THE ENERGY CONSCIOUS CONSUMER
IMPLICATIONS FOR MARKETING AND PUBLIC POLICY

by

Donald James Lowry

A

THESIS

Submitted to The University of Manitoba in

partial fulfillment of the requirements for

the degree of

MASTER OF BUSINESS ADMINISTRATION

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ABSTRACT

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"When change occurs, it is something to be explained. The fact that it is more abundant in our time than in centuries past does not mean it requires less explanation; it means there are more change producing agents operating today than there were before. It is important to discover what those factors are and how they operate." (46)

The monitoring of consumer attitudes toward and perceptions of the change-producing agents of our time is not only informative but valuable input to policy decision makers in business and government. This study focuses on one such change producing agent - Energy* - and its impact on Canadians' attitudes toward Energy conservation.

Within the last few years the term "energy crisis" has risen to prominence and become one of the most overworked terms in our vocabulary. A crisis does not mean the end of the

*Energy in the context of this report embraces the following natural or refined resources.....oil, coal, natural gas, gasoline, heating oil and electricity.

world. Instead, in the words of Scott & Pearse (72)

> "A crisis means literally a turning point, an interval of suspense in the groping for new directions during which there is a danger that the new scheme of things will bring quite different economic and political relationships among nations, producers, consumers and social groups."

Part of the turning point has been an increasing willingness by certain groups of consumers to conserve energy. Whereas consumers generally were once apathetic or opposed to supporting such issues as resource conservation, or pollution control, in recent years there has been a dramatic shift towards a more socially responsible position.

The purpose of this study is an attempt to develop a profile of the conservation oriented or energy conscious consumer and address the question of whether or not there really is a difference between this type of individual and the average Canadian consumer. In conjunction with the above this study seeks to measure the viability of the energy conscious segment in terms of a percentage of the Canadian population and establish whether or not it is worthy of developing marketing programmes styled to this type of consumer.

To date most studies devoted to profiling a particular type of consumer have been of a traditional nature relating people's behaviour to certain demographic characteristics such as age and education. It is essential that these basic facts be known but they are only superficial characteristics of the consumer and may not be very good predictors of market behaviour in relation to discriminating between the energy conscious type of consumer and his less socially responsible counterpart. What needs to be added to the demographic skeleton is the "flesh" that motives, attitudes, interests and opinion information can provide.

To this end the two major hypotheses to be investigated are:

(a) people live according to established behaviour and attitude patterns which can be identified and measured

(b) these psychographic patterns can be related to consumer behaviour in regards to energy conservation.

The data for this study has been collected by means of a self-administered, mail-type questionnaire submitted to two consumer groups, 1500 in each, randomly selected from major English speaking urban centres in Canada. One group represents the average Canadian consumer while the other represents the energy conscious consumer. Of this number 1,070 responses or thirty-six percent were usable and the analysis which follows is based upon this data.

The data has been organized into five groups based upon the type of questions included in the questionnaire. The data groups are as follows: fourteen Psychographic factors, four Attitude Towards Energy factors, five Interest/Exposure To Print Media factors, six Interest/Exposure to Broadcast Media factors and twelve Demographic Variables.

To answer the question whether or not the two groups are really different, the data for each group has been subjected to a multivariate analysis of means utilizing the Hotelling's T^2 statistic. The results support the hypothesis that the two groups are definitely and significantly different at the .005 level.

To identify the variables on which the two groups are different the data was then submitted to a univariate t-test of the groups' means. Nineteen variables have been isolated as being

significantly different. To test the ability of these variables to predict consumer behaviour in regards to the level of energy consciousness, an N-Way multiple discriminate analysis was performed in order to separate the respondents as to group membership: Group 1, the average consumer, and Group 2, the energy conscious consumer. The analysis correctly classified seventy-two percent of the respondents and from these results it can be concluded that people do live according to established behaviour and attitude patterns which can be identified and measured. Secondly, these psychographic patterns can be related to consumer behaviour in regards to energy conservation.

To conclude, the data suggests approximately thirty-four percent of the population can be considered energy conscious. Based on these results the study supports the development of a marketing campaign aimed at the energy conscious consumer.

ACKNOWLEDGEMENTS

The author would like to express his sincere thanks to Shell Canada Limited, especially Dan Androsoff, without whose support this project would not have been possible. His appraisal and great patience throughout the course of this study was most appreciated.

Special acknowledgement is also extended to Dr. Walter Good whose encouragement and enthusiasm enabled the author to overcome many of the frustrations and technical problems experienced throughout the course of the research.

The author is especially indebted to the hundreds of Canadians who took the time and effort to respond to the questionnaire.

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CHAPTER I

INTRODUCTION

"Power corrupts" was written of man's control over other men, but it also applies to his control over energy resources (13). The past few decades in Canada and many other energy intensive nations may be described as a promotional era in regards to energy growth. Energy supplies appeared to be abundant and were low in price. The policy of the public and private sector was to equate growth in consumption with progress and prosperity.....words so favourable in tone that they have been used as slogans for electing prime ministers and chairmen of the board.

As a result of this type of political and social climate, a pattern of energy consumption evolved in which the more power we disposed of, the more we wanted. The more power we used, the more we shaped our cities and moulded our economic and social institutions to be dependent on the application of power and consumption of energy.

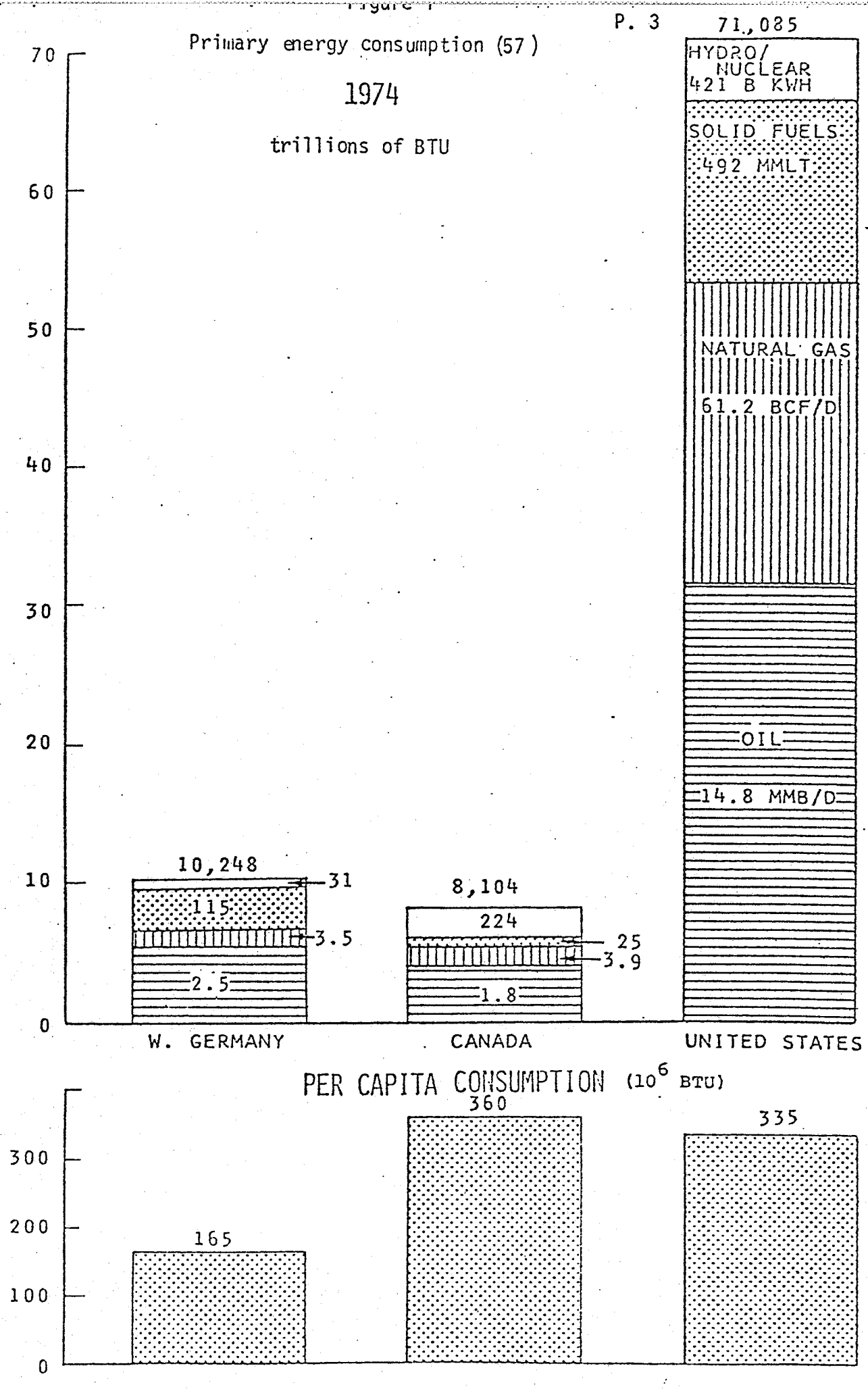
Today, energy drives our society. It heats our homes, moves our cars, runs our mines and factories.

> "Without energy, our whole civilization as we know it just comes to a halt.....there is hardly a move you can make if there is not energy in the picture someplace to help you accomplish what you want to do"(19).

Energy has superseded our muscles and given us "prosperity". Present trends of energy consumption are increasingly patterning our way of life to a style that relies heavily on a continuous energy subsidy. This increasing dependence has been likened to a form of social disease; energy addiction. (21)

Quantitatively Canadians are the highest per capita users of energy in the world; each Canadian using, on average, the equivalent of fifty-five barrels of oil per year. (71) Our national level of energy use is also increasing at a prodigious rate, that has been predicted will be three times greater than our current level of consumption by the year 2000 (51). Figures 1 and 2 on the following page graphically portray Canada's primary consumption and end use of energy.

Not only does energy demand grow at an expotential rate, but it tends to foreclose other less energy intensive development options by creating an all-encompassing life style which is becoming increasingly difficult to withdraw from.


Primary energy consumption (57)
1974
trillions of BTU
70
60
50
40
30
20
10
0
10,248
31
115
3.5
2.5
8,104
224
25
3.9
1.8
71,085
HYDRO/
NUCLEAR
421 B KWH
SOLID FUELS
492 MMLT
NATURAL GAS
61.2 BCF/D
OIL
14.8 MMB/D
W. GERMANY
CANADA
UNITED STATES
PER CAPITA CONSUMPTION (10^6 BTU)
300
200
100
0
165
360
335

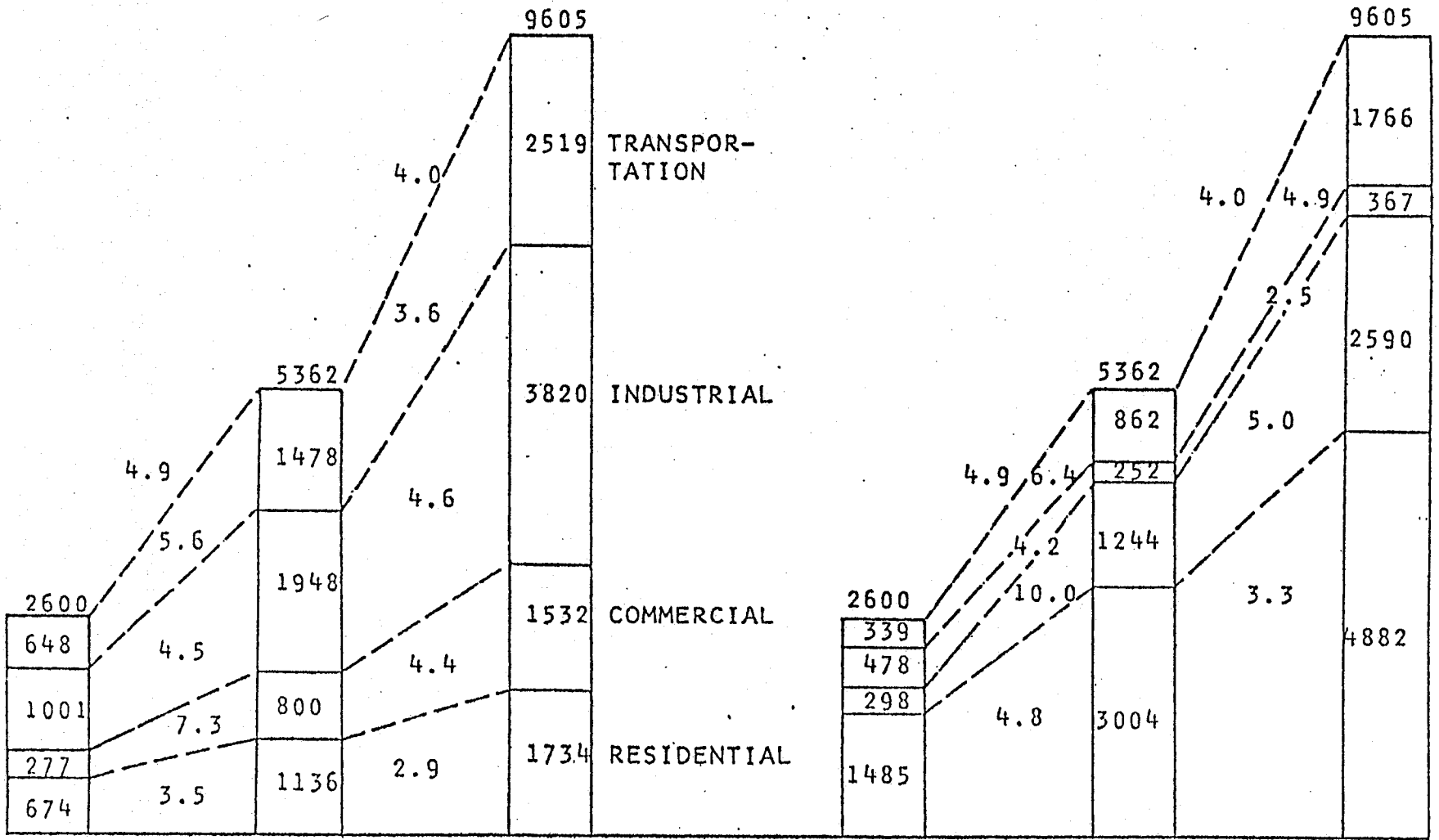


Figure 2
Canada End-use energy (58)
10^{12} Btu

P. 4

% DISTRIBUTION			
	1960	1975	1990
RESIDENTIAL	25.9	21.2	18.0
COMMERCIAL	10.7	14.9	16.0
INDUSTRIAL	38.5	36.3	39.8
TRANSPORTATION	24.9	27.6	26.2

% DISTRIBUTION			
	1960	1975	1990
PETROLEUM	57.1	56.0	50.8
NATURAL GAS	11.5	23.2	27.0
COAL	18.4	4.7	3.8
ELECTRICITY	13.0	16.1	18.4

Our current rate of growth is an abnormal one in human history and is incapable of continuing indefinitely. But our behaviour as a people generally shows little recognition that limits to growth do exist. This is not surprising. Garret Hardin has pointed out in his concept "The Freedom Of The Commons" (26) that even though the total behaviour of a society may be suicidal in nature, individuals and groups will do their part in hastening its end simply because they conceive of their additional contribution to and responsibility for the problem as being so small, and their individual loss so great from not getting their "fair" share.

The extensive use of the automobile, for example, has made urban sprawl possible, encouraged low density housing and in turn frustrated the expansion of the mass transit system. It is almost like Heller's "Catch-22" (33) in that the automobile reinforces itself as the only viable means of transportation in today's society.

Traditionally, Canada, in common with other developed countries, has allowed projections of energy demands to dictate policies for energy supplies, with very little thought being given to the efficiency with which we use our current resources. Attempts

to introduce an energy conservation ethic into the mainstream of Canadian society has seemed unimportant in the past because of the widely held belief that our country was so rich in resources that, provided we were prudent in the development of supplies, demand restraint or reduction was not needed. (68)

Canada is indeed rich in respect to energy resources of all kinds, but estimates of huge potential reserves are misleading, inasmuch as they can lead to the mistaken conclusion that energy resources can be made available as actual supplies on short notice without much difficulty when needed. In addition to the illusion of vast reserves and ease of access is the disconcerting habit of estimated reserves shrinking drastically in size as the date of their need fast approaches.

> "Canadians were told by both government and industry that they had vast reserves of oil and gas. Then along came the oil embargo and price hiking of the OPEC nations and when it got down to a matter of discussing actual reserves and not guess estimates the National Energy Board, informed us that we did not have nearly as much oil or natural gas that we thought we had." (79)

In addition to destroying the self sufficiency myth, the cost of extracting energy from these reserves in terms of capital, technology and manpower is tremendous.

Although hydro-electric power is a non-exhaustible source of energy, practically all easily accessible sites have been, or are in the process of being developed. Similar constraints apply to generating more electric power as to the fossil fuels. The more remote the regions, the longer the transmission lines, the greater the cost and the lower the efficiency.

As Canada and other industrialized nations exhaust the easily accessible and hence cheap resources of energy, we must turn to increasingly expensive alternatives thereby lowering the net energy return per dollar invested.

Shortages in our energy supply have been noted with greater frequency and urgency during the last few years. The shift in market conditions from a position of abundance of supply to one of scarcity has had a number of noticeable effects. The "energy crisis" laid bare man's dependence on the natural resources in the environment for his current style of living. The need to control energy demand and consumption in the hope of attenuating some of the strains on our economic and social system suddenly became a priority.

The increased consciousness of man's dependence on his environment is not limited to energy. On a wide variety of fronts, over the past few years, there are encouraging signs that there is beginning a process of questioning the past acceptance of the waste of natural resources that our society's materialism has involved. There appears to be a growing element in the fabric of our society who accept the consumer citizen concept and consume as individuals concerned not only with their personal satisfaction but with societal well being as well.

This aspect of consumer behaviour has been generally neglected perhaps due to its insignificance and clash with current societal norms. The increasing importance of the socially responsible consumer and the need for government and business to move in recognition of this form of behaviour is reinforced by our current energy situation.

As an indication of the viability of this type of behaviour there have been numerous market research studies in recent years devoted to exploring various aspects of socially responsible consumer behaviour. For example Kinnear, Taylor and Ahmed (43) examined the ecology conscious consumer

Anderson and Cunningham (1) profiled the socially responsible consumer and Peters (62) studied participants at recycling centres. While these are just a few examples of the research community's interest in socially responsible consumers the increasing frequency of this type of work is an indication of its relative importance. The implication of these studies in relation to this project will be elaborated on in the following sections.

In addition to the research on the "socially responsible" element in our society, there have been numerous community groups throughout Canada and North America that have established recycling centres and pollution abatement programs as well as taking other environmentally responsible actions.

In recognition of the emergence of a conserver element within Canadian society the Federal Government has established a department of energy conservation and incorporated the energy conservation ethic into the development of their energy policies.

> "Energy conservation is now an important part of Canada's overall energy policy. It will be a permanent part of that policy.....not merely a contingency plan enacted in a crisis.....and it will include all forms of energy in all areas of Canada" (15)

As an example of the public sectors commitment to the idea that conserving is becoming more culturally acceptable than consuming, the Federal Government has published a booklet "100 Ways To Save Energy And Money In The Home" (15). The booklet itself is aimed at the conserver element and its underlying purpose is to encourage and cultivate this form of more socially responsible behaviour.

In support of the government's position, the Science Council of Canada states.....

> "Canadians as individuals and their governments, institutions and industries, must begin a transition from a consumer society preoccupied with resource exploitation to a conserver society engaged in more constructive endeavours." (70)

As a result of various statements, actions and policy development, the government appears convinced as to the emergence of a conservation ethic within the fabric of our society. By employing programs of public education the public sector is endeavouring to cultivate this socially responsible form of behaviour as it offers a means of controlling energy demand

The question is, how significant is the emerging conservation ethic in our society? Is it fair to assume that our energy dependent attitudes and lifestyles as well as our industrial and legislative bodies are slowly being converted to a more energy conscious perspective? Is the government justified in building an educational program based upon a belief in a consumer movement towards more socially responsible behaviour?

John Fisher, a Canadian marketing and advertising executive questions the Federal Government's energy conservation program.....

> "it assumes a whole cultural milieu and accompanying economic climate which simply does not exist. To use a more specific term, it assumes the acceptance of a new social paradigm shift of major proportions" (24)

Mr. Fisher's comment probably echoes the thoughts of many other Canadians, and symbolizes the other body of thought which casts doubt on the existence of the conserver element in today's society.

The need to conserve is unquestionable. The existence of a significant energy conscious segment in our society to warrant labelling it a conserver society and building educational programs as well as marketing strategies to cater to this segment is questionable. In order to answer this question and provide valuable insight to problems faced by the public as well as private sector in regards to energy conversation, information is required.

Traditionally, such information about consumers has been collected by means of sample surveys. To date most of the market research studies in the private or public sector that have attempted to answer questions on identifying socially responsible segments, have been of a similar nature in that they have selected a representative sample of the population, gathered information from members of the sample about their purchase, consumption or use of products or services and presented the results relating people's behaviour or attitudinal slant to certain demographic characteristics such as age, sex, income, education and so on.

It is essential that these basic facts be known, but they do not provide the whole answer. Often more weight is attached to these types of data than is really deserved as the variables are only superficial characteristics of the consumer and may not be very good predictors of market behaviour in regards to the purchase of certain types of products or services, or, in this case, level of energy consciousness. What must be known are the motives, attitudes, interests and opinions which lead an individual to behave in a socially responsible manner or, conversely to adopt a negative attitude towards energy conservation. The impact of energy on our current lifestyle underscores the need to consider these variables.

Purpose And Significance

In response to the need to improve our understanding of man's current stance in regards to energy conservation and test the significance of a conservation oriented segment in our society this study shall attempt to develop a more meaningful description of the consumer than the set of demographic characteristics presently used in most marketing research and show that this description can be practically related to market behaviour regarding energy conservation. In short, this study shall attempt to determine whether an energy conscious consumer segment can be identified and the implications this segment poses for marketing and public policy.

This paper should prove of interest to marketers and those charged with the responsibility of developing energy conservation programs for a number of reasons:

(1) It marks the first time an attempt has been made to profile the energy conscious segment of our society.

(2) It will determine for the marketer whether the energy conservation ethic is a significantly important and viable

segment to warrant the development of marketing programs designed to appeal to consumers who exhibit the characteristics of the conservation ethic.

(3) It will examine the energy consumer from a number of different perspectives including his demographic and psychographic characteristics, his attitudes toward energy conservation, and his usage of and exposure to various media vehicles.

(4) It will attempt to determine those factors which differentiate an energy conscious consumer from the mass of consumers who are less socially responsible in their behaviour towards energy consumption and will seek to indicate to marketers and public policy makers which types of marketing strategies are most likely to appeal to the conserver element in society.

(5) Develop a framework for the implementation of programs aimed at promoting energy conservation.

Specific Hypotheses

The two major hypotheses to be investigated in this study are:

(a) People live according to established behaviour and attitude patterns which can be identified and measured.

(b) These psychographic patterns can be related to consumer behaviour in regards to energy conservation.

As a result, the research is directed toward obtaining information from consumers regarding their activities, attitudes and opinions on numerous aspects of everyday living and to sort out the underlying order in this large number of empirical variables in terms of another, smaller set of variables termed "factors" or "principal components." These factors will then be viewed in relation to their value as predictors of market behaviour with respect to energy conservation.

The alternate hypotheses are:

(a) People cannot be identified according to established behavioural or attitudinal patterns and these attitudes or patterns

cannot be measured.

(b) As a result of not being able to establish that people live according to established behaviour and attitude patterns and identify and measure these variables it is impossible to relate these life-style patterns to energy conservation.

CHAPTER II

LITERATURE REVIEW

Due to the nature of this study, the literature in a number of areas which relate to the problem has been reviewed. These areas are as follows:

(1) Market research studies based on profiling the socially responsible consumer.

(2) Psychographics and their role in market research.

(3) Application of factor analysis and multiple discriminant analysis in market research.

Because research in the above areas has been conducted relatively independently from each of the others, the areas are discussed individually but an attempt is made to show how each is important to this study.

(1) Market research based on profiling the socially responsible consumer.

The emergence of a more society oriented consumer and the implications this type of consumer behaviour poses for decision makers in business and government has been best stated by Kelly (39)

> "Market segmentation based on consumer's societal orientation is emerging, markets will be evaluated according to the degree to which consumers accept the consumer citizen concept and consume as individuals concerned not only with their personal satisfaction but with societal well being.....It is through the analysis of social and environmental developments and through new marketing policies that management responds to the pressures and opportunities presented by social/environmental change."

By late 1975 there were numerous studies available in the marketing literature relating personality, demographic or socio-economic and life-style variables to a broad variety of society oriented consumer behaviour.

The sheer number of studies and their broad focus reflects the increasing interest of market researchers in regards to this socially oriented segment of society. Despite the number of studies and their apparent breadth of focus, there are certain characteristics or elements that seem to be common to them all.

The basic objective of this area of research typically falls into one of three categories:

(1) Measures of the level or degree to which an entire population expresses a certain type of socially desirable behaviour or attitude;

(2) Segmentation studies or profiles of consumers who display a type of society oriented behaviour or attitude;

(3) Analysis of the effect of this type of behaviour on consumer purchasing patterns.

Examples of research devoted to measuring the general level of society's social consciousness are reflected in Simon (73) Murch (56), Barksdale and Darden (4) and Talarzyk and Omura (76). This research indicates that whereas consumers generally were once apathetic or opposed to supporting such issues as resource conservation and pollution control, in recent years there has been a dramatic shift towards a more socially responsible position. Precise measures of the extent of this shift are difficult to establish, due to the lack of longitudinal studies which provide bench marks for comparison purposes.

In the second category, Anderson and Cunningham's work (1) is perhaps the ground breaking study in regard to profiling the society oriented consumer. Kinnear, Taylor and Ahmed (42), is an extension of Anderson and Cunningham's work in that it attempts to improve upon the social responsibility scale as a measure of consumer concern by developing a new scale which incorporates behaviour and attitudinal measures relating to socially conscious purchasing patterns. Barnes and Bourgeois (5), Berkowitz and Lutterman (6), Hustad and Pessemier (35) and Peters (62) are other examples of segmentation studies of socially conscious consumers.

Most of this work tends to support Kelly's observation of the need to isolate various types of society-oriented behaviour. Some studies have been more successful than others providing rich profiles covering a broad range of consumer characteristics. In view of the broad focus and differing approaches of the work in this area one would expect that several different profiles of the socially responsible consumer would emerge. Surprisingly, such is not the case as certain common elements, i.e. age, occupation and education, appear as common distinguishing elements throughout most of these studies.

The last and perhaps most important area of concern involves the examination of the implications of this type of behaviour for the development of marketing strategies and programs. To date, the research conducted in this area has been limited and has yielded mixed results. Some representative studies include Kassarjian (37), Henion (34), Kinnear, Taylor and Ahmed (42), Reizenstein, Hills and Philpot (64) and Fritzsche (25). Most of their results confirm that opportunities exist for the marketing of socially beneficial products but the most-likely-to-succeed marketing strategy for capitalizing on these opportunities is still somewhat unclear. There appears to be a willingness on the part of some consumer groups to pay more for products with socially beneficial attributes. However, the scope of the product categories relevant to these consumers and the degree of price elasticity within these market segments has yet to be defined.

Identification Of The Socially Responsible Segment

Most of the research studies, to date, have employed basically similar experimental designs. Within each design, a common problem faced by all researchers has been how to isolate the socially responsible market segment they wish to study. There appears to be three common techniques that are used to achieve this stratification.

(1) To utilize people who have actually exhibited some form of socially responsible behaviour. For example, Peters (62), and Fritzsche (25) engaged participants at various recycling projects as subjects for their experimental groups.

(2) To utilize members of groups or associations that profess a high level of social concern or represent a socially responsible point of view. Barnes and Bourgeois (5), Hustad and Pessemier (35), and Grupp (29), all use various consumer associations and magazine subscription lists to create their society oriented groups. The assumption behind this approach is that those consumers who join such organizations or subscribe to these magazines are more socially responsible in their behaviour patterns or possess socially oriented attitudes to a higher than average degree.

(3) To use various kinds of surrogate measures. The most popular approach has been to measure individual's degree of social orientation based upon their response to certain scales or indices developed by the researcher. The basic assumption behind the use of these surrogate scales is that by measuring responses on these variables or scales it is possible to approximate or establish the

level of an individual's social concern. Kassarjian (37), Hustad and Pessemier (15), Kinnear, Taylor and Ahmed (42) (43), Anderson and Cunningham (1), Anderson, Henion and Cox (2) and Reizenstein, Hills and Philpot (64) are all examples of research employing surrogate measures of social responsibility.

It appears that much sharper profiles and correspondingly more significant results occur with the use of exhibited behaviour to create the experimental group. Utilizing subjects who have exhibited some form of socially responsible behaviour allows the researcher to obtain a more complete picture of the particular group or individual under study. There is less uncertainty as to who should be considered as a member of the society oriented segment under consideration. The guesswork is eliminated.

As one progresses to the second and the third technique the assumptions necessary to generate the group become more complex and the validity of the group being created is more suspect.

In the majority of cases the data have been obtained through the use of either self administered questionnaires or personal interviews.

The majority of studies which have tried to profile the socially conscious consumer or measure the general level of a given population's society oriented attitudes have described these segments in terms of socio-demographic and personality characteristics. Anderson and Cunningham (1), employed six demographic and six socio-psychological variables. Kinnear, Taylor and Ahmed (43) used seven socio-economic variables, twelve personality scales and a measure of perceived consumer effectiveness. Kassarjian (37) employed demographic variables and Anderson, Henion and Cox (2) used six demographic and six attitudinal variables while Reizenstein, Hills and Philpot (64) employed demographic variables exclusively in their work.

Only recently has the use of lifestyle dimensions and media preferences begun to enter into this analysis of the society oriented consumer segment. Barnes and Bourgeois (5) provide a good example of this more complete approach to consumer behaviour analysis.

The approach to data analysis in all studies has been very similar. The common objective is to reduce a large raw data base to a smaller set of variables which account for most of the variation between the groups under study on a specific

dimension of social responsibility. Factor analysis, multiple regression, and discriminant analysis have been the techniques most popular for this purpose, to date. The results have yielded, not surprisingly, a consistent profile of the socially responsible consumer as shown in Table 1 on the following page.

Implications Of The Research

Based on this work the following comments appear appropriate. In regard to the ability to identify unique socially concerned market segments, the belief of the individual insofar as his ability to influence the behaviour of society appears to be the most effective discriminating variable between those who possess a strong feeling of social responsibility and their more apathetic counterparts. (1) (37) (44)

A number of studies also indicate that society oriented consumers tend to be younger than average, better educated, in higher status occupations, and making above average incomes. (5) (4) (2) (64) (62)

Table 1.

Profile of the socially responsible consumer

Variable Type		Source				
DEMOGRAPHIC-SOCIOECONOMIC	Younger than average	(1)	(2)	(3) (6)	(4) (64)	(5) (76)
	Better education	(2)	(5)	(6) (62)	(17) (64)	(47) (73)
	Higher status occupations	(1)	(2) (47)	(3) (62)	(17) (64)	(29) (74)
	Average income greater than $14,000	(5)	(43)	(47)	(62)	(64) (73)
PERSONALITY	Less dogmatic	(1)	(2)			
	Less alienated	(1)				
	Less conservative	(1)	(2)	(3)	(35)	(73)
	Less status conscious	(2)	(5)	(42)		
	More cosmopolitan	(1)	(2)	(5)	(43)	
	Intellectually curious	(43)				
	Moderately high in harm avoidance	(1)	(43)			
ATTITUDE	Strong belief in individual's ability to change current problem	(2)	(17)	(35)	(37)	(43) (56)
	Negative feelings toward "big business" and in favour of stronger government controls	(4)	(35)			
	Feel a particular problem is the most important issue facing society today	(43)	(62)			
	Tolerance to new ideas and understanding	(43)				

Table 1. Continued

Variable Type		Source			
MEDIA	National and international as as opposed to local	(5)	(29)		
	Professional and cultural	(5)	(29)		
PSYCHOGRAPHIC	Likes to belong to and participate in community and service organizations	(5)	(6)	(35)	(62) (63)
	Places more emphasis on durability as opposed to fashion	(5)			
	Perceives value for money as opposed to "pizzazz"	(5)			

Unfortunately, in the research employing other measures such as media preferences or lifestyle factors, these variables do not appear to be as effective discriminators as the demographic and attitudinal characteristics mentioned above. Their major contribution is in fleshing out a more descriptive profile of the society oriented consumer.

Perhaps the major criticism of the work to date is the adherence to standard demographic and socio-economic variables which are of limited use for market segmentation or the design of advertising strategies. What is required is a more complete look at the individual or the type of behaviour under study.

A second criticism of the current research is its reliance on the assumption that all other things are equal except for the specific variables under consideration and the type of behaviour being studied. In reality all other things are not equal; it is much more complex. Trying to relate a single personality scale or measure of socio-economic standing to some type of society oriented behaviour is somewhat naive. The process is not that simple. There is a need to study the whole individual and not just a limited number of variables concerning that individual.

Thirdly, there has been no attempt to conduct a longitudinal study in regard to those who are currently sympathetic or unsympathetic towards a particular type of socially oriented behaviour. Is society, in general, moving towards a more responsible position? Are some groups within society moving faster than others? Are some moving away?

An unanswered question worthy of consideration is what proportion of the population exhibits a particular society-oriented trait? Does the society-oriented consumer exist in significant enough numbers to warrant the development of marketing programs geared to rifling in on this market segment? Kassarjian, (37) has made the comment that there does appear to be a viable segment for a company promoting a product with some perceived socially beneficial attributes. Other research generally supports Kassarjian's comment in that there does appear to be an opportunity for somebody who markets their product along a socially responsible theme. Before entering into such a program the significance of this segment must be established to warrant the expenditure of funds. A point to consider in any marketing campaign of this nature is that programs designed to appeal to this segment must be sincere and not merely a re-working of old themes. Such lip service could

be interpreted as tokenism, particularly by the society-oriented consumer.

From these studies it appears that possession of a socially responsible attitude does not necessarily translate into socially responsible behaviour, Fritzsche (25). This may be true for several reasons. Individuals may support the socially oriented viewpoint but feel their individual circumstances dictate that they behave in a contrary manner. For example, consumers may generally support energy conservation efforts but still feel they need the use of a big car to satisfy their personal transportation requirements.

In addition, products that may be labelled socially beneficial, i.e. non-phosphate detergents, recycled paper products, etc., may not be as aggressively promoted in the market-place. This can result in a generally lower level of consumer awareness as to their existence and distinguishing characteristics from other competing brands.

This information is crucial for decision makers in business or government for formulating programs to cultivate this type of behaviour. It would seem that communications geared to the promotion of energy conservation should emphasize not only the attitudes but the expected behavioural norms as well.

Psychographics And Their Role In Market Research

Psychographic studies are based on the proposition that the more you know about whom you are attempting to communicate with, the more effectively you can communicate with them. The "who" is usually a particular segment under the researcher's consideration such as in this study, the "energy conscious consumer." The question asked is "how is this group of consumers different than those who behave in a more "socially unresponsible manner?" Demographic and socioeconomic variables would supply the traditional data on sex, age, education level, occupation, income and so on. With psychographic analysis, there is an attempt to provide a three dimensional view of these consumers that may be more helpful in communicating with them. Psychographic characteristics combined with demographic and socioeconomic data help construct a profile of the segment under study so those charged with styling communications and policy to deal with them can get a better, more realistic picture of those with whom they are trying to communicate.

More specifically

> "Psychographics seeks to describe the human characteristics of consumers that may have a bearing on their response to products, packaging, advertising and public relations efforts. Psychographic variables can be conceived as falling into three classes:

(1) Product Attributes - as proposed by the marketer and/or perceived by the consumer.

(2) Lifestyle - evidenced by behavioural variables illustrating the use of time, services and products by the consumer.

(3) Psychological - often expressed as self-concept, but also involving interests and opinions." (83)

Why the shift to psychographics and how do research findings to date employing this technique relate to this study?

Traditionally marketing researchers have used demographic and socioeconomic data to develop market segments and predict the market behaviour of individuals therein.

Research which has relied solely on demographic and socio-economic variables has had limited success in accounting for the difference between segments. When linear models are fitted to demographic and socioeconomic data, typically the results are statistically insignificant and discouragingly modest proportions of the variation between groups are explained by these variables.

Conversely, the differences produced by psychographics are larger and account for greater proportions of the behavioural variances between groups.

Comparisons of psychographic and demographic-socioeconomic research can be found in reports by Wilson (87), Good and Suchsland (27), King and Sproles (41), Pessemier and Tigert (61), Burger and Schott (8) and Barnes and Bourjeois (5) to mention a few. All these studies show that the predictive ability of psychographic variables is substantially higher than the predictive ability of demographic variables.

The usefulness of psychographic profiles in comparison to those offered by demographics is another factor accounting for the increasing favour of lifestyle analysis. Wells and Tigert (86) make the following comment.....

> "Demographics have been and continue to be extremely useful, but they are unsatisfying. They lack color. They lack texture. They lack dimensionality. They need to be supplemented by something that puts flesh on bare statistical bones. Psychographics is that something."

The richness of psychographics and a reflection of its usefulness is evidenced by the number of psychographic profiles that market research has produced to date. King and Sproles (41), Reynolds and Darden (65), and Tigert (78) have produced profiles of opinion leadership. Donnelly (18), Jacoby (36),

Pessemier and Tigert (61) have given us a profile of innovativeness, Good and Suchsland (65) furniture buying, Kinnear and Taylor (44) environmental concern, Anderson and Cunningham (1) social responsibility, Barnes and Bourgeois (5) consumer activism. The conclusions of these authors are the same, psychographic data provides richer descriptive detail than demographic data.

It should be noted that demographics' shortcomings as predictors or descriptive variables does not warrant their exclusion from further research. Instead what is promulgated is that less weight be given to demographic variables and that they be employed in conjunction with lifestyle data. The philosophy of combining the two has proven to yield richer profiles than psychographic or demographic data alone.

The usefulness of psychographics to develop colorful profiles and account for greater variances between groups than demo-socioeconomic variables has been substantiated by market research. But what about their reliability and validity as a research tool? Are these conditions met by psychographics?

What about the reliability or freedom from random error of psychographics in relationships such as "predictions" of dependent variables like ecological concern or level of social responsibility? The answer to the question is particularly important because unreliable measurement can in themselves make strong relationships appear weak.

Research by Bruno and Pessemier (7) and Darden and Reynolds (14) concludes that whether the practioner employs homemade or standardized psychographic measurements they both have reliability high enough to support fairly strong relationships.

As in any other research study the possibility of being deceived by chance relationships and overanalyzing these relationships also applies to studies employing psychographics. As a means of minimizing this happening, various studies have either replicated their data as a means of checking or employed a "split half" approach to the data analysis.

The reliability of psychographics to relate to each other in much the same manner from study to study is confirmed by the work of Bruno and Pessemier (7) .

> "The wide range of variables employed and the constructs to which they relate appear to be sufficiently reliable for both practical and theoretical work."

The reliability of the segments produced depends on

1. whether sharply differing homogenous groups of consumers actually exist in the responding population

2. by the number of variables used

3. the number of segments extracted, the greater the number, the harder it is to replicate the study

The question of validity, the degree to which a measurement really measures what it was intended to measure, as it relates to psychographics appears as follows:

> "The evidence shows that psychographic variables generally relate to each other, demographics and to use of services or products as well as media in ways that make perfectly good sense." (84)

The evidence on predictive validity shows that psychographic variables seldom account for large portions of the variances of individual behaviour but are capable of producing

substantial differences between groups of consumers and these differences are often larger than those produced by demo-socioeconomic variables. Because of this ability the use of psychographics is increasingly being favoured in segmentation studies.

