

Modelling Consumer Preferences for Campground Design Features and Price  
Using Conjoint Analysis

by

Robert A. Jones

A dissertation  
presented to the University of Manitoba  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy

Winnipeg, Manitoba  
(c) Robert A. Jones, 1990



National Library  
of Canada

Bibliothèque nationale  
du Canada

Canadian Theses Service    Service des thèses canadiennes

Ottawa, Canada  
K1A 0N4

The author has granted an irrevocable non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of his/her thesis by any means and in any form or format, making this thesis available to interested persons.

The author retains ownership of the copyright in his/her thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without his/her permission.

L'auteur a accordé une licence irrévocable et non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de sa thèse de quelque manière et sous quelque forme que ce soit pour mettre des exemplaires de cette thèse à la disposition des personnes intéressées.

L'auteur conserve la propriété du droit d'auteur qui protège sa thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

ISBN 0-315-71828-5

Canada

*MODELLING CONSUMER PREFERENCES FOR CAMPGROUND  
DESIGN FEATURES AND PRICE USING CONJOINT ANALYSIS*

*BY*

*ROBERT A. JONES*

A thesis submitted to the Faculty of Graduate Studies  
of the University of Manitoba in partial fulfillment of the  
requirements of the degree of

*DOCTOR OF PHILOSOPHY*

*(c) 1990*

Permission has been granted to the LIBRARY OF THE UNIVERSITY  
OF MANITOBA to lend or sell copies of this thesis, to the  
NATIONAL LIBRARY OF CANADA to microfilm this thesis and to  
lend or sell copies of the film, and UNIVERSITY MICROFILMS to  
publish an abstract of this thesis.

The author reserves other publication rights, and neither the  
thesis nor extensive extracts from it may be printed or  
otherwise reproduced without the author's written permission.

## ABSTRACT

### MODELLING CONSUMER PREFERENCES FOR CAMPGROUND DESIGN FEATURES AND PRICE USING CONJOINT ANALYSIS

Reduced use of publicly provided overnight camping facilities, and agency motivation to reduce costs and increase revenue, provided incentive for use of a marketing approach in this study. This research applies conjoint analysis to determine the relative importance of a pre-determined set of attributes in determining consumer preferences for overnight campgrounds. In addition, approaches to campground segmentation are evaluated with respect to consumer preference, and the Pricing Sensitivity Measurement (PSM) model for determining the 'range of acceptable price' is investigated.

A full-profile conjoint analysis approach was used in a  $4 \times 3 \times 2^9$  fractional factorial design. A part-worth model was defined as the analytical model. CONJOINT DESIGNER and SIMGRAF software (Bretton-Clark) were used in the study. A questionnaire was mailed to a random sample of 1053 known (1988) campground users and 634 (60.2%) usable returns were received.

Results of the conjoint analysis showed price to be the most important determinant of preference. However, the PSM results suggested that current prices were below the upper level of the range of acceptable price. Thus, while price was the most important attribute in the preference model, price increases would be possible. The provision of showers, beach, fishing opportunities, and firewood were also important determinants of preference. Services at the campsite were also important. Full-service and electrically serviced sites were



preferred; this being in direct contrast to the current supply which is dominated by unserviced sites. The provision of hiking trails, campsite reservation systems, stores, and interpretive services did not contribute significantly to consumer preference. This suggested that these services could be eliminated from agency campgrounds (or not added) without negative consumer reaction. Similarly, travel distance was not an important determinant of preference.

Segmentation of the results provided numerous insights that may guide marketing mix decisions. Analysis of variance found segmentation on the basis of 'type of camping equipment used' [ $F(6,627)=4.538, p<.0002$ ] and on the basis of 'total days of camping' [ $F(5,628)=2.670, p<.021$ ] to be significant. Other segmentation criteria (c.f. age, total family income, place of residence, camping month and park/campground used) were not significant.

I hereby declare that I am the sole author of this dissertation.

I authorize the University of Manitoba to lend this dissertation to other institutions or individuals for the purpose of scholarly research.

Robert A. Jones

I further authorize the University of Manitoba to reproduce this dissertation by photocopying or by other means, in total or in part, at the request of other institutions or individuals for the purpose of scholarly research.

Robert A. Jones

The University of Manitoba requires the signatures of all persons using or photocopying this dissertation. Please sign below, and give address and date.

## ACKNOWLEDGEMENTS

This dissertation was completed with help from many people. No one has helped me more than my wife Carol who has supported all my efforts. Over the years that I have been working toward completion of this study and degree, she has given birth to our two daughters, Jaclyn and Kelsey. Over this time she has provided the majority of the effort required to raise these children and I thank her for that extraordinary effort. I would like to dedicate this accomplishment to the best family one could ask to be part of.

I would like to thank my advisor, Dr. Walter Good and committee members Dr. Louise Arthur and Dr. Walter Henson for their ongoing support and encouragement. In particular, I would like to acknowledge their willingness in allowing me to focus my efforts in a truly Interdisciplinary fashion.

I also extend appreciation to the Government of Manitoba for their financial support of this study, and to Mr. Jim Crone and Mr. Gordon Jones from the Parks Branch, Department of Natural Resources for their cooperation and commitment over the past years.

I offer special thanks to Mr. Bob Graves and Ms. Wanda Wiebe, research assistants, who contributed in a variety of ways to the completion of this study.

Finally, I offer thanks to the 634 camping enthusiasts who contributed their time and effort in completing and returning the surveys. Without them, the study would not have been possible.

## CONTENTS

<u>Chapter</u>	<u>page</u>
INTRODUCTION .....	1
Theories and Concepts Affecting This Study .....	2
The Situation in Parks and Campgrounds .....	5
The Role of Marketing .....	7
The Concept of Complex Decision Making .....	10
Statement of the Purpose .....	13
Subproblems .....	14
Null Hypotheses .....	15
Assumptions .....	16
Limitations .....	16
Need for the Study .....	17
REVIEW OF RELATED LITERATURE .....	19
Approaches to Measurement of Consumers' Judgments .....	19
Use of Conjoint Analysis in Measuring Consumers' Judgments .....	24
Steps in Using Conjoint Analysis Methods .....	28
Developing Product Profiles .....	29
Data Collection/Rating .....	32
Decomposition/Analysis .....	34
Conjoint Analysis in Leisure Research .....	36
Review of Literature Related to Outdoor Recreation .....	38
Price as a Determinant of Demand for Outdoor Recreation.....	38
Other Determinants of Demand for Outdoor Recreation .....	43
The Provision of MPB Campgrounds .....	49
Conclusion .....	56
APPROACH AND METHODOLOGY .....	57
Sampling .....	57
Data Collection Methods .....	59
Stimulus Set Construction and Presentation .....	61
Dependent Variable Measurement .....	64
Defining the Model .....	64
Optimal Products .....	69
Segmentation Issues .....	69
Simulation Issues .....	70
Hypothesis Testing .....	71
Analysis of the PSM Model .....	72

RESULTS AND DISCUSSION	76
Descriptive Statistics.....	77
Results of the Conjoint Analysis .....	93
Optimal Products .....	94
Conjoint Results by Segments .....	96
Simulation Modeling .....	96
Null Hypotheses Testing .....	114
Analysis of the PSM Results .....	122
Discussion .....	138
Suggested Further Research .....	144
 BIBLIOGRAPHY	 146
 APPENDIX	 156
A. Questionnaire	
B. Equipment Type Definitions	

#### LIST OF TABLES

<u>Table</u>	<u>page</u>
1 Frequency Distribution of Sample Park .....	79
2 Frequency Distribution of Sample Month.....	79
3 Frequency Distribution of Place of Residence .....	79
4 Frequency Distribution of Total Family Income .....	80
5 Frequency Distribution of Education .....	80
6 Frequency Distribution of Sex .....	80
7 Frequency Distribution of Marital Status .....	81
8 Frequency Distribution of Age .....	81
9 Frequency Distribution of Type of Camping Equipment Used .....	81
10 Frequency Distribution of Type of Campsite Purchased .....	83
11 Frequency Distribution of Campsite Service Preference .....	83
12 Frequency Distribution of Campground Ownership Preference .....	84
13 Frequency Distribution of Total Number in Camping Party Reported on Permit .....	84
14 Frequency Distribution of Normal Number of Children in Camping Party .....	84
15 Frequency Distribution of Normal Number of Adults in Camping Party .....	85
16 Frequency Distribution of Reported Length of Stay .....	85
17 Frequency Distribution of # of Visits to Manitoba Provincial Campgrounds May-Sept 1988 .....	87

18	Frequency Distribution of Total Days of Camping in Man. Provincial Campgrounds May-Sept 1988 .....	87
19	Frequency Distribution of # of Visits to Manitoba Provincial Campgrounds May-Sept 1989 .....	88
20	Frequency Distribution of Total Days of Camping in Man. Provincial Campgrounds May-Sept 1989 .....	88
21	Frequency Distribution of # of Visits to Manitoba National Park Campgrounds May-Sept 1988 .....	89
22	Frequency Distribution of Total Days of Camping in Man. National Park Campgrounds May-Sept 1988 .....	90
23	Frequency Distribution of # of Visits to Manitoba National Park Campgrounds May-Sept 1989 .....	90
24	Frequency Distribution of Total Days of Camping in Man. National Park Campgrounds May-Sept 1989 .....	91
25	Frequency Distribution of # of Visits to Manitoba Private Campgrounds May-Sept 1988 .....	91
26	Frequency Distribution of Total Days of Camping in Man. Private Campgrounds May-Sept 1988 .....	92
27	Frequency Distribution of # of Visits to Manitoba Private Campgrounds May-Sept 1989 .....	92
28	Frequency Distribution of Total Days of Camping in Man. Private Campgrounds May-Sept 1989 .....	93
29	Simulation Shares by Group and Place of Residence .....	97
30	Group Conjoint Results .....	99
31	Relative Importance of Attributes by Place of Residence .....	100
31A	Utility Values by Place of Residence .....	101
32	Relative Importance of Attributes by Age .....	102
32A	Utility Values by Age .....	103
33	Relative Importance of Attributes by Type of Camping Equipment Used .....	104
33A	Utility Values by Type of Camping Equipment Used .....	105
34	Relative Importance of Attributes by Total Days of Camping in Man. Prov. Parks May-Sept 1988 .....	106
34A	Utility Values by Total Days of Camping in Man. Prov. Parks May-Sept 1988 .....	107
35	Relative Importance of Attributes by Total Family Income .....	108
35A	Utility Values by Total Family Income .....	109
36	Relative Importance of Attributes by Camping Month .....	110
36A	Utility Values by Camping Month .....	111
37	Relative Importance of Attributes by Park .....	112
37A	Utility Values by Park .....	113
38	One Factor ANOVA - Repeated Measures of Eleven Attributes .....	115
39	Mean Statistics for Eleven Attributes .....	115
40	Scheffe F-Test Results .....	116
41	One Factor ANOVA - Repeated Measures for Camping Equipment Used .....	118
42	AB Incidence Table for Camping Equipment Used .....	119

43	One Factor ANOVA - Repeated Measures for Total Days of Camping 1988 .....	120
44	AB Incidence Table for Total Days of Camping 1988 .....	121
45	Summary of PSM Results .....	124
46	Summary of PSM Results by Camping Month .....	124
47	Summary of PSM Results by Park .....	125

## LIST OF FIGURES

<u>Figure</u>		<u>page</u>
1	Summary of the Arguments Concerning Compositional Versus Decompositional Model Designs .....	20
2	Summary of the Arguments Concerning Overt Behaviour Versus Expressed Preference Data in Choice Modeling .....	21
3	Annual Revenue from MPB Camping Permits 1985-1988 .....	50
4	Prices for MPB Daily Camping 1975-1988 .....	51
5	Prices for MPB Seasonal Camping 1975-1988 .....	51
6	Prices for Daily and Seasonal MPB Park Entry 1975-1988 .....	52
7	Unit Days Sold Daily and Seasonally by MPB 1975 -1988 .....	53
8	Supply of MPB Campsites 1975 -1988 .....	54
9	Equipment Type Used in MPB Campgrounds 1975-1988 .....	55
10	Origin of MPB Permit Holders 1975 -1988 .....	56
11	Attribute List .....	62
12	Analysis Example .....	66
13	Example of Graphical Analysis Using Price Utilities .....	68
14	Example of Graphical Analysis Using Campsite Service Utilities .....	68
15	Range of Acceptable Price for Unserviced Campsites in Man. Prov. Parks for All Respondents .....	126
16	Range of Acceptable Price for Electrically Serviced Campsites in Man. Prov. Parks for All Respondents .....	127
17	Range of Acceptable Price for Full-Service Campsites in Man. Prov. Parks for All Respondents .....	128
18	Range of Acceptable Price for Unserviced Campsites in Man. Prov. Parks for Winnipeg Residents .....	129
19	Range of Acceptable Price for Electrically Serviced Campsites in Man. Prov. Parks for Wpg. Residents .....	130
20	Range of Acceptable Price for Full-Service Campsites in Man. Prov. Parks for Wpg. Residents .....	131
21	Range of Acceptable Price for Unserviced Campsites in Man. Prov. Parks for Ot. Man. Residents .....	132
22	Range of Acceptable Price for Electrically Serviced Campsites in Man. Prov. Parks for Ot.Man.Residents .....	133
23	Range of Acceptable Price for Full-Service Campsites in Man. Prov. Parks for Ot.Man Residents .....	134



24	Range of Acceptable Price for Unserviced Campsites in Man. Prov. Parks for Non-Man. Residents .....	135
25	Range of Acceptable Price for Electrically Serviced Campsites in Man. Prov. Parks for Non-Man. Res .....	136
26	Range of Acceptable Price for Full-Service Campsites in Man. Prov. Parks for Non-Man Res .....	137

## CHAPTER 1

### INTRODUCTION

Significant challenges face the future manager in recreation and parks. Changes in the demand for specific recreation activities, for example, will require that future managers develop knowledge of marketing concepts and have the ability to implement marketing practices. The importance of marketing to the future manager can be clearly illustrated with respect to the use of public-sector parks and campgrounds in Canada. The basic goal of these agencies has traditionally been two-fold; to preserve the environment and to provide opportunities for participation in outdoor recreation. These positions are often viewed as being incompatible, giving rise to concerns about how park managers may 'trade-off' between these goals as the situation in parks changes. This research assumes that 'users' are of increasing importance to public-sector park agencies; as a source of revenue, and as a means of justifying parks in the future. This suggests a need to ensure that campgrounds meet the needs of current and future users.

In the future, the operative scenario is likely to reflect continuing changes in the level of service offered in campgrounds, and increases in the price charged to 'users'. Simultaneously, it is likely that competition for campers (customers) will increase. It is believed therefore, that agencies will require more comprehensive 'marketing intelligence in order to remain competitive. This study will demonstrate how marketing can be used to achieve this goal.

### Theories and Concepts Affecting This Research

**Demand** is critical to this study. The term demand refers to the number of units of a particular good or service that customers are willing to purchase during a specified period and under a given set of conditions. For managerial decision making, the primary focus is on "market" demand which is viewed as the aggregate of "individual" demand. As a result, insight into "market" demand relationships is gained by understanding the nature of demand at the individual consumer level. At the level of the individual, demand is determined by the "value" associated with the acquisition and use of a good or service, and the financial ability of the consumer to acquire the good or service. Merely having the desire to use a service without the ability to purchase does not constitute demand.

One consumer behaviour model of individual demand suggests that the value or worth of a good or service (its utility) is the prime determinant of individual demand. In this model consumers are viewed as attempting to maximize the total utility provided by the goods and services they consume. This optimization process requires them to examine such relationships as the the marginal utility of acquiring additional units of a product or service and the relative value of acquiring one product as opposed to another. In this circumstance, characteristics of both the product and the individual are important determinants of demand (Pappas et al., 1983). In the context of this research, characteristics of the product include such factors as price, campground design features, and additional services that can be manipulated by park managers.

The notion of **exchange** is also an important consideration with respect to this research. According to McDonald et al. (1986), visitors to parks may expect more benefits as park service fees increase. This notion can be explained by the logic of Exchange Theory which suggests that increased costs (to the consumer by way of fee increases) need to be balanced by some perception of increased benefits. This means that in their transactions, individuals aim to maximize their benefits and minimize their costs (Foa and Foa, 1975). Accordingly, it may be that in evaluating various camping opportunities, individuals strike a balance between price and other attributes that are offered in the various combinations available. Or, it may be that consumers merely select the 'best' available product regardless of price. The question is, what relationship exists between those attributes that constitute the product(s) available? More specifically, park managers can benefit by knowing how important each attribute is in the purchase decision and should aim to provide products that will optimize purchase behaviour or satisfaction. That is, managers should develop products that are comprised of the optimal combination of attributes. By offering such products to customers, these managers will have greater opportunity of securing the maximum numbers of customers (e.g. capturing a larger market share). Management, however, must ultimately weigh the cost of providing optimal products against the revenue generating potential that new customers represent; a benefit-cost analysis. If the revenue potential exceeds the expected costs, then the new products should be offered. Similarly, reductions to existing service levels which reduce overall costs (which constitute new products), that result in no significant loss of customers must also be considered.

Crompton and Lamb (1986) note that "the term allocation implies that different amounts of a service are assigned to selected groups on the basis of some principle or standard. The generally accepted standard for allocating public services is equity" (p. 155). In this context, equity addresses the question of fairness. That is, some standard of equity is implicit every time services are offered, and in particular when fees are charged.

In the public sector the concept of equity has historically been cause for public agencies to resist the desire to charge individuals for use of parks. However, this notion has had opponents for several decades. Proposals have been made suggesting that higher portions of the costs associated with the provision of non-essential public services, be borne by those who use such services. Proponents of this notion suggest that users accrue the majority of benefits and, therefore, should pay accordingly. This benefits principle is receiving more favorable reception among administrators and politicians in recent years as the ratio between operating costs and revenues has increased, leaving a greater burden on the public at large.

## The Situation in Parks and Campgrounds

In Canada, the trend in use of public-sector parks and campgrounds is evidenced by National Park statistics for the period 1930 to 1987. Total attendance in parks started to increase after World War II, with growth continuing until 1980 when it reached a peak of 21.2 million visitors. In subsequent years total attendance declined, reaching a low of 19.5 million visitors in 1985 before increasing again to the 1987 level of 20.8 million visitors. National Park campgrounds, often viewed as the most important facility by Parks, have also experienced declining use in recent years. Campground use is reported to have totalled 6,466,000 party-nights in 1985-86, a decline of 6 percent from the previous reporting period. This continued a generally negative trend that started in 1980 (Environment Canada Parks, 1986).

In the Province of Manitoba similar trends in daily campground use are evidenced by Provincial Parks Branch data that show the number of daily unitdays (party-nights) sold decreasing from 207,234 in 1975 to 191,427 in 1988; reaching a low of 183,130 in 1987. (Manitoba Park Statistics, 1975 to 1988, annual). These Manitoba totals represent non-seasonal unitdays sold and therefore do not represent unitdays sold on a seasonal basis or unitdays provided at no charge to Canadian senior citizens. In contrast to daily use, seasonal unitdays sold increased from 106,718 in 1975 to 186,343 in 1988; reaching a high of 193,159 in 1987. A more detailed explanation of MPB campgrounds is provided in Section 2 of this report.

This trend toward decreasing use of public campgrounds has been paralleled by an era of conservatism in the public sector in Canada. At a time

when agencies responsible for the administration of parks have been faced with substantially inflated operating costs, revenue generation has declined (assuming constant dollars), and public budgets have failed to keep pace. This has resulted in many agencies seeking to expand their revenue generation potential (Heit, 1980, pp. 12).

Doyle (1984) in his paper entitled "Revenue Enhancement, Cost Reduction and Management Innovation as a Means to Reducing Operating Deficits of Canadian Parks" assessed the relationship between revenue generation and operating costs for most Provincial/Territorial parks agencies and for the National Parks in Canada. In his analysis he noted that on the national scene, the average ratio of revenue to expenditures suggests that revenue has accounted for about 25% of costs in recent years. This represented a decline from in excess of 50% for reporting agencies in the late Sixties. He suggested that these reduced cost recovery ratios result in substantial increases in the tax burden associated with the provision of parks. Doyle also suggested that the development of strategies that would lead to reduced dependence on the tax base are favoured by the majority of agencies surveyed.

Similar findings were suggested by Driver (1985). His review of public responses to user fees at public recreation areas in the United States found evidence of increasing support among agency administrators and politicians for fee increases that would reduce the requirements for budget increases. He also found that individual users were willing to pay increased user fees, especially if these fees could be earmarked for return to the collecting agency. Driver et al. (1985) also supported the notion of substantial fee increases for

publicly provided outdoor recreation, suggesting that such increases would be common in the near future. In addition, they noted a trend toward the levying of a broader range of fees in public parks and campgrounds.

### The Role of Marketing

Interest in user fees for publicly provided outdoor recreation is expected to increase as agency budgets become more constrained (Crandall, 1984; Crompton and Lamb, 1986; Driver, 1985; Driver et al., 1985; Hoover, 1978; Manning and Baker, 1981; Rosenthal et al., 1984). As a result, it is clear that 'users' will become increasingly important to those who manage publicly provided outdoor recreation areas. That is, the beliefs held by consumers about camping products are important. This notion suggests a role for marketing. Doyle (1984) supports this position. His study concluded that a strong marketing focus would be essential for park agencies in the future, especially for those agencies that sought to enhance revenue.

Various concepts need to be understood with respect to marketing in the context of this research. These include the concept of exchange, marketing, marketing mix, the marketing concept, market segmentation, product differentiation, and product optimization.

Marketing as defined by the American Marketing Association and reported by Murphy and Enis (1986), "is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives" (p. 24). This definition is consistent with recent marketing literature



which suggests that product, price, promotion and distribution are the primary elements of the marketing mix. Crompton and Lamb (1986) suggest that these marketing mix elements, together with the selection of the client groups to be served (e.g. market segments), represents the combination of variables that an agency can control and manipulate to achieve desired outcomes.

According to Kotler and Turner (1985), marketing exists when individuals decide to satisfy needs and wants through the process of exchange which is the act of obtaining a desired product from someone by offering something in return (e.g. money exchanged for the use of a campsite for one night). Central to this understanding of marketing is the marketing concept. Defined by Kotler and Turner (1985), "the marketing concept holds that the key to achieving organizational goals consists in determining the needs and wants of target markets and delivering the desired satisfactions more effectively and efficiently than competitors" (p. 22). In its simplest form the marketing concept notes that "we have to stop marketing makeable products and learn to make marketable products" (Kotler and Turner, 1985, p. 22). With respect to this research, application of the marketing concept implies finding out what attributes consumers of parks' services want the most, incorporating these into the products offered by the parks agency, and then marketing these products (bundles of attributes) to identifiable specific target market segments. This implies that agencies providing products (e.g. camping opportunities) must accept the notion of competition.

The concepts of market segmentation and product differentiation also have relevance with respect to this research. Dickson and Ginter (1987) define market segmentation as "a state of demand heterogeneity such that the total

market demand can be disaggregated into segments with distinct demand functions" (p. 5). They note that individual demand functions are not directly observable and segment distinctions are usually blurred. Thus, different agencies' conclusions about the number and properties of market segments will vary with their conceptual and analytical approaches to segment identification. Because the perceptions of segments may provide a basis for marketing strategy, they may be one determinant of competitive performance. Consequently, the accuracy of the agencies' perception of market segmentation often is a crucial determinant of competitive advantage. In the case of public campground provision, the ability to segment the market may, therefore, be essential to improved efficiency.

Dickson and Ginter (1987) also note that product differentiation should be defined as a market condition. They define product differentiation as existing when "a product offering is perceived by the consumer to differ from its competition on any physical or nonphysical product characteristic including price" (p. 4). They suggest that the prevalent condition is one in which all products are not perceived as equal on each of the product characteristics, including price. Product differentiation strategy then, could be pursued through product design in specification of actual product characteristics and/or through advertising directed at establishing perceptions of both physical and non-physical product characteristics. This implies that park agencies should attempt to distinguish their campgrounds from those of other suppliers. To accomplish this, they need to develop an understanding of how consumers evaluate campground offerings.

What is clear from this discussion is that both market segmentation and market differentiation can provide the basis for marketing strategies. Equally clear is that the preferred strategic option is determined primarily by the existing market conditions. In addition, it is clear that a strategy of product differentiation does not require the existence of market segments, but may be used in conjunction with market segmentation strategy when segments are perceived to exist. In contrast, a strategy of market segment development is feasible only when product differentiation already exists or is an accompanying strategy. Thus, product differentiation and market segmentation are clearly not alternative marketing strategies (Dickson and Ginter, 1987).

#### The Concept of Complex Decision Making

In the larger context, individuals who purchase specific products over other alternatives do so having gone through a process of complex decision making. Louviere (1988) describes this process as involving the following steps:

1. Need Awareness
2. Search and Learning
3. Valuation of Key Decision Criteria
4. Evaluation of Alternatives on Key Decision Criteria
5. Decision to Choose / Not Choose Any Alternative
6. If Choosing An Alternative, Which One? (p. 10)

In this context consumers are involved in the process of assessment, comparison, and/or evaluation in which they decide which aspects of products

or services are important, compare products or services on each of the important aspects, and decide which one(s), if any, to choose. This process is complicated. Louviere (1988) believes that consumers do not perceive physical variables in physical measurement terms. Rather, they make psychological or perceptual judgments about each. Engel, Blackwell and Miniard (1986) suggest that this involves the consumer's beliefs, which lead to the formation of attitudes about alternative products. Ultimately these attitudes lead consumers to form an intention to purchase, to pick the 'winner' or product that they will purchase. In any case, consumers form impressions or opinions about the positions of various products on each determinant attribute that matters; and this process involves integrating perceptual information.

For the purposes of this research, both the evaluation of alternatives and the choosing of the final alternative (ie. which product is chosen among alternatives) are significant. For example, public-sector park managers need to know which of the evaluative criteria are important to the consumer. In this context, the evaluative criteria are best thought of as product-based representations of the consumer's underlying motives. Engel, Blackwell and Miniard (1986) discuss price and reputation of brand as important examples of evaluative criteria. Walsh (1986) suggests that with respect to outdoor recreation (camping), criteria would include but not be limited to, price, attractiveness or quality of the recreation site, congestion at the site, travel time to the site, and availability of substitutes.

Equally important to the public-sector park manager is the notion of purchase behaviour. For example, which combination of evaluative criteria (ie. which product) will the customer purchase? In marketing, product optimization

is the operative concept related to this question. Green et al. (1981) suggest that the following series of questions are central to the concept of product optimization:

1. What is the most profitable new/modified product to make, consistent with one's current product line, and what is the best target market for this new product?
2. What market segments will optimize profits for the current product line and, given a specifically defined segment, what is the most profitable product for it?
3. Given the competitive introduction of a new product, what is one's best retaliatory strategy, what is one's best retaliatory strategy from a product/market standpoint? (p. 17)

For this study question number one, above, is considered; the optimal product being viewed as having the greatest utility to the purchaser. That is, within the range of management's potential, what combination of attributes and/or attribute levels will result in maximum purchase. While the question of potential segments are of concern, this study does not attempt to identify the most profitable segments, nor does it consider retaliatory strategies given competitive introduction of new products.

### Statement of Purpose

The purpose of this study was to investigate consumer preferences for a pre-determined set of attributes thought to influence choice of developed campgrounds operated by Manitoba Department of Natural Resources, Parks Branch (MPB).

To this end the following problems are proposed:

1. To discover the relative importance (part-worth utility range) that consumers place on each of a pre-determined set of attributes that are thought to influence consumer choice of overnight campgrounds provided by MPB.
2. To discover the range of prices that known users of MPB campgrounds are willing to pay for use of a campsite on a daily basis.
3. To discover the combination of attribute levels that would result in the maximum purchase rate of MPB campsites by known MPB campground users.
4. To develop a socio-demographic profile of current MPB campground users that may be useful in providing a basis for segmenting the day-use campground market.

5. To discover if the relative importance (part-worth utility range) of attributes is significantly different for market segments distinguished on the basis of frequency of use of MPB campgrounds in 1988, age, total family income, type of camping equipment/vehicle used, place of residence, preference for campsite services (unserviced, electrical, full-service), and preference for campground ownership (National Park, Manitoba Provincial Park, Private campground).
6. To develop a simulation model which MPB managers could use to evaluate how proposed changes to the attribute levels used in this study, may affect the consumer preference of MPB campgrounds

### Subproblems

A subproblem of this research is to investigate the applicability of the Price Sensitivity Measurement (PSM) method developed by van Westendorp and reported by Travis (1982).

### Null Hypotheses

The null hypotheses to be tested in this research include:

H<sub>0</sub>(1)

There is no significant difference in the relative importance (part-worth utility ranges) that MPB campground users assign to the pre-determined set of attributes used in this study.

H<sub>0</sub>(2)

There is no significant difference in the relative importance (part-worth utility ranges) that MPB campground users assign to the pre-determined set of attributes used in this study, for respondent segments that are distinguished on the basis of:

- a) number of camping nights purchased in MPB campgrounds in 1988
- b) age of survey respondent
- c) total family income
- d) type of camping equipment/vehicle used (ie. tent, motor home)
- e) place of residence
- f) month wherein the camping permit was purchased
- g) park where the camping permit was purchased



### Assumptions

This research assumes that managers of publicly provided outdoor recreation areas will consciously attempt to reduce the tax burden associated with the provision of parks and campgrounds by modifying their marketing mix. It is further assumed that, with respect to controllable management actions, this will be attempted by means of product modification and by changing pricing strategies in an attempt to provide optimal products.

It is also assumed that consumer's choice of campgrounds is the result of complex decision making, or the process of assessment, comparison, and/or evaluation in which consumers decide which aspects of products or services are important, compare products or services on each of the important aspects, and decide which one(s), if any, to choose.

Further, it is assumed that the principal attributes that affect consumer choice of camping products have been effectively identified by survey research conducted by MPB in 1988. The research also assumes that consumer decision making can be modeled using an additive conjoint analysis approach.

### Limitations

This study is limited to the investigation of consumer decision making as it pertains to overnight camping sold on a daily basis in developed campgrounds operated by MPB. While also important, the study does not consider consumer decision making with respect to overnight camping sold as a seasonal pass, to day-use of parks facilities, cottage leasing, or use of

undeveloped backcountry operated by MPB. The study is also limited to MPB users only and thus does not consider non-campers, or campers who choose to use campgrounds offered by other public agencies or by the private sector.

In conjoint analysis, consumers' overall impressions, evaluations, or judgments of the attributes that constitute the available choices, are relative to their previous experiences and knowledge, and limited by the attributes included in the analysis. Thus, their judgments may change if (a) additional attributes were added to those included in the evaluation (ie. as noted in assumptions), and (b) if new information or experiences are acquired by consumers that change their values or beliefs concerning attributes prior to them making a related purchase decision.

### Need for the Study

The need for public agencies to incorporate the use of marketing into their management practices is strongly evidenced in the literature related to parks. This is particularly true with respect to the involvement of current and potential consumers in the 'change' process, rather than making decisions without substantial consideration of consumer reaction. It is evident that the vast majority of marketing-related decisions are based on observations of actions taken by similar agencies or that they merely reflect other unjustifiable criteria (Crompton and Lamb, 1986; Driver, 1985). Thus, it is important to demonstrate the need and value of marketing information such as that which will be generated by this study. At the very least, this study will require MPB managers to fully discuss marketing issues that pertain to their agency goals.

The use of marketing research methods such as conjoint analysis are noticeably absent in the literature related to publicly provided recreation and parks. Thus, by demonstrating the process and application of conjoint analysis in this study, it is hoped that recreation and park professionals will make further use of the process.

In practical terms, the results of this study will provide a sound basis upon which the MPB can test various marketing mix (attribute level) alternatives prior to their introduction into the system. Previously, changes were introduced and their affects were only measurable after implementation. Similarly, the result may provide a basis for more efficient and effective parks provision, and the research process may serve to highlight the provision of camping opportunities by MPB to politicians and to the general public.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

This selected review of the related literature is conducted in two sections. The first section provides an overview of the approaches used to measure consumer judgments and reviews the literature relevant to the use of conjoint analysis. Section two reviews the outdoor recreation literature related to this study.

