense of the product quality. Therefore, the marketers need to be careful if they want to implement the low pricing strategy to attract the price-value conscious consumers because these consumers are after the perceived value of the product, not the low price intrinsically.

The marketers can also target the consumers based on the combination of these three dimensions. For example, the marketers can target the consumers who are brand conscious as well as those who are price-value conscious by offering two brands of same product in the market. For example, Ralph Lauren has produced two brands of clothing lines. One is labelled as the 'Polo Ralph Lauren' brand, which is the premium brand targeted at the brand conscious consumers and the other one, is labelled as 'Chaps Ralph Lauren' brand, which is offered at a slightly lower price targeted at the price-value conscious consumers.

Another example is the strategy employed by SmithKline Beecham, which manufactures blackcurrant juice drink under two brand names. The first is Ribena, which is priced higher and targeted for the brand conscious consumers, and the second is C-Vit, which is priced slightly lower in the effort to capture the price-value conscious consumers. These are the few examples that illustrate how the market segmentation based on consumers' decision-making style dimensions can be put into practice in the formulation of the marketing strategy.

10.2.5. *Adding Demographic Element to Psychographic Segmentation.*

Psychographic profiles, according to Wells (1975), if used together with demographic segmentation can produce a very effective means to segment the market. Wells argument suggests that psychographic segmentation can be much more effective when used in combination with the relevant demographic variables. This principle can also be applied to the segmentation based on consumers' decision-making styles, which is a form of psychographic segmentation, in which the addition of relevant demographic variables can enhance its effectiveness.

The present study provides some insights on which demographic variables can be used for this purpose. For this, the relationships of the differences of demographic variables and consumers' decision-making style dimensions which can be put into practice by marketers in the formulation of the appropriate marketing strategy will be looked at. The study reveals that the consumers' age is the relatively strongest demographic variables that can influence the consumers' decision-making styles in purchasing products across product classes. For the Price-Value Conscious dimension, younger consumers are found to be less price-value conscious than their older counterparts, regardless of the product classes. Using this information, the marketers should give more emphasis on matured consumers when using the price-value strategy in marketing their products in order to be more effective. On the other hand, when dealing with the younger consumers, the marketers might use other strategy such as focusing more on styles and fashion of the product catered for these younger consumers, rather than using the price-value strategy. However, caution need to be taken when generalisation to be made on old consumers because some studies

(eg. Gunter, 1998) have found that older people can vary widely in their disposable income and overall assets.

In other words, the marketers can produce two brands of product when marketing clothing lines for the matured market; the premium brand for the brand-conscious consumers, and the budget brand for the price-value conscious consumers. For example, the marketing of sport wear for younger consumers, such as track shoes, the focus will be more on the selections of attractive designs which will be priced at the premium prices. This is because the younger consumers are found to be more fashion conscious than the more matured consumers.

The study also finds that the consumers from the higher income group are less price conscious than the lower income group consumers, especially when dealing with the convenience and speciality products. From here, the marketers can formulate a marketing strategy that will cater for this situation. For example, the marketers can organise sales promotion for convenience products offering both premium and budget brand of their product in order to capture the market of both types of consumers.

The same situation also applies to the consumers' types of job variables in which the findings indicate that the non-income earner (students, housewives and unemployed) and the retired consumers are more price conscious than the working group consumers. For obvious reason, the non-income earner and retired consumers are in general, have lower income than the working groups of consumers. Therefore, the consumers from the lower income groups by right should yield the same relationship as the non-income earner and retired group of consumers, with the consumers' decision-making style dimensions. On the other hand, the higher income

group of consumers should emulate the working groups (income earning groups) in terms of their relationships with the consumers' decision-making styles.

Finally, the consumers' gender is found to have a significant impact on the decision-making styles. It is found that the male consumers are less confused by overchoice than their female counterparts when dealing with shopping and speciality products. The marketers can respond to this information by providing more sales personnel at the point of purchase of products intended for the female consumers, in order to assist the female consumers to decide and conclude their purchases efficiently. More female consumers tend to buy products from outlets that provide such service, than those which do not. However, as indicated by the finding from this study, this may not be necessary for the marketing of products intended for the male market.

The examples illustrated above show how market segmentation using consumers' decision-making style dimensions can be made more effective if coupled with the demographic variables that are found to be significant in differentiating consumers in the market. Certainly, further research need to be carried out to validate the findings of the study and to ensure that the strategies formulated based on the findings work effectively when put into practice.

10.3. Limitation of This Study

This study, just like any other study in the social science disciplines, is far from being perfect. In this section, the researcher would like to acknowledge the shortcomings which can be used as guidance for future related studies. The

shortcomings of the study that will be explored include issues concerning the product classification, research questionnaire, dimensional typology, and sample.

The study is intended to investigate the differences of consumers' decision-making style dimensions across different product classes. The Copeland's convenience, shopping and speciality product classification is chosen because it seems to be the most established consumer product classification scheme in the marketing literature. However, due to the conceptual nature of this classification, it raised some problems in its usage. Firstly, a product may be classified differently by different consumers. For example, there is a possibility that a car may be classified as a shopping good by one consumer but may also be classified as speciality by another consumer. Secondly, there is a possibility that consumers may not be able to fully understand the concept of classifying product along this classification. This might result in inaccurate responses given by the consumers who do not fully understand the product classification concept used in the study.

For this, perhaps more product classification schemes should have been taken into consideration in terms of its effectiveness to be used in this study. The Copeland's product classification scheme along with other schemes should have been piloted using in-depth interviews to test which scheme is best understood by the UK based consumers. This should be done rather than merely relying on the establishment of the Copeland's scheme in the marketing literature. This is because establishment in the marketing literature might not be sufficient as the basis for assuming that the product classification of convenience, shopping and speciality is the most grounded scheme in the consumers' mind.

In addition, the method of data collection used is mail survey, with which respondents responded to the questionnaires on their own. Therefore, this study is unable to detect the extent of understanding of the Copeland's product classification concept being sensibly used by them in giving their responses. The research questionnaire used is also unable to determine the extent of the product classification used is grounded into the consumers mind in classifying products that they are dealing in their daily life. Perhaps more of the qualitative type of method, such as in-depth interviews, might be more able to overcome such shortcoming.

Next, the usage of the five-point Likert scales in the research questionnaire, to some extent, limit the variability of the responses obtained. For example, the means obtained for the shopping (4.03) and speciality (4.00) product classes in the Perfectionistic dimension (refer Table 7.7 in Chapter Seven) reach near the maximum value of the scale (5). However, if a wider scale is used (such as seven-point Likert Scale or more), other problem might arise. Thus, the limit on the variability of the scale used has limited the variability that might be obtained in measuring the consumers' decision-making style for the Perfectionistic dimension in the shopping and speciality product classes.

The study used the consumers' decision-making style dimensions adopted from the Sproles and Kendall's study on the US samples. Because this set of dimensions is adopted from different culture, it may not cover the entire consumers' decision-making style dimensions which may be relevant to the UK consumers. The fact that about 50% of the variance left unexplained by the factor solutions from the three product classes indicates the possibility that other dimensions may not be

covered in this study. Perhaps a more extensive pilot study, such as using the student samples from the Strathclyde University, might help to generate additional consumers' decision-making style dimensions that might not be covered by the Sproles (1985) and Sproles and Kendall (1986) studies. These might increase the coverage of the finding, thus making it more relevant to the UK based consumers. Therefore with this shortcoming, caution need to be taken when generalising the finding from this study onto the UK consumers. This is because it may not have the depth of coverage of all the dimensions relevant to the consumers in the UK setting.

This is also true because like most of the studies in social sciences, some of the findings generated from the present study might be very situation specific. In other words, the generalisability of the findings obtained may be limited to the consumers in the same locality or region only. However, this needs to be justified by replicating the method of study using samples of consumers from other regions or cultures in order to test the degree of generalisability of the study. In fact, one of the intentions of the study is to replicate the study on consumers' decision-making styles using Glaswegian samples and across the convenience, shopping and speciality product classes.

The crucial limitation faced by the researcher is the limited size of sample obtained for the study. This has hindered the use of some of the structural equation modeling techniques such as the replication of the regenerated measurement model and the usage of structured mean models which is actually very relevant to this kind of study. If this study could have managed to obtain, say a sample of 600, it can then be split randomly into two groups. One group is for the development of the

regeneration of the measurement model, and the other group is for replication of the regenerated measurement model obtained from the first group of samples. The second group is also required for the structured mean model in order to obtain the value of the parameters required to study the structural relationship of the consumers' decision-making style dimensions.

Unfortunately, the study only managed to get a sample of 259 out of the possible 995 respondents. With this number of samples available, only the measurement model for the consumers' decision-making style dimensions can be developed and regenerated using the structural equation modeling technique of the EQS program. Even after this, one of the dimensions, the Recreational and Hedonistic dimension, has to be sacrificed from the measurement model. This is because given the size of the sample, the model faces the problem of non-convergent of iterations in the process of extracting the confirmatory factor solution of the measurement model. Besides, the relatively small sample size might reduce the robustness of the finding generated from this study.

The small sample size also generates the problem of non-convergence of the iterations in the process of factor extraction. This is due to the insufficient degree of freedom available, resulting from too many parameters to be estimated relative to the number of samples available. Other measures such as using student samples might help to boost the number of respondents for the study. However, this method of sample collection will raise at least two problems. Firstly, this method is inconsistent with the earlier method of obtaining samples using the stratified random sampling

from the general public. Different method of sampling may increase the possibility of sampling bias that may distort the findings of the study.

Secondly, it is intended in this study that the samples be drawn from the general public, instead of relying on student samples. This is in order to obtain samples which are more heterogeneous in representing consumers in the real world. The use of student samples in the previous studies has been criticised earlier in the study for being less heterogeneous in representing consumers in general. In other words, using student samples in this study will be inconsistent with what have been argued earlier by the researcher. However, student samples could still be used to possibly generate any additional dimension of consumers' decision-making styles using the UK based consumers, which may not be covered by the dimensions generated by Sproles (1985) and Sproles and Kendall's (1986) studies. The response rate could have also been increased if the researcher could do the follow up meeting with the non-responding samples in person, in order to help them with the questionnaires. This could have gained more sympathy from the respondents to make them participate in the study if personal touch was used in the data collection process.

Finally, the study would be more informative and meaningful if a more extensive qualitative method of research is used along with the quantitative method used in the study. For example, the insight on the consumers' perspective on Copeland's (1923) product classification used in this study could be better achieved by doing in depth interviews (a qualitative research technique) with the respondents. This would enable the researcher to understand the consumers' perception on the usefulness of the product classification to the respondents more. In other words, by

incorporating more of the qualitative research techniques into the study, the researcher would be able to capture the strength of both research methods. The depth provided by the qualitative method coupled with the breadth provided by the qualitative method could give more impact to the findings of the study. This is because an extensive qualitative technique is more beneficial to the researcher in providing a better picture of the environment in which the respondents live.

This is important because it would enable the researcher to incorporate the respondents' environmental factors into this study. For example, the researcher could include the information regarding the kinds of neighbourhood the respondents live in and the distance between the respondents' home to the nearest outlets. In addition, the information about the infrastructure surroundings of the neighbourhoods and the moods and reactions of the respondents during the data collection process could be used as inputs to strengthen the finding from the study.

To summarise, the research would have benefited from the collection of more data, for example:

- A more complete battery of statements from US studies should have been compiled and piloted dynamically to examine degree of relevance of statements to UK populations.

- Focus group exploration of decision-making styles should have been deployed too.

- A student sample could have been run with a revised instrument.

- A general public survey could have followed.

- In both cases, factor analyses should have been computed at the outset to check on factor structure of decision-making styles.

- Product classification analysis should have been conducted

- Some data could have been collected on purchase habits or intentions

- Or data could have been collected on reactions to ads for products

These limitations may serve as the guidance for using the findings from this study, especially if they are to be generalised or used as reference for future research on related issues. Perhaps, those limitations could serve as a good departure point for future research be carried out with steps taken to overcome some of the limitations raised in this study. This is in order to get a better result from the more flawless studies. Besides those limitations, it will also be productive for the researcher to outline some of the improvement that can be considered as useful suggestions for future research in the related field of studies.

10.4. Suggestions for Future Research

Having discussed the shortcomings and some new insights triggered during conducting the present study, the researcher would like to highlight some new avenues for further research with this study serves as a point of departure.

Firstly, similar to most studies in any social science discipline, this study needs to be replicated using samples from other regions or cultures in this world. The reason for this is that the findings are not guaranteed in terms of its generalisability if carried out in a different setting or environment. For this purpose, the study aims to provide a good starting point for future research by providing a regenerated measurement model of consumers' decision-making styles that required to be replicated using the Glasweigian samples.

The replication of the measurement model is important because the researcher has to rely on a measurement model initiated by the studies done mostly in the USA where the culture and environment which differ from the UK's. Consequently, the model fit that the researcher obtained using the local data is far from satisfactory. Therefore, the probability for the measurement model obtained in this study to have a better fit, if it is replicated using the local samples, is likely to be higher. In other words, by using the measurement model which is closer to home, the chances of getting a much better model fit with the local samples is much more achievable.

If the measurement model obtained from this study can yield a good fit to the new set of samples collected, then the next step is to estimate the structural parameters using the structural model of the structural equation modeling technique. From this, the structural relationship between the consumers' decision-making style dimensions can be further studied in order to provide a more complete findings of the study of consumers' decision-making styles in their purchase behaviour.

Further to the replication of the measurement model and investigation on the structural relationship of the consumers' decision-making style dimensions, more new avenues can be explored in this interesting field. One of them is to investigate the temporal effect of the consumers' decision-making style dimensions over time. From the present study, the reliability and usefulness of the model of consumers' decision-making styles over time can be determined. It can be done using the panel data from randomly selected consumers.

The findings from this study which take into account the time factor, may be more useful for marketing practitioners. This is because time is an important resource

needed for any policy to be implemented. If it is found that the consumers' decision-making styles are stable over a reasonable period of time, that is the time long enough for the marketers to plan and implement the relevant strategy related to it, then marketing strategy based on consumers' decision-making styles can be a more useful tool for the marketing practitioners to rely on. If otherwise, then the use of consumers' decision-making styles as the basis of formulating marketing strategy can still be useful, but more risks are attached to it.

The study also provided some insight into consumers' perspectives on Copeland's consumer product classification scheme. Perhaps it gives some structure to the overall psychographic endeavour to focus in a brand management example. This point has been discussed earlier in Chapter 7. However, a further research needs to be done in order to investigate the product classification from the consumers' perspective. Perhaps in depth interviews or a more qualitative approach of study may enable the researcher to come up with such finding on this matter. Such finding may be useful in providing a good basis for marketing strategy formulation, when dealing with consumer behaviour.

Finally, the findings obtained from this study managed to partially replicate the findings from the studies by Sproles (1985), Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993). This proves that some of the consumers' decision-making style dimensions are reliable and useful to be used as the basis for strategy formulation for the academicians, researchers, marketers, consumer educators, policymakers and the consumers themselves, towards establishing a marketing environment which are beneficial to all the parties involved.

The cross-national replication using this study together with the studies by Sproles and Kendall (1986), Hafstrom et. al. (1992) and Durvasula et. al. (1993), suggests that psychographic instruments used in these studies produce consistent findings in terms of the consumers' decision-making style dimensions involved in the consumers' purchase behaviour world-wide. The consistency of the findings also suggest that consumers in various part of the world behave quite similarly in terms of the decision-making style dimensions which they involved in their general purchase behaviour. These factors support the notion that psychographic instrument is relevant as a means of analysing consumers in the international marketing.

The importance of psychographic instrument will become more pertinent to marketing researchers because marketing effort need to geared more towards globalisation. Marketers can no more rely solely on domestic market to market their products. For this, greater understanding of the consumer behaviour across the international border is becoming increasingly important. This is to improve their chances to succeed internationally. It is much more difficult to understand the behaviour of the international consumers due to the differences in the environment and cultural background that shape their taste and preferences, purchasing power and other elements of their purchasing behaviour. For this, psychographic instruments provide an opportunity for international comparisons of consumers that may be useful for developing global marketing communication strategies. This is due to some degree of consistency shown in the research finding obtained using psychographic instruments, as in this study as well the other previous studies.

Appendix 1

Questionnaire Final Outlay
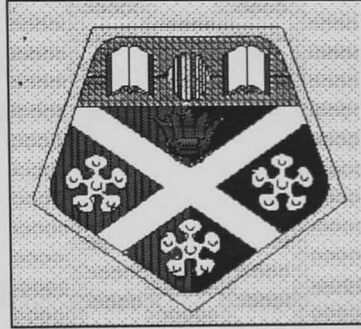
UNIVERSITY
of
STRATHCLYDE

Department of Marketing

An Independent Consumer Research Questionnaire

INTRODUCTION

I am a researcher at the University of Strathclyde and this questionnaire represents the vital part of my project work. Findings from this research may benefit you as a consumer, as they may guide businesses to offer goods that can better suit consumers' needs. The questionnaire will take about 20 minutes to complete.

I am interested in how you, as a consumer, decide and choose to buy goods. In particular, I am interested in how this happens when you buy goods in different product classes as follows:

1. Convenience Goods

Convenience Goods are those bought frequently. They are relatively easily substituted with other brands, if the usual brand is not available. Some people view goods such as petrol, salt, frozen food, eggs, flour, sugar, potato chips, garbage bags, bleach and toilet papers as convenience goods.

2. Shopping Goods

Shopping Goods are those where you restrict your choice to a few brands. When your regular or favourite brand is not available, you will only substitute among a few selected brands for it. Some people view goods such as television sets, microwave ovens, cameras, furniture and washing machines as shopping goods.

3. Speciality Goods

Speciality Goods involve you in a special effort to visit the store in which they are sold. They tend to be goods with particular appeal (such as artistic value) where price is not the buyers' main concern. You will not likely substitute them with any other brands. Some people view goods such as jewellery, computers, designer clothes, high end hi-fi sets and original paintings as speciality goods.

In responding to this questionnaire, I suggest you to think of a few purchases you have recently made that fall in each product class. Think of these when you indicate your responses to the following statements. Please respond to this questionnaire by indicating your choices that reflect as much as possible your buying behaviour for the **three different product classes.**

The contents of this form will be *absolutely confidential*. Information identifying the respondent will not be disclosed under any circumstances.

Your co-operation will be very much appreciated. Thank you.

A Guide To Responding To The Questionnaire

Throughout this questionnaire, you will see statements which are similar to the one shown below as an example;

| 1. I always shop at supermarket..SD   D   N   A   SA |

Please respond to such statement by indicating whether you strongly disagree, disagree, neither agree nor disagree (or neutral), agree or strongly agree with the statement.

You can respond to the example statement given above, by doing one of the following actions;

EITHER by ticking **SD,** like this, SD̸ D   N   A   SA , **for strongly disagreeing with the statement,** that is if you strongly disagree that you always shop at supermarket.

OR, by ticking **D,** like this, SD D̸   N   A   SA , **for disagreeing with the statement,** that is if you disagree that you always shop at supermarket.

OR, by ticking **N,** like this,   SD   D   N̸   A   SA , **for neither disagreeing nor agreeing (or neutral) with the statement,** that is if you neither agree nor disagree that you always shop at supermarket.

OR, by ticking **A,** like this,   SD   D   N   A̸   SA , **for agreeing with the statement,** that is if you merely agree that you always shop at supermarket.

OR, by ticking **SA,** like this, SD   D   N   A   S̸A **for strongly agreeing with the statement,** that is if you strongly agree that you always shop at supermarket.

For the background questions, at the very last part of the questionnaire, you just need to answer those questions by ticking the appropriate boxes or writing the answers in the boxes provided, according to the types of question asked.

Please respond to <u>all</u> the statements and answer <u>all</u> the questions in this questionnaire.Thank you.

SECTION I: SHOPPING BEHAVIOUR FOR CONVENIENCE GOODS

Convenience Goods are those bought **frequently**. They are relatively **easily substituted** with other brands, if the usual brand is not available. Some people view goods such as **petrol, salt, frozen food, eggs, flour, sugar, potato chips, garbage bags, bleach and toilet papers** as convenience goods.

*If you plan to use goods **other than those examples above** in responding to this section, please write them down in the space below;*

REMEMBER! YOU ARE <u>NOW</u> IN THE **CONVENIENCE GOODS** SECTION (eg. petrol)

SD=**Strongly Disagree**, D=**Disagree**, N=**Neutral**, A=**Agree**, SA=**Strongly Agree**

1. Getting very good quality products is so important to me............................ SD D N A SA

2. The more I learn about products, the harder for me to make the best choice. SD D N A SA

3. I always make use of special offers (eg. coupons, free gifts and discounts)... SD D N A SA

4. I always buy new products before my friends do... SD D N A SA

5. I go for retailer's brands of product (eg. Asda, Tesco and Littlewoods)........ SD D N A SA

6. It is confusing to buy products with so many brands in the market................ SD D N A SA

7. I usually come home from shopping with more things than I intended to buy SD D N A SA

8. Closeness of location is not important when selecting a place to shop........... SD D N A SA

9. Once I find a brand of product I like, I stick with it...................................... SD D N A SA

10. It is always difficult for me to choose which stores to shop at..................... SD D N A SA

REMEMBER! YOU ARE STILL IN THE CONVENIENCE GOODS SECTION (eg. petrol)

SD=**Strongly Disagree,** D=**Disagree,** N=**Neutral,** A=**Agree,** SA=**Strongly Agree**

11. I go to the same stores whenever I shop.. SD D N A SA

12. I take the time to shop carefully for best buys.. SD D N A SA

13. I always go for the best overall quality products.................................... SD D N A SA

14. I prefer shopping at discount stores... SD D N A SA

15. I am impulsive when buying things.. SD D N A SA

16. The higher the price of a product, the better its quality........................... SD D N A SA

17. I am up-to-date with the changing trends of products in the market........ SD D N A SA

18. I always buy products from catalogues.. SD D N A SA

19. I watch carefully how much I spend whenever I shop............................. SD D N A SA

20. Fashionable, attractive styling and appearance are very important to me SD D N A SA

21. I buy as much as possible at bargain prices.. SD D N A SA

22. I enjoy shopping just for the fun of it... SD D N A SA

23. All the information I get on different products confuses me..................... SD D N A SA

24. My expectations for the products that I buy are always high................... SD D N A SA

25. I regularly change the brands of product that I buy................................. SD D N A SA

26. I should plan my shopping more carefully than I always do.................... SD D N A SA

27. I have favourite brands of product that I buy over and over..................... SD D N A SA

28. I prefer buying the best-selling brands.. SD D N A SA

29. I like to try new products when they come out in the market................... SD D N A SA

30. The most advertised brands are usually my choice.................................. SD D N A SA

31. I really don't give much thought on whatever I buy................................. SD D N A SA

32. Going shopping is just a waste of time.. SD D N A SA

SECTION II: SHOPPING BEHAVIOUR FOR SHOPPING GOODS

Shopping Goods are those for which you **restrict your choice** to a few brands. When your regular or favourite brand is not available, you will only **substitute among a few** selected brands for it. Some people view goods such as **television sets, microwave ovens, cameras, furniture and washing machines** as shopping goods.

*If you plan to use goods **other than those examples above** in responding to this section, **please write them down in the space below;***

REMEMBER! YOU ARE <u>NOW</u> IN THE **SHOPPING GOODS** SECTION (eg. TV sets)

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

1. Getting very good quality products is so important to me............................ SD D N A SA

2. The more I learn about products, the harder for me to make the best choice.. SD D N A SA

3. I always make use of special offers (eg. coupons, free gifts and discounts)... SD D N A SA

4. I always buy new products before my friends do.. SD D N A SA

5. I go for retailer's brands of product (eg. Asda, Tesco and Littlewoods)........ SD D N A SA

6. It is confusing to buy products with so many brands in the market............... SD D N A SA

7. I usually come home from shopping with more things than I intended to buy SD D N A SA

8. Closeness of location is not important when selecting a place to shop........... SD D N A SA

9. Once I find a brand of product I like, I stick with it..................................... SD D N A SA

10. It is always difficult for me to choose which stores to shop at..................... SD D N A SA

REMEMBER! YOU ARE <u>STILL</u> IN THE **SHOPPING GOODS** SECTION (eg. TV sets)

| SD=**Strongly Disagree**, D=**Disagree**, N=**Neutral**, A=**Agree**, SA=**Strongly Agree** |

11. I go to the same stores whenever I shop... SD D N A SA

12. I take the time to shop carefully for best buys... SD D N A SA

13. I always go for the best overall quality products..................................... SD D N A SA

14. I prefer shopping at discount stores... SD D N A SA

15. I am impulsive when buying things.. SD D N A SA

16. The higher the price of a product, the better its quality............................ SD D N A SA

17. I am up-to-date with the changing trends of products in the market......... SD D N A SA

18. I always buy products from catalogues... SD D N A SA

19. I watch carefully how much I spend whenever I shop............................. SD D N A SA

20. Fashionable, attractive styling and appearance are very important to me SD D N A SA

21. I buy as much as possible at bargain prices.. SD D N A SA

22. I enjoy shopping just for the fun of it.. SD D N A SA

23. All the information I get on different products confuses me..................... SD D N A SA

24. My expectations for the products that I buy are always high................... SD D N A SA

25. I regularly change the brands of product that I buy................................. SD D N A SA

26. I should plan my shopping more carefully than I always do.................... SD D N A SA

27. I have favourite brands of product that I buy over and over.................... SD D N A SA

28. I prefer buying the best-selling brands.. SD D N A SA

29. I like to try new products when they come out in the market................... SD D N A SA

30. The most advertised brands are usually my choice................................. SD D N A SA

31. I really don't give much thought on whatever I buy................................ SD D N A SA

32. Going shopping is just a waste of time.. SD D N A SA

SECTION III: SHOPPING BEHAVIOUR FOR SPECIALITY GOODS

Speciality Goods involve you in **a special effort** to visit the store in which they are sold. They tend to be goods with **particular appeal** (such as aesthetic value) where price is not the buyers' main concern. You will **not likely substitute** them with any other brands. Some people view goods such as **jewellery, computers, designer clothes, high end hi-fi sets and original paintings** as speciality goods.