Implications of the research

Most psychographic research attempts to go beyond demographics into areas that are relatively new and unfamiliar. The added dimensions have run from one to several hundred and embrace a wide range of content including activities, interests, opinions, values and personality traits. In some cases the variables are homemade and in others they are borrowed from standardized attitude or personality inventories.

Psychographic research attempts to identify and profile consumer groups in a manner clearly understandable to the copywriter and media stratigist. The underlying premise is the more we know about our target market, the more likely we will be able to design effective copy and to select effective media to reach and communicate with the target market.

Typically, psychographic questionnaires possess the following characteristics:

1. They contain many questions with some surveys running over 70 pages.

2. They are self-administered with the lifestyle section consisting of a series of statements to be answered on a Likert scale.

3. The psychographic questions are either general, covering forty to fifty hypothesized dimensions, or product specific, with a large number of questions covering three or four product categories.

4. They are usually designed to profile market segments, i.e. heavy users, heavy readers, users of Brand "A", although they are not limited to these areas. Lifestyle research can be used, for example, to profile an ecology conscious consumer, type of political affiliation or, in this paper, energy consciousness.

5. Most questionnaires are precoded and are therefore much more amendable to complex multivariate analysis.

6. In most cases the large set of variables generated by lifestyle research is reduced to a smaller number of more abstract scores or factors and this reduced set of independent variables is then linked to the dependent variable by some means of multiple regression.

In summary, there is a need to communicate with the energy conscious consumer from a public as well as private point of view. To communicate with this segment and communicate effectively, more must be known about this type of consumer in order to establish what type of appeals and media will effectively reach him.

Psychographic research attempts to address man as a system, and to understand him as a consumer. It seeks to quantify activities, interests, opinions and behaviour by systematically searching through a relevant set of dimensions specific to the problem at hand. Because of these characteristics it is felt that psychographics is an important tool in attempting to communicate with the consumer.

To the extent that demographic characteristics may themselves be related to both lifestyles and behavioural patterns, they play an integral part in any analysis. However in some instances, isolated by the research cited, demographics may provide little or no discriminatory or descriptive power. When this phenomenon occurs, psychographic analysis can play its strongest role.

Factor and discriminant analysis in market research

Factor analysis is a multivariate statistical technique aimed at exploring the relationships among a total set of observed variables. Unlike multiple regression in which one variable is explicitly considered the criterion (dependent) variable and all others as the predictor (independent) variables, all the variables in factor analysis are considered simultaneously. Each observed variable is considered as a dependent variable that is a function of some underlying latent and hypothetical set of factors. Conversely, one can look at each factor as a dependent variable that is a function of the observed variables.

Most factor analysis programs require as input product-moment correlation coefficients. The correlation can be between variables (R-type) or between individuals (Q-type). R-type is the more common.

Factor analysis is not a unitary concept. There are several methods of factor analysis available which do not necessarily yield the same results. Therefore, factory analysis is more a set of techniques than a single unique method.

In marketing research, factor analysis performs four basic functions. First is factor analysis' data reduction capabilities. Given an array of correlation coefficients for a set of variables, factor-analytic techniques enable the researcher to see whether some underlying pattern of relationships exist such that the data may be "re-arranged" or "reduced" to a smaller set of factors or components. These factors or components may then be taken as source variables accounting for the observed interrelations in the data. For example, if several media are rated on one hundred different rating scales, the problem would be to present these ratings to a decision maker who does not have the time to study them. Factor analysis will summarize the information and make it much more manageable.

Secondly, factor analysis can be helpful in pointing out relationships among observed values that were there all the time but difficult to recognize. For example, a factor analysis of cosmetic use once suggested that hair spray use is more closely associated with face cosmetics, such as eye shadow and lipstick, than with other products women use specifically for their hair (85). It also showed that hair spray,

eye shadow and lipstick belong in a group of purchases and activities that include the number of movies attended in the past month.

Thirdly, factor analysis can point out the latent dimensions that account for the relationships among product preferences or other kinds of ratings obtained in market studies. For example, if we are exploring the dimensions consumers use when selecting a particular brand of coffee and ask them to rate the various brands according to preference, factor analysis may reveal some salient characteristics of coffee that underly relative consumer preferences. These characteristics may turn out to be sensory attributes, such as aroma, strength of flavour or caffeine content. They might be intangible attributes, such as stereotyped product images. The results, whatever they are, will be of some help to the marketer who is trying to organize his thinking.

Finally, factor analysis can be employed as one step in empirical clustering of products, media, stimuli or people.

The acceptance of factor analysis in the field of market research is illustrated by the variety of content areas to which it has been applied. The principal component technique (followed

by varimax rotation) appears to be the most popular. Wells and Sheth (85), Massey and Frank (49), Haley (30), Bruno and Pessemier (7) have employed factor analysis in the summarization of personality, benefit seeking, lifestyle, demographic and socioeconomic data. Stoetzel (75) provided an early application of this approach in the context of liquor preferences and Twedt (81) applied factoring techniques to advertising readership. Since these early studies Muhkerjee (54) has applied factoring methods to food preference while Wells (82) has used them in various aspects of television programming. Kinnear, Taylor and Ahmed (43) utilized factor analysis in developing a profile of the ecology conscious consumer. Peters (67) and Tigert (78) also developed profiles of various types of consumers based on factor analysis.

To conclude, like any other statistical procedure, factor analysis starts with a set of imperfect data. The results of any single analysis are therefore always less than perfectly dependable.

The objective of discriminant analysis is to classify individuals or objects into one or more mutually exclusive and exhaustive categories or classes on the basis of a set of independent variables. Mathematically, discriminant analysis is

simply a "scoring system" that assigns a "score" to each candidate or object. This score is the weighted average of an individual's numerical values based upon his responses to certain questions such as lifestyle factors, demographics and personality variables. The scores that discriminant analysis generates are then used to assign individuals to one of two or more mutually exclusive and exhaustive groups.

A more precise description of discriminant analysis according to Nie (59) is as follows.....

> Discriminant analysis begins with the desire to statistically distinguish between two or more groups or cases. To distinguish between the groups the researcher selects a collection of discriminating variables that measure characteristics on which the groups are expected to differ. The mathematical objective is to weight and linearly combine the discriminating variables so that the groups are forced to be as statistically distinct as possible."

In marketing research, discriminant analysis performs two basic functions. In market segmentation studies discriminant analysis assists in the classification of individuals or objects into certain groups or segments. Closely related to its classification function, discriminant analysis identifies

which variables are the most effective in discriminating among the different classes.

With the aid of discriminant analysis, the market researcher can develop a marketing plan tailored to meet the needs of a distinct market segment. With the knowledge of what characteristics differentiate a member of this segment from a non-member, more efficient and robust communication programs can be structured.

One of the first successful applications of discriminate analysis was in credit selection (53). Good credit risks were separated from bad credit risks on the basis of demographic and socioeconomic variables. William Massey (49) used discriminant analysis to ascertain the similarities among the audiences of five FM radio stations. Massey feels that the technique has excellent potential for providing a set of aggregate similarity indices for a number of audiences of various advertising media. Two main advantages of discriminant analysis according to Massey are that because it is a multivariate statistical technique the interrelationships between the explanatory variables are taken into account statistically, the same as in multiple regression. Secondly the results of the analysis are presented in a compact format that is easy to interpret and communicate.

Evans (22) applied discriminant analysis to demographic and psychological factors to try and identify Ford and Chevrolet buyers. King (40) used the same technique to try and determine the variables that distinguish between early and late adopters of new fashion. Similar to King's work, Pessemier (60) employed discriminant analysis to answer the question of whether new product buyers, as a group, could be identified. Claycamp (11) used discriminate analysis to differentiate between those people who save money in commercial banks and those saving at savings and loan associations. Other examples of the wide acceptance and use of discriminant analysis are as follows, Frank and Massey (49), consumer behaviour toward new products or brands, Barnes and Bourjeois (5), the difference between consumer activists and the rest of society, Kinnear, Taylor and Ahmed (43), determining the characteristics of ecologically concerned consumers. Anderson and Cunningham (1) have applied discriminant analysis to socio-psychological variables in discriminating consumers' degree of social consciousness. The list goes on and on but the point is that discriminant analysis has emerged as a useful and accepted tool in market research.

To conclude, discriminant analysis like any other statistical technique has its fair share of methodological errors. particularly in the areas of validation and chance criterion.

Like factor analysis, the researcher should attempt replication or analysis utilizing a split half approach to avoid spurious impressions or negative results based upon chance.

CHAPTER III

STUDY DESIGN

The Sample

The sample chosen is designed to be representative of the English speaking consumer. Geographically the cities of Halifax, Toronto, Winnipeg, Regina, Edmonton and Vancouver have been selected. The distribution of "prospects" based on a percentage of the national figure with minor adjustments made to improve the size of the smaller centres is shown in Table 2.

Group 1 represents the average Canadian consumer and is based on a random sample of these metropolitan areas purchased from a local research house.

Group 2 represents the "energy conscious" consumer and was constructed manually utilizing a random selection of requests made by Canadians from across Canada for a booklet entitled "100 WAYS TO SAVE ENERGY AND MONEY IN THE HOME" (15). It is assumed that a person who took the time and effort to write a special request for this type of publication possesses a higher than average concern for matters related to energy and thereby qualifies as a prospective "energy conscious" consumer.

Table 2
Sample distribution

City	Group 1 Average Consumer	Group 2 Energy Conscious Consumer	Total
Halifax	75	75	150
Toronto	700	700	1400
Winnipeg	177	177	354
Regina	70	70	140
Edmonton	150	150	300
Vancouver	328	328	656
TOTAL	1500	1500	3000

The Questionnaire

The instrument used to gather the data is a self-administered questionnaire developed by the author (Appendix I). Prior to executing the survey the questionnaire was pre-tested to remove ambiguities and improve its readability. The questionnaire consists of four main sections.

Part A - Psychographics.....This section consists of sixty-six statements designed to gather psychographic type data. The subjects respond to each statement on a six point Likert-type scale ranging from strongly disagree to strongly agree. The life-style statements have been selected so as to pertain to as broad a range of the subject's activities, interests and opinions about everyday living as possible. These statements have either been developed by the author or selected from previous studies employing this technique such as Barnes and Bourjeois (5), Wells (83), Tigert (78) and Good and Suchsland (65).

Included in this section are statements found to be effective in measuring certain social psychological dimensions such as alienation, dogmatism, status consciousness, cosmopolitanism, personal competence and leadership. These statements have been extracted from the work of Berkowitz and Lutterman (6), Middleton (52), Troldahl and Powell (80), McClosky (50), Kaufman (38) and Dye (20).

Part B - Attitudes Towards Energy.....This section is made up of statements developed by the author or a modification of similar statements from the work of Kinnear and Ahmed (43). Anderson and Cunningham (1), and Talarzyk and Omura (76). These statements have been designed to add an attitude towards energy dimension as well as provide information useful in developing an index of concern on matters related to energy.

Part C_1, C_2, C_3, C_4 - Exposure To And Interest In Print and Broadcast Media.....The questions in this section relate to the subject's exposure to and interest in newspapers, magazines, radio and television. A subject's interest and exposure to the various sections of the newspaper is assessed on a scale of 1 to 4 from read thoroughly to never read. For magazines the same technique is employed except by type of magazine.

Radio listenership is measured by program type from regularly listen to never listen on a scale of 1 to 4. Interest in television, like radio, is indicated by type of program from regularly watch to never watch on a scale of 1 to 4.

Section D - Demographics.....The questions in this part are of the standard statistical variety with the exception of those related to car ownership, miles driven and energy used to heat the home. These questions have been included as they offer potential for providing additional insight into the possible differences between the two groups.

Response Frequency

The overall response frequency and distribution appears in Table 3. Overall response was thirty-eight percent but an unusable proportion of questionnaires dilutes this figure to thirty-six percent. Although the rate of response for the average Canadian, Group 1 is somewhat less than the energy conscious group, Group 2, thirty percent vs. forty-one percent, the percentage distribution by city for the two groups is almost identical.

To stimulate the subject's response, a postcard reminder was sent fifteen days following the initial mailing (Appendix II). The impact of this tactic is shown in Diagram 3.

Table 3

Response frequency

	Sample		Response		% Response		% of Total Response	
	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2
Halifax	75	75	24	36	32%	48%	5%	6%
Toronto	700	700	185	268	26%	38%	41%	43%
Winnipeg	177	177	57	89	32%	50%	13%	14%
Regina	70	70	21	25	30%	36%	5%	4%
Edmonton	150	150	73	82	49%	55%	16%	13%
Vancouver	328	328	91	119	28%	36%	20%	19%
TOTAL	1,500	1,500	451	619	30%	41%	100%	100%

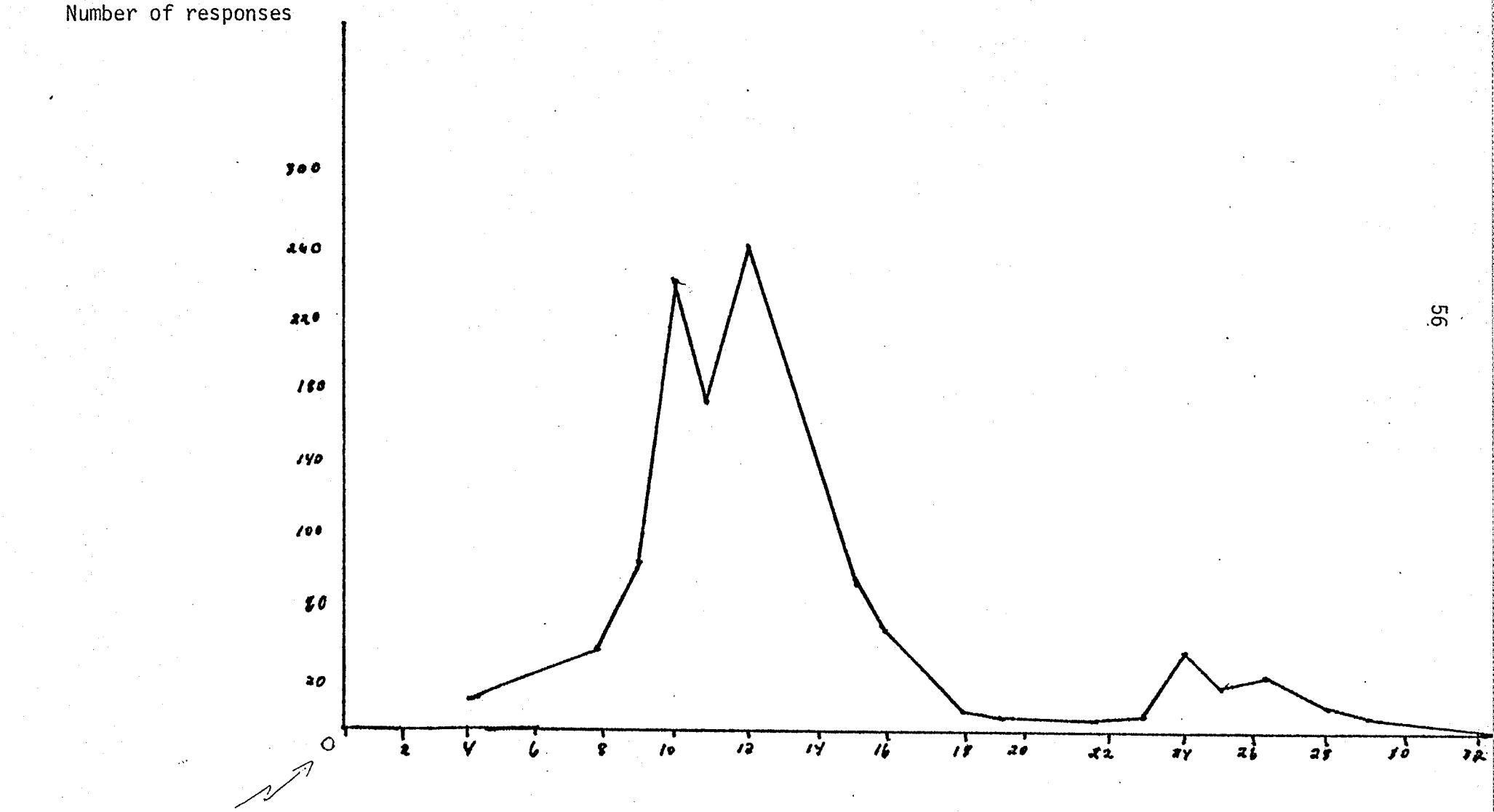
Group 1 = The average Canadian consumer

Group 2 = The energy conscious consumer

Overall Response - $\frac{1070}{3000}$ = 36%

Figure 3

Response Vs. Time



CHAPTER VI

PREPARATION OF DATA FOR ANALYSIS

Some basic housekeeping was performed on the data in order to prepare it for analysis. This tidying up involved checking for frequency of missing data as well as testing the validity of the average Canadian group as a measure of the Canadian consumer.

Both groups were submitted to SPSS sub-program frequencies (59) to determine the basic distribution characteristics of each of the variables to be used in subsequent statistical analysis as well as providing a basic reference document.

The mean, mode, medium, variance, skewness, standard deviation, Kurtosis as well as maximum and minimum values have been calculated for each variable. There is a surprising low frequency of missing values, never exceeding .019 for any variable. Because of the small number of missing values and the relatively large sample size the author decided to remove all missing data from further analysis. It is felt this impact would be negligible. First glance at the data reveals good distribution on all variables with no categories left blank.

To test the representativeness of the random sample in comparison to the overall population of these metropolitan areas, the demographic data from the sub-program frequencies has been compared with similar information from the cities under study based on Statistics Canada 1971 Census as well as a 1975 national survey by the federal government (9). Results of the comparison process appear in Table 4. It appears the respondents approximate the total population in terms of age distribution (slightly heavy on the 25 to 54 category), marital status, dwelling ownership as well as type of dwelling and car ownership. In terms of education and income the respondents tend to be above average in both categories. The author believes this is partly attributable to the type of questionnaire utilized in this study. The questionnaire is quite long and requires a reasonable degree of comprehension to complete. This would tend to eliminate the poorer educated whom, it seems fair to assume, are generally in the lower income categories. The author feels the sex ratio variance in males to females, between Group 1 and the 1971 census data is due to the manner in which the sample was selected. Candidates were randomly drawn from telephone directories where it is usually the male head of the household who has his name listed.

To conclude, the sample does not appear to be entirely representative of the overall population on all variables but does include, in the author's opinion, sufficient similarity in structure to the population on enough variables to warrant being considered as a representative sample.

Comparison of respondent's profile on selected demographic variables
With general statistical data

Demographic Characteristic	Group 1 Frequency	%	1971 Census %	Federal Survey %
Sex				
Male	301	67.	49.	50.
Female	150	33.	51.	50.
Age				
16 - 18	4	1.	8.	
19 - 24	51	11.	18.	56.
25 - 34	130	29.	22.	
35 - 44	76	17.	11.	
45 - 54	99	22.	18.	37.
55 - 64	55	12.	13.	
65 & Over	36	8.	10.	7
Marital Status				
Single	91	20.	28.	N/A
Married	313	69.	64.	N/A
Widowed	26	6.	6	N/A
Separated/Divorced	21	5.	2.	N/A
Education				
Less than Grade 8	34	8.	24	N/A
Some University	65	14.	8.	26.
University Degree	70	16.	10.	

Income	Group 1 Frequency	%	1971 Census %	Federal Survey %
7,999 or less	73	16.	51.	18*
8,000 to 19,999	239	53.	41)	82.
20,000 & Over	131	31.	8)	
Dwelling				
Own	284	64.	64.	
Rent	163	36.	36.	
Type of Dwelling				
Single Detached	267	59.	66.	
Mobile Home	2	0	1.	
Nplex	52	12.	8.	
Apartment	98	22.	24.	
Part of a House	23	5.	N/A	
Car Ownership				
None	50	11.	19.	
One	242	54.	54.	
More than 1	159	35.	27.	

* Estimate - Category did not match perfectly

Raw Data

To prepare the data for analysis the following steps were taken. The large number of variables in Sections A, B, and C, of the questionnaire have been reduced to a more manageable level through the use of principal components, factor analysis with varimax rotation. Missing values were dropped from further analysis.

The first step in the factor analysis involves calculation of appropriate measures of association for the set of relevant variables in the data base. For the purposes of this study, correlations between independent variables (R-type) has been selected. There are various forms of correlation coefficients, the type chosen by the author is called the Pearson product-moment correlation coefficient.

The Pearson correlation coefficient "r" is used to measure the strength of the relationship between the two interval-level variables. The strength of relationship indicates both the goodness of fit of a linear regression line to the data, and when r is squared, the proportion of variance in one variables that is explained by the other.

Mathematically, r is defined as the ratio of co-variation to the square root of the product of the variation in X and the variation in Y, where X and Y symbolize the two variables. This corresponds to the formula (59)

$$r = \frac{\sum_{i=1}^{N} (X_i - \bar{X})(Y_i - \bar{Y})}{\left(\sum_{i=1}^{N} (X_i - \bar{X})^2\right)\left(\sum_{i=1}^{N} (y_i - \bar{y})^2\right)^{1/2}}$$

where X = ith observation of variable X

Y = ith observation of variable Y

N = number of observations

$\bar{X} = X_i/N$ = mean of variable X

$\bar{Y} = Y_i/N$ = mean of variable Y

Six correlation matrices have been calculated, one for each section of the questionnaire, A, B, C_1, C_2, C_3, C_4. In reference to the formula the variables X and Y are the various questions within each section. For example, in section A of the questionnaire, the sixty-six lifestyle statements have been correlated to one another yielding a 66 x 66 correlation matrix. The correlation coefficients between variables in sections A, B, C_1, C_2, C_3, and C_4 are shown in (Appendix III).

Extraction of Factors

Psychographic, attitudes toward energy, and media factors are then developed by subjecting the correlation matrices developed in the preceeding analysis to factor analysis.

As mentioned previously factor analysis is basically a technique for reducing a large number of tests or measurements, each made on numerous persons or objects, to a much smaller, more manageable number of variables or factors. These mathematically derived factors describe the inter-relationships between the variables. There are numerous factoring techniques available, but discussion here shall be limited to principal components analysis since it has been selected for this exercise.

Principal component factor analysis is a technique which systematically extracts factors sequentially that are orthogonal (uncorrelated) to each other. The first factor that emerges accounts for the most variance in the original measures correlated. The second factor accounts for the next most and so on. The criteria to stop factoring is when the eigenvalue of the next factor extracted drops below 1.0. The factor with the low eigenvalue is discarded and the factoring process stopped.

From the correlation matrices, factor analysis extracts the underlying factors which are orthogonal to each other and which account for most of the variability in the original set of data from which the correlations are obtained.

It is not the aim of this paper to delineate the mathematics involved in going from the correlation matrix to a table of factor loadings. The computations involved are quite complex and involve the solving of many equations simultaneously, one for each correlation in the matrix. One such equation would look like this (63):

r_{ab} = (A's loading on factor I) X (B's loading on factor I)
+ (A's loading on factor II) X (B's loading on factor II)+...
+ (A's loading on factor N) X (B's loading on factor N).

where r_{ab} = the correlation coefficient between variable A and variable B.

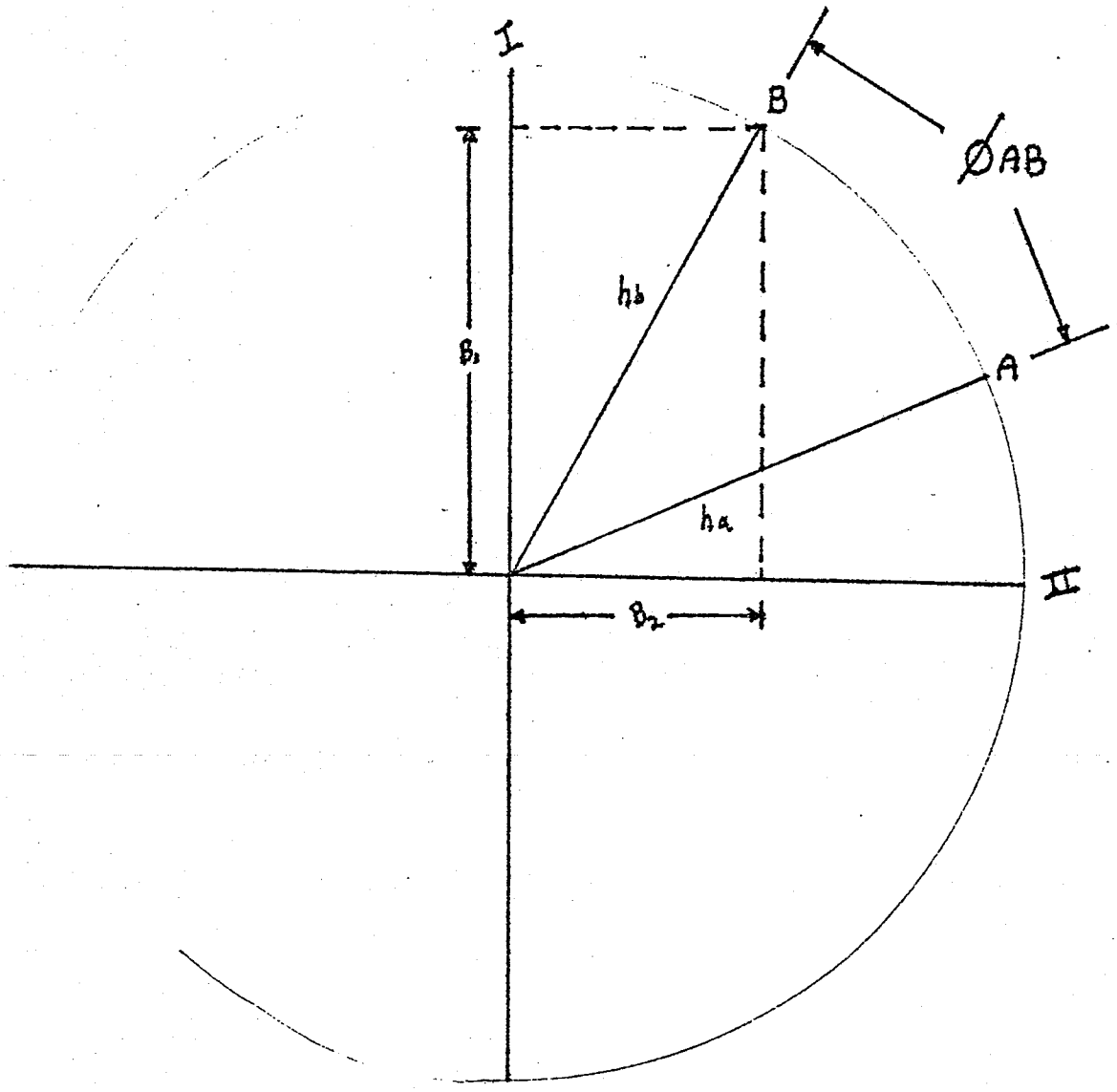
The objective is to find the loadings on the above equation which best reproduces the correlations between A and B as well as all other correlations in the matrix. Once solved, it moves on to the next series, and so on.

Diagrammatically, the solution would be a space with as many dimensions as there are factors. In graphical form each measurement would be denoted by a point whose distances from the axes (each of which represents a factor) would represent factor loadings. If lines were to be drawn to join each of these points to the origin , the angle between any pair is a simple function of the correlation coefficient between the measurements they represent. The correlation coefficient is the cosine of the angle.

For example, the solution of a case between two tests assumed to have only two common factors is shown graphically in Figure 4. The points A and B have been joined to the centre or origin and the square of the radiating lines or "test vectors is equal to the communality of the variable or the correlation of the variable with itself. In this example $h_a = h_b = 1$ but this is not necessarily the case. The circumscribed circle of unit radium is intended to represent the fact that any point on the circumference indicates that the whole if the variance of that set of measures is completely accounted for by the two common factors.

Figure 4

Graphical representation of the relationship between two tests - A and B, assumed to involve only two common factors (32)



It is evident that the relationship between tests A and B would be preserved even if the reference axes of factors I and II were allowed to rotate to new positions. Rotation of these axes is often used as an extension of principal component analysis in order to obtain more meaningful factors. Orthogonal analysis utilizing varimax rotation is the method selected for this study. The varimax method obtains a rotation of the factor axes so as to minimize the number of measurements in which any one factor occurs.

As a very rough analogy, rotation is something like staining a microscope slide. Just as different stains reveal different structures in the tissue under study, different rotations reveal different structures in the data, even though, in both cases all the structures are always actually there.

Different rotations give results that appear to be entirely different. From a statistical point of view, all results are equal, none superior or inferior to others; but from the standpoint of making sense of the results of factor analysis selecting the right rotation is extremely important.

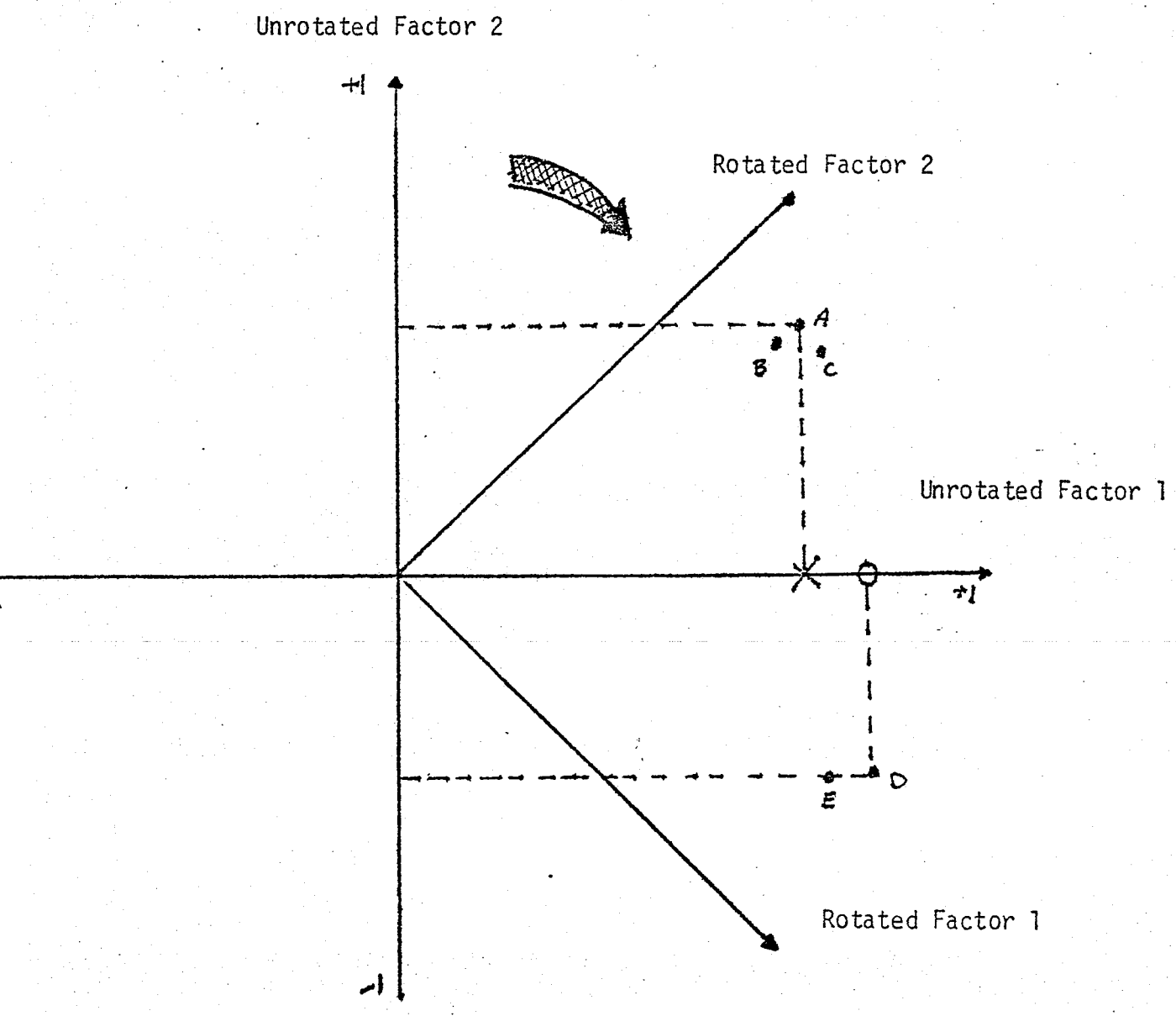
Figure 5, in which five variables (A, B, C, D and E) are depicted in a two-dimensional space will serve to clarify this exercise of rotation.

On the unrotated first factor all the variables load very high in the positive direction, while variables E and D are moderately high in the negative direction on factor 2. A's loading on the unrotated factors is indicated by the crossmarks on each axis; the distance of these marks from the origin represents the loadings. Likewise, the loadings of D are indicated by circles. Note that D's loading on the unrotated second factor is negative. Not until rotation is it obvious that there are two clusters of variables: A, B, C and D, E. The comparison between the two factor loadings before and after rotation are generally presented in tabular form as follows.....

	Unrotated		Rotated	
	Factor 1	Factor 2	Factor 1	Factor 2
VAR A	.75	.63	.14	.95
VAR B	.69	.57	.14	.90
VAR C	.80	.49	.18	.92
VAR D	.85	-.42	.94	.09
VAR E	.76	-.42	.92	.07

Figure 5

Graphical description of an orthogonal factor rotation (59)



Rotating the original axis to the dotted lines reveals the new factor loadings. The communality for each variable remains the same regardless of rotation. Basically this means that the rotated factors, taken together, account for exactly the same amount of the total variation as the unrotated factors. It is just that the weight of each variable on each factor is now redistributed.

The various loadings, resulting from the factor analysis, portray the degree to which individual items represent the factor as a whole (85). Therefore, if high loaded items on a factor are thought of as a group, the highest load items are the best instances of whatever it is that holds the group together. The loadings are a numerical quantity ranging from -1.00 to +1.00. Negative loadings are interpreted as just the reverse.

Complete details on the rotated factors and their respective loadings are presented in (Appendix IV).

For each subject a factor score has been calculated utilizing the composite estimate technique discussed by Rummell (69) and Cattell (10). The respondent's factor score on a particular factor is simply the sum of the subject's responses to the statements which loaded greater than or equal to

.35 on that factor. The variable's factor loading is used to weigh the variables contribution to the factor score. Because the means and standard deviations of the selected variables for a particular factor differ , they have been standardized so that the variables with larger means and standard deviations will not unduly influence the calculation of the factor score. The formula for this calculation appears as follows:

$$\text{Factor Score} = L_{v1} **[(V_1 - x_1) / y_1] + LV_n **[(V_n - x_n) / y_n] / n$$

where

L_{v1} = factor loading on selected variable .35 or greater

V_1 = subject's response on variable selected

x_1 = group mean on selected variable

y_1 = standard deviation of selected variable

n = # of variables included in factor

The calculation of the factor scores for those variables found significant at the .001 level as a result of the univariate t-tests is presented in Appendix V and is representative of how all other factor scores have been calculated.

These scores are then utilized as input to the multivariate, univariate and discriminate analysis programs. It is important to note that all factors and factor loadings utilized in calculating each respondent's factor score have been generated using Group 1 data only. The reason for utilizing this group is based on the original objectives of the study, to see if the energy conscious consumer is different from the average Canadian consumer. By creating a structure based on the average Canadian consumer's response we can then compare the responses of the energy conscious consumer group with this structure to see how well they conform. Creating factors based on a combination of the two groups would tend to compromise the differences between the two groups and probably bias it towards one or the other.

The labelling of the factor dimensions is a rather subjective procedure. Whatever best typifies the common element that seems to underly the various questions in the section under study has been chosen.

Tables 5 to 10 illustrate some of the basic concepts of factor analysis and show how these dimensions have been determined. "Factor loading" represents the results of the factor analysis. Only the strongest factors for each section are presented here. The remainder are presented in similar form in Appendix VI of this study.

Table 5

Psychographic factor 1

Question Number	Right winger	Factor Loading
40	Today's Youth Are Running Away From Reality.	.59
47	Young people have too many privileges today.	.56
45	People should go to church regularly.	.51
28	People caught smoking marijuana should go to jail.	.50
35	There is too much emphasis on sex today.	.48
55	On the job, security is more important than money.	.48
36	The only way to cure many of society's problems is through increased government control.	.45
41	I will probably switch jobs at least once in the next four years.	-.45

Proportion of total variance - 25.9%

Table 6

Attitude toward energy factor 1

Anti-Conservationist

Question Number		Factor loading
3	Recycling centres are just a passing fad.	.61
10	Products that reduce energy consumption are not worth the extra cost.	.56
8	In Canada there really isn't as strong a need to conserve energy as in some other countries.	.56
11	The energy crisis is short term in nature and will be over shortly.	.56
1	It is futile for the individual consumer to do anything about energy conservation.	.55
2	Responding to an energy conservation program is a good idea.	.46
7	Putting additional insulation in a home is not worth the extra effort.	.45

Proportion of total variance - 61.5%

Table 7

Magazine factor 1

Education oriented

	Factor loading
News (Time, Macleans, Newsweek, etc)	.63
Travel (National Geographic, etc.	.58
Professional Journals (Medicine Today, etc.)	.47

Proportion of total variance - 50.9%

Table 8

Newspaper factor 1

General interest in newspapers

	Factor loading
Advertising	.71
Subscribe	.70
Classified	.58
Travel and leisure	.51
National and international news	.50
Comics	.49
Women's pages	.48
Sports	.45

Proportion of total variance - 59.3%

Table 9

Radio factor 1

The norm

	Factor loading
News	.77
Weather	.68

Proportion of total variance - 56.6%

Table 10

Television factor 1

The heavy television viewer

	Factor loading
Games (Let's make a deal, etc.)	.69
Doctor/hospital	.64
Police/detective	.58
Variety (Cher, Carol Burnett, etc.)	.57
Comedy (All in the family)	.55
Movies (Specials of the week)	.52
Serial / soap opera (All my children, etc.)	.50

Proportion of total variance - 55.1%

The major effect of the factor analysis is to reduce the total number of variables to a number which can be more easily handled in subsequent analysis. The factors and demographic data have then been divided into five groups of related variables.

The description of these variables and the items contained in each follows:

Group 1 - Psychographic Variables

This group contains the 14 factors which resulted from the principal component factor analysis of the sixty-six statements contained in Part A of the questionnaire.

Group 2 - Attitudes Towards Energy

This group contains the four factors which resulted from the principal components factor analysis of the 16 statements related to energy in part B of the questionnaire.

Group 3 - Exposure to Print Media

This group contains the two newspaper and three magazine factors which resulted from the principal components factor analysis being applied to the newspaper and magazine section of the questionnaire.

Group 4 - Exposure to Broadcast Media

This group contains the three radio and three television factors which resulted from the principal components factor analysis being applied to the radio and television section of the questionnaire.

Group 5 - Demographics

This group contains the respondents raw scores to the questions in Part D of the questionnaire.

CHAPTER VI
ANALYTICAL PROCEDURE

The data base has been arranged as follows. Respondents were split into their respective groups, either the average Canadian consumer group or those who requested the booklet on energy conservation. These two groups will subsequently be referred to as Group 1 and Group 2 respectively.

Multivariate Analysis

The first phase of the analysis is to address the question of whether or not there really is an overall difference between the groups. Depending on the results of this test the need for further analysis will then be supported or rejected.