#### APPROACHES TO MEASUREMENT OF CONSUMERS' JUDGMENTS

Substantial effort has been devoted by marketing researchers to the study of consumer attitudes toward product characteristics. In essence, such efforts have attempted to estimate the structure of consumers' preferences (e.g., part-worths, attribute importance weights) and the specification of representational models that best reflect their evaluations of multiattribute alternatives (Green and Srinivasan, 1978; Green and Wind, 1975). These models assume that consumers make decisions about alternative products or services (campgrounds for this research) having made an assessment of product characteristics (Beckwith and Lehmann, 1973; Bettman et al., 1975). It is further assumed that these models can be expressed in mathematical form (Timmermans and van den Heijden, 1984).

The major choices associated with attempts to model consumer choice are two-fold. First, is the decision to focus on actual behaviour or expressed preferences. The second is whether to use a compositional approach, in which the model components are specified separately and then combined into an

aggregate model, or a decompositional approach, which starts with an expressed preference or observed behaviour followed by analysis that aims to identify the interior structure of that preference or choice (June and Smith, 1987). Several authors noted advantages and disadvantages associated with each choice (Akaah and Korgaonkar, 1983; Cattin and Wittink, 1982; Green and Srinivasan, 1978; Jaccard et al., 1986; Mazis et al., 1975). June and Smith (1987), summarized the advantages and disadvantages of each as shown in Figure 1 and Figure 2.

Figure 1  
Summary of The Arguments Concerning Compositional  
Versus Decompositional Model Designs

MODEL DESIGN	SUBSTANCE OF ARGUMENT	
	FOR	AGAINST
Compositional	1. Relatively simple to design and implement.  2. Researcher has complete control over choice of variables and combination rules.	1. Respondents often find model design too simplistic and unrealistic.  2. Adequacy of model can be compromised by poorly chosen variables or model structure.
Decompositional	1. Model design usually produces more realistic survey instruments for respondents.  2. Calibration of model tied more closely to dependent variables.	1. Can require more complex survey designs and analytical methods.  2. Researcher has less control over ultimate form of model and of weights associated with individual model components.

Figure 2  
 Summary of The Arguments Concerning Overt Behaviour  
 Versus Expressed Preference Data in Choice Modeling

MODEL FOCUS	SUBSTANCE OF ARGUMENT	
	FOR	AGAINST
Behaviour	1. May more reliably indicate actual future behaviour.  2. Less hypothetical, and less open to "wishful thinking" or game playing.  3. More reliable and objective than opinion data.	1. Reflects available supply, not necessarily real preferences or choices if supply were larger.  2. May be less stable owing to temporary influences on behaviour whereas attitudes may be more stable and indicative of future behaviour.  3. Data not available from current non-participants or non-purchasers.
Preference	1. Not constrained by current opportunities.  2. Can be used to study possible choices of proposed products.  3. Not constrained to current participants or purchasers.	1. Link between opinions about preferences and actual behaviour not always strong.  2. Respondents may have difficulty answering survey questions reliably.  3. Validity of data depends on ability of researcher to design a good survey form.

Jaccard et al. (1986) describe and statistically compare six methods used for identifying the importance of product attributes as they influence consumer preference and choice. They review elicitation measures, information-search measures, importance ratings, subjective probability measures, Thurstone measures, and conjoint measurement.

The elicitation approach asks subjects to rank order the characteristics that are important to them in evaluating a product or service, in an open-ended fashion. Responses are content-analyzed and the order of elicitation is used as the basis for determining the importance of attributes listed. Indirect support for

this approach is provided by several authors (Kaplan and Fishbein, 1969; Tversky and Kahneman, 1973; and Szalay and Deese, 1978).

Information-search measures require respondents to select one of several products (product descriptions) from a list of available choices. They are also presented with a list of attributes, each of which provides access to information concerning the attribute (c.f. price information). Information is requested by the respondent one attribute at a time. Respondents are permitted to select as much or as little information as they want prior to making a decision about which product they would purchase from the list of available choices. Analysis is based on the order of selection, duration, and number of times an attribute's information is accessed (Jacoby, 1977).

Importance ratings typically require respondents to rate the importance of each of several attributes on a likert-type rating scale. The results are then analyzed to determine the relative importance of each attribute. This method is typical in leisure research (e.g. McDonald et al., 1986).

Subjective probability measures typically ask respondents to rate their probability of purchasing a given product on a likert-type rating scale. Measures are asked as key attributes are manipulated to extremes. For example, respondents may be asked to rate their probability of buying a certain product (a) if the product was expensive, and (b) if the product were inexpensive. The absolute difference between the two conditional measures serves as the index of importance (e.g. Jaccard et al., 1979).

Thurstone measures (paired comparisons) present respondents with pairs of attributes and ask them to indicate which of the two would be more important to them in evaluating a given product. All possible pairs are presented and traditional paired comparison analysis is undertaken. In this approach only aggregate level estimates are possible (Fishbein and Ajzen, 1975).

Conjoint procedures as described later in this paper were also included in this comparison.

Jaccard et al. (1986) suggest that conclusions made about attribute importance may be quite different depending on which of the methods described above are used. They refer to the possibility of using a multidimensional approach that involves at least two different measures of attribute importance. They noted however that the low levels of convergence may primarily be the result of unreliability of the measures used and also cautioned that a multidimensional approach would require an elaboration of the conceptual foundations underlying attribute importance and how these relate to product evaluation. While the findings of this comparison suggest lack of convergence among the methods used, the authors emphasized that each of the methods considered, either has a substantial theoretical base, or is widely used in applied research. This serves to reinforce the validity of these methods, including conjoint analysis.

Also of note in any discussion of methods used in the evaluation of attribute importance is multidimensional scaling. This technique is intended to infer the underlying dimensions of attribute importance from a series of similarity and/or preference judgments provided by respondents (customers) about



products. Typically, respondents rate alternatives two at a time using a 10-12 point likert-type scale with end points indicated as highly similar and highly dissimilar. Computer programs then generate visual output indicating the perceived similarity between the products, usually on a two-dimensional basis (Engel et al., 1986). Green et al., (1987), suggest that the advantages of multidimensional scaling lie in its display power, noting that relationships among brands, attributes, and target segments can be easily portrayed in terms of relative distance using a perceptual map. These authors suggest using multidimensional scaling techniques to represent the results of conjoint simulations in a user-friendly, graphic way.

Kanters and Hamilton (1990) note that MDS is extremely time consuming for respondents given that each possible combination of attributes must be rated. In their study 20 recreation activities were evaluated, requiring an average completion time of 41.6 minutes using a pencil and paper technique. They note that this amount of time may increase bias given the potential for respondents to lose interest in the task. To overcome this potential, a direct data entry approach that had respondents interact directly with microcomputer terminals was used. This approach resulted in an average completion time of 22.2 minutes and was recommended for use with smaller sample sizes.

#### Use of Conjoint Analysis in Measuring Consumers' Judgments

Conjoint analysis is another method that has received substantial use in market research applications. The foundations for conjoint analysis were built in mathematical psychology (Luce and Tukey, 1964). The first discussion of the use of conjoint measurement in business applications was by Green and Rao

(1971). This marketing application discussed quantifying judgmental and preference data. Green and Wind (1975) saw the following uses of conjoint analysis: new product formulation, package design, brand name determination, pricing and brand alternatives, and alternative service designs. Addelman (1975) recognized conjoint analysis as a tool to value various product attributes and as an aid to planning advertising campaigns, employee motivation, and new product introduction.

The internal and external validity of conjoint analysis has been demonstrated in several research contexts (Davidson, 1973; Green and Srinivasan, 1978; Parker and Srinivasan, 1976; Timmermans, 1987). Green, et al., (1987) note that "the advantage of conjoint procedures lie in its analytic power, based on a function of known attribute levels" (p. 21). Other strengths include the wide applicability of conjoint analysis and the acceptance that virtually any choice problem may be addressed using this method. In addition, conjoint analysis has the added advantage of estimating preference judgments at the individual and aggregate level.

Another significant advantage associated with the use of conjoint analysis is that respondents may indicate their preferences by rating relatively complete product descriptions rather than individual attributes of a product. This process is thought to be more realistic. The process involves three assumptions. First, conjoint analysis is based on the premise that an individual's preference for certain product characteristics may be inferred from the rating of the product descriptions. Second, conjoint analysis assumes that a respondent's utility may be imputed from various levels of attributes, and that there is a significant correlation between preference rating and the objective

attributes of the product. Third, it is assumed that the preference rating is based on an objectively determined decision rule and therefore the representation of this decision rule is an important step in conjoint measurement. For example, if an additive decision rule is assumed then a respondent's total utility for a multiattribute alternative is equal to the sum of the part-worth utilities of each of the attribute levels in a given product (June and Smith, 1987).

The greatest limitation associated with the use of conjoint models is the usual assumption that there are no significant interaction effects. Several researchers suggest that interactions do exist. However, there is considerable support for the accuracy associated with additive models in comparison to more sophisticated models that do incorporate interaction effects (Green and Devita, 1973; Green and Wind, 1975; Green and Srinivasan, 1978; June and Smith, 1987).

A further limitation to conjoint analysis is the assumption of strong correlation between preference rating and actual purchase of the product or service. June and Smith (1987), and Louviere (1988), suggest that this limitation may be minimized by ensuring that the attributes chosen for the study closely reflect those incorporated with the actual product or service found in the marketplace. A final limitation to note relates to the levels of attributes used in the study. When qualitative attributes are used it is not possible to make inferences about the utility values for levels between or outside those levels specified. This limitation may be partially overcome for quantitative attributes (c.f. price) if a vector or quadratic model is used in the conjoint analysis. This allows for inferences about utility values between the levels of attributes, but does not permit inferences above or below by specified levels. Green and

Srinivasan (1978), suggest that individual attributes may be appropriately measured by vector, quadratic or the traditional part-worth models, thus facilitating this approach.

According to Cattin and Wittink (1982), over a thousand commercial applications of conjoint analysis have been made since its introduction to marketing research. These applications are shown as including the following product/service categories: consumer goods (61%); industrial goods (20%); transportation (4%); financial services (8%); government (3%); and other services (5%). For the most part, these commercial applications have been used with respect to product formulation, pricing, advertising, and segmentation research. More recent applications of traditional conjoint models take several product configurations, selected a priori, and see how each would do in a simulated choice environment. However, virtually without exception, these commercial applications did not go so far as to find optimal attribute combinations (Green et al., 1981).

Product optimization has been discussed in the marketing literature from two perspectives; the multidimensional scaling (MDS) approach, or approaches using conjoint analysis frameworks (Green et al., 1981). The first to use a conjoint analysis approach was Zufryden (1977), who's model assumed that the consumer compares the utility of the test product with that of one's current brand favorite and chooses (deterministically) the one with the higher utility.

POSSE (Product Optimization and Selected Segment Evaluation), is an example of the conjoint analysis concept used in the design of optimal products (Green et. al., 1981). In POSSE the attempt is to relate control variables, such

as product features including price, to such things as market share and sales. By gathering the correct information from consumers, these same relationships can also be evaluated for segments of customers. Ideally, POSSE can tell the identity of a group of people (which it can also describe) who want a specific product, as well as the potential market share of the new product (Beane and Ennis, 1987). The attempt to identify the 'optimal' attribute combinations, separate POSSE from the more traditional conjoint studies.

Researchers wanting to use microcomputers in conjoint analysis studies have two major software systems available: the Adaptive Conjoint Analysis (ACA) package from Sawtooth Software (Carmone, 1987), and Bretton Clark's combination of CONJOINT DESIGNER (Carmone, 1986), and CONJOINT ANALYZER (Green, 1987). Album (1989), suggests that these programs provide excellent internal validity and introduces SIMGRAF, a next-generation conjoint program from Bretton-Clark that introduces new simulation opportunities and allows for the development of background files for individual respondents that can be used to facilitate segmentation analysis for the conjoint results and for any simulations conducted.

### Steps in Using Conjoint Analysis Methods

The two basic objectives in designing a conjoint study are to permit the estimation of a respondent's preference function, and to make the task such that internal validity of the results is maximized. In conjoint analysis these two objectives are viewed as being incompatible given the inverse relationship between the number of treatments (cards) used, and the accuracy of the

preference function estimation. As the number of treatments increases, the accuracy of the preference function estimation decreases (Louviere, 1988).

June and Smith (1987) identified three general tasks in conjoint analysis: (1) developing product profiles, (2) data collection through having respondents rank or rate the profiles, and (3) decomposition or analysis of the rankings to determine part-worths of each attribute level. These tasks are described in the following section.

### Developing Product Profiles

Three basic steps are included in the process of developing product profiles: (1) determining/selecting the number of attributes and attribute levels to be used, (2) generating a representative set to represent the full range of possible attribute/level combinations and (3), presenting this representative set to the respondents.

The selection of attributes and levels should be based on the researcher's knowledge of the subject area and the respondent's ability to process the data. In addition, the range of levels for each attribute and the list of attributes must adequately portray the product so as to be believable but also differentiating (Green and Srinivasan, 1978). Louviere (1988) suggests that the selection of attributes and levels be based on professional expertise and/or other research findings. He further recommends the use of pilot studies to test the validity of the instrumentation with respect to both its believability and its ability to differentiate.

There are two traditional methods of representing the actual product representations to respondents; the two-factor-at-a-time procedure (paired comparisons), and the full profile approach. Jain et al. (1978), found that the two methods yielded similar results in their study of banking account preferences. Oppedijk van Veen et al. (1977), also found the two methods to be equal in their predictive validity.

The two-factor-at-a-time procedure is also referred to as trade-off analysis. Green and Srinivasan (1978) note that this approach is simple to apply, can reduce information overload, and lends itself to mail questionnaire format. The method involves creating a matrix of all factor levels of two attributes at a time until each attribute level has been compared with every other attribute. The respondent is then asked to rank the combination of factor levels. Green and Srinivasan (1978) suggest that the major disadvantage to this approach is that it sacrifices realism, in that, seldom is a consumer faced with only a two attribute analysis. They also suggest that this approach can still require a large number of judgments, that there is a tendency for respondents to adopt patterned types of responses, and that the procedure appears most suited to verbal descriptions of factor combinations rather than pictorial or other kinds of graphic representations.

The full-profile approach overcomes the realism problem associated with the two-factor-at-a-time procedure by utilizing combinations of the full set of attributes or factors. The major problem presented by this method is an evaluation overload. As the number of factors and factor levels increase, the respondent may be unable to mentally process the data available. Two problems are inherent here. First, if too many attributes are included,

respondents may not be able to include the complete range in their evaluation. Second, the number of treatments required to represent all possible combinations of attributes (in a fractional factorial design), increases as a function of the number of attributes and the number of levels associated with each. For example, four factors with four levels each would result in 256 combinations in a full profile procedure. A fractional factorial design is the accepted technique for overcoming this aspect of the overload problem. This design reduces the number of judgements required by the respondent by reducing the number of combinations to be analyzed (Louviere, 1988). Cattin and Wittink (1982) conducted a detailed study of approximately 1000 applications of conjoint analysis. They found the full-profile approach to be the method most frequently used.

There are three basic approaches to stimuli presentation: verbal profiles, paragraph descriptions and pictorial representation. Verbal profiles generally involve reading the product description to the respondent. Caldwell (1986) used this method incorporating the notion of a story line to provide a context relevant to her study. Pictorial representation would require that the selected attributes be pictorially displayed. For example, Alpert et al. (1978) use pictures to represent gasoline consumption. Green and Srinivasan (1978) note that pictorial representation offers important advantages including:

1. making stimuli more realistic
2. making the task more interesting and less fatiguing
3. reducing information overload
4. increasing homogeneity of perceptions across respondents



Alpert et al. (1978) suggest disadvantages of the pictorial approach include increased cost and time in preparing stimulus descriptions.

The major requirement in using verbal descriptions is insuring that the description adequately portrays the characteristics of interest to the respondent (Green and Srinivasan, 1978). Hauser and Urban (1977) use a paragraph description approach, citing the advantage of providing a more realistic and complete description of the stimulus. Louviere (1988) notes that descriptions should be pre-tested to ensure accurate, consistent interpretation. This is particularly true where explicit terminology or 'jargon' are involved.

#### Data Collection/Rating

Khera and Karns (1983) note that data gathering for conjoint studies has typically involved the use of personal interviews which are both expensive and time consuming. They compared the interview method with a mail survey format and found both to be feasible. In the more recent literature the use of mail surveys is more common (c.f. Cospers and Kinsley, 1984; Toy et al., 1989). Adaptive Conjoint Analysis (Carmone, 1987) uses direct data entry where respondents interact directly with a microcomputer. This approach has the obvious advantage of time savings but involves logistical problems associated with providing respondents with access to appropriate computer terminals.

Selection of the dependant variable measurement scale is generally restricted to ranking or rating tasks. Early conjoint analysis studies in marketing used ranking tasks where researchers wanted to show that it was possible to derive interval utility functions from simple ranking data. However, the ranking

task is considered to be very demanding and time consuming for respondents. In addition, the ranking task is thought to be very different from the purchase decision that it is trying to simulate. As a result, more recent studies have almost exclusively used rating scales (Louviere, 1988).

Louviere (1988) suggests that the primary considerations in choice of a rating scale are, (a) a sufficient number of categories for respondents to discriminate among the treatments, (b) numbering or labeling of categories that does not invite subjects to collapse them to a smaller number, (c) a response dimension that is meaningful to the research objective and (d), a description of the scale, its use, and its meaning that tells subjects how to use it and makes it easy for them to respond meaningfully. He also suggests that 11-category scales are appropriate when using 16 or fewer treatments and 21-category scales be used for larger numbers of treatments.

SIMGRAF software (Albaum, 1989) allows for the use of background data for the purposes of segmenting primary conjoint, and simulation results. Thus, background data must be included in the data collection process to facilitate such segmentation.

The collection of background data must be considered in light of the total time and effort required by respondents. For example, Cosper and Kinsley (1984) recommended that no additional tasks be incorporated with the conjoint task, noting that response rate and accuracy may be reduced due to excessive demands for respondents. However, Toy et al. (1989) gathered substantial background data in their study with no adverse effects reported with regard to accuracy or response rate.

### Decomposition/Analysis

There are two primary decisions involved in the analysis or decomposition: (1) selection of a preference model and, (2) deciding on an estimation method (June and Smith, 1987).

Since the purpose of conjoint analysis in consumer-oriented applications is to evaluate a stated preference for a combination of attributes, the model selection becomes an essential element of this process. For this type of application, preference models are most commonly used (Beane and Ennis, 1987). The most common model is the part-worth model, which requires separate estimates of the impact or 'part-worth' of each level of each attribute. A second option is the vector or linear model. This model assumes that there is a straight-line relationship between the respondent's utility for a feature and the value of that feature. Price and many other features tend to fit this pattern. The third option is the ideal-point or quadratic model. This model fits a curvilinear relationship, including a U-shaped curve or an inverted U-shaped curve. It is most appropriate when respondents have a preference for a specific level of a quantitative feature ('the ideal point') and when their utility drops for higher and lower values of the feature (Green and Srinivasan, 1978).

Green and Srinivasan (1978) suggest that the flexibility of the shape of the preference model is greater as one moves from the vector to the ideal point to the part-worth function models. However, the reliability of the estimate parameters is likely to improve in the reverse order. Thus, from the point of view of predictive validity, the relative desirability of the three models is not clear. As

a result, a priori notions of the shape of the part-worth function could help in the choice of an appropriate model.

In choosing among the three primary options described here, a preliminary analysis using a part-worth model for each feature could be conducted. The visual impression provided by plotting the utilities for each level, for each attribute should suggest if different models are appropriate to use for specific attributes (Louviere, 1988). This multi-method model is referred to as a mixed model.

The fourth option is to use a mixed model as described above. These models may combine the features of the three models already discussed. Green and Srinivasan (1978) suggest that, for each attribute, respondents may employ a different decision rule. That is, the evaluation of some attributes may be most appropriately measured by a linear model while other attributes are best measured by ideal point or part-worth function models. CONJOINT ANALYZER software (Green, 1987) offers all three traditional models to be specified and allows for mixed models to be created by offering model specification for individual attributes.

Green and Srinivasan (1978) suggest that parameter estimation methods used in conjoint analysis are found in three groups:

1. methods which assume that the dependant variable is, at most, ordinal scaled
2. methods which assume that the dependant variable is interval scaled

3. methods which relate paired-comparison data to a choice probability model

Rao (1977) reviews several estimation methods that fit the first category (above). The most noteworthy in the literature include MONANOVA (Kruskal, 1965), PREFMAP (Carroll, 1972), and LINMAP (Srinivasan and Shocker, 1973).

Ordinary least squares (OLS) is the most commonly used method where the dependant variable is assumed to be interval scaled. Cattin and Wittink (1982) found this method to be the most widely used of all parameter estimation methods in their review of approximately 1000 commercial applications of conjoint analysis. Typically, for each respondent, the coded attribute combinations are regressed against the stated preference ranking or rating. The resulting beta weights indicate the relative importance that each attribute level has in explaining the rankings or ratings. The individual beta weights are averaged to determine the pooled beta weights. These pooled beta weights indicate the relative importance of the appropriate attribute level to the group as a whole. Similarly, if market segmentation were appropriate, the pooled beta weights for each segment would indicate the relative preference of each segment (Desarbo and Green, 1984). The major software programs mentioned previously both use a version of multiple regression analysis as the estimation method. As a result, each package warrants consideration for use in this study.

#### Conjoint Analysis in Leisure Research

The literature offers few examples of conjoint analysis procedures being used in leisure research. Cospers and Kinsley (1984) used conjoint analysis in

determining the preferences for cultural activities in Canada. This study attempted to determine preferences for sports, classical music, drama, or popular music and attempted to determine a preference for partaking in these events live or through indirect media. This study used a two-attribute-at-a-time approach and found significant results. Based on their research, they recommended further use of the technique in applications related to recreation and leisure. They cautioned however, that a full profile approach be used where possible, citing the advantages associated with 'more realistic' representation of the product.

Toy et al. (1989) used hybrid conjoint analysis in a study of golf course services. This study demonstrated the usefulness of the conjoint technique as a powerful research tool for analyzing complex decision scenarios that were characteristic of those facing consumers of recreation and leisure services. Conjoint results were combined with a choice simulator model and used to forecast consumer preference for a variety of club profiles under consideration. Ultimately, the simulation results were used to guide the development of a new marketing mix.

Caldwell (1986) used conjoint analysis in a study of judgments about the desirability of recreational fishing locations. The study evaluated four attributes finding that two (travel distance on land and expected pounds of fish caught) accounted for the majority of the total preference (utility). One interesting aspect of the study involved determining if the preference functions were different for specific categories of respondents. For example, fishermen were categorized according to experience level (high and low). No significant differences were found in the preferences of the two groups.

Timmermans (1987) compared the internal validity, external validity and ease of implementation of different types of compositional, decompositional and hybrid evaluation models in the context of recreational trip behaviour. The results indicated that the full-profile conjoint measurement model outperformed the self-explicated models, the hybrid evaluation models and the trade-off conjoint measurement model in terms of both internal and external validity.

### REVIEW OF LITERATURE RELATED TO OUTDOOR RECREATION

The primary purpose of recreation resource development and management is to provide the opportunity for consumers to benefit from recreation activities. Individual consumers tend to participate in recreation activities that provide them with the most benefits relative to direct costs or price. In visiting a recreation site or choosing a campground, a user acquires a bundle of physical services. Different recreation sites have different bundles of physical characteristics associated with them, and the user's demand and willingness to pay is a function of the physical services associated with the site. With respect to use of public sector campgrounds, several determinants of demand are evident. The primary determinants are described in this section.

#### Price as a Determinant of Demand for Camping

The traditional view holds that most public recreation is a nonmarket service provided free of any appreciable entrance fee or price in the usual sense. Recent trends suggest that a fee for service orientation is gaining in popularity; this approach aiming to pass a larger percentage of operating costs directly to the user. This orientation has resulted in the introduction of daily use

fees (where none were previously charged), and in increases where fees were already established. In addition, fees have been introduced and/or increased for such things as park entrance, firewood, use of showers, etc. In many cases the cumulative effect of these fees has resulted in substantially higher costs being charged for a service that has remained essentially the same. Some managers believe that increased user fees will result in participation decline. Others suggest that because price is so minimal with respect to the overall cost of participating (which includes the cost of equipment, travel to and from the site, value of time, etc.), price increases will have only minimal effects on participation (Driver, 1985; Heit, 1984).

Driver et al. (1985) suggested five general reasons for increasing fees and/or for introducing new charges. One rationale is cost recovery, as noted previously. A second rationale is to generate revenue earmarked for return to the collecting agency to increase the quantity and quality of the recreation opportunities provided. In many public agencies, including the MPB, this is problematic given that revenues are allocated to the general treasury and cannot generally be earmarked for the agency in this manner. It is important to recognize however that revenue generation may factor significantly into the equation used to establish annual operating budgets. Using fees to limit or allocate use (on the basis of time or space) is another rationale. In this context, higher or lower fees may be an incentive to encourage use during low demand periods, or to encourage increased use of lower quality sites or campgrounds. Similarly, price may be used to alleviate congestion (through reallocation), or to reduce the environmental impact on some resources. A fourth basis for fees is tied to the concept of equity. It proposes apportioning operating costs fairly to those who benefit, or alternatively, to those who's use causes the costs to be



created (in the sense of marginal cost pricing), and to reduce subsidy (via tax dollars) to those who do not use the opportunities. This distinction in the equity rationale is made to show two distinct cost-allocation criteria, to indirect beneficiaries and to direct users. A fifth reason noted is that the government engages in unfair competition with the private sector by providing opportunities at lower fees than private service providers. In this context, the charging of more realistic fees may serve to stimulate provision of similar services by private sector operators who will not be faced with unfair competition in the form of price.

Crompton and Lamb (1986) suggest that price is a primary determinant of demand for all forms of recreation including camping in developed campgrounds. They note that price includes monetary costs such as user fees (the fee for one day of camping), and other incidental costs associated with travel, equipment purchase or rental, fees for required licenses, etc. In addition, non-monetary costs such as the opportunity cost of time (income foregone when a consumer chooses to use their time being involved in a given activity), and effort costs (costs associated with planning and participating in a given activity), are considered part of price. An important implication of this notion of price is that reaction to price is not always logical and rational. Rather, in some circumstances consumers will react on an emotional level. This implies that price has psychological aspects of which parks managers must be aware. The most significant of these include, expected price threshold, tolerance zone, client adjustment period, and price-quality relationships.

Consumers have an expected range of prices which they are willing to pay for a particular program or service. If a price is set above the threshold

price in that range then they will find it too expensive. If a price is set below the expected level, potential customers will be suspicious of the quality of the service. The parameters of this zone of acceptable prices may have been formed from a consumer's perceptions of prices asked or paid in the past. Therefore, an important factor in establishing the Expected Price Threshold may be the initial price an agency charges for a service. If customer groups have had little previous experience with this type of service, the initial price may become the reference price which establishes the midpoint of the Expected Price Threshold. Hence, an agency should be aware that the initial price it establishes cannot readily be increased to a substantially higher level at a future date. In effect, the first pricing decision may determine the level of price which can be charged for that service throughout its life (Crompton and Lamb, 1986). In the case of public campgrounds, the Expected Price Threshold is particularly important because of the high percentage of repeat customers who obviously have previous experience upon which to base their expectations.

The concept of a tolerance zone infers that price increases within a certain range or zone are sufficiently small that they do not influence participation rates (Crompton and Lamb, 1986). For example, camping fees that increase from \$7.00 to \$7.50 per night may not be noticed by consumers and therefore may not alter their pattern of use of the campground. In contrast, a more substantial price increase may be noticed and result in decreased use of the campground. It follows then, that a series of small incremental increases in price, which fall within the tolerance zone, are less likely to result in reduced participation than a single major increase. In public campgrounds, this may mean that annual price increases may be most appropriate. Howard and Selin

(1987) provide additional empirical evidence of the effects of incremental pricing.

In the event that price increases beyond the tolerance zone are necessary, client resistance is likely to result. A period of adjustment follows within which consumers accept the new price as the reference price. The length of the adjustment period will vary according to (1) the availability of substitute service suppliers, (2) the income level of the client group, (3) the type of service offered, and (4) the magnitude of the increase. The most effective way to minimize the length of the adjustment period is to provide customers with advance warning of pending increases, thus allowing some adjustment to take place prior to the change being implemented (Crompton and Lamb, 1986).

Prices are often significant indicators of a service's probable quality (the price-quality relationship). For example, when consumers are offered substitute services at different prices, the notion of prestige pricing often becomes important. In such cases, the higher priced service is selected simply because the customer believes that the higher price represents the better quality service. This notion is reinforced when managers use price as a means of rationing use of a particular service. In such a case, the higher price, while serving to restrict participation by certain segments of users, also serves to add an element of exclusivity for those who do participate; thus increasing the value of their experience (Howard and Crompton, 1980).

McCarville and Crompton (1987) discuss the role of reference price in the provision of public recreation services. They offer several propositions as to the role that reference price plays with respect to consumer purchase of

recreation services. One outcome of these propositions is that the traditional economic model of supply and demand, which predicts that as price increases fewer consumers will decide to purchase, is incomplete because it ignores contextual and residual factors which influence consumers' perceptions.

Leuschner et al. (1987) conducted an analysis of wilderness user fee policy. Users at both a fee and a non-fee backcountry area were surveyed. Responses indicated that users would rather not pay fees than pay them, but that behaviour and use patterns would not be drastically altered if fees were implemented. Approximately 75% of respondents reported that fees did not affect their choice of area and that they had voluntarily complied with fees which were paid using a self-serve payment box.

#### Other Determinants of Demand for Outdoor Recreation

In addition to price, consumer demand for parks may depend on a variety of other variables that are most often specific to the situation. Walsh (1986) identified attractiveness or quality of the recreation site, congestion, travel time, availability of substitutes, and changing tastes and preferences of campers as variables thought to affect demand for campgrounds.

The attractiveness of the site or the quality of the resource constitutes another important determinant of consumer demand for parks. Knetsch (1977) suggested that this variable is difficult to measure. To overcome this problem he indicated that various indications of 'size' can be used as effective proxies for attractiveness. Size measures such as number of campsites, length of beach, acres of picnic area, and miles of hiking trails are recommended. Other

variables that have been tried include: air quality and visibility (Randall et al., 1979; Schulze et al., 1981), water quality (Bouwes and Schneider, 1979), water level (Daubert and Young, 1981), forest quality (Walsh and Olienyk, 1981), game and fish harvest (Stevens, 1966), weather conditions (McConnell, 1977), noise (McMillan et al., 1980), and congestion (Cicchetti and Smith, 1976).

The Manitoba Provincial Parks Visitor Survey (1988) evaluated campground user demand for park services and facilities. In this study respondents rated facilities that they would like to see provided in MPB campgrounds. The results showed that the facilities most wanted by MPB campground users included showers (42.8%), more electrical campsites (32.9%), bicycle trails (16.7%), laundromats (15.2%), store (14.4%), nature/hiking trails (12.9%), children's playground areas (11.7%), and washrooms (10.9%). The study also asked respondents to identify the main factors attracting them to specific MPB campgrounds. The results of this question showed that closeness to home (14.3%), beach (12.5%), and fishing opportunity (7.6%) were important factors in this context.

The level of congestion or crowding at a recreation site may also have a significant effect on individual demand and willingness to pay for outdoor recreation. Congestion occurs when an individual user of a recreation area encounters increasing numbers of other users. Several alternative measures of congestion at recreation sites have been included in demand functions. Measures that have been noted in recent research studies include: actual number of users per acre per day, or at one time (McConnell, 1977); number of encounters per day or per hour on the trail and in backcountry campsites

(Cicchetti and Smith, 1976; Walsh and Gilliam, 1982); and, number of minutes of lift line wait at ski resorts (Walsh and Gilliam, 1983).