*If you plan to use goods **other than those examples above** in responding to this section, **please write them down in the space below;***

REMEMBER! YOU ARE <u>NOW</u> IN THE **SPECIALITY GOODS** SECTION (eg. jewllery)

| SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree |

1. Getting very good quality products is so important to me............................ SD D N A SA

2. The more I learn about products, the harder for me to make the best choice.. SD D N A SA

3. I always make use of special offers (eg. coupons, free gifts and discounts)... SD D N A SA

4. I always buy new products before my friends do.. SD D N A SA

5. I go for retailer's brands of product (eg. Asda, Tesco and Littlewoods)........ SD D N A SA

6. It is confusing to buy products with so many brands in the market................ SD D N A SA

7. I usually come home from shopping with more things than I intended to buy SD D N A SA

8. Closeness of location is not important when selecting a place to shop........... SD D N A SA

9. Once I find a brand of product I like, I stick with it...................................... SD D N A SA

10. It is always difficult for me to choose which stores to shop at...................... SD D N A SA

REMEMBER! YOU ARE STILL IN THE SPECIALITY GOODS SECTION (eg. jewllery)

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

11. I go to the same stores whenever I shop.................................... SD D N A SA

12. I take the time to shop carefully for best buys.......................... SD D N A SA

13. I always go for the best overall quality products...................... SD D N A SA

14. I prefer shopping at discount stores....................................... SD D N A SA

15. I am impulsive when buying things....................................... SD D N A SA

16. The higher the price of a product, the better its quality............ SD D N A SA

17. I am up-to-date with the changing trends of products in the market........ SD D N A SA

18. I always buy products from catalogues................................... SD D N A SA

19. I watch carefully how much I spend whenever I shop............ SD D N A SA

20. Fashionable, attractive styling and appearance are very important to me SD D N A SA

21. I buy as much as possible at bargain prices.......................... SD D N A SA

22. I enjoy shopping just for the fun of it.................................. SD D N A SA

23. All the information I get on different products confuses me.............. SD D N A SA

24. My expectations for the products that I buy are always high.......... SD D N A SA

25. I regularly change the brands of product that I buy................. SD D N A SA

26. I should plan my shopping more carefully than I always do.......... SD D N A SA

27. I have favourite brands of product that I buy over and over............ SD D N A SA

28. I prefer buying the best-selling brands.............................. SD D N A SA

29. I like to try new products when they come out in the market............ SD D N A SA

30. The most advertised brands are usually my choice.................. SD D N A SA

31. I really don't give much thought on whatever I buy............... SD D N A SA

32. Going shopping is just a waste of time............................. SD D N A SA

SECTION IV: BACKGROUND INFORMATION

*(Please **tick** one of the given answers or fill in the answer in the appropriate boxes)*

1. YOUR AGE (Years)

15 to 19 ☐   20 to 29 ☐   30 to 44 ☐   45 to 59 ☐

60 to 64 ☐   65 to 74 ☐   75 to 84 ☐   above 84 ☐

2. YOUR SEX

Male ☐   Female ☐

3. YOUR OCCUPATION:

I). Job Title

II). What does that
     involve?

4. YOUR TOTAL HOUSEHOLD BEFORE TAX INCOME (In Sterling Pounds).

☐ less than 500/mth   ☐ 501-1,250/mth   ☐ 1,251-2,000/mth
or(6,000/yr)   *or (6,012-15,000/yr)*   *or (15,012-24,000 yr)*

☐ 2,001-2,750/mth   ☐ 2,751-3,500/mth   ☐ 3,501-4,250/mth
or (24,012-33,000/yr)   *or (23,012-42,000/yr)* *or (42,012-51,000 yr)*

☐ 4,251-5,000/mth   ☐ 5,001-5,750/mth   ☐ above 5,751/mth
or (51,012-60,000/yr)   *or (60,012-69,000/yr)* *or (69,012/yr)*

5. YOUR HOUSEHOLD TYPE:

☐ Married with Children   ☐ Married without Children

☐ Single with Children   ☐ Single without Children

☐ Cohabiting Couple with Children   ☐ Cohabiting Couple without Children

6. NUMBER OF PEOPLE IN YOUR HOUSEHOLD (Living Together With You):

Adult (18 years & above) [   ] persons   Children (below 18 years) [   ] persons

PLEASE CHECK THAT YOU HAVE RESPONDED TO <u>ALL</u> THE STATEMENTS AND ANSWERED <u>ALL</u> THE QUESTIONS (IN <u>SEVEN</u> PAGES).

I WOULD LIKE TO THANK YOU FOR YOUR CO-OPERATION IN THIS STUDY.

<u>For further information, please contact:</u>

Rosli Saleh

Department of Marketing, University of Strathclyde, Stenhouse Building, 173, Cathedral, Street, Glasgow G4 0RQ.

Telephone Numbers: (Office) 5524400 Ext:4261   (House) 5583830

THANK YOU
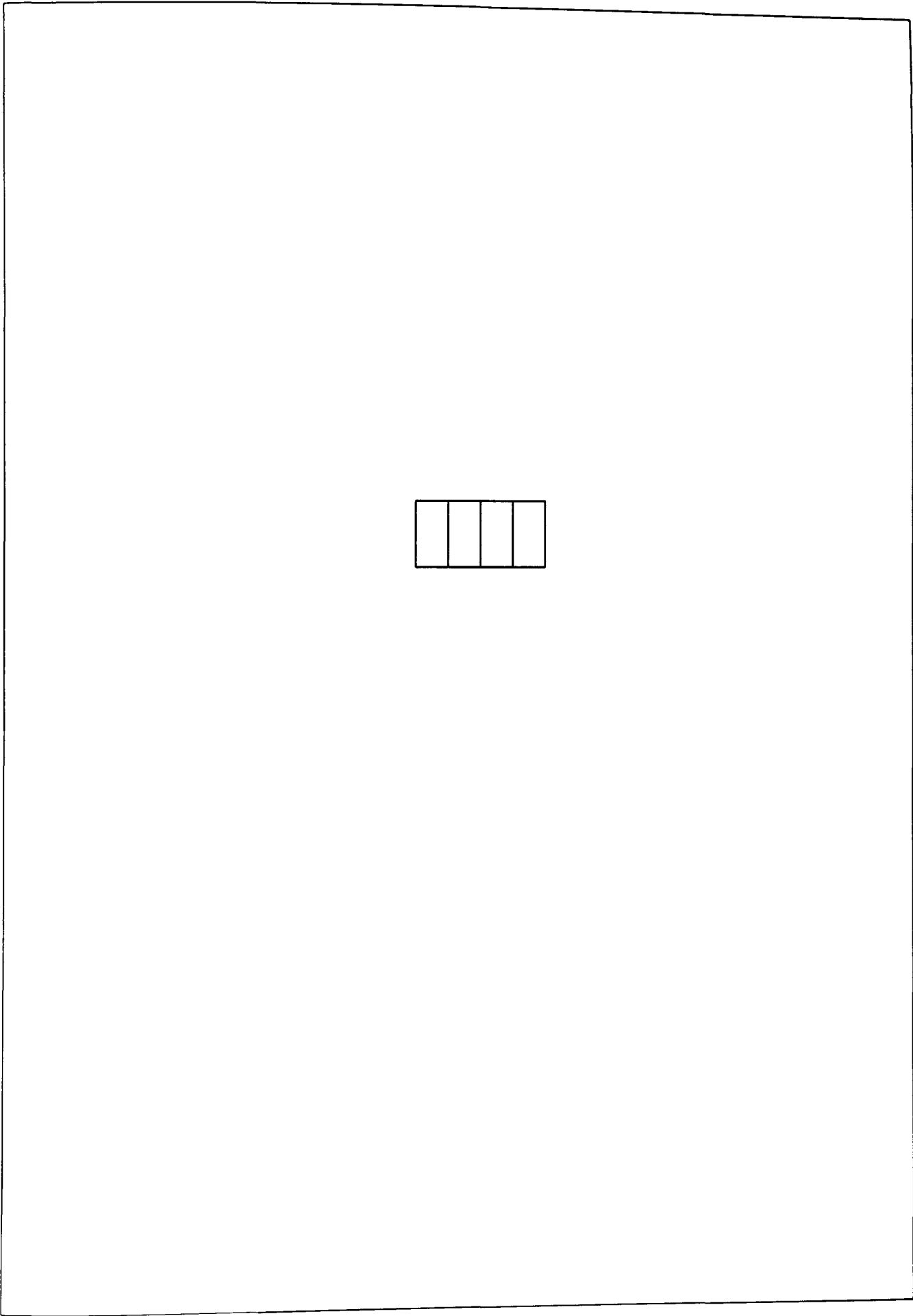
Appendix-2

1. *Initial cover letter*

10th. April 1997

CONSUMER BEHAVIOUR SURVEY

The main purpose of this survey is to study your behaviour, as a consumer, in choosing the products you buy. As part of the Centre for Consumer Behaviour, the intention is to characterise consumer behaviours more accurately. Such an improvement will allow manufacturers and sellers of consumer products to tailor them more precisely to consumer needs. To increase the accuracy of description, we need detailed information from consumers. This questionnaire provides you with an opportunity to help in the independent research into consumer behaviour.

I am writing to you to ask for your help to provide the required information. Enclosed is a copy of the consumer behaviour questionnaire which I would be grateful if you would respond and answer appropriately, and return in the envelope provided (no stamp required).

You may be wondering how you were chosen for the survey. Your name was among those who were randomly selected from the electoral register of the City of Glasgow. However, your responses will be treated with full confidentiality. The number indicated at the back of the questionnaire is to enable us to cross your name off, once you have returned the questionnaire. This is also to ensure that we do not send you a reminder. After receiving the reply from you, any connection between the number and your name and address will be destroyed.

Thank you for your help. I look forward to receive your completed questionnaire as soon as possible.

Yours sincerely,

Rosli Saleh
Researcher,
Consumer Study Group,
Department of Marketing.

PS   Should you have any questions about the survey, please phone me on 558 830

Appendix-3

2. Reminder Letter

20th. April, 1997

URGENT

CONSUMER BEHAVIOUR SURVEY

On the 10th. of April, I have sent you a questionnaire on consumer behaviour. Unfortunately, I still have not received the reply from you. Perhaps you are not around or too busy to attend to it. I hope, you can find sometime soon to respond to the said questionnaire as your response is vital to this research. If you go through it you will find that it is not as difficult or complicated as you might initially thought. Please take a few minutes of your time to attend to it and I can assure you, you will find it simple and interesting to respond to as it deals with what you experienced in your purchasing behaviour.

In case you have misplaced the earlier questionnaire, I enclosed another copy of the same questionnaire to replace it. In case you face any problem in responding to the questionnaire, please do not hesitate to phone me on 558 3830.

Thank you for your help.

Sincerely yours,

Rosli Saleh
Researcher,
Consumer Study Group,
Department of Marketing.

PS   Thank you and please ignore this message, if you have already returned the questionnaire.

Appendix-4

The Factor Solution of Average Value of Items for Each Dimension, According to Product Class.

Factor	Fashion	Price	Confuse	Brand	Perfect	Hedon	Impulse	Habit
TP3	**.87**	.02	-.05	.20	.09	.11	.14	-.03
GP3	**.85**	.01	-.06	.22	.18	.04	.09	.05
CP3	**.71**	.09	.01	.20	.17	.09	.12	-.01
CP5	-.01	**.87**	.08	-.00	.07	.02	.03	.13
GP5	.02	**.84**	.08	.13	.13	.05	-.04	-.07
TP5	.10	**.81**	.20	.07	-.04	-.03	-.12	-.06
TP7	.02	.10	**.88**	.20	-.08	-.09	.07	.01
GP7	-.16	.10	**.87**	.15	.12	.02	.13	-.11
CP7	.04	.19	**.79**	-.03	-.02	.02	.21	.13
GP2	.22	.06	.07	**.83**	.12	.12	.15	.12
TP2	.24	.17	.16	**.83**	.05	.04	.05	.11
CP2	.18	.00	.10	**.78**	.08	.03	.17	.03
GP1	.14	.05	.01	.10	**.85**	.19	-.07	-.07
CP1	.16	.20	.09	.05	**.71**	.01	-.06	.13
TP1	.28	-.04	-.05	.06	**.65**	.21	-.11	-.05
TP4	.10	-.12	-.02	.05	.06	**.83**	.04	-.02
GP4	.02	.03	.03	.10	.09	**.81**	-.00	-.01
CP4	.10	.15	-.06	-01	.14	**.75**	.07	.07
GP6	.14	.00	.19	.15	-.19	-.06	**.80**	.10
TP6	.28	-.01	.08	.09	-.13	.05	**.80**	.04
CP6	-.05	-.17	.18	.17	.08	.16	**.76**	-.23
GP8	-.06	.07	.05	.02	.08	-.11	.02	**.87**
TP8	.15	-.07	.02	.22	-.04	.22	-.07	**.81**
CP8	-.18	-.07	-.08	.07	**.52**	-.03	-.01	**.47**

Factor Loadings in **BOLD** are those with values 0.4 and above.

Appendix-5

Parallel Model for Convenience Product Class

```
☐
  EQS, A STRUCTURAL EQUATION PROGRAM          MULTIVARIATE SOFTWARE, INC.
☐
  COPYRIGHT BY P.M. BENTLER                    VERSION 5.6 (C) 1985 - 1997.
☐

☐
   PROGRAM CONTROL INFORMATION
☐

☐
     1   /TITLE
     2   Convenience  Jan 16 98 adjusted started signs and fixed variables
     3   /SPECIFICATIONS
     4    DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\C.ESS'; VARIABLES= 33;
CASES= 259;
     5    METHODS=ML;
     6    MATRIX=RAW;
     7   /LABELS
     8   V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
     9   V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
    10   V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
    11   V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
    12   V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
    13   V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
    14   V31=V31; V32=V32; V33=V33;
    15   /EQUATIONS
    16   V2 = +      F1 + E2;
    17   V14= + 1.0*F1 + E14;
    18   V25= + 1.0*F1 + E25;
    19   V32= - 1.0*F1 + E32;
    20     V6 = + 1.0*F2 + E6;
    21     V17= + 1.0*F2 + E17;
    22     V29= + 1.0*F2 + E29;
    23     V31= +      F2 + E31;
    24   V5 = +      F3 + E5;
    25   V18= + 1.0*F3 + E18;
    26   V21= + 1.0*F3 + E21;
    27   V30= + 1.0*F3 + E30;
    28   V4 = +      F5 + E4;
    29   V13= + 1.0*F5 + E13;
    30   V15= + 1.0*F5 + E15;
    31   V22= + 1.0*F5 + E22;
    32     V8 = +      F6 + E8;
    33     V16= + 1.0*F6 + E16;
    34     V20= - 1.0*F6 + E20;
    35     V27= + 1.0*F6 + E27;
    36   V3 = +      F7 + E3;
    37   V7 = + 1.0*F7 + E7;
    38   V24= + 1.0*F7 + E24;
    39   V11= + 1.0*F7 + E11;
    40     V10= +      F8 + E10;
    41     V12= + 1.0*F8 + E12;
    42     V26= - 1.0*F8 + E26;
    43     V28= + 1.0*F8 + E28;
    44   /VARIANCES
    45   F1 TO F3,F5 to F8= *;
    46   E2 to E8,e10 to e18,e20 to e22,e24 to e32= 0.5*;
    47   /COV
    48   F1 to F3,F5 to F8=0.3*;
    49   /WTEST
    50   /LMTEST
```

```
51    SET=PEE, GVF;
52   /PRINT
53      RETEST='c:\progra~1\eqs\olddat~1\FEB6C1.EQS';LMTEST=YES;
54   /END
```

PARAMETER ESTIMATES APPEAR IN ORDER,
NO SPECIAL PROBLEMS WERE ENCOUNTERED DURING OPTIMIZATION.

AVERAGE ABSOLUTE   COVARIANCE   RESIDUALS   =   0.0786
AVERAGE OFF-DIAGONAL ABSOLUTE   COVARIANCE   RESIDUALS   =   0.0845

AVERAGE ABSOLUTE STANDARDIZED RESIDUALS   =   0.0789
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS   =   0.0848

DISTRIBUTION OF STANDARDIZED RESIDUALS

```
       ---------------------------------------
       !                                       !
 180-  !                                       -
       !                                       !
       !                   *                   !
       !                   *                   !
       !                   *                   !            RANGE        FREQ
PERCENT
 135-  !                   *                   -
       !                   *                   !   1   -0.5  -  --          0
0.00%
       !                   *                   !   2   -0.4  -  -0.5        0
0.00%
       !                *  *                    !   3   -0.3  -  -0.4        0
0.00%
       !                *  *                    !   4   -0.2  -  -0.3        2
0.49%
 90-   !             *  *  *                    -   5   -0.1  -  -0.2       17
4.19%
       !             *  *  *                    !   6    0.0  -  -0.1      105
25.86%
       !             *  *  *                    !   7    0.1  -   0.0      164
40.39%
       !             *  *  *                    !   8    0.2  -   0.1       94
23.15%
       !             *  *  *                    !   9    0.3  -   0.2       22
5.42%
 45-   !             *  *  *                    -   A    0.4  -   0.3        2
0.49%
       !             *  *  *                    !   B    0.5  -   0.4        0
0.00%
       !             *  *  *                    !   C    ++   -   0.5        0
0.00%
       !          *  *  *  *  *                 !   -----------------------------
 ----
       !          *  *  *  *  *                 !        TOTAL            406
100.00%
       ---------------------------------------
        1  2  3  4  5  6  7  8  9  A  B  C    EACH "*" REPRESENTS   9
RESIDUALS
```

OODNESS OF FIT SUMMARY

    INDEPENDENCE MODEL CHI-SQUARE =   1612.442 ON   378 DEGREES OF FREEDOM

    INDEPENDENCE AIC =   856.44199 INDEPENDENCE CAIC = -861.63508
            MODEL AIC =   92.67082   MODEL CAIC = -1466.32505

```
CHI-SQUARE =        778.671 BASED ON    343 DEGREES OF FREEDOM
PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS LESS THAN 0.001
THE NORMAL THEORY RLS CHI-SQUARE FOR THIS ML SOLUTION IS         824.829.

BENTLER-BONETT NORMED    FIT INDEX=      0.517
BENTLER-BONETT NONNORMED FIT INDEX=      0.611
COMPARATIVE FIT INDEX (CFI)       =      0.647
```

STANDARDIZED SOLUTION:

Convenience (parallel)
```
    V2   =V2  =    .480 F1   + .877 E2
    V3   =V3  =    .477 F7   + .879 E3
    V4   =V4  =    .479 F5   + .878 E4
    V5   =V5  =    .478 F3   + .879 E5
    V6   =V6  =   -.094*F2   + .996 E6
    V7   =V7  =    .714*F7   + .700 E7
    V8   =V8  =    .642 F6   + .767 E8
    V10  =V10 =    .756 F8   + .655 E10
    V11  =V11 =    .446*F7   + .895 E11
    V12  =V12 =    .348*F8   + .937 E12
    V13  =V13 =    .527*F5   + .850 E13
    V14  =V14 =    .762*F1   + .648 E14
    V15  =V15 =    .618*F5   + .786 E15
    V16  =V16 =    .575*F6   + .818 E16
    V17  =V17 =    .364*F2   + .931 E17
    V18  =V18 =    .503*F3   + .864 E18
    V20  =V20 =   -.440*F6   + .898 E20
    V21  =V21 =    .521*F3   + .853 E21
    V22  =V22 =    .801*F5   + .598 E22
    V24  =V24 =    .688*F7   + .726 E24
    V25  =V25 =    .519*F1   + .855 E25
    V26  =V26 =   -.471*F8   + .882 E26
    V27  =V27 =    .483*F6   + .876 E27
    V28  =V28 =    .509*F8   + .861 E28
    V29  =V29 =    .578*F2   + .816 E29
    V30  =V30 =    .435*F3   + .901 E30
    V31  =V31 =    .845 F2   + .535 E31
    V32  =V32 =   -.265*F1   + .964 E32
```

CORRELATIONS AMONG INDEPENDENT VARIABLES

```
                    V                           F
                   ---                         ---
                          I F2  -   F2              .077*I
                          I F1  -   F1                   I
                          I                             I
                          I F6  -   F6             -.086*I
                          I F5  -   F5                   I
                          I                             I
                          I F7  -   F7              .362*I
                          I F5  -   F5                   I
                          I                             I
                          I F8  -   F8             -.046*I
                          I F5  -   F5                   I
                          I                             I
                          I F7  -   F7              .388*I
                          I F6  -   F6                   I
                          I                             I
                          I F8  -   F8              .051*I
                          I F6  -   F6                   I
                          I                             I
                          I F8  -   F8             -.034·I
                          I F7  -   F7                   I
                          I                             I
```

LAGRANGE MULTIPLIER TEST (FOR ADDING PARAMETERS)
ORDERED UNIVARIATE TEST STATISTICS:

NO	CODE		PARAMETER	CHI-SQUARE	PROBABILITY	PARAMETER CHANGE
1	2	12	V20,F5	46.463	0.000	0.954
2	2	12	V20,F7	24.422	0.000	0.872
3	2	12	V13,F1	23.819	0.000	0.865
4	2	6	E15,E11	21.118	0.000	0.229
5	2	12	V6,F5	19.320	0.000	0.631
6	2	12	V8,F5	17.893	0.000	0.649
7	2	12	V18,F1	17.642	0.000	0.672
8	2	12	V32,F6	15.130	0.000	0.384
9	2	12	V30,F6	14.807	0.000	0.346
10	2	6	E32,E13	13.237	0.000	-0.202
11	2	6	E20,E13	13.112	0.000	0.216
12	2	12	V26,F6	11.679	0.001	0.328
13	2	12	V15,F8	10.804	0.001	-0.419
14	2	6	E20,E16	10.367	0.001	-0.270
15	2	12	V10,F6	10.091	0.001	0.274
16	2	12	V13,F8	10.023	0.002	0.396
17	2	12	V28,F3	9.825	0.002	0.420
18	2	6	E22,E6	9.549	0.002	0.181
19	2	12	V31,F3	9.385	0.002	0.470
20	2	6	E16,E15	9.367	0.002	0.192

Parallel Model for Shopping Product Class

    PROGRAM CONTROL INFORMATION

```
 1  /TITLE
 2  shoppinG group with adjustment of starting and fixed jan16 98
 3  /SPECIFICATIONS
 4   DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\g.ESS'; VARIABLES= 33;
CASES=  259;
 5   METHODS=ML;
 6   MATRIX=RAW;
 7  /LABELS
 8  V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
 9  V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
10  V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
11  V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
12  V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
13  V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
14  V31=V31; V32=V32; V33=V33;
15  /EQUATIONS
16  V2 = +      F1 + E2;
17  V14= + 1.0*F1 + E14;
18  V25= + 1.0*F1 + E25;
19  V32= - 1.0*F1 + E32;
20    V6 = + 1.0*F2 + E6;
21    V17= + 1.0*F2 + E17;
22    V29= + 1.0*F2 + E29;
23    V31= +     F2 + E31;
24  V5 = +      F3 + E5;
25  V18= + 1.0*F3 + E18;
26  V21= + 1.0*F3 + E21;
27  V30= + 1.0*F3 + E30;
28  V4 = +      F5 + E4;
29  V13= + 1.0*F5 + E13;
30  V15= + 1.0*F5 + E15;
31  V22= + 1.0*F5 + E22;
32    V8 = +      F6 + E8;
33    V16= + 1.0*F6 + E16;
34    V20= - 1.0*F6 + E20;
35    V27= + 1.0*F6 + E27;
36  V3 = +      F7 + E3;
37  V7 = + 1.0*F7 + E7;
38  V24= + 1.0*F7 + E24;
39  V11= + 1.0*F7 + E11;
40    V10= +      F8 + E10;
41    V12= + 1.0*F8 + E12;
42    V26= - 1.0*F8 + E26;
43    V28= + 1.0*F8 + E28;
44  /VARIANCES
45  F1 TO F3,F5 to F8= *;
46  E2 to E8,e10 to e18,e20 to e22,e24 to e32= 0.5*;
47  /COV
48  F1 to F3,F5 to F8=0.3*;
49  /WTEST
50  /LMTEST
51   SET=PEE, GVF;
52  /PRINT
```

    DATA IS READ FROM C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\G.ESS
    THERE ARE 33 VARIABLES AND   259 CASES
    IT IS A RAW DATA ESS FILE

```
AVERAGE ABSOLUTE  COVARIANCE  RESIDUALS      =
AVERAGE OFF-DIAGONAL ABSOLUTE  COVARIANCE  RESIDUALS    0.0780
                                                    =
                                                              0.0838
AVERAGE ABSOLUTE STANDARDIZED RESIDUALS      =
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS   0.0829
                                                    =
                                                              0.0890
```

DISTRIBUTION OF STANDARDIZED RESIDUALS

```
       --------------------------------------
    !                                       !
 180-!                                      -
    !                                       !
    !                  *                    !
    !                  *                    !
    !                  *                    !
 PERCENT                                    !         RANGE      FREQ
 135-              *
    !              *                        -
0.00%             *                         !  1   -0.5  -  --      0
    !
0.00%         *   *                         !  2   -0.4  -  -0.5    0
    !
0.49%         *   *                         !  3   -0.3  -  -0.4    2
    !
0.49%         *   *                         !  4   -0.2  -  -0.3    2
  90-         *   *
3.20%                                       -  5   -0.1  -  -0.2   13
    !         *   *
28.08%                                      !  6    0.0  -  -0.1  114
    !         *   *   *
40.89%                                      !  7    0.1  -   0.0  166
    !         *   *   *
18.72%                                      !  8    0.2  -   0.1   76
    !         *   *   *
6.16%                                       !  9    0.3  -   0.2   25
  45-         *   *   *
1.97%                                       -  A    0.4  -   0.3    8
    !         *   *   *
0.00%                                       !  B    0.5  -   0.4    0
    !         *   *   *   *
0.00%                                       !  C    ++   -   0.5    0
    !         *   *   *   *
----                                        !  ---------------------------
    !     *   *   *   *   *   *             !
100.00%                                         TOTAL      406
       --------------------------------------
       1   2   3   4   5   6   7   8   9   A   B   C    EACH "*" REPRESENTS  9
RESIDUALS
```

GOODNESS OF FIT SUMMARY

INDEPENDENCE MODEL CHI-SQUARE =   1968.422 ON   378 DEGREES OF FREEDOM

INDEPENDENCE AIC =   1212.42161   INDEPENDENCE CAIC =   -504.17601
        MODEL AIC =   258.83671   MODEL CAIC = -1298.81669

CHI-SQUARE =   944.837 BASED ON   343 DEGREES OF FREEDOM
PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS LESS THAN 0.001
THE NORMAL THEORY RLS CHI-SQUARE FOR THIS ML SOLUTION IS   971.3-1.