The test chosen for this type of statistical analysis is Hotelling's T^2. The Hotelling's T^2 is the multivariate counterpart of the univariate t-test. In the multivariate case, instead of dealing with each individual group mean as in the univariate case, one compares "vectors" of group means. It has been shown by Tatsuoka (77) and Morrison (53) that using a sequence of univariate significant tests only, rather than the appropriate

multivariate test, results can be misleading and produce erroneous conclusions. For example if six of ten variables are significantly different on a univariate test between two groups, does this mean there is an overall difference between the groups or just that these variables are different? The reason for employing the Hotelling's T^2 test is to determine whether or not there is an overall significant difference between the average Canadian consumer (Group 1 and the energy conscious individual (Group 2.).

The T^2 statistic is the multivariate analog of the two-sample student's t-statistic and takes the following form.

$$T^2 = \frac{N_1 N_2}{N_1 N_2} (\bar{x}_1 - \bar{x}_2) \; S^1 \; (\bar{x}_1 - \bar{x}_2)$$

where N_1 = sample size of Group 1

N_2 = sample size of Group 2

$\bar{x}_1$ = mean Group 1

$\bar{x}_2$ = mean Group 2

S = the pooled sample variance-covariance matrix (multivariate counterpart of S^2)

This quantity can be easily converted to the standard F-statistic with degrees of freedom P and $N_1 + N_2 - P - 1$ where

$$F = \left(\frac{(N_1 + N_2 - P - 1)}{(N_1 + N_2 - 2)SP}\right) \; T^2$$

P = number of variables under consideration

Thus the null hypothesis for this test is

$H_o \quad u_1 = u_2$

$H_1 \quad u_1 \neq u_2$

Where u_1 equals the vector mean of Group 1 and u_2 equals the vector mean of Group 2.

The five groups of variables; psychographic, attitude towards energy, interest/exposure to print media, interest/exposure to broadcast media, and demographics have been submitted to a Hotelling's T^2 analysis utilizing the BDDP3D program (16). The results of the analysis are presented in Table 11. Computer output for the various dimensions, psychographic to demographic, appears in Appendix VII to XI).

While it should be noted that the two groups differ significantly along all five general dimensions the purpose here is not to offer or present a discussion of the reasons for these differences, but rather to point out these differences when they do, in fact, exist.

Knowing that significant differences do exist between the average population member and the energy conscious individual along the five general dimensions, it is assumed safe to proceed to the univariate test. The results of the multivariate tests allow the author to make the statement that the two groups are "definitely and significantly different." The question now is, on what variables are they different?

Table 11

Multivariate test of mean differences

HOTELLING T^2

Variables	#	Level	F - Statistic		
			Level	D.F.	Sign.
Psychographic	14	199.4	14.1	14,1055	.001
Attitude Toward Energy	4	66.2	16.5	4,1065	.001
Broadcast	6	28.8	4.8	6,1063	.001
Print	5	51.4	10.2	5,1064	.001
Demographic-Socioeconomic	12	76.4	6.3	12,1057	.001

Univariate Analysis

The purpose of the univariate analysis is to probe deeper into the structure of the data and gather greater insight in regards to which variables the groups are different on. The univariate analysis involves a two step procedure. First, the mean scores on each of the variables in the five groups discussed earlier are calculated for each of the two groups of subjects. Secondly, t-tests are performed on each variable to test the significant differences between Group 1 and Group 2. Because the data violates an important assumption of the t-test, that the variables have equal variances, a variation of the t-test has been used to test the hypotheses that the means of the two groups are equal without the assumption of equal variances. The formula for this statistic appears as follows:

$$T = \frac{\bar{x}_{s1} - \bar{x}_{s2}}{O_D}$$

where T = test of significance

$\bar{x}_{S1}$ = mean of Group 1

$\bar{x}_{S2}$ = mean of Group 2

O_D = (standard error of the difference)

Table 12

Univariate analysis

Psychographic variables

Variable	Group 1	Group 2	T-Test	Sign Level
Factor 1	-.0026	.0190	-1.27	.204*
Factor 2	.0034	.0163	-0.55	.581*
Factor 3	-.0053	-.0873	3.57	.001
Factor 4	-.0076	.2689	-11.79	.001
Factor 5	-.0025	-.0163	.65	.591*
Factor 6	.0039	.1262	-3.52	.001
Factor 7	.0036	.0094	-.32	.749*
Factor 8	-.0026	.0686	-4.10	.001
Factor 9	-.0134	-.0019	-.60	.549*
Factor 10	-.0046	.0299	-2.20	.028*
Factor 11	-.0118	-.0384	1.33	.185*
Factor 12	.0114	.0282	-.88	.378*
Factor 13	-.0232	-.0370	.41	.685*
Factor 14	-.0018	-.0863	3.51	.001

*These variables have been dropped from further analysis because they are not significant at the .005 level.

Psychographics.....For five of the fourteen variables, differences between group means are significant at the .001 level. Details are shown in Table 12 and computer output appears in Appendix VII.

Factor 3.....The Extrovert.....The energy conscious individual does not adhere as strongly to the gregarious tendencies of the average consumer. It appears Group 2 individuals compared to Group 1 are more inclined to be loners, preferring small groups and quiet more intimate gatherings.

Factor 4.....Economy Minded.....The data indicates the energy conscious individual is more concerned with good money management as compared to the average consumer. Consistent with sensitivity to price the energy conscious consumer watches for sales and is more inclined to clip coupons and shop for bargains in order to get a little more out of his/her dollar.

Factor 6.....Refined Individual.....The energy conscious consumer tends to be more of a "high brow" than the average Canadian, enjoying classical-type music and visiting galleries where objects d'art are on display.

Factor 8.....Interest In People, Not Things.....The energy conscious consumer does not seem to personify the typical "Marlboro man" type of image. Mechanical things and hunting are less important than people and his/her relationship with them, such as parent and child, husband and wife.

Factor 14.....Interest In Sports.....The average Canadian displays a greater interest in sports and sports oriented social activities such as conversations about sports compared to the average energy conscious consumer.

Attitudes Towards Energy.....For two of the four factors there are significant difference at the .001 level. Details are shown in Table 13 and the computer output appears in Appendix VIII.

Factor 1.....Conservation Oriented Actions.....The average Canadian does not possess, to the same degree as the energy conscious individual, faith in the individual's ability to effectively reduce energy consumption through his personal initiatives.

Table 13

Univariate analysis

Attitude toward energy variables

Variable	Group 1	Group 2	T - Test	Sign Level
Factor 1	.0013	-.1288	6.70	.001
Factor 2	-.0081	.1687	-5.67	.001
Factor 3	-.0106	.0870	-2.52	.012*
Factor 4	-.0050	.0737	-2.17	.030*

*These variables have been dropped from further analysis because they are not significant at the .005 level.

Factor 2.....Level of Concern.....The energy conscious consumer considers himself more concerned about matters related to energy conservation than the average individual and the results support this attitude. An interesting anomoly is the energy conscious consumer's willingness to pay for security of supplies in spite of the close watch on his/her money.

Print Media Variables.....Of the five print media variables, three are significant: two "newspaper" and one "magazine". Details appear in Table 14 and the computer output appears in Appendix IX.

Factor 1.....General Interest in Newspapers.....The energy conscious consumer group subscribes more frequently to newspapers, ninety-four percent vs. eighty-one percent, than the average Canadian, as well as he/she reads more of the paper than the average consumer.

Factor 2.....Fact Oriented.....A clearer understanding of the difference between the two groups is evident from the energy conscious consumers' stronger drive for fact-oriented material such as editorial and finance columns than the average individual.

Table 14

Univariate analysis of

print media variables

Variable	Group 1	Group 2	T-Test	Sign Level
Newspaper Factor 1	-.0402	-.162	5.00	.001
Newspaper Factor 2	-.0330	-.1446	4.32	.001
Magazine Factor 1	-.0147	-.0716	2.23	.026*
Magazine Factor 2	-.0273	-.0925	1.28	.202*
Magazine Factor 3	-.0393	.1160	-3.36	.001

*These variables have been dropped from further analysis because they are not significant at the .005 level.

Consistent with studies related to social responsibility the energy conscious consumer appears to have a more cosmopolitan focus in his reading habits as indicated by his stronger interest in national and international news than his/her average consumer counterpart.

Factor 3.....Magazines.....Sports Oriented.....Consistent with his/her less than average interest in sports activities (psychographic factor 14) the energy conscious consumer devotes less attention to the sports oriented magazines compared to the average Canadian consumer.

Broadcast Media Variables.....Of the six variables submitted to univariate analysis, only two are significantly different. Details appear in Table 15 and the computer output appears in Appendix X.

Factor 2.....Television - Education Oriented.....The energy conscious consumer's above average interest in education-oriented material and the arts is again supported by the significant difference between themselves and the average Canadian on programmes such as documentaries, consumer shows as well as the news and the classics (ballet and drama). In each category the energy conscious consumer is much more interested compared to the average Canadian.

Factor 2.....Radio.....Once again the energy conscious consumer's preference for education and quality oriented type of programmes yielded a significant difference between the two groups. The energy conscious consumer appears to be a more avid listener of this type of programme as opposed to his average Canadian counterpart.

Table 15

Univariate analysis of

broadcast media variables

Variables	Group 1	Group 2	T-Test	Sign Level
Television Factor 1	-.0094	.0145	- .99	.320*
Television Factor 2	-.0187	-.1259	4.20	.001
Television Factor 3	-.0079	.0014	- .44	.663*
Radio Factor 1	-.0107	-.0357	.62	.538*
Radio Factor 2	-.0454	-.1391	2.89	.004
Radio Factor 3	-.0313	-.0572	.93	.354*

*These variables have been dropped from further analysis because they are insignificant at the .005 level.

Demographics.....Of the twelve demographic variables five of them are significantly different at the .001 level. Details appear in Table 16 on the following page and computer output appears in (Appendix XI).

Sex.....sixty-seven percent of the Group 1 individuals were male as opposed to fifty-nine percent of the Group 2 respondents. Although the energy conscious group more closely approximates census data, the author feels the statistical difference between the two groups is more likely attributable to the manner in which the average sample was created than anything else. For this reason the author does not feel sex is an important discriminator in a discussion between the two groups.

Education.....The energy conscious consumer is educated well above the national norm with forty-nine percent having some college education or better, compared to the national average of eighteen percent and Group 1's level of thirty percent. His/her search for educationally oriented material, and above average interest in the arts is logical given the energy conscious consumer's higher degree of education.

Table 16

Univariate analysis of demographic variables

Variable	Group 1	Group 2	T-Test	Sign Level
Sex	1.32	1.41	- 2.88	.004
Age	5.16	5.08	.85	.393*
Marital Status	1.94	1.91	.87	.387*
Education	3.83	4.21	- 3.43	.001
Occuptation	4.28	4.45	-.94	.350*
Dwelling Ownership	1.35	1.23	4.00	.001
Dwelling Type	2.11	1.82	3.22	.001
Car Ownership	2.28	2.33	-.86	.388*
Number of Cars	1.25	1.14	2.54	.011*
Type of Car	1.88	1.73	2.37	.018*
Miles Driven	2.53	2.18	3.87	.001
Income	4.09	4.32	-1.48	.140*

*These variables have been dropped from further analysis because they are not signifcant at the .005 level.

Dwelling Ownership and Type.....More energy conscious consumers tend to own their own dwelling compared to the average consumer group, 75% versus 64%. In regards to type of dwelling the energy conscious consumer generally resides in the single detached variety of home as opposed to multiple family units such as apartments. The data on dwelling ownership and type suggests the energy conscious consumer, although not significantly different than the average consumer in terms of income, has a stronger drive for property ownership. Although type of dwelling is currently a significant difference between the two groups, the accelerating cost of single detached homes has increased the demand for multiple unit type of housing which may in the long term dilute the importance of dwelling type as a discriminating variable.

Miles Driven.....Although not a true demographic variable it is included due to its original placement in the questionnaire and can be interpreted as a measure of mobility. The energy conscious consumer drives fewer miles a year than the average Canadian; fifty-five percent drive less than 10,000 miles a year as opposed to forty-two percent of the Group 1 sample. It is intuitive to draw the conclusion that the less miles driven is consistent with the attitude to conserve energy. Whether or not this conclusion is fair is yet to be determined. Conversely, with the rise in the cost of fuel and the energy conscious consumer's price sensitivity, this could be a measure of his/her response to reduce expenditures.

Discriminant Analysis

The final stage of analysis includes a step-wise multiple discriminate analysis. The purpose of the discriminate analysis is to find those variables which best discriminate between the two groups of subjects - Group 1 and Group 2.

Discriminant analysis is a statistical technique that lends itself to uncovering subsets of independent variables, which can be used to classify individuals or objects into one of two or more mutually exclusive and exhaustive categories or classes.

Basically, discriminant analysis is a simple "scoring" system that assigns a "score" to each individual or object. This score is a weighted average of the subject's numerical values of his independent variables. On the basis of this score, the individual is assigned to the "most likely" category.

Discriminant analysis attempts to do this by forming one or more linear combinations of the discriminating variables. These discriminant functions are of the form (59).

$$D_i = d_i Z_1 + d_{i2} Z_2 + \ldots\ldots + d_{ip} Z_p$$

where

D_i = the score on the discriminant function i

d's = the weighting coefficients

Z's = the standardized values of p

p's = the discriminating variables

Because we know before hand which individuals belong to which group, a table of correct and incorrect classifications can be prepared. This "score sheet" of correct and incorrect classifications is termed a "confusion matrix." The fewer the misclassifications of individuals to their "true" group, the more distinct or dissimilar the groups.

Discriminant analysis begins by estimating the coefficients in a linear discriminant function. Massy (48) offers an example of this type of function in terms of two variables, X and Y.

$$f_i = c_x X_i + c_y Y_i$$

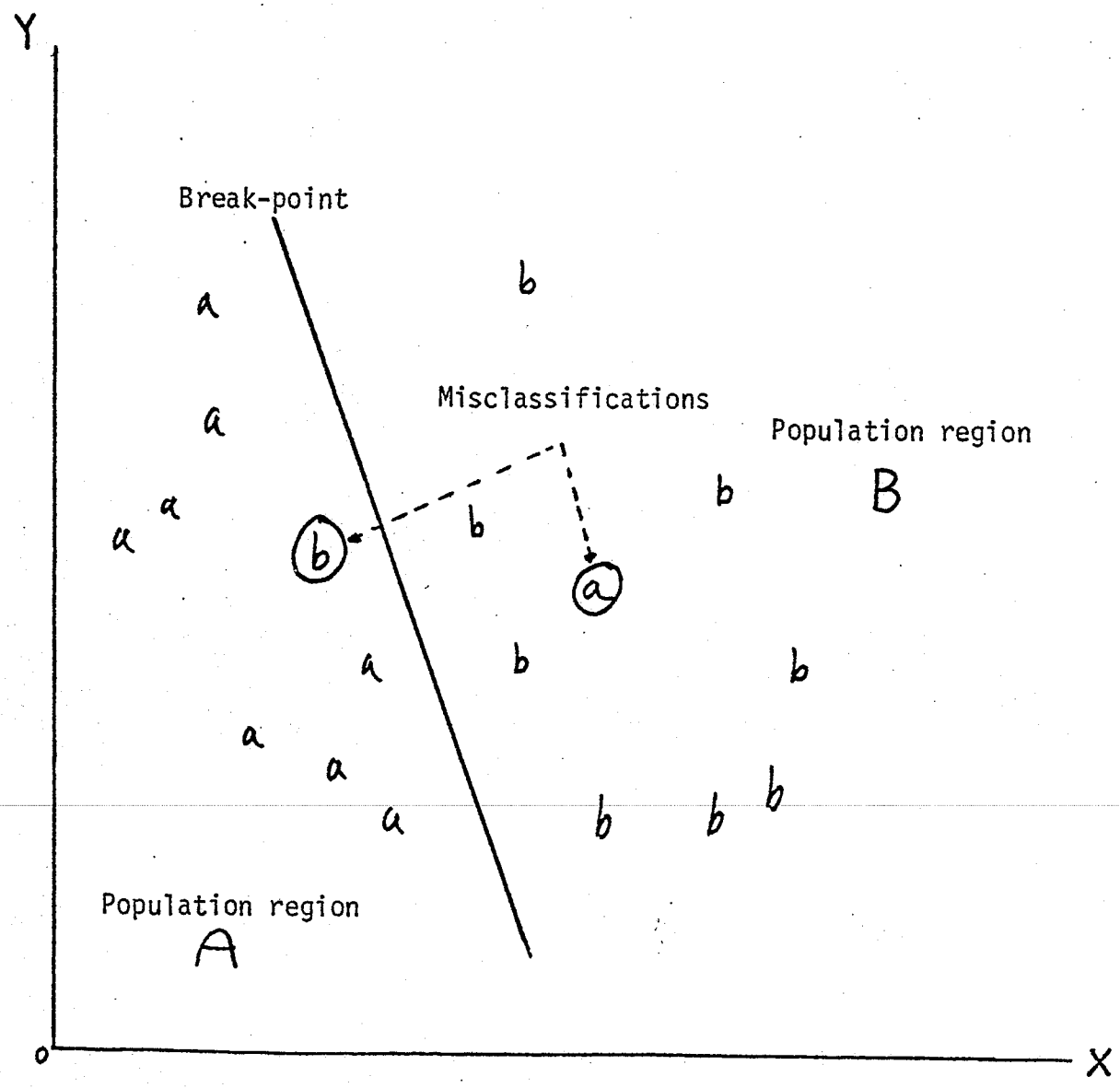
where i = each individual considered in the analysis

A critical value of "f" is determined such that if the individual's "f" value is above the break-point he is classified in one group and if it is below it he is assigned to the other. The function "f" is defined so that it discriminates between members of the two groups in the most efficient manner.

In this example we assume to have measurements on two variables for a sample of eighteen drawn equally from the two populations, A and B and this would appear as shown in Diagram 6 on the following page.

Figure 6

Graphical representation of 2 population regions, A and B with break-point (48)

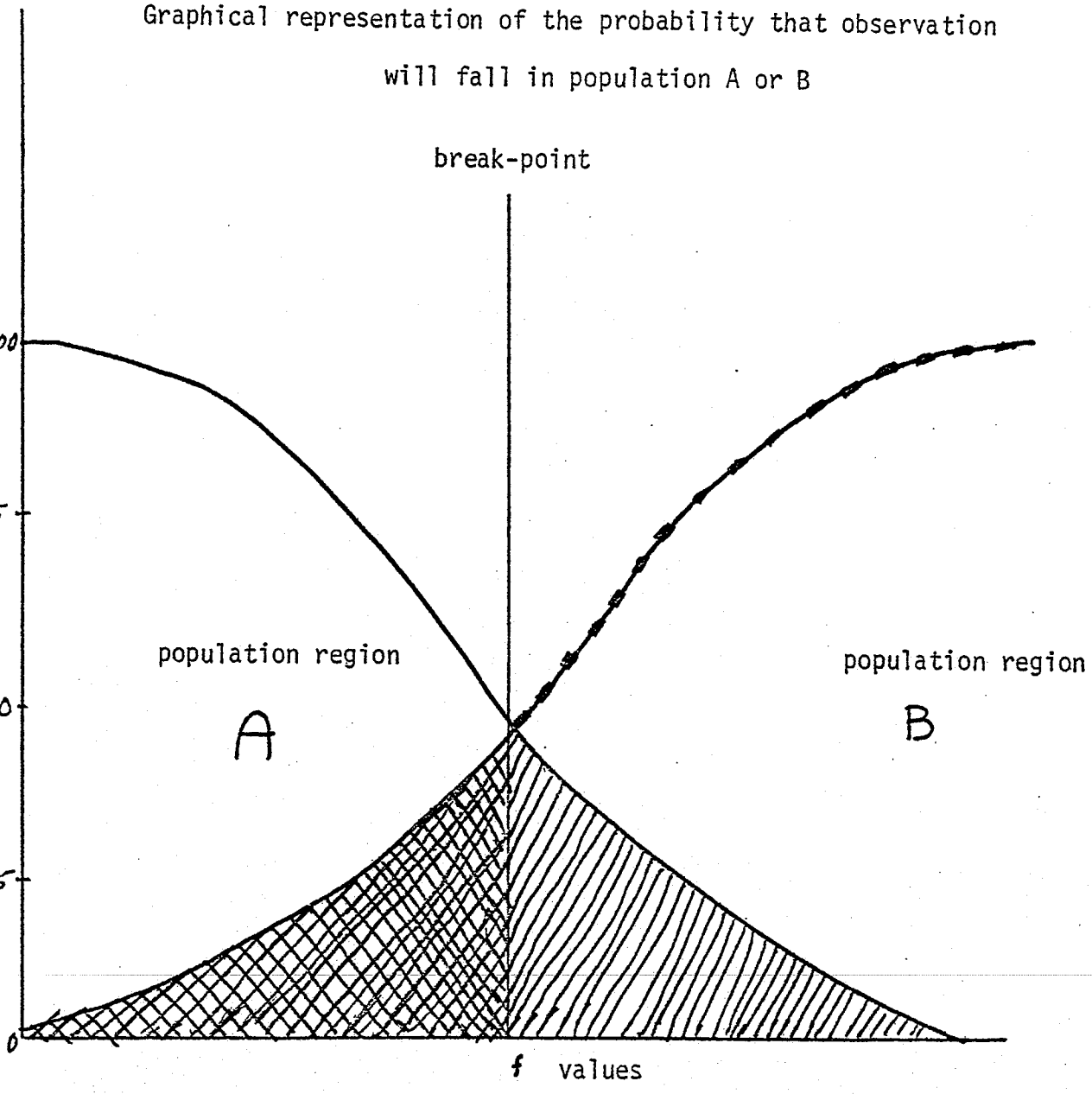


If an additional measurement were drawn and it had to be assigned to either A or B in a way that minimizes the possibility of misclassification the estimate would be based on the coefficients (the c's) of the discriminant function on the information provided by the original observations. Having values for the c's allows the user to assign a value of "f" to any possible combination of X and Y, whether from the original sample or a new sample. Mathematical methods can be employed to estimate the probability that, given a particular value of "f", the observation would fall in A. The probability distribution for A might appear as in Figure 7 where A is represented by the solid line, while B is depicted by the dotted line.

The vertical line represents the discriminant or break-point value of f. This value is set equi-distance between the means of f for A and B, so at this point an observation has about equal probability of falling in A or B. The shaded areas give the total probability of misclassifying a particular observation.

Figure 7

Graphical representation of the probability that observation will fall in population A or B



A discriminant analysis has been performed using the BMDP7M Dixon (16) package. Because of the extensive list of variables only those significantly different at the .005 level from the univariate analysis have been entered into the discriminant analysis. As mentioned previously the purpose here is to identify a subset of those variables which best "discriminates" between members of the Canadian population at large and the energy conscious type of individual. Table 17 presents the results of the discriminant analysis; the computer output appears in Appendix XII.

The relative importance of these variables in terms of their discriminating power is indicated by the relative size of their canonical coefficients. The classification matrix showing the number in each sub-sample classified into Group 1 or Group 2 by the discriminant function is presented in Table 18. These results show that sixty-nine point five percent of the respondents have been classified correctly. The proportional chance criteria for this event occuring is $Cp = (.42^2 + .58^2 =$ 51 percent. This indicates good predictive ability of the discrimant function.

Table 17

Discriminant analysis results

Variable Rank	Name	Canonical Coefficient	Discriminant Analysis Group 1	Group 2
7	Psychographic Factor 3	0.44503	-1.22017	-1.67013
1	Psychographic Factor 4	-1.85250	.76334	2.63637
5	Psychographic Factor 14	.46306	-.38221	- .85040
2	Energy Factor 1	.94093	.66926	- .28211
6	Energy Factor 2	-.42709	.60854	1.04037
3	Print Media-Newspaper Factor 1	.61417	-.99587	-1.61684
8	Demographic - Education	-.13601	1.04718	1.18471
4	Demographic - Dwelling Ownership	.50602	6.71956	6.20793
9	Demographic - Miles Driven	.10911	1.51892	1,40860
		Constant :	-9.18307	-9.25983
		Mean Discr. Score :	.58492	- .42617

Table 18

Raw data and normalized confusion matrix for eighteen variables related to consumer's degree of energy consciousness

a) raw data matrix

	Predicted		
Actual	Group 1	Group 2	Total
Group 1	298	153	451
Group 2	173	446	619
Total	471	599	1,070

Total hits = 744, percent hits = 69.5%

b) normalized matrix

	Predicted		
Actual	Group 1	Group 2	Total
Group 1	.66	.34	1.00
Group 2	.28	.72	1.00

Group 1 = average consumer

Group 2 = energy conscious consumer

Discriminating Variables

The most discriminating variable by far is the respondents degree of adherence to psychographic factor 4 "Economy Minded." The energy conscious consumer is significantly more sensitive to price and the benefits that accrue to someone who manages his/her money wisely. This trait is reinforced by the results of the univariate tests.

The next most discriminating variable is the respondents' attitude toward programmes or products designed to reduce energy consumption, Energy factor 1. The energy conscious consumer has a much stronger conviction of his/her ability through participation in various programmes or by taking certain actions such as insulating the home to reduce energy consumption.

The emergence of price and faith in an individual's ability to reduce energy consumption as the two strongest discriminating variables raises an interesting point. Is belief in the individual's effectiveness in conserving energy based on a sense of social concern or is it the dividend of investing money to reduce future energy expenditures?

The two variables are tightly inter-twined and in the author's opinion can not be analyzed separately. Instead, the author believes it is a combination of the two which yields a more socially responsible consumer. Money saved may be relatively more important than the benefits which accrue to society but the exact proportion is a value judgment. It is doubtful a single criteria can be isolated as accounting for an individual's adoption of energy conservationist behaviour.

Following concern for energy is the only media variable which proves to be a significant discriminator, Newspaper factor 1. Utilizing the information yielded from the univariate analysis, the energy conscious consumer appears to be a much stronger seeker of fact and educationally oriented types of information than the average consumer. It appears the energy conscious consumer favours the newspaper as a vehicle for gaining this type of data more than the average Canadian.

The fourth most discriminating variable is the respondent's dwelling ownership status. The energy conscious consumer is more likely to own his/her own dwelling compared to the average Canadian.

The next discriminating variable is Psychographic factor 14. The energy conscious consumer, consistent with his/her attraction to facts and educationally oriented type of material is definitely not an avid sports fan. This has been supported by the univariate analysis of the various media variables which have consistently shown the energy conscious consumer's less than average interest in sports oriented activities and media.

Energy Factor 2....."Level of Concern" for energy conservation plays a strong role in discriminating between the energy conscious consumer and his less sympathetic counterpart. The energy conscious consumer is more concerned than the average individual and places a higher priority on matters related to energy conservation than other problems facing society today.

The next most discriminating variable is Psychographic factor 3, "Extrovert." The energy conscious consumer is not the "life of the party" type of individual. Instead it would appear he/she is more concerned with developing meaningful and lasting relationships on a more personal level at home or in the company of small groups. The univariate analysis of the psychographic variables tends to support this profile.

The next most discriminating variable is the demographic factor, respondent's education level. The energy conscious consumer, not surprisingly considering the results of the univariate analysis, is well above average in terms of education. No doubt the interest in factually oriented material helps reinforce this characteristic.

The final discriminating variable is "Miles Driven". The energy conscious consumer tends to drive less than the average Canadian. This may indicate consistency with the desire to reduce energy consumption or personal expenditures on an increasingly expensive commodity, gasoline.

CHAPTER VI

DISCUSSION OF RESEARCH FINDINGS

Relating the results of the data anlysis to the original objectives and hypotheses of the study, the following comments appear in order.

The results support the null hypotheses.....people live according to established psychographic profiles which can be identified. Secondly these profiles can be related to consumer attitudes and behaviour in regards to energy conservation.

Value of the psychographic profile is strongest when complemented by other variables such as media exposure, and the standard demographic information. The profile of the energy conscious consumer is more than just a skeleton of statistical facts but "fleshed out" with psychographics, attitude towards energy, and interest in various media. In more practical terms, how viable a segment is the energy conscious consumer? Is it worth developing marketing programs geared to cultivating this type of behaviour? The answer to these questions is certainly not evident and would undoubtedly vary by market situation. The present research has produced considerable information which the author believes can answer this question.

From the results of the discriminant analysis a critical estimate can be obtained of the percentage of the population which may be considered energy conscious consumers. Since the Group 1 consumers represent a random sample of the English speaking population of Canadians from selected urban centres, it can be assumed to also include a proportionate number of energy conscious consumers. Given that we have also a random sample from the same area of actual energy conscious consumers, we can select from the general population a subset which is similar to the energy conscious consumer or Group 2.

In terms of the results produced from the discriminant analysis, one might interpret that the percentage of Group 1's misclassified as Group 2's is a reasonable estimate of the percentage of energy conscious consumers in the population at large. Employing this methodology the data from this study suggests that approximately thirty-four percent of the population possess characteristics which may warrant their being considered "energy conscious consumers."

Considering the apparent magnitude of the energy conscious group in relation to the rest of the population, the author believes the energy conscious consumer does represent a segment significant enough in size to warrant the development of marketing programs geared to this particular type of consumer.

Implications for marketing.....The most important finding is that the energy conscious consumer is indeed different from the average Canadian. Secondly, the energy conscious segment appears large enough to consider developing programs geared to capitalizing on the potential the energy conscious consumer represents.

To communicate effectively with the energy conscious consumer, marketing must know more about whom they wish to communicate with and the media vehicle best suited to communicating with them. This study has produced the following profile of the energy conscious consumer in relation to the average Canadian.

Psychographic.....The energy conscious consumer is not the extrovert, party type of person personified by the playboy/playgirl type of image. Instead the energy conscious consumer tends to be more of a loner, attracted to the company of his/her family and close friends. A quiet, thoughtful, more serious type of character more closely typifies the energy conscious consumer.

The energy conscious consumer is sensitive to price. The lure of bargains and "cents off" coupons is a reflection of his/her constant searching for a best buy, even for small items. From the energy conscious consumer's educational and income bracket position it does not appear to be a price consciousness in the sense of cheapness but more of a value for money as opposed to the more traditional status or materialistic drives of most consumers.

Interest.....The energy conscious consumer prefers the traditional appeal of art and better quality music as opposed to sports, hunting and other similar pursuits. These tastes are compatible with the type of person who enjoys being by himself/herself or in small groups.

It almost goes without saying, energy is a magnet for the energy conscious consumer. He/She believes in his/her ability to help combat society's waste of energy and perceives himself/herself as being above average in this concern. It would therefore appear logical that any product or service building on the words of energy and conservation stands a good chance of attracting this type of consumer.

Media.....The energy conscious consumer is not a heavy television, radio, or magazine fan. If these vehicles are watched, listened to or read, his preference is for the educational or factually oriented type of program such as news, special documentaries and, of course, the classics such as ballet, dance, and so forth.

Demographics.....The energy conscious consumer is most likely to be a home owner, not a renter or apartment dweller.

Educationally.....The energy conscious consumer is well above average, with the majority having a college education or better.

From the data presented the energy conscious consumer presents a challenge and an opportunity to the marketer. The energy conscious consumer is difficult to reach via the traditional media of television and radio. The most likely avenue of approach appears to be via the newspaper, concentrating on the factual or educationally oriented sections such as finance, travel or special features.

Because of the energy conscious consumer's higher education, perceived value for money and high level of concern for matters related to energy, if an advertiser was to make cosmetic or token changes to his ad copy or product they will most likely

be quickly spotted and ignored. Therefore it seems the more effective type of appeal to the energy conscious consumer would be one that is "down to earth" and more factually oriented as opposed to a fantasy and "pizzazz" type of approach. A more serious adult type of dialogue capitalizing on the indidividual's faith in his or her ability to conserve energy would receive greater acceptance and level of awareness than communications utilizing fear.

An important point to consider in marketing to the energy conscious consumer is his/her potential influence on the behaviour of others. The data suggests the energy conscious consumer possesses some of the important characteristics associated with opinion leaders. For example the energy conscious consumer's higher education, search for information and cosmopolitan interests are variables that have been identified by Robertson (66), Shoemaker (67), and Tigert (78) as those typically associated with opinion leadership.

To conclude, the results of the study reveal a segment of energy conscious consumers, significant enough in size to warrant the development of market programs designed to capitalize on the opportunity this type of consumer presents to the marketer.

Implications for Public Policy Makers

Although this study reports approximately thirty-four percent of the population is in sympathy with the conservation ethic, two thirds of the population can be classified as unsympathetic. The degree of apathy and whether or not it is growing or decreasing is unknown. In terms of the response to the statements on energy, utilizing only the categories of "agree strongly" and "agree moderately" twenty-seven percent of the population blames the government while twenty-nine percent blame the oil companies for the current energy situation. See Table 19 for further details as to the public's attitudes toward energy.

From the results it seems the consumer is confused and not sure who is to blame, if anyone, for the energy "crisis". If response to the statement "increased government control is needed to cure many of society's problems" is any indication of the direction to which the public is looking for guidance in regards to energy matters, the public clearly does not want more government control as forty-seven percent disagree with this statement. However, there is strong support for the government's policy of encouraging auto manufacturers to increase the economy of their automobiles in terms of miles per gallon. In response to the statement "auto manufacturers should be required

Table 19

Canadian attitudes toward energy

1. Disagree strongly with the statement
2. Disagree moderately with the statement
3. Disagree slightly with the statement
4. Agree slightly with the statement
5. Agree moderately with the statement
6. Agree strongly with the statement

Question number		Response % frequency Disagree strongly 1	2	3	4	5	Agree strongly 6	
1.	It is futile for the individual consumer to do anything about energy conservation.	64	19	7	4	3	4	Group 2
		46	23	11	7	7	6	Group 1
2.	Responding to an energy conservation program is a good idea.	3	3	1	8	21	64	Group 2
		5	3	3	11	29	50	Group 1
3.	Recycling centres are just a passing fad.	44	27	13	9	6	1	Group 2
		37	29	15	8	8	4	Group 1
4.	Driving at reduced speeds is not worth the effort considering the amount of energy saved.	54	20	11	6	4	6	Group 2
		40	21	12	9	9	9	Group 1

Canadian attitudes toward energy cont'd.

Question number		Response Frequency % Disagree strongly 1	2	3	4	5	Agree strongly 6	
5.	The government is to blame for the energy crisis.	17	18	17	24	12	8	Group 2
		18	18	15	23	15	12	Group 1
6.	The large oil companies have gotten together and faked the energy crisis.	20	18	17	23	13	10	Group 2
		17	15	16	23	14	15	Group 1
7.	Putting additional insulation in a home is not worth the extra effort.	73	16	7	2	1	2	Group 2
		55	24	9	4	2	4	Group 1
8.	In Canada there really isn't as strong a need to conserve energy as in some other countries.	50	19	10	12	5	3	Group 2
		35	22	10	14	11	7	Group 1
9.	Auto makers should be required to only produce cars that get at least 20 mpg.	10	6	9	14	21	40	Group 2
		12	11	8	15	17	37	Group 1

Canadian attitudes toward energy cont'd.

Question number		Response Frequency % Disagree strongly 1	2	3	4	5	Agree strongly 6	
10.	Products that reduce energy consumption are worth the extra cost.	2	4	5	23	34	33	Group 2
		3	5	6	28	30	29	Group 1
11.	The "energy crisis" is short term in nature and will be over shortly.	59	23	10	5	2	2	Group 2
		53	23	10	6	4	3	Group 1
12.	It is every Canadian's patriotic duty to conserve our natural resource.	3	2	2	8	19	64	Group 2
		3	4	3	12	25	53	Group 1
13.	Today's society wastes too much of our natural resources.	2	1	2	6	21	68	Group 2
		2	1	3	9	20	65	Group 1
14.	Energy conservation is the most important problem facing us today	6	9	13	26	30	16	Group 2
		9	12	16	26	23	14	Group 1

Canadian attitudes toward energy cont'd.

Question number		Response frequency % Disagree strongly 1	2	3	4	5	Agree strongly 6	
15.	I am more concerned about energy conservation than the average individual.	4	6	14	28	28	21	Group 2
		9	10	20	31	18	11	Group 1
16.	I would pay almost any price for guaranteed energy supplies.	14	18	22	26	14	6	Group 2
		21	15	23	23	12	6	Group 1

to produce cars that get at least 20 miles per gallon" fifty-four percent of the population agrees either moderately or strongly.

The public seems to agree that the need to conserve energy is something that is here to stay. Seventy-six percent disagree with the statement "the energy crisis is short term in nature." Seventy-eight percent of the Canadians believe that it is a citizen's patriotic duty to conserve. Unfortunately the general population's belief in the individual's effectiveness and willingness to conserve is significantly less than for the energy conscious group. Only forty-six percent of Canadians strongly believe in the effectiveness of individual action for conserving energy, as opposed to sixty-four percent of the energy conscious group.

There is general agreement by Canadians and the energy conscious group that responding to energy conservation programs is a good idea and a citizen's responsibility. Response to questions 2 and 12 support this statement. The Canadian public appears ready and willing to respond to a campaign designed to conserve energy.

The problem of designing and administering programs aimed at cultivating more socially responsible behaviour is a new and difficult task facing decision makers in government. As a result of the need to develop programmes aimed at furthering a more society oriented type of consumer, policy makers are increasingly looking towards the application of marketing techniques to assist in the formulation and implementation of their programmes. Kolter and Levy (45), Grether (28), Hansen, Cocanougher and Harvey (31), Farley (23), Coe (12), Mundy (55), are examples of market studies devoted to the application of marketing techniques in the public sector. This research indicates that the successful transfer of marketing techniques to the public sector must recognize the following:

1. Marketing techniques are transferrable with the key understanding that in order to be successful, marketing in the public sector must be consumer and not product or service oriented.

2. Markets to be communicated with should be segmented as to the degree of sympathy with the issue at hand and programmes geared to each segment.

> "Special note should be made to the prominent role assigned to the concept of market segmentation, it's implementation affects substantially the gains in message effectiveness and results in less expenditures on communication efforts." (12)

3. Results should be monitored and adjustments made where necessary.

4. Messages should use a positive tone as opposed to negative or fear inducing.

5. The message should clearly spell out the desired form of behaviour that is required to solve the problem at hand.

6. The message should present both sides of the case for behaving in the desired manner and how in so doing the individual's behaving in a socially acceptable manner.

If the government plans to implement programs designed to increase energy conservation they should be cognizant of the following

The public does not want direct government intervention but is more responsive to indirect means such as buying smaller cars and insulating the home; options where there is a degree of choice.

Secondly, the public tends to think in terms of average figures rather than the appropriate marginal concept. This is justified in that the bulk of data given to the public is in this form. Unless the perspective is changed to a more individual level it will do little good to point out that "Canada must import 'x' billions barrels of oil a year." This is something that the consumer cannot identify with.

Thirdly, government when formulating energy conservation policy should be aware that the opinions expressed by the more vocal conservationists are not representative of the general population. The data has shown that the energy conscious consumer is definitely different on a number of significant characteristics compared to the average Canadian. Therefore the energy conscious consumer does not speak for the majority of the Canadians and their demands should not be interpreted as being totally representative of the broader consumer interest.

While the fact of the energy conscious consumer's representativeness may be raised, his/her ability to influence others should not be ignored. The energy conscious consumer may represent the interest of only a third of the population but his/her associated opinion leader characteristics suggest he/she is capable of mustering public opinion and support for those issues in which they are interested. The vocal energy conscious consumer has proven his/her effectiveness in generating public interest, often through the use of a willing press.

Lastly from the results of this study and the findings of others it appears that possession of a socially responsible attitude does not necessarily translate into socially responsible behaviour. Individuals who support the energy conservation ethic may behave, in some instances, contrary to their belief. For example, there is no significant difference in the frequency of ownership of large automobiles between the energy conscious consumer and the average Canadian. (Table 20.)