The influence of congestion on demand and willingness to pay depends on the perception of the individual users. Thus, recreation sites may be similar in physical characteristics and still have different congestion effects. For example, McConnell (1977) found substantially different congestion effects at each of six Rhode Island beaches. On average, an extra 100 people per acre reduced the average individual's consumer surplus per day by about 25 percent. However, he calculated the optimal number of users per acre based on the congestion effects, and found a wide range (from 59 people/acre to 2400 people/acre) of results. He concluded that the reason for this large divergence was that the clientele of the two beaches differed greatly in their attitudes regarding the effect of crowding on their recreation benefits. It is important to note therefore, that congestion is not always considered in the negative. For some users (in certain situations) congestion may in fact contribute to increased use.

It can be reasonably argued that at least for some individuals, the value of travel time and on-site recreation time are also important determinants of consumer demand. Clawson and Knetsch (1966) observed that those who travel greater distances, and thereby incur higher direct costs or price, also have more personal travel time available. There is little or no reason to believe that the opportunity cost per hour of on-site recreation time of individuals will vary with distance traveled (ie. the level of direct costs or price). However, those who incur larger direct costs or price per trip have an incentive to increase their length of stay at the recreation site. Several authors have discussed methods by which travel time can be quantified in demand studies (McConnell and

Strand, 1983; Smith, Desvousges and McGivney, 1983; Strong, 1983; Ward, 1983; Wilman, 1980). In general, these studies suggest that for individuals whose work time is variable, the opportunity cost of on-site recreation time could be measured as income actually foregone while on site. This may not hold however for those whose work time is more structured. It also seems likely that the value per hour of travel time is a function of distance and other variables rather than a constant per mile traveled. Thus, it too is difficult to accurately quantify.

According to Kurtz and King (1980) the presence or lack of perfect substitutes can have a dramatic effect on demand for outdoor recreation. When substitute sites are available, it is likely they will have a significant influence on demand for a particular site. The effect of substitutes will depend on the extent to which the alternatives are perfect substitutes, and the location of the user population relative to the recreation site and substitute sites. In addition, the quality of available substitutes may also influence actual user substitution.

It also seems likely that the supply of recreation resources and whether users consider them substitutes or complements may have an important influence on consumer demand for specific recreation sites. This point is illustrated by Vaske, et al., (1983) who found that researcher-defined substitutes were not statistically related to recreation user-defined substitutes. For example, researchers may believe that a private campground located proximal to a National Park, would constitute a substitute, but users would not consider it a substitute because their decision criteria was based totally on the notion of public provision. While substitutes will effect demand, it must be concluded that consumer perception of the suitability of such substitutes will vary. Thus, it is

clear that increased understanding of the importance attributed to possible explanatory variables by consumers is necessary.

Hammitt and Strohmeier (1983), studied the likelihood of public campers to use nearby private campgrounds. They found that 39% of survey respondents would, but only under certain conditions. For example, when public sites were full, campers would use nearby private facilities and pay an added fee to do so. However, when substitute public facilities were available, these private sites were not regarded as likely substitutes, indicating a certain degree of 'brand loyalty' associated with the public sites.

Mills and Westover (1987) studied structural differences in California State parks in an attempt to identify factors influencing park popularity. They used a Guttman scale comprised of items reflecting both camping infrastructure (facilities) and water-related activity opportunities. Results indicated that structural differences were a relatively strong predictor of popularity as measured by annual visitation to each of the parks measured.

Schreyer and Beaulieu (1988) explored variations in preferences for various environmental attributes as they influence the choice of specific settings in which individuals chose to recreate. In particular this study focused on the amount of previous experience and activity commitment of particular users. Results indicated that experience and commitment were not related to the types of attributes preferred, but significantly influenced the structure of the attribute preferences.



The amount of leisure time available in our society is perhaps the primary influence on park visitation and outdoor recreation participation. In this respect, the amount of leisure time is expected to continue increasing with the advent of four-day work weeks, more part-time work, and more flexible working hours. Retirement age will be more flexible, and life expectancy will increase (Sessoms, 1986).

Trend analysts are predicting continued increases in outdoor recreation participation, but not as rapidly as in the 1960's and 70's (Hof and Kaiser, 1983). These figures generally correspond with the findings of McLellan (1986) who predicted a levelling of participation in horse riding, fishing, tennis, golf, jogging, picnicking, driving for pleasure, and visiting camping facilities. It appears that many of these activities peaked in the late 1970's and early 1980's. Actual decreases in participation have been reported for use of parks and campgrounds by Canada's National Parks and by Manitoba Parks, as detailed in Chapter I.

The age of 'mass leisure' has evolved into an age of 'specialized leisure' demanding specialized equipment and facilities, and using outdoor resources in ever more unusual ways. Today's outdoors-person is a specialist (a backcountry hiker, RV camper, cyclist, climber, skier, canoeist, etc.) who requires special equipment and facilities to enjoy his or her recreation. Even within these areas, there are sub-specialties that have their own distinct preferred locales and equipment. This equipment has permitted more park visitors to go to more remote locations, in shorter periods of time while living in relative comfort if not luxury. Like many other markets, outdoor leisure interests have become upscale, fragmented, and multi-faceted (Chubb and

Chubb, 1981). As a result the need to examine consumer preference related to specific recreation pursuits, such as camping is evident. In the case of overnight camping this may mean that service providers will be expected to offer a wider range of service levels to meet the diversity of consumer interest. At minimum, it is clear that consumer expectations with respect to camping are both varied and changing.

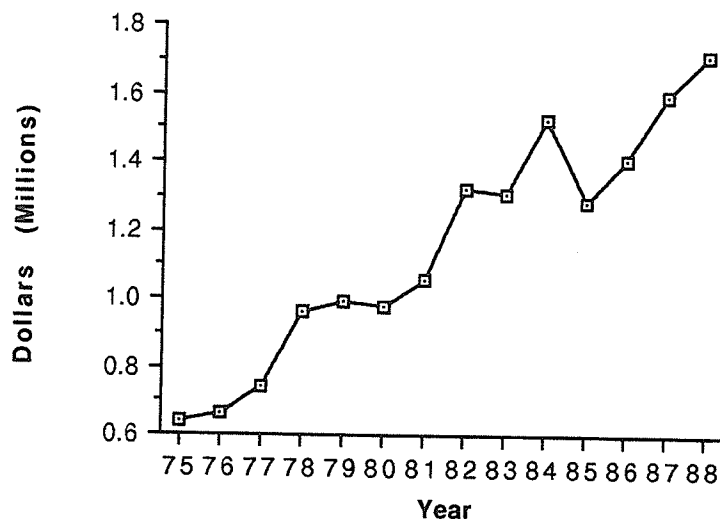
Heit (1980) suggested that public expenditures by all levels of government on recreation parks activities are expected to decline or level off in the near and medium future. Less discretionary items such as health, education and debt reduction are expected to consume a larger proportion of government revenues. There will be additional pressure to transfer all but the most essential elements of spending to private or non-government sectors. This has been evidenced in Ontario where several provincial park campgrounds have been leased to private sector operators. This understanding contributes to the importance and need of this study.

#### The Provision of MPB Campgrounds

In 1962, a regulation under the Provincial Parks Act established the first provincial parks in Manitoba. In 1986, there were a total of 165 parks providing more than 200 separate campgrounds (Manitoba Natural Resources, 1986). The scope of campground provision and use from 1975 to 1988 is represented in Figures 3 through 10 (Manitoba Provincial Parks: Annual Statistics 1975 - 1988).

Figure 3 shows the total annual revenue accrued from camping permits. This revenue ranged from \$636,594 in 1975 to \$1,716,624 in 1988.

Figure 3  
Annual Revenue from MPB Camping Permits 1975-1988



Camping permit revenue is derived from the sale of daily and seasonal campsites for which different prices are charged according to the services provided at the campsite. Figures 4 and 5, show daily prices for unserviced, electrically serviced and full-service campsites sold on a daily and seasonal basis respectively. It is interesting to note that these prices remained unchanged from 1978-1981 and from 1984-1986. In 1987 MPB initiated a differential pricing policy wherein a discount of \$1 per day (for daily customers) was offered when no fuelwood was supplied in the campground. Similarly, a discount of \$30 per season was offered to seasonal campers where fuelwood was not supplied.

Figure 4  
Prices for MPB Daily Camping 1975-1988

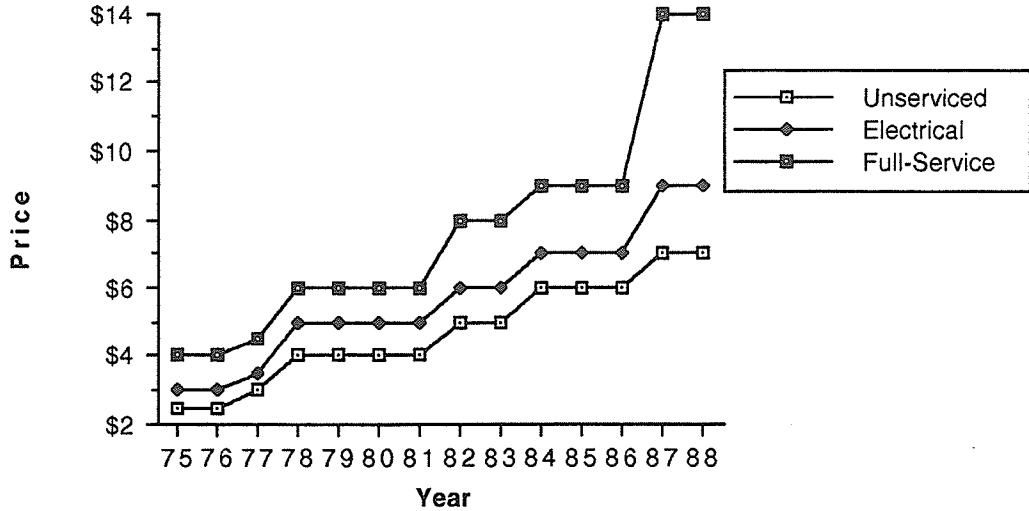
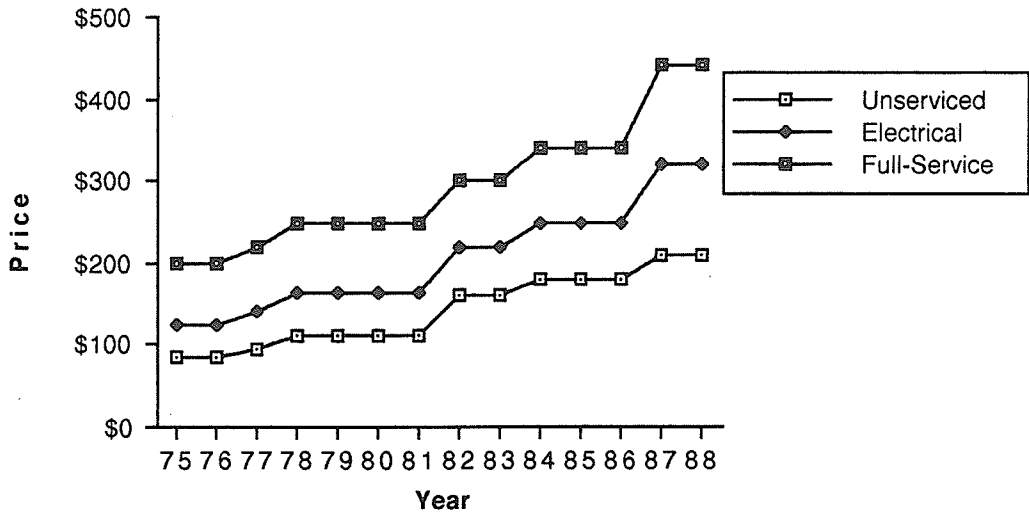
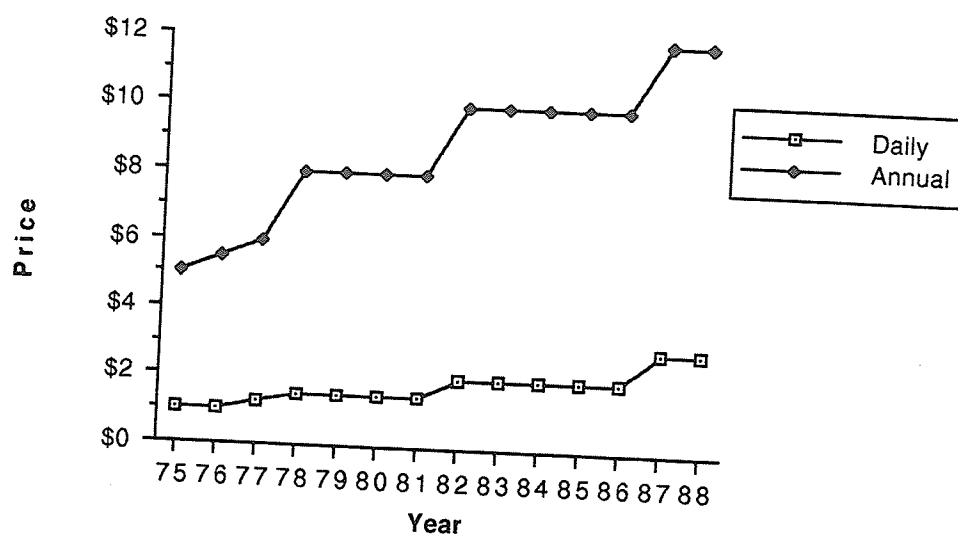


Figure 5  
Prices for MPB Seasonal Camping 1975-1988



In addition to camping fees, campground users are required to pay park entry fees. These fees may be purchased on a daily or seasonal basis. Figure 6 shows daily and seasonal fees charged by MPB.

Figure 6  
Prices for Daily and Seasonal MPB Park Entry 1975-1988



MPB accounts the number of Unit Days of camping sold on both daily and seasonal camping permits. These data are shown in figure 7. Daily permit unit days have ranged from a high of 216,226 in 1976 to a low of 176,548 in 1985. In contrast, seasonal unit days have ranged from 103,403 in 1977 to 193,159 in 1987. In recent years these data show that an approximately equal number of unit days have been sold on a daily basis as have been sold seasonally. These data suggest that more campsites have been available for seasonal sale in recent years although MPB statistics did not provide supply information to substantiate this observation.

Figure 7  
Unit Days Sold Daily and Seasonally by MPB 1975-1988

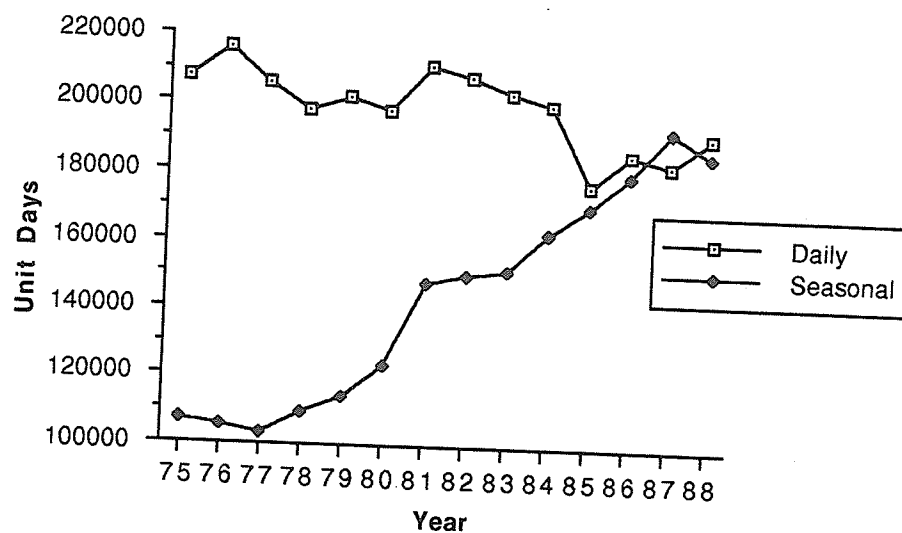
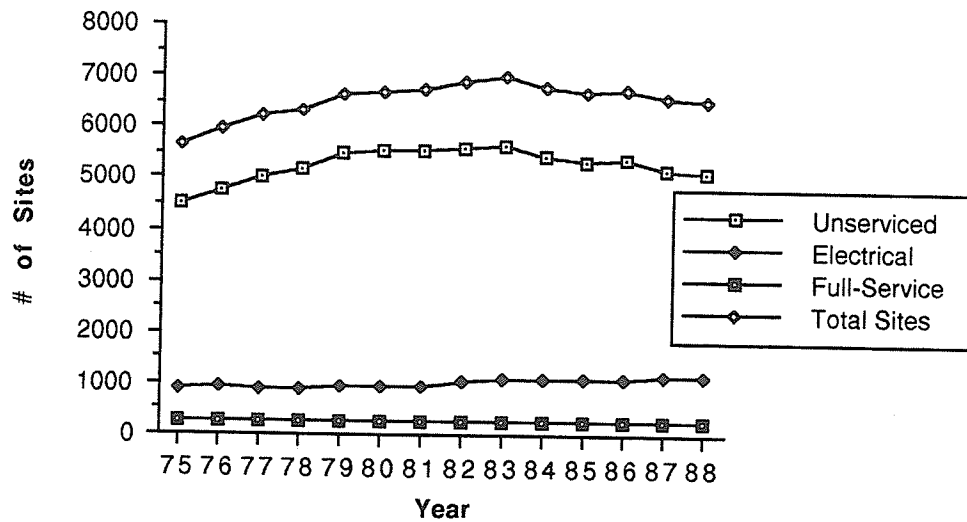


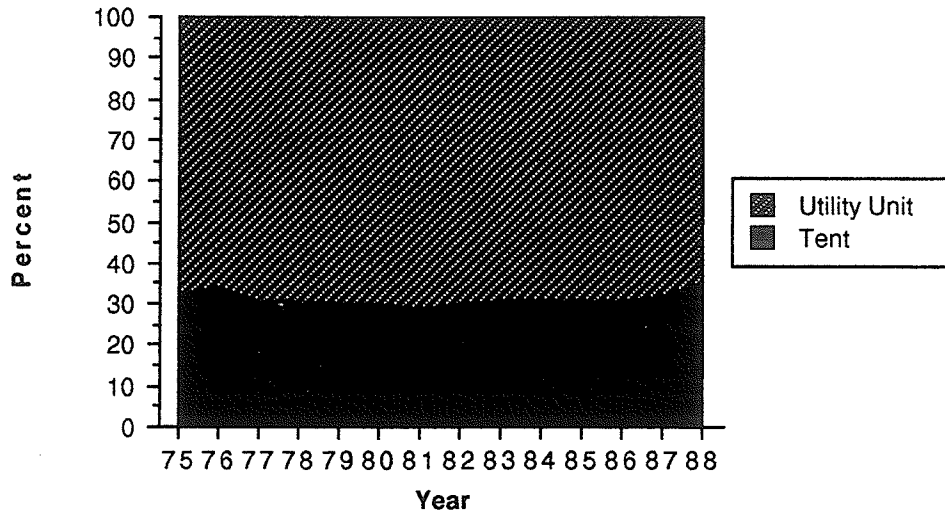
Figure 8 shows that supply of unserviced, electrically serviced and full-service campsites provided by MPB. These data show the total number of campsites having increased from 5,661 in 1975 to 6,514 in 1988. During this period of total growth, the number of full-service campsites has declined from 281 in 1975 to 267 in 1988, and the number of electrically serviced sites has increased from 889 to 1,138 during the same period of years. Unserved campsites have increased in supply from 4,491 in 1975 to 5,109 in 1988.

Figure 8  
Supply of MPB Campsites 1975-1988



While the majority of MPB campsites are unserviced, the majority of campers use utility-oriented camping equipment such as motor homes, tent trailers, and camper trailers. Figure 9 shows the percentage of tents and utility camping units found in MPB campgrounds. Tents have consistently been used by approximately 30% of MPB campers. The highest percentage tent usage was 35% reported in 1988.

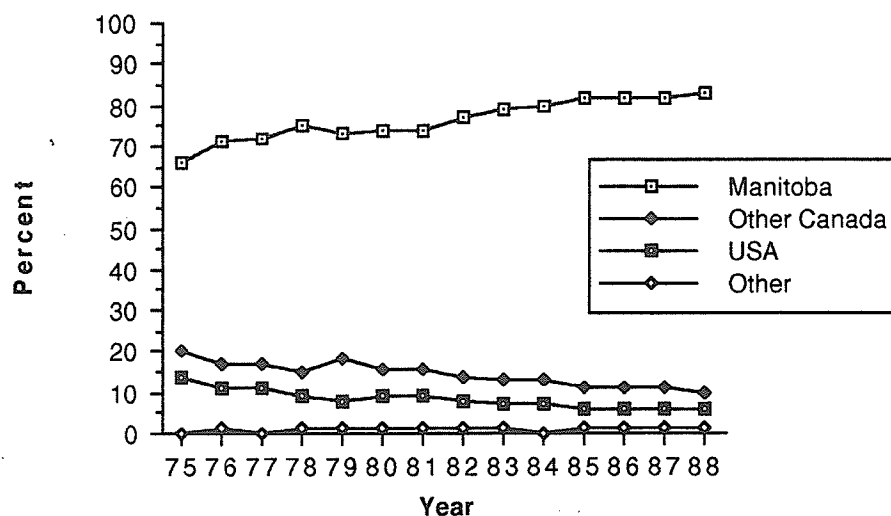
Figure 9  
Equipment Type Used in MPB Campgrounds 1975-1988



Origin of permit holders for MPB campgrounds is shown in figure 10. These data show the percentage of Manitoba residents having increased 17% from 1975 to 1988. In contrast, campers from other areas of Canada have decreased by 10% and campers from the United States have decreased by 8 percent over the same period of years.



Figure 10  
Origin of MPB Permit Holders 1975-1988



### Conclusion

This review of literature contributed to the formulation of the problem statement that guided this research, and to the choice of methods and analyses used in the conduct of the study. Chapter 3, describes the approach and methodology in detail. Where appropriate, references to the literature review are provided in the form of rationale for the use of specific methods and/or analyses.

## CHAPTER 3

### APPROACH AND METHODOLOGY

The purpose of this study was to investigate consumer preferences for a pre-determined set of attributes thought to influence choice of developed campgrounds operated by Manitoba Department of Natural Resources Parks Branch (MPB). The literature suggests that conjoint analysis is an appropriate method for measuring consumer preferences (c.f. Green and Srinivasan, 1978; Jaccard et al., 1986; Louviere, 1988; Timmermans, 1987).

#### Sampling

To facilitate the collection of data for this study, respondents were selected from those having previous camping experience. While recognizing the importance of understanding preferences of non-campers and users of campgrounds operated by other suppliers, this study was limited to users of MPB campgrounds only. In consultation with representatives from the MPB, 13 provincial parks were selected for the study. These parks represented all regions of the Province of Manitoba and were considered to represent campgrounds that offered the full range of service (attribute) combinations. The sample was drawn from a listing of all those who purchased camping permits for overnight camping in these thirteen MPB parks in 1988. It is important to note that some of these parks contained several campgrounds which were aggregated for the purposes of sampling. This means that results were segmented by park, not by specific campground. The sampling procedure also discriminated by month that the permit was sold (May, June, July, August, September) to facilitate segmentation of the results on this basis. That is, the

researcher wanted to determine if consumer preferences for attributes were significantly different given the parks used, or given the month that the permit was purchased. (Note: The analysis assumes that all respondents camped in MPB campgrounds in 1988).

From this sampling frame a disproportionate stratified random sample was drawn. Using a 'from the hat' selection procedure, a random sample of 100 permits was drawn from each of the thirteen parks; 20 from each month of operation in 1988. Permits were ordered by month of sale for each park. A list of random numbers was used to select the first permit to be included in the sample. From this start position, every sixth permit was selected for consideration. If the information available on the permit was incomplete, the next complete permit was substituted. The selection rotation continued (every 6th permit) from the original position for each month until the quota (20 permits) was reached. At completion of the first month (May) the same procedure was repeated for each subsequent month until 100 permits were selected for the park. The procedure was then repeated for each of the 13 parks. In the event that the quota (20 permits per month) was not achieved in the first 'pass' through the permits, the rotation was repeated after selecting a new random number as a starting point. Permits for respondents selected in the first 'pass' were eliminated from the second 'pass'.

The name of the individual registered on the permit was included in the sample. Instructions indicated that the survey was to be completed by that person only. The permits that represent the sample were alphabetically ordered by family name of the respondent using a data base program and duplicate names were eliminated. Mailing addresses provided on the permits did not

include postal codes. As a result, postal codes were added manually using the 1988 postal code directory for Canada. When adding the postal codes, addresses that did not exist in the postal code directory were regarded as errors, and these names were also eliminated from the sample. Addresses for respondents residing outside Canada were used as per information provided on the permits. These procedures resulted in a sample size of 1053. The quota of 100 original respondents per park was selected in consideration of repeat campers and an estimated return rate (60%) that would result in a minimum of 30 responses per park for the purposes of analysis.

At the time of sampling data was recorded from the camping permit for each respondent and entered directly into a microcomputer database program. In addition to name of the park, place of residence (from the address), and month that the permit was purchased, information from the permit included (1) type of camping equipment used, (2) length of stay (# of days paid) and (3), type of campsite (unserviced, electrical or full service) for which the permit was issued.

#### Data Collection Methods

Mailed questionnaires were used as the basis for data collection. Questionnaires were administered in accordance with the mail survey procedures outlined by Dillman (1978). Surveys were numerically coded to allow for matching to data recorded from the camping permit (as described above), and to facilitate follow-up procedures. The mailing procedures included:

- 1) Mailing of the questionnaire with a self-addressed stamped return envelope and cover letter.
- 2) Mailing of a reminder card to all respondents 1 week after the initial mailing; this card served to thank those who had already completed and returned the survey and as a reminder for those who had not yet responded.
- 3) Mailing of a complete second questionnaire package 3 weeks after the date of the original mailing to all non-respondents to date. This package was a replica of the original using a modified cover letter.

The questionnaire was printed using xerox quality on colour paper. It was presented in booklet form measuring 8.5" by 7". The survey was titled "A Survey of Camping Preferences" and the cover page identified the researcher by name and by affiliation with the University of Manitoba. A telephone number for enquiries was also provided on the front cover. The survey was divided into three sections. Section one asked general questions about the respondent's camping participation. Section two included the conjoint task and the PSM questions. The final section asked for basic demographic data. In total the questionnaire was 12 pages in length, excluding the front and back sheets.

Procedures for layout of the conjoint portion of the questionnaire including example cards was according to Louviere (1988). Procedures for the layout of the Pricing Sensitivity Measurement questions was according to Travis (1982). Procedures for the layout of the remaining sections of the questionnaire, content of the cover letter(s) and reminder card, envelope size and preparation, and coding were according to Dillman (1978).

### Stimulus Set Construction and Presentation

The stimulus set includes the combinations of attributes which are presented to the respondent. These can be thought of as independent variables with respect to the conjoint analysis task. Attributes were identified from the 1988 MPB Visitor Survey data which identified main factors that attracted visitors to a given park, and additional facilities wanted by visitors. These data were evaluated in cooperation with MPB experts and relative to the literature review, to determine the final attribute list and levels. A total of 11 attributes were used in the conjoint analysis. A final list of attributes and levels is shown in Figure 11.

The full-profile approach to data collection was used in a  $4 \times 3 \times 2^9$  design. The full-profile approach was selected because it is dominant in the literature and was thought to best represent reality with respect to describing campground products to be evaluated. The major problem with this method is information overload which can occur as the number of attributes and levels causes the number of treatments (cards) to increase. A fractional factorial design, which is the accepted technique, was used to overcome the overload problem.

CONJOINT DESIGNER software was used to generate the final design (cards). The list of attributes and attribute levels were entered into the CONJOINT DESIGNER design program. The program produced 16 cards using a fractional factorial design procedure (Carmone, 1986)

Figure 11  
Attribute List

ATTRIBUTES	LEVELS
CAMPSITE SERVICES	UNSERVICED
	ELECTRICAL
	FULL-SERVICE
CLOSENESS TO HOME	LESS THAN 2 HOURS
	MORE THAN 2 HOURS
SHOWERS	PROVIDED
	NONE
STORE	PROVIDED
	NONE
FISHING	AVAILABLE
	NONE
BEACH	PROVIDED
	NONE
CAMPSITE RESERVATIONS	AVAILABLE
	NONE
CAMPSITE PRICE PER DAY	\$7
	\$12
	\$17
	\$22
HIKING TRAILS	PROVIDED
	NONE
INTERPRETIVE PROGRAMS	PROVIDED
	NONE
FIREWOOD	INCLUDED IN PRICE/DAY
	FOR SALE

Verbal descriptions were used to present the cards in the mail questionnaire. Several descriptions were pilot tested on-site in MPB campgrounds to assure consistent interpretation. Respondents used in the pilot testing were interviewed after completing the survey to identify potential interpretation or overload problems. Comments generated through this process contributed to the final questionnaire design and wording. The major requirement was that the verbal descriptions adequately portrayed the characteristics of interest to the respondent (Green and Srinivasan, 1978). Terminology was consistent with that used by MPB in the 1988 Visitor Survey, and with other related MPB publications.

In order to reduce placement bias the order of attributes used in the cards was randomized using a 'from the hat' procedure. The ordering of the levels for each attribute were randomized using a function provided in CONJOINT DESIGNER. The final design included 16 cards. Two example cards were developed to represent the 'low preference' and 'high preference' levels and were scored 1 and 11 respectively. The construction of these example cards assumed that respondent utility would be maximum (rated 11) when all attributes were provided in the product description, and the minimum price was charged. In contrast, when no attributes were offered in the product description and the maximum price was charged, the respondent utility was assumed to be the lowest (rated 1). These scored examples served as 'end anchors', aiming to assure that respondents used the full range of the rating scale.



### Dependent Variable Measurement

The study used a rating scale procedure that measured the respondents' degree of preference for selected treatments (cards). An 11-point likert-type rating scale was used with end points identified as low preference (closer to 1) and high preference (closer to 11) (Louviere, 1988). Rating scales were presented below each treatment with instructions asking respondents to mark one "box" (X) indicating their degree of preference.

### Defining the Model

The part-worth function model was used in the conjoint analysis which aimed to determine how influential each attribute level was with respect to consumer preferences for selected campground attributes. CONJOINT ANALYZER (Green, 1987) software was used to conduct this analysis.

For all respondents the rating (1 to 11) for each of the 16 cards was entered into the computer program. In essence, the program used the ratings for each card as the dependent variable and the attribute levels as the independent variables in a multiple regression analysis subject to the constraints defined in the part-worth model. The analysis generated part-worth utilities for each attribute level on an individual respondent basis.

The part-worth utilities for each level can be interpreted as meaning that the respondent rating on the measurement scale (1 to 11) will increase or decrease by the part-worth utility value (+ or -) each time the given attribute level appeared in the treatment (card). The individual respondent part-worths

were averaged to determine the pooled utilities. These pooled part-worth utilities were used in the program to calculate the relative importance of each attribute in explaining consumer preference for developed campgrounds. First, for each attribute, the program found the levels with the highest and lowest part-worths, and calculated the magnitude of the difference; referred to as the range. The range was regarded as the measure of the relative importance of the given attribute (Green and Rao, 1970). In this study, the range for each of the eleven attributes were added and the relative importance was expressed as a percentage of the total for purposes of comparison.

Consider the example shown in Figure 12 which uses only three attributes; price, services, and showers. Price has four levels, services has three levels and showers has two levels.

In the example, price is the most important variable accounting for 51.6% (range = 2.413) of camper preference; showers is the second most important accounting for 27.6% (range = 1.296) of the preference; and campsite services accounts for the remaining 20.8% (range = .975).