BENTLER-BONETT NORMED   FIT INDEX=   0.520

```
BENTLER-BONETT NONNORMED FIT INDEX=        0.583
COMPARATIVE FIT INDEX (CFI)         =      0.622
```

STANDARDIZED SOLUTION:

Shopping (parallel)
```
  V2    =V2  =    .530 F1    + .848 E2
  V3    =V3  =    .675 F7    + .738 E3
  V4    =V4  =    .541 F5    + .841 E4
  V5    =V5  =    .516 F3    + .856 E5
  V6    =V6  =    .109*F2    + .994 E6
  V7    =V7  =    .723*F7    + .691 E7
  V8    =V8  =    .621 F6    + .783 E8
  V10   =V10 =    .932 F8    + .361 E10
  V11   =V11 =    .439*F7    + .899 E11
  V12   =V12 =    .398*F8    + .917 E12
  V13   =V13 =    .338*F5    + .941 E13
  V14   =V14 =    .814*F1    + .581 E14
  V15   =V15 =    .584*F5    + .812 E15
  V16   =V16 =    .753*F6    + .658 E16
  V17   =V17 =    .378*F2    + .926 E17
  V18   =V18 =    .545*F3    + .838 E18
  V20   =V20 =   -.170*F6    + .985 E20
  V21   =V21 =    .526*F3    + .850 E21
  V22   =V22 =    .626*F5    + .780 E22
  V24   =V24 =    .819*F7    + .574 E24
  V25   =V25 =    .482*F1    + .876 E25
  V26   =V26 =   -.239*F8    + .971 E26
  V27   =V27 =    .481*F6    + .877 E27
  V28   =V28 =    .600*F8    + .800 E28
  V29   =V29 =    .903*F2    + .430 E29
  V30   =V30 =    .604*F3    + .797 E30
  V31   =V31 =    .620 F2    + .785 E31
  V32   =V32 =   -.270*F1    + .963 E32
```

CORRELATIONS AMONG INDEPENDENT VARIABLES

```
                      V                           F
                     ---                         ---
                            I F2  -  F2                .395*I
                            I F1  -  F1                     I
                            I                              I
                            I F6  -  F6                .128*I
                            I F5  -  F5                     I
                            I                              I
                            I F7  -  F7                .262*I
                            I F5  -  F5                     I
                            I                              I
                            I F8  -  F8                .164·I
                            I F5  -  F5                     I
                            I                              I
                            I F7  -  F7                .321*I
                            I F6  -  F6                     I
                            I                              I
                            I F8  -  F8                .164*I
                            I F6  -  F6                     I
                            I                              I
                            I F8  -  F8                .105·I
                            I F7  -  F7                     I
                            I                              I
```

LAGRANGE MULTIPLIER TEST (FOR ADDING PARAMETERS)

ORDERED UNIVARIATE TEST STATISTICS:

NO	CODE		PARAMETER	CHI-SQUARE	PROBABILITY	PARAMETER CHANGE
--	----		---------	----------	-----------	-----------------
1	2	12	V20,F5	50.144	0.000	0.944
2	2	12	V13,F1	39.984	0.000	0.774
3	2	12	V32,F6	32.729	0.000	0.526
4	2	6	E32,E13	28.008	0.000	-0.211
5	2	12	V13,F6	23.932	0.000	-0.385
6	2	6	E16,E13	23.273	0.000	-0.182
7	2	12	V8,F8	21.944	0.000	0.390
8	2	6	E13,E4	20.964	0.000	0.234
9	2	12	V6,F5	20.541	0.000	0.595
10	2	12	V16,F8	18.115	0.000	-0.336
11	2	6	E8,E6	17.614	0.000	0.260
12	2	6	E20,E13	17.477	0.000	0.188
13	2	12	V3,F2	16.865	0.000	0.435
14	2	12	V21,F2	16.806	0.000	0.436
15	2	12	V3,F1	14.423	0.000	0.561
16	2	12	V30,F6	14.138	0.000	0.325
17	2	6	E26,E11	13.684	0.000	0.185
18	2	6	E20,E16	13.059	0.000	-0.225
19	2	6	E20,E4	12.809	0.000	0.221
20	2	6	E16,E11	12.338	0.000	0.156

Parallel Model for Speciality Product Class

```
☐
    PROGRAM CONTROL INFORMATION
☐

☐
    1  /TITLE
☐
    2  Groups seperately Group specialiTy Jan16 98
    3  adjusted which variables are fixed at 1 to the highest loading on
the other meth
    4  put in negative starting positions for those that came out negative.
    5  /SPECIFICATIONS
    6   DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\t.ESS'; VARIABLES= 33;
CASES=  259;
    7   METHODS=ML;
    8   MATRIX=RAW;
    9  /LABELS
   10  V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
   11  V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
   12  V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
   13  V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
   14  V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
   15  V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
   16  V31=V31; V32=V32; V33=V33;
   17  /EQUATIONS
   18  V2 = +      F1 + E2;
   19  V14= + 1.0*F1 + E14;
   20  V25= + 1.0*F1 + E25;
   21  V32= - 1.0*F1 + E32;
   22    V6 = + 1.0*F2 + E6;
   23    V17= + 1.0*F2 + E17;
   24    V29= + 1.0*F2 + E29;
   25    V31= +     F2 + E31;
   26  V5 = +     F3 + E5;
   27  V18= + 1.0*F3 + E18;
   28  V21= + 1.0*F3 + E21;
   29  V30= + 1.0*F3 + E30;
   30  V4 = +      F5 + E4;
   31  V13= + 1.0*F5 + E13;
   32  V15= + 1.0*F5 + E15;
   33  V22= + 1.0*F5 + E22;
   34    V8 = +      F6 + E8;
   35    V16= + 1.0*F6 + E16;
   36    V20= - 1.0*F6 + E20;
   37    V27= + 1.0*F6 + E27;
   38  V3 = +     F7 + E3;
   39  V7 = + 1.0*F7 + E7;
   40  V24= + 1.0*F7 + E24;
   41  V11= + 1.0*F7 + E11;
   42    V10= +      F8 + E10;
   43    V12= + 1.0*F8 + E12;
   44    V26= - 1.0*F8 + E26;
   45    V28= + 1.0*F8 + E28;
   46  /VARIANCES
   47  F1 TO F3,F5 to F8= *;
   48  E2 to E8,e10 to e18,e20 to e22,e24 to e32= 0.5*;
   49  /COV
   50  F1 to F3,F5 to F8=0.3*;
   51  /WTEST
   52  /LMTEST
```

PARAMETER ESTIMATES APPEAR IN ORDER,

NO SPECIAL PROBLEMS WERE ENCOUNTERED DURING OPTIMIZATION.

AVERAGE ABSOLUTE COVARIANCE RESIDUALS   =   0.1000
AVERAGE OFF-DIAGONAL ABSOLUTE COVARIANCE RESIDUALS   =   0.1074

AVERAGE ABSOLUTE STANDARDIZED RESIDUALS   =   0.0977
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS   =   0.1049

DISTRIBUTION OF STANDARDIZED RESIDUALS

```
     -----------------------------------------
     !                                       !
 140-                                        -
     !                 *                     !              ,
     !                 *                     !
     !                 *                     !
     !                 *                     !          RANGE        FREQ
PERCENT
 105-              *   *                      -
     !             *   *   *                 !   1  -0.5  -  --          0
0.00%
     !             *   *   *                 !   2  -0.4  -  -0.5        0
0.00%
     !             *   *   *                 !   3  -0.3  -  -0.4        0
0.00%
     !             *   *   *                 !   4  -0.2  -  -0.3        1
0.25%
  70-             *   *   *                   -   5  -0.1  -  -0.2       16
3.94%
     !            *   *   *                  !   6   0.0  -  -0.1      102
25.12%
     !            *   *   *                  !   7   0.1  -   0.0      135
33.25%
     !           *   *   *                   !   8   0.2  -   0.1       98
24.14%
     !          *   *   *   *                !   9   0.3  -   0.2       41
10.10%
  35-          *   *   *   *                  -   A   0.4  -   0.3       12
2.96%
     !         *   *   *   *                 !   B   0.5  -   0.4        1
0.25%
     !        *   *   *   *                  !   C   ++   -   0.5        0
0.00%
     !      *   *   *   *   *   *            !   ------------------------------
----
     !      *   *   *   *   *   *            !      TOTAL        406
100.00%
     -----------------------------------------
       1   2   3   4   5   6   7   8   9   A   B   C    EACH "*" REPRESENTS  7
RESIDUALS
```

GOODNESS OF FIT SUMMARY

INDEPENDENCE MODEL CHI-SQUARE =   2060.798 ON   378 DEGREES OF FREEDOM

INDEPENDENCE AIC =   1304.79786   INDEPENDENCE CAIC = -413.27922
        MODEL AIC =   380.66344   MODEL CAIC = -1178.33242

CHI-SQUARE =   1066.663 BASED ON   343 DEGREES OF FREEDOM
PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS LESS THAN 0.001
THE NORMAL THEORY RLS CHI-SQUARE FOR THIS ML SOLUTION IS   1066.547.

BENTLER-BONETT NORMED   FIT INDEX=   0.482
BENTLER-BONETT NONNORMED FIT INDEX=   0.526
COMPARATIVE FIT INDEX (CFI)   =   0.570

STANDARDIZED SOLUTION:

Speciality (parallel)
    V2   =V2 =   .580 F1   + .815 E2
    V3   =V3 =   .662 F7   + .749 E3
    V4   =V4 =   .564 F5   + .826 E4
    V5   =V5 =   .477 F3   + .879 E5
    V6   =V6 =   .119*F2   + .993 E6
    V7   =V7 =   .816*F7   + .577 E7
    V8   =V8 =   .692 F6   + .722 E8
    V10   =V10 =   .721 F8   + .693 E10
    V11   =V11 =   .476*F7   + .880 E11
    V12   =V12 =   .606*F8   + .795 E12
    V13   =V13 =   .337*F5   + .942 E13
    V14   =V14 =   .688*F1   + .726 E14
    V15   =V15 =   .727*F5   + .687 E15
    V16   =V16 =   .681*F6   + .732 E16
    V17   =V17 =   .502*F2   + .865 E17
    V18   =V18 =   .575*F3   + .818 E18
    V20   =V20 =   -.159*F6   + .987 E20
    V21   =V21 =   .569*F3   + .822 E21
    V22   =V22 =   .705*F5   + .709 E22
    V24   =V24 =   .658*F7   + .753 E24
    V25   =V25 =   .411*F1   + .911 E25
    V26   =V26 =   -.100*F8   + .995 E26
    V27   =V27 =   .467*F6   + .884 E27
    V28   =V28 =   .626*F8   + .780 E28
    V29   =V29 =   .696*F2   + .718 E29
    V30   =V30 =   .505*F3   + .863 E30
    V31   =V31 =   .709 F2   + .706 E31
    V32   =V32 =   -.244*F1   + .970 E32

CORRELATIONS AMONG INDEPENDENT VARIABLES

              V   F
             ---   ---
                        I F2 - F2   .363*I
                        I F1 - F1   I
                        I   I
                        I F6 - F6   .119*I
                        I F5 - F5   I
                        I   I
                        I F7 - F7   .405*I
                        I F5 - F5   I
                        I   I
                        I F8 - F8   .003*I
                        I F5 - F5   I
                        I   I
                        I F7 - F7   .268*I
                        I F6 - F6   I
                        I   I

417

```
I  F8  -   F8                    .313*I
I  F6  -   F6                         I
I                                     I
I  F8  -   F8                    .129*I
I  F7  -   F7                         I
I                                     I
```

LAGRANGE MULTIPLIER TEST (FOR ADDING PARAMETERS)

ORDERED UNIVARIATE TEST STATISTICS:

NO	CODE		PARAMETER	CHI-SQUARE	PROBABILITY	PARAMETER CHANGE
1	2	12	V20,F5	59.236	0.000	0.885
2	2	12	V6,F5	49.322	0.000	0.774
3	2	12	V13,F1	46.757	0.000	1.011
4	2	12	V32,F6	32.496	0.000	0.440
5	2	12	V26,F6	29.872	0.000	0.524
6	2	6	E14,E13	29.680	0.000	0.228
7	2	6	E8,E6	21.876	0.000	0.296
8	2	12	V20,F7	21.444	0.000	0.490
9	2	12	V5,F6	20.598	0.000	0.335
10	2	12	V27,F7	20.527	0.000	0.483
11	2	12	V32,F7	19.507	0.000	0.356
12	2	12	V6,F7	18.297	0.000	0.414
13	2	12	V28,F2	15.603	0.000	0.401
14	2	12	V30,F6	15.504	0.000	0.329
15	2	12	V18,F7	15.280	0.000	-0.340
16	2	12	V2,F8	14.927	0.000	0.282
17	2	6	E20,E6	14.619	0.000	0.247
18	2	12	V28,F1	13.762	0.000	0.573
19	2	12	V2,F3	13.662	0.000	0.519
20	2	12	V21,F1	13.635	0.000	0.599

Appendix-6

Integrated Model for the Three Product Classes.

1

```
  EQS, A STRUCTURAL EQUATION PROGRAM          MULTIVARIATE SOFTWARE, INC.
  COPYRIGHT BY P.M. BENTLER                   VERSION 5.6 (C) 1985 - 1997.


    PROGRAM CONTROL INFORMATION

     1  /TITLE
     2     Convenience  Mar 13 98 additional var which load on two classes.
     3  /SPECIFICATIONS
     4   DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\C.ESS'; VARIABLES= 33;
CASES=  259;
     5      GROUP=3;
     6      METHODS=ML;
     7      MATRIX=RAW;
     8  /LABELS
     9    V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
    10    V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
    11    V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
    12    V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
    13    V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
    14    V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
    15    V31=V31; V32=V32; V33=V33;
    16  !
    17  !
    18  !
    19  /EQUATION
    20      V2  =  .5*  F1  +  1.000 E2   ;
    21      V3  =  .1*  F1  +  .6*  F7  +  1.000 E3   ;
    22      V4  =  .15* F3  +  .5*  F5  +  1.000 E4   ;
    23      V5  =  .25* F2  +  .4*  F3  +  .2*  F6 +  1.000 E5   ;
    24      V6  =  .02* F2  +  .4*  F5  +  1.000 E6   ;
    25      V7  = 1.000 F7  +  1.000 E7   ;
    26      V8  =  .6*  F6  +  1.000 E8   ;
    27      V10 = 1.000 F8  +  1.000 E10  ;
    28      V11 =  .4*  F7  +  1.000 E11  ;
    29      V12 =  .4*  F8  +  1.000 E12  ;
    30   '  V13 =  .3*  F1  +  .3*  F5  - 1.5* F6  +  1.000 E13  ;
    31      V14 = 1.000 F1  +  1.000 E14  ;
    32      V15 =  .6*  F5  +  1.000 E15  ;
    33      V16 = 1.000 F6  +  1.000 E16  ;
    34      V17 =  .5*  F2  +  .15* F3  +  1.000 E17  ;
    35      V18 =  .3*  F1  +  1.000 F3  -  .15* F7  +  1.000 E18  ;
    36      V20 =  .4*  F5  +  -.3* F6  +  1.000 E20  ;
    37      V21 =  .4*  F2  +  .4*  F3  +  1.000 E21  ;
    38      V22 = 1.000 F5  +  1.000 E22  ;
    39      V24 =  .7*  F7  +  1.000 E24  ;
    40      V25 =  .4*  F1  +  1.000 E25  ;
    41      V26 =  .2*  F3  +  .15* F5  +  .3*  F6  -  .3* F8  +  1.000 E26  ;
    42      V27 =  .5*  F6  +  .2*  F7  +  1.000 E27  ;
    43      V28 =  .2*  F2  +  .1*  F3  +  .6* F8  +  1.000 E28  ;
    44      V29 = 1.000 F2  +  .2*  F7  +  1.000 E29  ;
    45      V30 =  .2*  F2  +  .5*  F3  +  .3* F6  +  1.000 E30  ;
    46      V31 =  .7*  F2  +  .2*  F6  +  1.000 E31  ;
    47      V32 = -.3*  F1  +  .3* F6  +  1.000 E32  ;
    48  /VARIANCES
    49      F1=   .2*  ;
    50      F2=   .5*  ;
    51      F3=   .18* ;
    52      F5=   .35* ;
    53      F6=   .6*  ;
```

```
54          F7=     .5* ;
55          F8=     .5* ;
56          E2=     .45* ;
57          E3=     .7* ;
58          E4=     .9* ;
59          E5=     .6* ;
60          E6=    1.0* ;
61          E7=     .6* ;
62          E8=     .8* ;
63          E10=    .3* ;
64          E11=    .7* ;
65          E12=    .9* ;
66          E13=    .7* ;
67          E14=    .35* ;
68          E15=    .7* ;
69          E16=    .65* ;
70          E17=   1.0* ;
71          E18=    .65* ;
72          E20=   1.0* ;
73          E21=    .75* ;
74          E22=    .6* ;
75          E24=    .5* ;
76          E25=    .6* ;
77          E26=    .8* ;
78          E27=    .85* ;
79          E28=    .6* ;
80          E29=    .5* ;
81          E30=    .6* ;
82          E31=    .4* ;
83          E32=    .7* ;
84      /COVARIANCES
85          F2,F1   =    .1* ;
86          F6,F5   =    .05* ;
87          F7,F5   =    .15* ;
88          F7,F6   =    .15* ;
89          F8,F5   =    .05* ;
90          F8,F6   =    .1* ;
91          F8,F7   =    .05* ;
92          E13,E4  =    .1 * ;
93          E16,E11 =    .13 * ;
94          E17,E16 =    .1 * ;
95          E20,E6  =     .01 * ;
96          E20,E13 =    .15 * ;
97      /END
98      /TITLE
99       shoppinG group Mar 13 98 additional var which load on two classes.
100     /SPECIFICATIONS
101      DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\g.ESS'; VARIABLES= 33;
CASES=   259;
102      METHODS=ML;
103      MATRIX=RAW;
104     /LABELS
105     V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
106     V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
107     V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
108     V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
109     V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
110     V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
111     V31=V31; V32=V32; V33=V33;
112     !
113     !
114     !
115     /EQUATION
116         V2  =   .5* F1   +   1.000 E2    ;
117         V3  =   .1* F1   +  .6* F7   +  1.000 E3    ;
118         V4  =   .15* F3  +  .5* F5   +  1.000 E4    ;
119         V5  =   .25* F2  +  .4* F3   +  .2* F6  +  1.000 E5    ;
120         V6  =   .02* F2  +  .4* F5   +  1.000 E6    ;
```

```
121       V7  =   1.000 F7  +   1.000 E7   ;
122       V8  =   .6* F6  +   1.000 E8   ;
123       V10 =   1.000 F8  +   1.000 E10  ;
124       V11 =   .4* F7  +   1.000 E11  ;
125       V12 =   .4* F8  +   1.000 E12  ;
126       V13 =   .3* F1  +   .3* F5  - 1.5* F6  +   1.000 E13  ;
127       V14 =   1.000 F1  +   1.000 E14  ;
128       V15 =   .6* F5  +   1.000 E15  ;
129       V16 =   1.000 F6  +   1.000 E16  ;
130       V17 =   .5* F2  + .15* F3 +  1.000 E17  ;
131       V18 =   .3* F1  +   1.000 F3  - .15* F7  +   1.000 E18  ;
132       V20 =   .4* F5  +   -.3* F6  +   1.000 E20  ;
133       V21 =   .4* F2  +   .4* F3  +   1.000 E21  ;
134       V22 =   1.000 F5  +   1.000 E22  ;
135       V24 =   .7* F7  +   1.000 E24  ;
136       V25 =   .4* F1  +   1.000 E25  ;
137       V26 =   .2* F3  + .15* F5 +   .3* F6  - .3* F8  +   1.000 E26  ;
138       V27 =   .5* F6  + .2* F7 +  1.000 E27  ;
139       V28 =   .2* F2  + .1* F3  +   .6* F8  +   1.000 E28  ;
140       V29 =   1.000 F2  +   .2* F7  +   1.000 E29  ;
141       V30 =   .2* F2 + .5* F3  +   .3* F6  +   1.000 E30  ;
142       V31 =   .7* F2  +   .2* F6  +   1.000 E31  ;
143       V32 =   -.3* F1  +   .3* F6  +   1.000 E32  ;
144   /VARIANCES
145       F1=    .2* ;
146       F2=    .5* ;
147       F3=    .18* ;
148       F5=    .35* ;
149       F6=    .6* ;
150       F7=    .5* ;
151       F8=    .5* ;
152       E2=    .45* ;
153       E3=    .7* ;
154       E4=    .9* ;
155       E5=    .6* ;
156       E6=   1.0* ;
157       E7=    .6* ;
158       E8=    .8* ;
159       E10=    .3* ;
160       E11=    .7* ;
161       E12=    .9* ;
162       E13=    .7* ;
163       E14=    .35* ;
164       E15=    .7* ;
165       E16=    .65* ;
166       E17=   1.0* ;
167       E18=    .65* ;
168       E20=   1.0* ;
169       E21=    .75* ;
170       E22=    .6* ;
171       E24=    .5* ;
172       E25=    .6* ;
173       E26=    .8* ;
174       E27=    .85* ;
175       E28=    .6* ;
176       E29=    .5* ;
177       E30=    .6* ;
178       E31=    .4* ;
179       E32=    .7* ;
180   /COVARIANCES
181        F2,F1  =    .1* ;
182        F6,F5  =    .05* ;
183        F7,F5  =    .15* ;
184        F7,F6  =    .15* ;
185        F8,F5  =    .05* ;
186        F8,F6  =    .1* ;
187        F8,F7  =    .05* ;
188        E13,E4  =   .1 * ;
```

```
189          E16,E11 =  .13 * ;
190          E17,E16 =  .1 * ;
191          E20,E6  =   .01 * ;
192          E20,E13 =  .15 * ;
193  /END
194  /TITLE
195   speciality group Mar 13 98 additional var which load on two
classes.
196  /SPECIFICATIONS
197   DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\g.ESS'; VARIABLES= 33;
CASES=  259;
198   METHODS=ML;
199   MATRIX=RAW;
200  /LABELS
201  V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
202  V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
203  V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
204  V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
205  V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
206  V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
207  V31=V31; V32=V32; V33=V33;
208  !
209  !
210  !
211  /EQUATION
212      V2  =  .5* F1  +  1.000 E2   ;
213      V3  =  .1* F1  + .6* F7  +  1.000 E3   ;
214      V4  =  .15* F3 + .5* F5  +  1.000 E4   ;
215      V5  =  .25* F2 + .4* F3  + .2* F6 +  1.000 E5   ;
216      V6  =  .02* F2 + .4* F5  +  1.000 E6   ;
217      V7  =  1.000 F7  +  1.000 E7   ;
218      V8  =  .6* F6  +  1.000 E8   ;
219      V10 =  1.000 F8  +  1.000 E10  ;
220      V11 =  .4* F7  +  1.000 E11  ;
221      V12 =  .4* F8  +  1.000 E12  ;
222      V13 =  .3* F1  +  .3* F5  - 1.5* F6  +  1.000 E13  ;
223      V14 =  1.000 F1  +  1.000 E14  ;
224      V15 =   .6* F5  +  1.000 E15  ;
225      V16 =  1.000 F6  +  1.000 E16  ;
226      V17 =   .5* F2  + .15* F3 +  1.000 E17  ;
227      V18 =   .3* F1  +  1.000 F3  - .15* F7  +  1.000 E18  ;
228      V20 =   .4* F5  +  -.3* F6  +  1.000 E20  ;
229      V21 =   .4* F2  +  .4* F3  +  1.000 E21  ;
230      V22 =  1.000 F5  +  1.000 E22  ;
231      V24 =  .7* F7  +  1.000 E24  ;
232      V25 =  .4* F1  +  1.000 E25  ;
233      V26 =  .2* F3  + .15* F5  +  .3* F6  - .3* F8  +  1.000 E26  ;
234      V27 =  .5* F6  + .2* F7 +  1.000 E27  ;
235      V28 =  .2* F2  + .1* F3  +   .6* F8  +  1.000 E28  ;
236      V29 =  1.000 F2  +   .2* F7  +  1.000 E29  ;
237      V30 =  .2* F2  + .5* F3  +  .3* F6  +  1.000 E30  ;
238      V31 =  .7* F2  +   .2* F6  +  1.000 E31  ;
239      V32 =  -.3* F1  +   .3* F6  +  1.000 E32  ;
240  /VARIANCES
241      F1=   .2* ;
242      F2=   .5* ;
243      F3=   .18* ;
244      F5=   .35* ;
245      F6=   .6* ;
246      F7=   .5* ;
247      F8=   .5* ;
248      E2=   .45* ;
249      E3=   .7* ;
250      E4=   .9* ;
251      E5=   .6* ;
252      E6= 1.0* ;
253      E7=   .6* ;
254      E8=   .8* ;
```

```
255        E10=    .3* ;
256        E11=    .7* ;
257        E12=    .9* ;
258        E13=    .7* ;
259        E14=    .35* ;
260        E15=    .7* ;
261        E16=    .65* ;
262        E17=   1.0* ;
263        E18=    .65* ;
264        E20=   1.0* ;
265        E21=    .75* ;
266        E22=    .6* ;
267        E24=    .5* ;
268        E25=    .6* ;
269        E26=    .8* ;
270        E27=    .85* ;
271        E28=    .6* ;
272        E29=    .5* ;
273        E30=    .6* ;
274        E31=    .4* ;
275        E32=    .7* ;
276    /COVARIANCES
277        F2,F1   =     .1* ;
278        F6,F5   =     .05* ;
279        F7,F5   =     .15* ;
280        F7,F6   =     .15* ;
281        F8,F5   =     .05* ;
282        F8,F6   =     .1* ;
283        F8,F7   =     .05* ;
284        E13,E4  =    .1 * ;
285        E16,E11 =    .13 * ;
286        E17,E16 =    .1 * ;
287        E20,E6  =     .01 * ;
288        E20,E13 =    .15 * ;
289    /CONSTRAINTS
290    (1,V2,F1)=(2,V2,F1)=(3,V2,F1)
291    (1,V3,F1)=(2,V3,F1)=(3,V3,F1)
292    (1,V3,F7)=(2,V3,F7)=(3,V3,F7)
293    (1,V4,F3)=(2,V4,F3)=(3,V4,F3)
294    (1,V4,F5)=(2,V4,F5)=(3,V4,F5)
295    (1,V5,F2)=(2,V5,F2)=(3,V5,F2)
296    (1,V5,F3)=(2,V5,F3)=(3,V5,F3)
297    (1,V5,F6)=(2,V5,F6)=(3,V5,F6)
298    (1,V6,F2)=(2,V6,F2)=(3,V6,F2)
299    (1,V6,F5)=(2,V6,F5)=(3,V6,F5)
300    (1,V8,F6)=(2,V8,F6)=(3,V8,F6)
301    (1,V11,F7)=(2,V11,F7)=(3,V11,F7)
302    (1,V12,F8)=(2,V12,F8)=(3,V12,F8)
303    (1,V13,F1)=(2,V13,F1)=(3,V13,F1)
304    (1,V13,F5)=(2,V13,F5)=(3,V13,F5)
305    (1,V13,F6)=(2,V13,F6)=(3,V13,F6)
306    (1,V15,F5)=(2,V15,F5)=(3,V15,F5)
307    (1,V17,F2)=(2,V17,F2)=(3,V17,F2)
308    (1,V17,F3)=(2,V17,F3)=(3,V17,F3)
309    (1,V18,F1)=(2,V18,F1)=(3,V18,F1)
310    (1,V18,F7)=(2,V18,F7)=(3,V18,F7)
311    (1,V20,F5)=(2,V20,F5)=(3,V20,F5)
312    (1,V20,F6)=(2,V20,F6)=(3,V20,F6)
313    (1,V21,F2)=(2,V21,F2)=(3,V21,F2)
314    (1,V21,F3)=(2,V21,F3)=(3,V21,F3)
315    (1,V24,F7)=(2,V24,F7)=(3,V24,F7)
316    (1,V25,F1)=(2,V25,F1)=(3,V25,F1)
317    (1,V26,F3)=(2,V26,F3)=(3,V26,F3)
318    (1,V26,F5)=(2,V26,F5)=(3,V26,F5)
319    (1,V26,F6)=(2,V26,F6)=(3,V26,F6)
320    (1,V26,F8)=(2,V26,F8)=(3,V26,F8)
321    (1,V27,F6)=(2,V27,F6)=(3,V27,F6)
322    (1,V27,F7)=(2,V27,F7)=(3,V27,F7)
```

```
323    (1,V28,F2)=(2,V28,F2)=(3,V28,F2)
324    (1,V28,F3)=(2,V28,F3)=(3,V28,F3)
325    (1,V28,F8)=(2,V28,F8)=(3,V28,F8)
326    (1,V29,F7)=(2,V29,F7)=(3,V29,F7)
327    (1,V30,F2)=(2,V30,F2)=(3,V30,F2)
328    (1,V30,F3)=(2,V30,F3)=(3,V30,F3)
329    (1,V30,F6)=(2,V30,F6)=(3,V30,F6)
330    (1,V31,F2)=(2,V31,F2)=(3,V31,F2)
331    (1,V31,F6)=(2,V31,F6)=(3,V31,F6)
332    (1,V32,F1)=(2,V32,F1)=(3,V32,F1)
333    (1,V32,F6)=(2,V32,F6)=(3,V32,F6)
334    (1,F1,F1)=(2,F1,F1)=(3,F1,F1)
335    (1,F2,F2)=(2,F2,F2)=(3,F2,F2)
336    (1,F3,F3)=(2,F3,F3)=(3,F3,F3)
337    (1,F5,F5)=(2,F5,F5)=(3,F5,F5)
338    (1,F6,F6)=(2,F6,F6)=(3,F6,F6)
339    (1,F7,F7)=(2,F7,F7)=(3,F7,F7)
340    (1,F8,F8)=(2,F8,F8)=(3,F8,F8)
341    (1,F2,F1)=(2,F2,F1)=(3,F2,F1)
342    (1,F6,F5)=(2,F6,F5)=(3,F6,F5)
343    (1,F7,F5)=(2,F7,F5)=(3,F7,F5)
344    (1,F7,F6)=(2,F7,F6)=(3,F7,F6)
345    (1,F8,F5)=(2,F8,F5)=(3,F8,F5)
346    (1,F8,F6)=(2,F8,F6)=(3,F8,F6)
347    (1,F8,F7)=(2,F8,F7)=(3,F8,F7)
348    (1,E2,E2)=(2,E2,E2)=(3,E2,E2)
349    (1,E3,E3)=(2,E3,E3)=(3,E3,E3)
350    (1,E4,E4)=(2,E4,E4)=(3,E4,E4)
351    (1,E5,E5)=(2,E5,E5)=(3,E5,E5)
352    (1,E6,E6)=(2,E6,E6)=(3,E6,E6)
353    (1,E7,E7)=(2,E7,E7)=(3,E7,E7)
354    (1,E8,E8)=(2,E8,E8)=(3,E8,E8)
355    (1,E10,E10)=(2,E10,E10)=(3,E10,E10)
356    (1,E11,E11)=(2,E11,E11)=(3,E11,E11)
357    (1,E12,E12)=(2,E12,E12)=(3,E12,E12)
358    (1,E13,E13)=(2,E13,E13)=(3,E13,E13)
359    (1,E14,E14)=(2,E14,E14)=(3,E14,E14)
360    (1,E15,E15)=(2,E15,E15)=(3,E15,E15)
361    (1,E16,E16)=(2,E16,E16)=(3,E16,E16)
362    (1,E17,E17)=(2,E17,E17)=(3,E17,E17)
363    (1,E18,E18)=(2,E18,E18)=(3,E18,E18)
364    (1,E20,E20)=(2,E20,E20)=(3,E20,E20)
365    (1,E21,E21)=(2,E21,E21)=(3,E21,E21)
366    (1,E22,E22)=(2,E22,E22)=(3,E22,E22)
367    (1,E24,E24)=(2,E24,E24)=(3,E24,E24)
368    (1,E25,E25)=(2,E25,E25)=(3,E25,E25)
369    (1,E26,E26)=(2,E26,E26)=(3,E26,E26)
370    (1,E27,E27)=(2,E27,E27)=(3,E27,E27)
371    (1,E28,E28)=(2,E28,E28)=(3,E28,E28)
372    (1,E29,E29)=(2,E29,E29)=(3,E29,E29)
373    (1,E30,E30)=(2,E30,E30)=(3,E30,E30)
374    (1,E31,E31)=(2,E31,E31)=(3,E31,E31)
375    (1,E32,E32)=(2,E32,E32)=(3,E32,E32)
376    (1,E13,E4)=(2,E13,E4)=(3,E13,E4)
377    (1,E16,E11)=(2,E16,E11)=(3,E16,E11)
378    (1,E17,E16)=(2,E17,E16)=(3,E17,E16)
379    (1,E20,E6)=(2,E20,E6)=(3,E20,E6)
380    (1,E20,E13)=(2,E20,E13)=(3,E20,E13)
381  /LMTEST
382  /END
```