Products that may be labelled energy efficient or contribute to reducing energy consumption, such as chronotherms and insulation may not be as popular as the regular or less efficient products

Table 20

Automobile ownership group 1 vs. group 2

	Group 1		Group 2	
	Frequency	%	Frequency	%
A. Number at your disposal				
None	50	11	24	14
One car	242	54	363	59
More than one car	159	35	172	27
	451	100%	619	100%
B. Type (the car which is driven the most miles				
Subcompact/ compact	18	29	179	33
Intermediate	122	30	175	33
Full-size	161	40	181	34
	401	100%	100	100%

simply because they have not been promoted with the same level of effort or the promotion has "missed" the intended market segment.

Given the results of this study and the work of others in this area the author recommends the following points be considered in a programme aimed at promoting energy conservation:

1. Advertising or promotion of the "conservation" ethic should be positive in tone as opposed to negative. The message should stress the benefits of conserving and how in so doing the individual is being socially responsible.

2. The content of the communications should present both sides of the case for energy conservation and conclude by demonstrating how the individual can conserve and contribute to the cause of energy conservation.

3. There must be visible efforts by society's leaders in government, business and upper class to reduce their consumption before the public can be expected to follow.

4. Efforts should be made to segment the public in terms of their sympathy with the need to conserve and messages tailored to match these segments.

5. Specific products or actions should be isolated and their value as agents to reduce energy consumption explained.

6. All references to energy consumption, cost and so on should be in terms comprehensible to the average consumer.

7. The program should be monitored to measure its effectiveness and modified as required.

To conclude, government will continue to make policy decisions with or without the aid of marketing. With marketing the results can be improved and the task that much easier.

CHAPTER VII

SUMMARY AND CONCLUSIONS

This study represents an attempt to profile the energy conscious consumer and explore the implications this type of individual presents for marketers in the public and private sector.

From the results of the study it is evident the energy conscious segment is significantly different on a number of variables from the average Canadian consumer. The size of the segment does appear large enough to devote specific marketing campaigns aimed at this group of consumers.

It is interesting to note that while the general population is alert to the need to conserve energy and the fact that the days of cheap energy and unlimited resources are over, there still is a lot of work to be done in terms of educating them in "how" they can conserve energy.

This study refutes the media and government's position that it is the oil companies the public blames for the rising

costs of energy. The public appears not quite sure who is to blame, which is probably a reflection of their understanding that it is a much more complex issue and involves all members of society, not just one group.

The key to maintaining our current standard of living offers both a challenge and opportunity to marketers in the private and public sector. It is the author's belief the answer rests with the Canadian consumer. Not until the individual is motivated through convictions in his/her ability to reduce energy consumption or desire to adhere to societal norms, will a significant and lasting drop occur in our current level of energy consumption. Therefore advertising at the public or private level should endeavour to show how the individual can be effective and in so doing, how they are behaving in a more socially acceptable manner than others who do not support these actions.

Energy consumption can not be effectively reduced by means of pricing. The demand for energy, like liquor and cigarettes, will not slacken no matter how high the price goes until consumers believe that it should, not the politicians.

In support of this belief the Winnipeg Free Press (88) had this to say about the level of energy consumption vs. price in reference to the Portuguese experience.

> "Despite gasoline costs of $3.00 a gallon, there is no reduction in the numbers of horn-blowing automobiles that jam Lisbon streets and highways fanning out from the capitol."

Considering North America's level of disposable income versus our European neighbors our capacity to absorb price increases does not yet appear to have been tested.

A good example of an attempt by the public sector to utilize marketing skills as opposed to price to cultivate a more socially responsible attitude in regards to consumption of a particular commodity is the Manitoba Government's Liquor Control Board advertising campaign.

The general thrust of the government's message is "moderation in drinking" not abolition. To present their position they utilize people prominent in local society to act as spokesmen in their commercials, for example Bobby Hull.

The messages are factual, down to earth, sometimes amusing and generally effective. The media of newspaper, television and radio are employed.

To conclude, this research is by no means exhaustive but in it is the author's hope that it will provide some incentive for others to explore more fully this interesting and important aspect of consumer behaviour.

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APPENDICES

Appendix I

The questionnaire used to obtain the data for this study

UM

The University of Manitoba

Faculty of Administrative Studies

Department of Business Administration

Winnipeg, Manitoba R3T 2N2

Jan. 1976

Hello,

I am a graduate student at the University of Manitoba. I am doing a comprehensive survey of Canadian attitudes, interests and opinions on a wide range of subjects. The survey is in partial fulfillment of the requirements for my degree. I have attached a questionnaire and would appreciate it if you would take the time to complete it and forward it to me in the stamped, self-addressed envelope provided. Please, I need your cooperation and cannot stress enough how important you are to me.

You have been selected as part of a random sample of residents of your city and can be assured that all information that you send will be kept strictly confidential. You will never be asked to buy anything or to make a contribution of any kind as a result of participating in this study.

If you have any questions, please contact me at the University, 474-8429 and I will be glad to answer them for you.

Sincerely,

Don Lowry

DON LOWRY
MBA II

DL:jec
Attachment

SURVEY OF CANADIAN ATTITUDES, INTERESTS AND OPINIONS

SECTION A

ıis section contains a series of statements designed to represent a particular .ewpoint or opinion on a wide range of topics. As you read each statement, .rcle the number opposite it which best describes your level of agreement or .sagreement with it. This is not a test so there are no right or wrong answers, ıe important thing is your opinion. The ratings are as follows:

Disagree Strongly with the statement.
Disagree Moderately with the statement.
Disagree Slightly with the statement.
Agree Slightly with the statement.
Agree Moderately with the statement.
Agree Strongly with the statement.

	DISAGREE STRONGLY					AGREE STRONGLY	OFFICE USE ONLY
							1-1
People come to me more often than I go to them for advice.	1	2	3	4	5	6	6
I like to try new and different things.	1	2	3	4	5	6	7
While shopping, I find myself checking the prices, even for small items.	1	2	3	4	5	6	8
I drink beer more than any other alcoholic beverage.	1	2	3	4	5	6	9
I enjoy visiting an art gallery.	1	2	3	4	5	6	10
My choice of brands for many products is influenced by advertising.	1	2	3	4	5	6	11
My greatest achievements are still ahead of me.	1	2	3	4	5	6	12
Before going shopping, I usually prepare a list of the things I need.	1	2	3	4	5	6	13
I like to work on community projects.	1	2	3	4	5	6	14
Once I find a brand I like, I usually stick with it.	1	2	3	4	5	6	15
I like to think I am a bit of a swinger.	1	2	3	4	5	6	16
Canadian made is best made.	1	2	3	4	5	6	17
I like to be considered a leader.	1	2	3	4	5	6	18
When a store sells a product at a reduced price, there is probably something wrong with it.	1	2	3	4	5	6	19

	DISAGREE STRONGLY					AGREE STRONGLY	OFFICE USE ONLY
I like to go camping.	1	2	3	4	5	6	__20
I am the type of person who is always looking for an exciting or stimulating kind of life.	1	2	3	4	5	6	__21
Advertising makes people buy things they do not want.	1	2	3	4	5	6	__22
I am good at fixing mechanical things.	1	2	3	4	5	6	__23
I am ambitious and hard working but do not seem to be getting anywhere.	1	2	3	4	5	6	__24
If I had the chance, I would like to take a trip around the world.	1	2	3	4	5	6	__25
To buy anything other than a car or house on credit is unwise.	1	2	3	4	5	6	__26
I will probably have more money to spend next year than this year.	1	2	3	4	5	6	__27
I like to go hunting.	1	2	3	4	5	6	__28
I have somewhat old-fashioned ideas and tastes.	1	2	3	4	5	6	__29
There is too much advertising today.	1	2	3	4	5	6	__30
Shopping for bargains is worth the extra time and effort.	1	2	3	4	5	6	__31
I hate to throw things away, even if they are of little use anymore.	1	2	3	4	5	6	__32
People caught smoking marijuana should go to jail.	1	2	3	4	5	6	__33
I like parties where there is lots of music and people.	1	2	3	4	5	6	__34
If I had my life to live over again, I would probably do things differently.	1	2	3	4	5	6	__35
I often clip coupons out of magazines and newspapers for free merchandise.	1	2	3	4	5	6	__36
My home is furnished for comfort--not style.	1	2	3	4	5	6	__37
I often have a cocktail before dinner.	1	2	3	4	5	6	__38
I have more self-confidence than most people.	1	2	3	4	5	6	__39
There is too much emphasis on sex today.	1	2	3	4	5	6	__40
The only way to cure many of society's problems is through increased government control.	1	2	3	4	5	6	__41

	DISAGREE STRONGLY					AGREE STRONGLY	OFFICE USE ONLY
I trust retailers who advertise a lot more than those who do not.	1	2	3	4	5	6	__42
I would rather spend a quiet evening at home than go out to a party.	1	2	3	4	5	6	__43
I enjoy conversations about sports.	1	2	3	4	5	6	__44
Today's youth are running away from reality.	1	2	3	4	5	6	__45
I will probably switch jobs at least once in the next four years.	1	2	3	4	5	6	__46
I am interested in politics.	1	2	3	4	5	6	__47
I socialize more than do most of my friends.	1	2	3	4	5	6	__48
Advertising drives up prices.	1	2	3	4	5	6	__49
People should go to church regularly.	1	2	3	4	5	6	__50
Parents should spend a lot of time with their children.	1	2	3	4	5	6	__51
Young people have too many privileges today.	1	2	3	4	5	6	__52
I'm considered creative by my friends.	1	2	3	4	5	6	__53
I like to pay cash for everything I buy.	1	2	3	4	5	6	__54
I sympathize with "Women's Lib."	1	2	3	4	5	6	__55
The media today rely on sensationalism too much.	1	2	3	4	5	6	__56
The problem with most people today is they don't stand up for their rights.	1	2	3	4	5	6	__57
Half the fun of shopping is trying new things.	1	2	3	4	5	6	__58
I dread the future.	1	2	3	4	5	6	__59
On the job, security is more important than money.	1	2	3	4	5	6	__60
They just do not make things the way they used to.	1	2	3	4	5	6	__61
Disposable products have really improved my way of life.	1	2	3	4	5	6	__62
What I am doing with my life will not make a lasting contribution to the world.	1	2	3	4	5	6	__63
Life is getting more confusing all the time.	1	2	3	4	5	6	__64
I enjoy eating out at a quality restaurant.	1	2	3	4	5	6	__65

	DISAGREE STRONGLY					AGREE STRONGLY	OFFICE USE ONLY
When children are sick, parents should drop everything and attend to their needs.	1	2	3	4	5	6	__66
I enjoy listening to classical music.	1	2	3	4	5	6	__67
I don't like to take chances.	1	2	3	4	5	6	__68
A person is judged by the clothes he/she wears.	1	2	3	4	5	6	__69
Today unions have too much power.	1	2	3	4	5	6	__70
I usually watch for sales before I go out and buy.	1	2	3	4	5	6	__71

SECTION B

has been said and done in recent months as a result of the 'Energy Crisis.' w are a series of statements which represent a particular viewpoint or opinion atters related to energy and the environment. As you read each statement, circle number opposite it which best describes your level of agreement or disagreement it. This is not a test so there are no right or wrong answers, the important g is your opinion. The ratings are as follows:

	OFFICE USE ONLY
Disagree Strongly with the statement.	
Disagree Moderately with the statement.	2-1
Disagree Slightly with the statement.	__2
Agree Slightly with the statement.	__3
Agree Moderately with the statement.	__4
Agree Strongly with the statement.	__5

	DISAGREE STRONGLY					AGREE STRONGLY	
It is futile for the individual consumer to do anything about energy conservation.	1	2	3	4	5	6	__6
Responding to an energy conservation program is a good idea.	1	2	3	4	5	6	__7
Recycling centres are just a passing fad.	1	2	3	4	5	6	__8
Driving at reduced speeds is not worth the effort considering the amount of energy saved.	1	2	3	4	5	6	__9
The government is to blame for the energy crisis.	1	2	3	4	5	6	__10
The large oil companies have gotten together and faked the energy crisis.	1	2	3	4	5	6	__11
Putting additional insulation in a home is not worth the extra effort.	1	2	3	4	5	6	__12
In Canada there really isn't as strong a need to conserve energy as in some other countries.	1	2	3	4	5	6	__13

	DISAGREE STRONGLY					AGREE STRONGLY	OFFICE USE ONLY
Auto makers should be required to only produce cars that get at least 20 mpg.	1	2	3	4	5	6	__14
Products that reduce energy consumption are worth the extra cost.	1	2	3	4	5	6	__15
The 'energy crisis' is short term in nature and will be over shortly.	1	2	3	4	5	6	__16
It is every Canadian's patriotic duty to conserve our natural resources.	1	2	3	4	5	6	__17
Today's society wastes too much of our natural resources.	1	2	3	4	5	6	__18
Energy conservation is the most important problem facing us today.	1	2	3	4	5	6	__19
I am more concerned about energy conservation than the average individual.	1	2	3	4	5	6	__20
I would pay almost any price for guaranteed energy supplies.	1	2	3	4	5	6	__21

SECTION C_1

)UT NEWSPAPERS, RADIO, TELEVISION AND MAGAZINES

Do you subscribe to or receive on a regular basis (at least three times a week) a daily **newspaper**? (Please circle your choice)

OFFICE USE ONLY

YES 1 __22

NO 2 (if your answer is no, please go directly to question number 3.)

I am interested in finding out which sections you pay most attention to when you read the newspaper. (If you subscribe to more than one paper, the one you read the most.) Please circle the number opposite each line below which best describes the extent to which you read a particular section

The number 1 means that you read that section thoroughly.
The number 2 means that you read some of that section.
The number 3 means that you may glance at that section.
The number 4 means that you never read that section.

	Read Thoroughly	Read Some	Glance At	Never Read	OFFICE USE ONLY
l news	1	2	3	4	__23
)nal and international news	1	2	3	4	__24

	Read Thoroughly	Read Some	Glance At	Never Read	OFFICE USE ONLY
en's pages	1	2	3	4	__25
ertising	1	2	3	4	__26
ancial	1	2	3	4	__27
torial	1	2	3	4	__28
ics	1	2	3	4	__29
rts	1	2	3	4	__30
ssified ads	1	2	3	4	__31
vel and Leisure	1	2	3	4	__32

SECTION C_2

I am interested in finding out what type of radio program you listen to the most. Please circle the number opposite each line below that best describes the amount of time you devote to a particular kind of program.

The number 1 means that you regularly listen to this type.
The number 2 means that you sometimes listen to this type.
The number 3 means that you seldom listen to this type.
The number 4 means that you never listen to this type.

	Regularly Listen To	Sometimes Listen To	Seldom Listen	Never Listen	OFFICE USE ONLY
music	1	2	3	4	__33
ity/Classical	1	2	3	4	__34
ign Language er than English)	1	2	3	4	__35
ts	1	2	3	4	__36
	1	2	3	4	__37
dy Specials	1	2	3	4	__38
ational	1	2	3	4	__39
Shows	1	2	3	4	__40
ner	1	2	3	4	__41

SECTION C_3

I am interested in finding out what type of television program you watch the most. Please circle the number opposite each type of program listed below that best describes your program preferences.

The number 1 means that you regularly watch this type.
The number 2 means that you sometimes watch this type.
The number 3 means that you seldom watch this type.
The number 4 means that you never watch this type.

	Regularly Watch	Sometimes Watch	Seldom Watch	Never Watch	OFFICE USE ONLY
ies (specials of week)	1	2	3	4	42
rts (Hockey, tball, etc.)	1	2	3	4	43
edy (All in the Family)	1	2	3	4	44
iety (Cher, Carol Burnett, .)	1	2	3	4	45
es (Let's Make a Deal, .)	1	2	3	4	46
ial/Soap Opera (All My ldren, etc.)	1	2	3	4	47
k Shows (Johnny Carson, .)	1	2	3	4	48
mentaries (Jacques steau, National Geogra- c or Special Performan- .)	1	2	3	4	49
s	1	2	3	4	50
sumer Oriented (Market ce, etc.)	1	2	3	4	51
ssics (Ballet, Drama, .)	1	2	3	4	52
ice/Detective	1	2	3	4	53
cor/Hospital	1	2	3	4	54

SECTION C_4

I am interested in finding out what type of magazines you read the most. Please circle the number opposite each type of magazine listed below that best describes your reading habits.

The number 1 means that you regularly read every edition.
The number 2 means that you usually read this type.
The number 3 means that you seldom read this type.
The number 4 means that you never read this type.

	Regularly Read	Sometimes Read	Seldom Read	Never Read	OFFICE USE ONLY
:emporary (Playgirl, /boy, etc.)	1	2	3	4	__55
ıion (Seventeen, etc.)	1	2	3	4	__56
litional (Readers Digest, :er Homes and Gardens, Book, etc.)	1	2	3	4	__57
; (Time, Macleans, ;week, etc.)	1	2	3	4	__58
el (National raphic, etc.)	1	2	3	4	__59
ts	1	2	3	4	__60
essional Journals icine Today, etc.)	1	2	3	4	__61

SECTION D

nk you. Now for some basic statistical data about yourself.

e last few questions deal with a few statistical details about yourself. Please ssured that this information is completely confidential and will not be given to ne under any circumstances. Please mark your answers with an (✓) in the appro- te box on the right. If you object strongly to answering a question, please e that one unanswered but complete the rest of the questionnaire.

OFFICE USE ONLY

3-1

Sex: Male ☐ 1 Female ☐ 2 __2

__3

Age:
15 or younger ☐ 1
16 to 18 ☐ 2
19 to 24 ☐ 3
25 to 34 ☐ 4
35 to 44 ☐ 5
45 to 54 ☐ 6
55 to 64 ☐ 7
65 and over ☐ 8

__4
__5
__6
__7

OFFICE USE ONLY

arital Status:
- Single ☐ 1
- Married ☐ 2
- Separated/Divorced ☐ 3
- Widowed ☐ 4

__8

ucation:
- Grade Eight or Less ☐ 1
- Some High School ☐ 2
- High School Graduate ☐ 3
- Technical or Vocational School above High School Level ☐ 4
- Some College or University ☐ 5
- Have a University Degree ☐ 6
- Post-Graduate (Masters, Doctorate or equivalent) ☐ 7
- Other (Please Specify)_____ ☐ 8

__9

cupation:
- Professional/doctor, lawyer, etc. ☐ 1
- Business Executive/Owner ☐ 2
- Supervisory/Technical ☐ 3
- Sales/Clerical ☐ 4
- Skilled Labour ☐ 5
- Unskilled Labour ☐ 6
- Homemaker ☐ 7
- Student ☐ 8
- Retired ☐ 9
- Unemployed ☐ 10
- Other (Specify)_____ ☐ 11 ☐ 12

__10,__11

elling:

a) Ownership
- Own ☐ 1
- Rent ☐ 2

__12

b) Type
- Single detached ☐ 1
- Mobile Home ☐ 2
- Duplex/Triplex ☐ 3
- Quadraplex ☐ 4
- Apartment (More than 5 units) ☐ 5
- Part of House ☐ 6
- Other (Specify)_____ ☐ 7

__13

c) Energy Used To Heat Home:
- Electricity ☐ 1
- Natural gas/Propane ☐ 2
- Oil ☐ 3
- Other (Specify)_____ ☐ 4
- Don't Know ☐ 5

__14

)ut Cars: (if you do not own a car, or have the use of one, please directly to number 8)

__15

a) Number at your disposal:
- One car ☐ 1
- More than one car ☐ 2

b) Type (the car which is driven the most miles):
- subcompact/compact ☐ 1
- Intermediate ☐ 2
- Full-size ☐ 3

__16

OFFICE USE ONLY

c) Miles Driven each year:

5,000 or less	☐ 1
5,001 to 10,000	☐ 2
10,001 to 15,000	☐ 3
15,001 to 20,000	☐ 4
20,001 to 30,000	☐ 5
30,001 to 40,000	☐ 6
40,001 and over	☐ 7

__17

Total yearly income (if single, widowed/separated, or divorced) or total family income (if married).

__18

$ 7,999 or less	☐ 1
$ 8,000 to 10,999	☐ 2
$11,000 to 13,999	☐ 3
$14,000 to 16,999	☐ 4
$17,000 to 19,999	☐ 5
$20,000 to 22,999	☐ 6
$23,000 to 25,999	☐ 7
$26,000 and over	☐ 8

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION!

X

Appendix II

Post card reminder used in follow-up

UM

The University of Manitoba

Faculty of Administrative Studies

Department of Business Administration

Winnipeg, Manitoba R3T 2N2

Jan. 1976

Thank You . . . .

for your participation in the survey entitled "Canadian Attitudes, Interests and Opinions". If you have not yet forwarded your questionnaire, please do so immediately. Time is running out and I need your reply.

Respectfully yours

Don Lowry

Don Lowry

Appendix III

Correlation coefficients between variables in sections :

A, B, C_1, C_2, C_3, C_4 of the questionnaire

THE LOWRY FILE

FILE IDENTIFI (CREATION DATE = 17/02/76) OF THE ENERGY CONSCIOUS CONSUMER 17/02/76

CORRELATION COEFFICIENTS..

	LSEEK	LTRY	LPCHECKS	LOFFER	LART
LSEEK	1.00000	0.29734	0.00442	-0.15702	0.16019
LTRY	0.29734	1.00000	0.15195	-0.10175	0.25569
LPCHECKS	0.00442	0.15195	1.00000	-0.01058	0.05124
LOFFER	-0.15702	-0.10175	-0.01058	1.00000	-0.12417
LART	0.16019	0.25569	0.05124	-0.12417	1.00000
LINFL	-0.10981	-0.17750	-0.11047	0.09523	-0.11927
LACH	0.05407	0.24029	0.10580	0.06861	0.10201
LLIST	0.12278	0.25043	0.24201	-0.15910	0.14132
LCOMM	0.17630	0.23663	0.14284	-0.10048	0.24567
LBRAND	-0.01352	0.01306	-0.00752	-0.05514	-0.10708
LEXING	0.06864	0.24497	0.09994	0.07542	0.01963
LCAN	-0.01614	0.01968	0.05224	0.03957	-0.10435
LLEAD	0.40870	0.31107	0.09753	-0.16011	0.10346
LBRNG	-0.17233	-0.16483	-0.12122	0.02069	-0.07134
LCAMP	0.02190	0.07716	0.07805	-0.09664	0.13301
LEXCIT	0.09507	0.20435	0.03217	-0.07704	0.07371
LBUY	-0.02658	-0.08176	0.03842	0.04731	-0.03208
LFIX	0.00549	0.01311	-0.02554	0.05003	-0.02361
LAMBIT	-0.12457	-0.10516	-0.02054	0.22573	-0.13968
LTRIP	0.12869	0.08076	0.12306	-0.17094	0.25347
LCREDIT	-0.17157	-0.10699	0.00275	0.10580	-0.06721
LMORE	0.21725	0.17614	0.15368	-0.04765	0.03305
LHUNT	-0.14035	-0.15824	-0.15096	0.15387	-0.21132
LOLD	-0.08042	-0.21020	-0.03016	0.07027	-0.10936
LTAG	-0.07959	-0.07483	0.01876	0.02916	-0.08462
LSHOP	0.11498	0.12435	0.29408	-0.06430	0.02925
LHATE	0.06696	0.04527	0.19377	-0.01156	-0.01790
LVERB	-0.11071	-0.12089	-0.02371	0.02401	-0.18460
LPART	-0.03721	0.11280	0.02447	0.10974	-0.05588
LLIFE	-0.07451	-0.02775	-0.03816	0.06246	-0.09596
LCLIP	-0.15577	-0.02955	0.25097	0.06305	0.00702
LCOMP	0.20201	0.25782	0.12031	-0.12578	0.07725
LCOOK	0.05539	0.06115	-0.11384	0.00753	0.01974
LOTHER	0.07412	0.20094	0.05266	-0.17475	0.12343
LSEX	0.04975	0.02924	0.07844	-0.02064	0.01622
LGOVT	-0.15350	-0.11028	-0.06723	0.09872	-0.09283
LTRUST	-0.13823	-0.10501	-0.04367	0.07967	-0.14910
LQUIET	0.14534	-0.04737	-0.00028	-0.06885	0.07673
LSPORT	-0.03747	-0.07437	-0.09056	0.13426	-0.17560
LYOUTH	-0.05152	-0.13555	-0.06113	0.05745	-0.18462
LSWITCH	-0.05559	0.07667	0.07530	0.09714	0.09973
LPOLIT	0.22965	0.11972	0.01263	-0.10129	0.20409
LSOCIAL	-0.09498	0.01477	-0.00265	0.00148	-0.07359

	LINFL	LACH	LLIST	LCOMM	LBRAND
LSEEK	-0.10981	0.05407	0.12278	0.17630	-0.01352
LTRY	-0.17750	0.24029	0.25043	0.23663	0.01164
LPCHECKS	-0.11047	0.10580	0.24201	0.14284	-0.00752
LOFFER	0.09523	0.06861	-0.15910	-0.10048	-0.05514
LART	-0.11927	0.10201	0.14132	0.24567	-0.10708
LINFL	1.00000	-0.05512	-0.09052	-0.03284	0.04563
LACH	-0.05512	1.00000	0.07460	0.03670	-0.11805
LLIST	-0.09052	0.07463	1.00000	0.21060	-0.20040
LCOMM	-0.03284	0.03670	0.21060	1.00000	-0.04861
LBRAND	0.04563	-0.11805	0.20030	-0.04861	1.00000
LEXING	-0.02502	0.24595	0.15250	0.02297	-0.07179
LCAN	0.12196	0.07221	-0.06346	0.07770	0.07654
LLEAD	-0.05129	0.15633	0.18606	0.22259	-0.21545
LBRNG	0.07301	-0.25443	-0.10704	-0.04195	0.04159
LCAMP	-0.06725	0.25388	0.23066	0.16334	-0.05429
LEXCIT	-0.07336	0.30411	0.12608	0.17220	0.06312
LBUY	-0.03600	-0.03471	-0.07421	-0.02120	0.07713
LFIX	-0.05803	-0.13544	-0.02162	0.02654	-0.07746
LAMBIT	0.02527	-0.13653	-0.00284	-0.11232	0.14233
LTRIP	-0.17128	0.10926	0.12376	[illegible]	-0.01233
LCREDIT	0.02744	-0.13758	-0.05849	-0.04437	0.04629
LMORE	-0.07210	0.12859	0.02214	0.03177	0.02663
LHUNT	0.17191	-0.13091	-0.11257	-0.05872	-0.00683
LOLD	0.12850	-0.14739	-0.04486	-0.04627	0.10655
LTAG	-0.09671	-0.10235	-0.05881	-0.07256	0.10985
LSHOP	-0.09715	0.11131	0.14029	0.04724	-0.01961
LHATE	-0.02039	-0.03170	0.01767	0.05470	0.13720
LVERB	0.07355	-0.15917	-0.05913	-0.02657	0.11857
LPART	0.07621	0.11278	0.04068	0.05770	0.10171
LLIFE	0.04815	-0.25402	-0.02704	-0.1440	0.11237
LCLIP	0.03513	-0.01912	0.11757	0.04028	0.05322
LCOMP	-0.20511	0.07833	0.12072	0.17477	0.12583
LCOOK	0.13595	-0.06762	0.00705	0.01772	-0.02359
LOTHER	-0.16090	0.02219	0.11149	0.14127	-0.00960
LSEX	-0.06096	-0.26001	0.00362	0.03933	0.11304
LGOVT	0.00488	-0.18576	-0.09455	-0.07270	0.05048
LTRUST	0.25553	-0.08723	-0.10560	-0.08815	0.06208
LQUIET	-0.08173	-0.02516	0.15053	-0.03347	0.01726
LSPORT	0.05820	-0.17795	-0.12830	0.11033	0.05141
LYOUTH	0.03266	-0.22447	-0.10221	-0.01504	0.14344
LSWITCH	0.00976	0.29255	-0.01157	-0.09350	-0.08731
LPOLIT	-0.10597	-0.05027	0.12226	0.03267	-0.03020
LSOCIAL	0.05582	-0.01334	-0.10508	0.10278	-0.04787

LADVT	-0.14144	-0.09090	0.07401	0.07423	-0.12927	0.01931	-0.05491	-0.05176	-0.05717	0.09542
LCHURCH	-0.00719	-0.18818	-0.01720	-0.00560	-0.10370	0.10694	-0.21768	0.03403	0.11970	0.09065
LPARENT	0.01063	0.25456	0.06536	0.09090	0.05171	-0.05097	-0.22396	0.01466	0.00972	0.11842
LYOUNG	-0.00070	-0.10132	-0.03432	-0.03109	-0.12564	0.04355	-0.18175	-0.05177	-0.03045	0.16431
LCREATE	0.20993	0.35391	0.12350	-0.15793	0.29524	-0.07286	0.17956	0.19224	0.10814	0.22076
LCASH	-0.06422	-0.03722	0.05702	-0.00747	0.06299	-0.02932	-0.09079	-0.02716	-0.00383	0.05240
LLIB	0.14697	0.15573	0.05221	-0.01279	0.27754	-0.13516	0.17734	0.10446	0.05709	-0.11459
LMEDIA	0.23959	0.22295	0.10084	-0.14609	0.11654	-0.17272	0.06242	0.18592	0.03617	-0.03690
LPROB	0.07726	0.11369	0.12392	0.09437	-0.01117	-0.00014	0.19222	0.07536	0.12425	-0.05728
LFUN	-0.00698	0.25903	0.09477	-0.02944	0.17207	0.12896	0.16613	0.17275	0.06192	-0.00509
LDREAD	-0.22763	-0.29405	-0.05595	0.07765	-0.17755	0.00632	-0.08994	-0.09256	-0.12958	0.05827
LSEC	-0.16839	-0.06972	0.03261	-0.03758	-0.07727	0.07026	-0.09361	0.02438	0.07333	0.13860
LMAKE	0.00479	0.11710	0.09602	-0.10164	-0.04159	0.00977	0.05574	0.04975	-0.02534	0.12075
LDISP	-0.00329	-0.12569	0.04269	0.04834	-0.19333	0.17390	-0.04717	0.01055	-0.00577	0.06374
LLACT	0.09446	-0.02149	0.04097	0.07341	-0.13259	-0.05514	-0.15948	-0.10759	-0.21157	0.12340
LCONF	-0.13250	-0.07275	-0.01427	0.00152	-0.17792	0.06836	-0.09506	0.03097	-0.14001	0.12153
LEAT	0.10937	0.34702	0.05712	-0.12423	0.14254	-0.10445	0.25773	0.14703	0.03224	-0.04563
LDROP	0.10392	0.06099	0.04782	-0.13981	0.00239	-0.05772	-0.04391	0.07155	0.00535	0.13467
LCLASS	0.24514	0.20437	0.03275	-0.22062	0.50649	-0.15083	0.03538	0.22250	0.16759	-0.02644
LCHAN	-0.06770	-0.12775	0.07795	-0.00106	0.02136	0.06189	-0.13351	0.04958	-0.04430	0.14213
LJUDGE	-0.11700	-0.11059	-0.11214	0.10624	-0.03729	0.21687	-0.06214	-0.10339	-0.12372	0.11334
LUNION	0.19163	0.25205	0.04692	-0.14058	0.02182	-0.00996	0.06604	0.13574	0.01246	0.03457
LWATCH	-0.01882	-0.06610	0.28279	0.03157	0.00537	0.06151	-0.05117	0.10437	0.06473	-0.04001

	LSWING	LCAN	LLEAD	LWRONG	LCAMP	LEXCIT	LBUY	LFIX	LAMBIT	LTRIP
LSEEK	0.06864	-0.01614	0.40370	-0.17233	0.03190	0.09507	-0.02658	0.00089	-0.12457	0.12458
LTRY	0.24497	0.01968	0.31107	-0.10483	0.27716	0.39835	-0.08176	0.01311	[illegible]	0.28976
LPCHECKS	0.06894	0.05224	0.09753	-0.12120	0.07395	0.03217	0.02842	-0.02554	-0.02254	0.10395
LCHECP	0.07542	0.02953	-0.13011	0.09969	-0.09664	-0.07794	0.04731	0.05113	0.03573	-0.17046
LART	0.01863	-0.16435	0.13346	-0.07134	0.13301	0.07371	-0.03208	-0.02361	-0.13948	0.23347
LINFL	-0.02602	0.12196	-0.05129	0.07301	-0.06725	-0.07736	-0.07602	-0.05903	0.07597	-0.17129
LACH	0.24595	0.07222	0.15633	-0.05483	0.26389	0.30411	-0.03471	-0.13544	-0.13152	0.10079
LLIST	0.15250	-0.06346	0.13000	-0.12964	0.03086	0.12508	-0.07421	-0.02162	-0.08232	0.17376
LCOMM	0.02997	0.07779	0.29259	-0.09129	0.16328	0.13299	-0.02122	0.02624	-0.11752	0.06536
LBRAND	-0.07179	0.07654	-0.01545	0.08159	-0.05939	0.06312	0.03713	-0.06746	0.14177	-0.04233
LSWING	1.00000	0.05451	0.30181	-0.01526	0.10953	0.35804	-0.10106	-0.02562	0.02228	0.23410
LCAN	0.05451	1.00000	-0.03713	0.18579	-0.02952	-0.05605	0.00580	-0.01932	0.15492	-0.16162
LLEAD	0.30181	-0.03713	1.00000	-0.17020	0.02470	0.29679	-0.01309	0.01249	-0.19951	0.21046
LWRONG	-0.01526	0.18579	-0.17020	1.00000	-0.07817	-0.08163	0.11710	0.07469	0.25943	-0.12983
LCAMP	0.10953	-0.02952	0.02470	-0.07817	1.00000	0.44306	-0.03136	0.17715	-0.06736	0.19455
LEXCIT	0.35804	-0.05605	0.29679	-0.08163	0.44306	1.00000	0.03409	0.02275	0.02583	0.33842
LBUY	-0.10106	0.00580	-0.01309	0.11710	-0.03136	0.03409	1.00000	0.07099	0.11217	-0.06726
LFIX	-0.02562	-0.01932	0.01249	0.07469	0.17715	0.02275	0.07099	1.00000	0.17732	-0.05085
LAMBIT	0.02228	0.15492	-0.19951	0.25943	-0.06736	0.02583	0.11217	0.17732	1.00000	-0.14714
LTRIP	0.23410	-0.16162	0.21046	-0.12983	0.19455	0.33842	-0.06726	-0.05085	-0.14714	1.00000
LCREDIT	-0.07642	0.14860	-0.12989	0.15671	-0.09158	-0.09229	0.14008	0.09159	0.11227	-0.00264
LMORE	0.16166	0.09639	0.10526	-0.14663	0.14600	0.20827	-0.04593	0.03119	-0.02862	0.11632
LHUNT	0.24754	0.09207	-0.09367	0.13286	0.12791	0.02507	-0.00257	0.06736	0.10071	-0.11476
LOLD	-0.11731	0.16560	-0.08175	0.05883	-0.17213	-0.19328	0.09267	0.10157	0.16330	-0.10425
LTGO	-0.10243	0.09787	0.03559	0.15083	0.05568	0.04857	0.27596	0.02644	0.21890	-0.00841
LCHOR	0.04457	0.01561	0.08724	-0.17294	0.13353	0.10435	-0.11838	-0.06874	-0.07529	0.22123
LHATE	-0.05975	0.09003	0.05392	-0.04671	0.04333	0.06936	-0.05745	0.04421	0.06600	0.24988
LWEED	-0.08272	0.17312	-0.02237	0.21149	-0.05085	-0.01940	0.05715	0.11448	0.16074	-0.13433
LCARET	0.26232	0.11630	0.03231	0.02436	0.08652	0.17543	-0.01317	0.00280	0.14170	0.25649
LLIFE	0.09702	0.05620	-0.04535	0.11243	-0.08363	0.06012	0.02707	-0.03045	0.09648	0.02762
LCLIP	-0.06416	0.14169	-0.08566	-0.01807	0.01151	-0.03265	0.05156	0.05924	0.07310	-0.14138
LCONF	-0.07206	0.02662	0.09907	-0.10904	0.12092	0.12724	-0.04085	-0.08448	-0.04736	0.10703
LCOCK	0.13614	-0.04931	0.14275	-0.06113	-0.08347	0.05970	-0.03848	0.02879	0.21732	-0.00681
LSELF	0.10745	0.00143	0.47480	-0.15548	0.01248	0.24815	0.03105	0.13067	-0.17034	0.14608
LSEX	-0.08932	0.13371	-0.06304	0.03737	-0.09009	-0.11050	0.14362	0.07961	0.21242	0.21664
LGOVT	-0.03713	0.14741	-0.17716	0.12472	0.04099	-0.04419	0.10070	0.07982	0.18703	-0.11301
LTRUST	0.06915	0.12997	-0.08637	0.18024	-0.06439	-0.08156	0.09204	0.00144	0.17334	-0.15349

LCOVE	-0.02369	0.17112	-0.09485	-0.02430	0.03001	0.15168	0.19757	-0.01848	-0.07906	-0.10020
LCOCK	-0.06374	-0.01360	0.09320	0.06135	-0.04679	-0.03549	-0.02498	-0.04027	0.07591	0.05781
LSELF	-0.11957	0.14602	-0.05393	-0.10619	-0.11007	0.09575	0.00008	-0.05561	-0.06687	-0.15416
LSEX	0.18007	-0.08372	0.01950	0.18555	0.24011	0.03643	0.01336	0.27954	0.07721	0.12179
LGOVT	0.28016	-0.11344	0.19749	0.10237	0.19549	-0.06347	0.01540	0.29620	0.09117	0.17181
LTRUST	0.02123	-0.06768	0.14259	0.17261	0.00690	-0.09486	0.05009	0.17515	0.05775	0.09279
LQUIET	-0.20152	-0.02735	-0.08647	0.23564	0.07992	0.04483	0.14306	-0.01329	-0.41129	-0.07987
LSPORT	0.09596	-0.00514	0.15696	0.14705	0.04601	-0.09692	-0.02198	0.11519	0.07649	-0.04023
LYOUTH	0.16284	-0.05007	0.17660	0.24522	0.21936	-0.10714	0.00778	0.32733	0.03637	0.17726
LSWITCH	-0.01272	0.04970	-0.02454	-0.16356	-0.11909	0.07150	-0.03268	-0.21766	0.17121	0.01598
LPOLIT	-0.04088	0.04815	-0.10170	-0.02394	-0.07656	-0.03408	0.01632	-0.17591	[illegible]	-0.07772
LSOCIAL	-0.01291	0.03627	0.08247	-0.09254	0.05107	-0.00986	-0.00472	0.15779	0.28716	0.11220
LACVT	0.18258	-0.02022	0.08300	0.06858	0.33745	-0.03202	0.00995	0.12992	0.04496	0.21832
LCHURCH	0.17512	-0.08745	0.19353	0.26122	0.20439	0.02353	0.16050	0.39472	-0.02312	0.07379
LPARENT	0.02977	0.00313	0.00534	0.06462	0.05557	0.15735	0.04675	0.14661	0.12165	0.01754
LYOUNG	0.14039	-0.07891	0.07778	0.18963	0.23243	-0.05169	0.01730	0.28152	-0.05658	0.15297
LCREATE	-0.15052	0.12368	-0.09798	-0.03344	-0.04856	0.09714	0.13995	0.01549	0.04729	-0.14247
LCASH	0.36144	0.04646	0.05054	0.10829	0.22998	-0.02649	0.08799	0.11073	0.17352	0.07555
LLIB	-0.04154	0.02117	-0.14002	-0.20628	-0.09391	0.14414	-0.09260	-0.24277	0.06546	-0.04830
LMEDIA	-0.05813	0.05997	-0.26616	-0.11651	0.13249	0.04943	0.00736	-0.21511	-0.18255	0.04954
LPROP	-0.26826	0.12722	0.03019	-0.07593	0.04365	0.18574	0.06915	-0.12238	0.08551	0.06159
LFUN	-0.07843	0.14268	-0.11195	-0.06930	-0.15199	0.13500	-0.01618	-0.16211	0.17532	0.04146
LSPREAD	0.19562	-0.27767	0.08478	0.11312	0.18037	-0.11133	0.04602	0.19361	0.04175	0.15566
LSEC	0.16739	-0.08067	0.09701	0.08956	0.19214	0.01304	0.12942	0.19749	-0.02556	0.05629
LMAKE	0.05909	-0.03769	-0.04945	-0.05508	0.09473	0.13652	0.14994	0.00971	0.14117	0.14957
LDISP	0.06957	0.04239	0.13664	0.09262	0.06080	0.07756	0.02248	0.14577	0.06171	0.10307
LLAST	0.00731	-0.00793	0.02773	0.06434	0.01365	0.04439	0.09242	0.10697	-0.11375	0.12444
LCONF	0.18227	-0.11391	0.07409	0.14594	0.19287	0.03126	0.08912	0.09528	0.11946	0.23019
LEAT	-0.17404	0.16939	-0.24226	-0.14237	-0.16915	0.13917	-0.03576	-0.14792	0.12451	-0.04167
LDROP	0.09237	-0.04987	-0.07914	0.04840	0.07333	0.10180	0.07242	0.13115	0.01488	-0.24436
LCLASS	-0.04476	0.06241	-0.17381	-0.02513	-0.00743	0.02722	0.03735	-0.13243	[illegible]	[illegible]
LCHAN	0.12139	-0.09965	-0.00483	0.11937	0.12565	0.09171	0.07262	0.07949	[illegible]	0.12091
LJUDGE	0.02467	-0.12999	0.00962	0.03787	0.02553	-0.17953	-0.07536	0.07203	[illegible]	0.05739
LUNION	-0.06092	0.11885	-0.12404	0.04567	0.00366	0.10757	0.10128	-0.00281	-0.03225	0.11930
LWATCH	-0.03334	0.02862	0.06253	0.11579	-0.03626	0.42524	0.13703	0.10749	[illegible]	0.12648