Figure 12  
Analysis Example

ATTRIBUTE	LEVEL	PART-WORTH	RANGE
PRICE PER DAY	\$7	+1.129	+1.129 -(-1.284) = +2.413 (51.6%)
	\$12	+0.545	
	\$17	-0.390	
	\$22	-1.284	
CAMPSITE SERVICES	unserviced	-0.611	+0.364 -(-0.611) = +0.975 (20.8%)
	electric	+0.248	
	full-service	+0.364	
SHOWERS	none	-0.648	+0.648 -(-0.648) = +1.296 (27.6%)
	provided	+0.648	
Total Range			= +4.684 (100%)

Conjoint analysis can be interpreted statistically and graphically. Both of these methods are common to the interpretation of conjoint results (c.f. Anderson, 1982; Caldwell, 1986; Johnson and Meyer, 1984). Graphical analysis allows for visual inspection of the relationships between levels of attributes and is suggestive of the algebraic form of the data (Caldwell, 1986).

In this context, graphical analysis was conducted for the part-worth utilities for each of the attributes. This analysis was used for the aggregate conjoint results but not for the segmented results. Louviere (1988) suggested that this graphical analysis could be used with results derived using the part-worth function model in a primary analysis to determine the appropriateness of

using quadratic or vector models (in a mixed model) to evaluate specific attributes.

To illustrate, figure 13 shows graphically the part-worth utility values for the attribute price, using the data from figure 12. This graphic representation shows the linear relationship wherein respondent preference declined as price increased. This suggested the use of a vector model to interpret the price variable.

Another example of this visual analysis is provided in figure 14 which shows the graph of part-worth utilities for the attribute 'campsite services', also using the example data from figure 12. This result shows distinct preferences for each level of service, suggesting the appropriateness of the part-worth model to evaluate this attribute.

In conducting a complete preliminary analysis in this manner, the appropriateness of the part-worth model was confirmed. Analysis using a mixed model with price measured using a vector model and the other attributes using a part-worth model, no differences were found. As a result, further analysis was conducted using only the part-worth model.

Figure 13  
Example of Graphical Analysis Using Price Utilities

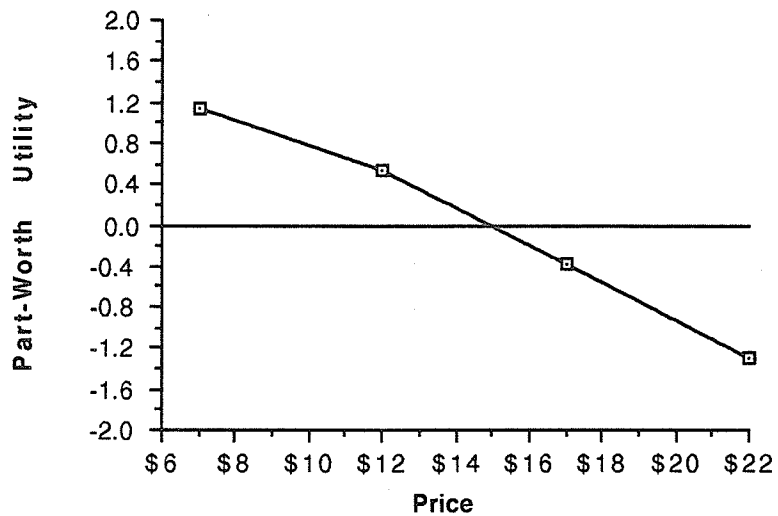
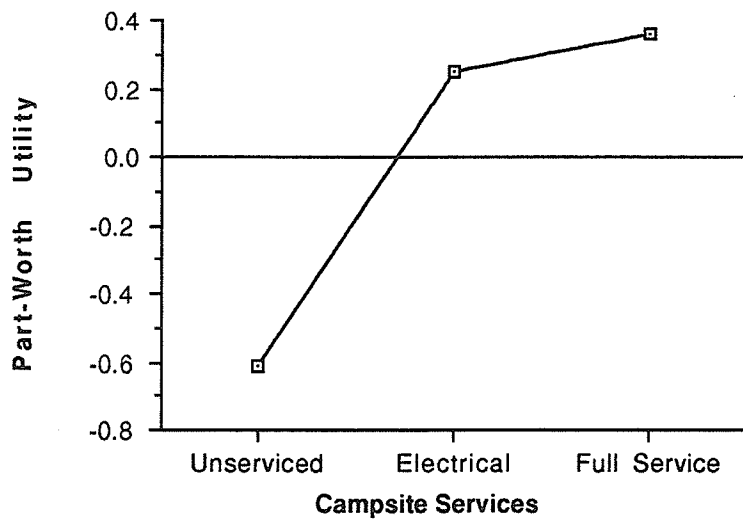


Figure 14  
Example of Graphical Analysis Using Campsite Service Utilities



### Optimal Products

An important aspect of this study was to determine what combination of attribute levels would result in the highest total utility (preference) among campground users. That is, what combination of attributes would result in the greatest preference and purchase of campground products offered by MPB. An additive preference prediction equation of the form,  $P = W_1 + W_2 + W_3 + \dots + W_j$ ; where P is preference, and W1, W2, etc. represent the most preferred level for each attribute, was used for this purpose (Green et al., 1981; June and Smith, 1987). Using the example shown in Figure 2, the optimal product would offer a full-service campsite, with showers available at a price of \$7 (total utility = 2.141).

### Segmentation Issues

Segmenting the responses based on demographic and socioeconomic characteristics allowed the researcher to determine whether or not preferences varied within the sample group. If significant differences in preferences were found using particular segmentation criteria, that segmentation criterion could be used in developing specific marketing mix combinations for use with that segment.

The sample population was segmented on the basis of information reported by respondents on 1988 MPB camping permits (c.f. camping equipment used, and place of residence), and on the basis of information collected on the questionnaire. Specific segmentation categories included:

- a) number of camping nights purchased in MPB parks in 1988
- b) age of questionnaire respondent
- c) total family income
- d) type of camping equipment/vehicle used (ie. tent, motor home)
- e) place of residence
- f) month in which the camping permit was purchased
- g) park wherein the camping permit was purchased

Background files were constructed for each respondent using data taken from the camping permits (discussed previously) and from other questions asked in the questionnaire. This background data was used as the basis for segmentation of the results. SIMGRAF (Albaum, 1989) software was used to conduct the conjoint analysis for these market segments. When the total sample was segmented using SIMGRAF, the program's output only provided the raw part-worth utilities for the segments (ie. according to the selected criteria). For example, when sex was used as the segmentation criteria the program displayed the part-worth utilities for each attribute level, separately for all males and for females. For each segment, ranges were then hand calculated for each attribute and used in determining the relative importance of specific attributes for the segments in question.

### Simulation Issues

SIMGRAF (Albaum, 1989) software provided an opportunity to conduct simulations of different attribute level combinations within the range of attributes and attribute levels used in the study. These simulations were based on all respondents and the results were reported in measurement units referred to as

market shares. The program can simulate up to 60 products in a single analysis and report which of the products included would be preferred. In essence, the market share is the percentage of respondents that would prefer a given product over the other products simulated. These market share percentages sum to 100 percent. Because the part-worth model was used, simulated products were limited to use of the specific levels in the stimulus set (See Figure 1). However, by applying a Vector Model to the pricing attribute, the price level could be simulated for one cent intervals between \$7 and \$22. For the purposes of this study four products were simulated to demonstrate the use of the model. It must be recognized however that the model remains intact and can be used in the future to simulate a wide variety of product changes and/or new product introductions.

### Hypothesis Testing

Analysis of Variance was used to test the null hypotheses in this study. The part-worth utilities for each attribute level were saved in a log file using CONJOINT ANALYZER. This data was retained for each individual respondent. The data set was transformed into a computer format (from DOS format used in CONJOINT ANALYZER) appropriate for use with a Macintosh microcomputer. The data was entered into the EXCEL program and ranges were calculated for each attribute, for all individual respondents. These ranges were then used in the Analysis of Variance relative to the individual hypotheses. This analysis was conducted using STAT VIEW SE AND GRAPHICS software for Macintosh computers.



Testing of the first null hypothesis involved determining if significant differences existed for the relative importances (measured by part-worth utility ranges for individual subjects) for the eleven attributes tested. When significant differences (.95 confidence interval) were found to exist, a post-hoc Scheffe F-test was conducted to determine where (ie. between which variables) differences existed.

Testing of the second null hypothesis involved determining if significant differences existed for the relative importances for the eleven attributes tested, when the respondents were segmented according to the criteria established in that hypothesis. For example, were the preferences expressed by males significantly different from those of females? If yes, which of the attributes accounted for the difference in preferences? Using the individual respondent ranges (as above), Analysis of Variance was conducted. Where the segments (e.g male vs. female) showed significant differences (.95 confidence interval), a Kruskal-Wallis post-hoc test was conducted to show which attributes accounted for the differences.

#### Analysis of the Price Sensitivity Measurement (PSM) Model

Travis (1982) has described the mechanics of the PSM model. The scaling procedure developed for the PSM method involved asking each respondent the following set of four questions:

Q1. At what price on the scale do you consider the product  
or service to be cheap?

- Q2. At what price on the scale do you consider the product or service to be expensive?
- Q3. At what price do you consider the product or service to be too expensive and beyond buying?
- Q4. At what price do you consider the product or service to be too cheap, so that you question the quality?

Using a scale with values ranged from \$0 to \$30 at \$2 intervals, respondents were asked to identify the points at which they perceived the unserviced, electrically serviced and full-serviced campsites would be priced in relation to these four questions. The answers were plotted on a graph with the prices appearing on the horizontal axis and the proportion of the total respondents (percentage) on the vertical axis. The resulting four curves and their intersections provided the basis for analysis.

Analysis of the PSM results is primarily visual. The analysis examined the plots of the cumulative distribution of responses to questions 1 (cheap) and 2 (expensive). The point where the response distributions for these two questions intersected was denoted the indifference price (IDP). The lower the level of the IDP (the closer to horizontal axis), the greater the relative price sensitivity of the respondents (Travis, 1982).

van Westendorp (1982) defined IDP as "the one, and only one price in the range, at which an equal number of people experience the product as cheap or as expensive (p. 147). He also suggests that the following points have been substantiated through his research.

(1) The IDP generally represents either the median price actually paid by consumers of the product, or the price charged by an important market-leader.

(2) The IDP was found to vary for various submarkets such as people who are especially price conscious.

(3) The IDP was found to be based upon people's experience with price-levels in the market, and thus it will change when conditions on the market change (van Westendorp 1982, p. 147).

A similar procedure was used to calculate the optimum pricing point (OPP). In calculating the OPP, the cumulative response distributions to questions 3 (too expensive) and 4 (too cheap) were used. The point where these two distributions intersected was the OPP. At this point, an equal number of individuals viewed the product as "too expensive" or "too cheap". If the OPP is to the left of the IDP, a condition of "stress" is said to exist. Stress exists when individual perceptions of a reference price is a price that is too high relative to product value. The price associated with the OPP represented a price at which resistance against the price of a particular product is very low (Travis, 1982).. The word "optimal" signifies that at OPP, the least amount of resistance against the price can be expected from the consumers. No relation to the "optimum-theory" in economy is meant" (van Westendorp 1982, p. 152).

The intersection of the expensive and too expensive distributions (questions 2 and 4) indicated the point of marginal cheapness (PMC). At the PMC a price is given where the number of people which experiences a product as "too cheap" is larger than the number which experiences it merely as "cheap". Similarly, the point of marginal expensiveness (PME) is the point where the number of people experiencing the product as "too expensive" is larger than the number of

those experiencing the product merely as "expensive". PME is indicated where the curves representing questions 1 (cheap) and 3 (too expensive) intersected (van Westendorp, 1982).

The range of price values between PMC and PME was considered the latitude (range) of acceptable price for the product. van Westendorp (1986) noted from his research that the share of sales below or above these points was very small. Thus, a major part of business was always transacted within the range of acceptable prices.

This section of the study was included as a sub-problem replicating the methodology used in a previous study by Gillpatrick et al. (1984). Results and discussion of the PSM findings are therefore undertaken on a limited basis only.

## CHAPTER 4

### RESULTS AND DISCUSSION

The purpose of this study was to investigate consumer preferences for a pre-determined set of attributes thought to influence choice of developed campgrounds operated by MPB. Eleven (11) attributes in a (4X3X2<sup>9</sup>) fractional factorial design was used. Ten attributes representing quality (1 with 3 levels, and 9 with 2 levels) and one price attribute (4 levels) were manipulated. Respondents were presented with sixteen descriptions of overnight camping situations and asked to rate their relative preference for each on a likert-type scale from 1 (low preference) to 11 (high preference). Each of the sixteen descriptions (cards) represented a different combination of the levels for each attribute as generated by the CONJOINT DESIGNER software program based on a fractional factorial design process. In addition to the conjoint task, respondents were asked to provide demographic data, and to respond to Pricing Sensitivity Measurement (PSM) questions. The PSM task required respondents to evaluate the price of unserviced, electrically serviced and full-service campsites. The results are presented in five sections:

1. Descriptive Statistics
2. Analysis of the Conjoint Task Results
3. Hypotheses Testing
4. Analysis of the Pricing Sensitivity Measurement Task Results
5. Discussion

## DESCRIPTIVE STATISTICS

The following data describe the sample of campground users who participated in the study.

A total of 634 usable returns were received from an effective sample of 1053 representing a return rate of 61.06%. Table 1 is a frequency distribution of the sample according to the Manitoba Provincial parks where the respondents were originally identified (their permit was selected from the records of these parks). The mean number of respondents from each park was 48.77; (S.D. = 7.918).

Table 2 is a frequency distribution for month that the respondents represented in the sample procedure. Sample size by month ranged from 115 in June and July to a high of 144 for the month of August. The mean sample size by month was 126.8, (S.D. = 13.755) respondents.

Place of residence for all respondents is reported in Table 3. Respondents were grouped into four categories; the mean number of respondents is 158.5, (S.D. = 128.4) per category. Other Canada and U.S.A. residents were combined to form the group, Non-Manitoba residents for later analysis. These data indicated that the sampling procedure was effective when compared to actual park use reported in the 1988 Manitoba Park Statistics data. The sample represents 84.7% Manitoba residents which compares favorably to 83% which was reported for all Manitoba Parks in 1988. Other Canada residents represents 9.78% in the sample compared to 10% in 1988, and

United States residents represents 5.52% of the sample compared to 6% in 1988.

Table 4 is a frequency distribution of total family income level. The category \$30,000 - \$49,999 thousand dollars represented the mode. A total of 329 (59.71%) represented family incomes between \$20,000 and \$49,999 thousand dollars. The mean number of respondents per category is 70.44 (S.D. = 35.39). Respondents per category ranged from a minimum of 12 (< than \$10,000) to a maximum of 121 (\$30,000 to \$39,999).

Table 5 indicated that the maximum education level attained (to-date) by 236 (37.22%) was high school; 158 (24.92%) had college/technical education and 198 (31.23%) had university education. Other demographic characteristics are shown in Table 6, Table 7, and Table 8. These frequency distributions indicated that respondents were predominantly male (71.29%), and married (80.44%). The dominant age range was 35-44 years (32.49%) with 16.25% representing the 55+ age group. A total of 468 (73.81%) represented the 25-54 age group.

Table 1  
Frequency Distribution of Sample Park

PARK	COUNT	PERCENT
DUCK MOUNTAIN	53	8.36%
ST. MALO	51	8.04%
SPRUCE WOODS	53	8.36%
HECLA	55	8.68%
ASESSIPPI	55	8.68%
PAINT LAKE	37	5.84%
NOPIMING	44	6.94%
TURTLE MOUNTAIN	60	9.46%
GRASS RIVER	51	8.04%
BIRD'S HILL	52	8.20%
WHITESHELL	51	8.04%
CLEARWATER	36	5.68%
GRAND BEACH	36	5.68%
TOTAL	634	100%

Table 2  
Frequency Distribution of Sample Month

MONTH	COUNT	PERCENT
MAY	121	19.08%
JUNE	115	18.14%
JULY	115	18.14%
AUGUST	144	22.71%
SEPTEMBER	139	21.93%
TOTAL	634	100%

Table 3  
Frequency Distribution of Place of Residence

PLACE	COUNT	PERCENT
WINNIPEG	287	45.26%
OTHER MANITOBA	250	39.44%
OTHER CANADA	62	09.78%
UNITED STATES	35	05.52%
TOTAL	634	100%



Table 4  
Frequency Distribution of Total Family Income

INCOME GROUP	COUNT	PERCENT
LESS THAN \$10,000	12	02.18%
\$10,000-\$19,999	43	07.80%
\$20,000-\$29,999	105	19.06%
\$30,000-\$39,999	121	21.96%
\$40,000-\$49,999	103	18.69%
\$50,000-\$59,999	68	12.34%
\$60,000-\$69,999	49	08.89%
\$70,000+	50	09.07%
NO RESPONSE	83	13.09%
TOTAL	634	100%

Table 5  
Frequency Distribution of Education

MAXIMUM LEVEL	COUNT	PERCENT
< THAN HIGH SCHOOL	33	05.21%
HIGH SCHOOL	236	37.22%
COLLEGE/TECHNICAL	158	24.92%
UNIVERSITY	198	31.23%
NO RESPONSE	9	01.42%
TOTAL	634	100%

Table 6  
Frequency Distribution of Sex

SEX	COUNT	PERCENT
MALE	452	71.29%
FEMALE	179	28.23%
NO RESPONSE	3	00.47%
TOTAL	634	100%

Table 7  
Frequency Distribution of Marital Status

MARITAL GROUP	COUNT	PERCENT
MARRIED	510	80.44%
SINGLE	90	14.20%
SEPARATED OR DIVORCED	28	04.42%
WIDOWED	3	00.47%
NO RESPONSE	3	00.47%
TOTAL	634	100%

Table 8  
Frequency Distribution of Age

AGE GROUP	COUNT	PERCENT
LESS THAN 15 YEARS	1	00.16%
15-24 YEARS	57	08.99%
25-34 YEARS	161	25.39%
35-44 YEARS	206	32.49%
45-54 YEARS	101	15.93%
55-64 YEARS	66	10.41%
65+ YEARS	37	05.84%
NO RESPONSE	5	00.79%
TOTAL	634	100%

Table 9  
Frequency Distribution of  
Type of Camping Equipment Used

TYPE	COUNT	PERCENT
CAMPER	32	05.05%
MOTORHOME	71	11.20%
TENT	211	33.28%
TENT TRAILER	93	14.67%
CAMPER TRAILER	141	22.24%
CAMPER TRUCK	53	08.36%
OTHER	33	05.21%
TOTAL	634	100%

Note: See definitions Appendix B.

Table 9 is a frequency distribution of type of camping equipment used as reported on 1988 campsite registration permits. The data showed 211 of 634 (33.28%) used tents. This compared favorably with 1988 Manitoba Parks Statistics which indicate that 35% of all campground permit holders used tents. The remaining 66.72% of users reported the use of various utility-oriented camping units.

Data reflecting the type of campsites purchased are shown in Table 10. Frequencies indicated that unserviced sites were purchased by 70.03% of campers. MPB statistics for 1988 indicate that 5109 (78.43%) of all available campsites were unserviced. It is interesting to compare purchase behaviour to preferences for campsite services which are shown in Table 11. A total of 222 (35.02%) campers reported a preference for unserviced campsites when they had a choice of site type available.

The questionnaire asked respondents to identify their personal preferences for campground ownership. Table 12 is a frequency distribution of the responses. These data indicated that 19.40% of respondents preferred private or National Park campgrounds, and 29.34% had no particular preference. The remaining 50.47% indicated a preference for Manitoba Provincial Parks campgrounds. These data can be thought of as reflecting the degree of 'brand loyalty' exhibited by respondents.

Table 13 is a frequency distribution for party size reported on permits. A total of 535 (84.39%) reported a group size less than 4 persons on camping permits. A total of 274 (43.22%) camping groups reported normally having no

children in the camping group and 250 (39.43%) reported 1 or 2 children per group (Table 14).

The frequency distribution of adults in camping groups is shown in Table 15. A total of 76.03% indicated normally having 1-2 adults in the camping group. A total of 147 (23.19%) indicated normally having 3 or more adults in the camping group.

Table 10  
Frequency Distribution of Type  
of Campsite Purchased

SITE SERVICES	COUNT	PERCENT
UNSERVICED	444	70.03%
ELECTRICAL	175	27.60%
FULL-SERVICE	15	02.37%
TOTAL	634	100%

Table 11  
Frequency Distribution of  
Campsite Service Preferences

SERVICE PREFERENCE	COUNT	PERCENT
UNSERVICED	222	35.02%
ELECTRICAL	245	38.64%
FULL-SERVICE	164	25.87%
NO RESPONSE	3	00.47%
TOTAL	634	100%

Table 12  
Frequency Distribution of  
Campground Ownership Preference

OWNERSHIP PREFERENCE	COUNT	PERCENT
PRIVATE	39	06.15%
NATIONAL PARK	84	13.25%
PROVINCIAL PARK	320	50.47%
NO PREFERENCE	186	29.34%
NO RESPONSE	5	00.79%
TOTAL	634	100%

Table 13  
Frequency Distribution of  
Total Number in Camping Party Reported on Permit

PARTY SIZE	COUNT	PERCENT
1-2	266	41.96%
3-4	269	42.43%
5-6	89	14.04%
7-8	9	01.42%
9+	1	00.16%
TOTAL	634	100%

Table 14  
Frequency Distribution of  
Normal Number of Children in Camping Party

# OF CHILDREN	COUNT	PERCENT
NONE	274	43.22%
1-2	250	39.43%
3-4	91	14.35%
5+	17	02.68%
NO RESPONSE	2	00.32%
TOTAL	634	100%

Table 15  
Frequency Distribution of  
Normal Number of Adults in Camping Party

# OF ADULTS	COUNT	PERCENT
NONE	1	00.16%
1-2	482	76.03%
3-4	110	17.35%
5+	37	05.84%
NO RESPONSE	4	00.63%
TOTAL	634	100%

Table 16  
Frequency Distribution of Reported Length of Stay

LENGTH OF STAY	COUNT	PERCENT
1 DAY	286	45.11%
2 DAYS	212	33.44%
3 DAYS	80	12.62%
4 DAYS	16	02.52%
5 DAYS	23	03.63%
6 DAYS	7	01.10%
7 DAYS	9	01.42%
8 DAYS	1	00.16%
TOTAL	634	100%

Table 16 is a frequency distribution of the length of stay as reported on the 1988 camping permits. These data showed 45.11% staying only one day and 33.44% stayed two days. It is important to note that length of stay per visit is likely longer than indicated here given that permit renewals were not considered (it is likely that some campers bought a separate permit for each of several consecutive days of camping).

As a means of comparison, the questionnaire asked respondents to recall the number of visits and total days of camping that they purchased in Manitoba in 1988 and 1989. Tables 17 through 28 are frequency distributions

for the resulting data. Data are reported for purchases in Manitoba only and do not consider purchases made out-of province. The data are grouped for private campgrounds, provincial park campgrounds, and National Park campgrounds.

Table 17 shows that 65.77% of the sample visited Manitoba Provincial campgrounds 1 to 3 times in 1988. A total of 218 (34.38%) campers who visited provincial campgrounds in 1988 stayed a total of 1 to 5 days while 28.71% stayed 6 to 10 days in total (Table 18). In contrast, 53.15% made from 1 to 3 visits to provincial campgrounds in 1989 and 13.56% made 4 to 6 visits. A total of 154 (24.29%) campers who visited provincial parks in 1988 did not make a return visit in 1989. A total of 179 (28.23%) campers who visited provincial campgrounds in 1989 stayed a total of 1 to 5 days, while 141 (22.23%) stayed between 6 and 10 days total. In 1988, 9.15% of campers visited provincial parks between 7 and 12 times compared to 1989 when 5.05% visited between 7 and 12 times. A total of 176 (27.77%) 1988 provincial campground users stayed a total of 11 to 25 days. In 1989, 127 (20.04%) stayed between 11 and 25 days in total.

These data provided an opportunity to calculate average length of stay for each visit. By taking the mid-points of the ranges used to report the # of visits and multiplying by the 'counts', an expression of total visits and total days was calculated. Using data from tables 17 and 18, this formula produced a total of 2438 visits representing a total of 6944 days of camping in provincial campgrounds in Manitoba for 1988. This represented an average length of stay of approximately 2.85 days in 1988. In comparison, 1989 data (Tables 19 and 20) showed a total of 1638 visits to Manitoba Provincial Parks representing a total of 4905 total days of camping. This indicated an average stay length of

2.99 days. To compare, MPB statistics indicate that average length of stay in 1988 was 2.5 days.

Table 17  
Frequency Distribution of  
# of Visits to Manitoba Provincial Campgrounds  
May-Sept 1988

# OF VISITS	COUNT	PERCENT
NONE	0	00.00%
1-3	417	65.77%
4-6	126	19.87%
7-9	34	05.36%
10-12	24	03.79%
13-15	15	02.37%
16+	18	02.84%
NO RESPONSE	0	00.00%
TOTAL	634	100%

Table 18  
Frequency Distribution of  
Total Days of Camping in Manitoba Provincial Campgrounds  
May-Sept 1988

# OF DAYS	COUNT	PERCENT
NONE	0	00.00%
1-5	218	34.38%
6-10	182	28.71%
11-15	99	15.62%
16-25	77	12.15%
16-35	25	03.94%
36+	33	05.21%
NO RESPONSE	0	00.00%
TOTAL	634	100%



(13.72%) visited between 1 and 3 times with the majority staying a total of 1-5 days.

Similar results are indicated for visits to Private campgrounds in Manitoba. In 1988, 26.5% of respondents (known Manitoba campground users), also visited private campgrounds between 1 and 3 times, and in 1989, 21.14% visited private campgrounds the same number of times (Tables 25 to 28).

Table 21  
Frequency Distribution of  
# of Visits to Manitoba National Park Campgrounds  
May-Sept 1988

# OF VISITS	COUNT	PERCENT
NONE	471	74.29%
1-3	150	23.66%
4-6	10	01.58%
7-9	2	00.32%
10-12	0	00.00%
13-15	0	00.00%
16+	0	00.00%
NO RESPONSE	1	00.16%
TOTAL	634	100%

Table 22  
 Frequency Distribution of  
 Total Days of Camping in Manitoba National Park Campgrounds  
 May-Sept 1988

# OF DAYS	COUNT	PERCENT
NONE	471	74.29%
1-5	118	18.61%
6-10	32	05.05%
11-15	7	01.10%
16-25	3	00.47%
16-35	1	00.16%
36+	0	00.00%
NO RESPONSE	2	00.32%
TOTAL	634	100%

Table 23  
 Frequency Distribution of  
 # of Visits to Manitoba National Park Campgrounds  
 May-Sept 1989

# OF VISITS	COUNT	PERCENT
NONE	539	85.02%
1-3	87	13.72%
4-6	7	01.10%
7-9	0	00.00%
10-12	0	00.00%
13-15	0	00.00%
16+	0	00.00%
NO RESPONSE	1	00.16%
TOTAL	634	100%

Table 24  
 Frequency Distribution of  
 Total Days of Camping in Manitoba National Park Campgrounds  
 May-Sept 1989

# OF DAYS	COUNT	PERCENT
NONE	539	85.02%
1-5	62	09.78%
6-10	26	04.10%
11-15	2	00.32%
16-25	3	00.47%
16-35	0	00.00%
36+	0	00.00%
NO RESPONSE	2	00.32%
TOTAL	634	100%

Table 25  
 Frequency Distribution of  
 # of Visits to Manitoba Private Campgrounds  
 May-Sept 1988

# OF VISITS	COUNT	PERCENT
NONE	423	66.72%
1-3	168	26.50%
4-6	17	02.68%
7-9	9	01.42%
10-12	7	01.10%
13-15	4	00.64%
16+	3	00.47%
NO RESPONSE	3	00.47%
TOTAL	634	100%

Table 26  
 Frequency Distribution of  
 Total Days of Camping in Manitoba Private Campgrounds  
 May-Sept 1988

# OF DAYS	COUNT	PERCENT
NONE	422	66.56%
1-5	133	20.98%
6-10	34	05.36%
11-15	19	03.00%
16-25	14	02.21%
16-35	9	01.42%
36+	2	00.32%
NO RESPONSE	1	00.16%
TOTAL	634	100%

Table 27  
 Frequency Distribution of  
 # of Visits to Manitoba Private Campgrounds  
 May-Sept 1989

# OF VISITS	COUNT	PERCENT
NONE	465	73.34%
1-3	134	21.14%
4-6	17	02.68%
7-9	6	00.95%
10-12	3	00.47%
13-15	2	00.32%
16+	3	00.47%
NO RESPONSE	4	00.63%
TOTAL	634	100%

Table 28  
 Frequency Distribution of  
 Total Days of Camping in Manitoba Private Campgrounds  
 May-Sept 1989

# OF DAYS	COUNT	PERCENT
NONE	465	73.34%
1-5	107	16.88%
6-10	38	05.99%
11-15	8	01.26%
16-25	10	01.58%
16-35	4	00.63%
36+	2	00.32%
NO RESPONSE	0	00.00%
TOTAL	634	100%

### RESULTS OF THE CONJOINT ANALYSIS

Table 30 shows the results of the conjoint task for all respondents (group statistics). The relative importance is the preference for each attribute expressed in percent terms (the utility range for a given attribute expressed as a percentage of the sum of the utility ranges for all attributes). In addition, part-worth utility values are shown for each attribute level. These utility values are interpreted as meaning that the respondent rating on the measurement scale (1 to 11) will increase or decrease by the stated value (+ or -) each time the given level appears in a treatment (card).

Results of the conjoint analysis task indicated that price, showers, beach, fishing, campsite services, and firewood provision accounted for 85.28% of the preferences of campground users. Lower prices (\$7 and \$12) contributed positively to preference ratings and in total 26.55% of preferences were accounted for by the price attribute. The provision of showers, beach, and fishing opportunity accounted for 14.27%, 13.54% and 12.17% of preferences

respectively. In each of these cases, the provision of the attribute contributed positively to the preference rating. Firewood provision was also an important attribute with respect to preferences contributing 8.02% to the preference function. Inclusion of firewood in the daily camping fee contributed positively to the preference rating. In comparison, charging a separate fee for firewood resulted in ratings being lowered by .364 (on the 11 point scale).

The provision of a store in the park area, availability of a campsite reservation system, provision of hiking trails in the park area, closeness to home (time in hours), and the provision of interpretive programs and services only contributed a total of 14.72% to the preference function.

Tables 31 through 40 show the Relative Importance of Attributes segmented according to a variety of variables. Tables 31-A through 40-A show the part-worth utility values segmented for the same group of variables. These tables serve as a basis for possible simulation exercises and provide information that may be useful in planning promotional campaigns for specific target markets. For example, visual examination of Table 31 shows fishing to be the most important attribute for residents of the United States (28.46%) while the availability of a beach is not important (.93%). This suggests that MPB promotion aimed at the U.S. market should focus on the fishing opportunities and disregard beach as an attribute in campgrounds.

#### Optimal Products

Conjoint analysis theory notes that optimal products are those that would result in maximum consumer preference (purchase). Using the group conjoint

results (Table 30), the optimal product (combination of attribute levels) consisted of the following product description:

- \* campsite with sewer, water, electricity
- \* located less than 2 hours from home
- \* showers provided in campground
- \* store provided in park area
- \* fishing opportunity in park area
- \* beach provided in park area
- \* campsite reservation system offered
- \* daily camping fee of \$7 charged
- \* hiking trails provided in park area
- \* no visitor centres, museums, nature trails, or amphitheater provided
- \* firewood provided (in base price)

It is interesting to note that the optimal combination of attribute levels includes the elimination of interpretive programs and services. One explanation of this result is that consumers view interpretive services as contributing to higher daily camping fees, yet they are not viewed as important services by consumers (1.55%; -.07 utility when provided).

### Conjoint Results by Segments

Conjoint results were calculated according to seven separate segmentation criteria that were identified a priori in the study. The results showing the relative importance of attributes according to these segmentation criteria are shown in table 31 through 37. The corresponding part-worth utility values are shown in table 31A through 37A. These data provide a basis for the identification of simulation opportunities which are too numerous to evaluate in this report.