382 CUMULATED RECORDS OF INPUT MODEL FILE WERE READ (GROUP   3)

DATA IS READ FROM C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\G.ESS
THERE ARE 33 VARIABLES AND   259 CASES

IT IS A RAW DATA ESS FILE

PARAMETER ESTIMATES APPEAR IN ORDER,
NO SPECIAL PROBLEMS WERE ENCOUNTERED DURING OPTIMIZATION.

AVERAGE ABSOLUTE   COVARIANCE   RESIDUALS   =   0.0688
AVERAGE OFF-DIAGONAL ABSOLUTE   COVARIANCE   RESIDUALS   =   0.0671

AVERAGE ABSOLUTE STANDARDIZED RESIDUALS   =   0.0700
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS   =   0.0680
DISTRIBUTION OF STANDARDIZED RESIDUALS


```
        ---------------------------------------------
        !                                         !
  180-  !                                         -
        !                      *                  !
        !                      *                  !
        !                      *                  !
        !                 *    *                  !          RANGE        FREQ
PERCENT
  135-  !                 *    *                  -
        !                 *    *                  !    1   -0.5  -  --         1
  0.25%
        !                 *    *                  !    2   -0.4  -  -0.5       0
  0.00%
        !                 *    *                  !    3   -0.3  -  -0.4       2
  0.49%
        !                 *    *                  !    4   -0.2  -  -0.3       1
  0.25%
   90-  !                 *    *                  -    5   -0.1  -  -0.2      37
  9.11%
        !                 *    *                  !    6    0.0  -  -0.1     140
 34.48%
        !                 *    *                  !    7    0.1  -   0.0     171
 42.12%
        !                 *    *                  !    8    0.2  -   0.1      49
 12.07%
        !                 *    *                  !    9    0.3  -   0.2       4
  0.99%
   45-  !                 *    *    *             -    A    0.4  -   0.3       1
  0.25%
        !            *    *    *    *             !    B    0.5  -   0.4       0
  0.00%
        !            *    *    *    *             !    C    ++   -   0.5       0
  0.00%
        !            *    *    *    *             !    --------------------------
  ----
        !            *    *    *    *             !        TOTAL          406
100.00%
        ---------------------------------------------
              1  2  3  4  5  6  7  8  9  A  B  C      EACH "*" REPRESENTS   9
RESIDUALS
```


STANDARDIZED SOLUTION:

Convenience (integrated)

$$
\begin{aligned}
V2 &= V2 = .493*F1 + .870\ E2 \\
V3 &= V3 = .164*F1 + .609*F7 + .776\ E3 \\
V4 &= V4 = .128*F3 + .483*F5 + .866\ E4 \\
V5 &= V5 = .293*F2 + .375*F3 + .195*F6 + .858\ E5
\end{aligned}
$$

425

```
  V6     =V6  =    .032*F2     + .355*F5     + .934 E6
  V7     =V7  =    .715 F7     + .700 E7
  V8     =V8  =    .625*F6     + .781 E8
  V10    =V10 =    .864 F8     + .504 E10
  V11    =V11 =    .449*F7     + .894 E11
  V12    =V12 =    .394*F8     + .919 E12
  V13    =V13 =    .404*F1     + .382*F5    +-.302*F6    + .797 E13
  V14    =V14 =    .729 F1     + .684 E14
  V15    =V15 =    .570*F5     + .822 E15
  V16    =V16 =    .688 F6     + .726 E16
  V17    =V17 =    .384*F2     + .179*F3    + .906 E17
  V18    =V18 =    .313*F1     + .530 F3    +-.195*F7    + .764 E18
  V20    =V20 =    .482*F5     +-.366*F6    + .829 E20
  V21    =V21 =    .401*F2     + .372*F3    + .837 E21
  V22    =V22 =    .729 F5     + .685 E22
  V24    =V24 =    .775*F7     + .632 E24
  V25    =V25 =    .536*F1     + .844 E25
  V26    =V26 =    .187*F3     + .182*F5    + .209*F6    +-.375*F8    + .886
E26
  V27    =V27 =    .399*F6     + .144*F7    + .886 E27
  V28    =V28 =    .160*F2     + .106*F3    + .583*F8    + .789 E28
  V29    =V29 =    .773 F2     + .147*F7    + .617 E29
  V30    =V30 =    .281*F2     + .380*F3    + .258*F6    + .842 E30
  V31    =V31 =    .634*F2     + .211*F6    + .744 E31
  V32    =V32 =   -.328*F1     + .385*F6    + .862 E32

  CORRELATIONS AMONG INDEPENDENT VARIABLES
  ----------------------------------------


                        V                                 F
                        ---                               ---
                                I F2  -   F2                  .378*I
                                I F1  -   F1                      I
                                I                                 I
                                I F6  -   F6                  .154*I
                                I F5  -   F5                      I
                                I                                 I
                                I F7  -   F7                  .307*I
                                I F5  -   F5                      I
                                I                                 I
                                I F8  -   F8                  .149*I
                                I F5  -   F5                      I
                                I                                 I
                                I F7  -   F7                  .303*I
                                I F6  -   F6                      I
                                I                                 I
                                I F8  -   F8                  .185*I
                                I F6  -   F6                      I
                                I                                 I
                                I F8  -   F8                  .084*I
                                I F7  -   F7                      I
                                I                                 I
```

AVERAGE ABSOLUTE   COVARIANCE   RESIDUALS   =   0.0556
AVERAGE OFF-DIAGONAL ABSOLUTE   COVARIANCE   RESIDUALS   =   0.0564

AVERAGE ABSOLUTE STANDARDIZED RESIDUALS   =   0.0581
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS   =   0.0588

DISTRIBUTION OF STANDARDIZED RESIDUALS

```
      ----------------------------------------
      !                                      !
200-  !                                      _
      !                     *                !
      !                     *                !
      !                     *                !
      !                     *                !
PERCENT                     *                !          RANGE          FREQ
150-                     *  *                _
      !                  *  *                !    1   -0.5  -   --        0
0.00%
      !                  *  *                !    2   -0.4  -  -0.5       0
0.00%
      !                  *  *                !    3   -0.3  -  -0.4       0
0.00%
      !                  *  *                !    4   -0.2  -  -0.3       1
0.25%
100-                  *  *                   -    5   -0.1  -  -0.2      14
3.45%
      !                  *  *                !    6    0.0  -  -0.1     147
36.21%
      !                  *  *                !    7    0.1  -   0.0     191
47.04%
      !                  *  *                !    8    0.2  -   0.1      51
12.56%
      !                  *  *                !    9    0.3  -   0.2       2
0.49%
50-                   *  *  *                -    A    0.4  -   0.3       0
0.00%
      !               *  *  *                !    B    0.5  -   0.4       0
0.00%
      !               *  *  *                !    C    ++   -   0.5       0
0.00%
      !               *  *  *                !    ---------------------------
----
      !            *  *  *  *                !        TOTAL            406
100.00%
      ----------------------------------------
        1  2  3  4  5  6  7  8  9  A  B  C     EACH "*" REPRESENTS 10
RESIDUALS
```

STANDARDIZED SOLUTION:

Shopping (integrated)

```
    V2    =V2  =   .493*F1   + .870 E2
    V3    =V3  =   .164*F1   + .609*F7  + .776 E3
    V4    =V4  =   .128*F3   + .483*F5  + .866 E4
    V5    =V5  =   .293*F2   + .375*F3  + .195*F6   + .858 E5
    V6    =V6  =   .032*F2   + .355*F5  + .934 E6
    V7    =V7  =   .715 F7   + .700 E7
    V8    =V8  =   .625*F6   + .781 E8
    V10   =V10 =   .864 F8   + .504 E10
    V11   =V11 =   .449*F7   + .894 E11
    V12   =V12 =   .394*F8   + .919 E12
    V13   =V13 =   .404*F1   + .382*F5  +-.302*F6   + .797 E13
    V14   =V14 =   .729 F1   + .684 E14
    V15   =V15 =   .570*F5   + .822 E15
    V16   =V16 =   .688 F6   + .726 E16
    V17   =V17 =   .384*F2   + .179*F3  + .906 E17
    V18   =V18 =   .313*F1   + .530 F3  +-.195*F7   + .764 E18
    V20   =V20 =   .482*F5   +-.366*F6  + .829 E20
```

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```
V21    =V21 =      .401*F2     + .372*F3     + .837 E21
V22    =V22 =      .729 F5     + .685 E22
V24    =V24 =      .775*F7     + .632 E24
V25    =V25 =      .536*F1     + .844 E25
V26    =V26 =      .187*F3     + .182*F5     + .209*F6    +-.375*F8     + .886
E26
V27    =V27 =      .399*F6     + .144*F7     + .886 E27
V28    =V28 =      .160*F2     + .106*F3     + .583*F8    + .789 E28
V29    =V29 =      .773 F2     + .147*F7     + .617 E29
V30    =V30 =      .281*F2     + .380*F3     + .258*F6    + .842 E30
V31    =V31 =      .634*F2     + .211*F6     + .744 E31
V32    =V32 =     -.328*F1     + .385*F6     + .862 E32
```

CORRELATIONS AMONG INDEPENDENT VARIABLES

```
                          V                                F
                          ---                              ---
                    I F2  -   F2                        .378*I
                    I F1  -   F1                             I
                    I                                        I
                    I F6  -   F6                        .154*I
                    I F5  -   F5                             I
                    I                                        I
                    I F7  -   F7                        .307*I
                    I F5  -   F5                             I
                    I                                        I
                    I F8  -   F8                        .149*I
                    I F5  -   F5                             I
                    I                                        I
                    I F7  -   F7                        .303*I
                    I F6  -   F6                             I
                    I                                        I
                    I F8  -   F8                        .185*I
                    I F6  -   F6                             I
                    I                                        I
                    I F8  -   F8                        .084*I
                    I F7  -   F7                             I
                    I                                        I
```
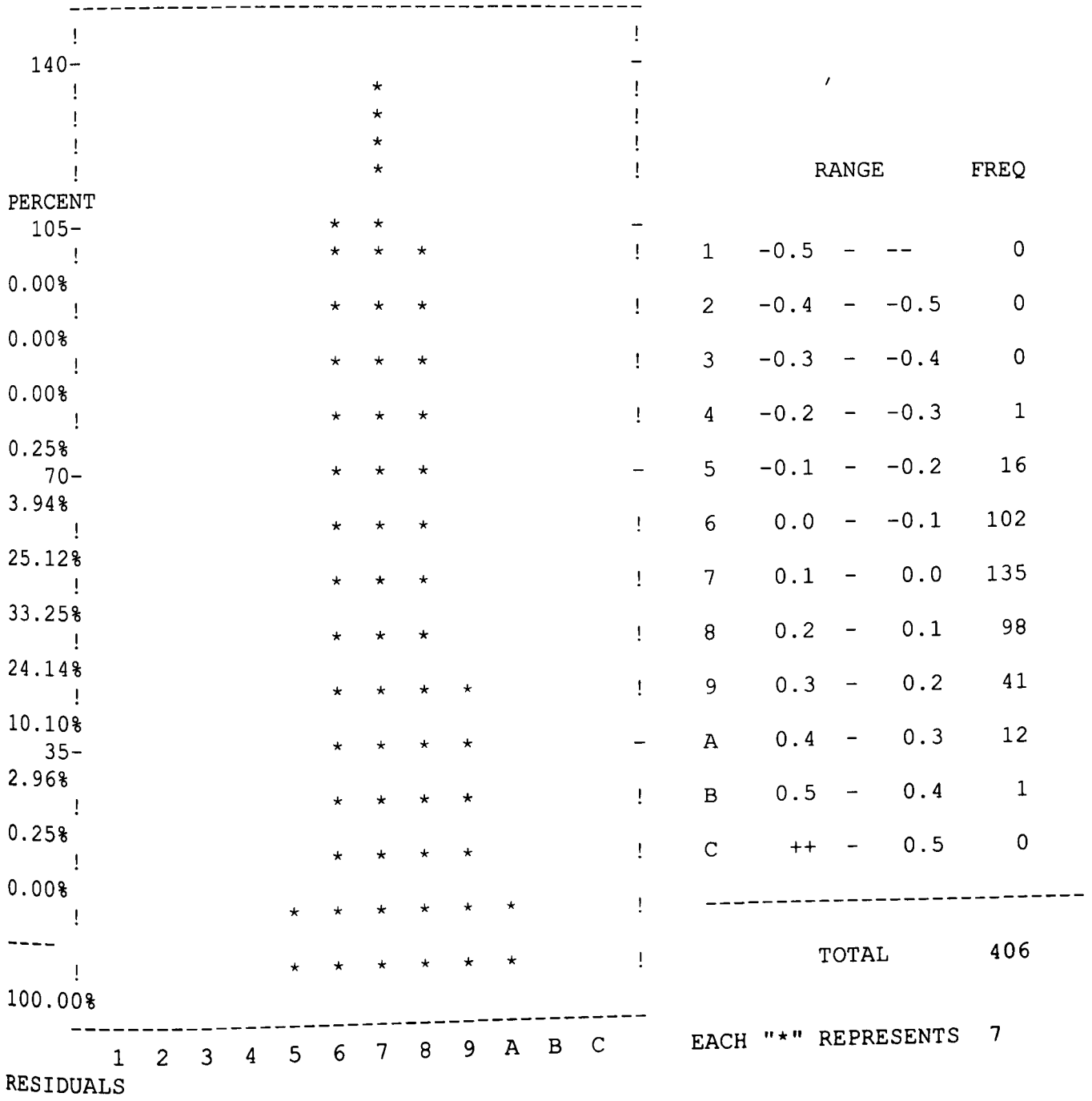
PARAMETER ESTIMATES APPEAR IN ORDER,
NO SPECIAL PROBLEMS WERE ENCOUNTERED DURING OPTIMIZATION.

ALL EQUALITY CONSTRAINTS WERE CORRECTLY IMPOSED

AVERAGE ABSOLUTE   COVARIANCE RESIDUALS   =   0.0556
AVERAGE OFF-DIAGONAL ABSOLUTE COVARIANCE RESIDUALS   =   0.0564

AVERAGE ABSOLUTE STANDARDIZED RESIDUALS   =   0.0581
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS   =   0.0588

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DISTRIBUTION OF STANDARDIZED RESIDUALS

```
        ----------------------------------
        !                              !
   200- !                              _
        !              *               !
        !              *               !
        !              *               !
        !              *               !            RANGE         FREQ
PERCENT !              *               !
   150-             *  *               _
        !           *  *               !    1   -0.5  -  --         0
  0.00% !           *  *               !    2   -0.4  -  -0.5       0
  0.00% !           *  *               !    3   -0.3  -  -0.4       0
  0.00% !           *  *               !    4   -0.2  -  -0.3       1
  0.25% !           *  *               !
   100-             *  *               -    5   -0.1  -  -0.2      14
  3.45% !           *  *               !    6    0.0  -  -0.1     147
 36.21% !           *  *               !    7    0.1  -   0.0     191
 47.04% !           *  *               !    8    0.2  -   0.1      51
 12.56% !           *  *               !    9    0.3  -   0.2       2
  0.49% !           *  *               !
    50-             *  *  *            -    A    0.4  -   0.3       0
  0.00% !           *  *  *            !    B    0.5  -   0.4       0
  0.00% !           *  *  *            !    C    ++   -   0.5       0
  0.00% !           *  *  *            !    ---------------------------
        !         *  *  *  *           !        TOTAL            406
----
100.00%
        ----------------------------------
        1  2  3  4  5  6  7  8  9  A  B  C     EACH "*" REPRESENTS 10
RESIDUALS
```

MULTIPLE POPULATION ANALYSIS, INFORMATION IN GROUP 3

STANDARDIZED SOLUTION:

Speciality (integrated)

```
V2    =V2  =   .493*F1   + .870 E2
V3    =V3  =   .164*F1   + .609*F7   + .776 E3
V4    =V4  =   .128*F3   + .483*F5   + .866 E4
V5    =V5  =   .293*F2   + .375*F3   + .195*F6   + .858 E5
V6    =V6  =   .032*F2   + .355*F5   + .934 E6
V7    =V7  =   .715 F7   + .700 E7
V8    =V8  =   .625*F6   + .781 E8
V10   =V10 =   .864 F8   + .504 E10
V11   =V11 =   .449*F7   + .894 E11
V12   =V12 =   .394*F8   + .919 E12
V13   =V13 =   .404*F1   + .382*F5   +-.302*F6   + .797 E13
V14   =V14 =   .729 F1   + .684 E14
V15   =V15 =   .570*F5   + .822 E15
V16   =V16 =   .688 F6   + .726 E16
V17   =V17 =   .384*F2   + .179*F3   + .906 E17
V18   =V18 =   .313*F1   + .530 F3   +-.195*F7   + .764 E18
```

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```
V20    =V20 =    .482*F5    +-.366*F6    + .829 E20
V21    =V21 =    .401*F2    + .372*F3    + .837 E21
V22    =V22 =    .729 F5    + .685 E22
V24    =V24 =    .775*F7    + .632 E24
V25    =V25 =    .536*F1    + .844 E25
V26    =V26 =    .187*F3    + .182*F5    + .209*F6    +-.375*F8    + .886
E26
V27    =V27 =    .399*F6    + .144*F7    + .886 E27
V28    =V28 =    .160*F2    + .106*F3    + .583*F8    + .789 E28
V29    =V29 =    .773 F2    + .147*F7    + .617 E29
V30    =V30 =    .281*F2    + .380*F3    + .258*F6    + .842 E30
V31    =V31 =    .634*F2    + .211*F6    + .744 E31
V32    =V32 = -.328*F1    + .385*F6    + .862 E32
```

CORRELATIONS AMONG INDEPENDENT VARIABLES

```
                          V                              F
                         ---                            ---
                   I F2  -   F2                      .378*I
                   I F1  -   F1                          I
                   I                                     I
                   I F6  -   F6                      .154*I
                   I F5  -   F5                          I
                   I                                     I
                   I F7  -   F7                      .307*I
                   I F5  -   F5                          I
                   I                                     I
                   I F8  -   F8                      .149*I
                   I F5  -   F5                          I
                   I                                     I
                   I F7  -   F7                      .303*I
                   I F6  -   F6                          I
                   I                                     I
                   I F8  -   F8                      .185*I
                   I F6  -   F6                          I
                   I                                     I
                   I F8  -   F8                      .084*I
                   I F7  -   F7                          I
                   I                                     I
```

STATISTICS FOR MULTIPLE POPULATION ANALYSIS

  ALL EQUALITY CONSTRAINTS WERE CORRECTLY IMPOSED

  GOODNESS OF FIT SUMMARY

  INDEPENDENCE MODEL CHI-SQUARE =   5549.285 ON 1134 DEGREES OF FREEDOM

  INDEPENDENCE AIC = 3281.28528   INDEPENDENCE CAIC = -3115.81530
        MODEL AIC = -411.53239   MODEL CAIC = -6769.14470

  CHI-SQUARE =   1842.468 BASED ON 1127 DEGREES OF FREEDOM
  PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS LESS THAN 0.001

  BENTLER-BONETT NORMED   FIT INDEX=   0.668
  BENTLER-BONETT NONNORMED FIT INDEX=   0.837
  COMPARATIVE FIT INDEX (CFI)   =   0.838

LAGRANGE MULTIPLIER TEST (FOR RELEASING CONSTRAINTS)

CONSTRAINTS TO BE RELEASED ARE:

CONSTRAINTS FROM GROUP 3

CONSTR:	1	(1,V2,F1)-(2,V2,F1)=0;
CONSTR:	2	(1,V2,F1)-(3,V2,F1)=0;
CONSTR:	3	(1,V3,F1)-(2,V3,F1)=0;
CONSTR:	4	(1,V3,F1)-(3,V3,F1)=0;
CONSTR:	5	(1,V3,F7)-(2,V3,F7)=0;
CONSTR:	6	(1,V3,F7)-(3,V3,F7)=0;
CONSTR:	7	(1,V4,F3)-(2,V4,F3)=0;
CONSTR:	8	(1,V4,F3)-(3,V4,F3)=0;
CONSTR:	9	(1,V4,F5)-(2,V4,F5)=0;
CONSTR:	10	(1,V4,F5)-(3,V4,F5)=0;
CONSTR:	11	(1,V5,F2)-(2,V5,F2)=0;
CONSTR:	12	(1,V5,F2)-(3,V5,F2)=0;
CONSTR:	13	(1,V5,F3)-(2,V5,F3)=0;
CONSTR:	14	(1,V5,F3)-(3,V5,F3)=0;
CONSTR:	15	(1,V5,F6)-(2,V5,F6)=0;
CONSTR:	16	(1,V5,F6)-(3,V5,F6)=0;
CONSTR:	17	(1,V6,F2)-(2,V6,F2)=0;
CONSTR:	18	(1,V6,F2)-(3,V6,F2)=0;
CONSTR:	19	(1,V6,F5)-(2,V6,F5)=0;
CONSTR:	20	(1,V6,F5)-(3,V6,F5)=0;
CONSTR:	21	(1,V8,F6)-(2,V8,F6)=0;
CONSTR:	22	(1,V8,F6)-(3,V8,F6)=0;
CONSTR:	23	(1,V11,F7)-(2,V11,F7)=0;
CONSTR:	24	(1,V11,F7)-(3,V11,F7)=0;
CONSTR:	25	(1,V12,F8)-(2,V12,F8)=0;
CONSTR:	26	(1,V12,F8)-(3,V12,F8)=0;
CONSTR:	27	(1,V13,F1)-(2,V13,F1)=0;
CONSTR:	28	(1,V13,F1)-(3,V13,F1)=0;
CONSTR:	29	(1,V13,F5)-(2,V13,F5)=0;
CONSTR:	30	(1,V13,F5)-(3,V13,F5)=0;
CONSTR:	31	(1,V13,F6)-(2,V13,F6)=0;
CONSTR:	32	(1,V13,F6)-(3,V13,F6)=0;
CONSTR:	33	(1,V15,F5)-(2,V15,F5)=0;
CONSTR:	34	(1,V15,F5)-(3,V15,F5)=0;
CONSTR:	35	(1,V17,F2)-(2,V17,F2)=0;
CONSTR:	36	(1,V17,F2)-(3,V17,F2)=0;
CONSTR:	37	(1,V17,F3)-(2,V17,F3)=0;
CONSTR:	38	(1,V17,F3)-(3,V17,F3)=0;
CONSTR:	39	(1,V18,F1)-(2,V18,F1)=0;
CONSTR:	40	(1,V18,F1)-(3,V18,F1)=0;
CONSTR:	41	(1,V18,F7)-(2,V18,F7)=0;
CONSTR:	42	(1,V18,F7)-(3,V18,F7)=0;
CONSTR:	43	(1,V20,F5)-(2,V20,F5)=0;
CONSTR:	44	(1,V20,F5)-(3,V20,F5)=0;
CONSTR:	45	(1,V20,F6)-(2,V20,F6)=0;
CONSTR:	46	(1,V20,F6)-(3,V20,F6)=0;
CONSTR:	47	(1,V21,F2)-(2,V21,F2)=0;
CONSTR:	48	(1,V21,F2)-(3,V21,F2)=0;
CONSTR:	49	(1,V21,F3)-(2,V21,F3)=0;
CONSTR:	50	(1,V21,F3)-(3,V21,F3)=0;
CONSTR:	51	(1,V24,F7)-(2,V24,F7)=0;
CONSTR:	52	(1,V24,F7)-(3,V24,F7)=0;
CONSTR:	53	(1,V25,F1)-(2,V25,F1)=0;
CONSTR:	54	(1,V25,F1)-(3,V25,F1)=0;
CONSTR:	55	(1,V26,F3)-(2,V26,F3)=0;
CONSTR:	56	(1,V26,F3)-(3,V26,F3)=0;
CONSTR:	57	(1,V26,F5)-(2,V26,F5)=0;
CONSTR:	58	(1,V26,F5)-(3,V26,F5)=0;
CONSTR:	59	(1,V26,F6)-(2,V26,F6)=0;
CONSTR:	60	(1,V26,F6)-(3,V26,F6)=0;
CONSTR:	61	(1,V26,F8)-(2,V26,F8)=0;