	LCLIP	LCOMF	LCOCK	LSELF	LSEX	LGOVT	LTRUST	LQUIET	LSPORT	LYOUTH
LSEEK	-0.10577	0.20290	0.09539	0.35612	0.03875	-0.15359	-0.13826	0.14634	-0.03737	-0.05152
LTRY	-0.09968	0.25782	0.06115	0.29094	0.02234	-0.11928	-0.15081	-0.04787	-0.07477	-0.13665
LPCHECKS	0.25097	0.12031	-0.11384	0.05266	0.07344	-0.06723	-0.08367	-0.00028	-0.05656	-0.06113
LCHEER	0.06335	-0.12579	0.00753	-0.17375	-0.02264	0.08872	0.07067	-0.06465	0.17426	0.08715
LART	0.00732	0.07725	0.01974	0.12343	0.01622	-0.00283	-0.14010	0.07675	-0.17560	-0.14462
LIMEL	0.03513	-0.20511	0.13505	-0.16290	-0.26096	0.00488	0.25553	-0.29177	0.05420	0.13266
LACH	-0.01912	0.07873	-0.06762	0.00218	-0.20031	-0.18576	-0.08723	-0.02746	-0.17705	-0.22447
LLIST	0.11757	0.12972	0.09725	0.14148	0.03362	-0.08459	-0.10561	0.08660	-0.12631	-0.11201
LCOMM	0.04928	0.17437	0.01372	0.18132	0.03533	-0.03238	-0.08813	-0.00363	0.11032	-0.01804
LBRAND	0.05282	0.12983	-0.02369	-0.02060	0.11108	0.05948	0.06219	0.31726	0.07441	0.14344
LSAVING	-0.06416	-0.07256	0.13014	0.10745	-0.08332	-0.03713	0.00915	-0.20628	-0.01630	-0.02924
LCAN	0.14169	0.02662	-0.04031	0.00143	0.13371	0.14741	0.12237	-0.07665	0.07010	0.17417
LLEAD	-0.08566	0.09907	0.14275	0.47480	-0.06304	-0.17716	-0.08637	-0.01775	0.03154	-0.11812
LWRONG	-0.21847	-0.12024	-0.06113	-0.15646	0.03777	0.12470	0.18024	0.02332	0.09764	0.15663
LCAMP	0.01151	0.12092	-0.08347	0.01248	-0.09009	0.04000	-0.06439	-0.06337	0.03312	-0.04630
LEXCIT	-0.03265	0.12724	0.05970	0.24815	-0.11350	-0.04418	-0.09166	-0.12314	-0.07347	-0.34661
LBUY	0.05156	-0.04985	-0.03848	0.03105	0.14362	0.02072	0.09204	0.06096	0.01334	0.11732
LFIX	0.05924	-0.08448	0.02839	0.13069	0.07861	0.07842	0.00144	0.03677	0.02134	0.22441
LADMIT	0.07310	-0.08739	0.01732	-0.17981	0.21242	0.18353	0.17344	-0.07253	-0.03946	0.23007
LTRIP	-0.14128	0.10758	-0.06681	0.14698	0.01664	-0.10301	-0.15319	-0.04664	-0.17736	-0.15328
LCREDIT	0.01620	-0.02369	-0.06374	-0.11957	0.18007	0.08016	0.02123	-0.00150	0.09526	0.16354
LMORE	-0.07773	0.17012	-0.01360	0.14602	-0.08372	-0.11344	-0.06759	-0.02775	[illegible]	-0.05327
LHUNT	0.08199	-0.09485	0.09320	-0.05393	0.01950	0.18749	0.14259	-0.09647	0.15696	0.17660
LOLD	0.07293	-0.02420	0.06185	-0.10519	0.18655	0.10237	0.17261	0.23564	0.14725	0.24522
LTOO	0.07313	0.03001	-0.04678	-0.11007	0.24011	0.18549	0.00690	0.07892	0.04601	0.21836

LSHOP	0.11225	0.15168	-0.07549	0.02576	0.03643	-0.06347	-0.09486	0.04493	-0.00632	-0.10714
LHATE	0.15621	0.18757	-0.02488	0.00298	0.01336	0.01589	0.05012	0.14306	-0.02108	0.09378
LWEED	0.14029	-0.01848	-0.04027	-0.05991	0.27954	0.28660	0.17516	-0.01929	0.11512	0.22783
LPART	0.10625	-0.03806	0.07501	-0.06687	0.03721	0.09117	0.05776	-0.41029	0.07649	0.03637
LLIFE	-0.04944	-0.09020	0.05781	-0.16416	0.12173	0.17191	0.09279	-0.07987	-0.04727	0.17026
LCLIP	1.00000	-0.00427	0.03182	-0.12744	0.02303	0.12703	0.07194	-0.13012	0.07621	0.02025
LCOME	-0.00427	1.00000	-0.07057	0.10533	0.09671	-0.13475	-0.14037	0.14669	-0.05117	-0.01472
LCOCK	0.03182	-0.07057	1.00000	0.16821	0.04406	-0.03756	0.09735	-0.12253	0.00750	0.26614
LSELF	-0.12744	0.10533	0.16821	1.00000	0.00750	-0.12863	-0.06270	0.12117	[illegible]	[illegible]
LSEX	0.09913	0.09671	0.04406	0.00750	1.00000	0.20875	0.09694	0.09008	0.28816	0.30743
LGOVT	0.12703	-0.10475	-0.03756	-0.12863	0.22875	1.00000	0.14436	-0.07026	0.10117	0.34216
LTRUST	0.07104	-0.14937	0.00705	-0.06270	0.08693	0.14406	1.00000	-0.02522	0.07113	0.13729
LQUIET	-0.13032	0.14668	-0.12257	0.12119	0.09009	-0.07026	-0.02522	1.00000	-0.02134	[illegible]
LSPORT	0.04791	-0.05113	0.00740	-0.00706	0.08836	0.10107	0.07113	-0.02144	1.00000	0.10970
LYOUTH	0.00025	-0.01632	0.05614	0.09913	0.30343	0.24216	0.13729	0.06630	0.10270	1.00000
LSWITCH	-0.04056	-0.05907	0.00912	-0.08503	-0.14031	-0.18436	-0.12540	-0.11875	-0.14305	-0.28653
LPOLIT	-0.14065	0.09223	0.13727	0.28892	-0.04174	-0.20295	-0.19312	[illegible]	0.24517	-0.16613
LSOCIAL	0.12607	-0.10147	0.24854	0.10918	0.09555	0.16520	0.09524	-0.33528	0.15603	0.15940
LADVT	0.34653	-0.07727	-0.00497	-0.10104	0.13943	0.27004	-0.07939	-0.09258	0.05603	0.12682
LCHURCH	0.05481	0.02702	-0.02331	-0.07234	0.39965	0.21213	0.19436	0.10544	0.15176	0.22208
LPARENT	0.05875	0.12243	-0.04809	-0.04939	0.10454	0.14093	0.02456	0.07541	0.05931	0.16461
LYOUNG	0.03423	0.02091	0.03564	-0.03096	0.28906	0.26523	0.12933	0.06830	0.07955	0.57250
LCREATE	-0.02779	0.00266	0.06113	0.09443	0.07942	-0.04228	-0.20763	-0.05606	-0.14705	0.02722
LCASH	0.01498	0.10127	-0.04348	-0.14016	0.19761	0.12809	-0.01432	[illegible]	0.01403	0.15225
LLIT	-0.01411	0.04680	-0.03206	0.05565	-0.14757	-0.12445	-0.12273	-0.02729	[illegible]	-0.26150
LMEDIA	-0.19438	0.16754	-0.00072	0.13924	0.07465	-0.12470	-0.30651	0.10271	[illegible]	-0.03431
LSAVE	[illegible]	0.15084	-0.03642	0.11325	0.02237	0.00666	-0.09727	-0.01540	-0.11717	-0.01429
LFUN	0.10136	0.02098	-0.02763	0.05746	-0.04441	-0.07630	0.11059	-0.08508	-0.11731	-0.04720
LCREAT	0.00924	-0.17482	-0.01506	-0.19246	0.08196	0.05710	0.10587	-0.07101	[illegible]	0.24106
LSEC	0.07520	0.15845	-0.09196	-0.10074	0.26458	0.26302	0.16934	0.06289	0.04081	0.17770
LMAKE	-0.04267	0.11078	-0.10269	-0.04742	0.21026	0.03636	0.09464	0.01772	-0.12764	0.17464
LCRISP	0.22653	-0.11780	0.07342	-0.09369	0.05224	0.10024	0.29976	-0.09305	0.06152	0.14130
LLAST	0.04675	0.06465	0.07423	-0.06956	0.04895	0.07154	0.13437	-0.02156	-0.06832	0.02221
LCOME	-0.02354	0.01623	-0.02659	-0.15145	0.16486	0.10705	0.13853	0.02435	-0.07708	0.03823
LEAT	-0.09183	0.04254	0.06851	0.12190	-0.06832	-0.21174	-0.06523	-0.01505	-0.02714	-0.17712
LDRUG	-0.03005	0.21075	-0.06157	0.03151	0.24543	0.11875	0.13106	0.09347	-0.02320	0.20102
LCLASS	[illegible]	0.10976	0.05815	0.17527	0.07453	-0.07247	-0.12438	0.10499	[illegible]	[illegible]
LCHAN	0.08938	0.05783	-0.01075	-0.14983	0.17245	0.16715	0.07744	0.01359	-0.01730	0.13344
LJUDGE	0.02250	-0.17817	0.05157	-0.00832	0.08746	0.11132	0.09250	-0.05076	-0.01857	0.08488
LUNION	-0.19546	0.17835	0.05322	0.18155	0.07261	-0.09442	-0.07049	0.07961	-0.05764	0.00115
LWATCH	0.20745	-0.01621	0.07345	-0.00983	0.08403	0.06424	0.06603	-0.06632	0.04132	0.01361

	LSWITCH	LPOLIT	LSOCIAL	LADVT	LCHURCH	LPARENT	LYOUNG	LCREATE	LCASH	LLIT
LSEEK	-0.09559	0.22965	-0.00498	-0.14144	-0.09719	0.01053	-0.00070	0.22983	-0.05422	0.06607
LTRY	0.07667	0.11972	0.01477	-0.00990	-0.18818	0.05456	-0.10132	0.35291	[illegible]	0.17573
LPCHECKS	0.07520	0.01263	-0.01265	0.07401	-0.01720	0.06536	-0.03443	0.12550	0.05719	0.05221
LOSELF	0.04714	-0.10127	0.09149	0.07423	-0.00560	0.00029	[illegible]	-0.15728	-0.02717	-0.01270
LART	0.09973	0.20429	-0.07358	-0.12827	-0.10070	0.05171	-0.12544	0.28824	0.06299	0.27754
LINEL	0.02076	-0.10537	0.05582	0.01031	0.10584	-0.05087	0.04255	-0.07246	-0.02032	-0.17516
LACH	0.29255	-0.05927	-0.01384	-0.25481	-0.21768	-0.02306	-0.18175	0.17966	-0.00276	0.17734
LLIST	-0.01147	0.10226	-0.02598	-0.05176	0.23403	0.01465	-0.16177	0.10224	-0.02714	0.10446
LCCAM	-0.09559	0.23243	0.10078	-0.05713	0.11070	0.02272	-0.03045	0.19804	-0.00733	0.02798
LBRAND	-0.08781	-0.12029	-0.04797	0.08542	0.08065	0.11842	0.15431	0.02076	0.05261	-0.10452
LSWING	0.12556	-0.01466	0.27507	-0.08274	-0.17621	-0.05232	-0.15865	0.14366	-0.08348	0.11584
LCAN	-0.11405	-0.09697	0.06323	0.11852	0.10115	0.00834	0.15313	0.10758	0.10400	-0.08760
LLEAD	-0.02276	0.28289	0.10822	-0.10900	-0.09459	-0.00840	-0.12108	0.27162	-0.02401	0.05749
LARMS	-0.12648	-0.13899	0.07532	0.13232	0.20352	0.08804	0.03885	-0.07746	0.17059	-0.07537
LCAMP	0.12537	-0.02459	0.04257	-0.00061	-0.14254	0.04209	-0.13099	0.20650	0.05831	0.15869
LEXCIT	0.14736	0.02490	0.28275	-0.05425	-0.15393	-0.02214	-0.05041	[illegible]	-0.01061	0.10546
LBUY	-0.05350	0.04639	0.09205	0.21175	0.00864	0.10278	0.06028	-0.03903	0.17020	-0.03323
LCIX	-0.04991	-0.01364	0.00843	-0.07061	0.14631	-0.00076	0.35619	0.11450	[illegible]	-0.11806
LAMBIT	0.06782	-0.16864	0.00663	0.09314	0.20775	0.03808	0.18757	-0.10060	0.10957	-0.05516

LWRONG	-0.15832	-0.12582	-0.01479	0.15634	0.09611	0.04193	0.10740	0.10040	0.15349	-0.10914
LCAMP	-0.00281	0.08552	0.13326	-0.08907	-0.01631	0.03967	-0.06196	-0.07945	-0.02355	0.12356
LEXCIT	0.05586	0.10301	0.23487	-0.10289	-0.11507	0.01514	-0.01122	-0.07446	-0.01353	0.27640
LBUY	0.04417	0.01299	-0.04178	0.15122	0.22897	0.02133	-0.02036	0.03800	0.02830	-0.04660
LFIX	-0.08622	-0.02564	-0.17127	0.05586	-0.02461	-0.00447	-0.01435	-0.01712	[illegible]	-0.19428
LAMBIT	-0.16756	0.00516	-0.00401	0.39046	0.00004	0.14405	0.14110	0.14516	[illegible]	[illegible]
LTEMP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LCOMFIT	-0.05813	-0.00826	-0.02443	0.10602	0.16740	0.05999	0.05939	0.03721	0.15227	-0.17404
LMORE	0.05997	0.12720	0.14269	-0.27767	-0.29067	-0.03769	0.04230	-0.08393	-0.11761	[illegible]
LHUNT	-0.26616	0.07010	-0.11105	0.08678	0.08701	-0.06045	0.13664	0.02773	0.07415	[illegible]
LOLD	-0.11601	[illegible]	-0.06030	0.11312	0.09986	[illegible]	[illegible]	[illegible]	0.14734	[illegible]
LTOO	0.12240	0.04366	-0.15199	0.18037	0.19214	0.08473	0.06680	0.01355	0.13247	-0.10416
LSHOP	[illegible]	[illegible]	[illegible]	-0.11100	0.01394	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LHATE	[illegible]	0.06015	-0.01618	0.04606	0.12042	0.14994	0.02246	0.06240	[illegible]	[illegible]
LWORK	-0.01511	[illegible]	[illegible]	[illegible]	0.19740	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LPART	-0.19253	0.06546	0.15902	0.06173	-0.02560	0.14317	0.06171	-0.01975	0.11846	0.12641
LLIFE	0.04954	0.05159	0.04146	0.16566	0.05829	0.10207	0.16107	0.12444	[illegible]	[illegible]
LCLIQ	-0.19410	-0.00860	0.10106	0.00024	0.07520	-0.04987	0.22955	0.04675	[illegible]	[illegible]
LCONT	0.14764	0.15184	0.02208	-0.17482	0.15845	0.13075	-0.11796	0.06405	[illegible]	[illegible]
LROCK	-0.00072	-0.02642	-0.02763	[illegible]	[illegible]	[illegible]	[illegible]	0.07413	[illegible]	[illegible]
LSELF	0.11624	[illegible]	[illegible]	-0.19946	-0.10074	[illegible]	[illegible]	[illegible]	-0.15194	[illegible]
LSEX	[illegible]	0.02237	-0.04441	0.08196	0.26450	0.01736	0.09924	0.04305	[illegible]	[illegible]
LGOVT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.07154	0.10701	[illegible]
LTRUST	-0.30541	-0.08703	0.11259	0.19557	0.16984	0.09464	0.29206	0.13457	0.13667	-0.21174
LQUIET	0.10271	-0.01592	-0.08159	[illegible]	0.05293	0.01732	-0.00735	-0.02156	0.02436	-0.04523
LSPORT	[illegible]	-0.10727	-0.19721	-0.01206	0.04281	-0.12264	[illegible]	[illegible]	[illegible]	-0.01515
LYOUTH	[illegible]	-0.01426	-0.04722	0.28106	0.17770	0.13458	0.14130	[illegible]	0.07833	-0.09714
LSWITCH	-0.02738	0.05443	0.19748	-0.05301	-0.20961	-0.04836	-0.04890	-0.05827	0.02027	-0.17719
LPOLIT	0.27020	0.09139	-0.02690	-0.22759	-0.17612	-0.15407	-0.19243	[illegible]	[illegible]	0.09906
LSOCIAL	-0.12144	0.19961	0.04697	0.01225	0.02564	-0.03072	0.23189	-0.06373	[illegible]	0.11422
LACVT	0.11664	0.12436	-0.12420	0.17730	0.10564	0.12143	0.04885	[illegible]	[illegible]	-0.03734
LCHURCH	-0.11504	-0.09356	-0.12768	0.19197	0.26789	0.11206	0.13858	0.09831	0.15330	-0.13926
LPARENT	0.09176	0.10316	0.02015	-0.01352	0.07073	0.14132	[illegible]	[illegible]	0.15110	-0.19585
LYOUNG	-0.05543	-0.06700	-0.06377	0.20996	0.23551	0.17623	0.14985	0.11533	0.20452	0.02725
LCOLATE	0.11358	0.17926	0.17235	-0.11810	0.29265	0.05883	-0.01291	-0.12342	-0.16132	-0.17425
LCASH	-0.34210	0.02054	-0.07337	0.11492	0.12424	0.14760	-0.01100	0.08791	0.12797	0.14736
LLIP	[illegible]	[illegible]	0.18280	-0.06645	-0.11739	[illegible]	[illegible]	[illegible]	[illegible]	-0.11313
LMEDIA	1.00000	0.17266	0.08815	-0.13063	-0.05570	0.06583	-0.14379	-0.02722	0.03334	[illegible]
LDEEP	0.17266	1.00000	0.19494	0.21098	0.02705	0.07009	0.09013	-0.01210	0.06031	0.17294
LFUN	0.08815	0.19494	1.00000	-0.04876	-0.01050	0.11348	0.12921	0.02770	0.10815	0.01761
LDREAD	-0.13063	0.01398	-0.04876	1.00000	0.16355	0.11240	0.11834	0.13303	0.33304	0.32496
LSEC	[illegible]	0.02705	-0.01050	0.16355	1.00000	0.29236	0.09874	0.05909	0.13736	-0.10357
LMAKE	[illegible]	[illegible]	0.11348	0.11240	0.29236	1.00000	-0.01024	0.00936	0.23104	-0.20139
LDISP	-0.14379	0.09013	0.12921	0.11834	0.09874	-0.01024	1.00000	0.06703	0.14257	0.09114
LLAST	-0.02722	-0.01210	0.02770	0.13303	0.05909	0.09976	0.06703	1.00000	0.23336	-0.03350
LCONF	0.03344	0.06031	0.10815	0.33304	0.13736	0.23104	0.14257	0.23336	1.00000	-0.03320
LFAT	0.17254	0.01761	0.32496	-0.10357	-0.20139	0.09114	[illegible]	[illegible]	[illegible]	1.00000
LDROP	0.06391	0.02501	0.09276	0.00509	0.21995	0.09951	0.02813	0.09507	0.04576	0.09223
LCLASS	0.19162	-0.24034	0.16836	-0.14050	-0.03393	-0.04998	-0.16324	-0.11462	-0.11216	0.23308
LCHAN	-0.07075	0.10027	-0.01690	0.15018	0.34254	0.09649	0.09040	0.15677	0.17930	-0.17105
LJUDGE	-0.05568	-0.11051	0.06476	0.10653	0.01873	0.02658	-0.01134	0.07263	0.05703	0.02234
LUNION	0.20648	0.02221	0.19429	-0.12432	0.02588	0.14360	-0.12656	0.03548	0.02983	0.16236
LWATCH	-0.07027	0.04601	-0.00022	0.01350	0.05517	0.05204	0.14003	0.01062	0.01559	-0.01994

	LDROP	LCLASS	LCHAN	LJUDGE	LUNION	LWATCH
LSEEK	0.10392	0.24514	-0.06779	-0.11700	0.19163	-0.01582
LTRY	[illegible]	0.20437	-0.12775	-0.11059	0.25205	-0.06010
LPCHECKS	0.04782	0.03275	0.03785	-0.11214	0.04692	0.28270
[illegible]	-0.13941	-0.22962	-0.00106	0.10624	-0.14064	0.03157
LART	0.03239	0.50640	0.02136	-0.03728	0.02182	0.00587
LINCL	-0.05772	-0.15983	0.05189	0.20690	-0.20996	0.06151
LACH	-0.04391	0.03578	-0.13351	-0.06214	0.06604	-0.05117

DETERMINANT OF CORRELATION MATRIX = 0.30000000(0-12701E40-07)

THE LOWRY FILE

19/02/76

FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER

CORRELATION COEFFICIENTS..

	EFUTILE	EGOOD	ERECYCL	EREDUCED	EGOVT	EOIL	EADDINS	ECAN	ECAR	EPROD
EFUTILE	1.00000	-0.40312	0.40319	0.32551	0.11752	0.26016	0.26551	0.35547	0.00864	-0.20622
EGOOD	-0.40312	1.00000	-0.32221	-0.27371	-0.01567	-0.17591	-0.20917	-0.30309	0.07949	0.30454
ERECYCL	0.40319	-0.32221	1.00000	0.33164	0.17160	0.25210	0.29036	0.31389	-0.05213	-0.18841
EREDUCED	0.32551	-0.27371	0.33164	1.00000	0.04744	0.16479	0.35309	0.34573	-0.10169	-0.21565
EGOVT	0.11752	-0.01567	0.17160	0.04744	1.00000	0.26108	0.02713	0.15474	0.13896	-0.03423
EOIL	0.26016	-0.17591	0.25210	0.16479	0.26108	1.00000	0.15114	0.21165	0.10865	-0.11596
EADDINS	0.26551	-0.20917	0.29036	0.35309	0.02713	0.15114	1.00000	0.31002	0.01097	-0.16303
ECAN	0.35547	-0.30309	0.31389	0.34573	0.15474	0.21165	0.31002	1.00000	-0.01851	-0.17981
ECAR	0.00864	0.07949	-0.05213	-0.10169	0.13896	0.10865	0.01097	-0.01851	1.00000	0.29344
EPROD	-0.20622	0.30454	-0.18841	-0.21565	-0.03423	-0.11596	-0.16303	-0.17981	0.29344	1.00000
ESHORT	0.35046	-0.31803	0.39858	0.33536	0.12260	0.29012	0.21793	0.34923	-0.04191	-0.24853
EPATRIOT	-0.33023	0.31815	-0.23070	-0.20950	0.05042	-0.12871	-0.15698	-0.21597	0.10619	0.30686
EWASTE	-0.33925	0.28441	-0.20414	-0.17941	0.04284	-0.08590	-0.17602	-0.25828	0.11699	0.33270
EIMPORT	-0.21179	0.18332	-0.18591	-0.17041	-0.06677	-0.08747	-0.12654	-0.20818	0.19516	0.26224
ECONCERN	-0.30643	0.30037	-0.16553	-0.18125	-0.05689	-0.13684	-0.16220	-0.20760	0.11065	0.28181
EANY	-0.12268	0.16299	-0.12612	-0.12767	-0.02504	-0.13263	-0.10774	-0.05129	0.03826	0.26269

	ESHORT	EPATRIOT	EWASTE	EIMPORT	ECONCERN	EANY
EFUTILE	0.35046	-0.33023	-0.33925	-0.21179	-0.30643	-0.12268
EGOOD	-0.31803	0.31815	0.28441	0.18332	0.30037	0.16299
ERECYCL	0.39858	-0.23070	-0.20414	-0.18591	-0.16553	-0.12612
EREDUCED	0.33536	-0.20950	-0.17941	-0.17041	-0.18125	-0.12767
EGOVT	0.12260	0.05042	0.04284	-0.06677	-0.05689	-0.02504
EOIL	0.29012	-0.12871	-0.08590	-0.08747	-0.13684	-0.13263
EADDINS	0.21793	-0.15698	-0.17602	-0.12654	-0.16220	-0.10774
ECAN	0.34923	-0.21597	-0.25828	-0.20818	-0.20760	-0.05129
ECAR	-0.04191	0.10619	0.11699	0.19516	0.11065	0.03826
EPROD	-0.24853	0.30686	0.33270	0.26224	0.28181	0.26268
ESHORT	1.00000	-0.30338	-0.31977	-0.21855	-0.26494	-0.06315
EPATRIOT	-0.30338	1.00000	0.60838	0.33077	0.30638	0.13756
EWASTE	-0.31977	0.60838	1.00000	0.29894	0.30557	0.18039
EIMPORT	-0.21855	0.33077	0.29894	1.00000	0.51101	0.36075
ECONCERN	-0.26494	0.30638	0.30557	0.51101	1.00000	0.52299
EANY	-0.06315	0.13756	0.18039	0.36075	0.52299	1.00000

DETERMINANT OF CORRELATION MATRIX = 0.0245717(0.24571680D-01)

THE LOWRY FILE 19/02/76

FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER

CORRELATION COEFFICIENTS..

	MNSUB	MNLOCAL	MNEW	MNWOM	MNADVT	MNFIN	MNEDT	MNCOM	MNSPOR	MNCLASS
MNSUB	1.00000	0.76671	0.78184	0.48533	0.57052	0.46591	0.59752	0.48524	0.59014	0.45625
MNLOCAL	0.76671	1.00000	0.71788	0.49201	0.63934	0.40705	0.57635	0.42635	0.57447	0.45871
MNEW	0.78184	0.71788	1.00000	0.48470	0.46380	0.54340	0.68521	0.37064	0.46853	0.36958
MNWOM	0.48533	0.49201	0.48470	1.00000	0.41127	0.16748	0.39600	0.20050	0.16297	0.34996
MNADVT	0.57052	0.63934	0.46380	0.41127	1.00000	0.29187	0.34709	0.32046	0.43319	0.50679
MNFIN	0.46591	0.40705	0.54340	0.16748	0.29187	1.00000	0.56973	0.11540	0.41171	0.24680
MNEDT	0.59752	0.57635	0.68521	0.39600	0.34709	0.56973	1.00000	0.22210	0.42046	0.26848
MNCOM	0.48524	0.42635	0.37064	0.20050	0.32046	0.11540	0.22210	1.00000	0.36670	0.29223
MNSPOR	0.59014	0.57447	0.46853	0.16297	0.43319	0.41171	0.42046	0.36670	1.00000	0.32298
MNCLASS	0.45625	0.45871	0.36958	0.34996	0.50679	0.24680	0.26848	0.29223	0.32298	1.00000
MNTRAV	0.59769	0.54479	0.56777	0.46430	0.44698	0.40237	0.48306	0.31610	0.33233	0.38700

	MNTRAV
MNSUB	0.59769
MNLOCAL	0.54479
MNEW	0.56777
MNWOM	0.46430
MNADVT	0.44698
MNFIN	0.40237
MNEDT	0.48306
MNCOM	0.31610
MNSPOR	0.33233
MNCLASS	0.38700
MNTRAV	1.00000

DETERMINANT OF CORRELATION MATRIX = 0.00274221 0.27421680D-02)

THE LOWRY FILE

FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER 19/02/76

CORRELATION COEFFICIENTS..

	MMCONT	MMFASH	MMTRAD	MMNEWS	MMTRAV	MMSPORT	MMPROF
MMCONT	1.00000	0.03567	-0.08096	0.01878	0.02955	0.13391	0.02554
MMFASH	0.03567	1.00000	0.20658	-0.00249	-0.00038	-0.12974	-0.01613
MMTRAD	-0.08096	0.20658	1.00000	0.19182	0.29319	0.06404	-0.01949
MMNEWS	0.01878	-0.00249	0.19182	1.00000	0.38299	0.09349	0.29198
MMTRAV	0.02955	-0.00038	0.29319	0.38299	1.00000	0.08835	0.25191
MMSPORT	0.13391	-0.12974	0.06404	0.09349	0.08835	1.00000	0.09068
MMPROF	0.02554	-0.01613	-0.01949	0.29198	0.25191	0.09068	1.00000

DETERMINANT OF CORRELATION MATRIX = 0.6019016(0.60190159D+00)

THE LOWRY FILE 19/02/76

FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER

CORRELATION COEFFICIENTS..

	MRROCK	MRQUA	MREOR	MRSPOR	MRNEW	MRCOM	MREDUC	MRTALK	MRWEA
MRROCK	1.00000	-0.22259	-0.09305	-0.05733	-0.20054	-0.07849	-0.24139	-0.10565	-0.04112
MRQUA	-0.22259	1.00000	0.14959	-0.00947	0.19410	0.03778	0.37594	0.05686	0.12534
MREOR	-0.09305	0.14959	1.00000	-0.14341	0.04411	0.11825	0.30785	0.05107	-0.03107
MRSPOR	-0.05733	-0.00947	-0.14341	1.00000	0.26585	0.16934	0.05031	0.07414	0.25311
MRNEW	-0.20054	0.19410	0.04411	0.26585	1.00000	0.11838	0.26117	0.21323	0.55553
MRCOM	-0.07849	0.03778	0.11825	0.16934	0.11838	1.00000	0.36131	0.38085	0.14322
MREDUC	-0.24139	0.37594	0.30785	0.05031	0.26117	0.36131	1.00000	0.33813	0.15756
MRTALK	-0.10565	0.05686	0.05107	0.07414	0.21323	0.38085	0.33813	1.00000	0.22281
MRWEA	-0.04112	0.12534	-0.03107	0.25311	0.55553	0.14322	0.15756	0.22281	1.00000

DETERMINANT OF CORRELATION MATRIX = 0.2511916(0.25119162D+00)

THE LOWRY FILE 19/02/76

FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER

CORRELATION COEFFICIENTS..

	MTMOVIE	MTSPORT	MTCOMD	MTVAR	MTGAME	MTSOAP	MTTALK	MTDOCUM	MTNEW	MTCONS
MTMOVIE	1.00000	0.09388	0.38025	0.33766	0.36106	0.19214	0.15267	0.12034	0.13161	0.02309
MTSPORT	0.09388	1.00000	0.18850	0.01434	0.09692	-0.02449	0.08167	0.09510	0.30293	0.11933
MTCOMD	0.38025	0.18850	1.00000	0.42764	0.36459	0.19140	0.18143	0.02658	0.20177	0.09718
MTVAR	0.33766	0.01434	0.42764	1.00000	0.39154	0.21100	0.29637	0.03856	0.14007	0.10036
MTGAME	0.36106	0.09692	0.36459	0.39154	1.00000	0.42408	0.25910	-0.03789	0.11990	0.10599
MTSOAP	0.19214	-0.02449	0.19140	0.21100	0.42408	1.00000	0.21303	-0.15883	-0.05037	0.01721
MTTALK	0.15267	0.08167	0.18143	0.29637	0.25910	0.21303	1.00000	0.20229	0.23667	0.19767
MTDOCUM	0.12034	0.09510	0.02658	0.03856	-0.03789	-0.15883	0.20229	1.00000	0.45659	0.38759
MTNEW	0.13161	0.30293	0.20177	0.14007	0.11990	-0.05037	0.23667	0.45659	1.00000	0.38701
MTCONS	0.02309	0.11933	0.09718	0.10036	0.10599	0.01721	0.19767	0.38759	0.38701	1.00000
MTCLASS	-0.02585	-0.14446	-0.05265	-0.01185	-0.11233	-0.02993	0.06931	0.34602	0.23281	0.29891
MTDET	0.43842	0.15287	0.33115	0.28126	0.34337	0.16421	0.10707	-0.10627	0.08990	0.08467
MTDOCT	0.31499	0.02921	0.35092	0.29703	0.39287	0.31390	0.16515	-0.10917	0.03741	0.03937

	MTCLASS	MTDET	MTDOCT
MTMOVIE	-0.02585	0.43842	0.31499
MTSPORT	-0.14446	0.15287	0.02921
MTCOMD	-0.05265	0.33115	0.35092
MTVAR	-0.01185	0.28126	0.29703
MTGAME	-0.11233	0.34337	0.39287
MTSOAP	-0.02993	0.16421	0.31390
MTTALK	0.06931	0.10707	0.16515
MTDOCUM	0.34602	-0.10627	-0.10917
MTNEW	0.23281	0.08990	0.03741
MTCONS	0.29891	0.08467	0.03937
MTCLASS	1.00000	-0.14107	-0.10800
MTDET	-0.14107	1.00000	0.58467
MTDOCT	-0.10800	0.58467	1.00000

DETERMINANT OF CORRELATION MATRIX = 0.0534223(0.534223130-01)

Appendix IV

Factor loading of the varimax rotated factors in sections A, B, C_1, C_2, C_3, and C_4 of the questionnaire

THE LOWRY FILE

FILE IDENTIFI (CREATION DATE = 17/02/76) OF THE ENERGY CONSCIOUS CONSUMER 17/02/76

FACTOR MATRIX USING PRINCIPAL FACTOR WITH ITERATIONS

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR 9	FACTOR 10
LSEEK	-0.38895	0.25657	-0.21496	0.17862	-0.01925	0.12117	-0.11654	0.08252	-0.00433	0.04766
LTRY	-0.52446	0.37497	0.14089	0.02233	0.09715	0.03347	-0.04774	-0.12419	-0.01710	-0.05045
LECHECKS	-0.14863	0.28566	0.06719	-0.21312	-0.37015	-0.08675	0.10033	0.16792	0.07318	0.02450
L[illegible]	0.22742	-0.20294	0.23261	-0.02295	0.00757	-0.12613	-0.03465	0.07246	0.11151	0.11320
LART	-0.41676	0.13486	-0.13834	-0.04480	0.09177	-0.05031	0.40141	-0.22681	0.09674	0.27557
LINFL	0.23[illegible]03	-0.15262	0.18014	0.04255	-0.04837	0.27641	0.31052	-0.24744	-0.04149	0.[illegible]
LACH	-0.39391	0.01342	0.29410	-0.17151	0.01493	-0.28649	-0.13773	-0.11147	-0.03508	0.15973
LLIST	-0.25547	0.29361	0.00070	-0.03722	-0.09911	0.17[illegible]	0.16244	0.07112	0.05008	[illegible]
LCOMM	-0.25124	0.25205	-0.01622	0.24063	-0.18238	-0.06551	0.20010	-0.04455	-0.19108	0.03241
L[illegible]	0.17[illegible]	0.22779	-0.21085	-0.03940	0.07617	0.10[illegible]	-0.09163	[illegible]	-0.06630	[illegible]
LSWING	-0.26855	0.02099	0.47699	0.15736	0.10421	0.04807	-0.03283	0.09030	-0.00862	0.05052
LCAN	0.24452	0.23045	0.15654	0.02127	-0.12052	-0.02[illegible]	-0.04[illegible]	-0.02270	-0.03036	0.14020
LLEAD	-0.44207	0.23104	0.05620	0.36929	-0.00658	0.06982	-0.09735	0.21259	-0.08373	0.14740
LWRONG	0.35658	-0.10693	0.09538	-0.00857	0.20281	-0.03600	0.06231	-0.13510	-0.10594	0.17225
LCAMO	-0.26425	0.14227	0.29179	0.01005	-0.06372	-0.33662	-0.10051	-0.07629	0.10621	-0.07161
LEXCIT	-0.38540	0.27137	0.44073	0.16326	0.15040	-0.14887	-0.17635	-0.17218	0.20037	0.02189
LBUY	0.15555	0.10725	-0.05897	0.03720	0.19727	-0.18745	0.10328	0.11511	-0.07129	0.11463
LFIX	0.11347	0.37162	-0.09367	0.32774	-0.08323	-0.24057	-0.02410	-0.16[illegible]	0.09773	0.03348
LAMBIT	0.42349	0.12179	0.21304	-0.10612	0.16194	0.03700	0.02577	0.01923	0.17104	0.14827
LTRIP	-0.35440	0.26762	0.16393	-0.13976	0.15132	-0.04010	-0.01665	-0.02455	0.00317	-0.18437
LCREDIT	0.31806	0.13379	-0.02446	-0.05906	0.13853	-0.22811	0.10469	0.01283	-0.02127	0.07241
LMORE	-0.30181	0.13584	0.10892	0.08030	-0.11081	-0.24792	-0.23688	-0.01770	-0.01372	-0.08441
LHUNT	0.33501	-0.06920	0.19433	0.29356	-0.10133	-0.13735	-0.12136	-0.11390	0.05738	0.04777
LCLO	0.37[illegible]	0.10594	-0.15520	0.13241	-0.10768	0.05410	0.0[illegible]217	-0.03726	0.16450	0.20030
LTOO	0.31071	0.31557	-0.07726	-0.02593	0.15161	-0.32819	-0.34215	0.16745	0.04830	0.06449
LSHOP	-0.21222	0.30180	0.12773	-0.29797	-0.45480	0.01749	-0.02267	0.15112	0.13241	-0.11193
LHATE	0.02793	0.28974	-0.02463	-0.04906	-0.21921	-0.03280	-0.10612	-0.04319	0.05319	0.00358
LAFFD	0.44546	0.23428	0.26983	0.25147	-0.09466	-0.02420	-0.09886	-0.1[illegible]	[illegible]	-0.15752
LPART	0.62613	0.11935	0.02980	0.01114	0.10135	0.03105	0.08828	0.03643	-0.11573	-0.22564
LLIFE	0.29339	0.14311	0.17893	-0.14396	0.25583	0.13973	-0.35041	0.23726	0.17248	-0.05501
LCLIP	0.18354	0.04617	0.23628	-0.01792	-0.39840	-0.01985	0.29399	0.05917	0.03724	0.02235
LCOME	-0.21213	0.37575	-0.20408	-0.09637	-0.09456	-0.06486	-0.17017	-0.00214	-0.17036	-0.03712
LCOCK	-0.64087	0.02963	0.11379	0.28478	0.05437	0.22302	0.08030	0.19551	0.17730	0.02381
LSELF	-0.30265	0.24160	-0.12246	0.41413	0.00567	0.06414	-0.13037	0.09139	-0.01777	0.15288
LSEX	0.29635	0.45455	-0.12320	0.05235	0.05991	0.03022	0.13254	0.03358	0.02445	-0.08969
LGOVT	0.47502	0.19590	0.11959	0.06296	0.05471	-0.08553	0.07472	-0.[illegible]	0.02031	-0.11734
LTRUST	0.34726	0.02146	0.19620	0.09427	-0.03829	0.32742	0.01578	-0.17458	-0.06931	0.18196