### Simulation Modeling

The basic logic used in defining optimal products (ie. an additive model) can be applied to simulation issues. That is, a representation of relative preference for specified products (combinations of attribute levels) can be estimated using the part-worth utility values. The SIMGRAF program is used in this analysis. This program can simulate the relative preference for up to 21 products at the same time using the attribute levels prescribed in the study. The simulation shows the percent of respondents that would prefer each product simulated relative to the other products offered in a given simulation. SIMGRAF refers to these percentages as shares. The program can also segment the share results according to any of the background variables used in the program (c.f. age, income, place of residence, etc.). To demonstrate the use of the simulation model, four products were entered into the SIMGRAF program and shares determined for each. The four products were identical with the exception of the daily camping price which was \$7, \$12, \$17, \$22 respectively



for products 1 to 4. To demonstrate the segmentation potential, the products were also evaluated by 'place of residence'.

The description for PRODUCT #1 included:

- \* unserviced campsite
- \* located less than 2 hours from home
- \* showers provided in campground
- \* no store provided in park area
- \* fishing opportunity in park area
- \* beach provided in park area
- \* campsite reservation system offered
- \* daily camping fee of \$7 charged
- \* no hiking trails provided in park area
- \* visitor centres, museums, nature trails, or amphitheatres provided
- \* firewood provided (in base price)

PRODUCT #2: (same as above with \$12 price)

PRODUCT #3: (same as above with \$17 price)

PRODUCT #4: (same as above with \$22 price)

The resulting shares are shown in Table 29.

Table 29  
Simulation Shares by Group and Place of Residence

PRODUCT	GROUP	PLACE OF RESIDENCE			
		WPG.	OT. MAN.	OT. CAN.	U.S.A.
#1	60.6%	61.44%	56.13%	72.58%	63.81%
#2	25.7%	26.77%	26.67%	25.00%	10.95%
#3	12.7%	11.15%	15.87%	02.42%	20.95%
#4	01.1%	00.64%	01.33%	00.00%	04.29%

These results show the potential to differentiate the camping products on the basis of price. For example, using the group statistics, 12.7% of respondents preferred a campsite price at \$17 given the available products being limited to those simulated here. This may be interpreted as meaning that

this group attributed 'quality' with the higher price (remember that all other attribute levels were the same). This preference may be further explained by the results segmented by 'place of residence'. For example, U.S.A. residents preferred the \$17 campsite (20.95%) rather than the \$12 campsite (10.95%). In contrast, 'other Canada' residents preferred the \$12 campsite (26.67%) compared to to the \$17 campsite (2.42%). The campsite priced at \$22 received no substantial support in any of the segments simulated.

The simulation model can be used to estimate consumer response to proposed product modification, and/or to the introduction of new products. For example, MPB could simulate consumer response to the addition of showers in any of the 13 parks where they do not currently exist. By simulating this product change and segmenting the results by 'park', an indication of the consumer response by users of the given park could be estimated. Other simulation opportunities are too numerous to mention.

Table 30  
Group Conjoint Results

ATTRIBUTE	RELATIVE IMPORTANCE (%)	ATTRIBUTE LEVEL	PART-WORTH UTILITY
CAMPSITE SERVICES	10.73	UNSERVICED	-0.611
		ELECTRICAL	+0.248
		FULL-SERVICE	+0.364
CLOSENESS TO HOME	02.23	< 2 HRS	+0.101
		> 2 HRS	-0.101
SHOWERS	14.27	PROVIDED	+0.648
		NONE	-0.648
STORE	05.45	PROVIDED	+0.248
		NONE	-0.248
FISHING	12.17	AVAILABLE	+0.553
		NONE	-0.553
BEACH	13.54	PROVIDED	+0.615
		NONE	-0.615
CAMPSITE RESERVATIONS	03.18	AVAILABLE	+0.144
		NONE	-0.144
CAMPSITE PRICE PER DAY	26.55	\$7	+1.129
		\$12	+0.545
		\$17	-0.390
		\$22	-1.284
HIKING TRAILS	02.31	PROVIDED	+0.105
		NONE	-0.105
INTERPRETIVE PROGRAMS	01.55	PROVIDED	-0.070
		NONE	+0.070
FIREWOOD PROVISION	08.02	INCLUDED IN PRICE PER DAY	+0.364
		FOR SALE	-0.364

Table 31  
Relative Importance of Attributes by Place of Residence

ATTRIBUTE	PLACE OF RESIDENCE			
	WPG.	OTHER MAN.	OTHER. CAN.	U.S.A
	%	%	%	%
CAMPSITE SERVICES	11.17	11.15	08.23	11.92
CLOSENESS TO HOME	02.88	02.76	02.16	07.64
SHOWERS	14.38	14.01	14.94	12.04
STORE	05.31	05.94	04.98	03.01
FISHING	10.40	11.25	13.64	28.46
BEACH	13.94	14.86	11.04	00.93
CAMPSITE RESERVATIONS	02.21	03.61	03.46	06.02
CAMPSITE PRICE/DAY	27.76	23.68	30.29	26.04
HIKING TRAILS	02.43	02.76	00.87	00.23
INTERPRETIVE PROGRAMS	01.11	02.34	01.30	00.93
FIREWOOD	08.41	07.64	09.09	02.78
N	287	250	62	35

Table 31 A  
Utility Values by Place of Residence

ATTRIBUTE	ATTRIBUTE LEVEL	WPG	OTHER MAN.	OTHER CAN.	U.S.A.
CAMPSITE SERVICES	UNSERVICED	-.60	-.66	-.50	-.50
	ELECTRICAL	+.19	+.27	+.25	+.53
	FULL-SERVE	+.41	+.39	+.26	-.03
CLOSENESS TO HOME	< 2 HRS	+.13	+.13	+.10	-.33
	> 2 HRS	-.13	-.13	-.10	+.33
SHOWERS	PROVIDED	+.65	+.66	+.69	+.52
	NONE	-.65	-.66	-.69	-.52
STORE	PROVIDED	+.24	+.28	+.23	+.13
	NONE	-.24	-.28	-.23	-.13
FISHING	AVAILABLE	+.47	+.53	+.63	+1.23
	NONE	-.47	-.53	-.63	-1.23
BEACH	PROVIDED	+.63	+.70	+.51	+.04
	NONE	-.63	-.70	-.51	-.04
CAMPSITE RESERVATION	AVAILABLE	+.10	+.17	+.16	+.26
	NONE	-.10	-.17	-.16	-.26
CAMPSITE PRICE	\$7	+1.19	+.98	+1.43	+1.15
	\$12	+.55	+.60	+.53	+.16
	\$17	-.43	-.32	-.59	-.20
	\$22	-1.32	-1.25	-1.37	-1.10
HIKING TRAILS	PROVIDED	+.11	+.13	+.04	+.01
	NONE	-.11	-.13	-.04	-.01
INTERPRETIVE PROGRAMS	PROVIDED	-.05	-.11	-.06	+.04
	NONE	+.05	+.11	+.06	-.04
FIREWOOD PROVISION	INCLUDED	+.38	+.36	+.42	+.12
	FOR SALE	-.38	-.36	-.42	-.12

Table 32  
Relative Importance of Attributes by Age

ATTRIBUTE	AGE GROUP (YEARS)						
	<15	15 TO 24	25 TO 34	35 TO 44	45 TO 54	55 TO 64	65+
	%	%	%	%	%	%	%
CAMPSITE SERVICES	03.83	07.50	07.37	11.11	11.44	14.21	19.58
CLOSENESS TO HOME	03.83	03.59	01.98	02.20	01.56	02.39	02.02
SHOWERS	13.48	15.21	14.96	14.52	14.00	12.60	11.02
STORE	00.00	09.50	07.04	06.16	02.44	02.61	00.90
FISHING	01.99	11.40	11.44	12.32	13.78	14.12	07.65
BEACH	45.93	16.05	14.74	14.74	11.33	08.69	09.90
CAMPSITE RESERVATIONS	01.99	02.11	02.42	02.64	05.11	06.08	00.22
CAMPSITE PRICE/DAY	09.65	22.17	26.85	24.43	27.45	29.96	35.67
HIKING TRAILS	05.82	03.17	03.52	03.08	01.78	00.43	02.02
INTERPRETIVE PROGRAMS	11.49	01.27	01.98	01.10	01.78	01.09	03.15
FIREWOOD	01.99	08.03	07.70	07.70	09.33	07.82	07.87
N	1	57	161	206	101	66	37

Table 32 A  
Utility Values by Age

ATTRIBUTE	ATTRIBUTE LEVEL	AGE GROUP (YEARS)						
		<15 YR	15-24	25-34	35-44	45-54	55-64	65+
CAMPSITE SERVICES	UNSERVICED	-.33	-.47	-.42	-.65	-.63	-.82	-1.0
	ELECTRICAL	+.17	+.24	+.17	+.29	+.23	+.33	+.26
	FULL-SERVE	+.17	+.23	+.25	+.36	+.40	+.49	+.74
CLOSENESS TO HOME	< 2 HRS	-.25	+.17	+.09	+.10	+.07	+.11	+.09
	> 2 HRS	+.25	-.17	-.09	-.10	-.07	-.11	-.09
SHOWERS	PROVIDED	+.88	+.72	+.68	+.66	+.63	+.58	+.49
	NONE	-.88	-.72	-.68	-.66	-.63	-.58	-.49
STORE	PROVIDED	+.00	+.45	+.32	+.28	+.11	+.12	+.04
	NONE	+.00	-.45	-.32	-.28	-.11	-.12	-.04
FISHING	AVAILABLE	+.13	+.54	+.52	+.56	+.62	+.65	+.34
	NONE	-.13	-.54	-.52	-.56	-.62	-.65	-.34
BEACH	PROVIDED	+3.00	+.76	+.67	+.67	+.51	+.40	+.44
	NONE	-3.00	-.76	-.67	-.67	-.51	-.40	-.44
CAMPSITE RESERVATION	AVAILABLE	+.13	+.10	+.11	+.12	+.23	+.28	+.01
	NONE	-.13	-.10	-.11	-.12	-.23	-.28	-.01
CAMPSITE PRICE	\$7	+.13	+.79	+1.12	+.97	+1.19	+1.51	+1.78
	\$12	+.63	+.56	+.60	+.60	+.56	+.32	+.30
	\$17	-.63	-.04	-.39	-.32	-.47	-.58	-.69
	\$22	-.13	-1.31	-1.32	-1.25	-1.28	-1.25	-1.39
HIKING TRAILS	PROVIDED	+.38	+.15	+.16	+.14	+.08	-.02	-.09
	NONE	-.38	-.15	-.16	-.14	-.08	+.02	+.09
INTERPRETIVE PROGRAMS	PROVIDED	+.75	-.06	-.09	-.05	-.08	-.05	-.14
	NONE	-.75	+.06	+.09	+.05	+.08	+.05	+.14
FIREWOOD PROVISION	INCLUDED	+.13	+.38	+.35	+.35	+.42	+.36	+.35
	FOR SALE	-.13	-.38	-.35	-.35	-.42	-.36	-.35

Table 33  
Relative Importance of Attributes by Type of Camping Equipment Used

ATTRIBUTE	TYPE OF EQUIPMENT USED						
	Camper	Motor Home	Tent	Tent Trailer	Camp Trailer	Camp Truck	Other
	%	%	%	%	%	%	%
CAMPSITE SERVICES	13.91	17.33	03.67	11.03	16.96	10.08	11.76
CLOSENESS TO HOME	02.96	01.26	01.96	03.24	03.93	01.43	00.65
SHOWERS	16.37	12.39	14.43	14.57	14.06	13.65	13.07
STORE	04.34	02.73	08.07	05.67	03.31	05.30	05.88
FISHING	06.90	18.29	15.15	09.31	07.03	14.66	11.55
BEACH	15.58	10.71	13.45	14.78	14.27	12.22	10.02
CAMPSITE RESERVATIONS	03.35	03.78	02.69	03.44	02.28	04.07	04.79
CAMPSITE PRICE/DAY	25.94	24.48	27.62	23.18	26.16	25.77	33.56
HIKING TRAILS	00.59	00.84	04.89	03.24	01.45	00.81	00.22
INTERPRETIVE PROGRAMS	00.79	00.63	01.22	02.43	02.28	03.05	01.31
FIREWOOD	09.27	07.56	06.85	09.11	08.27	08.96	07.19
N	32	71	211	93	141	53	33



Table 33 A  
Utility Values by Type of Camping Equipment Used

ATTRIBUTE	ATTRIBUTE LEVEL	Camp-er	Motor Home	Tent	Tent Trailer	Camp Trailer	Camp Truck	Other
CAMPSITE SERVICES	UNSERVICED	-.86	-1.05	-.17	-.69	-.93	-.64	-.65
	ELECTRICAL	+.31	+.44	+.13	+.29	+.22	+.29	+.43
	FULL-SERVE	+.55	+.60	+.03	+.40	+.71	+.35	+.22
CLOSENESS TO HOME	< 2 HRS	+.15	-.06	+.08	+.16	+.19	+.07	+.03
	> 2 HRS	-.15	+.06	-.08	-.16	-.19	-.07	-.03
SHOWERS	PROVIDED	+.83	+.59	+.59	+.72	+.68	+.67	+.60
	NONE	-.83	-.59	-.59	-.72	-.68	-.67	-.60
STORE	PROVIDED	+.22	+.13	+.33	+.28	+.16	+.26	+.27
	NONE	-.22	-.13	-.33	-.28	-.16	-.26	-.27
FISHING	AVAILABLE	+.35	+.87	+.62	+.46	+.34	+.72	+.53
	NONE	-.35	-.87	-.62	-.46	-.34	-.72	-.53
BEACH	PROVIDED	+.79	+.51	+.55	+.73	+.69	+.60	+.46
	NONE	-.79	-.51	-.55	-.73	-.69	-.60	-.46
CAMPSITE RESERVATION	AVAILABLE	+.17	+.18	+.11	+.17	+.11	+.20	+.22
	NONE	-.17	-.18	-.11	-.17	-.11	-.20	-.22
CAMPSITE PRICE	\$7	+1.33	+1.12	+1.00	+1.00	+1.24	+1.16	+1.65
	\$12	+.63	+.39	+.50	+.75	+.56	+.47	+.53
	\$17	-.65	-.29	-.25	-.46	-.51	-.26	-.75
	\$22	-1.30	-1.21	-1.26	-1.29	-1.29	-1.37	-1.43
HIKING TRAILS	PROVIDED	-.03	-.04	+.20	+.16	+.07	+.04	-.01
	NONE	+.03	+.04	-.20	-.16	-.07	-.04	+.01
INTERPRETIVE PROGRAMS	PROVIDED	+.04	-.03	-.05	-.12	-.11	-.15	+.06
	NONE	-.04	+.03	+.05	+.12	+.11	+.15	-.06
FIREWOOD PROVISION	INCLUDED	+.47	+.36	+.28	+.45	+.40	+.44	+.33
	FOR SALE	-.47	-.36	-.28	-.45	-.40	-.44	-.33

Table 34  
 Relative Importance of Attributes by Total Days of Camping  
 in Manitoba Provincial Park Campgrounds May-Sept 1988

ATTRIBUTE	TOTAL DAYS OF CAMPING 1988					
	1-5	6-10	11-15	16-25	26-35	36+
	%	%	%	%	%	%
CAMPSITE SERVICES	11.42	09.41	07.44	14.68	13.71	11.70
CLOSENESS TO HOME	01.11	02.75	02.13	01.90	04.97	03.18
SHOWERS	15.96	13.53	12.75	14.78	11.88	12.50
STORE	05.76	06.34	04.96	03.38	03.67	05.91
FISHING	11.31	13.11	15.82	08.66	09.50	10.68
BEACH	13.53	13.53	13.93	14.78	12.74	12.96
CAMPSITE RESERVATIONS	02.44	03.59	03.78	02.53	04.32	02.95
CAMPSITE PRICE/DAY	26.05	24.83	27.38	29.37	28.63	27.62
HIKING TRAILS	03.55	02.33	02.60	00.21	02.59	01.82
INTERPRETIVE PROGRAMS	01.11	02.33	01.65	00.84	00.65	03.41
FIREWOOD	07.76	08.25	07.56	08.87	07.34	07.27
N	218	182	99	77	25	33

Table 34 A  
Utility Values by Total Days of Camping  
in Manitoba Provincial Parks May-Sept 1988

ATTRIBUTE	ATTRIBUTE LEVEL	TOTAL DAYS OF CAMPING 1988					
		1-5 days	6-10 days	11-15 days	16-25 days	26-35 days	36+ days
CAMPSITE SERVICES	UNSERVICED	-.65	-.58	-.41	-.83	-.69	-.68
	ELECTRICAL	+.26	+.27	+.19	+.27	+.10	+.32
	FULL-SERVE	+.38	+.31	+.22	+.56	+.58	+.35
CLOSENESS TO HOME	< 2 HRS	+.05	+.13	+.09	+.19	+.23	+.14
	> 2 HRS	-.05	-.13	-.09	-.19	-.23	-.14
SHOWERS	PROVIDED	+.72	+.64	+.54	+.70	+.55	+.55
	NONE	-.72	-.64	-.54	-.70	-.55	-.55
STORE	PROVIDED	+.26	+.30	+.21	+.16	+.17	+.26
	NONE	-.26	-.30	-.21	-.16	-.17	-.26
FISHING	AVAILABLE	+.51	+.62	+.67	+.41	+.44	+.47
	NONE	-.51	-.62	-.67	-.41	-.44	-.47
BEACH	PROVIDED	+.61	+.64	+.59	+.70	+.59	+.57
	NONE	-.61	-.64	-.59	-.70	-.59	-.57
CAMPSITE RESERVATION	AVAILABLE	+.11	+.17	+.16	+.12	+.20	+.13
	NONE	-.11	-.17	-.16	-.12	-.20	-.13
CAMPSITE PRICE	\$7	+1.06	+1.08	+1.09	+1.36	+1.34	+1.19
	\$12	+.52	+.54	+.52	+.59	+.48	+.81
	\$17	-.29	-.35	-.39	-.53	-.51	-.76
	\$22	-1.29	-1.27	-1.23	-1.42	-1.31	-1.24
HIKING TRAILS	PROVIDED	+.16	+.11	+.11	+.01	+.12	-.08
	NONE	-.16	-.11	-.11	-.01	-.12	+.08
INTERPRETIVE PROGRAMS	PROVIDED	-.05	-.11	-.07	-.04	-.03	-.15
	NONE	+.05	+.11	+.07	+.04	+.03	+.15
FIREWOOD PROVISION	INCLUDED	+.35	+.39	+.32	+.42	+.34	+.32
	FOR SALE	-.35	-.39	-.32	-.42	-.34	-.32

Table 35  
Relative Importance of Attributes by Total Family Income

ATTRIBUTE	INCOME LEVELS (,000 DOLLARS)							
	< 10	10-19.99	20-29.99	30-39.99	40-49.99	50-59.99	60-69.99	>70
	%	%	%	%	%	%	%	%
CAMPSITE SERVICES	07.88	08.35	09.42	11.27	10.41	08.53	15.64	10.73
CLOSENESS TO HOME	05.01	01.39	01.67	02.60	02.50	00.89	02.01	03.36
SHOWERS	14.10	13.46	14.06	15.60	13.11	15.28	11.62	14.51
STORE	06.12	06.03	04.29	04.98	05.20	03.99	08.49	06.10
FISHING	06.12	12.76	12.16	09.32	11.45	17.50	13.18	13.25
BEACH	13.36	15.31	14.06	12.78	15.40	10.19	12.74	14.30
CAMPSITE RESERVATIONS	01.30	03.25	01.91	02.60	03.75	03.77	04.25	04.21
CAMPSITE PRICE/DAY	34.98	29.01	30.27	27.42	25.69	27.68	22.46	24.71
HIKING TRAILS	01.30	00.70	02.15	01.95	02.29	01.99	05.36	00.84
INTERPRETIVE PROGRAMS	02.04	02.32	01.43	01.73	02.50	02.21	01.12	00.00
FIREWOOD	07.79	07.42	08.58	09.75	07.70	07.97	03.13	07.99
N	12	43	105	121	103	68	49	50

Table 35 A  
Utility Values by Total Family Income (\$,000)

ATTRIBUTE	ATTRIBUTE LEVEL	INCOME LEVELS (,000 DOLLARS)							
		<10	10-19.999	20-29.999	30-39.999	40-49.999	50-59.999	60-69.999	>70
CAMPSITE SERVICES	UNSERVICED	-.48	-.39	-.48	-.69	-.62	-.48	-.81	-.64
	ELECTRICAL	+.11	+.33	+.17	+.34	+.24	+.20	+.21	+.26
	FULL-SERVE	+.37	+.06	+.31	+.35	+.38	+.29	+.59	+.38
CLOSENESS TO HOME	<2HRS	+.27	+.06	+.07	+.12	+.12	+.04	+.09	+.16
	>2HRS	-.27	-.06	-.07	-.12	-.12	-.04	-.09	-.16
SHOWERS	PROVIDED	+.76	+.58	+.59	+.72	+.63	+.69	+.52	+.69
	NONE	-.76	-.58	-.59	-.72	-.63	-.69	-.52	-.69
STORE	PROVIDED	+.33	+.26	+.18	+.23	+.25	+.18	+.38	+.29
	NONE	-.33	-.26	-.18	-.23	-.25	-.18	-.38	-.29
FISHING	AVAILABLE	+.33	+.55	+.51	+.43	+.55	+.79	+.59	+.63
	NONE	-.33	-.55	-.51	-.43	-.55	-.79	-.59	-.63
BEACH	PROVIDED	+.72	+.66	+.59	+.59	+.74	+.46	+.57	+.68
	NONE	-.72	-.66	-.59	-.59	-.74	-.46	-.57	-.68
CAMPSITE RES.	AVAILABLE	+.07	+.14	+.08	+.12	+.18	+.17	+.19	+.20
	NONE	-.07	-.14	-.08	-.12	-.18	-.17	-.19	-.20
CAMPSITE PRICE	\$7	+1.91	+1.18	+1.27	+1.22	+1.16	+1.21	+.79	+1.01
	\$12	+.55	+.58	+.38	+.59	+.66	+.45	+.60	+.67
	\$17	-.59	-.44	-.38	-.50	-.52	-.37	-.17	-.34
	\$22	-1.86	-1.32	-1.27	-1.31	-1.31	-1.29	-1.22	-1.34
HIKING TRAILS	PROVIDED	+.07	+.03	+.09	+.09	+.11	+.09	+.24	+.04
	NONE	-.07	-.03	-.09	-.09	-.11	-.09	-.24	-.04
INTERP. PROGRAMS	PROVIDED	-.11	-.10	-.06	-.08	-.12	-.10	+.05	+.00
	NONE	+.11	+.10	+.06	+.08	+.12	+.10	-.05	+.00
FIREWOOD PROVISION	INCLUDED	+.42	+.32	+.36	+.45	+.37	+.36	+.14	+.38
	FORSALE	-.42	-.32	-.36	-.45	-.37	-.36	-.14	-.38

Table 36  
Relative Importance of Attributes by Camping Month

ATTRIBUTE	MONTH				
	May %	June %	July %	Aug %	Sept %
CAMPSITE SERVICES	11.42	09.43	10.36	09.84	12.25
CLOSENESS TO HOME	00.22	02.12	03.60	02.38	03.28
SHOWERS	13.75	14.41	15.10	13.84	14.01
STORE	05.76	04.87	04.50	06.27	05.25
FISHING	15.08	13.35	11.94	11.46	09.19
BEACH	12.86	12.50	14.41	15.14	12.47
CAMPSITE RESERVATIONS	03.33	03.18	02.70	03.24	03.94
CAMPSITE PRICE/DAY	26.49	29.97	22.98	25.50	26.92
HIKING TRAILS	02.22	00.85	02.25	03.68	02.19
INTERPRETIVE PROGRAMS	00.89	01.48	04.05	02.16	01.09
FIREWOOD	07.98	07.84	08.11	06.49	09.41
N	121	115	115	144	139

Table 36 A  
Utility Values by Camping Month

ATTRIBUTE	ATTRIBUTE LEVEL	May	June	July	Aug	Sept
CAMPSITE SERVICES	UNSERVICED	-.64	-.57	-.61	-.57	-.67
	ELECTRICAL	+.25	+.25	+.30	+.23	+.22
	FULL-SERVE	+.39	+.32	+.31	+.34	+.45
CLOSENESS TO HOME	< 2 HRS	-.01	+.10	+.16	+.11	+.15
	> 2 HRS	+.01	-.10	-.16	-.11	-.15
SHOWERS	PROVIDED	+.62	+.68	+.67	+.64	+.64
	NONE	-.62	-.68	-.67	-.64	-.64
STORE	PROVIDED	+.26	+.23	+.20	+.29	+.24
	NONE	-.26	-.23	-.20	-.29	-.24
FISHING	AVAILABLE	+.68	+.63	+.53	+.53	+.42
	NONE	-.68	-.63	-.53	-.53	-.42
BEACH	PROVIDED	+.58	+.59	+.64	+.70	+.57
	NONE	-.58	-.59	-.64	-.70	-.57
CAMPSITE RESERVATION	AVAILABLE	+.15	+.15	+.12	+.15	+.16
	NONE	-.15	-.15	-.12	-.15	-.16
CAMPSITE PRICE	\$7	+1.04	+1.35	+.99	+1.10	+1.17
	\$12	+.62	+.67	+.48	+.44	+.53
	\$17	-.31	-.54	-.42	-.28	-.42
	\$22	-1.35	-1.48	-1.05	-1.26	-1.29
HIKING TRAILS	PROVIDED	+.10	+.04	+.10	+.17	+.10
	NONE	-.10	-.04	-.10	-.17	-.10
INTERPRETIVE PROGRAMS	PROVIDED	+.04	-.07	-.18	-.10	-.05
	NONE	-.04	+.07	+.18	+.10	+.05
FIREWOOD PROVISION	INCLUDED	+.36	+.37	+.36	+.30	+.43
	FOR SALE	-.36	-.37	-.36	-.30	-.43

Table 37  
Relative Importance of Attributes by Park

ATTRIBUTE	PARK												
	Bird's Hill	Grand Beach	White -shell	Paint Lake	Aseessippi	Hecla	Duck Mt.	Spruce Woods	Grass River	Nop-iming	Turtle Mt.	St. Malo	Clear-water
	%	%	%	%	%	%	%	%	%	%	%	%	%
CAMPSITE SERVICES	18.37	11.29	14.32	09.24	09.18	12.04	06.58	13.29	09.80	01.21	13.11	14.99	08.55
CLOSENESS TO HOME	04.97	03.26	00.90	01.61	02.69	02.82	01.34	03.20	03.82	00.81	02.25	06.03	01.54
SHOWERS	15.69	16.48	12.63	13.05	14.33	15.40	12.49	12.99	10.99	10.47	16.61	14.14	13.16
STORE	02.78	09.16	06.54	07.23	06.72	06.29	08.70	02.80	02.87	06.44	04.30	03.20	03.51
FISHING	04.37	07.53	10.37	13.45	19.04	09.33	16.72	05.19	28.20	24.43	05.53	04.71	14.04
BEACH	10.53	17.50	15.56	12.25	11.42	15.62	12.04	15.78	03.58	14.77	13.53	15.46	13.38
CAMPSITE RESERVATION	02.18	00.20	02.93	03.21	4.48	03.69	04.01	02.00	07.65	04.83	01.43	00.94	04.17
CAMPSITE PRICE/DAY	30.98	24.82	26.37	29.72	23.40	22.23	24.96	25.37	25.21	27.64	32.59	23.94	26.96
HIKING TRAILS	00.99	00.81	00.23	00.80	00.45	04.12	05.80	07.59	01.19	01.88	02.66	03.02	03.29
INTERPRETIVE PROGRAMS	00.60	02.03	02.93	02.21	00.90	0.43	00.89	01.20	01.91	00.27	01.02	03.39	02.41
FIREWOOD	08.54	06.92	07.22	07.23	07.39	08.03	06.47	10.59	04.78	07.25	06.97	10.18	08.99
N	52	36	51	37	55	55	53	53	51	44	60	51	36



Table 37 A  
Utility Values by Park

ATTRIBUTE	ATTRIBUTE LEVEL	PARK												
		Bird's Hill	Gran. Bea.	White -shell	Paint Lake	Asees -ippi	Hecla	Duck Mt.	Spr. Wood	Grass River	Nop-iming	Turtle Mt.	St. Malo	Clear-water
CAMPSITE SERVICES	UNSERVICED	-1.02	-.72	-.79	-.56	-.49	-.69	-.36	-.73	-.33	-.04	-.73	-.88	-.49
	ELECTRICAL	+2.20	+3.39	+3.31	+3.36	+3.33	+2.28	+1.13	+1.13	+4.49	+0.05	+1.17	+1.17	+2.29
	FULL-SERVE	+8.83	+3.33	+4.48	+2.20	+1.15	+4.42	+2.23	+6.60	-.16	-.01	+5.55	+7.71	+2.21
CLOSENESS TO HOME	< 2 HRS	+2.25	+1.16	+0.04	+0.08	+1.12	+1.13	+0.06	+1.16	-.16	-.03	+1.11	+3.32	+0.07
	> 2 HRS	-.25	-.16	-.04	-.08	-.12	-.13	-.06	-.16	+1.16	+0.03	-.11	-.32	-.07
SHOWERS	PROVIDED	+7.79	+8.81	+5.56	+6.65	+6.64	+7.71	+5.56	+6.65	+4.46	+3.39	+8.81	+7.75	+6.60
	NONE	-.79	-.81	-.56	-.65	-.64	-.71	-.56	-.65	-.46	-.39	-.81	-.75	-.60
STORE	PROVIDED	+1.14	+4.45	+2.29	+3.36	+3.30	+2.29	+3.39	14	+1.12	+2.24	+2.21	+1.17	+1.16
	NONE	-.14	-.45	-.29	-.36	-.30	-.29	-.39	-.14	-.12	-.24	-.21	-.17	-.16
FISHING	AVAILABLE	+2.22	+3.37	+4.46	+6.67	+8.85	+4.43	+7.75	+2.26	+1.18	+9.91	+2.27	+2.25	+6.64
	NONE	-.22	-.37	-.46	-.67	-.85	-.43	-.75	-.26	-1.18	-.91	-.27	-.25	-.64
BEACH	PROVIDED	+5.53	+8.86	+6.69	+6.61	+5.51	+7.72	+5.54	+7.79	+1.15	+5.55	+6.66	+8.82	+6.61
	NONE	-.53	-.86	-.69	-.61	-.51	-.72	-.54	-.79	-.15	-.55	-.66	-.82	-.61
CAMPSITE RESERVATION	AVAILABLE	+1.11	-.01	+1.13	+1.16	+2.20	+1.17	+1.18	+1.10	+3.32	+1.18	+0.07	+0.05	+1.19
	NONE	-.11	+0.01	-.13	-.16	-.20	-.17	-.18	-.10	-.32	-.18	-.07	-.05	-.19
CAMPSITE PRICE	\$7	+1.67	+1.11	+1.14	+7.77	+9.90	+8.85	+1.01	+1.22	+1.00	+8.88	+1.61	+1.21	+1.11
	\$12	+4.41	+4.45	+5.53	+6.67	+5.58	+6.64	+5.52	+5.52	+3.34	+4.49	+6.62	+7.70	+6.61
	\$17	-.63	-.24	-.47	-.25	-.29	-.28	-.31	-.42	-.23	-.19	-.66	-.58	-.38
	\$22	-1.45	-1.33	-1.20	-1.19	-1.19	-1.20	-1.23	-1.32	-1.11	-1.18	-1.57	-1.33	-1.35
HIKING TRAILS	PROVIDED	-.05	+0.04	-.01	+0.04	+0.02	+1.19	+2.26	+3.38	-.05	+0.07	+1.13	+1.16	+1.15
	NONE	+0.05	-.04	+0.01	-.04	-.02	-.19	-.26	-.38	+0.05	-.07	-.13	-.16	-.15
INTERPRETIVE PROGRAMS	PROVIDED	-.03	-.10	-.13	-.11	-.04	-.02	-.04	-.06	-.08	-.01	-.05	-.18	-.11
	NONE	+0.03	+1.10	+1.13	+1.11	+0.04	+0.02	+0.04	+0.06	+0.08	+0.01	+0.05	+1.18	+1.11
FIREWOOD PROVISION	INCLUDED	+4.43	+3.34	+3.32	+3.36	+3.33	+3.37	+2.29	+5.53	+2.20	+2.27	+3.34	+5.54	+4.41
	FOR SALE	-.43	-.34	-.32	-.36	-.33	-.37	-.29	-.53	-.20	-.27	-.34	-.54	-.41

## NULL HYPOTHESES TESTING

H(1) There is no significant difference in the relative importance (part-worth utility ranges) that MPB campground users attribute to the pre-determined set of attributes used in this study.