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CONSTR:    62    (1,V26,F8)-(3,V26,F8)=0;
CONSTR:    63    (1,V27,F6)-(2,V27,F6)=0;
CONSTR:    64    (1,V27,F6)-(3,V27,F6)=0;
CONSTR:    65    (1,V27,F7)-(2,V27,F7)=0;
CONSTR:    66    (1,V27,F7)-(3,V27,F7)=0;
CONSTR:    67    (1,V28,F2)-(2,V28,F2)=0;
CONSTR:    68    (1,V28,F2)-(3,V28,F2)=0;
CONSTR:    69    (1,V28,F3)-(2,V28,F3)=0;
CONSTR:    70    (1,V28,F3)-(3,V28,F3)=0;
CONSTR:    71    (1,V28,F8)-(2,V28,F8)=0;
CONSTR:    72    (1,V28,F8)-(3,V28,F8)=0;
CONSTR:    73    (1,V29,F7)-(2,V29,F7)=0;
CONSTR:    74    (1,V29,F7)-(3,V29,F7)=0;
CONSTR:    75    (1,V30,F2)-(2,V30,F2)=0;
CONSTR:    76    (1,V30,F2)-(3,V30,F2)=0;
CONSTR:    77    (1,V30,F3)-(2,V30,F3)=0;
CONSTR:    78    (1,V30,F3)-(3,V30,F3)=0;
CONSTR:    79    (1,V30,F6)-(2,V30,F6)=0;
CONSTR:    80    (1,V30,F6)-(3,V30,F6)=0;
CONSTR:    81    (1,V31,F2)-(2,V31,F2)=0;
CONSTR:    82    (1,V31,F2)-(3,V31,F2)=0;
CONSTR:    83    (1,V31,F6)-(2,V31,F6)=0;
CONSTR:    84    (1,V31,F6)-(3,V31,F6)=0;
CONSTR:    85    (1,V32,F1)-(2,V32,F1)=0;
CONSTR:    86    (1,V32,F1)-(3,V32,F1)=0;
CONSTR:    87    (1,V32,F6)-(2,V32,F6)=0;
CONSTR:    88    (1,V32,F6)-(3,V32,F6)=0;
CONSTR:    89    (1,F1,F1)-(2,F1,F1)=0;
CONSTR:    90    (1,F1,F1)-(3,F1,F1)=0;
CONSTR:    91    (1,F2,F2)-(2,F2,F2)=0;
CONSTR:    92    (1,F2,F2)-(3,F2,F2)=0;
CONSTR:    93    (1,F3,F3)-(2,F3,F3)=0;
CONSTR:    94    (1,F3,F3)-(3,F3,F3)=0;
CONSTR:    95    (1,F5,F5)-(2,F5,F5)=0;
CONSTR:    96    (1,F5,F5)-(3,F5,F5)=0;
CONSTR:    97    (1,F6,F6)-(2,F6,F6)=0;
CONSTR:    98    (1,F6,F6)-(3,F6,F6)=0;
CONSTR:    99    (1,F7,F7)-(2,F7,F7)=0;
CONSTR:   100    (1,F7,F7)-(3,F7,F7)=0;
CONSTR:   101    (1,F8,F8)-(2,F8,F8)=0;
CONSTR:   102    (1,F8,F8)-(3,F8,F8)=0;
CONSTR:   103    (1,F2,F1)-(2,F2,F1)=0;
CONSTR:   104    (1,F2,F1)-(3,F2,F1)=0;
CONSTR:   105    (1,F6,F5)-(2,F6,F5)=0;
CONSTR:   106    (1,F6,F5)-(3,F6,F5)=0;
CONSTR:   107    (1,F7,F5)-(2,F7,F5)=0;
CONSTR:   108    (1,F7,F5)-(3,F7,F5)=0;
CONSTR:   109    (1,F7,F6)-(2,F7,F6)=0;
CONSTR:   110    (1,F7,F6)-(3,F7,F6)=0;
CONSTR:   111    (1,F8,F5)-(2,F8,F5)=0;
CONSTR:   112    (1,F8,F5)-(3,F8,F5)=0;
CONSTR:   113    (1,F8,F6)-(2,F8,F6)=0;
CONSTR:   114    (1,F8,F6)-(3,F8,F6)=0;
CONSTR:   115    (1,F8,F7)-(2,F8,F7)=0;
CONSTR:   116    (1,F8,F7)-(3,F8,F7)=0;
CONSTR:   117    (1,E2,E2)-(2,E2,E2)=0;
CONSTR:   118    (1,E2,E2)-(3,E2,E2)=0;
CONSTR:   119    (1,E3,E3)-(2,E3,E3)=0;
CONSTR:   120    (1,E3,E3)-(3,E3,E3)=0;
CONSTR:   121    (1,E4,E4)-(2,E4,E4)=0;
CONSTR:   122    (1,E4,E4)-(3,E4,E4)=0;
CONSTR:   123    (1,E5,E5)-(2,E5,E5)=0;
CONSTR:   124    (1,E5,E5)-(3,E5,E5)=0;
CONSTR:   125    (1,E6,E6)-(2,E6,E6)=0;
CONSTR:   126    (1,E6,E6)-(3,E6,E6)=0;
CONSTR:   127    (1,E7,E7)-(2,E7,E7)=0;
CONSTR:   128    (1,E7,E7)-(3,E7,E7)=0;
CONSTR:   129    (1,E8,E8)-(2,E8,E8)=0;
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```
CONSTR:   130   (1,E8,E8)-(3,E8,E8)=0;
CONSTR:   131   (1,E10,E10)-(2,E10,E10)=0;
CONSTR:   132   (1,E10,E10)-(3,E10,E10)=0;
CONSTR:   133   (1,E11,E11)-(2,E11,E11)=0;
CONSTR:   134   (1,E11,E11)-(3,E11,E11)=0;
CONSTR:   135   (1,E12,E12)-(2,E12,E12)=0;
CONSTR:   136   (1,E12,E12)-(3,E12,E12)=0;
CONSTR:   137   (1,E13,E13)-(2,E13,E13)=0;
CONSTR:   138   (1,E13,E13)-(3,E13,E13)=0;
CONSTR:   139   (1,E14,E14)-(2,E14,E14)=0;
CONSTR:   140   (1,E14,E14)-(3,E14,E14)=0;
CONSTR:   141   (1,E15,E15)-(2,E15,E15)=0;
CONSTR:   142   (1,E15,E15)-(3,E15,E15)=0;
CONSTR:   143   (1,E16,E16)-(2,E16,E16)=0;
CONSTR:   144   (1,E16,E16)-(3,E16,E16)=0;
CONSTR:   145   (1,E17,E17)-(2,E17,E17)=0;
CONSTR:   146   (1,E17,E17)-(3,E17,E17)=0;
CONSTR:   147   (1,E18,E18)-(2,E18,E18)=0;
CONSTR:   148   (1,E18,E18)-(3,E18,E18)=0;
CONSTR:   149   (1,E20,E20)-(2,E20,E20)=0;
CONSTR:   150   (1,E20,E20)-(3,E20,E20)=0;
CONSTR:   151   (1,E21,E21)-(2,E21,E21)=0;
CONSTR:   152   (1,E21,E21)-(3,E21,E21)=0;
CONSTR:   153   (1,E22,E22)-(2,E22,E22)=0;
CONSTR:   154   (1,E22,E22)-(3,E22,E22)=0;
CONSTR:   155   (1,E24,E24)-(2,E24,E24)=0;
CONSTR:   156   (1,E24,E24)-(3,E24,E24)=0;
CONSTR:   157   (1,E25,E25)-(2,E25,E25)=0;
CONSTR:   158   (1,E25,E25)-(3,E25,E25)=0;
CONSTR:   159   (1,E26,E26)-(2,E26,E26)=0;
CONSTR:   160   (1,E26,E26)-(3,E26,E26)=0;
CONSTR:   161   (1,E27,E27)-(2,E27,E27)=0;
CONSTR:   162   (1,E27,E27)-(3,E27,E27)=0;
CONSTR:   163   (1,E28,E28)-(2,E28,E28)=0;
CONSTR:   164   (1,E28,E28)-(3,E28,E28)=0;
CONSTR:   165   (1,E29,E29)-(2,E29,E29)=0;
CONSTR:   166   (1,E29,E29)-(3,E29,E29)=0;
CONSTR:   167   (1,E30,E30)-(2,E30,E30)=0;
CONSTR:   168   (1,E30,E30)-(3,E30,E30)=0;
CONSTR:   169   (1,E31,E31)-(2,E31,E31)=0;
CONSTR:   170   (1,E31,E31)-(3,E31,E31)=0;
CONSTR:   171   (1,E32,E32)-(2,E32,E32)=0;
CONSTR:   172   (1,E32,E32)-(3,E32,E32)=0;
CONSTR:   173   (1,E13,E4)-(2,E13,E4)=0;
CONSTR:   174   (1,E13,E4)-(3,E13,E4)=0;
CONSTR:   175   (1,E16,E11)-(2,E16,E11)=0;
CONSTR:   176   (1,E16,E11)-(3,E16,E11)=0;
CONSTR:   177   (1,E17,E16)-(2,E17,E16)=0;
CONSTR:   178   (1,E17,E16)-(3,E17,E16)=0;
CONSTR:   179   (1,E20,E6)-(2,E20,E6)=0;
CONSTR:   180   (1,E20,E6)-(3,E20,E6)=0;
CONSTR:   181   (1,E20,E13)-(2,E20,E13)=0;
CONSTR:   182   (1,E20,E13)-(3,E20,E13)=0;
```

CUMULATIVE MULTIVARIATE STATISTICS   UNIVARIATE
INCREMENT
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  STEP   PARAMETER   CHI-SQUARE   D.F.   PROBABILITY   CHI-SQUARE
PROBABILITY
  ----   ----------   ----------   ----   -----------   ----------   --------
  ---

1	CONSTR: 138	12.688	1	0.000	12.688
0.000					
2	CONSTR: 137	50.653	2	0.000	37.965
0.000					
3	CONSTR: 143	57.659	3	0.000	7.007
0.008					
4	CONSTR: 144	78.624	4	0.000	20.965
0.000					
5	CONSTR: 29	84.007	5	0.000	5.383
0.020					
6	CONSTR: 30	100.114	6	0.000	16.107
0.000					
7	CONSTR: 164	102.875	7	0.000	2.761
0.097					
8	CONSTR: 163	111.137	8	0.000	8.261
0.004					
9	CONSTR: 46	113.590	9	0.000	2.453
0.117					
10	CONSTR: 45	120.930	10	0.000	7.341
0.007					
11	CONSTR: 102	123.347	11	0.000	2.417
0.120					
12	CONSTR: 101	130.578	12	0.000	7.231
0.007					
13	CONSTR: 139	132.882	13	0.000	2.304
0.129					
14	CONSTR: 140	139.774	14	0.000	6.892
0.009					
15	CONSTR: 151	141.790	15	0.000	2.016
0.156					
16	CONSTR: 152	147.824	16	0.000	6.033
0.014					
17	CONSTR: 119	149.776	17	0.000	1.953
0.162					
18	CONSTR: 120	155.619	18	0.000	5.843
0.016					
19	CONSTR: 5	158.468	19	0.000	2.849
0.091					
20	CONSTR: 6	166.991	20	0.000	8.524
0.004					

Appendix-7

Joint Relaxation of Parameters - Convenience

1
```
 EQS, A STRUCTURAL EQUATION PROGRAM          MULTIVARIATE SOFTWARE, INC.
 COPYRIGHT BY P.M. BENTLER                    VERSION 5.6 (C) 1985 - 1997.


    PROGRAM CONTROL INFORMATION

     1   /TITLE
     2   Convenience  Jan 16 98 adjusted started signs and fixed variables
     3   /SPECIFICATIONS
     4    DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\C.ESS'; VARIABLES= 33;
CASES=  259;
     5    METHODS=ML;
     6    MATRIX=RAW;
     7   /LABELS
     8   V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
     9   V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
    10   V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
    11   V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
    12   V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
    13   V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
    14   V31=V31; V32=V32; V33=V33;
    15   /EQUATIONS
    16   V2 = +       F1 + E2;
    17   V14= + 1.0*F1 + E14;
    18   V25= + 1.0*F1 + E25;
    19   V32= - 1.0*F1 + 1.0*F6 + E32;
    20     V6 = + 1.0*F2 +1.0*F5 + E6;
    21     V17= + 1.0*F2 + E17;
    22     V29= + 1.0*F2 + E29;
    23     V31= - 1.0*F1 +       F2 + E31;
    24   V5 = +       F3 + E5;
    25   V18= - 1.0*F2 + 1.0*F3 -1.0*F6 + E18;
    26   V21= + 1.0*F3 - 1.0*F6 + E21;
    27   V30= + 1.0*F3 + E30;
    28     V9 = + 1.0*F4 + E9;
    29     V19= + 1.0*F4 + E19;
    30     V23= +       F4 + E23;
    31     V33= - 1.0*F1 - 1.0*F4 + E33;
    32   V4 = +       F5 + E4;
    33   V13= + 1.0*F1 + 1.0*F5 - 1.0*F6 + E13;
    34   V15= + 1.0*F5 + E15;
    35   V22= + 1.0*F5 + E22;
    36     V8 = +       F6 + E8;
    37     V16= - 1.0*F5 + 1.0*F6 + E16;
    38     V20= + 1.0*F5 - 1.0*F6 + E20;
    39     V27= + 1.0*F6 + E27;
    40   V3 = +       F7 + E3;
    41   V7 = + 1.0*F7 + E7;
    42   V24= + 1.0*F7 + E24;
    43   V11= + 1.0*F7 + E11;
    44     V10= +       F8 + E10;
    45     V12= + 1.0*F8 + E12;
    46     V26= + 1.0*F5 + 1.0*F6 - 1.0*F8 + E26;
    47     V28= + 1.0*F2 + 1.0*F3 + 1.0*F8 + E28;
    48   /VARIANCES
    49   F1 TO F8= *;
    50   E2 TO E33= 0.5*;
    51   /COV
    52   F1 to F8=0.3*; E32,E33=.3*; E16,E25=.3*; E11,E16=.3*;
E15,E22=.3*;
    53   /WTEST
```

```
 54  /LMTEST
 55    SET=PEE, GVF;
 56  /END


       56 RECORDS OF INPUT MODEL FILE WERE READ


    DATA IS READ FROM C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\C.ESS
    THERE ARE  33 VARIABLES AND   259 CASES
    IT IS A RAW DATA ESS FILE


  PARAMETER ESTIMATES APPEAR IN ORDER,
  NO SPECIAL PROBLEMS WERE ENCOUNTERED DURING OPTIMIZATION.

AVERAGE ABSOLUTE  COVARIANCE  RESIDUALS     =      0.0463
AVERAGE OFF-DIAGONAL ABSOLUTE  COVARIANCE  RESIDUALS   =      0.0492


AVERAGE ABSOLUTE STANDARDIZED RESIDUALS    =      0.0460
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS   =      0.0489

DISTRIBUTION OF STANDARDIZED RESIDUALS
```

```
        ---------------------------------
      !                   *              !
  260-                    *              -
      !                   *              !
      !                   *              !
      !                   *              !
      !               *   *              !          RANGE        FREQ
PERCENT
  195-                *   *              -
      !               *   *              !   1   -0.5  -   --        0
0.00%
      !               *   *              !   2   -0.4  -  -0.5       0
0.00%
      !               *   *              !   3   -0.3  -  -0.4       0
0.00%
      !               *   *              !   4   -0.2  -  -0.3       0
0.00%
  130-                *   *              -   5   -0.1  -  -0.2      25
4.73%
      !               *   *              !   6    0.0  -  -0.1     212
40.15%
      !               *   *              !   7    0.1  -   0.0     257
48.67%
      !               *   *              !   8    0.2  -   0.1      33
6.25%
      !               *   *              !   9    0.3  -   0.2       1
0.19%
  65-                 *   *              -   A    0.4  -   0.3       0
0.00%
      !               *   *              !   B    0.5  -   0.4       0
0.00%
      !               *   *   *          !   C    ++   -   0.5       0
0.00%
      !           *   *   *   *          !      ---------------------------
  ----
      !           *   *   *   *          !        TOTAL          528
100.00%
        ---------------------------------
          1  2  3  4  5  6  7  8  9  A  B  C    EACH "*" REPRESENTS 13
RESIDUALS
```
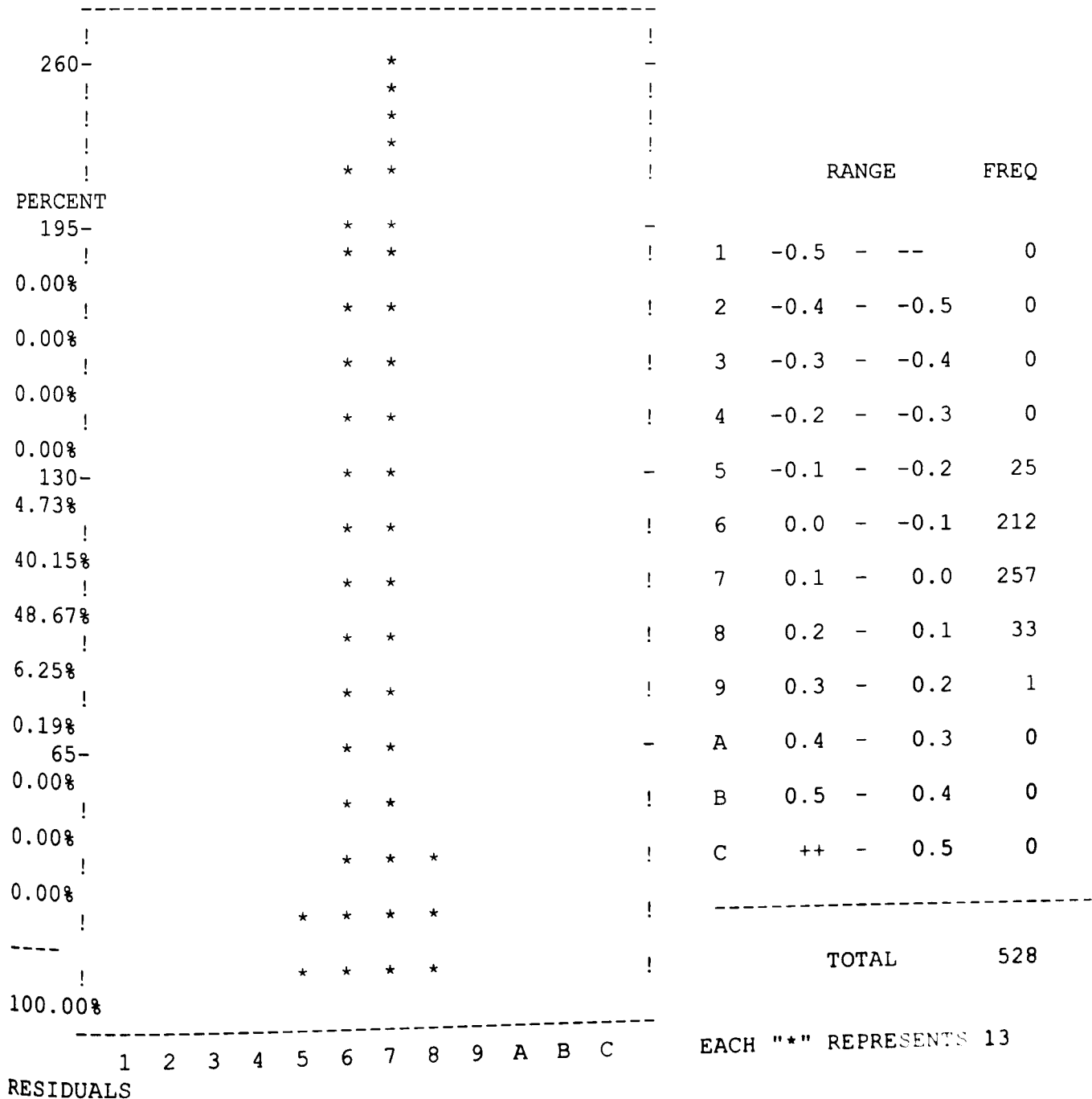
GOODNESS OF FIT SUMMARY

INDEPENDENCE MODEL CHI-SQUARE =   1888.874 ON   496 DEGREES OF FREEDOM

INDEPENDENCE AIC =   896.87428   INDEPENDENCE CAIC = -1357.53373
        MODEL AIC = -215.91823   MODEL CAIC = -2111.25723

CHI-SQUARE =   618.082 BASED ON   417 DEGREES OF FREEDOM
PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS LESS THAN 0.001
THE NORMAL THEORY RLS CHI-SQUARE FOR THIS ML SOLUTION IS   602.536.

BENTLER-BONETT NORMED   FIT INDEX=   0.673
BENTLER-BONETT NONNORMED FIT INDEX=   0.828
COMPARATIVE FIT INDEX (CFI)   =   0.856

    STANDARDIZED SOLUTION:

Convenience (joint relaxation)

V2   =V2 =   .482 F1   + .876 E2
V3   =V3 =   .499 F7   + .867 E3
V4   =V4 =   .522 F5   + .853 E4
V5   =V5 =   .452 F3   + .892 E5
V6   =V6 =   -.085*F2   + .343*F5   + .935 E6
V7   =V7 =   .733*F7   + .680 E7
V8   =V8 =   .591 F6   + .807 E8
V9   =V9 =   .200*F4   + .980 E9
V10   =V10 =   .743 F8   + .669 E10
V11   =V11 =   .446*F7   + .895 E11
V12   =V12 =   .337*F8   + .942 E12
V13   =V13 =   .339*F1   + .560*F5   +-.137*F6   + .697 E13
V14   =V14 =   .644*F1   + .765 E14
V15   =V15 =   .524*F5   + .852 E15
V16   =V16 =   -.212*F5   + .685*F6   + .732 E16
V17   =V17 =   .389*F2   + .921 E17
V18   =V18 =   -.342*F2   + .980*F3   +-.401*F6   + .778 E18
V19   =V19 =   .253*F4   + .968 E19
V20   =V20 =   .575*F5   +-.450*F6   + .746 E20
V21   =V21 =   .579*F3   +-.218*F6   + .874 E21
V22   =V22 =   .645*F5   + .764 E22
V23   =V23 =   .672 F4   + .740 E23
V24   =V24 =   .658*F7   + .753 E24
V25   =V25 =   .547*F1   + .837 E25
V26   =V26 =   .150*F5   + .269*F6   +-.508*F8   + .804 E26
V27   =V27 =   .454*F6   + .891 E27
V28   =V28 =   .118*F2   + .067*F3   + .502*F8   + .840 E28
V29   =V29 =   .609*F2   + .793 E29
V30   =V30 =   .482*F3   + .876 E30
V31   =V31 =   -.224*F1   + .860 F2   + .572 E31
V32   =V32 =   -.353*F1   + .237*F6   + .902 E32
V33   =V33 =   -.193*F1   +-.195*F4   + .950 E33

CORRELATIONS AMONG INDEPENDENT VARIABLES
□

□

□
                    V   F
□
                   ---   ---
                            I F2 - F2   .307*I
                            I F1 - F1   I
                            I   I
                            I F3 - F3   .45 *I
                            I F1 - F1   I
                            I   I
                            I F4 - F4   .2 5*I

437

```
I F1   -   F1                              I
I                                          I
I F5   -   F5                       .238*I
I F1   -   F1                              I
I                                          I
I F6   -   F6                      -.040*I
I F1   -   F1                              I
I                                          I
I F7   -   F7                       .248*I
I F1   -   F1                              I
I                                          I
I F8   -   F8                       .418*I
I F1   -   F1                              I
I                                          I
I F3   -   F3                       .724*I
I F2   -   F2                              I
I                                          I
I F4   -   F4                       .217*I
I F2   -   F2                              I
I                                          I
I F5   -   F5                      -.020*I
I F2   -   F2                              I
I                                          I
I F6   -   F6                       .363*I
I F2   -   F2                              I
I                                          I
I F7   -   F7                       .261*I
I F2   -   F2                              I
I                                          I
I F8   -   F8                       .059*I
I F2   -   F2                              I
I                                          I
I F4   -   F4                       .663*I
I F3   -   F3                              I
I                                          I
I F5   -   F5                       .175*I
I F3   -   F3                              I
I                                          I
I F6   -   F6                       .582*I
I F3   -   F3                              I
I                                          I
I F7   -   F7                       .227*I
I F3   -   F3                              I
I                                          I
I F8   -   F8                       .077*I
I F3   -   F3                              I
I                                          I
I F5   -   F5                       .383*I
I F4   -   F4                              I
I                                          I
I F6   -   F6                       .496*I
I F4   -   F4                              I
I                                          I
I F7   -   F7                      -.055*I
I F4   -   F4                              I
I                                          I
I F8   -   F8                       .065*I
I F4   -   F4                              I
I                                          I
I F6   -   F6                       .171*I
I F5   -   F5                              I
I                                          I
I F7   -   F7                       .361*I
I F5   -   F5                              I
I                                          I
I F8   -   F8                      -.028*I
I F5   -   F5                              I
I                                          I
```

438