LQUIET	-0.09523	0.12122	-0.51557	-0.07455	-0.08194	0.00663	-0.13474	-0.12407	0.12267	0.32779
LSPORT	0.17941	-0.03099	-0.01347	0.27549	-0.09763	-0.09220	-0.01258	0.05043	-0.07872	-0.09222
LYOUTH	0.49004	0.35356	-0.02744	0.22009	0.14040	0.01669	-0.11832	[illegible]	0.12027	[illegible]
LSWITCH	-0.24825	-0.18386	0.29589	-0.22212	0.08495	-0.00280	0.04357	-0.07462	0.17124	0.07719
LPOLIT	-0.36374	0.06195	-0.24792	0.27453	0.09089	0.00232	0.17092	[illegible]	[illegible]	[illegible]
LSOCIAL	0.04799	0.13416	0.44519	0.33894	0.11373	-0.01611	0.18901	0.22854	[illegible]	-0.08509
LADVT	[illegible]	0.17076	0.04911	-0.10041	0.13766	-0.20516	[illegible]	0.31012	[illegible]	[illegible]
LCHURCH	0.43139	0.30128	-0.12295	0.14837	-0.13586	0.09237	0.07413	[illegible]	-0.04729	-0.02474
LPARENT	[illegible]	0.30954	-0.01798	-0.08246	0.00640	[illegible]	0.05032	[illegible]	[illegible]	[illegible]
LYOUNG	0.43513	0.35044	-0.11569	0.10919	0.08035	0.11555	-0.07711	[illegible]	0.15635	-0.06743
LCOSATE	-0.32557	0.39725	0.11123	0.15412	0.01572	-0.15167	0.05273	-0.10478	[illegible]	0.19846
LCASH	0.22306	0.27975	-0.00680	-0.08026	0.08476	-0.31061	0.13632	-0.00264	0.05543	-0.04331
LLIB	-0.36650	-0.34662	0.09676	-0.20811	0.06511	-0.14724	0.22793	[illegible]	[illegible]	0.11332
LMEDIA	-0.31932	0.24123	-0.28929	-0.16579	0.10560	-0.07626	-0.09331	0.27348	[illegible]	[illegible]
LPROB	-0.16755	0.24233	0.18001	-0.10184	-0.04449	-0.13465	-0.11974	0.21733	[illegible]	0.22773
LFUN	-0.26108	0.17569	0.32639	-0.20547	0.07551	0.20162	0.11219	-0.12817	[illegible]	0.15692
LDREAD	0.47522	[illegible]	0.11573	-0.13180	0.14277	-0.02290	0.23041	[illegible]	[illegible]	0.13606
LSEC	0.24776	0.35546	-0.05331	-0.10998	-0.06080	0.02424	0.33827	-0.15169	-0.33621	[illegible]
LMAKE	0.11820	0.27512	0.06042	-0.29022	0.06722	0.10214	-0.14726	-0.10746	-0.07637	-0.11432
LDISP	0.25082	0.07745	0.29780	0.05304	-0.17668	0.16719	0.01579	0.10673	-0.05420	0.15924
LLAST	0.22112	[illegible]	-0.00795	-0.19917	0.05710	0.16735	-0.11223	0.26173	[illegible]	[illegible]
LCONF	0.34570	0.23442	0.13049	-0.25663	0.16961	0.07443	-0.10516	0.05323	0.09510	0.13660
LEAT	-0.46874	0.11319	0.12132	-0.09483	0.11530	0.23927	-0.01615	-0.04741	[illegible]	[illegible]
LDROP	0.07690	0.34628	-0.14421	-0.09790	0.06776	0.15760	0.23050	-0.01684	-0.25710	-0.04632
LCLASS	-0.36951	0.24454	-0.23834	0.06578	0.24390	0.06292	0.45521	-0.07393	0.16957	[illegible]
LCHAN	0.39814	0.21392	-0.03993	-0.18653	-0.06954	0.07940	0.13623	0.02761	-0.11182	[illegible]
LJUDGE	0.18695	[illegible]	0.06320	0.04937	0.19160	0.21097	0.12141	[illegible]	[illegible]	[illegible]
LUNION	-0.19194	0.29141	-0.15074	-0.02307	0.08854	0.20399	-0.24730	-0.04186	0.18314	-0.11965
LWATCH	0.09565	0.16355	0.11473	-0.08324	-0.55176	0.05273	0.11971	0.12222	0.27234	-0.06073

	FACTOR 11	FACTOR 12	FACTOR 13	FACTOR 14
LSEEK	0.01777	0.08439	0.09778	-0.01205
LTRY	[illegible]	0.09354	0.02047	-0.00055
LPCHECKS	0.08791	0.07595	-0.03632	-0.15928
LOFFER	0.12173	[illegible]	0.05212	0.13924
LART	-0.06260	-0.05685	0.08925	-0.00623
LINFL	[illegible]	-0.19186	0.12494	0.09176
LACH	0.05408	-0.17968	[illegible]	-0.03764
LLIST	-0.01219	0.04649	-0.01957	-0.08266
LCOMM	[illegible]	-0.04178	0.04441	0.05812
LDEMAND	0.12291	0.17079	[illegible]	-0.05749
LSWING	0.09891	-0.01823	0.02349	-0.01537
LCAN	0.09679	-0.10474	0.24538	-0.02759
LLEAD	[illegible]	0.01000	0.01597	-0.09726
LWRONG	0.11438	[illegible]	-0.00959	-0.04692
LCAMP	-0.07250	0.04133	-0.14184	0.16546
LEXCIT	-0.01409	0.04645	-0.19269	0.01248
LBUY	0.17156	-0.01435	-0.20992	-0.07028
LFIX	-0.06652	0.10379	0.05391	-0.05850
LAMBIT	-0.04010	0.22619	0.05463	-0.06688
LTRIP	0.22667	-0.05841	-0.03903	-0.02256
LCREDIT	0.20639	0.04549	0.16248	-0.05545
LMORE	0.17171	-0.07664	0.01401	0.08967
LHUNT	-0.02275	0.05634	0.03273	0.19361
LCOL	0.21257	-0.04740	0.03679	[illegible]
LTOG	0.15544	-0.07380	-0.17917	-0.07987
LSHOP	-0.02441	-0.01664	-0.03770	0.10168
LHATE	0.06134	0.14300	-0.04040	-0.07615
LWEEK	0.08721	-0.04694	-0.09137	-0.06202
LPART	0.13684	0.12097	0.14526	0.04111
LLIFE	-0.07092	[illegible]	0.04774	0.09314
LCLIP	0.06687	0.06093	-0.19766	-0.15823

LCOMF	-0.00141	0.25140	0.05078	0.12471
LCOCK	-0.03458	0.07460	0.10562	-0.00558
LCELF	-0.07617	0.00022	-0.00324	-0.14070
LSEX	0.03409	-0.01855	0.04142	0.02749
[illegible]	[illegible]	[illegible]	0.10111	0.07731
LTRUST	0.05514	0.00831	-0.11740	-0.00659
LQUIET	0.02450	-0.08942	-0.15027	0.05066
LSPORT	0.14209	0.02667	-0.05414	0.22557
LYOUTH	-0.13135	-0.11327	-0.03436	0.02708
LSWITCH	0.28822	0.02807	0.11612	0.00606
LPOLIT	0.[illegible]	0.10601	0.04917	0.17795
LSOCIAL	-0.12041	0.01913	-0.06995	0.03453
LA[illegible]	-0.01411	-0.1[illegible]	-0.0[illegible]	-0.[illegible]
LCHURCH	0.11136	-0.03815	0.00437	0.04194
LPARENT	0.1[illegible]	-0.01420	-0.01499	0.19615
LYOUNG	-0.10355	-0.14725	0.04073	-0.05297
LC[illegible]ATE	-0.1[illegible]	-0.0[illegible]	0.14071	-0.1[illegible]
LCASH	0.20492	0.00846	0.27021	-0.02674
LL[illegible]	-0.10016	0.07099	0.00558	0.12726
LMEDIA	-0.0[illegible]7	-0.12132	-0.02145	0.10764
L[illegible]	-0.10519	-0.07625	0.07248	0.10619
L[illegible]	0.24516	-0.10[illegible]	-0.0[illegible]	0.1[illegible]
L[illegible]	-0.11711	0.01[illegible]	-0.0[illegible]	-0.1[illegible]
LSEC	-0.20136	0.00732	0.02129	-0.00070
LMAKE	-0.03587	-0.07115	0.09024	-0.11060
LDISP	-0.01333	-0.08786	-0.09689	0.02312
LLAST	0.21437	0.36361	-0.01151	-0.05841
LCOMF	-0.02425	0.07308	0.03055	0.08710
L[illegible]	0.21[illegible]	-0.[illegible]	-0.11[illegible]	-0.01434
L[illegible]	0.0[illegible]	0.12551	-0.16775	0.13373
L[illegible]	0.0[illegible]1[illegible]	-0.[illegible]	-0.07494	0.0[illegible]21
LCHAN	-0.16753	0.10439	0.06559	0.04470
LJUDGE	0.00094	-0.02150	-0.01412	-0.00931
LUNION	0.02949	-0.07499	0.11051	0.01739
LWATCH	0.00495	-0.08430	0.07226	0.03034

VARIABLE	COMMUNALITY
LSEEK	0.34980
LTRY	0.48875
LOCHECKS	0.37676
LD[illegible]	0.22914
LART	0.54158
LINFL	0.27559
LACH	0.39423
LLIST	0.22156
LCOMM	0.21651
L[illegible]	[illegible]
LSWING	0.35765
LCAN	0.32975
LLEAD	0.49237
L[illegible]	0.24237
LCAMP	0.51246
LEXCIT	0.57436
LBUY	0.23152
LFIX	0.[illegible]
LAMBIT	0.37440
LTRIP	0.37213
LCREDIT	0.28916
L[illegible]	0.22447
LHUNT	0.35133
LOLD	0.34[illegible]
LTOT	0.43568

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	6.21509	25.9	25.9
2	3.33990	13.9	39.8
3	2.60690	10.9	50.7
4	1.94520	8.1	58.8
5	1.67434	7.0	65.8
6	1.38451	5.8	71.6
7	1.28854	5.4	77.0
8	1.10106	4.6	81.5
9	0.91545	3.8	85.4
10	0.[illegible]	[illegible]	88.9
11	0.73630	3.1	92.0
12	0.67745	2.8	94.8
13	0.64055	2.7	97.5
14	0.60401	2.5	100.0

LSHOP	0.51907
LMATE	0.19318
LWEED	0.70160
LPARTY	0.42653
LLIFE	0.30446
LCLIP	0.41371
LSOAP	0.47611
LCOOK	0.24458
LSELF	0.49717
LSEX	0.74946
LGOVT	0.35267
LTRUST	0.35906
LQUIET	0.49664
LSPORT	0.21030
LYOUTH	0.53346
LSWITCH	0.31305
LPOLIT	0.42381
LSOCIAL	0.44055
LADVT	0.23731
LCHURCH	0.42637
LBASEBT	0.17638
LYOUNG	0.43928
LCREATE	0.44934
LCASH	0.39473
LLIB	0.23135
LMEDIA	0.42660
LPROP	0.35687
LFUN	0.42826
LSPEAD	0.24837
LSEC	0.43562
LMAKE	0.32046
LDISP	0.28056
LLAST	0.29147
LCONF	0.34457
LFAT	0.40926
LDROP	0.32412
LCLASS	0.57131
LCHAN	0.27256
LJUDGE	0.16648
LUNION	0.32568
LWATCH	0.48230

THE LOWRY FILE 17/02/76

FILE IDENTIF (CREATION DATE = 17/02/76) OF THE ENERGY CONSCIOUS CONSUMER

VARIMAX ROTATED FACTOR MATRIX

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR 9	FACTOR 10
LSEEK	0.[illegible]	0.52530	-0.11506	0.02754	-0.11057	0.[illegible]	0.04467	0.07467	-0.16[illegible]	-0.04503
LTRY	-0.03837	0.38816	0.09869	0.06114	-0.10089	0.17067	0.46151	0.13688	-0.16674	-0.01745
LPCHECKS	-0.[illegible]636	0.09253	-0.02907	0.56146	0.09422	0.03387	-0.06476	0.[illegible]078	-0.[illegible]778	-0.[illegible]6662
LOFFER	-0.17203	-0.10592	0.03759	-0.01317	0.09258	-0.14257	-0.03418	-0.[illegible]8[illegible]	0.[illegible]216	-0.25107
LART	-0.11716	0.09166	-0.66013	0.[illegible]065	-0.07244	0.65443	0.[illegible]4[illegible]	-0.[illegible]446	-0.[illegible]8[illegible]	-0.07564
LFAIL	-0.08964	-0.16576	0.66695	-0.08627	-0.14300	-0.09321	-0.09585	0.10044	0.[illegible]8[illegible]	-0.09701
LACH	-0.31456	0.24485	0.03158	0.03140	0.02615	-0.33566	0.47131	0.13644	0.07013	-0.[illegible]737
LLIST	0.01178	0.25107	0.02610	0.25137	-0.02216	0.24503	0.06740	0.11644	-0.21736	0.20107

	FACTOR 11	FACTOR 12	FACTOR 13	FACTOR 14
LSEEK	-0.13342	-0.01500	0.03163	-0.00273
LTRV	0.00891	0.04027	-0.00284	-0.15728

LPCHECKS	0.01604	0.07908	0.05185	-0.09727
LOREFO	0.14745	0.09570	0.05463	0.10011
LANT	-0.16420	[illegible]	-0.00181	-0.15224
LINFL	-0.05640	0.34608	-0.02578	0.04143
LACH	-0.14671	[illegible]	0.13962	-0.17082
LLIST	0.04502	-0.03538	0.01735	-0.11088
LCOMM	-0.26220	0.04061	0.16318	0.04240
LBRAND	0.23678	0.07073	-0.08626	0.01901
LSWING	[illegible]	[illegible]	0.05588	-0.02608
LCAN	-0.01814	0.36116	0.20276	-0.04042
LLEAD	-0.13039	-0.04872	0.04214	0.01090
LWRONG	0.17205	0.14777	-0.03569	-0.00073
LCAMP	-0.06111	-0.01169	0.10578	0.05069
LEXCIT	[illegible]	-0.11174	0.07961	[illegible]
LBUY	[illegible]	[illegible]	-0.03519	0.06007
LFIX	0.05362	0.05721	-0.09396	0.04774
LAMBIT	0.16063	0.12717	0.00168	-0.03149
LTRIP	-0.04277	-0.00102	-0.02105	-0.13276
LCONT	[illegible]	0.40780	-0.01979	0.03106
LMORE	-0.16350	0.02181	0.01274	0.09608
LHUNT	0.02074	0.14601	0.05573	0.25048
LCLD	0.09526	0.16940	-0.05720	0.21488
LTOO	0.08148	0.17714	0.05102	0.21614
LSHOP	0.00043	-0.03663	0.15624	0.02605
LHATE	0.17417	0.00017	0.00002	-0.01277
LWEED	-0.01125	0.09867	-0.14074	0.08739
LPAST	0.10477	0.29063	-0.04217	0.08235
LLIFE	0.20644	-0.02462	0.09428	-0.03799
LCLIP	0.03274	-0.14597	-0.09320	0.01180
LCOMP	0.12562	0.12515	0.16720	0.08658
LCOOK	[illegible]	[illegible]	[illegible]	[illegible]
LSELF	-0.17070	-0.17342	0.04968	-0.06652
LTV	[illegible]	[illegible]	-0.00940	0.04027
LGOVT	0.07654	-0.23110	0.11651	0.01373
LTRUST	0.14566	[illegible]	-0.07684	0.01646
LQUIET	0.01412	-0.03486	0.01136	0.04992
LSPORT	-0.10761	0.02936	-0.02725	0.30776
LYOUTH	[illegible]	0.02461	0.00987	0.00122
LSWITCH	[illegible]	[illegible]	0.21342	-0.09275
LPOLIT	-0.12037	-0.04134	0.04483	0.04771
LSOCIAL	-0.03121	-0.10607	0.11756	0.07299
LADVT	[illegible]	0.17440	0.10512	-0.05960
LCHURCH	0.09098	0.18726	[illegible]	0.14990
LPARENT	0.00016	0.14942	0.02248	0.15765
LYOUNG	[illegible]	[illegible]	-0.24679	-0.07491
LCREATE	-0.11417	0.17004	0.14977	[illegible]
LCASH	0.09099	0.13439	-0.00371	0.05796
LLIB	0.01293	-0.02533	0.24230	-0.09815
LMEDIA	-0.03535	-0.04336	0.22600	-0.04184
LPROB	0.02065	0.01202	0.52854	-0.01687
LFUN	0.00462	-0.07199	0.08533	-0.01665
LDELAG	0.28043	0.00629	0.06335	-0.10150
LSEC	0.12181	0.12531	0.21773	-0.12569
LMAKE	0.15929	0.17726	0.04580	-0.25664
LDISP	0.35156	-0.26855	0.12747	0.02410
LLAST	0.51174	0.00211	-0.06580	-0.01578
LCOUP	0.41335	0.11851	0.17365	-0.04307
LEAT	-0.35147	-0.09912	-0.19507	-0.04973
LPOOR	0.14123	-0.00951	0.05797	0.12044
LCLASS	-0.07530	-0.03141	-0.11061	0.01563
LCHAN	0.22787	0.25413	0.22199	-0.09933
LJUDGE	0.11357	-0.00439	-0.20349	0.01090
LUNION	0.05131	0.02136	-0.09546	-0.07933
LWATCH	-0.04736	0.02462	0.02775	0.04819

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FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER

FACTOR MATRIX USING PRINCIPAL FACTOR WITH ITERATIONS

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
EFUTILE	-0.59926	0.22261	-0.00133	-0.06849
EGOOD	0.54085	-0.07463	0.04629	-0.05315
ERECYCL	-0.52669	0.30914	0.04354	0.10088
EREDUCED	-0.50127	0.20911	-0.03436	0.21560
EGOVT	-0.12444	0.26047	0.26085	-0.09720
EOIL	-0.33253	0.28004	0.20917	-0.12442
EADDINS	-0.30630	0.20591	0.02125	0.11448
ECAN	-0.50783	0.27438	0.02551	0.06687
ECAR	0.15021	0.30662	0.21185	-0.45021
EPROD	0.44092	0.19259	0.07702	-0.19821
ESHORT	-0.56587	0.22770	-0.03392	0.00988
EPATRIOT	0.41067	0.19584	0.39777	0.30231
EWASTE	0.56315	0.18441	0.35100	0.20740
EIMPORT	0.52247	0.32359	-0.15857	-0.01125
ECONCERN	0.59467	0.40125	-0.36923	0.06413
EANY	0.37738	0.37104	-0.39767	0.01583

VARIABLE	COMMUNALITY
EFUTILE	0.41217
EGOOD	0.30705
ERECYCL	0.38442
EREDUCED	0.34266
EGOVT	0.15581
EOIL	0.24923
EADDINS	0.21452
ECAN	0.33737
ECAR	0.36661
EPROD	0.31359
ESHORT	0.37335
EPATRIOT	0.66089
EWASTE	0.56389
EIMPORT	0.39246
ECONCERN	0.66093
EANY	0.43847

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	3.78604	61.5	61.5
2	1.11196	18.1	79.6
3	0.77051	12.5	92.1
4	0.48859	7.9	100.0

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VARIMAX ROTATED FACTOR MATRIX

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
EFUTILE	0.55279	-0.15474	-0.26276	0.11665
EGOOD	-0.45853	0.18789	0.23224	0.05970
ERECYCL	0.60551	-0.09071	-0.08321	0.05124
EREDUCED	0.56096	-0.08995	-0.08070	-0.11568
EGOVT	0.21875	-0.26949	0.11395	0.30024
EOIL	0.37961	-0.28164	-0.02345	0.29920
EADDINS	0.45297	-0.20706	-0.05262	-0.01119
ECAN	0.55937	-0.28825	-0.12655	0.04498
ECAR	-0.06754	0.12657	0.02837	0.58756
EPROD	-0.29965	0.20167	0.20791	0.30028
ESHORT	0.55554	-0.11418	-0.22257	0.04586
EPATRIOT	-0.22750	0.17853	0.75587	0.07715
EWASTE	-0.25949	0.14455	0.66606	0.12231
EIMPORT	-0.19326	0.54214	0.20760	0.10764
ECONCERN	-0.19111	0.76900	0.14164	-0.00783
EANY	-0.06134	0.65876	0.02535	-0.01046

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VARIABLE	EST COMMUNALITY	FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
MNSUB	0.75420	1	5.55648	50.5	50.5
MNLOCAL	0.70930	2	1.11324	10.1	60.6
MNEW	0.72278	3	0.95913	8.7	69.4
MNWOM	0.39000	4	0.75967	6.9	76.3
MNADVT	0.49068	5	0.58802	5.3	81.6
MNFIN	0.43382	6	0.48690	4.4	86.0
MNEDT	0.55492	7	0.42722	3.9	89.9
MNCOM	0.28665	8	0.37562	3.4	93.3
MNSPOR	0.45317	9	0.33091	3.0	96.3
MNCLASS	0.32320	10	0.22466	2.0	98.4
MNTRAV	0.44713	11	0.17813	1.6	100.0

CONVERGENCE REQUIRED 10 ITERATIONS

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FACTOR MATRIX USING PRINCIPAL FACTOR WITH ITERATIONS

	FACTOR 1	FACTOR 2
MNSUB	0.89369	0.04625
MNLOCAL	0.86287	0.13107
MNEW	0.84770	-0.20092
MNWOM	0.53945	0.11516
MNADVT	0.66753	0.31721
MNFIN	0.56152	-0.39045
MNEDT	0.71735	-0.41085
MNCOM	0.46092	0.21620
MNSPOR	0.60568	0.00652
MNCLASS	0.53616	0.27423
MNTRAV	0.67333	0.00795

VARIABLE	COMMUNALITY	FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
MNSUB	0.80079	1	5.14843	89.3	89.3
MNLOCAL	0.76172	2	0.61687	10.7	100.0
MNEW	0.75896				
MNWOM	0.30427				
MNADVT	0.54621				
MNFIN	0.46776				
MNEDT	0.68339				
MNCOM	0.25919				
MNSPOR	0.36689				
MNCLASS	0.36267				
MNTRAV	0.45344				

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VARIMAX ROTATED FACTOR MATRIX

	FACTOR 1	FACTOR 2
MNSUB	0.69550	0.56310
MNLOCAL	0.72930	0.47943
MNEW	0.49606	0.71616
MNWCM	0.47815	0.27503
MNASVT	0.70848	0.21041
MNFIN	0.15652	0.66578
MNECT	0.25877	0.78513
MNCCM	0.48739	0.14738
MNSPOR	0.45477	0.40010
MNCLASS	0.58206	0.15453
MNTRAV	0.50603	0.44427

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FACTOR MATRIX USING PRINCIPAL FACTOR WITH ITERATIONS

	FACTOR 1	FACTOR 2	FACTOR 3
MMCONT	0.01393	0.15100	0.09728
MMFASH	0.09492	-0.26041	-0.05582
MMTRAD	0.64891	-0.55906	0.21239
MMNEWS	0.55680	0.22600	-0.20949
MMTRAV	0.59928	0.12072	-0.14305
MMSPORT	0.22636	0.38058	0.56575
MMPROF	0.31790	0.31519	-0.19351

VARIABLE	COMMUNALITY
MMCONT	0.03246
MMFASH	0.07814
MMTRAD	0.77974
MMNEWS	0.40510
MMTRAV	0.38228
MMSPORT	0.51615
MMPROF	0.23791

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	1.23822	50.9	50.9
2	0.71400	29.4	80.3
3	0.47956	19.7	100.0

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VARIMAX ROTATED FACTOR MATRIX

	FACTOR 1	FACTOR 2	FACTOR 3
MMCONT	0.02949	-0.06704	0.16460
MMFASH	-0.01685	0.21951	-0.17226
MMTRAD	0.17660	0.86510	-0.01249
MMNEWS	0.62717	0.09279	0.05610
MMTRAV	0.57797	0.21162	0.05974
MMSPORT	0.07705	0.05690	0.71202
MMPROF	0.46996	-0.10787	0.07357

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FACTOR MATRIX USING PRINCIPAL FACTOR WITH ITERATIONS

	FACTOR 1	FACTOR 2	FACTOR 3
MRROCK	-0.28612	0.00060	0.17575
MRQUA	0.42647	-0.17940	-0.15911
MREDP	0.19807	-0.32773	-0.14296
MRSPOR	0.25089	0.29445	0.15005
MRNEW	0.55191	0.45078	-0.10275
MRCOM	0.48688	-0.21618	0.50797
MREDUC	0.58821	-0.44224	-0.10977
MRTALK	0.45916	-0.08326	0.27108
MRWEA	0.52163	0.45416	-0.09448

VARIABLE	COMMUNALITY
MRROCK	0.12269
MRQUA	0.28864
MREDP	0.16796
MRSPOR	0.17244
MRNEW	0.66798
MRCOM	0.54193
MREDUC	0.68104
MRTALK	0.29167
MRWEA	0.47775

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	1.93196	56.6	56.6
2	0.80492	26.2	83.9
3	0.58423	17.1	100.0

THE LOWRY FILE 19/02/76

FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER

VARIMAX ROTATED FACTOR MATRIX

	FACTOR 1	FACTOR 2	FACTOR 3
MRROCK	-0.10725	-0.33004	-0.04752
MRQUA	0.10000	0.52693	-0.03143
MREDP	-0.12802	0.37383	0.10338
MRSPOR	0.37447	-0.09543	0.16101
MRNEW	0.76744	0.27777	0.04310
MRCOM	0.08939	0.08331	0.72588
MREDUC	0.07593	0.76192	0.42730
MRTALK	0.19413	0.14575	0.48243
MRWEA	0.67622	0.08006	0.11863

THE LOWRY FILE

FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER 19/02/76

FACTOR MATRIX USING PRINCIPAL FACTOR WITH ITERATIONS

	FACTOR 1	FACTOR 2	FACTOR 3
MTMOVIE	0.55558	-0.02122	-0.05611
MTSPORT	0.20515	0.16080	-0.39387
MTCOMD	0.50041	-0.00045	-0.09326
MTVAR	0.56735	0.00150	0.13466
MTGAME	0.65634	-0.11738	0.16305
MTSOAP	0.41004	-0.20619	0.33241
MTTALK	0.37884	0.21526	0.19194
MTDOCUM	0.08251	0.70704	0.01506
MTNEW	0.31235	0.64366	-0.20572
MTCONS	0.19922	0.53077	0.09496
MTCLASS	-0.05604	0.45878	0.26910
MTDET	0.50091	-0.21905	-0.24589
MTDOCT	0.61790	-0.23878	-0.01868

VARIABLE	COMMUNALITY
MTMOVIE	0.31226
MTSPORT	0.22307
MTCOMD	0.36919
MTVAR	0.34102
MTGAME	0.47115
MTSOAP	0.32118
MTTALK	0.22296
MTDOCUM	0.50604
MTNEW	0.55418
MTCONS	0.33042
MTCLASS	0.28604
MTDET	0.49043
MTDOCT	0.43916

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	2.67661	55.1	55.1
2	1.64035	33.8	88.9
3	0.54008	11.1	100.0

THE LOWRY FILE

FILE IDENTIFI (CREATION DATE = 19/02/76) OF THE ENERGY CONSCIOUS CONSUMER 19/02/76

VARIMAX ROTATED FACTOR MATRIX

	FACTOR 1	FACTOR 2	FACTOR 3
MTMOVIE	0.52315)	0.05368	0.18893
MTSPORT	0.37967	0.08217	(0.45423)
MTCOMD	0.55377	0.07083	0.23983
MTVAR	0.56879	0.12734	0.01706
MTGAME	0.68534)	0.03588	-0.01309
MTSOAP	0.55454	-0.04338	-0.25442
MTTALK	0.35229	0.31310	-0.02864
MTDOCUM	-0.07155	0.68089	0.16084
MTNEW	0.11600	0.60820)	0.41330)
MTCONS	0.09453	0.56179	0.27665
MTCLASS	-0.09754	0.49836	-0.16781
MTDET	0.57879	-0.17579	0.33943
MTDOCT	0.63753)	-0.13355	0.12200

TRANSFORMATION MATRIX

Appendix V

Calculations involved in developing factor scores for group 1 and group 2 respondents for those variables found significantly different at the .001 level utilizing univariate t-tests

STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES SPSSH - VERSION 6.01 18/03/76

SPACE ALLOCATION FOR THIS RUN..

TOTAL AMOUNT REQUESTED 126976 BYTES

DEFAULT TRANSPACE ALLOCATION 15872 BYTES

MAX NO OF TRANSFORMATIONS PERMITTED 158
MAX NO OF RECODE VALUES 632
MAX NO OF ARITHM.OR LOG.OPERATIONS 1264

RESULTING WORKSPACE ALLOCATION 111104 BYTES

EDIT
RUN NAME THE LOWRY FILE
FILE NAME IDENTIFICATION OF THE ENERGY CONSCIOUS CONSUMER
VARIABLE LIST CARD1,RESP1,LSEEK,LTRY,LPCHECKS,LDEER,LART,LINFL,LACH,LLIST,
LCOMM,LGRAND,LSWING,LCAN,LLEAD,LWRONG,LCAMP,LEXCIT,LBUY,LFIX,
LAMBIT,LTRIP,LCREDIT,LVOTE,LHUNT,LOLD,LTOO,LSHOP,LHATE,LWEED,
LPART,LLIFE,LCLIP,LCONF,LCOOK,LSELF,LSEX,LGOVT,LTRUST,LQUIET,
LSPORT,LYOUTH,LSWITCH,LPOLIT,LSOCIAL,LADVT,LCHURCH,LPARENT,
LYOUNG,LCREATE,LCASE,LLIB,LMEDIA,LPROP,LFUN,LBREAD,LSEC,LMAKE,
LDISP,LLAST,LCONF,LBAT,LDROP,LCLASS,LCHAN,LJUDGE,LUNION,LWATCH,
CARD2,RESP2,BFUTILE,EGOOD,ERECYCL,ESERVICE,EGOVT,ECIL,EADDINS,
ECAN,ECAR,EPROD,ESHORT,EPATRIOT,EWASTE,EIMPORT,ECONCERN,EANY,
MNSUR,MNLOCAL,MNEW,MNWOW,MNADVT,MNFIN,MNEDT,MNCOM,MNSPOR,MNCLASS,
MNTRAV,MRROCK,MROUA,MREJF,MESPOR,MRNEW,MRCOM,MREDUC,MRTALK,MRWEA,
MTMOVIE,MTSPORT,MTCOMD,MTVAR,MTGAME,MTSOAP,MTTALK,MTDOCUM,MTNEW,
MTCONS,MTCLASS,MTDET,MTDOCT,MMCONT,MMFASH,MMTRAD,MMNEWS,MMTRAV,
MMSPORT,MMPROF,CARD3,RESP3,DSEX,DAGE,DMARSTA,DEDUC,DOCCUP,DDWELL,
DDTYPE,DENERGY,DCAR,DTYPE,DMILES,DINCOME
INPUT MEDIUM CARD
N OF CASES 1070
INPUT FORMAT FIXED(F1.0,F4.0,66F1.0,/,F1.0,F4.0,56F1.0,/,F1.0,F4.0,4F1.0,F2.0,
7F1.0,62X)

ACCORDING TO YOUR INPUT FORMAT, VARIABLES ARE TO BE READ AS FOLLOWS

VARIABLE	FORMAT	RECORD	COLUMNS
CARD1	F 1. 0	1	1- 1
RESP1	F 4. 0	1	2- 5
LSEEK	F 1. 0	1	6- 6
LTRY	F 1. 0	1	7- 7
LPCHECKS	F 1. 0	1	8- 8
LDEER	F 1. 0	1	9- 9
LART	F 1. 0	1	10- 10
LINFL	F 1. 0	1	11- 11
LACH	F 1. 0	1	12- 12
LLIST	F 1. 0	1	13- 13
LCOMM	F 1. 0	1	14- 14
LGRAND	F 1. 0	1	15- 15
LSWING	F 1. 0	1	16- 16
LCAN	F 1. 0	1	17- 17
LLEAD	F 1. 0	1	18- 18
LWRONG	F 1. 0	1	19- 19
LCAMP	F 1. 0	1	20- 20
LEXCIT	F 1. 0	1	21- 21
LBUY	F 1. 0	1	22- 22
LFIX	F 1. 0	1	23- 23

MNGUP	F 1. 0	2	22-	22
MNLOCAL	F 1. 0	2	23-	23
MNLW	F 1. 0	2	24-	24
MNWOM	F 1. 0	2	25-	25
MNADVT	F 1. 0	2	26-	26
MNFIN	F 1. 0	2	27-	27
MNFDT	F 1. 0	2	28-	28
MNCOM	F 1. 0	2	29-	29
MNSPOR	F 1. 0	2	30-	30
MNCLASS	F 1. 0	2	31-	31
MNTRAV	F 1. 0	2	32-	32
MNROCK	F 1. 0	2	33-	33
MNQUA	F 1. 0	2	34-	34
MNFOR	F 1. 0	2	35-	35
MNSPOR	F 1. 0	2	36-	36
MNNEW	F 1. 0	2	37-	37
MNCOM	F 1. 0	2	38-	38
MNEDUC	F 1. 0	2	39-	39
MNTALK	F 1. 0	2	40-	40
MNWEA	F 1. 0	2	41-	41
MTMOVIE	F 1. 0	2	42-	42
MTSPORT	F 1. 0	2	43-	43
MTCOMD	F 1. 0	2	44-	44
MTVAR	F 1. 0	2	45-	45
MTGAME	F 1. 0	2	46-	46
MTSOAP	F 1. 0	2	47-	47
MTTALK	F 1. 0	2	48-	48
MTDOCUM	F 1. 0	2	49-	49
MTNEW	F 1. 0	2	50-	50
MTCOOK	F 1. 0	2	51-	51
MTCLASS	F 1. 0	2	52-	52
MTART	F 1. 0	2	53-	53
MTPOCT	F 1. 0	2	54-	54
MNCONT	F 1. 0	2	55-	55
MNFASH	F 1. 0	2	56-	56
AMTRAD	F 1. 0	2	57-	57
AMNEWS	F 1. 0	2	58-	58
AMTRAV	F 1. 0	2	59-	59
AMCOUNT	F 1. 0	2	60-	60
AMFOOF	F 1. 0	2	61-	61
CARD1	F 1. 0	1	1-	1
RESP3	F 4. 0	3	2-	5
DSEX	F 1. 0	3	6-	6
DAGE	F 1. 0	3	7-	7
DMARSTA	F 1. 0	3	8-	8
DEDUC	F 1. 0	3	9-	9
DOCCUP	F 2. 0	3	10-	11
DOWELL	F 1. 0	3	12-	12
DDTYPE	F 1. 0	3	13-	13
DENERGY	F 1. 0	3	14-	14
DCAR	F 1. 0	3	15-	15
DTYPE	F 1. 0	3	16-	16
DMILES	F 1. 0	3	17-	17
DINCOME	F 1. 0	3	18-	18

THE INPUT FORMAT PROVIDES FOR 140 VARIABLES. 140 WILL BE READ
IT PROVIDES FOR 3 RECORDS ('CARDS') PER CASE. A MAXIMUM OF 80 'COLUMNS' ARE USED ON A RECORD.