Analysis of Variance was used to test this null hypothesis. Part-worth utility ranges were calculated for each attribute for all respondents. The range refers to the magnitude of the difference between the levels for each attribute that have the highest and lowest utility. For example, for the price attribute the level (\$7, \$12, \$17, \$22) with the lowest utility was subtracted from the level with the highest utility to calculate the range for that attribute. This procedure was repeated to calculate a range for each attribute for all respondents. These data were used in an Analysis of Variance using STAT VIEW SE AND GRAPHICS for Macintosh computers. While the relative importance of attributes (Table 30) are different (some attributes are more or less important than others), this analysis distinguished statistical significance at the .95 confidence level. The analysis of variance showed that the relative importance of the eleven attributes was significantly different [ $F(10,6330)=378.966, p<.0001$ ]. This analysis allowed for rejection of the null hypothesis and acceptance of the hypothesis that the relative importances of attributes was significantly different. Results of the ANOVA are shown in table 38.

Table 38  
One Factor ANOVA-Repeated Measures for Eleven Attributes

Source	df:	Sum of Squares:	Mean Square:	F-test:	P value:
Between subjects	633	768.606	1.214	.954	.7794
Within subjects	6340	8065.827	1.272		
treatment	10	3020.532	302.053	378.966	.0001
residual	6330	5045.294	.797		
Total	6973	8834.432			

Reliability Estimates for - All treatments: -.048  
Single Treatments: -.044

Table 39  
Mean Statistics for Eleven Attributes

Range:	Count:	Mean:	Std. Dev.:	Std. Error:
Services	634	1.786	1.108	.044
Closeness	634	.686	.611	.024
Showers	634	1.365	.899	.036
Store	634	.843	.625	.025
Fishing	634	1.313	1.241	.049
Beach	634	1.365	.993	.039
Reservations	634	.676	.587	.023
Price	634	2.962	1.511	.060
Trails	634	.704	.609	.024
Interpretive	634	.688	.554	.022
Firewood	634	.927	.743	.030

A post-hoc Scheffe F-test was conducted to determine to isolate significant differences. The results are shown in Table 40.

Table 40  
Scheffe F-Test Results

ATTRIBUTE	SITE	TRA.	SHO.	STORE	FISH	BEA.	RES.	PRICE	HIKE	INT.	FIRE
SITE SERVICES	X										
TRAVEL TIME	48.138	X									
SHOWERS	7.067	18.316	X								
STORE	35.354	.985 *	10.808	X							
FISHING	8.890	15.654	.105 *	8.787	X						
BEACH	7.054	18.338	6.184 *	10.824	.106 *	X					
RESERVATIONS	49.039	.004 *	18.874	1.117 *	16.170	18.896	X				
PRICE	55.010	206.066	101.51	178.563	108.129	101.46	207.926	X			
HIKING	46.598	.013 *	17.371	.775 *	14.781	17.392	.031 *	202.865	X		
INTERPRETATION	47.965	1.546 *	18.210	.960 *	15.556	18.231	.006 *	205.709	.010 *	X	
FIREWOOD	29.362	2.309	7.619	.278 *	5.939	7.633	2.509	164.752	1.981	2.271	X

Note: \* indicates results not significant at .05 level

H(2) There is no significant difference in the relative importance (part-worth utility ranges) that MPB campground users attribute to the pre-determined set of attributes used in this study, for respondent segments that are distinguished on the basis of:

- a) number of camping nights purchased in MPB campgrounds in 1988
- b) age of respondent
- c) total family income
- d) type of camping equipment/vehicle used (ie. tent, motor home)
- e) place of residence
- f) month wherein the camping permit was purchased
- g) park wherein the camping permit was purchased

For each of the segmentation criteria noted above, analysis of variance was conducted to test the null hypothesis. Data used in this analysis was utility range data for each respondent. Categories used in each segmentation were consistent with those used by MPB in related studies (ie. 1988 Annual Park Statistics). This allowed for direct comparison to previous studies, and provided a basis for confirming the representativeness of the sample.

Results of the analysis of variance were used to evaluate the viability of the pre-determined segmentation criteria. For example, if a given segmentation criterion (ie. sex), resulted in significantly different preferences (.95 confidence level) that criterion could be used as a basis for segmentation strategy. Ultimately, marketing mix decisions could then be focused recognizing the

specific preferences of a defined segment. In contrast, if the segmentation criterion did not result in significantly different preferences, it would not be logical to segment according to that criteria.

For the seven criteria tested, only two resulted in significantly different preferences at the .95 confidence level. Thus, the null hypothesis could be rejected in those instances, and the hypothesis that preference differences did exist, was accepted. The criteria TYPE OF CAMPING EQUIPMENT/VEHICLE USED, resulted in significant differences being determined among the 7 equipment types (categories) included [ $F(6,627) = 4.538, p < .0002$ ]. ANOVA results are shown in table 41. Further comparative detail is provided in table 42.

Table 41  
One Factor ANOVA-Repeated Measures for Camping Equipment Used

Source	df:	Sum of Squares:	Mean Square:	F-test:	P value:
Camping Equip.	6	31.986	5.331	4.538	.0002
Subjects w. groups	627	736.62	1.175		
Repeated Measure (B)	10	3020.532	302.053	388.35	.0001
AB	60	168.578	2.81	3.612	.0001
B x subjects w. groups	6270	4876.717	.778		

Table 42  
 AB Incidence Table  
 Camping Equipment Used

Equip. Type	Attribute Ranges										
	Serv.	Travel	Show.	Store	Fish	Beach	Res.	Price	Trails	Interp.	Fire.
Camper Truck	53 <sup>1</sup> 1.71 <sup>2</sup>	53 .7	53 1.455	53 .719	53 1.606	53 1.408	53 .62	53 2.991	53 .743	53 .738	53 1.007
Camper Trailer	141 2.107	141 .65	141 1.416	141 .795	141 .951	141 1.46	141 .614	141 2.98	141 .627	141 .699	141 .964
Tent	211 1.392	211 .649	211 1.262	211 .873	211 1.431	211 1.261	211 .669	211 2.799	211 .71	211 .649	211 .788
Motor Home	71 2.363	71 .877	71 1.299	71 .722	71 1.887	71 1.208	71 .873	71 3.092	71 .729	71 .725	71 .993
Tent Trailer	93 1.726	93 .699	93 1.473	93 .938	93 1.059	93 1.538	93 .656	93 2.858	93 .715	93 .718	93 .995
Camper	32 1.98	32 .574	32 1.668	32 .816	32 .949	32 1.605	32 .645	32 3.203	32 .688	32 .707	32 1.082
Other	33 1.799	33 .712	33 1.197	33 1.076	33 1.47	33 1.174	33 .727	33 3.667	33 .879	33 .621	33 1.045
Totals:	634 1.786	634 .686	634 1.365	634 .843	634 1.313	634 1.365	634 .676	634 2.962	634 .704	634 .688	634 .927

1 - Represents total N in segment

2 - Represents mean part-worth utility for segment

A Kruskal-Wallis Post-Hoc test was conducted to identify the attributes that accounted for the preference differences. Results showed that Campsite Services [ $H(6,634) = 56.803, p < .001$ ], Store [ $H(6,634) = 13.433, p < .0367$ ], Fishing [ $H(6,634) = 36.082, p < .0001$ ], Reservations [ $H(6,634) = 13.134, p < .041$ ], and Firewood [ $H(6,634) = 14.22, p < .0273$ ] were significant at the .95 confidence level.

Segmentation according to TOTAL DAYS OF CAMPING IN MPB 1988, also showed significant differences in the attribute preferences within the six groups identified [ $F(5,628) = 2.67, p < .021$ ]. ANOVA results are shown in table 43. Further comparative detail is provided in table 44.

Table 43  
One Factor ANOVA-Repeated Measures for Total Days of Camping 1988

Source	df:	Sum of Squares:	Mean Square:	F-test:	P value:
Total Days 1988	5	16.03	3.21	2.67	.021
Subjects w. groups	628	752.58	1.2		
Repeated Measure (B)	10	3020.53	302.05	380.52	.0001
AB	50	60.28	1.21	1.52	.0108
B x subjects w. groups	6280	4985.01	.79		



Table 44  
 AB Incidence Table  
 Total Days of Camping in 1988

Total Days	Attribute Ranges										
	Serv.	Trav.	Show	Store	Fish	Bea.	Res.	Price	Trail	Int.	Fire.
1-5	218 <sup>1</sup> 1.77 <sup>2</sup>	218 .67	218 1.49	218 .87	218 1.22	218 1.32	218 .6	218 2.92	218 .79	218 .72	218 .92
6-10	182 1.75	182 .7	182 1.34	182 .83	182 1.39	182 1.4	182 .74	182 2.82	182 .65	182 .67	182 .95
11-15	99 1.57	99 .62	99 1.17	99 .78	99 1.48	99 1.35	99 .66	99 2.78	99 .64	99 .59	99 .8
16-25	77 2.06	77 .74	77 1.48	77 .79	77 1.32	77 1.5	77 .74	77 3.32	77 .67	77 .73	77 .96
26-35	25 2.1	25 .74	25 1.2	25 .89	25 .97	25 1.19	25 .68	25 3.41	25 .63	25 .67	25 .99
36+	33 1.83	33 .77	33 1.14	33 1.02	33 1.26	33 1.31	33 .7	33 3.36	33 .78	33 .79	33 1.14
Totals:	634 1.79	634 .69	634 1.36	634 .84	634 1.31	634 1.36	634 .68	634 2.96	634 .7	634 .69	634 .93

1 - Represents total N in segment  
 2 - Represents mean part-worth utility for segment

The Kruskal-Wallis Post-Hoc test was conducted to identify the attributes that accounted for the preference differences. Results showed that Campsite Services [ $H(5,634) = 11.86, p < .0367$ ], and Price [ $H(5,634) = 12.19, p < .0322$ ] accounted for the significant difference in preference among the six groups used in this segmentation.

Other segmentation criteria were not significant at the .95 confidence level, but warrant mention. Segmentation according to Age [ $F(6,622) = 2.04, p < .0585$ ], Camping Month [ $F(4,629) = 2.30, p < .0571$ ], and Park [ $F(12,621) = 1.68, p < .0677$ ] may provide some basis for segmentation although they were not significant at the .95 confidence level. Segmentation by Place of Residence [ $F(93,630) = .784, p < .5033$ ], and Total Family Income [ $F(7,543) = .88, p < .5244$ ] do not appear to provide a basis for segmentation.

### ANALYSIS OF THE PSM RESULTS

As noted in Chapter 3, a technique referred to as the Pricing Sensitivity Measurement (PSM) model was included as a sub-problem in this study. PSM was included to provide additional insight with respect to the pricing attribute. In particular, data reflecting the "range of acceptable price" was of interest. Analysis of these data are minimal in this thesis. However, more detailed evaluation of the PSM method and results will be undertaken outside the bounds of this thesis.

The PSM model results are summarized in Table 45. Graphs showing the results according to Place of Residence criteria are provided in Figures 15 through 26. Results indicated that the campers are somewhat price sensitive as

indicated by the position of the Indifference Price (IDP) with respect to proportion of respondents. For all places of residence and service levels measured, the IDP falls between 40.0% and 47.0%. It is important to remember that the lower (%) the level of the IDP, the more price sensitive are the respondents. There did not appear to be any significant differences in the degree of price sensitivity attributable to any group or to any service type. In general, there may be somewhat more price sensitivity with respect to the purchase of full-service campsites than for other service levels.

The range of acceptable prices also did not appear significantly different with respect to place of residence or service type. One exception to this observation may be Other Manitoba residents who showed somewhat higher optimal price levels for each type of campsite.

The PSM results are also shown by month that the respondent was selected in the sample (Table 46), and for each of thirteen parks (Table 47). No significant differences are apparent with respect to these segmented results.

For all respondents, the optimal price levels were \$6.60, \$9.50, and \$14.20, for unserviced, electrically serviced, and full-serviced campsites respectively. The OPP was the price at which least consumer resistance would be found. It is important to note that the questionnaire did not specify a particular supplier of the campsite (c.f. Manitoba Provincial Park). The questionnaire did however, specify that the price did not include entrance fees.

Table 45  
Summary of PSM Results

GROUP	SERVICE	MIN PRICE	OPTIMAL PRICE	MAX PRICE	I.D.P. LEVEL (%)
ALL	UNSERVICED	\$5.50	\$6.60	\$9.15	45.0
	ELECTRICAL	\$8.30	\$9.50	\$11.90	46.0
	FULL	\$10.60	\$11.50	\$14.20	42.5
WINNIPEG	UNSERVICED	\$5.40	\$6.50	\$8.95	45.0
	ELECTRICAL	\$8.30	\$9.30	\$11.90	44.0
	FULL	\$10.80	\$11.75	\$14.25	40.0
OTHER MAN.	UNSERVICED	\$5.75	\$7.00	\$9.20	46.0
	ELECTRICAL	\$8.60	\$9.85	\$12.50	47.0
	FULL	\$10.70	\$11.80	\$14.40	42.0
NON-MAN.	UNSERVICED	\$5.50	\$6.20	\$8.80	45.0
	ELECTRICAL	\$7.80	\$9.20	\$11.60	47.0
	FULL	\$10.40	\$11.20	\$13.50	43.5

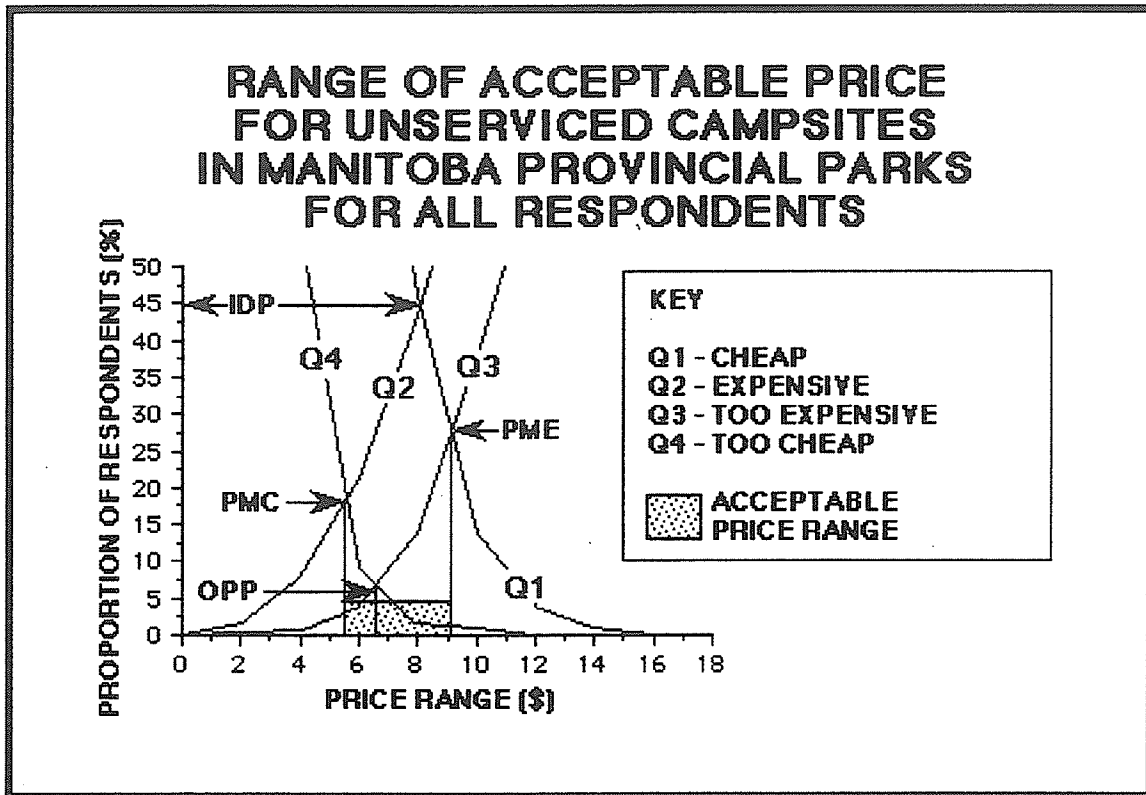
Table 46  
Summary of PSM Results by Month

PARK	SERVICE LEVEL	MIN PRICE	OPTIMAL PRICE	MAX PRICE	I.D.P. LEVEL (%)
MAY	UNSERVICED	\$5.40	\$6.40	\$9.40	45.0
	ELECTRICAL	\$8.20	\$9.50	\$12.50	42.0
	FULL	\$10.50	\$11.50	\$14.20	41.0
JUNE	UNSERVICED	\$5.75	\$7.00	\$9.00	44.0
	ELECTRICAL	\$8.00	\$9.40	\$12.00	44.0
	FULL	\$10.60	\$11.75	\$13.75	42.0
JULY	UNSERVICED	\$5.40	\$6.25	\$9.00	46.0
	ELECTRICAL	\$8.20	\$9.20	\$11.60	47.0
	FULL	\$10.50	\$11.80	\$14.50	45.0
AUGUST	UNSERVICED	\$5.40	\$6.20	\$9.20	44.0
	ELECTRICAL	\$8.00	\$9.50	\$12.50	43.0
	FULL	\$10.75	\$11.80	\$14.75	42.0
SEPTEMBER	UNSERVICED	\$5.50	\$6.50	\$8.90	46.0
	ELECTRICAL	\$8.00	\$9.20	\$11.75	44.0
	FULL	\$10.80	\$11.75	\$14.10	37.0

Table 47  
Summary of PSM Results by Park

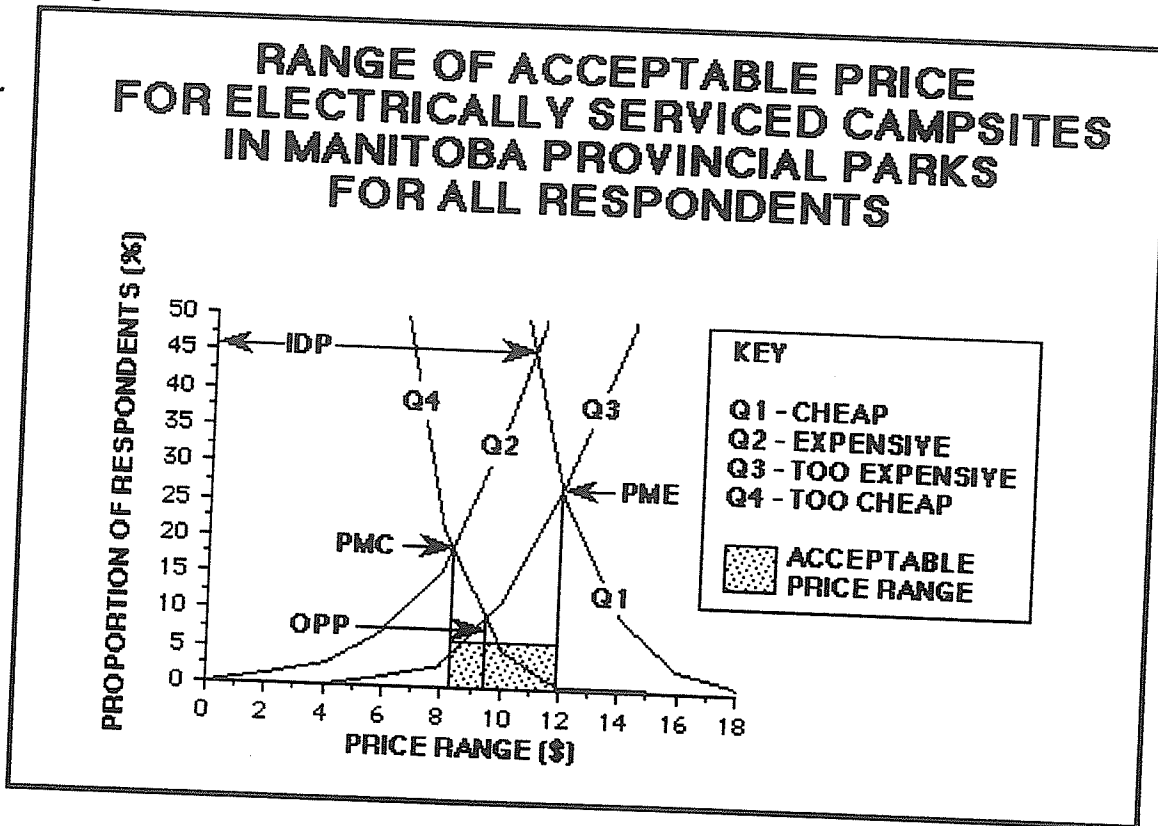
PARK	SERVICE LEVEL	MIN PRICE	OPTMAL PRICE	MAX PRICE	I.D.P. LEVEL (%)
DUCK MT	UNSERVICED	\$5.75	\$6.25	\$9.25	42.0
	ELECTRICAL	\$8.00	\$9.50	\$12.50	47.0
	FULL	\$10.00	\$11.20	\$14.40	48.0
ST. MALO	UNSERVICED	\$5.25	\$6.00	\$9.00	40.0
	ELECTRICAL	\$8.00	\$9.25	\$11.90	45.0
	FULL	\$11.00	\$12.25	\$14.90	42.0
SPRUCE WOODS	UNSERVICED	\$5.75	\$7.00	\$9.90	48.0
	ELECTRICAL	\$8.00	\$9.60	\$13.00	45.0
	FULL	\$10.50	\$11.50	\$14.75	43.0
HECLA	UNSERVICED	\$6.00	\$6.80	\$9.40	45.0
	ELECTRICAL	\$8.60	\$9.25	\$12.50	50.0
	FULL	\$10.90	\$12.00	\$14.75	42.0
ASESSIPPI	UNSERVICED	\$5.20	\$6.00	\$8.90	45.0
	ELECTRICAL	\$8.20	\$9.20	\$11.80	40.0
	FULL	\$10.75	\$11.60	\$14.20	37.0
PAINT LAKE	UNSERVICED	\$5.00	\$6.25	\$8.90	53.0
	ELECTRICAL	\$7.75	\$9.00	\$12.00	42.0
	FULL	\$10.50	\$12.20	\$14.00	40.0
NOPIMING	UNSERVICED	\$5.75	\$6.60	\$9.40	47.0
	ELECTRICAL	\$8.20	\$9.75	\$12.25	42.0
	FULL	\$10.50	\$11.75	\$15.00	43.0
TURTLE MOUNTAIN	UNSERVICED	\$5.90	\$7.00	\$9.25	46.0
	ELECTRICAL	\$8.90	\$9.40	\$12.25	39.0
	FULL	\$10.60	\$11.75	\$14.00	37.0
GRASS RIVER	UNSERVICED	\$5.50	\$6.30	\$8.90	50.0
	ELECTRICAL	\$7.90	\$9.40	\$11.60	53.0
	FULL	\$10.75	\$11.50	\$14.25	48.0
BIRD'S HILL	UNSERVICED	\$5.40	\$6.00	\$8.00	44.0
	ELECTRICAL	\$7.75	\$8.60	\$11.00	42.0
	FULL	\$10.50	\$11.00	\$13.10	41.0
WHITESHELL	UNSERVICED	\$5.25	\$6.40	\$8.90	41.0
	ELECTRICAL	\$7.80	\$9.00	\$12.30	42.0
	FULL	\$10.75	\$12.00	\$14.25	37.0
CLEARWATER	UNSERVICED	\$5.25	\$6.25	\$9.00	42.0
	ELECTRICAL	\$8.20	\$9.00	\$11.00	34.0
	FULL	\$9.25	\$11.00	\$13.00	45.0
GRAND BEACH	UNSERVICED	\$5.50	\$7.00	\$10.00	40.0
	ELECTRICAL	\$8.75	\$10.00	\$12.90	34.0
	FULL	\$11.75	\$13.80	\$16.50	38.0

Figure 15



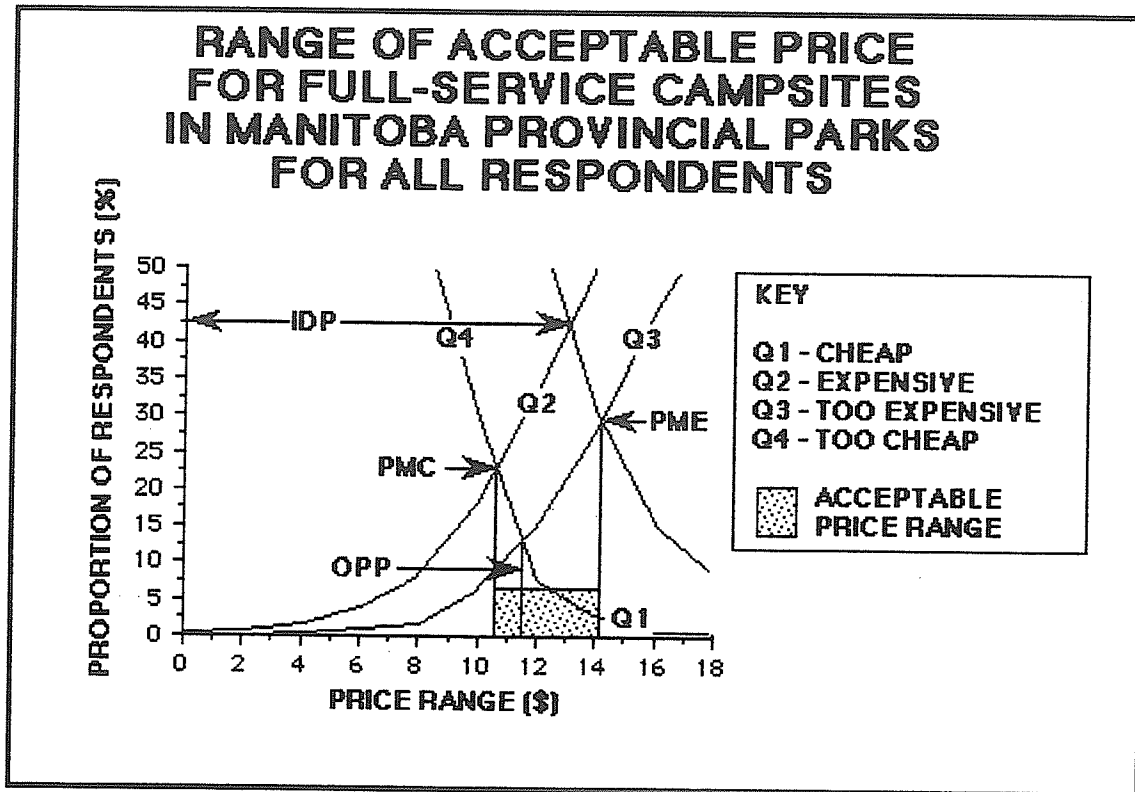
Note:           IDP - Indifference Price  
                   OPP - Optimal Price Point  
                   PMC - Point of Marginal Cheapness  
                   PME - Point of Marginal Expensiveness

Figure 16



Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

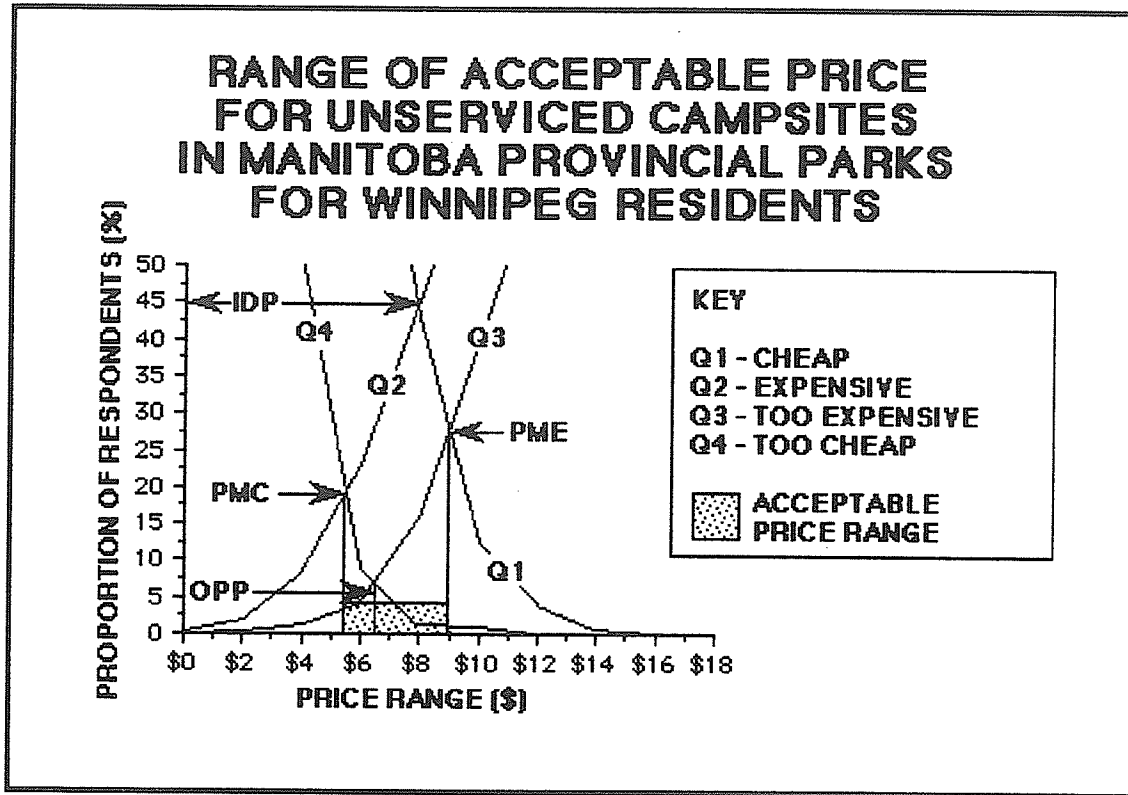
Figure 17



Note:           IDP - Indifference Price  
                   OPP - Optimal Price Point  
                   PMC - Point of Marginal Cheapness  
                   PME - Point of Marginal Expensiveness