```
I F7   -   F7                          .434*I
I F6   -   F6                              I
I                                          I
I F8   -   F8                          .066*I
I F6   -   F6                              I
I                                          I
I F8   -   F8                          .012*I
I F7   -   F7                              I
I                                          I
```

LAGRANGE MULTIPLIER TEST (FOR ADDING PARAMETERS)

ORDERED UNIVARIATE TEST STATISTICS:

NO	CODE		PARAMETER	CHI-SQUARE	PROBABILITY	PARAMETER CHANGE
1	2	6	E15,E11	15.440	0.000	0.190
2	2	6	E27,E4	11.452	0.001	-0.214
3	2	6	E27,E17	9.803	0.002	-0.187
4	2	6	E26,E17	9.608	0.002	0.160
5	2	6	E19,E16	9.337	0.002	0.148
6	2	6	E17,E6	9.042	0.003	0.191
7	2	12	V15,F8	8.451	0.004	-0.361
8	2	6	E31,E19	8.431	0.004	0.108
9	2	6	E12,E4	7.698	0.006	0.175
10	2	12	V9,F1	7.561	0.006	0.720
11	2	6	E11,E7	7.554	0.006	-0.170
12	2	12	V9,F8	7.497	0.006	0.479
13	2	6	E12,E5	7.463	0.006	0.140
14	2	12	V33,F6	7.279	0.007	0.318
15	2	6	E5,E4	7.128	0.008	0.141
16	2	12	V33,F7	7.104	0.008	0.332
17	2	12	V30,F5	6.906	0.009	-0.291
18	2	12	V27,F7	6.719	0.010	0.424
19	2	12	V24,F3	6.668	0.010	-0.442
20	2	12	V6,F7	6.647	0.010	-0.443

Joint Relaxation of Parameters – Shopping

```
1
□
  EQS, A STRUCTURAL EQUATION PROGRAM        MULTIVARIATE SOFTWARE, INC.
□
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     PROGRAM CONTROL INFORMATION

      1   /TITLE
      2   shoppinG group with adjustment of starting and fixed jan16 98
      3   /SPECIFICATIONS
      4    DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\g.ESS'; VARIABLES= 33;
CASES=   259;
      5    METHODS=ML;
      6    MATRIX=RAW;
      7   /LABELS
      8   V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
      9   V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
     10   V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
     11   V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
     12   V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
     13   V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
     14   V31=V31; V32=V32; V33=V33;
     15   /EQUATIONS
     16   V2 = +       F1 + E2;
     17   V14= + 1.0*F1 + E14;
     18   V25= + 1.0*F1 + E25;
     19   V32= - 1.0*F1 + 1.0*F6 + E32;
     20     V6 = + 1.0*F2 +1.0*F5 + E6;
     21     V17= + 1.0*F2 + E17;
     22     V29= + 1.0*F2 + E29;
     23     V31= - 1.0*F1 +       F2 + E31;
     24   V5 = +       F3 + E5;
     25   V18= - 1.0*F2 + 1.0*F3 -1.0*F6 + E18;
     26   V21= + 1.0*F3 - 1.0*F6 + E21;
     27   V30= + 1.0*F3 + E30;
     28     V9 = + 1.0*F4 + E9;
     29     V19= + 1.0*F4 + E19;
     30     V23= +       F4 + E23;
     31     V33= - 1.0*F1 - 1.0*F4 + E33;
     32   V4 = +       F5 + E4;
     33   V13= + 1.0*F1 + 1.0*F5 - 1.0*F6 + E13;
     34   V15= + 1.0*F5 + E15;
     35   V22= + 1.0*F5 + E22;
     36     V8 = +       F6 + E8;
     37     V16= - 1.0*F5 + 1.0*F6 + E16;
     38     V20= + 1.0*F5 - 1.0*F6 + E20;
     39     V27= + 1.0*F6 + E27;
     40   V3 = +       F7 + E3;
     41   V7 = + 1.0*F7 + E7;
     42   V24= + 1.0*F7 + E24;
     43   V11= + 1.0*F7 + E11;
     44     V10= +       F8 + E10;
     45     V12= + 1.0*F8 + E12;
     46     V26= + 1.0*F5 + 1.0*F6 - 1.0*F8 + E26;
     47     V28= + 1.0*F2 + 1.0*F3 + 1.0*F8 + E28;
     48   /VARIANCES
     49   F1 TO F8= *;
     50   E2 TO E33= 0.5*;
     51   /COV
     52   F1 to F8=0.3*; E32,E33=.3*; E16,E25=.3*; E11,E16=.3*; E15,E22=.3*;
     53   /WTEST
     54   /LMTEST
```

```
55   SET=PEE, GVF;
56   /END


     56 RECORDS OF INPUT MODEL FILE WERE READ


     DATA IS READ FROM C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\G.ESS
     THERE ARE   33 VARIABLES AND    259 CASES
     IT IS A RAW DATA ESS FILE


   PARAMETER ESTIMATES APPEAR IN ORDER,
   NO SPECIAL PROBLEMS WERE ENCOUNTERED DURING OPTIMIZATION.


AVERAGE ABSOLUTE   COVARIANCE   RESIDUALS     =        0.0454
AVERAGE OFF-DIAGONAL ABSOLUTE   COVARIANCE   RESIDUALS    =         0.0483


AVERAGE ABSOLUTE STANDARDIZED RESIDUALS      =        0.0468
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS     =         0.0498

DISTRIBUTION OF STANDARDIZED RESIDUALS
```

```
        ----------------------------------------
     !                                  !
   260-                  *              -
     !                   *              !
     !                   *              !
     !                   *              !
     !             *     *              !          RANGE        FREQ
PERCENT
   195-            *     *              -
     !             *     *              !   1   -0.5  -  --        0
 0.00%
     !                   *     *        !   2   -0.4  -  -0.5      0
 0.00%
     !                   *     *        !   3   -0.3  -  -0.4      0
 0.00%
     !                   *     *        !   4   -0.2  -  -0.3      0
 0.00%
   130-                  *     *        -   5   -0.1  -  -0.2     27
 5.11%
     !                   *     *        !   6    0.0  -  -0.1    211
39.96%
     !                   *     *        !   7    0.1  -   0.0    254
48.11%
     !                   *     *        !   8    0.2  -   0.1     35
 6.63%
     !                   *     *        !   9    0.3  -   0.2      1
 0.19%
    65-                  *     *        -   A    0.4  -   0.3      0
 0.00%
     !                   *     *        !   B    0.5  -   0.4      0
 0.00%
     !                   *     *   *    !   C    ++   -   0.5      0
 0.00%
     !             *     *     *   *    !   ----------------------------
----
     !             *     *     *   *    !       TOTAL       528
     !
100.00%
     --------------------------------------
         1   2   3   4   5   6   7   8   9  A   B   C    EACH "*" REPRESENTS 13
RESIDUALS
```

441
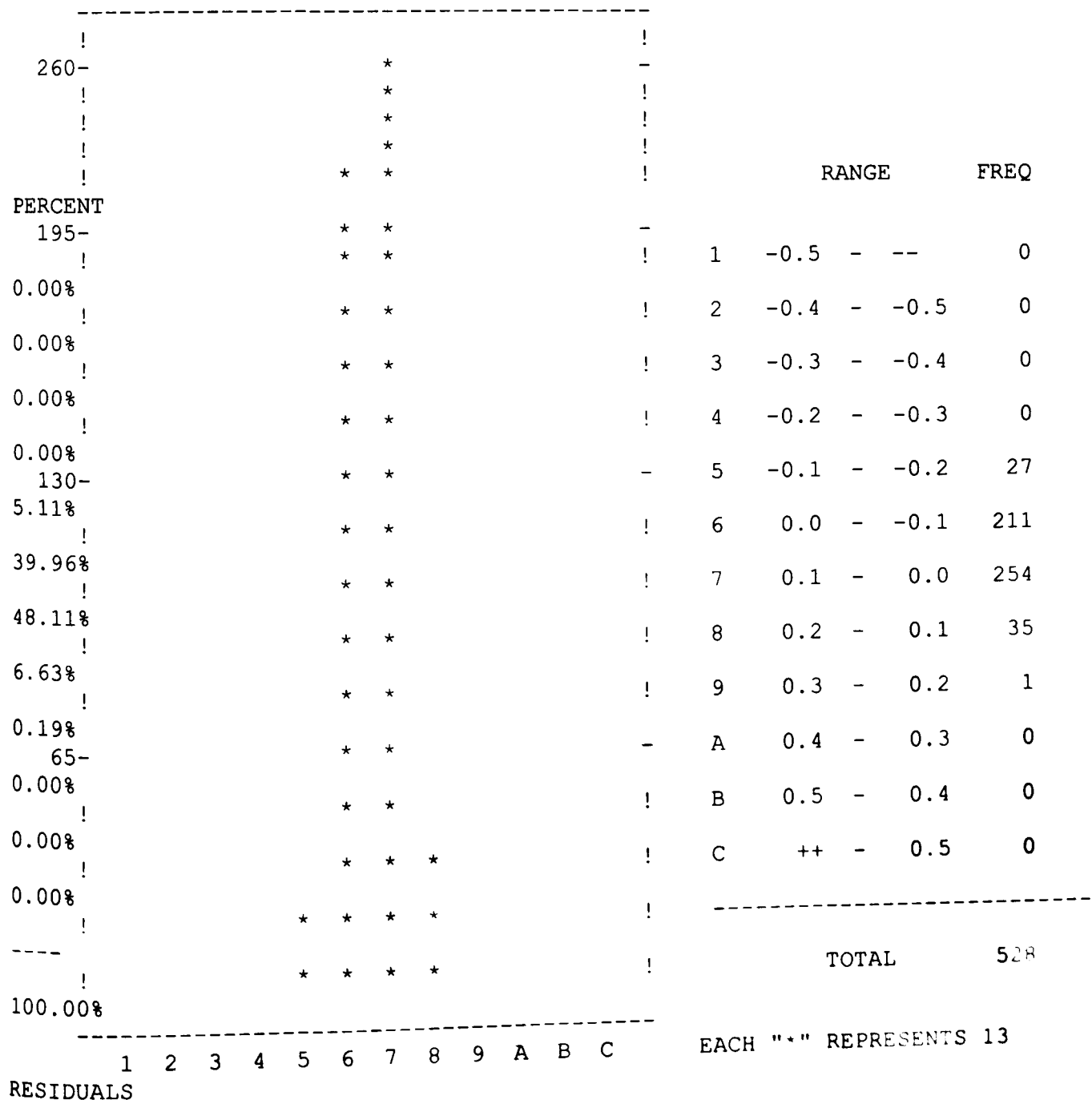
GOODNESS OF FIT SUMMARY

INDEPENDENCE MODEL CHI-SQUARE =   2191.756 ON   496 DEGREES OF FREEDOM

INDEPENDENCE AIC = 1199.75644   INDEPENDENCE CAIC = -1052.71028
        MODEL AIC = -181.35773   MODEL CAIC = -2075.06462

CHI-SQUARE =   652.642 BASED ON   417 DEGREES OF FREEDOM
PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS LESS THAN 0.001
THE NORMAL THEORY RLS CHI-SQUARE FOR THIS ML SOLUTION IS   631.501.

BENTLER-BONETT NORMED   FIT INDEX=   0.702
BENTLER-BONETT NONNORMED FIT INDEX=   0.835
COMPARATIVE FIT INDEX (CFI)   =   0.861

STANDARDIZED SOLUTION:

Shopping (joint relaxation)

    V2   =V2 =   .508 F1   + .861 E2
□
    V3   =V3 =   .705 F7   + .709 E3
    V4   =V4 =   .603 F5   + .798 E4
    V5   =V5 =   .522 F3   + .853 E5
    V6   =V6 =   .060*F2   + .409*F5   + .908 E6
    V7   =V7 =   .721*F7   + .693 E7
    V8   =V8 =   .725 F6   + .689 E8
    V9   =V9 =   .107*F4   + .994 E9
    V10   =V10 =   .889 F8   + .458 E10
    V11   =V11 =   .435*F7   + .900 E11
    V12   =V12 =   .426*F8   + .905 E12
    V13   =V13 =   .415*F1   + .485*F5   +-.389*F6   + .699 E13
    V14   =V14 =   .703*F1   + .711 E14
    V15   =V15 =   .351*F5   + .936 E15
    V16   =V16 =   -.252*F5   + .770*F6   + .707 E16
    V17   =V17 =   .455*F2   + .890 E17
    V18   =V18 =   -.537*F2   +1.213*F3   +-.511*F6   + .718 E18
    V19   =V19 =   .208*F4   + .978 E19
    V20   =V20 =   .698*F5   +-.397*F6   + .761 E20
    V21   =V21 =   .694*F3   +-.295*F6   + .820 E21
    V22   =V22 =   .498*F5   + .867 E22
    V23   =V23 =   .597 F4   + .802 E23
    V24   =V24 =   .797*F7   + .605 E24
    V25   =V25 =   .556*F1   + .831 E25
    V26   =V26 =   .179*F5   + .240*F6   +-.386*F8   + .907 E26
    V27   =V27 =   .402*F6   + .916 E27
    V28   =V28 =   .032*F2   + .121*F3   + .587*F8   + .773 E28
    V29   =V29 =   .774*F2   + .633 E29
    V30   =V30 =   .592*F3   + .806 E30
    V31   =V31 =   -.245*F1   + .830 F2   + .665 E31
    V32   =V32 =   -.380*F1   + .314*F6   + .865 E32
    V33   =V33 =   -.172*F1   +-.167*F4   + .962 E33

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CORRELATIONS AMONG INDEPENDENT VARIABLES

```
            V                                    F
           ---                                  ---
                    I F2  -  F2          .469*I
                    I F1  -  F1               I
                    I                         I
                    I F3  -  F3          .412*I
                    I F1  -  F1               I
                    I                         I
                    I F4  -  F4          .299*I
                    I F1  -  F1               I
                    I                         I
                    I F5  -  F5          .227*I
                    I F1  -  F1               I
                    I                         I
                    I F6  -  F6         -.041*I
                    I F1  -  F1               I
                    I                         I
                    I F7  -  F7          .177*I
                    I F1  -  F1               I
                    I                         I
                    I F8  -  F8          .092*I
                    I F1  -  F1               I
                    I                         I
                    I F3  -  F3          .759*I
                    I F2  -  F2               I
                    I                         I
                    I F4  -  F4          .467*I
                    I F2  -  F2               I
                    I                         I
                    I F5  -  F5          .095*I
                    I F2  -  F2               I
                    I                         I
                    I F6  -  F6          .331*I
                    I F2  -  F2               I
                    I                         I
                    I F7  -  F7          .192*I
                    I F2  -  F2               I
                    I                         I
                    I F8  -  F8          .212*I
                    I F2  -  F2               I
                    I                         I
                    I F4  -  F4          .604*I
                    I F3  -  F3               I
                    I                         I
                    I F5  -  F5          .296*I
                    I F3  -  F3               I
                    I                         I
                    I F6  -  F6          .589*I
                    I F3  -  F3               I
                    I                         I
                    I F7  -  F7          .030*I
                    I F3  -  F3               I
                    I                         I
                    I F8  -  F8          .209*I
                    I F3  -  F3               I
                    I                         I
                    I F5  -  F5          .463·I
                    I F4  -  F4               I
                    I                         I
                    I F6  -  F6          .425*I
                    I F4  -  F4               I
                    I                         I
                    I F7  -  F7         -.015*I
                    I F4  -  F4               I
```

```
I                                                   I
I F8    -    F8                                      I
I F4    -    F4                           .104*I
I                                                   I
I                                                   I
I F6    -    F6                           .404*I
I F5    -    F5                                      I
I                                                   I
I                                                   I
I F7    -    F7                           .319*I
I F5    -    F5                                      I
I                                                   I
I                                                   I
I F8    -    F8                           .294*I
I F5    -    F5                                      I
I                                                   I
I                                                   I
I F7    -    F7                           .352*I
I F6    -    F6                                      I
I                                                   I
I                                                   I
I F8    -    F8                           .297*I
I F6    -    F6                                      I
I                                                   I
I                                                   I
I F8    -    F8                           .112*I
I F7    -    F7                                      I
I                                                   I
```

LAGRANGE MULTIPLIER TEST (FOR ADDING PARAMETERS)

ORDERED UNIVARIATE TEST STATISTICS:

NO	CODE		PARAMETER	CHI-SQUARE	PROBABILITY	PARAMETER CHANGE
1	2	12	V16,F8	15.070	0.000	-0.299
2	2	6	E26,E11	13.448	0.000	0.172
3	2	12	V4,F1	11.298	0.001	0.672
4	2	6	E29,E4	10.658	0.001	0.148
5	2	6	E29,E3	10.282	0.001	0.130
6	2	6	E14,E2	10.054	0.002	0.126
7	2	6	E16,E15	9.777	0.002	0.153
8	2	12	V3,F2	9.352	0.002	0.259
9	2	12	V8,F8	8.824	0.003	0.273
10	2	12	V3,F1	8.647	0.003	0.470
11	2	6	E10,E9	8.605	0.003	0.164
12	2	12	V33,F3	8.493	0.004	0.685
13	2	6	E28,E10	8.034	0.005	0.402
14	2	12	V33,F6	8.027	0.005	0.272
15	2	6	E19,E15	7.930	0.005	0.136
16	2	6	E13,E2	7.564	0.006	-0.082
17	2	12	V7,F3	7.439	0.006	-0.382
18	2	6	E27,E16	7.257	0.007	0.139
19	2	6	E33,E4	7.226	0.007	-0.135
20	2	6	E16,E10	7.209	0.007	-0.101

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Joint Relaxation of Parameters – Speciality

```
1
☐
  EQS, A STRUCTURAL EQUATION PROGRAM          MULTIVARIATE SOFTWARE, INC.
☐
  COPYRIGHT BY P.M. BENTLER                    VERSION 5.6 (C) 1985 - 1997.
☐


☐


☐
      PROGRAM CONTROL INFORMATION

       1   /TITLE
       2   Groups seperately Group specialiTy Jan16 98
       3   adjusted which variables are fixed at 1 to the highest loading on
  the other meth
       4   put in negative starting positions for those that came out negative.
       5   /SPECIFICATIONS
       6   DATA='C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\t.ESS'; VARIABLES= 33;
  CASES=  259;
       7    METHODS=ML;
       8    MATRIX=RAW;
       9   /LABELS
      10   V1=ID; V2=V2; V3=V3; V4=V4; V5=V5;
      11   V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
      12   V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
      13   V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
      14   V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
      15   V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
      16   V31=V31; V32=V32; V33=V33;
      17   /EQUATIONS
      18   V2 = +        F1 + E2;
      19   V14= + 1.0*F1 + E14;
      20   V25= + 1.0*F1 + E25;
      21   V32= - 1.0*F1 + 1.0*F6 + E32;
      22     V6 = + 1.0*F2 +1.0*F5 + E6;
      23     V17= + 1.0*F2 + E17;
      24     V29= + 1.0*F2 + E29;
      25     V31= - 1.0*F1 +       F2 + E31;
      26   V5 = +        F3 + E5;
      27   V18= - 1.0*F2 + 1.0*F3 -1.0*F6 + E18;
      28   V21= + 1.0*F3 - 1.0*F6 + E21;
      29   V30= + 1.0*F3 + E30;
      30     V9 = + 1.0*F4 + E9;
      31     V19= + 1.0*F4 + E19;
      32     V23= +        F4 + E23;
      33     V33= - 1.0*F1 - 1.0*F4 + E33;
      34   V4 = +        F5 + E4;
      35   V13= + 1.0*F1 + 1.0*F5 - 1.0*F6 + E13;
      36   V15= + 1.0*F5 + E15;
      37   V22= + 1.0*F5 + E22;
      38     V8 = +        F6 + E8;
      39     V16= - 1.0*F5 + 1.0*F6 + E16;
      40     V20= + 1.0*F5 - 1.0*F6 + E20;
      41     V27= + 1.0*F6 + E27;
      42   V3 = +        F7 + E3;
      43   V7 = + 1.0*F7 + E7;
      44   V24= + 1.0*F7 + E24;
      45   V11= + 1.0*F7 + E11;
      46     V10= +        F8 + E10;
      47     V12= + 1.0*F8 + E12;
      48     V26= + 1.0*F5 + 1.0*F6 - 1.0*F8 + E26;
      49     V28= + 1.0*F2 + 1.0*F3 + 1.0*F8 + E28;
      50   /VARIANCES
```

```
   51  F1 TO F8= *;
   52  E2 TO E33= 0.5*;
   53  /COV
   54  F1 to F8=0.3*; E32,E33=.3*; E16,E25=.3*; E11,E16=.3*; E15,E22=.3*;
   55  /WTEST
   56  /LMTEST
   57   SET=PEE, GVF;
   58  /END
```

     58 RECORDS OF INPUT MODEL FILE WERE READ

   DATA IS READ FROM C:\WINDOWS\DESKTOP\TEACHING\PG\ROSLI\T.ESS
   THERE ARE 33 VARIABLES AND   259 CASES
   IT IS A RAW DATA ESS FILE

 PARAMETER ESTIMATES APPEAR IN ORDER,
☐
  NO SPECIAL PROBLEMS WERE ENCOUNTERED DURING OPTIMIZATION.
☐
AVERAGE ABSOLUTE COVARIANCE RESIDUALS   =   0.0516
☐
AVERAGE OFF-DIAGONAL ABSOLUTE COVARIANCE RESIDUALS   =   0.0549

AVERAGE ABSOLUTE STANDARDIZED RESIDUALS   =   0.0494
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUALS   =   0.0525

   DISTRIBUTION OF STANDARDIZED RESIDUALS

```
        -------------------------------------
        !                                    !
   240-                      *               -
        !               *    *               !
        !               *    *               !
        !               *    *               !
        !               *    *               !        RANGE        FREQ
PERCENT
   180-               *    *               -
        !               *    *               !  1  -0.5  -  --        0
  0.00%
        !               *    *               !  2  -0.4  -  -0.5      0
  0.00%
        !               *    *               !  3  -0.3  -  -0.4      0
  0.00%
        !               *    *               !  4  -0.2  -  -0.3      0
  0.00%
   120-               *    *               -  5  -0.1  -  -0.2     27
  5.11%
        !               *    *               !  6   0.0  -  -0.1    223
 42.23%
        !               *    *               !  7   0.1  -   0.0    235
 44.51%
        !               *    *               !  8   0.2  -   0.1     40
  7.58%
        !               *    *               !  9   0.3  -   0.2      3
  0.57%
    60-               *    *               -  A   0.4  -   0.3      0
  0.00%
        !               *    *               !  B   0.5  -   0.4      0
  0.00%
        !             *    *    *             !  C   ++   -   0.5      0
  0.00%                                         ---------------------------
        !           *    *    *    *          !
 ----                                            TOTAL       5.9
        !           *    *    *    *          !
100.00%
        ---------------------------------------
          1  2  3  4  5  6  7  8  9  A  B  C    EACH "*" REPRESENTS 12
RESIDUALS
```
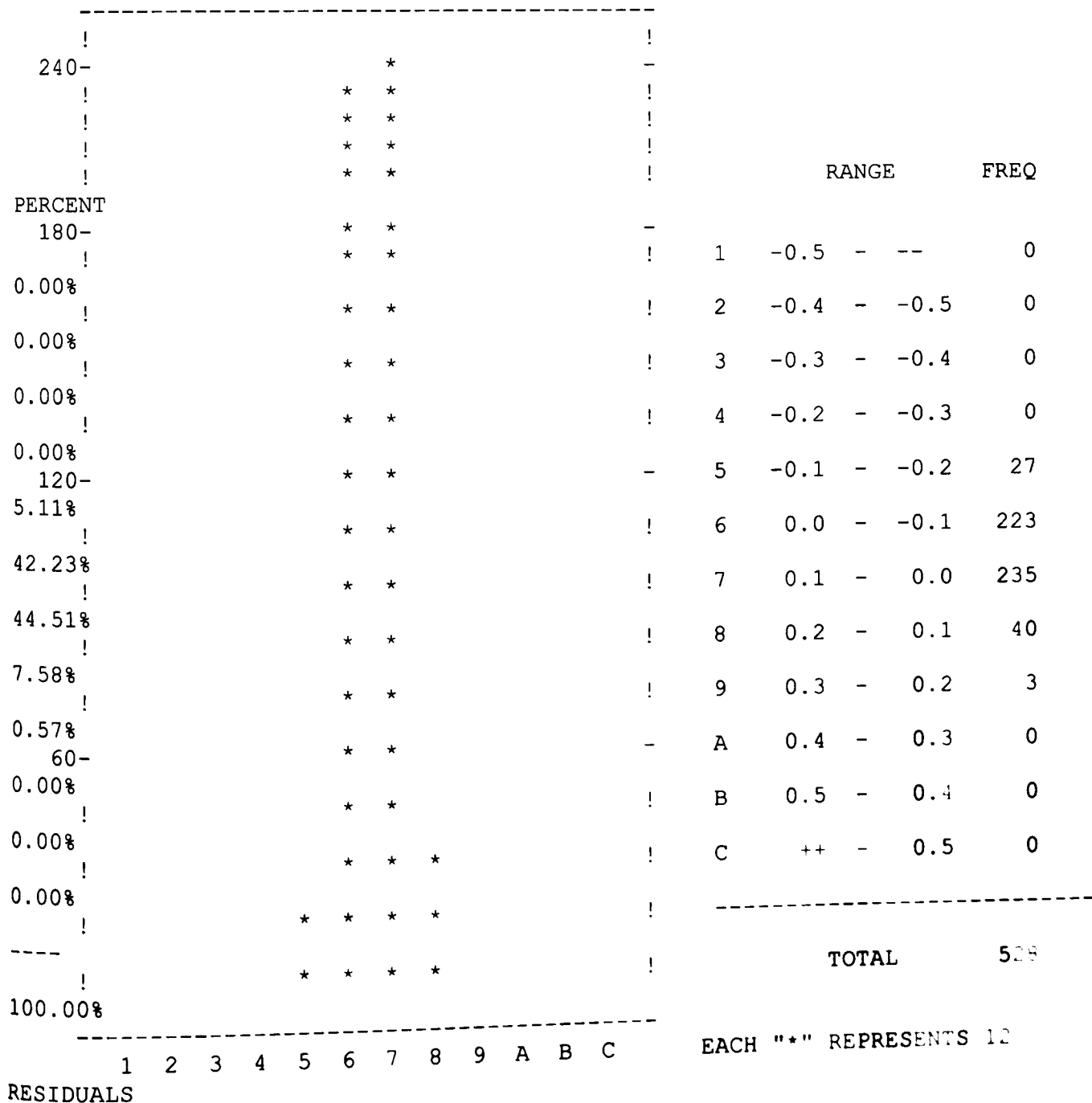
GOODNESS OF FIT SUMMARY

INDEPENDENCE MODEL CHI-SQUARE =   2351.332 ON   496 DEGREES OF FREEDOM

INDEPENDENCE AIC =   1359.33197   INDEPENDENCE CAIC = -895.07604
        MODEL AIC =   -98.42447   MODEL CAIC = -1993.76346

CHI-SQUARE =   735.576 BASED ON   417 DEGREES OF FREEDOM
PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS LESS THAN 0.001
THE NORMAL THEORY RLS CHI-SQUARE FOR THIS ML SOLUTION IS   697.321.

BENTLER-BONETT NORMED   FIT INDEX=   0.687
BENTLER-BONETT NONNORMED FIT INDEX=   0.796
COMPARATIVE FIT INDEX (CFI)   =   0.828

STANDARDIZED SOLUTION:

Spciality (joint relaxation)
▯

▯

V2   =V2 =   .622 F1   + .783 E2

V3   =V3 =   .655 F7   + .756 E3
V4   =V4 =   .609 F5   + .794 E4
V5   =V5 =   .501 F3   + .865 E5
V6   =V6 =   .039*F2   + .545*F5   + .835 E6
V7   =V7 =   .801*F7   + .599 E7
V8   =V8 =   .702 F6   + .712 E8
V9   =V9 =   .174*F4   + .985 E9
V10   =V10 =   .799 F8   + .602 E10
V11   =V11 =   .498*F7   + .867 E11
V12   =V12 =   .565*F8   + .825 E12
V13   =V13 =   .497*F1   + .522*F5   +-.333*F6   + .736 E13
V14   =V14 =   .615*F1   + .788 E14
V15   =V15 =   .617*F5   + .787 E15
V16   =V16 =   -.211*F5   + .779*F6   + .694 E16
V17   =V17 =   .521*F2   + .854 E17
V18   =V18 =   -.448*F2   -1.514*F3   +-.844*F6   + .720 E18
V19   =V19 =   .320*F4   + .947 E19
V20   =V20 =   .670*F5   +-.372*F6   + .784 E20
V21   =V21 =   .922*F3   +-.598*F6   + .824 E21
V22   =V22 =   .643*F5   + .766 E22
V23   =V23 =   .556 F4   + .831 E23
V24   =V24 =   .677*F7   + .736 E24
V25   =V25 =   .371*F1   + .929 E25
V26   =V26 =   .125*F5   + .391*F6   --.306*F8   - .884 E26
V27   =V27 =   .456*F6   + .890 E27
V28   =V28 =   .104*F2   - .188*F3   - .466*F8   - .793 E28
V29   =V29 =   .685*F2   - .729 E29
V30   =V30 =   .500*F3   + .866 E30
V31   =V31 =   -.303*F1   + .872 F2   - .662 E31
V32   =V32 =   -.359*F1   + .393*F6   - .861 E32
V33   =V33 =   -.205*F1   --.068*F4   - .971 E33

CORRELATIONS AMONG INDEPENDENT VARIABLES