MISSING VALUES LSEEK TO LWATCH(0,9)/FUTILE TO MMFOOF(0,9)/DSEX TO DEDUC(0,9)/
DOCCUP(0,12)/DOWELL(0,9)/DENERGY(0)/DCAR TO DINCOME(0,9)

VAR LABELS CARD1, THE FIRST CARD IN THE CASE/
RESP1, IDENTIFICATION NUMBER OF CASE/
LSEEK, PEOPLE OFTEN SEEK MY ADVICE/
LTRY, LIKE TO TRY NEW AND DIFFERENT THINGS/
LPCHECKS, CHECKS PRICES WHILE SHOPPING/
LDBEER, DRINKS BEER/

LART, ENJOYS VISITING AN ART GALLERY/
LINFL, INFLUENCED BY ADVERTISING/
LACH, GREATEST ACHIEVEMENTS STILL AHEAD/
LLIST, PREPARES LIST BEFORE SHOPPING/
LCOMM, LIKES TO WORK ON COMMUNITY PROJECTS/
LBRAND, STICKS WITH FAVORITE BRAND/
LSWING, CONSIDERS SELF TO BE A SWINGER/
LCAN, CANADIAN MADE IS BEST MADE/
LLEAD, LIKES TO BE CONSIDERED A LEADER/
LWRONG, PERCEIVES LOWER PRICE AS LOW QUALITY/
LCAMP, LIKES TO GO CAMPING/
LEXCIT, SEEKS AN EXCITING KIND OF LIFE/
LBUY, ADVERTISING MAKES PEOPLE BUY THINGS/
LFIX, GOOD AT FIXING MECHANICAL THINGS/
LAMBIT, AMBITIOUS BUT GOING NOWHERE/
LTRIP, WOULD LIKE TO TAKE A TRIP AROUND THE WORLD/
LCREDIT, ANYTHING BUT HOUSE OR CAR ON CREDIT/
LMORE, WILL HAVE MORE MONEY NEXT YEAR/
LHUNT, LIKES TO GO HUNTING/
LOLD, HAS OLDFASHIONED IDEAS/
LTOO, TOO MUCH ADVERTISING TODAY/
LSHOP, SHOPPING FOR BARGAINS WORTH XTRA EFFORT/
LHATE, HATE TO THROW THINGS AWAY/
LWEED, MARIJUANA SMOKERS SHOULD GO TO JAIL/
LPART, LIKES PARTIES WITH LOTS OF PEOPLE/
LLIFE, WOULD DO THINGS DIFFERENTLY/
LCLIP, COUPON CLIPPER/
LCOVE, HOME IS FURNISHED FOR COMFORT NOT STYLE/
LCOCK, HAS COCKTAIL BEFORE DINNER/
LSELF, HAS MORE SELFCONFIDENCE THAN MOST/
LSEX, TOO MUCH EMPHASIS ON SEX TODAY/
LGOVT, NEED FOR INCREASED GOVT CONTROL/
LTRUST, TRUSTS RETAILERS WHO ADVERTISE/
LQUIET, PREFERS QUIET EVENING AT HOME/
LSPORT, ENJOYS CONVERSATIONS ABOUT SPORTS/
LYOUTH, YOUTH IS RUNNING AWAY FROM REALITY/
LSWITCH, WILL SWITCH JOBS IN NEXT FOUR YEARS/
LPOLIT, INTERESTED IN POLITICS/
LSOCIAL, SOCIALIZES MORE THAN FRIENDS/
LADVT, ADVERTISING DRIVES UP PRICES/
LCHURCH, PEOPLE SHOULD GO TO CHURCH/
LPARENT, SPEND TIME WITH CHILDREN/
LYOUNG, YOUTH HAS TOO MANY PRIVELEGES TODAY/
LCREATE, CONSIDERED CREATIVE/
LCASH, LIKES TO PAY CASH/
LLIB, SYMPATHSIZES WITH WOMENS LIB/
LMEDIA, MEDIA RELIES ON SENSATIONALISM/
LPROB, PROBLEM IS PEOPLE NO STAND UP FTS/
LFUN, HALF FUN SHPING TRY NEW THINGS/
LDREAD, DREADS THE FUTURE/
LSEC, SECURITY MORE IN THAN MONEY/
LMAKE, THINGS NOT MADE AS THEY USED TO BE/
LDISP, DISPOSABLE PRODUCTS IMPROVE LIFE/
LLAST, LIFE NOT CONTRIBUTING TO WORLD/
LCONF, LIFE IS CONFUSING/
LEAT, ENJOY EATING OUT/
LSICK, CHILD SICK PARENT DROP EVERYTHING/
LCLASS, ENJOY LISTENING TO CLASSICAL MUSIC/
LCHAN, DO NOT LIKE TO TAKE CHANCES/
LJUDGE, PERSON JUDGED BY THE CLOTHES THEY WEAR/
LUNION, UNIONS HAVE TOO MUCH POWER TODAY/
LWATCH, WATCHES FOR SALES BEFORE BUYING/
CARD2, THE SECOND CARD IN THE CASE/
RESP2, IDENTIFICATION NUMBER OF CASE/
FFUTILE, FUTILE FOR THE INDIVIDUAL TO CONSERVE/
EGOOD, RESPONDING TO ENERGY PROGRAM GOOD/

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ERECYCL, RECYCLING IS A FAD/
EREDUCED, DRIVING AT REDUCED SPEED NOT WORTH IT/
EGOVT, GOVT IS TO BLAME FOR ENERGY CRISIS/
EOIL, OIL COMPANIES TO BLAME FOR ENCRISIS/
EADDINS, ADDITIONAL INSULATION NOT WORTH IT/
ECAN, NOT A STRONG NEED TO CONSERVE/
ECAR, CARS THAT GET TWENTY MPG/
EPROD, ENERGY REDUCTION WORTH COST/
ESHORT, ENERGY CRISIS IS SHORT TERM/
EPATRIOT, PATRIOTIC DUTY TO CONSERVE/
EWASTE, SOCIETY WASTES RESOURCES/
EIMPORT, ENERGY CONSERVATION IS MOST AN PROBLEM/
ECONCERN, MORE CONCERNED THAN AVERAGE/
EANY, PAY ANY PRICE/
MNSUB, SUBSCRIBE TO A DAILY NEWSPER/
MNLOCAL, READERSHIP OF LOCAL NEWS/
MNNEW, NATIONAL AND INTL NEWS/
MNWOM, WOMENS PAGES/
MNADVT, ADVERTISING/
MNFIN, FINANCIAL PAGES/
MNEDT, EDITORIAL PAGES/
MNCOM, COMIC PAGES/
MNSPOR, SPORTS PAGES/
MNCLASS, CLASSIFIED/
MNTRAV, TRAVEL AND LEISURE/
MPROCK, ROCK MUSIC/
MPQUA, QUALITY AND CLASSICAL MUSIC/
MPFOR, FOREIGN LANGUAGE STATIONS/
MPSPOR, SPORTS BROADCASTS/
MPNEW, NEWS BROADCASTS/
MPCOM, COMEDY SPECIALS/
MPEDUC, EDUCATIONAL/
MPTALK, TALK SHOWS/
MPWEA, WEATHER/
MTMOVIE, MOVIE SPECIALS ON TELEVISION/
MTSPORT, SPORTS ON TELEVISION/
MTCOMD, COMEDY SHOWS ON TELEVISION/
MTVAR, VARIETY SHOWS/
MTGAME, GAME SHOWS/
MTSOAP, SERIAL SOAP OPERAS/
MTTALK, TALK SHOWS/
MTDOCUM, DOCUMENTARIES/
MTNEW, NEWS/
MTCONS, CONSUMER ORIENTATED/
MTCLASS, CLASSICS/
MTDET, POLICE DETECTIVE SERIES/
MTDOCT, DOCTOR HOSPITAL SERIES/
MMCONT, CONTEMPORARY MAGAZINES/
MMFASH, FASHION MAGAZINES/
MMTRAD, TRADITIONAL MAGAZINES/
MMNEWS, NEWS MAGAZINES/
MMTRAV, TRAVEL MAGAZINES/
MMSPORT, SPORT MAGAZINES/
MMPROF, PROFESSIONAL JOURNALS/
CARD3, THE THIRD CARD IN THE CASE
RESP3, IDENTIFICATION NUMBER OF CASE/
DSEX, SEX OF RESPONDENT/
DAGE, AGE OF RESPONDENT/
DMARSTA, MARTIAL STATUS OF RESPONDENT/
DEDUC, EDUCATIONAL LEVEL OF RESPONDENT/
DOCCUP, OCCUPATION OF RESPONDENT/
DOWELL, OWNERSHIP OF DWELLING/
DDTYPE, TYPE OF DWELLING/
DENERGY, TYPE OF ENERGY USED TO HEAT DWELLING/
DCAR, CAR OWNERSHIP OR DISPOSAL/
DTYPE, TYPE OF CAR/
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VALUE LABELS   DMILES, MILES DRIVEN EACH YEAR/
               DINCOME, YEARLY INCOME/
               LSEEK TO LWATCH(1)DISAGREE STRONGLY (2)DISAGREE MODERATELY
               (3)DISAGREE SLIGHTLY (4)AGREE SLIGHTLY (5)AGREE MODERATELY
               (6)AGREE STRONGLY/FUTILE TO ANY (1)DISAGREE STRONGLY (2)
               DISAGREE MODERATELY (3)DISAGREE SLIGHTLY (4)AGREE SLIGHTLY (5)
               AGREE MODERATELY (6)AGREE STRONGLY/MNSUR (1)YES (2)NO/
               MNLOCAL TO MNTRAV (1)READ THOROUGHLY (2)READ SOME (3)GLANCE AT
               (4)NEVER READ/MBROCK TO MEWEA (1)REGULARLY LISTEN TO
               (2)SOMETIMES LISTEN TO (3)SELDOM LISTEN TO (4)NEVER LISTEN TO/
               MTMOVIE TO MTDOCT (1)REGULARLY WATCH (2)SOMETIMES WATCH
               (3)SELDOM WATCH (4)NEVER WATCH/MMCONT TO MMPROF (1)REGULARLY READ
               (2)SOMETIMES READ (3)SELDOM READ (4)NEVER READ/DSEX (1)MALE
               (2)FEMALE/DAGE (1)15 OR YOUNGER (2)16-18 (3)19-24 (4)25-34
               (5)35-44 (6)45-54 (7)55-64 (8)65 AND OVER/DMARSTA (1)SINGLE
               (2)MARRIED (3)SEPERATED-DIVORCED (4)WIDOWED/DEDUC (1)GRADE 8 OR
               LESS (2)SOME HIGH SCHOOL (3)HIGH SCHOOL GRAD (4)TECH-VOC (5)SOME
               COLLEGE (6)DEGREE (7)POST GRAD (8)OTHER/DOCCUP (1)PROFESSIONAL
               (2)BUS EXEC (3)SUPERVISORY-TECHN (4)SALES CLERICAL (5)SKILLED
               LABOUR (6)UNSKILLED LABOUR (7)HOMEMAKER (8)STUDENT (9)RETIRED
               (10)UNEMPLOYED (11)OTHER/DDWELL (1)OWN (2)RENT/DDTYPE (1)SINGLE
               DETACHED (2)MOBILE HOME (3)DUPLEX (4)APARTMENT (5)PART OF HOUSE
               (6)OTHER/DENERGY (1)ELECTRICITY (2)NATGAS-PROPANE (3)OIL(4)OTHER
               (5)DON'T KNOW/DCAR (1)ONE CAR (2)MORE THAN ONE CAR/DDTYPE
               (1)SUBCOMPACT-COMPACT (2)INTERMEDIATE (3)FULL-SIZE/DMILES
               (1)5,000 OR LESS (2)5,001-10,000 (3)10,001-15,000 (4)15,001-
               20,000 (5)20,001-25,000 (6)25,001-30,000 (7)30,001 AND OVER/
               DINCOME (1)$7,999 OR LESS (2)$8,000-10,999 (3)$11,000-13,999
               (4)$14,000-16,999 (5)$17,000-19,999 (6)$20,000-22,999
               (7)$23,000-25,999 (8)$26,000 AND OVER/
               LSEEK TO LWATCH (0)OMITTED (9)DON'T KNOW/FUTILE TO MMPROF (0)
               OMITTED (9)DON'T KNOW/DSEX TO DEDUC (0)OMITTED (9)DON'T KNOW/
               DOCCUP (0)OMITTED (11)DON'T KNOW/DDWELL TO DDTYPE (0)OMITTED
               (9)DON'T KNOW/DENERGY (0)OMITTED/DCAR TO DINCOME (0)OMITTED
               (9)DON'T KNOW

COMPUTE        FACT1=(.586*(LSOCIAL-3.09)/1.42 - .475*(LQUIET-3.98)/1.48 +
               .541*(LPART-4.02)/1.41 + .376*(LSWING-2.36)/1.50)/4
COMPUTE        FACT2=(.736*(LWATCH-3.53)/1.66 + .627*(LSHOP-4.15)/1.88 +
               .561*(LCHECKS-4.46)/1.74 + .467*(LCLIP-2.48)/1.77)/4
COMPUTE        FACT3=(.682*(LCLASS-3.90)/1.67 + .604*(LART-3.47)/1.75)/2
COMPUTE        FACT4=(.356*(LDROP-4.47)/1.30 - .534*(LFIX-3.85)/1.79 -
               .397*(LHUN-2.23)/1.86)/3
COMPUTE        FACT5=.488*(LSPECT-3.82)/1.73
COMPUTE        FACT6=(.606*(ERECYCL-2.30)/1.43 + .561*(EREDUCED-2.54)/1.59 +
               .555*(ECAN-2.64)/1.66 + .554*(ESHORT-1.95)/1.33 +
               .552*(EFUTILE-2.23)/1.54-.459*(EGOOD-5.06)/1.32 +
               .453*(EADDINS-1.84)/1.30)/7
COMPUTE        FACT7=(.769*(ECONCERN-3.74)/1.41 + .689*(EANY-3.07)/1.49 +
               .542*(EIMPORT-3.33)/1.50)/3
COMPUTE        FACT8=(.729*(MNLOCAL-2.10)/1.07 + .708*(MNADVT-2.95)/.82 +
               .534*(MNSUR-1.19)/.40 + .502*(MNCLASS-3.10)/.97 +
               .502*(MNTRAV-2.78)/.92 + .496*(MNEW-2.19)/1.06 +
               .427*(MNCOM-2.75)/1.15 + .478*(MNWOM-2.06)/.93 +
               .456*(MNSPOP-2.58)/1.13)/9
COMPUTE        FACT9=(.785*(MNEDT-2.56)/1.10 + .716*(MNEW-2.19)/1.06 +
               .665*(MNFIN-2.91)/1.07 + .563*(MNSUR-1.19)/.40 +
               .478*(MNLOCAL-2.10)/1.07 + .444*(MNTRAV-2.78)/.92 +
               .430*(MNSPOP-2.58)/1.13)/7
COMPUTE        FACT10=.712*(MMSPORT-2.64)/1.01
COMPUTE        FACT11=(.690*(MTDOCUM-1.94)/.92 + .608*(MTNEW-1.55)/.75 +
               .562*(MTCONS-2.63)/1.03 + .498*(MTCLASS-3.02)/.99)/4
COMPUTE        FACT12=(.702*(MREDUC-2.77)/.97 + .527*(MROUA-2.32)/.97)/2
COMPUTE        FACT13=DSEX
COMPUTE        FACT14=DEDUC
COMPUTE        FACT15=DDWELL
COMPUTE        FACT16=DDTYPE
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                COMPUTE         FACT17=DMILES
                IF              (RESP1 GT 1500)NVAR=1
                IF              (RESP1 LE 1500)NVAR=2
                WRITE CASES     (F1.0,15F5.3/2F5.3)
                                NVAR,FACT1 TO FACT17

 DATA TRANSFORMATION DONE UP TO THIS POINT..

        NO OF TRANSFORMATIONS                  21
        NO OF RECODE VALUES                     0
        NO OF ARITHM. OR LOG. OPERATIONS      195
 THE AMOUNT OF TRANSPACE REQUIRED IS     2400 BYTES

        READ INPUT DATA
        FINISH

 NORMAL END OF JOB.
235 CONTROL CARDS WERE PROCESSED.
  0 ERRORS WERE DETECTED.
```

Appendix VI

Descriptions of the remaining psychographic, attitudes toward energy, exposure/interest to print and broadcast media

Psychographic factor 1

Question Number	Right winger	Factor Loading
40	Today's Youth Are Running Away From Reality.	.59
47	Young people have too many privileges today.	.56
45	People should go to church regularly.	.51
28	People caught smoking marijuana should go to jail.	.50
35	There is too much emphasis on sex today.	.48
55	On the job, security is more important than money.	.48
36	The only way to cure many of society's problems is through increased government control.	.45
41	I will probably switch jobs at least once in the next four years.	-.45

Proportion of total variance - 25.9%

FACTOR 2

Question Number	Self-designated opinion leader	Factor Loading
34	I have more self-confidence than most people	.66
13	I like to be considered a leader	.65
1	People come to me more often than I go to them for advice	.53
42	I am interested in politics	.42

Proportion of total variance - 13.9%

FACTOR 3

Question Number	Extrovert	Factor Loading
38	I would rather spend a quiet evening at home than go out to a party	-.67
43	I socialize more than do most of my friends	.59
29	I like parties where there is lots of music and people	.54
11	I like to think I am a bit of a swinger	.38

Proportion of total variance - 10.9%

FACTOR 4

Question Number	Economy minded	Factor Loading
66	I usually watch for sales before I go out and buy	.63
26	Shopping for bargains is worth the extra time and effort	.63
3	While shopping, I find myself checking the prices, even for small items	.56
31	I often clip coupons out of magazines and newspapers for free merchandise	.47

Proportion of total variance - 8.1%

FACTOR 5

Question Number	Anti-advertising	Factor Loading
25	There is too much advertising today	.54
17	Advertising makes people buy things they do not want	.45
44	Advertising drives up prices	.42

Proportion of total variance - 7.0%

FACTOR 6

Question Number	Refined individual	Factor Loading
62	I enjoy listening to classical music	.68
5	I enjoy visiting an art gallery	.65

Proportion of total variance - 5.8%

FACTOR 7

Question Number	The hedonist	Factor Loading
16	I am the type of person who is always looking for an exciting or stimulating kind of life	.63
15	I like to go camping	.62
2	I like to try new and different things	.46
7	My greatest achievements are still ahead of me	.43
53	Half the fun of shopping is trying new things	.36

Proportion of total variance - 5.4%

FACTOR 8

Question Number	Interest in people - not things	Factor Loading
18	I am good at fixing mechanical things	-.53
23	I like to go hunting	-.40
61	When children are sick, parents should drop everything and attend to their needs	.36

Proportion of total variance - 4.60%

FACTOR 9

Question Number	The conformist	Factor Loading
37	I trust retailers who advertise a lot more than those who do not	.50
6	My choice of brands for many products is influenced by advertising	.45
57	Disposable products have really improved my way of life	.40

Proportion of total variance - 3.8%

FACTOR 10

Question Number	Regretful	Factor Loading
30	If I had my life to live over again, I would probably do things differently	.39

Proportion of variance accounted for - 3.6%

FACTOR 11

Question Number	Frustrated	Factor Loading
58	What I am doing with my life will not make a lasting contribution to the world	.51
19	I am ambitious and hard working but do not seem to be getting anywhere	.47
59	Life is getting more confusing all the time	.41

Proportion of variance accounted for - 3.1%

FACTOR 12

Question Number	Conservative	Factor Loading
49	I like to pay cash for everything I buy	.53
21	To buy anything other than a car or house on credit is unwise	.41
12	Canadian made is best made	.36

Proportion of total variance - 2.8%

FACTOR 13 Activist

52	The problem with most people today is they don't stand up for their rights	.53

Proportion of total variance - 2.7%

FACTOR 14 Interest in sports

39	I enjoy conversations about sports	.39

Proportion of total variance - 2.5%

Attitude toward energy factor 1

Anti-Conservationist

Question Number		Factor loading
3	Recycling centres are just a passing fad.	.61
10	Products that reduce energy consumption are not worth the extra cost.	.56
8	In Canada there really isn't as strong a need to conserve energy as in some other countries.	.56
11	The energy crisis is short term in nature and will be over shortly.	.56
1	It is futile for the individual consumer to do anything about energy conservation.	.55
2	Responding to an energy conservation program is a good idea.	.46
7	Putting additional insulation in a home is not worth the extra effort.	.45

Proportion of total variance - 61.5%

Individual level of concern factor 2

		Factor loading
15	I am more concerned about energy conservation than the average individual	.77
16	I would pay almost any price for guaranteed energy supplies	.66
14	Energy conservation is the most important problem facing us today.	.54

Proportion of variance accounted for - 18.1%

FACTOR 3

Question Number	Nationalistic	Factor Loading
12	It is every Canadian's patriotic duty to conserve our natural resources	.76
13	Today's society wastes too much of our resources	.67

Proportion of variance accounted for - 12.5%

FACTOR 4

"Controls" Oriented

9	Auto manufacturers should be required to produce only cars that get at least 20 m.p.g.	.59

Proportion of variance accounted for - 7.9%

Newspaper factor 1

General interest in newspapers

	Factor loading
Advertising	.71
Subscribe	.70
Classified	.58
Travel and leisure	.51
National and international news	.50
Comics	.49
Women's pages	.48
Sports	.45

Proportion of total variance - 59.3%

Newspaper factor 2

	Factor loading
Editorial	.79
National and international news	.72
Financial	.67
Subscribe	.56
Local news	.48
Travel and leisure	.44
Sports	.40

Magazine factor 1

Education oriented

	Factor loading
News (Time, Macleans, Newsweek, etc)	.63
Travel (National Geographic, etc.	.58
Professional Journals (Medicine Today, etc.)	.47

Proportion of total variance - 50.9%

Magazine factor 2

Traditionalist

		Factor loading
Traditional	(Reader's Digest, Better Homes & Gardens, Redbook, etc.	.87

Proportion of variance - 29.4%

Magazine factor 3

Sports

Sports		.71

Proportion of variance - 19.7%

Radio factor 1

The norm

	Factor loading
News	.77
Weather	.68

Proportion of total variance - 56.6%

Radio factor 2

Education Oriented

	Factor loading
Educational	.70
Quality	.53

Proportion of total variance - 26.2%

Radio factor 3

Talk type shows

Comedy specials	.73
Talk shows	.48
Educational	.43

Proportion of total variance - 17.1%

Television factor 1

The heavy television viewer

	Factor loading
Games (Let's make a deal, etc.)	.69
Doctor/hospital	.64
Police/detective	.58
Variety (Cher, Carol Burnett, etc.)	.57
Comedy (All in the family)	.55
Movies (Specials of the week)	.52
Serial / soap opera (All my children, etc.)	.50

Proportion of total variance - 55.1%

Television factor 2

Fact oriented

	Factor loading
Documentaries (Jacques Cousteau, etc.)	.69
News	.61
Consumer oriented (Marketplace)	.56
Classics (ballet, drama, etc.)	.50

Proportion of total variance - 33.8%

Television factor 3

Sports/news

	Factor loading
Sports	.46
News	.41

Proportion of variance - 11.1%

Appendix VII

Output of multivariate and univariate analysis of psychographic variable

FOR DIFFERENCES AMONG GROUP MEANS USING ALL VARIABLES

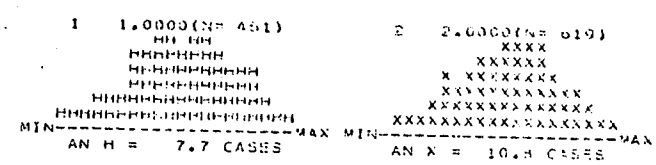
MAHALANOBIS D SQUARE	0.7642		
HOTELLING T SQUARE	199.3912		
F VALUE	14.0680	P VALUE	0.000
DEGREES OF FREEDOM	14,1055		

FOR DIFFERENCES ON SINGLE VARIABLES

VARIABLE NUMBER 2 X(2)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-1.27	0.204	956.3
T (POOLED)	-1.28	0.202	1068
F(FOR VARIANCES)	1.05	0.0	450, 618

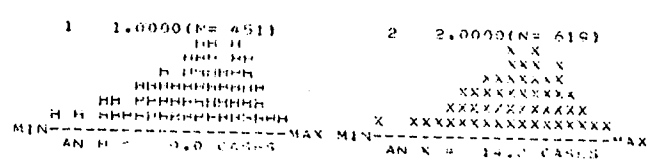
GROUP	1	2
MEAN	1.0000	2.0000
	-0.0026	0.0190
STD DEV	0.2770	0.2704
S.E.M.	0.0130	0.0104
NUMBER	451	619
MAXIMUM	0.6770	0.6770
MINIMUM	-0.7960	-0.7160



VARIABLE NUMBER 3 X(3)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-0.55	0.581	958.1
T (POOLED)	-0.57	0.570	1068
F(FOR VARIANCES)	1.45	0.0	450, 618

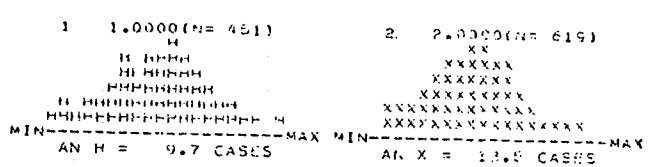
GROUP	1	2
MEAN	1.0000	2.0000
	0.0036	0.0163
STD DEV	0.4056	0.3852
S.E.M.	0.0190	0.0155
NUMBER	451	619
MAXIMUM	0.7910	0.7910
MINIMUM	-1.2490	-1.1480



VARIABLE NUMBER 4 X(4)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	3.57	0.001	913.1
T (POOLED)	3.62	0.000	1068
F(FOR VARIANCES)	1.21	0.0	450, 618

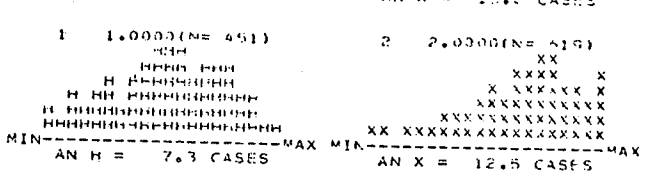
GROUP	1	2
MEAN	1.0000	2.0000
	-0.0053	-0.0873
STD DEV	0.3857	0.3502
S.E.M.	0.0182	0.0141
NUMBER	451	619
MAXIMUM	1.1280	0.9240
MINIMUM	-1.0030	-0.8160



VARIABLE NUMBER 5 X(5)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-11.79	0.0	887.2
T (POOLED)	-12.05	0.0	1068
F(FOR VARIANCES)	1.32	0.0	450, 618

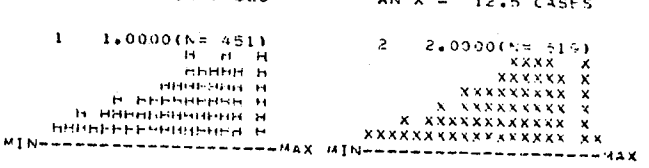
GROUP	1	2
MEAN	1.0000	2.0000
	-0.0776	0.2680
STD DEV	0.3998	0.3481
S.E.M.	0.0188	0.0140
NUMBER	451	619
MAXIMUM	0.7780	0.9240
MINIMUM	-0.9350	-0.8540



VARIABLE NUMBER 6 X(6)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	0.65	0.519	987.6
T (POOLED)	0.64	0.521	1068
F(FOR VARIANCES)	1.07	0.0	618, 450

GROUP	1	2
MEAN	1.0000	2.0000
	-0.0025	-0.0163
STD DEV	0.3408	0.3823
S.E.M.	0.0160	0.0142
NUMBER	451	619
MAXIMUM	0.4660	0.6280
MINIMUM	-0.9760	-1.0720

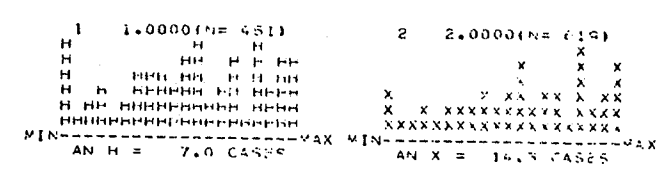


VARIABLE NUMBER 7 X(7)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-3.52	0.001	940.4
T (POOLED)	-3.55	0.000	1068
F(FOR VARIANCES)	1.11	0.0	450, 618

GROUP	1	2
MEAN	0.0039	0.1262
STD DEV	0.5733	0.5447
S.E.M.	0.0270	0.0219
NUMBER	451	619
MAXIMUM	0.9020	0.9020
MINIMUM	-1.0540	-1.0540

AN H = 8.7 CASES AN X = 11.2 CASES

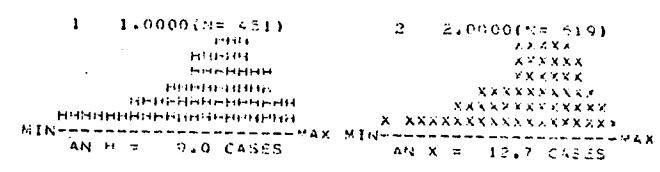


AN H = 7.0 CASES AN X = 14.9 CASES

VARIABLE NUMBER 8 X(8)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-0.32	0.749	907.8
T (POOLED)	-0.33	0.744	1068
F(FOR VARIANCES)	1.23	0.0	450, 618

GROUP	1	2
MEAN	0.0036	0.0094
STD DEV	0.3029	0.2727
S.E.M.	0.0143	0.0110
NUMBER	451	619
MAXIMUM	0.5640	0.5640
MINIMUM	-0.9980	-0.9350

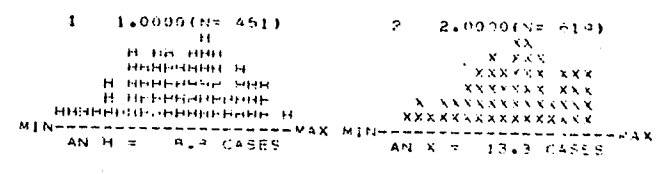


AN H = 9.0 CASES AN X = 12.7 CASES

VARIABLE NUMBER 9 X(9)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-4.10	0.000	901.9
T (POOLED)	-4.17	0.000	1068
F(FOR VARIANCES)	1.46	0.0	450, 618

GROUP	1	2
MEAN	-0.0026	0.0686
STD DEV	0.2939	0.2620
S.E.M.	0.0138	0.0105
NUMBER	451	619
MAXIMUM	0.6810	0.6190
MINIMUM	-0.7990	-0.6160

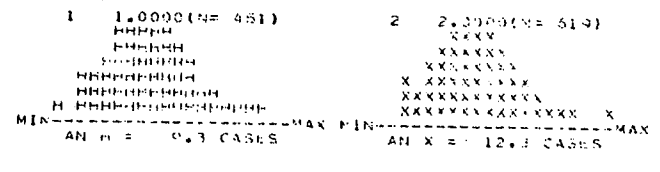


AN H = 8.3 CASES AN X = 13.3 CASES

VARIABLE NUMBER 10 X(10)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-0.60	0.549	946.1
T (POOLED)	-0.60	0.546	1068
F(FOR VARIANCES)	1.09	0.0	450, 618

GROUP	1	2
MEAN	-0.0134	-0.0019
STD DEV	0.3164	0.3039
S.E.M.	0.0149	0.0122
NUMBER	451	619
MAXIMUM	0.9460	1.2050
MINIMUM	-0.9390	-0.5420

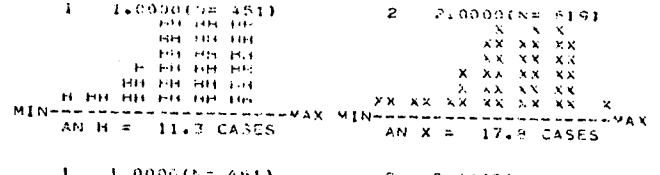


AN H = 9.3 CASES AN X = 12.3 CASES

VARIABLE NUMBER 11 X(11)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-2.20	0.028	885.2
T (POOLED)	-2.25	0.024	1068
F(FOR VARIANCES)	1.33	0.0	450, 618

GROUP	1	2
MEAN	-0.0346	0.0229
STD DEV	0.3068	0.2316
S.E.M.	0.0126	0.0093
NUMBER	451	619
MAXIMUM	0.7520	0.5660
MINIMUM	-0.7490	-0.8870

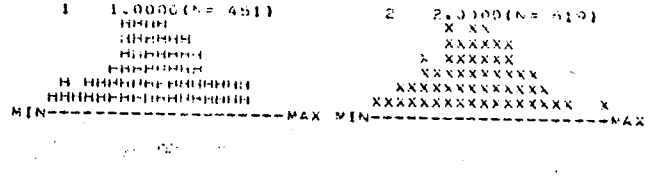


AN H = 11.3 CASES AN X = 17.9 CASES

VARIABLE NUMBER 12 X(12)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	1.43	0.185	946.2
T (POOLED)	1.44	0.149	1068
F(FOR VARIANCES)	1.06	0.0	450, 618

GROUP	1	2
MEAN	-0.0118	-0.0384
STD DEV	0.3300	0.3182
S.E.M.	0.0155	0.0128
NUMBER	451	619
MAXIMUM	0.6940	0.9010
MINIMUM	-0.8470	-0.8470



VARIABLE NUMBER 13 X(13)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-0.48	0.628	954.6
T (POOLED)	-0.47	0.639	1068
F(FOR VARIANCES)	1.00	0.0	450, 618

GROUP	1	2
MEAN	1.0000 0.0114	2.0000 0.0282
STD DEV	0.3104	0.3021
S.E.M.	0.0146	0.0121
NUMBER	451	619
MAXIMUM	0.5150	0.7450
MINIMUM	-0.4700	-0.7930

AN H = 9.5 CASES

1 1.0000(N= 451)

AN X = 13.2 CASES

2 2.0000(N= 619)

MIN----------MAX MIN----------MAX

VARIABLE NUMBER 14 X(14)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	0.41	0.685	970.9
T (POOLED)	0.41	0.686	1068
F(FOR VARIANCES)	1.00	0.0	618, 450

GROUP	1	2
MEAN	1.0000 -0.0232	2.0000 -0.0370
STD DEV	0.5502	0.5513
S.E.M.	0.0259	0.0222
NUMBER	451	619
MAXIMUM	0.7150	1.9330
MINIMUM	-1.5200	-1.1470

AN H = 17.5 CASES

1 1.0000(N= 451)

AN X = 26.5 CASES

2 2.0000(N= 619)

MIN----------MAX MIN----------MAX

VARIABLE NUMBER 15 X(15)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	3.51	0.001	950.1
T (POOLED)	3.52	0.000	1068
F(FOR VARIANCES)	1.07	0.0	450, 618

GROUP	1	2
MEAN	1.0000 -0.0016	2.0000 -0.0567
STD DEV	0.3048	0.3814
S.E.M.	0.0169	0.0153
NUMBER	451	619
MAXIMUM	0.4890	0.4890
MINIMUM	-0.8570	-0.6320

AN H = 10.5 CASES

1 1.0000(N= 451)

AN X = 20.5 CASES

2 2.0000(N= 619)

MIN----------MAX MIN----------MAX

Appendix VIII

Output of multivariate and univariate analysis of attitudes toward energy variable

FOR DIFFERENCES AMONG GROUP MEANS USING ALL VARIABLES

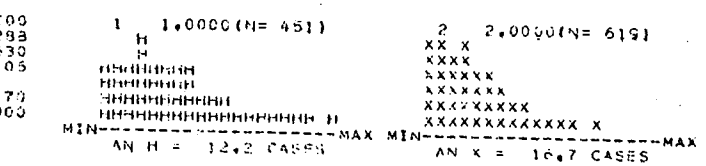
MAHALANOBIS D SQUARE	0.2535		
HOTELLING T SQUARE	66.1460		
F VALUE	16.4908	P VALUE	0.000
DEGREES OF FREEDOM	4,1065		

FOR DIFFERENCES ON SINGLE VARIABLES

VARIABLE NUMBER 2 X(2)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	6.75	0.000	806.0
T (POOLED)	6.99	0.000	1068
F(FOR VARIANCES)	1.72	0.0	450, 618

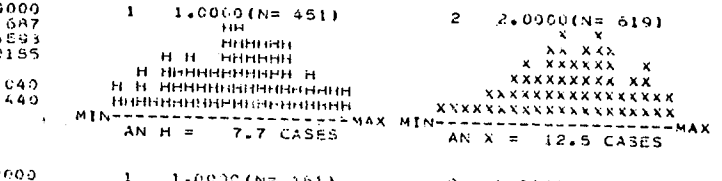
GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	0.0013	-0.1298
S.E.M.	0.3453	0.2630
NUMBER	0.0163	0.0105
MAXIMUM	451	619
MINIMUM	1.3940	0.9170
	-0.4400	-0.4900



VARIABLE NUMBER 3 X(3)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-5.67	0.000	880.3
T (POOLED)	-5.81	0.000	1068
F(FOR VARIANCES)	1.38	0.0	450, 618

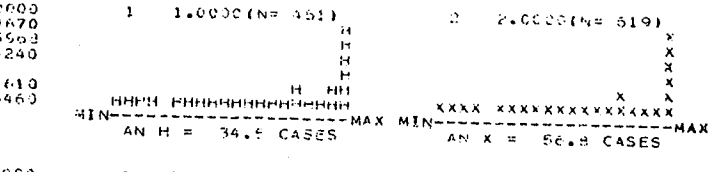
GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	-0.0081	0.1687
S.E.M.	0.5335	0.4593
NUMBER	0.0251	0.0185
MAXIMUM	451	619
MINIMUM	1.1040	1.1040
	-1.1440	-1.1440



VARIABLE NUMBER 4 X(4)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-2.62	0.012	925.3
T (POOLED)	-2.55	0.011	1068
F(FOR VARIANCES)	1.17	0.0	450, 618

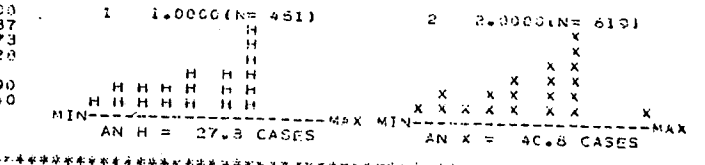
GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	-0.0166	0.0670
S.E.M.	0.6442	0.5568
NUMBER	0.0303	0.0240
MAXIMUM	451	619
MINIMUM	0.4610	0.4610
	-2.5460	-2.5460



VARIABLE NUMBER 5 X(5)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-2.17	0.030	939.4
T (POOLED)	-2.19	0.029	1068
F(FOR VARIANCES)	1.11	0.0	450, 618

GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	-0.0050	0.0737
S.E.M.	0.5981	0.5673
NUMBER	0.0282	0.0228
MAXIMUM	451	619
MINIMUM	0.5760	1.5690
	-1.4040	-1.4040



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Appendix IX

Output of multivatiate and univariate analysis of interest/ exposure to print media variable

FOR DIFFERENCES AMONG GROUP MEANS USING ALL VARIABLES

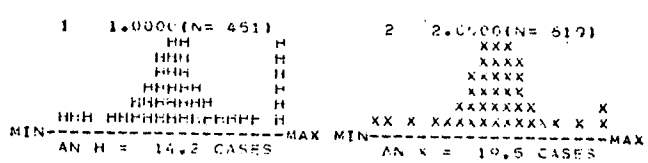
MAHALANOBIS D SQUARE	0.1970	
HOTELLING T SQUARE	91.4006	
F VALUE	10.2416	P VALUE 0.000
DEGREES OF FREEDOM	5,1064	

FOR DIFFERENCES ON SINGLE VARIABLES

VARIABLE NUMBER 2 X(2)

STATISTICS	F VALUE	D. F.	
T (SEPARATE)	5.00	0.000	775.1
T (POOLED)	5.25	0.000	1068
F(FOR VARIANCES)	1.92	0.0	450, 618

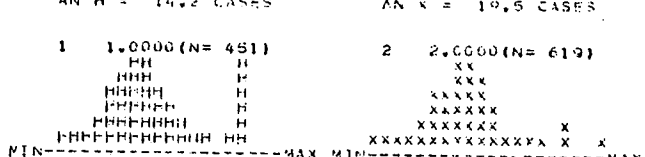
GROUP	1	1.0000	2	2.0000
MEAN		-0.0402		-0.1623
STD DEV		0.4413		0.3186
S.E.M.		0.0208		0.0128
NUMBER		451		619
MAXIMUM		0.8120		0.8120
MINIMUM		-1.0200		-1.3370



VARIABLE NUMBER 3 X(3)

STATISTICS	F VALUE	D. F.	
T (SEPARATE)	4.32	0.000	784.8
T (POOLED)	4.53	0.000	1068
F(FOR VARIANCES)	1.98	0.0	450, 618

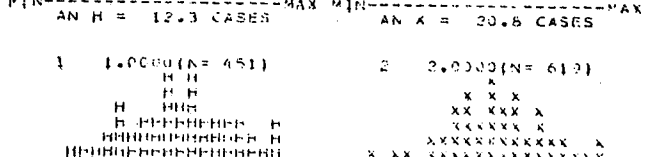
GROUP	1	1.0000	2	2.0000
MEAN		-0.0530		-0.1446
STD DEV		0.4693		0.3416
S.E.M.		0.0219		0.0137
NUMBER		451		619
MAXIMUM		0.8500		1.2700
MINIMUM		-1.0250		-1.1620



VARIABLE NUMBER 4 X(4)

STATISTICS	F VALUE	D. F.	
T (SEPARATE)	2.23	0.025	936.1
T (POOLED)	2.25	0.025	1068
F(FOR VARIANCES)	1.12	0.0	450, 618

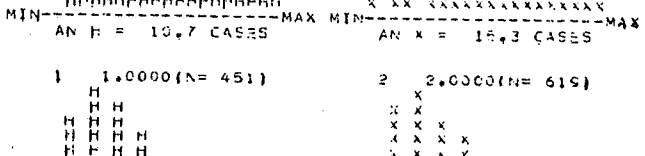
GROUP	1	1.0000	2	2.0000
MEAN		-0.0147		-0.0716
STD DEV		0.4223		0.3993
S.E.M.		0.0199		0.0160
NUMBER		451		619
MAXIMUM		0.9730		0.8730
MINIMUM		-1.1020		-1.3220



VARIABLE NUMBER 5 X(5)

STATISTICS	F VALUE	D. F.	
T (SEPARATE)	1.26	0.202	985.9
T (POOLED)	1.27	0.204	1068
F(FOR VARIANCES)	1.04	0.0	618, 450

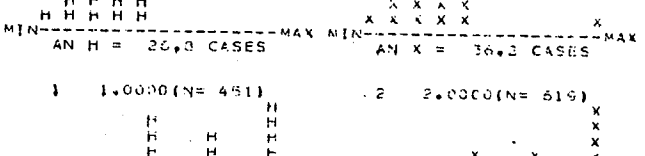
GROUP	1	1.0000	2	2.0000
MEAN		-0.0273		-0.0575
STD DEV		0.8774		0.9040
S.E.M.		0.0413		0.0363
NUMBER		451		619
MAXIMUM		1.4220		5.7040
MINIMUM		-2.0040		-2.0040



VARIABLE NUMBER 6 X(6)

STATISTICS	F VALUE	D. F.	
T (SEPARATE)	-3.36	0.001	954.8
T (POOLED)	-3.37	0.001	1068
F(FOR VARIANCES)	1.05	0.0	450, 618

GROUP	1	1.0000	2	2.0000
MEAN		-0.0393		0.1160
STD DEV		0.7569		0.7352
S.E.M.		0.0365		0.0296
NUMBER		451		619
MAXIMUM		0.7470		0.7470
MINIMUM		-2.0730		-2.0730



Appendix X

Output of multivariate and univariate analysis of interest/ exposure to broad case media variable

FOR DIFFERENCES AMONG GROUP MEANS USING ALL VARIABLES

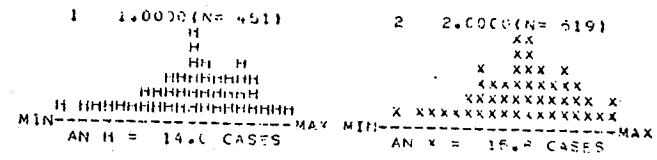
MAHALANOBIS D SQUARE	0.1103		
HOTELLING T SQUARE	28.7741		
F VALUE	4.7732	P VALUE	0.000
DEGREES OF FREEDOM	6,1063		

FOR DIFFERENCES ON SINGLE VARIABLES

VARIABLE NUMBER 2 X(2)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-0.99	0.320	977.3
T (POOLED)	-0.99	0.322	1068
F(FOR VARIANCES)	1.03	0.0	618, 450

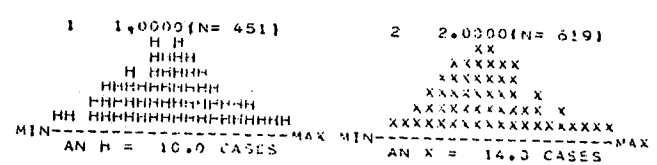
GROUP	1	2
MEAN	-0.0069	0.0145
STD DEV	0.3946	0.4000
S.E.M.	0.0186	0.0161
NUMBER	451	619
MAXIMUM	0.9150	0.9150
MINIMUM	-1.4230	-1.2400



VARIABLE NUMBER 3 X(3)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	4.20	0.000	885.8
T (POOLED)	4.39	0.000	1068
F(FOR VARIANCES)	1.33	0.0	450, 618

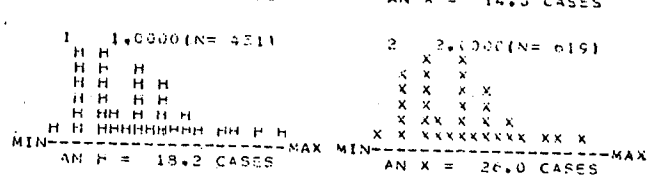
GROUP	1	2
MEAN	-0.0187	-0.1259
STD DEV	0.4356	0.3784
S.E.M.	0.0205	0.0152
NUMBER	451	619
MAXIMUM	1.1930	1.1930
MINIMUM	-1.2140	-1.0770



VARIABLE NUMBER 4 X(4)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-0.44	0.663	907.2
T (POOLED)	-0.44	0.658	1068
F(FOR VARIANCES)	1.24	0.0	450, 618

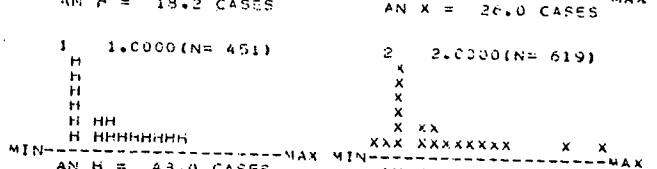
GROUP	1	2
MEAN	-0.0079	0.0014
STD DEV	0.3597	0.3235
S.E.M.	0.0169	0.0130
NUMBER	451	619
MAXIMUM	1.3570	1.0820
MINIMUM	-0.6500	-0.6800



VARIABLE NUMBER 5 X(5)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	0.62	0.534	*****
T (POOLED)	0.61	0.545	1068
F(FOR VARIANCES)	1.84	0.0	618, 450

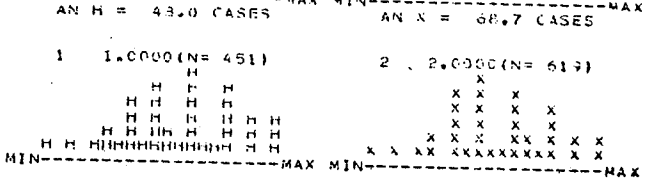
GROUP	1	2
MEAN	-0.0107	-0.0357
STD DEV	0.6253	0.6966
S.E.M.	0.0294	0.0280
NUMBER	451	619
MAXIMUM	3.2840	6.7080
MINIMUM	-0.4060	-1.6360



VARIABLE NUMBER 6 X(6)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	2.80	0.004	901.1
T (POOLED)	2.95	0.003	1068
F(FOR VARIANCES)	1.26	0.0	450, 618

GROUP	1	2
MEAN	-0.0454	-0.1391
STD DEV	0.5469	0.4869
S.E.M.	0.0258	0.0196
NUMBER	451	619
MAXIMUM	0.9010	0.9010
MINIMUM	-1.6330	-1.6330



VARIABLE NUMBER 7 X(7)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	0.93	0.354	957.2
T (POOLED)	0.93	0.352	1068
F(FOR VARIANCES)	1.05	0.0	450, 618

GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	-0.0313	-0.0572
S.E. M.	0.4437	0.4437
NUMBER	0.0214	0.0178
MAXIMUM	451	619
MINIMUM	1.3260	0.6870
	-1.5640	-1.5640

AN H = 15.5 CASES

AN X = 24.5 CASES

1 1.0000(N= 451)

2 2.0000(N= 619)

MIN----------MAX MIN----------MAX

AN H = 9.5 CASES

AN X = 13.0 CASES

Appendix XI

Output of multivariate and univariate analysis of demographic variables

FOR DIFFERENCES AMONG GROUP MEANS USING ALL VARIABLES

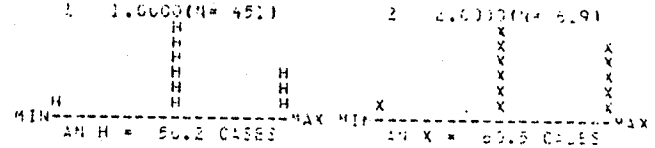
MAHALANOBIS D SQUARE	0.2928		
HOTELLING T SQUARE	76.4016		
F VALUE	6.3012	P VALUE	0.000
DEGREES OF FREEDOM	12,1057		

FOR DIFFERENCES ON SINGLE VARIABLES

VARIABLE NUMBER 2 X(2)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-2.83	0.004	989.3
T (POOLED)	-2.86	0.004	1068
F(FOR VARIANCES)	1.08	0.0	618, 450

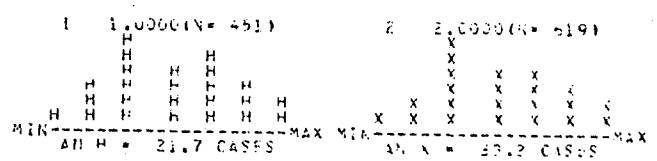
GROUP	1	2
MEAN	1.3236	1.4102
STD DEV	0.4773	0.4926
S.E.M.	0.0225	0.0199
NUMBER	451	619
MAXIMUM	2.0000	2.0000
MINIMUM	0.0	0.0



VARIABLE NUMBER 3 X(3)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	0.85	0.393	980.2
T (POOLED)	0.85	0.395	1068
F(FOR VARIANCES)	1.04	0.0	618, 450

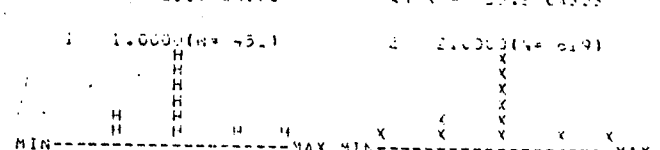
GROUP	1	2
MEAN	5.5518	5.5063
STD DEV	1.4916	1.5205
S.E.M.	0.0702	0.0611
NUMBER	451	619
MAXIMUM	8.0000	8.0000
MINIMUM	2.0000	2.0000



VARIABLE NUMBER 4 X(4)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	0.87	0.387	926.5
T (POOLED)	0.88	0.381	1068
F(FOR VARIANCES)	1.16	0.0	450, 618

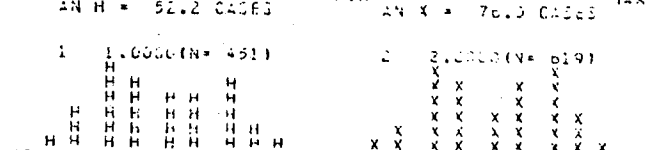
GROUP	1	2
MEAN	1.8489	1.8142
STD DEV	0.6664	0.6136
S.E.M.	0.0314	0.0249
NUMBER	451	619
MAXIMUM	4.0000	4.0000
MINIMUM	1.0000	0.0



VARIABLE NUMBER 5 X(5)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-3.43	0.001	954.0
T (POOLED)	-3.45	0.001	1068
F(FOR VARIANCES)	1.06	0.0	450, 618

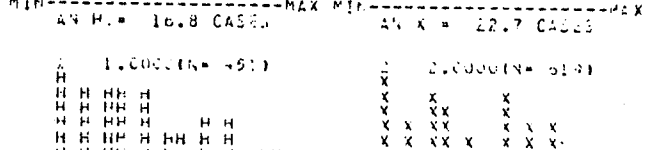
GROUP	1	2
MEAN	3.8336	4.2196
STD DEV	1.8369	1.7863
S.E.M.	0.0865	0.0718
NUMBER	451	619
MAXIMUM	8.0000	8.0000
MINIMUM	0.0	0.0



VARIABLE NUMBER 6 X(6)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-0.94	0.348	*****
T (POOLED)	-0.93	0.355	1068
F(FOR VARIANCES)	1.19	0.0	618, 450

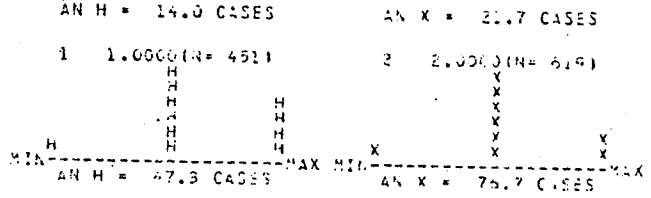
GROUP	1	2
MEAN	4.2837	4.4457
STD DEV	2.6815	2.9270
S.E.M.	0.1263	0.1176
NUMBER	451	619
MAXIMUM	12.0000	12.0000
MINIMUM	1.0000	0.0



VARIABLE NUMBER 7 X(7)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	4.03	0.000	911.7
T (POOLED)	4.07	0.000	1069
F(FOR VARIANCES)	1.22	0.0	450, 618

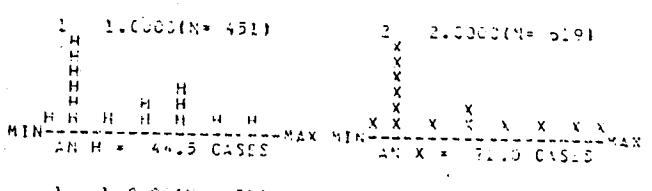
GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	1.3383	1.2341
S.E.M.	0.4965	0.4498
NUMBER	0.0234	0.0181
MAXIMUM	451	619
MINIMUM	2.0000	2.0000
	0.0	0.0



VARIABLE NUMBER 8 X(8)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	3.22	0.001	940.9
T (POOLED)	3.24	0.001	1068
F(FOR VARIANCES)	1.11	0.0	450, 618

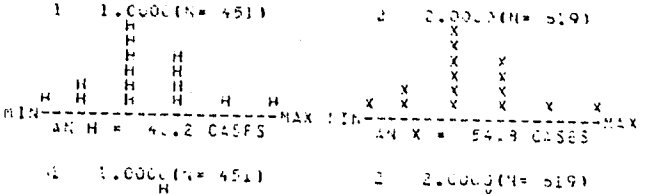
GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	2.1108	1.8222
S.E.M.	1.4791	1.4064
NUMBER	0.0696	0.0565
MAXIMUM	451	619
MINIMUM	6.0000	7.0000
	0.0	0.0



VARIABLE NUMBER 9 X(9)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	-0.86	0.388	879.1
T (POOLED)	-0.84	0.376	1068
F(FOR VARIANCES)	1.35	0.0	450, 618

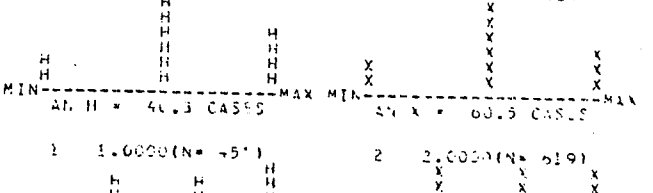
GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	2.3837	2.5278
S.E.M.	0.8739	0.7508
NUMBER	0.0412	0.0302
MAXIMUM	451	619
MINIMUM	6.0000	6.0000
	0.0	0.0



VARIABLE NUMBER 10 X(10)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	2.54	0.011	961.4
T (POOLED)	2.55	0.011	1069
F(FOR VARIANCES)	1.03	0.0	450, 618

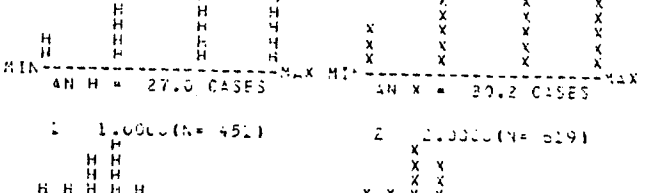
GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	1.2416	1.1420
S.E.M.	0.6571	0.6277
NUMBER	0.0300	0.0252
MAXIMUM	451	619
MINIMUM	2.0000	2.0000
	0.0	0.0



VARIABLE NUMBER 11 X(11)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	2.37	0.018	973.6
T (POOLED)	2.36	0.018	1069
F(FOR VARIANCES)	1.01	0.0	618, 450

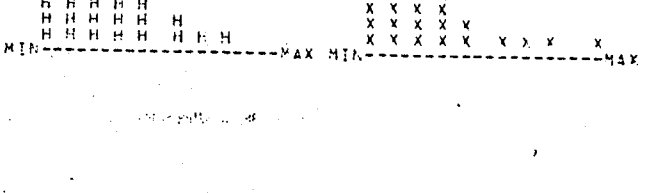
GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	1.8802	1.7301
S.E.M.	1.0214	1.0286
NUMBER	0.0481	0.0413
MAXIMUM	451	619
MINIMUM	3.0000	3.0000
	0.0	0.0



VARIABLE NUMBER 12 X(12)

STATISTICS		P VALUE	D. F.
T (SEPARATE)	3.37	0.000	945.5
T (POOLED)	3.40	0.000	1068
F(FOR VARIANCES)	1.09	0.0	450, 618

GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	2.0276	2.1732
S.E.M.	1.4790	1.4171
NUMBER	0.0696	0.0570
MAXIMUM	451	619
MINIMUM	7.0000	9.0000
	0.0	0.0



VARIABLE NUMBER 13 X(13)

STATISTICS	T VALUE	P VALUE	D. F.
T (SEPARATE)	-1.48	0.140	973.2
T (POOLED)	-1.48	0.140	1068
F(FOR VARIANCES)	1.01	0.0	618, 450

GROUP	1	2
MEAN	1.0000	2.0000
STD DEV	4.0975	4.3214
S.E.M.	2.4412	2.4371
NUMBER	0.1149	0.0988
MAXIMUM	451	619
MINIMUM	1.0000	2.0000
	0.0	0.0

AN H = 24.0 CASES

1 1.0000(N= 451)

MIN MAX

AN H = 12.2 CASES

AN X = 34.7 CASES

2 2.0000(N= 619)

MIN MAX

AN X = 19.8 CASES

Appendix XII

Output of multiple discriminate analysis for five psychographic, two attitudes toward energy, three print media, two broadcast media and five demographic variables related to level of energy consciousness

BMDP7V - STEPWISE DISCRIMINANT ANALYSIS. PROGRAM REVISED JULY 7, 1975
HEALTH SCIENCES COMPUTING FACILITY MANUAL DATE -- 1975
UNIVERSITY OF CALIFORNIA, LOS ANGELES

IN THIS VERSION OF BMDP7V
-- SUBPROBLEMS ARE NOT PERMITTED.
-- GROUP CODES OR CUTPOINTS MUST BE STATED.

PROGRAM CONTROL INFORMATION