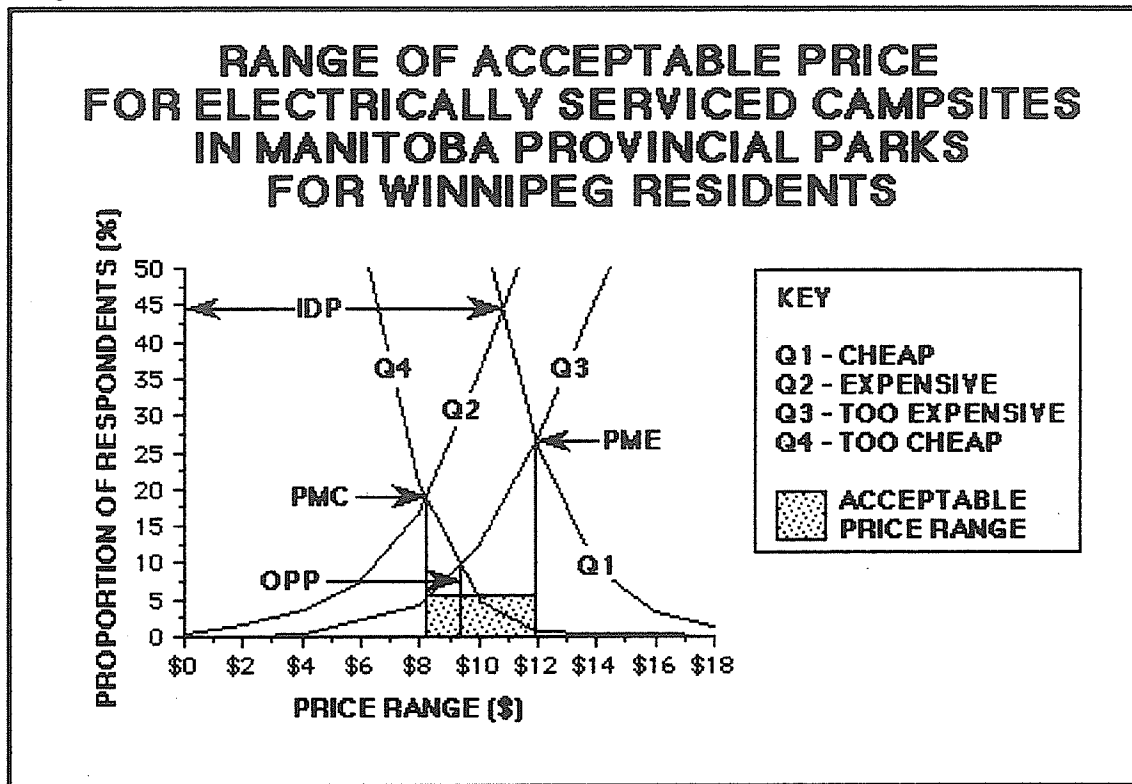


Figure 18



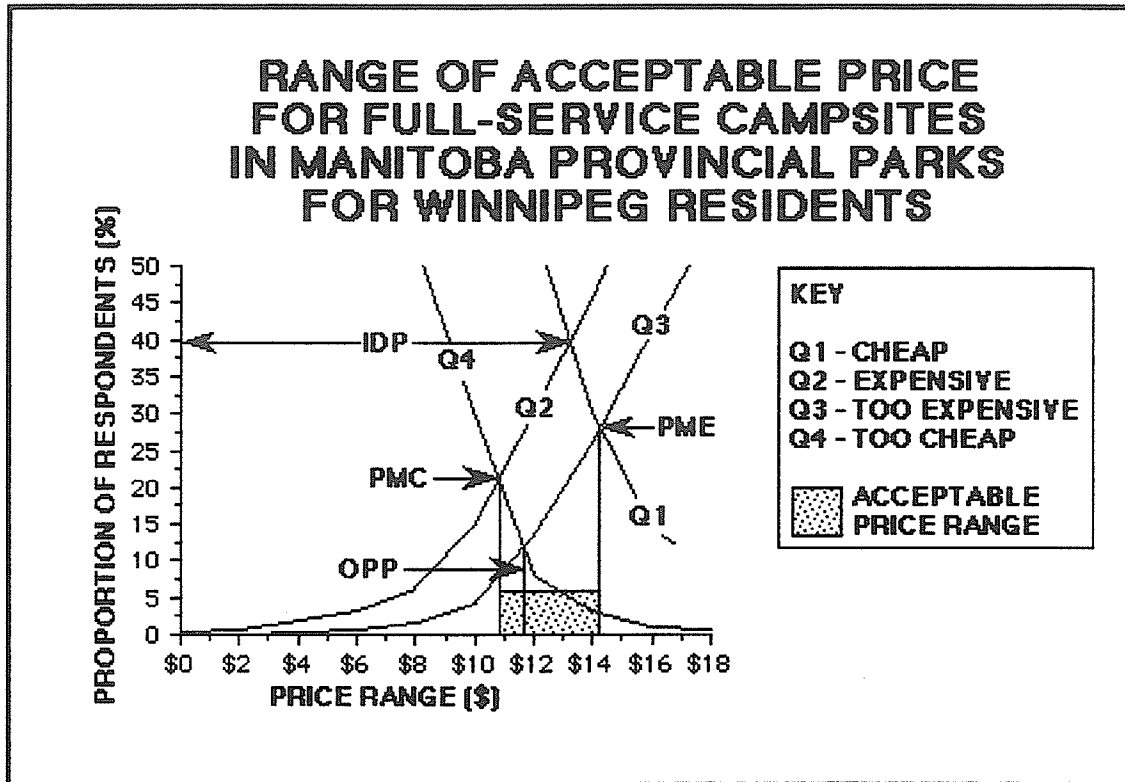
Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

Figure 19



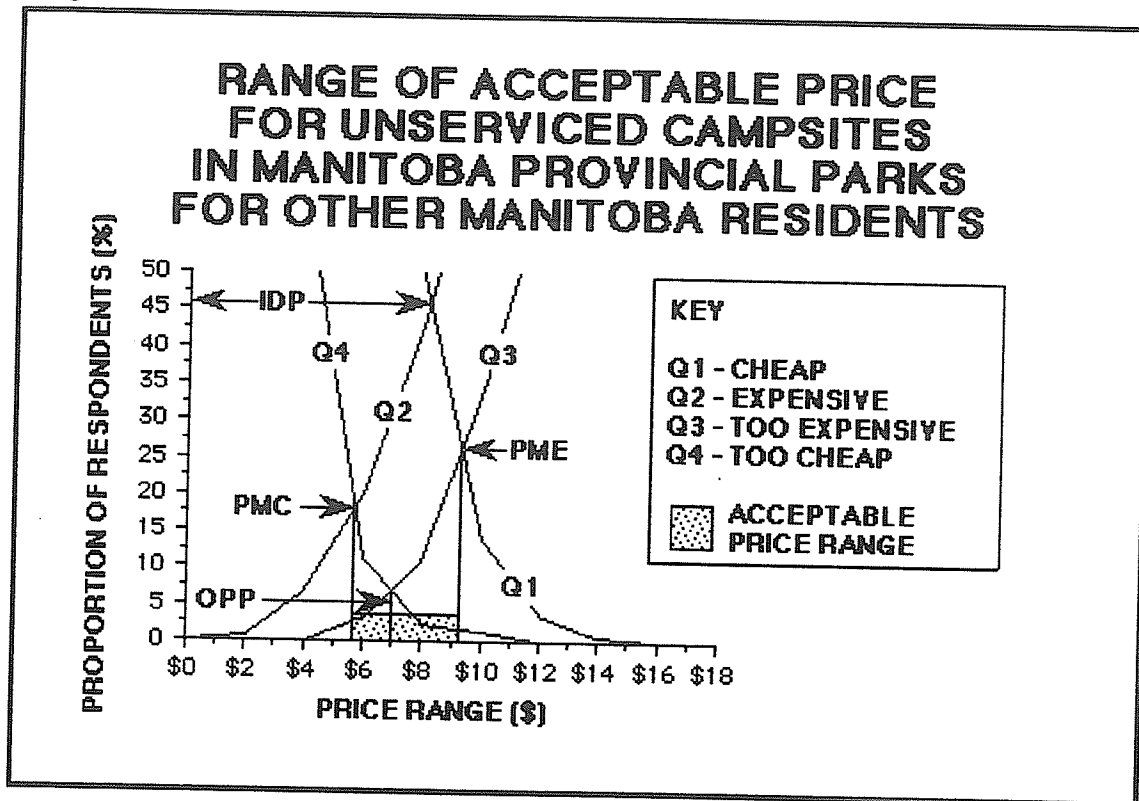
Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

Figure 20



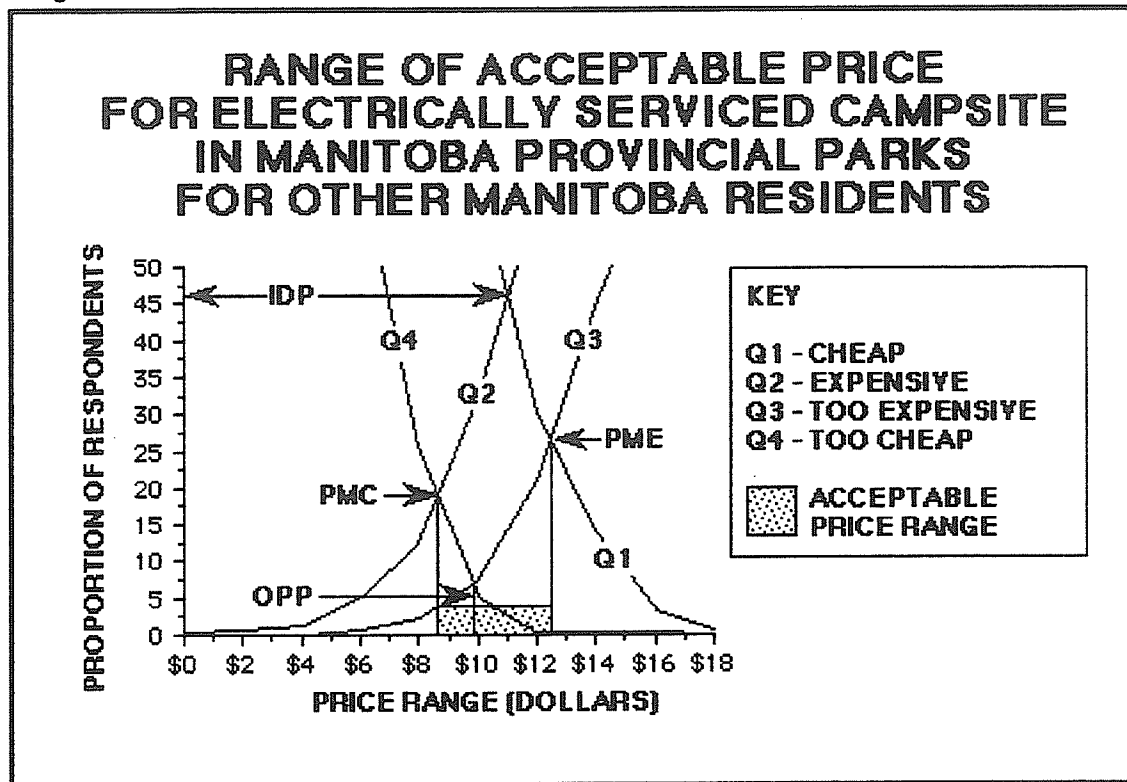
Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

Figure 21



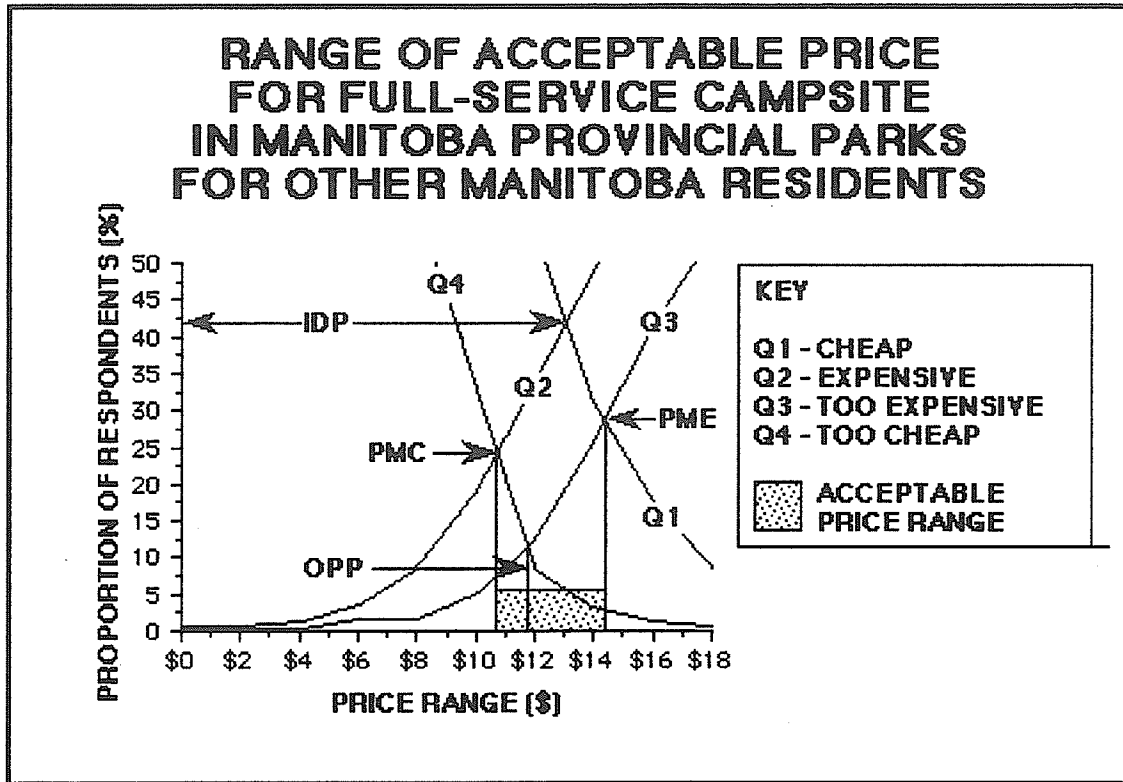
Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

Figure 22



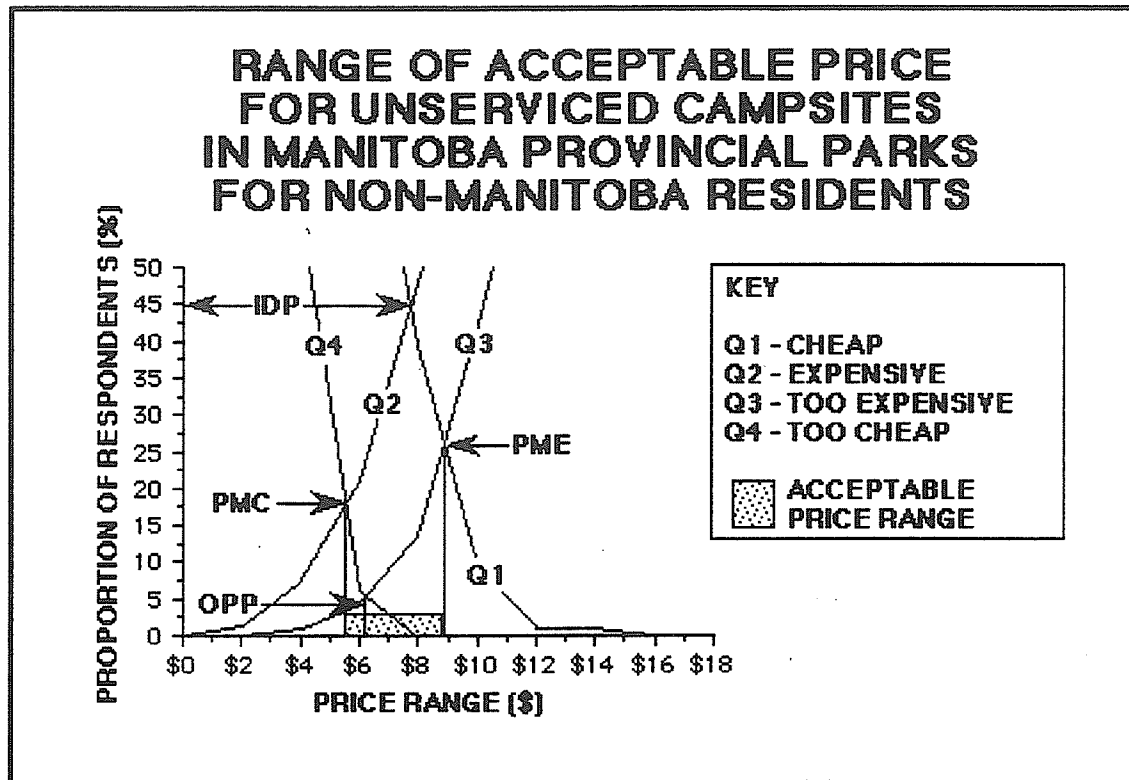
Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

Figure 23



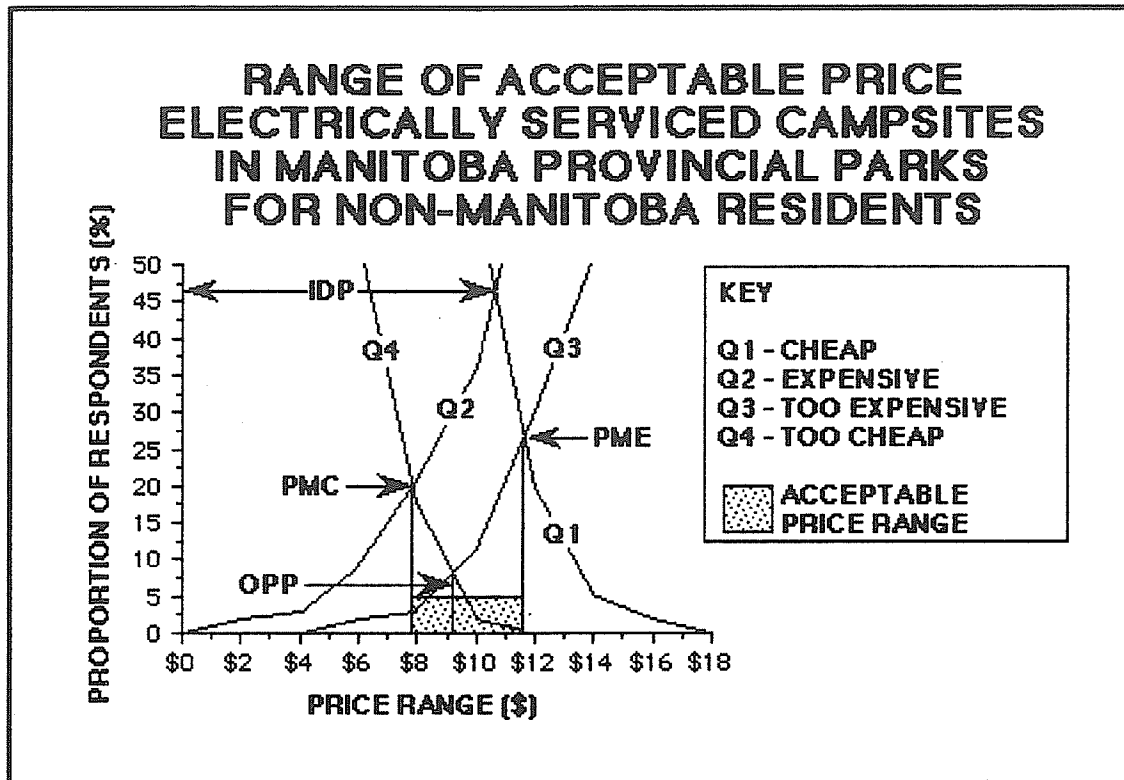
Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

Figure 24



Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

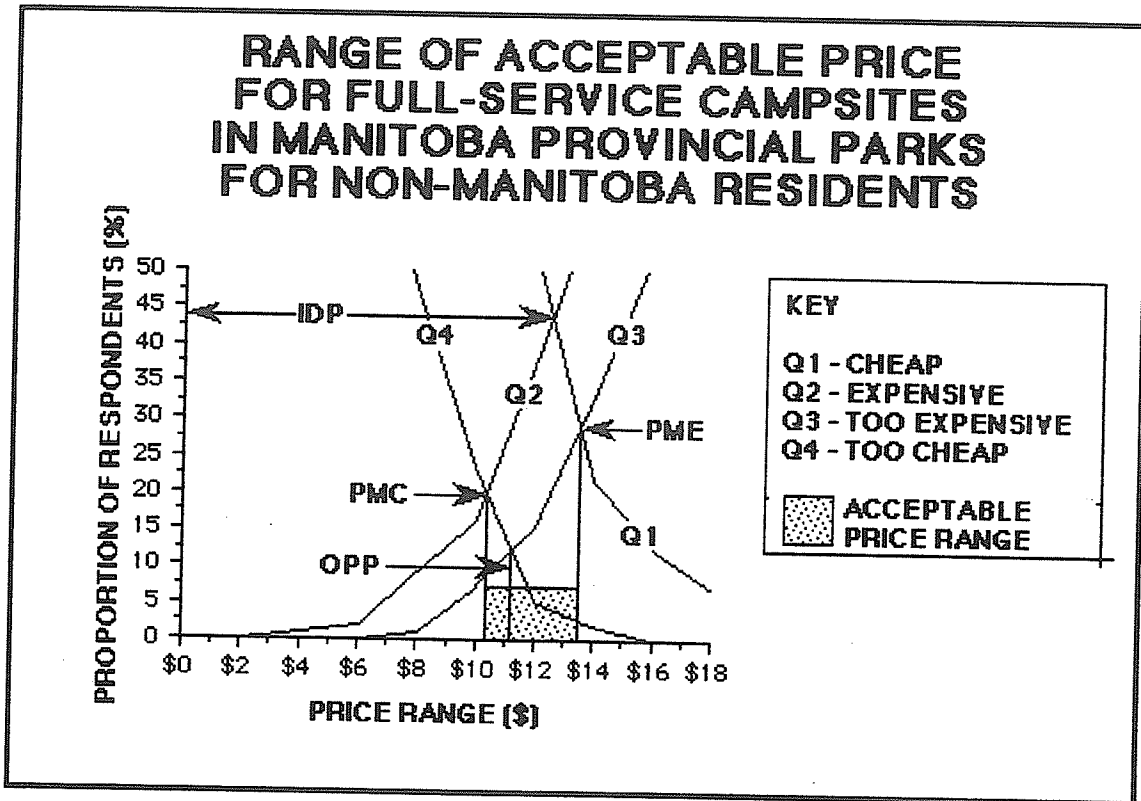
Figure 25



Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness



Figure 26



Note: IDP - Indifference Price  
 OPP - Optimal Price Point  
 PMC - Point of Marginal Cheapness  
 PME - Point of Marginal Expensiveness

## DISCUSSION

Analysis of the background data provides an opportunity to develop a profile of MPB users. The data indicate that 80.44% of users were married and 32.49% were between the age of 35 and 44 years. Total family income for 59.71% was between \$20,000 and \$49,999 annually. In addition, 37.22% had only high school education and 66.72% used camping equipment other than tents (utility vehicles).

It is interesting to note that while 70.03% of campers purchased unserviced sites, the majority (64.51%) indicated a preference for either electrical or full-service sites. The purchase of unserviced sites appears consistent with the supply of sites offered by MPB which is inverse to the preference expressed. The preference for utility-oriented sites is nearly the same as the percentage of campers who use non-tent camping equipment. These results suggest that expansion of the supply of serviced campsites may be warranted. A benefit-cost analysis would be warranted to determine potential pay-back of the investment required given the appreciation that daily fees are the most significant determinant of preference (conjoint results), and given indications of acceptable price ranges generated using the PSM measurements.

Approximately half (50.47%) of 1988 MPB users had a definite preference for provincial campgrounds compared to those provided by private operators or by the National Parks. This data suggests the potential to increase preference loyalties among MPB users. Some MPB users purchased a significant number of camping days from other suppliers in Manitoba. It may

also be inferred that some purchase occurred outside of Manitoba although this data was not collected in this study. Visits to private campgrounds and to National Park campgrounds by MPB users declined in 1989 compared to 1988. In both years, visits to private campgrounds were more frequent than to National Park campgrounds (consistent with the limited supply of National Park campgrounds in Manitoba). Also noteworthy is the percentage of repeat visits to MPB campgrounds in 1989 by those who visited in the previous year. A total of 154 (24.29%) 1988 visitors did not use MPB campgrounds in 1989. The majority of these non-repeat campers were Winnipeg residents (37.66%) while 31.82% were from other parts of Manitoba and 30.52% were non-Manitoba residents.

Data indicated that average length of stay in MPB campgrounds increased from 2.85 in 1988 to 2.99 days in 1989. However, it appears that visits to MPB campgrounds and total days of camping in MPB campgrounds likely declined in 1989 compared to 1988 if participation by this sample is indicative of participation by the population in general. It would be interesting to evaluate actual use statistics for 1988 and 1989 to provide a comparison for these findings. Unfortunately, these data are not available to date.

Results of the conjoint analysis showed price to be the most important determinant of preference with respect to the attributes evaluated. Also, the OPP was found to be to the left of the IDP in all cases tested. Travis (1982) noted that this may indicate a 'stress' factor in price consciousness. He described stress as analogous to automobile 'sticker shock'. In a 'stress' situation, consumers may feel that the market price is too high relative to the perceived value of the product. In the provision of camping opportunities by

MPB this may be explained by the long history of 'free' and/or 'low priced' camping experiences that have been the norm in the province until recent years.

The PSM results also showed some remaining latitude (relative to current prices) with respect to the price of unserviced, electrical and full-service campsites. This finding appears somewhat contradictory with respect to the notion of "stress" mentioned previously. While price increases are possible within the range of acceptance, such increases may result in consumers looking for other suppliers. In particular, price conscious campers would likely fall into this group. One question to be answered prior to increasing price relates to revenue. In the event that reduced use of campgrounds results from a price increase, such increases could be justified if total revenue increased. That is, if the motivation is to increase total revenue, fewer campers may produce this result if the increase is large enough. In addition, maintenance costs may be reduced and the preservation objectives may be easier to achieve with reduced use of the campgrounds.

The provision of showers, beach, and fishing opportunities were expected to contribute positively to the preference model and were found to do so. In the case of showers, this suggested that consideration should be given to the provision of these services in MPB campgrounds where they do not already exist. The provision of beaches and fishing also provided potential focus for marketing promotions and for the selection of future new campground locations.

Services at the campsite was also an important preference determinant. This result is consistent with the general questionnaire results which noted a

preference for electrical and full-service sites among MPB users. This supports the provision of additional serviced campsites as noted previously.

In contrast, the provision of hiking trails, interpretive programs, campsite reservations systems, and stores did not contribute significantly to the preference of consumers. This suggested that these services can be eliminated from MPB campgrounds without having significantly negative effects on consumer preference. Given any desire to reduce operating costs through the reduction or elimination of services, these should be considered. Similarly, interpretive programs must be evaluated relative to the contribution that they make to other MPB goals (c.f. education), and not merely on an economic basis.

Firewood provision also appeared to be an important determinant of consumer preference. As expected, consumers preferred to have firewood provided in the daily camping fee. The author interpreted this as meaning that having firewood for sale was perceived as negative by consumers. In addition, higher prices may be more readily tolerated when MPB can show service increases such as this. Preliminary review of the comments provided in the questionnaires also supported this notion, suggesting that a consistent policy was warranted. For example, some respondents noted frustration at having firewood provided in some campgrounds and not in others. Several respondents also suggested that the price differential (\$1.00 per day) was too minimal relative to the cost of buying firewood which was deemed much higher.

It should be noted however that the relative importance of these attributes varied to some extent when the respondent population was segmented. This suggested some potential to differentiate products for identifiable user groups.

Similarly, promotion targeted at specific market segments could focus on the appropriate attributes. The best opportunity to evaluate potential effects of differentiated products is provided through the use of simulation exercises using SIMGRAF software. The author viewed this potential as the primary benefit of using the conjoint analysis approach. It must be remembered however that preference ratings are also influenced by attributes and factors not included in this study. For example, it is clear that weather conditions and total cost (equipment, travel, fees, etc.) influence the purchase decision for some campers. It must also be recognized that consumer preference may change given exposure to new information and experiences. In this light, any use of the conjoint data must be interpreted with some caution.

The results of the hypothesis testing in this study showed that preferences were significantly different for consumer groups on the basis of type of camping equipment used. Equipment type may be thought of as a proxy for cost, suggesting that investment (sunk costs) influences campsite preference. The preference for campsite services, store, fishing, reservations and firewood were shown to account for the differences among the equipment segments. An interesting discussion of this result is associated with Motor Home users. For example, campsite services, fishing opportunity, and reservations are more important for this group than for other equipment segments as shown in table 42. In contrast, the provision of a store and of firewood are less important for motor home users than for the majority of other equipment segments. This understanding could be used by campground management in the development of promotional strategies that are directed at users of particular equipment. It may be logical for example to provide some campgrounds that offer amenities consistent with the needs of motor home users. These campgrounds would

offer a majority of full-service and electrical sites, a reservation system, and be developed in parks where excellent fishing opportunities are available. Similarly, other campgrounds could be managed to be consistent with the preferences associated with tent users.

Segmentation according to total days of camping (frequency) should also be investigated further. In particular, price is a more important determinant of preference for users who camp more frequently. The possibility of offering price discounts for high frequency users may therefore be warranted.

It is also worth noting the importance of having up-to-date information upon which to make decisions. While this study provided this, the author has experienced some frustration at the lack of published data in the form of 1989 Manitoba Park Use Statistics. This information is extremely important as a means of comparison for some of the findings suggested in this study.

The potential of the PSM methodology was clearly demonstrated in this study. Conjoint results alone show that the price variable was most important in determining preference, suggesting the importance of having more detailed consumer information prior to manipulating price. The PSM results provided this detail. The simplicity of the method increases its value as a pricing tool. In particular, PSM could be used as a preliminary assessment tool that is followed by secondary investigation that focuses on price change strategy. One obvious use of the PSM method is in selecting the levels of price to be used in a conjoint analysis study.

### Suggested Further Research

These results are specific to consumer preferences for overnight camping that is provided and purchased on a daily basis. However, the success of this study approach leads the researcher to believe that a similar methodology would provide valuable market intelligence with respect to seasonal camping, day-use services, and back-country camping.

The results of the study also provide some direction with respect to further research. In particular, the researcher recommends a follow-up study to identify reasons that may explain why approximately 25% (154 groups) of 1988 campers did not return to MPB parks in 1989. Initial investigation by the researchers shows that 111 (20.67% of Manitoba residents) of these groups were residents of Winnipeg or other parts of Manitoba. Non-Manitoba residents can be excluded from such a study given a belief that these users likely represent vacation travellers who made other destination choices in 1989. By discovering reasons why campers did not return, valuable insight may be gained.

Similarly, some understanding of expected rate of return would be valuable. For example, it may be that a 75% return rate is exceptional. This could be determined by developing a longitudinal study that tracks the camping behaviour of this sample.

The comments provided informally on returned questionnaires also provide direction for further research. For example, some respondents voiced concerns about the new fuelwood policy adopted by MPB. This policy allows



for some campgrounds to provide fuelwood as a service in the campground. In campgrounds where this service is not provided, a discount of \$1 per day or \$30 per season is offered and fuelwood is then available for purchase from a concession at \$2.50 per small bundle. Numerous respondents found this policy to be inequitable, noting that the discount was not equivalent to the cost of fuelwood. In addition, others cited a lack of consistency as a problem in selecting campgrounds. These campers would rather have consistent fuelwood provision in all campgrounds.

Other concerns were raised with respect to enforcement of noise regulations, mostly requesting strict enforcement. Several suggestions were offered to accommodate both sides of this issue. Of particular interest was the notion of "family campgrounds" where noise would not be a problem because "party groups" would not be permitted. Non-family "party groups" would then be accommodated in specific campgrounds that catered to this group.

Investigation of the PSM model also warrants further research. In particular, reliability and validity of the method need to be established.

## BIBLIOGRAPHY

- Addelman, Robert A. (1975). Measuring values for marketing decisions. Wharton Magazine, 8(2), 10-15.
- Akaah, I.P., & Korgaonkar, P.K. (1983). An empirical comparison of predictive validity of self-explicated huber-hybrid, traditional conjoint, and hybrid conjoint models. Journal of Marketing Research, 20(May), 187-197.
- Albaum, G. (1989). Simgraf. Journal of Marketing Research, (November), 486-488.
- Alpert, M. I., Betak, J. F., & Golden, L. L. (1978). Data gathering issues in conjoint measurement. Working Paper, Graduate School of Business, The University of Texas at Austin.
- Anderson, N. H. (1982). Acquisition of cognitive skill. Psychological Review, 89, 369-406.
- Beane, T.P., & Ennis, D.M. (1987). Market segmentation: A review. European Journal of Marketing, 21(5), 20-42.
- Becker, R.H., Berrier, Deborah, & Barker, G.B.. (1986). Entrance fees and visitation levels. Journal of Park and Recreation Administration, 3(1), 28-32.
- Beckwith, E. & Lehmann, R. (1973). The importance of differential weights in multiple attribute models of consumer attitude. Journal of Marketing Research, 10, 141-145.
- Bettman, R. J., Capon, R. N., & Lutz, R. (1975). Multiattribute measurement models and multiattribute theory: A test of construct validity. Journal of Consumer Research, 1, 1-15.
- Bouwes, Nicholas W., & Schneider, Robert. (1979). Procedures in estimating benefits of water quality change. American Journal of Agricultural Economics. 61, 535-539.
- Bretton-Clark. (1987). Conjoint designer software.
- Bretton-Clark (1987) Conjoint analyzer software.
- Bretton-Clark. (1988). Simgraf software.
- Caldwell, Linda. (1986). A study of judgments of recreationists about the desirability of recreation sites based on cost and quality attributes. Unpublished doctoral dissertation, University of Maryland, Baltimore.