```
                V                                        F
               ---                                      ---
                        I F2   -    F2
                        I F1   -    F1                    .551*I
                        I                                     I
                        I F3   -    F3                        I
                        I F1   -    F1                    .500*I
                        I                                     I
                        I F4   -    F4                        I
                        I F1   -    F1                    .402*I
                        I                                     I
                        I F5   -    F5                        I
                        I F1   -    F1                   -.020*I
                        I                                     I
                        I F6   -    F6                        I
                        I F1   -    F1                    .064*I
                        I                                     I
                        I F7   -    F7                        I
                        I F1   -    F1                   -.065*I
                        I                                     I
                        I F8   -    F8                        I
                        I F1   -    F1                    .218*I
                        I                                     I
```



```
 I F2   -    F2                  I
                                 I                             I
                                 I F4   -    F4            .419*I
                                 I F2   -    F2                I
                                 I                             I
                                 I F5   -    F5            .124*I
                                 I F2   -    F2                I
                                 I                             I
                                 I F6   -    F6            .302*I
                                 I F2   -    F2                I
                                 I                             I
                                 I F7   -    F7            .312*I
                                 I F2   -    F2                I
                                 I                             I
                                 I F8   -    F8            .370*I
                                 I F2   -    F2                I
                                 I                             I
                                 I F4   -    F4            .790*I
                                 I F3   -    F3                I
                                 I                             I
                                 I F5   -    F5            .268*I
                                 I F3   -    F3                I
                                 I                             I
                                 I F6   -    F6            .803*I
                                 I F3   -    F3                I
                                 I                             I
                                 I F7   -    F7            .153*I
                                 I F3   -    F3                I
                                 I                             I
                                 I F8   -    F8            .358*I
                                 I F3   -    F3                I
                                 I                             I
                                 I F5   -    F5            .174*I
                                 I F4   -    F4                I
                                 I                             I
                                 I F6   -    F6           .646*I
                                 I F4   -    F4                I
                                 I                             I
                                 I F7   -    F7            .035*I
```

```
I F4    -    F4                                    I
I                                                  I
I F8    -    F8                              .122*I
I F4    -    F4                                    I
I                                                  I
I F6    -    F6                              .405*I
I F5    -    F5                                    I
I                                                  I
I F7    -    F7                              .455*I
I F5    -    F5                                    I
I                                                  I
I F8    -    F8                              .153*I
I F5    -    F5                                    I
I                                                  I
I F7    -    F7                              .324*I
I F6    -    F6                                    I
I                                                  I
I F8    -    F8                              .298*I
I F6    -    F6                                    I
I                                                  I
I F8    -    F8                              .150*I
I F7    -    F7                                    I
I                                                  I
```