```
        PROBLEM   TITLE='DISCRIMINANT',/
        INPUT     VARIABLES=18,
                  CASES=1070,
                  FORMAT='(F1.0,15F5.3/2F5.3)',/
        VARIABLE  GROUP=1,/
        GROUP     CODE=1,2,/
        END/
```

PROBLEM TITLE . . . . . .DISCRIMINANT .

NUMBER OF VARIABLES TO READ IN.	18
NUMBER OF VARIABLES ADDED BY TRANSFORMATIONS. .	0
TOTAL NUMBER OF VARIABLES	18
NUMBER OF CASES TO READ IN.	1070
CASE LABELING VARIABLES	
LIMITS AND MISSING VALUE CHECKED BEFORE TRANSFORMATIONS	
BLANKS ARE.	ZEROS
INPUT UNIT NUMBER	5
REWIND INPUT UNIT PRIOR TO READING. . DATA. . .	NO

INPUT FORMAT
(F1.0,15F5.3/2F5.3)

VARIABLES TO BE USED

1	X(1)	2	X(2)	3	X(3)	4	X(4)	5	X(5)
6	X(6)	7	X(7)	8	X(8)	9	X(9)	10	X(10)
11	X(11)	12	X(12)	13	X(13)	14	X(14)	15	X(15)
16	X(16)	17	X(17)	18	X(18)				

TOLERANCE.	0.010	
F-TO-ENTER	4.000	
F-TO-REMOVE.	3.996	
METHOD	1	
MAXIMUM FORCED LEVEL . . .	0	
MAXIMUM NUMBER OF STEPS. .	36	
PRIOR PROBABILITIES. . . .	0.50000	0.50000

VARIABLE NO.	NAME	BEFORE TRANSFORMATION MINIMUM LIMIT	MAXIMUM LIMIT	MISSING CODE	CATEGORY CODE	CATEGORY NAME	INTERVAL RANGE GREATER THAN	LESS THAN OR EQUAL TO
1	X(1)				1.00000	1.0000		
					2.00000	2.0000		

NUMBER OF CASES READ. 1070

MEANS

VARIABLE	GROUP = 1.0000	2.0000	ALL GPS.
1 X(1)	1.00000	2.00000	1.57850
2 X(2)	-0.00531	-0.09726	-0.05272
3 X(3)	-0.00762	0.26899	0.15234
4 X(4)	0.00386	0.13617	0.07463
5 X(5)	-0.00263	0.08863	0.03859
6 X(6)	-0.00179	-0.08633	-0.05070
7 X(7)	0.00126	-0.12878	-0.07357
8 X(8)	-0.00408	0.16874	0.09421
9 X(9)	-0.04023	-0.16229	-0.11084
10 X(10)	-0.03288	-0.14462	-0.09756
11 X(11)	-0.03929	0.11603	0.08057
12 X(12)	-0.01469	-0.12597	-0.08669
13 X(13)	-0.04544	-0.13907	-0.09860
14 X(14)	1.38372	1.41034	1.37383
15 X(15)	3.83370	4.21971	4.05701
16 X(16)	1.35255	1.22426	1.28411
17 X(17)	2.11086	1.82229	1.94392
18 X(18)	2.52772	2.17932	2.32617
CCLNTS	481.	519.	1070.

STANDARD DEVIATIONS

VARIABLE	GROUP = 1.0000	2.0000	ALL GPS.
1 X(1)	0.0	0.0	0.0
2 X(2)	0.38568	0.35018	0.36556
3 X(3)	0.35563	0.34409	0.37077
4 X(4)	0.57330	0.54469	0.55690
5 X(5)	0.35947	0.24201	0.27588
6 X(6)	0.37461	0.39139	0.38710
7 X(7)	0.24490	0.24106	0.30044
8 X(8)	0.53347	0.45936	0.49189
9 X(9)	0.44172	0.31851	0.37519
10 X(10)	0.46528	0.34164	0.39844
11 X(11)	0.75493	0.73523	0.74356
12 X(12)	0.43563	0.37837	0.40349
13 X(13)	0.54586	0.44693	0.51302
14 X(14)	0.47780	0.49556	0.48816
15 X(15)	1.43695	1.78134	1.89784
16 X(16)	0.49652	0.44979	0.47005
17 X(17)	1.47995	1.40641	1.43746
18 X(18)	1.47961	1.41709	1.43350

MEANS/ST.DEVS.

VARIABLE	GROUP = 1.0000	2.0000	ALL GPS.
1 X(1)	0.0	0.0	0.0
2 X(2)	-0.01376	-0.24918	-0.14421
3 X(3)	-0.01907	0.77249	0.41088
4 X(4)	0.00679	0.23163	0.13401
5 X(5)	-0.06896	0.26193	0.13989
6 X(6)	-0.00453	-0.22436	-0.13097
7 X(7)	0.00363	-0.48967	-0.24622
8 X(8)	-0.01515	0.36741	0.19153
9 X(9)	-0.05116	-0.50552	-0.29543
10 X(10)	-0.07004	-0.42331	-0.24486
11 X(11)	-0.05204	0.15782	0.06800
12 X(12)	-0.04249	-0.33267	-0.19059
13 X(13)	-0.08309	-0.23550	-0.19415
14 X(14)	2.77044	2.84594	2.81432
15 X(15)	2.08469	2.36220	2.24412
16 X(16)	2.72483	2.74404	2.73187
17 X(17)	1.42717	1.29571	1.35293
18 X(18)	1.70066	1.53748	1.61148

STEP NUMBER 0

VARIABLE	F TO REMOVE DF= 1 1069	VARIABLE	F TO ENTER DF= 1 1068	FORCE LEVEL	TOLERANCE
		2 X(2)	13.110	1	1.000000
		3 X(3)	145.110	1	1.000000
		4 X(4)	12.576	1	1.000000
		5 X(5)	17.406	1	1.000000
		6 X(6)	12.443	1	1.000000
		7 X(7)	44.877	1	1.000000
		8 X(8)	33.711	1	1.000000
		9 X(9)	27.610	1	1.000000
		10 X(10)	20.483	1	1.000000
		11 X(11)	11.382	1	1.000000
		12 X(12)	18.411	1	1.000000
		13 X(13)	8.689	1	1.000000
		14 X(14)	8.213	1	1.000000
		15 X(15)	11.493	1	1.000000
		16 X(16)	16.526	1	1.000000
		17 X(17)	10.513	1	1.000000
		18 X(18)	15.197	1	1.000000

STEP NUMBER 1
VARIABLE ENTERED 3 X(3)

VARIABLE	F TO REMOVE	FORCE LEVEL	*	VARIABLE	F TO ENTER	FORCE LEVEL	TOLERANCE
	DF= 1 1068		*		DF= 1 1067		
3 X(3)	145.110	1	*	2 X(2)	12.371	1	0.999885
			*	4 X(4)	11.836	1	0.999982
			*	5 X(5)	11.805	1	0.998195
			*	6 X(6)	9.381	1	0.999506
			*	7 X(7)	41.053	1	0.999824
			*	8 X(8)	24.258	1	0.997796
			*	9 X(9)	10.241	1	0.975629
			*	10 X(10)	14.970	1	0.999484
			*	11 X(11)	6.321	1	0.996649
			*	12 X(12)	11.429	1	0.996750
			*	13 X(13)	7.151	1	0.999936
			*	14 X(14)	0.447	1	0.967709
			*	15 X(15)	16.601	1	0.994615
			*	16 X(16)	11.473	1	0.999844
			*	17 X(17)	8.369	1	0.999836
			*	18 X(18)	7.111	1	0.992169

U-STATISTIC OR WILKS' LAMBDA 0.881818 DEGREES OF FREEDOM 1 1 1068
APPROXIMATE F-STATISTIC 145.110 DEGREES OF FREEDOM 1.00 1068.00

F - MATRIX DEGREES OF FREEDOM = 1 1068

0.0000 145.11 1.0000

CLASSIFICATION FUNCTIONS

GROUP =	1.0000	2.0000
VARIABLE		
3 X(3)	-0.05545	1.66593
CONSTANT	-0.69336	-0.96612

5128

STEP NUMBER 2
VARIABLE ENTERED 7 X(7)

VARIABLE	F TO REMOVE	LEVEL
	DF= 1 1067	
3 X(3)	136.526	1
7 X(7)	41.054	1

VARIABLE	F TO ENTER	FORCE LEVEL	TOLERANCE
	DF= 1 1066		
2 X(2)	7.893	1	0.999002
4 X(4)	4.036	1	0.644426
5 X(5)	7.150	1	0.985379
6 X(6)	7.847	1	0.994498
8 X(8)	9.986	1	0.914517
9 X(9)	10.607	1	0.975188
10 X(10)	10.733	1	0.991767
11 X(11)	4.352	1	0.994198
12 X(12)	4.035	1	0.963069
13 X(13)	2.979	1	0.978708
14 X(14)	0.203	1	0.966686
15 X(15)	9.140	1	0.964978
16 X(16)	12.003	1	0.999357
17 X(17)	7.664	1	0.999702
18 X(18)	4.598	1	0.986365

U-STATISTIC OR WILKS' LAMBDA 0.8477630 DEGREES OF FREEDOM 2 1 1068
APPROXIMATE F-STATISTIC 95.903 DEGREES OF FREEDOM 2.00 1067.00

F - MATRIX DEGREES OF FREEDOM = 2 1067

1.0000	
2.0000	95.90

CLASSIFICATION FUNCTIONS

VARIABLE	GROUP = 1.0000	2.0000
3 X(3)	-0.05631	1.94093
7 X(7)	0.01350	-1.29490
CONSTANT	-0.69237	-1.04392

STEP NUMBER 3
VARIABLE ENTERED 16 X(16)

VARIABLE	F TO REMOVE	FORCE LEVEL	*	VARIABLE	F TO ENTER	FORCE LEVEL	TOLERANCE
	DF= 1 1066		*		DF= 1 1065		
3 X(3)	133.317	1	*	2 X(2)	6.811	1	0.986104
7 X(7)	39.591	1	*	4 X(4)	4.941	1	0.944529
16 X(16)	12.004	1	*	5 X(5)	7.136	1	0.985334
			*	6 X(6)	7.927	1	0.993416
			*	8 X(8)	8.. 0	1	0.911223
			*	9 X(9)	9.414	1	0.972733
			*	10 X(10)	8.631	1	0.982939
			*	11 X(11)	5.462	1	0.991183
			*	12 X(12)	4.248	1	0.981892
			*	13 X(13)	2.714	1	0.978325
			*	14 X(14)	0.835	1	0.947713
			*	15 X(15)	10.330	1	0.966696
			*	17 X(17)	0.259	1	0.523486
			*	18 X(18)	7.119	1	0.963761

U-STATISTIC OF WILKS' LAMBDA 0.8383227 DEGREES OF FREEDOM 3 1 1068
APPROXIMATE F-STATISTIC 68.529 DEGREES OF FREEDOM 3.00 1066.00

F - MATRIX DEGREES OF FREEDOM = 3 1066

1.0000
2.0000 68.53

CLASSIFICATION FUNCTIONS

GROUP =	1.0000	2.0000
VARIABLE		
3 X(3)	0.03820	2.02696
7 X(7)	-0.19021	-1.58032
16 X(16)	6.12443	5.63940
CONSTANT	-4.83481	-4.54146

3129

STEP NUMBER 4
VARIABLE ENTERED 15 X(15)

VARIABLE	F TO REMOVE	FORCE LEVEL
	DF= 1,1065	
3 X(3)	137.838	1
7 X(7)	31.699	1
15 X(15)	10.331	1
16 X(16)	13.175	1

VARIABLE	F TO ENTER	FORCE LEVEL	TOLERANCE
	DF= 1 1064		
2 X(2)	6.937	1	0.985969
4 X(4)	2.559	1	0.996178
5 X(5)	7.326	1	0.985044
6 X(6)	6.608	1	0.992921
8 X(8)	9.411	1	0.999064
9 X(9)	10.432	1	0.997746
10 X(10)	7.797	1	0.980951
11 X(11)	4.662	1	0.988422
12 X(12)	5.319	1	0.956253
13 X(13)	1.776	1	0.968987
14 X(14)	1.817	1	0.932734
17 X(17)	0.291	1	0.523465
18 X(18)	8.515	1	0.958231

U-STATISTIC OR WILKS' LAMBDA 0.9302686 DEGREES OF FREEDOM 4 1 1068
APPROXIMATE F-STATISTIC 54.429 DEGREES OF FREEDOM 4.00 1065.00

F - MATRIX DEGREES OF FREEDOM = 4 1065

	1.3900
2.0300	54.43

CLASSIFICATION FUNCTIONS

VARIABLE / GROUP =	1.0000	2.0000
3 X(3)	0.44468	2.47999
7 X(7)	0.85521	-0.34352
15 X(15)	1.11968	1.24218
16 X(16)	5.97744	5.35460
CONSTANT	-6.81326	-6.97455

STEP NUMBER 5
VARIABLE ENTERED 9 X(9)

VARIABLE	F TO REMOVE	FORCE LEVEL	*	VARIABLE	F TO ENTER	FORCE LEVEL	TOLERANCE
	DF= 1 1064		*		DF= 1 1063		
3 X(3)	110.523	1	*	2 X(2)	6.958	1	0.985937
7 X(7)	71.645	1	*	4 X(4)	2.334	1	0.905439
9 X(9)	10.922	1	*	5 X(5)	6.544	1	0.983344
15 X(15)	11.739	1	*	6 X(6)	8.044	1	0.977241
16 X(16)	11.918	1	*	8 X(8)	7.501	1	0.900052
			*	10 X(10)	0.004	1	0.243578
			*	11 X(11)	7.169	1	0.965417
			*	12 X(12)	2.776	1	0.917060
			*	13 X(13)	1.094	1	0.961731
			*	14 X(14)	1.745	1	0.932700
			*	17 X(17)	0.079	1	0.820268
			*	18 X(18)	8.647	1	0.654100

U-STATISTIC OR WILKS' LAMBDA = 0.8219083 DEGREES OF FREEDOM 5 1 1068
APPROXIMATE F-STATISTIC = 46.110 DEGREES OF FREEDOM 5.00 1064.00

F - MATRIX DEGREES OF FREEDOM = 5 1064

2.0000	1.0000
	46.11

CLASSIFICATION FUNCTIONS

	GROUP = 1.0000	2.0000
VARIABLE		
3 X(3)	0.28135	2.32217
7 X(7)	0.87741	-0.49036
9 X(9)	-1.08307	-1.69069
15 X(15)	1.13586	1.26742
16 X(16)	5.01715	5.41693
CONSTANT	-6.99333	-7.17126

STEP NUMBER 6
VARIABLE ENTERED 6 X(6)

VARIABLE	F TO REMOVE DF= 1 1063	FORCE LEVEL	*	VARIABLE	F TO ENTER DF= 1 1062	FORCE LEVEL	TOLERANCE
3 X(3)	114.523	1	*	2 X(2)	5.859	1	0.980974
6 X(6)	40.202	1	*	4 X(4)	1.341	1	0.891714
7 X(7)	30.097	1	*	5 X(5)	4.780	1	0.967547
9 X(9)	13.165	1	*	8 X(8)	8.009	1	0.894949
15 X(15)	13.268	1	*	10 X(10)	0.[illegible]32	1	0.245526
16 X(16)	11.764	1	*	11 X(11)	1.490	1	0.669291
			*	12 X(12)	3.559	1	0.916703
			*	13 X(13)	0.583	1	0.553176
			*	14 X(14)	0.421	1	0.883654
			*	17 X(17)	0.109	1	0.520118
			*	18 X(18)	6.507	1	0.540898

U-STATISTIC OR WILKS' LAMBDA 0.9150498 DEGREES OF FREEDOM 6 1 1058
APPROXIMATE F-STATISTIC 40.202 DEGREES OF FREEDOM 6.00 1063.00

F - MATRIX DEGREES OF FREEDOM = 6 1063

1.0000
2.0000 40.20

CLASSIFICATION FUNCTIONS

VARIABLE \ GROUP =	1.0000	2.0000
3 X(3)	0.29659	2.21133
6 X(6)	0.31246	-0.32224
7 X(7)	0.46988	-0.39498
9 X(9)	-1.24256	-1.71935
15 X(15)	1.14070	1.24427
16 X(16)	5.91089	5.41612
CONSTANT	-6.90049	-7.17438

STEP NUMBER 7
VARIABLE ENTERED R X(8)

VARIABLE	F TO REMOVE	FORCE LEVEL	*	VARIABLE	F TO ENTER	FORCE LEVEL	TOLERANCE
	DF= 1 1062		*		DF= 1 1061		
3 X(3)	111.513	1	*	2 X(2)	6.698	1	0.577279
4 X(4)	0.482	1	*	4 X(4)	0.611	1	0.875638
7 X(7)	19.338	1	*	5 X(5)	4.296	1	0.966178
8 X(8)	4.000	1	*	10 X(10)	0.0	1	0.242577
9 X(9)	11.067	1	*	11 X(11)	1.836	1	0.667148
15 X(15)	10.496	1	*	12 X(12)	1.378	1	0.898066
16 X(16)	10.640	1	*	13 X(13)	0.057	1	0.920260
			*	14 X(14)	0.363	1	0.883443
			*	17 X(17)	0.195	1	0.519304
			*	18 X(18)	6.151	1	0.940490

U-STATISTIC OR WILKS' LAMBDA 0.9089489 DEGREES OF FREEDOM 7 1 1068
APPROXIMATE F-STATISTIC 35.831 DEGREES OF FREEDOM 7.00 1062.00

F - MATRIX DEGREES OF FREEDOM = 7 1062

2.000 1.0000
35.83

CLASSIFICATION FUNCTIONS

VARIABLE	GROUP = 1.0000	2.0000
3 X(3)	0.39095	2.19135
4 X(4)	0.23257	-0.25887
7 X(7)	1.03044	2.02947
8 X(8)	0.45945	0.97273
9 X(9)	-0.06705	-1.61424
15 X(15)	1.14503	1.27933
16 X(16)	5.94089	5.46211
CONSTANT	-6.92305	-7.25772

5031

STEP NUMBER 8
VARIABLE ENTERED 2 X(2)

VARIABLE	F TO REMOVE	FORCE LEVEL		VARIABLE	F TO ENTER	FORCE LEVEL	TOLERANCE
	DF= 1 1061				DF= 1 1060		
2 X(2)	7.498	1	*	4 X(4)	0.047	1	0.875683
3 X(3)	111.918	1	*	5 X(5)	3.491	1	0.963022
6 X(6)	11.270	1	*	10 X(10)	0.014	1	0.242239
7 X(7)	15.354	1	*	11 X(11)	2.427	1	0.666885
8 X(8)	8.949	1	*	12 X(12)	1.200	1	0.894322
9 X(9)	10.419	1	*	13 X(13)	0.317	1	0.918888
15 X(15)	11.146	1	*	14 X(14)	0.398	1	0.883320
16 X(16)	9.585	1	*	17 X(17)	0.090	1	0.817767
			*	18 X(18)	4.910	1	0.930232

U-STATISTIC OR WILKS' LAMBDA 0.8039734 DEGREES OF FREEDOM 8 1 1068
APPROXIMATE F-STATISTIC 32.357 DEGREES OF FREEDOM 8.00 1061.00

F - MATRIX DEGREES OF FREEDOM = 8 1061

1.0000
2.0000 32.36

CLASSIFICATION FUNCTIONS

VARIABLE	GROUP = 1.0000	2.0000
2 X(2)	-0.60569	-1.10028
3 X(3)	0.28857	3.19732
6 X(6)	0.33312	-0.19703
7 X(7)	1.11123	0.19259
8 X(8)	0.48431	0.92416
9 X(9)	-0.38341	-1.60436
15 X(15)	1.14741	1.27765
16 X(16)	0.07754	0.51053
CONSTANT	-6.94700	-7.13677

STEP NUMBER 5
VARIABLE ENTERED 16 X(16)

VARIABLE	F TO REMOVE DF= 1 1060	FORCE LEVEL		VARIABLE	F TO ENTER DF= 1 1059	FORCE LEVEL	TOLERANCE
2 X(2)	5.447	1	*	4 X(4)	0.232	1	0.855328
3 X(3)	105.707	1	*	5 X(5)	2.093	1	0.912210
6 X(6)	6.544	1	*	10 X(10)	0.004	1	0.242113
7 X(7)	10.974	1	*	11 X(11)	1.641	1	0.064151
8 X(8)	8.434	1	*	12 X(12)	1.255	1	0.894181
9 X(9)	10.724	1	*	13 X(13)	0.002	1	0.917616
15 X(15)	13.253	1	*	14 X(14)	0.015	1	0.637027
16 X(16)	11.648	1	*	17 X(17)	0.372	1	0.509844
18 X(18)	4.910	1	*				

U-STATISTIC OR WILKS' LAMBDA 0.8301664 DEGREES OF FREEDOM 9 1 1068
APPROXIMATE F-STATISTIC 29.414 DEGREES OF FREEDOM 9.00 1060.00

F - MATRIX DEGREES OF FREEDOM = 9 1060

1.0000
2.0000 29.41

CLASSIFICATION FUNCTIONS

VARIABLE	GROUP = 1.0000	2.0000
2 X(2)	-1.22017	-1.47013
3 X(3)	0.78396	2.03637
6 X(6)	-0.38221	-0.85040
7 X(7)	0.76524	-0.28211
8 X(8)	0.66464	1.04037
9 X(9)	-0.99587	-1.61634
15 X(15)	1.04718	1.19471
16 X(16)	0.71686	0.20723
18 X(18)	1.51632	1.40860
CONSTANT	-9.18307	-9.25983

CLASSIFICATION MATRIX

GROUP	PERCENT CORRECT	NUMBER OF CASES CLASSIFIED INTO GROUP = 1.0000	2.0000
1.0000	64.7	298	153
2.0000	72.1	173	446
TOTAL	69.5	471	599

CANONICAL CORRELATIONS

0.44703

VARIABLE	COEFFICIENTS FOR CANONICAL VARIABLES
2 X(2)	0.44503
3 X(3)	-1.46250
5 X(5)	2.66306
7 X(7)	0.94403
8 X(8)	-5.42704
9 X(9)	0.41617
15 X(15)	-1.13601
16 X(16)	0.56702
18 X(18)	0.10911
CONSTANT	0.15629

GROUP	CANONICAL VARIABLES EVALUATED AT GROUP MEANS
1.0000	-0.[illegible]32
2.0000	-0.42617

NUMBER OF NON-ZERO EIGENVALUES IS 1.
NO PLOTS WILL BE COMPUTED.