- Carmone, Frank J. (1987). ACA system for Adaptive conjoint analysis. Journal of Marketing Research, 24 (August), 325-327.
- Carmone, Frank J. (1986). Bretton-Clark, conjoint designer. Journal of Marketing Research, 23(August), 311-312.
- Carmone, Frank J., Green, Paul E., & Jain, Arun K. (1978). Robustness of conjoint analysis: Some monte carlo results. Journal of Marketing Research, 15(2), 300-303.
- Carroll, J. D. (1972). Individual differences and multidimensional scaling. In R. Shepard et al. (Ed.), Multidimensional scaling: Theory and applications in behavioral science (Vol. 1) (pp. 105-155). New York: Seminar Press.
- Cattin, Phillippe, & Wittink, Dick R. (1982). Commercial use of conjoint analysis: A survey. Journal of Marketing, 46(3), 44-53.
- Cesario, Frank J. (1980). Congestion and valuation of recreation benefits. Land Economics. 56, 329-338.
- Chubb, M., & Chubb, H.R. (1981). One third of our time. Toronto: Wiley.
- Cicchetti, Charles J., & Smith, Kerry. (1976). The costs of congestion: An econometric analysis of wilderness recreation. Cambridge: Ballinger.
- Clawson, Marion, & Knetsch, Jack L. (1966). Economics of outdoor recreation. Baltimore: Johns Hopkins University Press.
- Cosper, R. & Kinsley, B. L. (1984). An application of conjoint analysis to leisure research: Cultural preferences in Canada. Journal of Leisure Research, 16, 224-233.
- Crandall, D.A. (1984). Recreation on public lands: Should the user pay? American Forests, 8(March), 10, 49-51.
- Crompton, John L. (1981). How to find the price that's right. Parks and Recreation, (March), 32-39, 64.
- Crompton, John L., & Lamb, Charles W Jr. (1986). Marketing government and social services. Toronto: Wiley.
- Daniels, S. E. (1987) Marginal cost pricing and the efficient provision of public recreation. Journal of Leisure Research, 19(1), 22-34.
- Daubert, John T., & Young, Robert A. (1981). Recreational demands for maintaining interstream flows: A contingent evaluation approach. American Journal of Agricultural Economics, 63, 667-76.

- Davidson, J. D. (1973). Forecasting traffic on STOL. Operational Research Quarterly, 24, 561-569.
- DeSarbo, W.S. & Green, P.E. (1984). Choice constrained conjoint analysis. Decision Sciences, (Fall), 293-323.
- Dickson, P.R., & Ginter, J.L. (1987). Market segmentation, product differentiation, and marketing strategy. Journal of Marketing, 51(April), 1-10.
- Dillman, D. 1978. Mail and telephone surveys: The total design method. New York: Wiley.
- Doyle, D. (1984). Revenue enhancement, cost reduction and management innovation as a means to reducing operating deficits of Canadian parks. Paper presented at the Federal-Provincial Parks Conference, Banff, Alberta.
- Driver, B. (1985). Public responses to user fees. Proceedings, Fees for Outdoor Recreation on Public Lands. Northeast Experiment Station, USDA Forest Service, Durham, NH.
- Driver, B.L., Bossi, J.L., & Cordell, H.K. (1985). Trends in user fees at federal outdoor recreation areas. Proceedings of the 1985 Outdoor Recreation Trends Symposium II. Myrtle Beach, SC.
- Engel, J.F., Blackwell, R.D., & Miniard, P.W. (1986). Consumer behavior (Fifth Edition). New York: The Dryden Press.
- Environment Canada - Parks. Park Use Statistics 1985-86. Socio-Economic Information Division, Socio-Economic Branch, June, 1986.
- Fishbein, Martin, & Ajzen, Icek. (1975). Beliefs, attitudes, intentions, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.
- Fletcher, James Edward. (1985). The effects of controlled access and entrance fees on park visitor safety and security. Journal of Park and Recreation Administration, 2(4), 13-23.
- Foa, U.G., & Foa, E.B. (1975). Resource theory of social exchange. Morristown, NJ: General Learning Press.
- Gillpatrick, T.R., Harmon, R.R., & Wood V.R. (1984). Price sensitivity measurement for new products. Proceedings 1885 American Marketing Association Educators Conference. Chicago, Illinois.

- Goldberg, Stephen M., Green, Paul E., & Wind, Yoram. (1984). Conjoint analysis of price premiums for hotel amenities. Journal of Business, 57(1), S111-S132.
- Green, Paul E. (1987). Conjoint analyzer. Journal of Marketing Research, 24(August), 327-329.
- Green, Paul E. (1978). Analyzing Multivariable Data. Hinsdale, Illinois: The Dryden Press.
- Green, P.E., & Carmone, F. (1970). Multidimensional scaling and related techniques in marketing analysis. Boston: Allyn and Bacon.
- Green, Paul E., and Desarbo, Wayne S. (1979). Componential segmentation in the analysis of consumer tradeoffs. Journal of Marketing, 43(4), 83-91.
- Green, Paul E. & Devita, M. T. (1973). An interaction model of consumer utility. Journal of Consumer Research, 2, 146-153.
- Green, Paul E., Krieger, Abba M., & Carroll, J. Douglas. (1987). Conjoint analysis and multidimensional scaling: A complimentary approach. Journal of Advertising Research, (October/November), 21-27.
- Green, Paul E., & Rao, Vithala R. (1971). Conjoint measurement for quantifying judgmental data. Journal of Marketing Research, 8, 355-363.
- Green, Paul E., & Srinivasan, V. (1978). Conjoint analysis in consumer research: Issues and outlook. Journal of Consumer Research, 5, 103-123.
- Green, Paul E., & Wind, Y. (1975). New way to measure consumer's judgments. Harvard Business Review, 53(July-August), 107-117.
- Green, Paul E., Carroll, J.D., & Goldberg, S.M. (1981). An approach to product design optimization via conjoint analysis. Journal of Marketing, 45(3), 17-34.
- Green, Paul E., Goldberg, S.M., & Montemayer, Mila. (1981). A hybrid utility estimation model for conjoint analysis. Journal of Marketing, 45, 33-41.
- Hammit, W. E., & Strohmeier, C. S. (1983). The likelihood of public campers to use nearby private campgrounds. Journal of Travel Research, 22(1), 15-17.
- Harris, C., & Driver, B. (1987). The emerging role of user fees in public recreation management. Journal of Forestry, 3(March), 401-411.

- Hauser, J.R., & Urban, G.L. (1977). A normative methodology for modeling consumer responses to innovation. Operations Research, 25(July-August), 579-619.
- Hauser, John R., & Simmie, Patricia. (1981). Profit maximizing perceptual positions: An integrated theory for the selection of product features and price. Management Science, 27(1), 33-56.
- Heit, Michael. (1980). Doing more with less: The ontario provincial parks example. Recreation Canada, (September), 12-14.
- Hoepfl, R.T., & Huber, G.P. (1970). A study of self-explicated models. Behavioral Sciences, 15, 408-414.
- Hof, John G. & Kaiser, H. Fred. (1983). Long-term outdoor recreation participation projections for public land management agencies. Journal of Leisure Research, 15(1), 1-14.
- Hoover, R. L. (1978). User fees for hunting and fishing on public lands. State Publication Code DOW-R-M-6-78. Colorado Division of Wildlife, Denver.
- Howard, Dennis R. & Crompton, John L. (1986). Who are the consumers of public park and recreation services? An analysis of the users and non-users of three municipal leisure service organizations. Journal of Park and Recreation Administration, 2(3), 33-48.
- Howard, Dennis, & Crompton, John L. (1980). Financing, managing and marketing recreation and park resources. Dubuque, Iowa: William C. Brown.
- Howard, Dennis R. & Selin, Steven W. (1987). A method for establishing consumer price tolerance levels for public recreation services. Journal of Park and Recreation Administration, 5(3), 48-59.
- Huber, G.P. (1974). Multiattribute utility models: A review of field and field-like studies. Management Science, 20(June), 1393-1402.
- Jaccard, James, Brinberg, David, & Ackerman, Lee J. (1986). Assessing attribute importance: A comparison of six methods. Journal of Consumer Research, 12(March), 463-468.
- Jacoby, Jacob. (1977). The emerging behavioral process technology in consumer decision making. In William D. Perreault Jr. (Ed.), Advances in consumer research (Volume 4) (pp. 263-265). Atlanta, GA: Association for Consumer Research.
- Jain, Arun K., Acito, Franklin C., & Mahajan, Vrjay. (1979). Why did they pick that package. Bank Marketing, 5(6), 20-27.

- Johnson, R.M. (1971). Market segmentation: A strategic management tool. Journal of Marketing Research, 8(February), 13-18.
- Johnson, E. J., & Meyer, R. J. (1984). Compensatory choice models of concompensatory processes: The effect of varying context. Journal of Consumer Research, 11, 528-541.
- June, Leslie P. & Smith, Stephen L. J. (1987). Service attributes and situational effects on customer preferences for restaurant dining. Journal of Travel Research, 26(2), 20-27.
- Kanters, M., & Hamilton, E. J. (1990). Computer assisted data collection for leisure research [Summary]. In Bryan J.A. Smale (Ed.), Proceedings of the 6th Canadian Congress on Leisure Research (pp. 208-212). Waterloo, Ontario, Canada: University of Waterloo Graphic Services.
- Kaplan, K. J., & Fishbein, M. (1969). The source of beliefs, their saliency, and prediction of attitude. Journal of Social Psychology, 78, 63-74.
- Khera, I.P., & Karns, D.A. (1983). Using mail survey for conjoint measurement: An assessment of alternative multi-factor instruments. Proceedings 1983 American Marketing Association Winter Educators Conference. Chicago, Illinois.
- Knetsch, Jack L. (1977). Displaced facilities and benefit calculations. Land Economics, 53, 123-29.
- Kotler, P., & Turner, R.E. (1985). Marketing management: analysis, planning, and control (Canadian Fifth Edition). Scarborough, Ontario: Prentice-Hall.
- Kruskal, Joseph B. (1965). Anaysis of factorial experiments by estimating monotone transformation of the data. Journal of the Royal Statistical Society, Series B, 27, 251-163.
- Kurtz, William B., & King, David A. (1980). Evaluating substitution relationships between recreation areas. In Donald E. Hawkins, Elwood L. Shafer, & James M. Rovelstad (Ed.), Tourism Marketing and Management Issues (pp. 391-403). Washington, D.C.
- Leuschner, W. A., Cook, P. S., Roggenbuck, J. W., & Oderwald, R. G. (1987). A comparative analysis for wilderness user fee policy. Journal of Leisure Research, 19(2), 101-114.
- Louviere, J.L. (1988). Analyzing decision making: Metric conjoint analysis. Newbury Park, CA: Sage Publications.
- Luce, R. D. & Tukey, W. J. (1964). Simultaneous conjoint measurement: A new type of fundamental measurement. Journal of Mathematical Psychology, 1, 1-27.

- Manitoba Park Statistics. Annual Reports for the Years 1975 through 1988. Government of Manitoba.
- Manitoba Provincial Parks Visitor Survey 1988. Economics and Program Review Section, Communications, Economics and Planning Branch, Winnipeg, Manitoba, 1989.
- Manning, R.E., Callinan, E.A., H.E. Echelberger, H.E., Koenemann, E.J., & McEwen, D.N. (1984). Differential fees: Raising revenue, distributing demand. Journal of Park and Recreation Administration, 2(1), 20-38.
- Manning, Robert E. & Baker, Sidney C. (1981). Discrimination through user fees: Fact or fiction?. Parks and Recreation, (September), 70-74.
- Mazis, M. B., Athola, O. T., & Klippel, P. E. (1975). A comparison of four multi-attribute models in the prediction of consumer attitudes. Journal of Consumer Research, 2, 38-52.
- McCarville, R. E., & Crompton, J. L. (1987). Propositions addressing perceptions of reference price for public recreation services. Leisure Sciences, 9(4), 281-291.
- McConnell, Kenneth E. (1977). Congestion and willingness to pay: A study of beach use. Land Economics, 53, 187-95.
- McConnell, Kenneth E., & Strand, Ivar. (1981). Measuring the cost of time in recreation demand analysis: An application to sport-fishing. American Journal of Agricultural Economics, 63, 153-156.
- McDonald, C.D., Cary, D., Noe, F.P., & Hammitt, W.E. (1986). Expectations and recreation fees: A dilemma for recreation resource administrators. Journal of Park and Recreation Administration, 5(2), 1-9.
- McLellan, G. (1986). The future of outdoor recreation: What the trends tell us. Parks and Recreation, (May), 45-48, 63.
- McMillan, Melville L., Bradford G. Reid, Bradford G., & Gillen, David W. (1980). An extension of the hedonic approach for estimating the value of quiet. Land Economics, 56, 315-28.
- Mills, A. S., & Westover, T. N. (1987). Structural differentiation: A determinant of park popularity. Annals of Tourism Research, 14(4), 486-498.
- Monroe, K.B. (1971). Measuring price thresholds by psychographics and latitude of acceptance. Journal of Marketing Research, 9(November), 460-464



- Monroe, K.B. (1976). The influence of price differences and brand familiarity on brand preferences. Journal of Consumer Research, 3(June), 42-49.
- Murphy, P.E., & Enis, B.M. (1986). Classifying products strategically. Journal of Marketing, 50(July), 24-42.
- Nautiyal, J.C. & Chowdhary, R.L.. (1975). A suggested basis for pricing campsites: Demand estimation in an Ontario Provincial Park. Journal of Leisure Research, 7(2), 95-107.
- Opendijk van Veen, Walle, M., & Beazley, D. (1977). An investigation of alternative methods of applying the trade-off model. Journal of Marketing Research Society, 19, 2-9.
- Pappas, James L., Brigham, Eugene, F. & Hirschey, Mark. (1983). Managerial economics (4th. ed.). Toronto: Dryden.
- Parker, B.R. & Srinivasan, V. (1976). A consumer preference approach to the planning of rural primary health care facilities. Operations Research, 24(September), 991-1025.
- Randall, Alan, Ives, Barry, & Eastman, Clyde. (1979). Bidding games for valuation of aesthetic environmental improvements. Journal of Agricultural Economics, 61, 921-25.
- Rao, Vithala R. (1984). A Review of pricing research in marketing. Journal of Business, 57(1), S100-S111.
- Rosenthal, D.H., Loomis, J.B., & Peterson, G.L. (1984). Pricing for efficiency and revenue in public recreation areas. Journal of Leisure Research, 16(3), 195-208.
- Sands, S. & Warwick, K. (1981). What product benefits to offer to whom: An application of conjoint segmentation. California Management Review, 24(Fall), 69-74.
- Schreyer, R., & Beaulieu, T. T. (1988). Attribute preferences for wildland recreation settings. Journal of Leisure Research, 18(4), 231-247.
- Schulze, William D., d'Arge, Ralph D., & Brookshire, David S. (1981). Valuing environmental commodities: Some recent experiments. Land Economics, 57, 151-72.
- Sessoms, Douglas H. (1986). Leisure Services. New Jersey. Prentice-Hall.

- Shocker, A.D., & Srinivasan, V. (1979). Multi-attribute approaches for product concept evaluation and generation: A critical review. Journal of Marketing Research, 16(May), 159-180.
- Smith, Kerry V., Desvousges, William H., & McGivney, Matthew P. (1983). The opportunity cost of travel time in recreation demand models. Land Economics, 59(3), 259-278.
- Srinivasan, V. & Shocker, A. (1973). Linear programming techniques for multidimensional analysis of preferences. Psychometrika, 38, 337-369.
- Stevens, Joe B. (1966). Recreation benefits from water pollution control. Water Resources Research, 2, 167-81.
- Strong, Elizabeth J. (1983). A Note on the functional form of travel cost models with zones of unequal populations. Land Economics, 59(3), 342-349.
- Szalay, L. B., & Deese, J. (1978). Subjective measuring and culture: An assessment through word associations. Hillside, NJ: Lawrence Erlbaum.
- Timmermans, H. (1987). Hybrid and non-hybrid evaluation models for predicting outdoor recreation behavior: A test of predictive validity. Leisure Sciences, 9(2), 67-76.
- Timmermans, H., & van den Heijden, R. (1984). The predictive ability of alternative decision rules in decompositional multiattribute preference models. Sistemi Urbani, 1, 89-101.
- Toy, Daniel, Rager, Robin, & Guadagnolo, Frank. (1989). Using hybrid conjoint analysis in strategic marketing of recreation and leisure studies [Summary]. In Leo McAvoy and Dennis Howard (Ed.), Abrstracts of the Proceedings of the 1989 NRPA Leisure Research Symposium (pp. 42). San Antonio, Texas.
- Travis, K.M. (1982). Price sensitivity measurement technique plots product price vs. quality perceptions. Marketing News, (May 14), 6.
- Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. Cognitive Psychology, 5, 207-232.
- van Westendorp, P. H. (1982). Price sensitivity meter (PSM): A new approach to study consumer perception of prices. Unpublished report NSS, The Hague.
- Vaske, Jerry J., Donnelly, Maureen P., & Tweed, Dan L. (1983). Recreationist-defined versus researcher-defined similarity judgments in substitutability research. Journal of Leisure Research, 15(3), 251-62.

- Walsh, Richard G. 1986. Recreation economic decisions: comparing benefits and costs. State College, Pennsylvania. Venture Publishing.
- Walsh, Richard G., & Gilliam, Lynde O. (1983). Congestion and willingness to pay for expansion of skiing capacity. Land Economics, 59, 195-210.
- Walsh, Richard G., & Olienyk, John P. (1981). Recreation demand effects of mountain pine beetle damage to the quality of forest recreation resources in the Colorado front range. Report to the Forest Service by Department of Economics, Colorado State University, Fort Collins, Colorado.
- Ward, Frank A. (1983). Measuring the cost of time in recreation demand analysis: Comment. American Journal of Agricultural Economics, 59(4), 455-458.
- Wilman, Elizabeth A. (1980). The value of time in recreation benefit studies. Journal of Environmental Economics and Management, 7, 272-286.
- Wittink, Dick R., & Cattin, Phillippe. (1981). Alternative estimation methods for conjoint analysis: A monte carlo study. Journal of Marketing Research, 19(1), 101-106.
- Zufryden, F.S. (1977). A conjoint measurement-based approach for optimal new product design and market segmentation. In A.D. Shocker, (Ed.), Analytic approaches to product and market planning (pp. 100-114). Cambridge, MA: Marketing Science Institute.

APPENDIX A

Nº 0943

A SURVEY OF  
CAMPING PREFERENCES

ROBERT A. JONES

THE UNIVERSITY OF MANITOBA  
FACULTY OF PHYSICAL EDUCATION  
AND RECREATION STUDIES

ENQUIRIES: PHONE (204) 474-9255

# CAMPING SURVEY

## Section 1: ABOUT YOUR CAMPING PARTICIPATION

This section of the questionnaire provides a description of your involvement in camping. The following questions all refer to your use of campgrounds for which a daily fee is charged. Use of seasonal campgrounds is not a consideration of this survey.

Please answer the following questions.

1. Which of the following best describes the type of campground that you would prefer to use if each was equally available to you?

- privately owned/operated (e.g., K.O.A.)  
 National Park campground  
 Provincial Park campground  
 no preference

2. Please recall the number of times that you stayed in each of the following types of campgrounds in Manitoba from May to September last year (1988). Also, please indicate the total number of nights that you camped in each type of campground.

	Number of Stays	Total Number of Days
National Parks	_____	_____
Provincial Parks	_____	_____
Private Campgrounds	_____	_____

3. Please recall the number of times that you stayed in each of the following types of campgrounds in Manitoba from May to September (estimate the remainder of August and Sept.) this year (1989). Also, please indicate the number of nights that you camped in each type of campground.

	Number of Stays	Total Number of Days
National Parks	_____	_____
Provincial Parks	_____	_____
Private Campgrounds	_____	_____

4. With respect to your use of Manitoba campgrounds in the last two years (1988 and 1989), please indicate the total number of people (including yourself) that shared your campsite on an average camping stay.

Adults \_\_\_\_\_ Children \_\_\_\_\_

5. Which of the following best describes the type of campsite that you would prefer to use if each was equally available to you?

\_\_\_\_\_ Unserviced  
 \_\_\_\_\_ Electrically Serviced  
 \_\_\_\_\_ Fully Serviced

## Section 2: EVALUATING CAMPGROUND SERVICES

This section of the questionnaire helps evaluate the importance of various campground services. By identifying your preferences we hope to better serve you and other campers. In the following pages you will find sixteen descriptions. Think of each description as a campsite in a campground that is available to you as a camper. We assume that you will prefer some descriptions more than others. Below each description a preference rating scale is provided. A lower rating indicates less preference and a higher rating greater preference for the camping situation described. Here are two examples.

### EXAMPLE 1:

- . campsite with sewer,water,electricity
- . located less than 2 hours from home
- . showers provided in campground
- . store provided in park area
- . fishing opportunity in park area
- . beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$7 charged
- . hiking trails provided in park area
- . visitor centres,museums,nature trails, or amphitheatre provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
Low										High
Preference					Preference					

### EXAMPLE 2:

- . unserviced campsite
- . located more than 2 hours from home
- . no showers provided in campground
- . no store provided in park area
- . no fishing opportunity in park area
- . no beach provided in park area
- . no campsite reservation system offered
- . daily camping fee of \$22 charged
- . no hiking trails provided in park area
- . no visitor centres,museums,nature trails, or amphitheatre provided
- . firewood for sale (added charge)

1	2	3	4	5	6	7	8	9	10	11
Low	High									
Preference					Preference					

**INSTRUCTIONS:** Please rate each of the 16 camping descriptions that follow by marking an (X) on the rating scale to indicate your degree of preference. It is important that you rate all 16 descriptions.



**Program 1:**

- . campsite with sewer, water, electricity
- . located less than 2 hours from home
- . showers provided in campground
- . no store provided in park area
- . no fishing opportunity in area
- . beach provided in park area
- . no reservation system offered
- . daily camping fee of \$7 charged
- . hiking trails provided in park area
- . no visitor centres, museums, nature trails, or amphitheatre provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
Low Preference					High Preference					

**Program 3:**

- . electrically serviced campsite
- . located less than 2 hours from home
- . no showers provided in campground
- . no store provided in park area
- . no fishing opportunity in park area
- . no beach provided in park area
- . no campsite reservation system offered
- . daily camping fee of \$12 charged
- . no hiking trails provided in park area
- . no visitor centres, museums, nature trails, or amphitheatres provided
- . firewood for sale (added charge)

1	2	3	4	5	6	7	8	9	10	11
Low Preference					High Preference					

**Program 2:**

- . electrically serviced campsite
- . located more than 2 hours from home
- . showers provided in campground
- . no store provided in park area
- . fishing opportunity in park area
- . no beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$7 charged
- . no hiking trails provided in park area
- . visitor centres, museums, nature trails, or amphitheatre provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
Low Preference					High Preference					

**Program 4:**

- . unserviced campsite
- . located less than 2 hours from home
- . no showers provided in campground
- . store provided in park area
- . fishing opportunity in park area
- . no beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$7 charged
- . hiking trails provided in park area
- . no visitor centres, museums, nature trails, or amphitheatres provided
- . firewood for sale (added charge)

1	2	3	4	5	6	7	8	9	10	11
Low Preference					High Preference					

**Program 5:**

- . campsite with sewer,water,electricity
- . located more than 2 hours from home
- . no showers provided in campground
- . no store provided in park area
- . fishing opportunity in park area
- . beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$12 charged
- . hiking trails provided in park area
- . visitor centres,museums,nature trails, or amphitheatres provided
- . firewood for sale (added charge)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 6:**

- . unserviced campsite
- . located more than 2 hours from home
- . showers provided in campground
- . no store provided in park area
- . no fishing opportunity in park area
- . beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$22 charged
- . no hiking trails provided in park area
- . no visitor centres,museums,nature trails,or amphitheatres provided
- . firewood for sale(added charge)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 7:**

- . electrically serviced campsite
- . located more than 2 hours from home
- . no showers provided in campground
- . store provided in park area
- . no fishing opportunity in park area
- . beach provided in park area
- . no campsite reservation system offered
- . daily camping fee of \$7 charged
- . no hiking trails provided in park area
- . visitor centres,museums,nature trails, or amphitheatres provided
- . firewood for sale (added charge)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 8:**

- . electrically serviced campsite
- . located less than 2 hours from home
- . showers provided in campground
- . store provided in park area
- . fishing opportunity in park area
- . beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$12 charged
- . no hiking trails provided in park area
- . no visitor centres,museums,nature trails, or amphitheatres provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 9:**

- . campsite with sewer,water,electricity
- . located more than 2 hours from home
- . no showers provided in campground
- . store provided in park area
- . fishing opportunity in park area
- . no beach provided in park area
- . no campsite reservation system offered
- . daily camping fee of \$22 charged
- . no hiking trails provided in park area
- . no visitor centers,museums,nature trails, or amphitheatres provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 10:**

- . unserviced campsite
- . located more than 2 hours from home
- . showers provided in campground
- . store provided in park area
- . no fishing opportunity in park area
- . no beach provided in park area
- . no campsite reservation system offered
- . daily camping fee of \$12 charged
- . hiking trails provided in park area
- . visitor centres,museums,nature trails, or amphitheatres provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 11:**

- . electrically serviced campsite
- . located less than 2 hours from home
- . no showers provided in campground
- . store provided in park area
- . no fishing opportunity in park area
- . beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$22 charged
- . hiking trails provided in park area
- . visitor centers,museums,nature trails, or amphitheatres provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 12:**

- . unserviced campsite
- . located less than 2 hours from home
- . no showers provided in campground
- . no store provided in park area
- . fishing opportunity in the park area
- . beach provided in park area
- . no campsite reservation system offered
- . daily camping fee of \$17 charged
- . no hiking trails provided in park area
- . visitor centres,museums,nature trails, or amphitheatres provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 13:**

- . campsite with sewer,water,electricity
- . located less than 2 hours from home
- . showers provided in campground
- . store provided in park area
- . no fishing opportunity in park area
- . no beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$17 charged
- . no hiking trails provided in park area
- . visitor centres,museums,nature trails, or amphitheatre provided
- . firewood for sale(added charge)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 15:**

- . electrically serviced campsite
- . located more than 2 hours from home
- . showers provided in campground
- . store provided in park area
- . fishing opportunity in park area
- . beach provided in park area
- . no campsite reservation system offered
- . daily camping fee of \$17 charged
- . hiking trails provided in park area
- . no visitor centres,museums,nature trails, or amphitheatres provided
- . firewood for sale(added charge)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 14:**

- . electrically serviced campsite
- . located less than 2 hours from home
- . showers provided in campground
- . no store provided in park area
- . fishing opportunity in park area
- . no beach provided in park area
- . no reservation system offered
- . daily camping fee of \$22 charged
- . hiking trails provided in park area
- . visitor centers,museums,nature trails, or ampitheatres provided
- . firewood for sale (added charge)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**Program 16:**

- . electrically serviced campsite
- . located more than 2 hours from home
- . no showers provided in campground
- . no store provided in park area
- . no fishing opportunity in park area
- . no beach provided in park area
- . campsite reservation system offered
- . daily camping fee of \$17 charged
- . hiking trails provided in park area
- . no visitor centers,museums,nature trails, or ampitheatre provided
- . firewood provided (in base price)

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Low Preference High Preference

**THANK YOU FOR RATING THESE CAMPING DESCRIPTIONS,  
PLEASE CONTINUE ON THE NEXT PAGE.**

With respect to campground services please answer the following four questions using the scales provided under each. The scales refer to the daily fee for use of an UNSERVICED campsite and does not include park entrance fees.

- a. What is the highest fee at which you consider one day's use of an unserviced campsite to be inexpensive?  
(circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- b. What is the lowest fee at which you consider one day's use of an unserviced campsite to be expensive?  
(circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- c. At what price on the scale do you consider one day's use of an unserviced campsite to be too expensive and beyond considering buying? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- d. At what price on the scale do you consider one day's use of an unserviced campsite to be too cheap, so that you question the quality? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

With respect to campground services please answer the following four questions using the scales provided under each. The scales refer to the daily fee for use of an ELECTRICALLY SERVICED campsite and does not include park entrance fees.

- a. What is the highest fee at which you consider one day's use of an electrically serviced campsite to be inexpensive? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- b. What is the lowest fee at which you consider one day's use of an electrically serviced campsite to be expensive? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- c. At what price on the scale do you consider one day's use of an electrically serviced campsite to be too expensive and beyond considering buying? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- d. At what price on the scale do you consider one day's use of an electrically serviced campsite to be too cheap, so that you question the quality? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

With respect to campground services please answer the following four questions using the scales provided under each. The scales refer to the daily fee for use of a campsite serviced with WATER, SEWER AND ELECTRICITY.

- a. What is the highest fee at which you consider one day's use of a campsite serviced with water, sewer and electricity to be inexpensive? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- b. What is the lowest fee at which you consider one day's use of a campsite serviced with water, sewer and electricity to be expensive? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- c. At what price on the scale do you consider one day's use of a campsite serviced with water, sewer and electricity to be too expensive and beyond considering buying? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

- d. At what price on the scale do you consider one day's use of a campsite serviced with water, sewer and electricity to be too cheap, so that you question the quality? (circle one dollar amount).

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	\$22	\$24	\$26	\$28	\$30
-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

**Section 3: ABOUT YOU PERSONALLY**

This is the final section of the questionnaire. We would like to ask you some questions about your personal background.

1. Sex: Male \_\_\_\_\_ Female \_\_\_\_\_
  
2. Year of Birth: \_\_\_\_\_ (Year)
  
3. Marital status:            Married \_\_\_\_\_ Single \_\_\_\_\_  
   Separated or divorced \_\_\_\_\_ Widowed \_\_\_\_\_
  
4. How many dependents under the age of 18 live at home with you? \_\_\_\_\_
  
5. Which of the following best describes the highest level of education in which you have participated?  
\_\_\_\_\_ less than high school  
\_\_\_\_\_ high school  
\_\_\_\_\_ community college or technical school  
\_\_\_\_\_ university



6. Approximately, what was the total amount of income that you and members of your household received during the past 12 months. (NOTE: YOUR PENSION, INVESTMENT INCOME AND INTEREST IS CONSIDERED INCOME)

_____ less than \$10,000	_____ \$40,001 to \$50,000
_____ \$10,001 to \$20,000	_____ \$50,001 to \$60,000
_____ \$20,001 to \$30,000	_____ \$60,001 to \$70,000
_____ \$30,001 to \$40,000	_____ more than \$70,000

THANK YOU. PLEASE MAIL  
IN THE ENVELOPE PROVIDED.

Comments?

---

---

---

---

---

---

---

---

APPENDIX B  
EQUIPMENT TYPE DEFINITIONS

- Camper: Any vehicle that is modified to provide living accommodation, such as a Volkswagen Westphalia.
- Motorhome: Any self-contained camping unit that is motor driven.
- Tent: Portable shelter generally made of material.
- Tent Trailer: A tow-behind trailer that pops-up to form a tent.
- Camper Trailer: House trailer, travel trailer or a 5th wheel trailer that provides temporary living accommodation.
- Camper Truck: Slide-in unit that is fully equipped for camping.
- Other: Truck with a pick-up cap, also a van that is not equipped with living accommodation.