```
I F3   -    F3                .663*I
```

LAGRANGE MULTIPLIER TEST (FOR ADDING PARAMETERS)

NO	CODE		PARAMETER	CHI-SQUARE	PROBABILITY	PARAMETER CHANGE
1	2	12	V27,F7	15.299	0.000	0.418
2	2	12	V3,F8	12.691	0.000	0.302
3	2	12	V6,F8	12.151	0.000	0.322
4	2	6	E9,E2	11.987	0.001	0.188
5	2	6	E33,E27	11.791	0.001	0.173
6	2	6	E8,E6	11.675	0.001	0.182
7	2	6	E14,E13	11.565	0.001	0.143
8	2	12	V2,F8	10.505	0.001	0.233
9	2	12	V3,F1	10.297	0.001	0.441
10	2	12	V16,F8	10.258	0.001	-0.302
11	2	6	E16,E10	9.598	0.002	-0.147
12	2	6	E28,E21	9.219	0.002	-0.155
13	2	6	E21,E3	8.993	0.003	0.156
14	2	6	E27,E10	8.783	0.003	0.154
15	2	12	V15,F6	8.559	0.003	-0.253
16	2	12	V32,F4	8.537	0.003	-0.590
17	2	12	V15,F8	8.365	0.004	-0.235
18	2	12	V16,F4	8.333	0.004	0.563
19	2	6	E33,E5	8.203	0.004	0.111
20	2	12	V19,F5	8.033	0.005	0.268

Appendix-8

Summary of the Standardised Solution of the Modified Measurement Model.

Dimension 1	PC	D1	D2	D3	D5	D6	D7	D8
1. Getting very good quality of products is so important to me. (Var 1)	Conv	.49		-			-	-
	Shop	.51		-			.15	-
	Spec	.58		.19			-	.23
12 I take the time to shop carefully for best buys. (Var 12).	Conv	.24		-	.48	-		.16
	Shop	.39		-	.22	-.12		-
	Spec	.33		.15	.35	-.27		-
13. I always go for the best overall quality products. (Var 13)	Conv	.77						
	Shop	.84						
	Spec	.61						
24. My expectations for products I buy are always high. (Var 24)	Conv	.43	.18					.20
	Shop	.45	-					-
	Spec	.45	-					-
Dimension 2								
16. The higher the product price, the better its quality.(Var 16)	Conv		.40	-				
	Shop		.34	.21				
	Spec		.61	.13				
20 Fashionable, attractive styling and appearance is important to me. (Var 20).	Conv		.30	.42				
	Shop		.42	.37				
	Spec		.33	.48				
28. I prefer buying products of the best selling brand. (Var 28)	Conv		.59				.17	-
	Shop		.89				.18	-
	Spec		.69				.22	.23
30. I usually choose products of the most advertised brands. (Var 30)	Conv	-.22	.78	.16		.23		
	Shop	-	.60	-		.17		
	Spec	-	.59	-		.20		
Dimension 3								
4. I always buy new products before my friends do.* (Var 4)	Conv		.18	.41		-		
	Shop		.29	.44		.17		
	Spec		-	.41		.29		
17. I am up-to-date with the changing trends of products in the market. (Var 17)	Conv	.34		.45			-	
	Shop	.27		.55			-.20	
	Spec	.24		.54			-.17	
20 Fashionable, attractive styling and appearance is important to me. (Var 20).	Conv		.30	.42				
	Shop		.42	.37				
	Spec		.33	.48				
29. I like to try new products when they come out in the market.* (Var 29)	Conv		.15	.43		.30		
	Shop		.29	.45		.22		
	Spec		-	.48		.28		

Dimension 5							
3. I always make use of special offers (eg. Coupons, free gifts and discounts).* (Var 3)	Conv	-		-	.45		
	Shop	.18		.17	.48		
	Spec	-		.16	.54		
5. I prefer retailer's brands of product (eg. Asda, Tesco & Littlewoods).* (Var 5)	Conv		-.10		.31		-
	Shop		.10		.35		-
	Spec		-.01		.47		-.23
12 I take the time to shop carefully for best buys. (Var 12).	Conv	.24		-	.48	-	.16
	Shop	.39		-	.22	-.12	-
	Spec	.33		.15	.35	-.27	-
14. I prefer shopping at discounts stores.* (Var 14)	Conv				.63	-	-.15
	Shop				.58	-	-
	Spec				.75	-.16	-
21. I buy as much as possible at bargain prices. (Var 21)	Conv				.82		
	Shop				.69		
	Spec				.73		
Dimension 6							
7. I usually come home from shopping with more things than I intended to buy.* (Var 7)	Conv	.15		-	.15	.63	-
	Shop	-		.24	-	.63	.26
	Spec	-		-	-	.68	-
15. I am impulsive when buying things. (var 15)	Conv			-		.55	
	Shop			-		.70	
	Spec			.21		.69	
19. I watch carefully how much I spend whenever I shop. (-)(Var 19)	Conv				.35	-.39	
	Shop				.42	-.16	
	Spec				.53	-.30	
26. I should plan my shopping more carefully than I always do. (Var 26)	Conv					.46	.17
	Shop					.57	-
	Spec					.41	.27
31. I really don't give much thought on most of my purchase. (-) (Var 31)	Conv	-.26				.30	-
	Shop	-.25				.36	-
	Spec	-.28				.33	.20
Dimension 7							
2. The more I learn about products, the harder for me to make the best choice. (Var 2)	Conv	-	-			.47	-
	Shop	.15	.15			.65	-
	Spec	.10	-			.63	.20
6. It is confusing to buy products with so many brands in the market. (Var 6)	Conv	.17		-		-	.75
	Shop	-		-.06		-.15	.80
	Spec	-		-		-	.82
10. It is always difficult for me to choose which stores to shop at. (Var 10)	Conv						.49
	Shop						.42
	Spec						.48
23. All the information I get on different products confuses me. (Var 23)	Conv			-.16			.66
	Shop			-			.82
	Spec			-			.67

Dimension 8

9. Once I find a brand of product of product I like, I stick with it. (Var 9)	Conv						.67
	Shop						.85
	Spec						.71
11. I go to the same stores whenever I shop. (Var 11)	Conv			-			.38
	Shop			-			.44
	Spec			-.11			.63
25. I regularly change the brands of product I buy. (-)(Var 25)	Conv	-	.16	.18	.23		-.55
	Shop	-	.18	-	.21		-.30
	Spec	.08	.12	.16	.36		-.23
27. I have favourite brands of products I buy over and over. (Var 27)	Conv	-	-				.53
	Shop	.13	.13				.64
	Spec	.24	.04				.58

Bibliography

"AMA Board Approves New Marketing Definition" (1985), Marketing News, 19, March.

Aaker, D.A. and Day, G.S. (1995), Marketing Research, 3rd edition, John Wiley and sons, New York.

Aaker, Jennifer L., (1997) " Dimensions of Brand Personality," Journal of Marketing Research, Vol.34, August.

Ajzen, Icek (1985) "From Intentions to Actions: A Theory of Planned Behaviour," in Action Control: From Cognition to Behaviour, Kuhl, Julius, and Beckmann eds., Springer, New York.

Ajzen, Icek and Fishbein, Martin eds. (1980), Understanding Attitudes and Predicting Social Behaviour, Prentice-Hall, Englewood Cliffs, New Jersey.

Alba, Joseph W., and Hutchinson, J. Wesley (1987), "Dimensions of Consumer Expertise," Journal of Consumer Research, Vol.13, March.

Alhadeff, D. A. (1982), Microeconomics and Human Behaviour: Toward a New Synthesis of Economics and Psychology, University of California Press, Berkeley CA.

Anastasi, A. (1982), Psychological Testing, Macmillan, New York.

Anderson, Thomas W. Jr. and Golden, Linda L., (1984) "Lifestyle and Psychographics: A Critical Review and Recommendation," Advances in Consumer Research, vol. 11, Kinnear, T. C. (ed), Provo, Utah..

Andreason, A. R., (1984), "Life Status Changes and Changes in Consumer Preferences and Satisfaction", Journal of Consumer Research, vol. 11.

Antonides, Gerrit and van Raaij, W. Fred (1998), Consumer Behaviour: A European Perspective, John Wiley and Sons, Chichester, England.

Bagozzi,. Richard P. and Yi, Youjae. (1989)"The Degree of Intention Formation as a Moderatorof the Attitude-Behaviour Relation." Social Psychology Quarterly, vol. 52, December.

Bagozzi,. Richard P. and Yi, Youjae, (1991)"Multitrait-Multimethod Matrices in Consumer Research." Journal of Consumer Research, Vol 17, March.

Bagozzi,. Richard P., and Warshaw, Paul R., (1990) "Trying to Consume." Journal of Consumer Research, Vol 17, September.

Baker, Michael J., (1991), Research for Marketing, Macmillan Press Ltd.. London.

Baker, Michael J., (1992), Marketing Strategy and Management 2nd edition, Macmillan Press Ltd., London.

Baker, Michael J., (1996), Marketing: An Introductory Text, 6th edition, Macmillan Press Ltd., London.

Baker, Michael J., ed.,(1987), The Marketing Book, The Institute of Marketing, Heinemann, London.

Bareham, Jonathan. (1995) Consumer Behaviour in the Food Industry: A European Perspective, Butterworth-Heinemann Ltd. Oxford.

Beane, T. P. and Ennis D.M., (1985) "Market Segmentation: A Review.", European Journal of Marketing, vol 21, no.5.

Bearden, William O., Netermeyer, Richard G. and Mobley Mary F., (1993). Handbook of Marketing Scales: Multi-Item Measures for Marketing and Consumer Behaviour Research., Sage Publications Inc. Newbury Park, California,

Bearden, William O., Teel, J. E. Jr. And Durand, R. M. (1978) "Media Usage, Psychographics and Demographic Dimensions of Retail Shoppers", Journal of Retailing, vol. 54.

Beatty, Sharon and Smith, Scott., (1987) " External Search Effort: An Investigation Across Several Product Categories," Journal of Consumer Research, Vol.14, June.

Bentler, Peter M. (1983) "Some Contribution to Efficient Statistics for the Structural Models: Specification and Estimation of Momemnt Structures", Psychometrika, vol. 48.

Bentler, Peter M. and Bonette, D. G. (1980) "Significantce Test and Goodness-of-Fit in the Analysis of Covariance Structures," Psychological Bulletin, vol 88.

Bentler, Peter M. and Chou, Chih-Ping, (1995) "Estimates and Tests in Structural Equation Modeling," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Bentler, Peter M. and Wu, E. J. C. (1993) EQS/Windows User's Guide, BDMP Statistical Software, Los Angeles.

Bernardi, Richard A. (1994) "Validating Research Results When Cronbach's Alpha is Below .70: A Methodological Procedure," Educational and Psychological Measurement, vol. 54, no. 3, Fall.

Bernhardt, K. L. And Kinnear, T. C. (1976) "Profiling the Senior Citizens' Market", in Anderson B., ed. Advances of Consumer Research.

Bernstein, Ira H. and Teng, Gary (1989) "Factoring Items and Factoring Scales Are Different: Spurious Evidence for Multidimensionality Due to Item Categorisation," Psychological Bulletin, vol. 105, no. 3.

Bohdanowicz, Janet. and Clamp, Liz (1994), Fashion Marketing, Routledge, London.

Brinberg, David and Hirschman, Elizabeth C., (1986) "Multiple Orientations for the Conduct of Marketing Research: An Analysis of the Academic/Practitioner Distinction," Journal of Marketing, vol. 50, October.

Brooks, Lee (1978), "Nonanalytic Concept Formation and Memory for Instances," in Cognition and Categorization, eds. Eleanor Rosch and Barbara B. Lloyd, . Erlbaum, Hillsdale, N. J.

Bruno, A. V. And Pessmeier, E., (1972) "An Empherical Investigation of the Validity of Selected Attitude and Activity Measures", Proceedings of the Third Annual Conference of the Association for Consumer Research.

Bucklin, Louis (1963) "Retail Strategy and the Classification of Consumer Goods." Journal of Marketing, vol. 27, January.

Bucklin, Louis (1976) "Retrospective Comment on Retail Strategy and the Classification of Consumer Goods," in The Great Writings in Marketing, Thompson. H. A., ed., The Commerce Press, Plymouth, MI.

Bucklin, Randolph E., Gupta, Sunil and Siddarth, S., (1998) " Determining Segmentation in Sales Response Across Consumer Purchase Behaviour." Journal of Marketing Research, Vol.35, May.

Burns, Alvin C. and Harrison, Mary Carolyn, (1979) "A Test of the Reliabilty of Psychographics," Journal of Marketing Research, Vol 16 . Feb.

Byrne, Barbara M., (1994), Structural Equation Modeling with EQS and EQS/Windows: Basic Concepts, Applications, and Programming, Sage Publications. London.

Byrne, Barbara M., (1995) "One Application of Structural Equation Modeling From Two Perspectives; Exploring the EQS and LISREL Strategies," in Rick H. Hoyle, ed.. Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications. Inc., London.

Calder, Bobby J., Phillips, Lynn W. and Tybout Alice, (1981), "Designing Research for Application," Journal of Consumer Research, vol. 8, September .

Capon, Noel and Burke, Marian (1980) "Individual, Product Class. and Task Related Factors in Consumer Information Processing", Journal of Consumer Research. vol. 7. December.

Carroll, Christopher D., (1994) "How Does Future Income Affect Current Consumption?" Quaterly Journal of Economics 109, vol 1, Feb.

Caruso, John C. and Spirrison, Charles L. (1996). "Reported Earliest Memory Age: Relationships with Personality and Coping Variables," Personality and Individual Differences, vol. 21, no. 1.

Cattell, R.B., (1961) "Theory of Situational, Instrument, Second-Order and Refraction Factors in Personality Structure Research," Psychological Bulettin, 58, March.

Chisnall, Peter M., (1986) Marketing Research, 3rd. edition, McGraw-Hill Book Company (UK) Limited, London.

Chisnall, Peter M., (1995) Consumer Behaviour, 3rd. edition, McGraw-Hill Book Company Europe, Berkshire, England.

Chou, Chih-Ping and Bentler, Peter M., (1995) "Estimates and Tests in Structural Equation Modeling," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Churchill, Gilbert A. Jr,(1995) Marketing Research: Methodological Foundations.,6th edition, The Dryden Press, Fort Worth, Texas, USA.

Clarke, Yvone and Sautar, Geoffrey N. (1982) "Consumer Acquisition Patterns for Durable Goods: Australian Evidence", Journal of Consumer Research, vol. 8, March.

Cohen, Joel B. And Basu, Kunal (1987) "Alternative Models of Categorisation: Toward a Contingent Processing Framework", Journal of Consumer Research, vol. 13, March.

Cole, Catherine A. and Balasubramanian, Siva K., (1993) " Age Differences in Consumers Search for Information: Public Policy Implications." Journal of Consumer Research, Vol.20, June.

Coleman, R. P. (1983) "The Continuing Significance of Social Class to Marketing", Journal of Consumer Research, Vol.10, December.

Copeland, Melvin T., (1923) "The Relation of Consumers Buying Habit to Marketing Methods," Harvard Business Review, 1 (April).

Cosmas, S. C. (1982) "Life Styles and Consumption Patterns". Journal of Consumer Research, vol. 8.

Coupey, Eloise, Irwin, Julie R. And Payne, John W. (1998) "Product Category Familiarity and Preference Construction", Journal of Consumer Research. Vol.24. No. 4, March.

Cox, William E. Jr. (1979) Industrial Marketing Research, John Wiley and Sons. New York.

Cronbach, L. J. (1951) "Coefficient Alpha and the Internal Structure of Test", Psychometrika, 16 (3).

Currim, Imran S., (1981) "Using Segmentation Approaches for Better Prediction and Understanding from Consumer Mode Choice Models". The Journal of Marketing Research, Volume 18, August.

Czinkota, Michael R. and Ronkainen, Ilkka A. (1998) International Marketing 5th. edn., The Dryden Press, Orlando.

Dabholkar, Pratibha A., (1994) " Incorporating Choice into an Attitudinal Framework: Analysing Models of Mental Comparison Processes," Journal of Consumer Research. Vol.21, June.

Darden, W. R. And Reynolds, F. D. (1971) "Shopping Orientations and Shopping Usage Rates", Journal of Marketing Research, vol. 8.

Darden, William R., and Ashton, Dub., (1974) "Psychographic Profiles of Patronage Preference Groups.", Journal of Retailing, Vol. 50 No.4 Winter.

Demby, E., (1974) "Psychographics and from whence it came". in Wells. W.D. (ed). Lifestyle and Psychographics, Chicago: American Marketing Association.

Dennis, Geoff, Perason, Nail and Ukueku, Clara (ed). Annual Abstract of Statistics. (1995), Central Statistical Office, London: HMSO.

Deshpande, Rohit, (1983) "Paradigm Lost: On Theory and Method in Research in Marketing", Journal of Marketing, Vol 47 (Fall),

Diamantopoulos, A., (1994), "Modelling with LISREL: A Guide for the Uninitiated." Journal of Marketing Management, Vol. 10, Issue 1, January.

Dommeyer, Curt J., (1986) "The Effects of Negative Cover Letter Appeals on Mail Survey Response" , The Journal of the Market Research Society. vol. 29, no. 4.

Douthitt, Robin A. and Fedyk, Joanne M. (1988) "The Influence of Children on Family Life Cycle Spending Behaviour: Theory and Applications." Journal of Consumer Affairs, vol. 22, Winter.

Douthitt, Robin A. and Fedyk, Joanne M. (1990) "Family Composition, Parental Time, and Market Goods: Life Cycle Trade-Offs," Journal of Consumer Affairs, vol. 24, Summer.

Doyle, Peter., (1991) "Branding", in Baker, Michael J., ed., The Marketing Book. Butterworth Heinemann, London.

Doyle, Peter., (1995) "Marketing in the New Millennium.", European Journal of Marketing, vol 29, no.13,

Drucker, Peter F., (1954), The Practice of Management, Harper and Row Publishers Inc.

Dube, Laurette and Morgan, Michael S., (1996) " Trend Effects and Gender Differences in Retrospective Judgments of Consumption Emotions." Journal of Consumer Research, Vol.23, September.

Dunn, G., Everitt, B., and Pickles, A., (1993), Modelling Covariance and Latent Variables using EQS, Chapman and Hall, London.

Durvasula, Srinivas., Lysonsky, Steven. and Andrews, J. Craig. (1993) "Cross Cultural Generalizability of a Scale for Profiling Consumers' Decision-Making Styles." The Journal of Consumer Affairs, Vol 27, No 1.

East, Robert, (1990), <u>Changing Consumer Behaviour</u>, Cassell Educational Limited, London.

East, Robert, (1992), "The Effect of Experience on the Decision Making of Expert and Novice Buyers," <u>Journal of Marketing Management</u>, Vol. 8. Issue 2. April.

Egloff, Boris and Gruhn, Jan A. (1996), "Personality and Endurance Sport," <u>Personality and Individual Differences</u>, vol. 21, no. 1.

Ehrenberg, A. S. C. and Goodhardt, G. J.,(1979). <u>Essays on Understanding Buyer Behaviour</u>, J. Walter Thompson and Co. and Market Research Corporation of America.

Ehrenberg, A. S. C., (1972),<u>Repeat Buying</u>, Amsterdam, North Holland,.

Ehrenberg, A. S. C.,(1996) "Towards an Integrated Theory of Consumer Behaviour," <u>Journal of Market Research Society</u>, vol. 38, no. 4, October.

<u>Electoral Register for Glasgow Constituencies</u>, 1996.

Engel, James F., Blackwell, Roger D., and Miniard, Paul W. (1990), <u>Consumer Behaviour</u>, 6th ed., The Dryden Press, Chicago USA.

Enis, Ben M. and Roering, Kenneth J., (1980) "Product Classification Taxonomies: Synthesis and Consumer Implications'" in <u>Theoretical Developments in Marketing</u>, Lamb, C. W. and Dunne, eds, American Marketing Association, Chicago.

Everitt, Brian S. and Dunn, Graham.,(1991). <u>Applied Multivariate Data Analysis</u>, Edward Arnold, Hodder and Stoughton, London.

Fischer, Eileen and Arnold, Stephen J., (1990) " More Than A Labour of Love: Gender Roles and Christmas Gift Shopping," <u>Journal of Consumer Research</u>. Vol.17, December.

Fishbein, Martin and Ajzen, Icek (1975). <u>Belief, Attitude, Intention and Behaviour</u>, Addison-Wesley, Reading, Mass.

Fournier, Susan, (1998) " Consumers and Their Brands: Developing Relationship Theory in Consumer Research," <u>Journal of Consumer Research</u>, Vol.24, March.

Foxall, Gordon R. and Goldsmith, Ronald E.,(1988) "Personality and Consumer Research: Another Look", <u>Journal of Market Research Society</u>, vol. 30.

Foxall, Gordon R. and Goldsmith, Ronald E.,(1994),<u>Consumer Psychology for Marketing</u>., Routledge, London.

Foxall, Gordon R., (1990), <u>Consumer Psychology in Behavioural Perspective</u>., Routledge, London,

Frank, R. E., Massy, W. F. And Wind, Y. (1972),<u>Market Segmentation</u>, Prentice-Hall, Englewood Cliffs, New Jersey.

Garner, W. R. (1974), The Processing of Information and Structure, Erlbaum, Potomac, MD.

Gay, L. R. and Diehl, P.L., (1992), <u>Research Methods for Business and Management</u>., Maxwell Macmillan International, Singapore.

Gendeall, Philip, Hoek, Janet and Esslemont, Don, (1995) "The Effect of Appeal, Complexity and Tone in Mail Survey Covering Letter," <u>Journal of Market Research Society</u>, vol. 37, no. 3, 1995.

Gordon, W., and Langmaid, R, (1988), <u>Qualitative Market Research: A Practitioner's and Buyer's Guide</u>, Gower, Aldershot.

Gorn, Gerald J. and Weinberg, Charles B. (1984) "The Impact of Comparative Advertising on Perception and Attitude: Some Positive Findings". <u>Journal of Consumer Research</u>, vol. 11, September.

Gorsuch, Richard L., (1974), <u>Factor Analysis</u>, W. B. Saunders Company, London.

Grewal, Dhuruv and Marmorstein, Howard (1994) "Market Price Variation, Perceived Price Variation and Consumers' Price Search Decision for Durable Goods". <u>Journal of Consumer Research</u>, vol. 21, December.

461

Gunter, B. and Furnham, A., (1992), Consumer Profiles: An Introduction To Psychographics, Routledge, London.

Gunter, B. and Furnham, A., (1998), Children as Consumers', Routledge. London.

Gunter, B., (1998), Understanding the Older Consumer: The Grey Market, Routledge. London.

Hackett, Paul M. W. and Foxall, Gordon R., (1994), "A Factor Analytic Study of Consumers' Location Specific Values: A Traditional High Street and a Modern Shopping Mall," Journal of Marketing Management, Vol. 10, Issue 2, February.,

Hafstrom, Jeanne L.,Jung Sook Chae and Young Sook Chung, (1992) "Consumer Decision Styles: Comparison Between United States and Korean Young Consumers," The Journal of Consumer Affairs, Vol 26, No 1.

Hair, Joseph F., Anderson, Rolph E., Tatham, Ronald L. and Black, William C. (1995), Multivariate Data Analysis with Readings, 4th. Edn., Macmillan, New York.

Handelsman, M., (1983) "Measurement of Individual Varied Behaviour Across Product Classes - Result And Applications". Advances in Consumer Research, vol. 10, Bagozzi and Tybout (ed), Ann Arbor.

Hart, Susan J. (1987), An Empirical Investigation of the Product Elimination Decision-Making Process in British Manufacturing Industry, Unpublished PhD Thesis, University of Strathclyde.

Harvey, Lee, (1988) "Factors Effecting Response Rate to Mail Questionnaires: A Comprehensive Literature Review," Journal of Market Research Society, vol. 29, no. 3.

Herrman, Robert O. and Warland, Rex H., (1990) "Consumers' Use of Recommended Food Buying Practices," The Journal of Consumer Affairs, Vol 24, No 2.

Heylen, Paul J., Dawson, Barbara, and Sampson, Peter, (1995) "An Implicit Model of Consumer Behaviour" , The Journal of the Market Research Society, vol. 37.

Holbrook, Morris B. And Howard, John A., (1977) "Frequently Purchased Nondurable Goods and Services," in Selected Aspects of Consumer Behaviour. Ferber, Robert ed. National Science Foundation, Washington D.C.

Holton, Richard M. (1958) "The Distinction between Convenience Goods, Shopping Goods, and Specialty Goods," Journal of Marketing, vol. 23, July.

Horton, R. L. (1979) "Some Relationships Between Personality and Consumer Decision-Making", Journal of Marketing Research, vol. 16.

Houston, Franklin S., (1986) "The Marketing Concept: What It Is and What It Is Not," Journal of Marketing, vol. 50, April.

Howard, John and Sheth, Jagdith (1969), The Theory of Buyer Behaviour, John Wiley and Sons, New York.

Hoyer Wayne D. and Brown, Stephen P. (1990) "Effect of Brand Awareness on Choice for a Common, Repeat-Purchase Product," Journal of Marketing Research, Vol 17, September.

Hoyer, Wyne D. and Brown Steven P., (1995) "The Structural Equation Modeling Approach: Basic Concepts and Fundamental Issues," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Hoyle, Rick H. (1995) "Basic Concepts and Fundamental Issues," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Hoyle, Rick H. and Panter, Abigail T., (1995), "Writing About Structural Equation Models," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Hu, Li-Tze and Bentler, Peter M., (1995) "Evaluating Model Fit," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Hughes, G. D., (1978), <u>Marketing Management</u>, Addison-Wesley, Reading, Mass.

Hustad, T. P. And Pessemeier, E. A. (1974) "The Development and Application of Psychographic, Life Style and Associated Activity and Attitude Measures", in <u>Lifestyle and Psychographics</u>, Wells, H. D., ed., American Marketing Association, Chicago.

Jackson, R. W., McDaniel, S. W., and Rao, C. P. (1985) "Food Shopping and Preparation: Psychographic Differences of Working Wives and Housewives", <u>Journal of Consumer Research</u>, vol. 12.

Jacoby, Larry L. And Brooks , Lee R. (1984), "Nonanalytic Cognition: Memory, Perception and Concept Learning," in <u>The Psychology of Learning and Motivation</u>, vol. 18, ed. Gordon H. Bower, Academic Press, New York.

Johnson, Douglas and Inglis, J., (1996) "Some Observations on, and Developments in, the Analysis of Multivariate Survey Data," <u>Journal of Market Research Society</u>, vol. 38, no. 4, October.

Johnson, Michael (1988) "Comparability and Hierarchical Processing in Multialternative Choice", <u>Journal of Consumer Research</u>, vol. 15, December.

Joreskog, K. G. (1971) "Statistical Analysis of Sets of Congeneric Tests", <u>Psychometrika</u>, vol. 36.

Kacen, J,J. (1993) "Phenomenological Insights In Mood and Mood-Related Consumer Behaviours". <u>Advances in Consumer Research</u>, vol. 21, Allen and John (ed), Ann Arbor.

Kahle, Lynn R. (1986) "The Nine Nations of North America and the Value Basis of Geographic Segmentation," <u>Journal of Marketing</u>, vol. 50, April.

Kahle, Lynn R., ed, (1983), <u>Social Values and Social Change: Adaptation to Life in America</u>, Praeger, New York.

Kaiser, H. F. (1958) "The Varimax Criterion for Analytic Rotation in Factor Analysis", Psychometrika, vol. 23.

Kaish, Stanley (1967), "Cognitive Dissonance and the Classification of Consumer Goods," Journal of Marketing, vol. 31, October.

Kalafatis, Stavros P. And Blankson, Charles, (1996) "Some Observations on, and Developments in, the Analysis of Multivariate Survey Data," Journal of Market Research Society, vol. 38, no. 3, July.

Kaplan, David, (1995) "Statistical Power in Structural Equation Modeling," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Kaplan, Robert M. and Saccuzzo, Dennis P. (1997) , Psychological Testing: Principles, Applications and Issues, 4th . edn., Brooks/Cole Publishing Company, Pacific Groove, CA.

Kassarjian, Harold H. and Robertson, Thomas S., (1991), Perspective in Consumer Behaviour (4th. edn), Prentice-Hall Inc., Englewood Cliffs, New Jersey.

Keith, R.J.,(1960), "The Marketing Revolution," Journal of Marketing, vol. 24, January.

Kellaris, J,J. and Mantel, S.P., (1993) "The Influence of Mood and Gender on Consumers' Time Perceptions". Advances in Consumer Research, vol. 21, Allen and John (ed), Ann Arbor.

Kemler Nelson, Deborah G. (1984), "The Effect of Intention on What Concepts Are Acquired," Journal of Verbal Learning and Verbal Behaviour, vol 23, December.

Kemler, Deborah G. (1983), "Holistic and Analytic Modes in Perceptual and Cognitive Development," in Perception, Cognition, and Development: Interactional Analyses, eds. Thomas J. Tighe and Bryan E. Shepp, Erlbaum, Hillsdale, N. J.

Kendall, Elizabeth Sproles and Sproles, George B (1990) "Consumer Decision-Making Styles as a Function of Individual Learning Styles," The Journal of Consumer Affairs, Volume 24 No.1, Summer.

Kim, Jae-On and Mueller, Charles W., (1978), Factor Analysis: Statistical Methods and Practical Issues, Quantitative Applications in the Social Sciences, Eric M. Uslaner ed., Sage University Paper Series, Sage Publications. Inc. London.

Kim, Jae-On and Mueller, Charles W., (1978), Introduction to Factor Analysis: What It Is and How To Do It, Eric M. Uslaner ed.. Sage University Paper Series. Sage Publications, Inc. London.

King, Charles W. and Summers, John O., (1970) "Overlap of Opinion Leadership Across Consumer Product Categories.", Journal of Marketing Research. Vol 7, February.

Kishton, Joseph M. and Widaman, Keith F., (1994) "Unidimensional Versus Domain Representative Parceling of Questionnaire Items: An Empirical Example," Educational and Psychological Measurement, vol. 54, no.3, Fall.

Knox, Simon, Walker, David and Marshal. Charles, (1994), "Measuring Consumer Involvement with Grocery Brands: Model Validation and Scale Reliability Test Procedures," Journal of Marketing Management, Vol. 10, Issue 2. February.

Kotler, P., (1980), Principles of Marketing, Englewood Cliffs, New Jersey. Prentice-Hall,.

Kotler, Philip (1991), Marketing Management: Analysis, Planning, Implementation and Control, 7th edn., Prentice-Hall International Edition, Englewood Cliffs, New Jersey.

Krishnamurthi, Lakshman and Raj, S. P., (1991) " An Emphirical Analysis of the Relationship Between Band Loyal and Consumer Price Elasticity," Marketing Science, Vol.10, Spring.

Krishnamurthi, Lakshman, Mazumdar, Tridib and Raj. S. P., (1992) " Asymmetric Response to Price in Consumer Brand Choice and Purchase Quantity Decision." Journal of Consumer Research, Vol.19, December.

LaBarbera, Priscilla A. and Mazursky, David (1983), " A Longitudinal Assessment of Consumer Satisfaction/Dissatisfaction: The Dynamic Aspect of the Cognitive Process," Journal of Marketing Research, Vol.20, November.

Lastovicka, John L., (1982) "On Validation of Lifestyle Traits: A Review and Illustration," Journal of Marketing Research, Vol 19 . Feb.

LaTour, Stephen A. and Miniard, Paul W. (1983), " The Misuse of Repeated Measures Analysis in Marketing Research," Journal of Marketing Research, Vol.20, February.

Lazar, W. (1963) "Lifestyle Concepts and Marketing: Toward Scientific Marketing." Proceeding of the American Marketing Association.

Lazarfeld, P. F. (1935) "The Art of Asking Why", National Marketing Review, vol. 1.

Lehmnan, D. R. (1985), Market Research and Analysis,, Irwin, Homewood, IL.

Lesser, J. A. and Hughes, M. A., (1986) "The Generalizability of Psychographic Market Segments Across Geographic Locations", Journal of Marketing, vol 50, Jan.

Leventhal, Richard C. (1997) "Aging Consumers and Their Effects on the Market Place", Journal of Consumer Marketing, Vol.14, No. 4 & 5.

Levitt, Theodore, (1960), "Marketing Myophia.", Harvard Business Review, vol. 38. July-August.

Levitt, Theodore, (1964) "Marketing Myophia," in Edward Bursk and John Chapman (eds), Modern Marketing Strategy, Cambridge Massachusetts.:Harvard University Press,.

Lockhead, G. R. (1972), "Processing Dimensional Stimuli: A Note." Psychological Review, vol. 79, September.

Loken, Barbara Ward, James, (1970) "Alternative Approaches to Understand the Determinants of Typicality", Journal of Marketing Research, Vol 7. February.

Lord, F. M. and Norvick, M. R. (1968) Statistical Theories of Mental Test Scores. Addison-Wesley, Reading, MA.

Loudon, David L. and Della Bitta, Albert J., (1993). Consumer Behaviour: Concepts and Applications (4th edn)., McGraw-Hill, Inc. USA.

Luck, David J. (1959) "On the Nature of Specialty Goods," Journal of Marketing, vol. 24, July.

Lutz, Richard J., (1991) "The Role of Attitude Thoery in Marketing," in H.H. Kassarjian and T.S. Robertson, Perspectives in Consumer Behaviour, Prentice Hall International Edition.

Mac Callum, Robert C., (1995) "Model Specifications: Procedures, Strategies and Related Issues," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Malhotra, Naresh K., (1993), Marketing Research: An Applied Orientation., Prentice-Hall Inc., Englewood Cliffs, New Jersey.

Mayer, Morris L., Mason, Barry J. and Gee, Morris (1971) "A Reconceptualisation of Store Classification as Related to Retail Strategy Formulation," Journal of Retailing, vol. 47, Fall.

McCarthy, Jerome E. and Perreault, William D. Jr. (1990), Basic Marketing: A Managerial Approach, 10th. Edn., Irwin, Homewood, IL.

McConkey, C. W., and W. E. Warren, (1987). "Psychographic and Demographic Profiles of State Lottery Ticket Purchasers", Journal of Consumer Affairs, vol 21 no. 2.

McKitterick, J. B., (1957), "What is the Marketing Management Concept?", in The Frontiers of Marketing Thought, Bass, Frank M., (ed). American Marketing Association, Chicago.

McQuarrie, Edward F., (1988) "An Alternative To Purchase Intentions: The Role of Prior Behaviour In Consumer Expenditure On Computers." . The Journal of the Market Research Society, vol. 30.

McWilliam, Gil (1992) "Consumers' Involvement in Brands and Product Categories", in Perspectives on Marketing Management, Baker. Michael J., ed., John Wiley and Sons, Chichester, England.

Mehotra, Sunil and Wells, William. D. (1979) "Psychographics and Buyer Behaviour: Theory and Recent Empirical Findings," in Consumer and Industrial Buying Behaviour, Woodside, Arch, Sheth, Jagdish N. And Bennett, Peter D. (1979), eds., North Holland, New York.

Menasco, Michael B and Curry, David S., (1989) " Utility and Choice: An Empirical Study of Wife / Husband Decision-Making," Journal of Consumer Research, Vol.16, June.

Menon, Satya and Kahn, Barbara E., (1995) "The Impact of Context on Variety Seeking in Product Choices", Journal of Consumer Research, Vol.22, December.

Meyers-Levy, Joan and Maheswaran, Durairaj, (1991) " Exploring Differences in Males' and Females' Processing Strategies," Journal of Consumer Research. Vol.18. June.

Mischel, W. (1973) "Toward a Cognitive Social Learning Reconceptialisation of Personality", Psychological Review, vol. 80.

Mitchell, Arnold (1983), The Nine American Life Styles. Warner. New York.

Mitchell, V. W. (1993), Using Factor, Cluster and Discriminant Analysis to Identify Psychographic Segments, Working Paper Series. Manchester School of Management. UMIST.

Moschis, George P., (1976) "Shopping Orientations and Consumer Uses of Information," Journal of Retailing, Vol. 52 No.2 Summer.

Moschis, George P., (1985) " The Role of Family Communication in Consumer Socialization of Children and Adolescents," Journal of Consumer Research. Vol.11. March.

Mowen, John C., (1990), Consumer Behaviour, 2nd. Ed. MacMillan Publishing Company, New York.

Mueller-Heumann, G., (1992), "Market Technology Shifts in the 1990s: Market Fragmentation and Mass Customisation." Journal of Marketing Management. Vol.8. Issue 4, October.

Mulaik, Stanley A. and James, Lawrence R., (1995) "Objectivity and Reasoning in Science and Structural Equation Modeling," in Rick H. Hoyle, ed., Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Inc., London.

Mulaik, Stanley A., (1972), The Foundations of Factor Analysis, McGraw-Hill Inc., New York.

Mulhern, Francis J. and Padgett, Daniel T. (1995) "The Relationship between Retail Price Promotion and Regular Price Purchases", Journal of Marketing, Vol.59, No. 4. October.

Murphy, Patrick E. and Enis, Ben M., (1986) "Classifying Products Strategically." Journal of Marketing, Vol 50, July.

Muthen, B. O. (1988), LISCOMP: Analysis of Linear Structural Equations Using a Comprehensive Measurement Model: User's Guide, Scientific Software Inc., Chicago.

Muthen, B. O. (1989) "Latent Variable Modeling in Heterogeneous Populations. Psychometrika, vol. 54 (4).

Nelson, Alan R., (1971) "Psyching Psychographics: A Look at Why People Buy", in King, Charles W. and Tigert, Douglas J., eds., Attitude Research Reaches New Heights, American Marketing Association, Chicago.

Nunnally, Jum C. (1978) Psychometric Theory, 2nd Edition, McGraw-Hill, New York.

Ogwo, Ogwo Ekeoma (1980) An Analysis of the Psychographic and Demographic Correlates of Consumer Credit Behaviour, Unpublished PhD Thesis, University of Strathclyde.

Olson, David, H., McCubbin, Hamilton I. Et. al. (1983), Families: What Makes Them Work?, Sage Publications, Beverly Hills.

Parasuraman, A., (1991), Marketing Research, Addison-Wesley, Massachusetts, USA.

Pernica, J., (1974), "The Second Generation of Market Segmentation Studies: An Audit of Buying Motivations", in Wells, W. D., ed. Lifestyle and Psychographics, American Marketing Association, Chicago.

Perri, M. (1990) "Application of the List of Values Alternative Psychographic Assesment Scale", Psychological Reports, vol 66.

Pessmeier, E. and Bruno, A. V. (1971), "An Empirical Investigation of the Reliability and Stability of Activity and Attitude Measures, Reprint Series No. 391, Krannert Graduate School of Industrial Administration, Purdue University.

Peter, P.J. and Olson, J.C., (1994),Understanding Consumer Behaviour, Irwin, Burr Ridge, Illinois,

Peter, Paul J. (1981) "Construct Validity: A Review of Basic Issues and Marketing Practices", Journal of Marketing Research, vol. 18, May.

Peterson, R. A. (1972) "Psychographics and Media Exposure", Journal of Advertising Research vol. 12.

Pollay, Richard W, Siddarth S., Siegel, Michael, Haddix, Anne, Merritt, Robert K., Giovino, Garry A and Michael Erickson (1996) " The Last Straw? Cigarette

Advertising and Realised Market Shares Among Youths and Adults 1979-1993," Journal of Marketing, Vol. 60 No. 2, April.

Ramsay, William, (1996) "Whither Branding," Journal of Brand Management, Vol.4, December.

Rentz, Joseph O., (1987) "Generalizability Theory: A Comprehensive Method for Assessing and Improving the Dependability of Marketing Measures", Journal of Marketing Research, Vol 24, February.

Rentz, Joseph O., Reynolds, Fred D.and Stout, Roy G. (1983), " Analysing Changing Consumption Patterns with Cohort Analysis," Journal of Marketing Research, Vol.20, February.

Reynolds, F. D. (1972) "Intermarket Patronage: A Psychographic Study of Consumer Outshoppers", Journal of Marketing, vol. 36.

Reynolds, Fred and Darden, William, (1974) "Construing Life Style and Psychographics," in William D. Wells, ed., Life Style and Psychographics, Chicago: American Marketing Association.

Reynolds, Fred D, and Darden, William R., (1972) "Intermarket Patronage: A Psychographic Study of Consumer Outshoppers", Journal of Marketing, vol. 36.

Richardson, Paul S., Jain, Arun K. and Dick, Alan, (1996) " Household Store Brand Proneness: A Framework," Journal of Retailing, Vol.72, No. 2,.

Riche, M. F. (1989) "Psychographics for the 1990's", American Demographics, July.

Rindfleisch, Aric, Burroughs, James E. and Denton, Frank (1997) Family Structure, Materialism, and Compulsive Consumption," Journal of Consumer Research, Vol.23, March.

Rook, Dennis W. and Fisher, Robert J. (1995) "Normative Influences on Impulsive Buying Behaviour", Journal of Consumer Research, Vol.22, December.

Rosenthal, R. And Rosnow, R. L. (1984), Essential of Behavioural Research, McGraw-Hill, New York.

Rothman, James, (1996) "Some Considerations Affecting the Use of Factor Analysis in Market Research," Journal of Market Research Society, vol. 38, no. 4, October.

Rousseau, D. (1990) "Developing and Testing a Model of Psychographic Market Segmentation", South African Tydskr. Sielk, 20 (3).

Russel, Gary J. and Kamakura, Wagner A., (1997) " Modeling Multiple Category Brand Preference with Household Basket Data," Journal of Retailing, Vol.73, No. 4.

Russell, Robin J. H. and Wells, Pamela A. (1994), "Personality and Quality of Marriage," British Journal of Psychology, Vol. 85.

Sampson, Peter, (1986), "Qualitative Research and Motivation Research" in Consumer Market Research Handbook, 3rd edition, North Holland ESOMAR, Worcester, Robert and Downham, John (eds)

Schaninger, Charles M. and Danko, William D. (1993) "A Conceptual and Empirical Comparison of Alternative Household Life Cycle Models," Journal of Consumer Research, vol. 19, March.

Schiffman,G.L. and Kanuk, L.L., (1983) Consumer Behavior, Englewood Cliffs, New Jersey, Prentice-Hall.

Shapiro, Irving J., (1973), Marketing Terms: Definitions, Explainations and/or Aspects, S-M-C Publishing Company 3rd. ed. USA.

Shaw, A., Dawson, J. A. and Blair, L. M. A., (1992), "The Sourcing of Retailer Brand Food Products by a UK Retailer," Journal of Marketing Management, Vol. 8, Issue 2, April.

Shepard, Roger N. (1964), "Attention and the Matric Structure of the Stimulus Space," Journal of Mathematical Psychology, vol. 1, February.

Shepp, Bryan E. (1978), "From Perceived Similarity to Dimensional Structure: A New Hypothesis About Perceptual Development," in Cognition and Categorization, eds. Eleanor Rosch and Barbara B. Lloyd, Erlbaum, Hillsdale, N. J.

Sivadas, Eugene, Mathew, George and Curry, David (1997) "A Preliminary Examination of the Continuing Significance of Social Class to Marketing: A Geodemographic Replication", Journal of Consumer Marketing, Vol.14, No. 4 & 5.

Sivakumar, K. and Raj, S. P. (1997) "Quality Tier Competition: How Price Change Influences Brand Choice and Category Choice", Journal of Marketing, Vol.61, No. 3, July.

Skinner, B. F. (1972), Cummulative Record, 3rd. Edn, Appleton-Century-Crofts, New York.

Skinner, Steven J. (1990), Marketing, Houghton Miflin Co., Boston, MA.

Solomon, Michael R., (1996), Consumer Behaviour: Buying, Having and Being, Prentice-Hall International, Inc. Englewood Cliffs, New Jersey.

Sproles, George B. and Kendall, Elizabeth L., (1986) "A Methodology for Profiling Consumers' Decision-Making Styles.", The Journal of Consumer Affairs, Volume 20 No.2, Winter.

Sproles, George B., (1983) "Conceptualization and Measurement of Optimal Consumer Decision-Making.", The Journal of Consumer Affairs, Volume 17 No.2, Winter.

Sproles, George B., (1985) "From Perfectionism to Fadism: Measuring Consumers' Decision-Making Styles, ", Proceedings, American Council of Consumer Interests, Karen P. Schnittgrund, ed., Colombia, Missouri: ACCI.

SPSS Manual version 7.5.1., 1996

Starvridou, Antonia and Furnham, Adrian (1996), "The Relationship between Psychoticism, Trai-Creativity and the Attentional Mechanism of Cognitive Inhibition," <u>Personality and Individual Differences</u>, vol. 21, no. 1.

Stokmans, Mia (1992) "Product Characteristics used by Management in New-Product Development versus Those Used by the Consumer in Making a Choice", in <u>Perspectives on Marketing Management</u>, Baker, Michael J., ed., John Wiley and Sons, Chichester, England.

Stone, Gregory P., (1954) "City Shoppers and Urban Identification: Observations On The Social Psychology of City Life.", <u>American Journal of Sociology</u>, Vol 60, July.

Sullivan, Mary W., (1998) " How Brand Names Affect the Demand for Twin Automobiles," <u>Journal of Marketing Research</u>, Vol.35, May.

Taylor, S. and Todd, P., (1995) "Decomposition annd Crossover Effects in the Theory of Planned Behaviour: A Study of Consumer Adoption Intentions.", <u>International Journal of Research in Marketing</u>, Volume 12 No. 2, July.

Teel, J. E., Beardon W. O. And Durand, R. M. (1979) "Psychographic of Radio and Television Audiences", <u>Journal of Advertising Research</u>, vol. 19.

Tigert, D. J. (1969) "A Taxonomy of Magazine Readership Applied to Problems in Marketing Strategy and Media Selection", <u>Journal of Business</u>, vol. 42.

Tigert, D. J., Lathrope, R. And Bleeg, M. (1971) "The Fast Food Franchise: Psychographic and Demographic Segmentation Analyses", <u>Journal of Retailing</u>, vol. 47.

Tull, Donald S. and Kahle, Lynn R. (1990), <u>Marketing Management</u>, Macmillan Publishing Co., New York.

Tull, Donald S., and Hawkins, Del I., (1993), <u>Marketing Research: Measurement and Method</u> (6th edn), Macmillan Publishing Co., New York.

Vakratsas, Demetrios (1998) "Household Cost Effects on Purchase Timing Decisions: Do Demographics Matter?", Journal of Consumer Marketing, vol. 15. no. 1.

Van Minden, Jack J. R. (1987), Dictionary of Marketing Research, St. James Press. Chicago, USA.

Van Trijp, Hans C. M., Hoyer, Wayne D. and Inman, J. Jeffrey. (1996) "Why Switch? Product Category-Level Explainations for True Variety Seeking Behaviour." Journal of Marketing Research, 33 , August.

Veroff, J., Douvan, E. and Kulka, R. A. (1981) The Inner American. Basic Books, New York.

Warshaw, Paul R., Sheppard, Blair H. and Hartwick, Jon (1990) "The Intention and Self-Prediction on Goals and Behaviours," in Advances in Marketing Communication Research, Bagozzi, Richard P., ed., JAI, Greenwich, Connecticut.

Webber, Charles (1977) in Chisnall, Peter M. (1995) Consumer Behaviour, 3rd. edition, McGraw-Hill Book Company Europe, Berkshire. England.

Webster, Frederick E Jr., (1992) "The Changing Role of Marketing in the Corporation," Journal of Marketing , Vol. 56 , October.

Wells, William D. (ed) (1974), Lifestyle and Psychographics, American Marketing Association, Chicago.

Wells, William D. and Gubar, Charles (1966), "The Life Cycle Concept," Journal of Marketing Research, Vol. 2, November.

Wells, William D. and Tiggert D., (1971) "Actvities, Interests and Opinions". Journal of Advertising Research, vol. 11.

Wells, William D., (1975) "Psychographics:A Critical Review." Journal of Marketing Research, 2 , May.

Wilkes, Robert E., (1995) "Household Life-Cycle Stages. Transitions. and Product Expenditures" Journal of Consumer Research, Vol 22. June.

Wind, Y. (1978) "Issues and Advances in Segmentation Research". Journal of Marketing Research, vol. 15.

Wind, Y. And Green, P. E. (1974)"Some Conceptual Measurement and Analytical Problems in Life Style Research", in Wells, William D. (ed), Lifestyle and Psychographics, American Marketing Association, Chicago.

Winzar, F. Hume, (1992), "Product Classifications and Marketing Strategy," Journal of Marketing Management, Vol.8, Issue 3, July.

Wunder, Gene C. and Wynn, George W., (1989) "The Effects of Address Personalisation on Mailed Questionnaires Response Rate, Time and Quality," Journal of Market Research Society, vol. 30, no. 1.

Young, S., (1973), "Research Both for Strategic Planning and for Tactical Testing", Proceedings of the 19th. Annual Conference of the Advertising Research Foundation, New York.

Zaltman, Gerald, Pinson, Christian R. A. and Angelmar, Reinhard, (1973), Metatheory and Consumer Research., Dryden Press, Hinsdale, Illinois.

Ziff, R. (1971), "Psychographics for Market Segmentation", Journal of Advertising Research, vol. 11.