NOTICE

The quality of this microform is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Reproduction in full or in part of this microform is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30, and subsequent amendments.

AVIS

La qualité de cette microforme dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

La reproduction, même partielle, de cette microforme est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30, et ses amendements subséquents.

UNIVERSITY OF ALBERTA

A CONJOINT ANALYSIS STUDY OF THE PREFERENCES OF RECREATIONAL SWIMMING SERVICE USERS

BY

DIANA MARGARET GALLIVAN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF RECREATION AND LEISURE STUDIES

EDMONTON, ALBERTA

SPRING 1990

NOTICE

The quality of this microform is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Reproduction in full or in part of this microform is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30, and subsequent amendments.

AVIS

La qualité de cette microforme dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

La reproduction, même partielle, de cette microforme est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30, et ses amendements subséquents.

ISBN 0-315-60251-1

HOLT, RINEHART AND WINSTON, INC.
ORLANDO, FLORIDA 32887 (407) 345-2000

June 28, 1988

Diana Gallivan
Dept. of Recreation and Leisure Studies
University of Alberta
Edmonton, AL
Canada T6G 2H9

Dear Ms. Gallivan:

In response to your June 10 letter, we are willing to grant you permission to reprint the figure, p. 687, from CONSUMER BEHAVIOR, Fourth Edition, by James F. Engel and Roger D. Blackwell as the basis for the conceptual framework of your thesis titled "An Analysis of the Preferences of Users of the City of Edmonton Recreational Swimming Services," provided the following copyright credit is given on the page the selection is reprinted, or in the copyright section of your volume:

> "Model of High Involvement Decision Making" from CONSUMER BEHAVIOR, Fourth Edition, by James F. Engel and Roger D. Blackwell, copyright © 1982 by Holt, Rinehart and Winston, Inc., reprinted by permission of the publisher.

This permission is granted on a one-time, nonexclusive basis.

If your dissertation is committed for publication, we ask that you reapply.

Sincerely yours,

Betty Schlossberg

Betty Schlossberg
Copyrights and Permissions Dept.

UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR: Diana Margaret Gallivan.

TITLE OF THESIS: A Conjoint Analysis Study of the Preferences of Recreational Swimming Service Users.

DEGREE: Master of Arts.

YEAR THIS DEGREE GRANTED: Spring, 1990.

(SIGNED) Diana Gallivan

(PERMANENT ADDRESS)

305 159 Seabolt Drive
Hinton,
Alberta.

Date: March 20th 1990.

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis titled A Conjoint Analysis Study of the Preferences of Recreational Swimming Service Users by Diana Margaret Gallivan in partial fulfillment of the requirements for the degree of Master of Arts in Recreation and Leisure Studies.

Dr. L. L. Lanier ..... Supervisor

Dr. B. Weiler .....

Dr. J. Dunn .....

Dr. L. Wankel .....

Date ....Feb. 6, 1990

DEDICATION

To Nod Navillag.

ABSTRACT

The study reported in this thesis was concerned with user preferences and priorities about recreational swimming services. Its primary objective was to determine what the preferences and priorities of a group of service users were with regard to the attributes of such services. Attributes are characteristics, such as hours of operation and price. The second objective of the study was to determine whether user preferences were related to either user sociodemographic characteristics or patterns of service use.

Two data collection methods were used: group interviews and questionnaires. Group interviews were conducted to determine which attributes subjects considered in service evaluation, and what their preferences regarding these attributes were. Questionnaires were then employed to determine user priorities, by means of conjoint analysis, and to analyze the relationship between user priorities and user sociodemographic and service use characteristics.

The majority of subjects considered the following attributes in service evaluation: facility location, facility cleanliness and maintenance, staff attitude and competency, hours of operation, variety of facilities, variety of things to do, and cost of admission. Detailed information about user preferences concerning each of these attributes is included in the body of the thesis.

The attributes were generally considered in the following the following order of priority: staff, facility cleanliness and maintenance, facility location, times available, facilities and equipment, and admission price. Very few significant relationships were found between user priorities and either sociodemographic characteristics or service use variables.

The results of the study were in accordance with what would be expected from the literature regarding consumer preferences; however, there were major discrepancies concerning priorities. Consumer service priorities have received little attention in the literature to date; apparently further study is required in order to refine existing theory on this topic. The results of the study indicate that consumer expectations regarding recreational swimming services are relatively homogeneous. More detailed study would be required in order to fully explore any differences in the preferences and priorities of different types of service users which may exist.

ACKNOWLEDGEMENTS

First, I would like to thank everyone who contributed to making my studies at the University of Alberta so worthwhile. I have learned a great deal which will be useful to me both personally and professionally.

I am particularly indebted to my academic advisor, Dr L. L. Lanier, and to my thesis committee members: Dr B. Weiler, Dr J.Dunn and Dr L.Wankel. These people were all extremely helpful and supportative; I appreciate this very much.

The thesis study was conducted in cooperation with the City of Edmonton Parks and Recreation Department. I really appreciate the help and support which I got from the management and staff of this department. I must especially thank Ms W. Wetterberg, Manager of Marketing and Major Facilities, Mr G. Deacon, Director of Marketing, Mr B. Monaghan, Director of Leisure Services, and Mr L.Craven, Manager of Bonnie Doon Pool.

Retests of the reliability of the questionnaire were conducted at the municipal swimming pool in Canmore. I appreciate the assistance of Mr D. Judd, Community Services Director for the Town of Canmore, in this regard.

I am grateful to my friend Roy Mason for the invaluable help and advice which he gave me regarding computer use. Finally, I must acknowledge the encouragement and support which my husband, Don, and my

parents, Ruth and Chris Pollok, give me on every undertaking.

TABLE OF CONTENTS

CHAPTER		PAGE
1	STATEMENT OF THE PROBLEM	
	1.1 Introduction	1
	1.2 Problem Statement	3
	1.3 Research Objectives	4
	1.4 Definition of Terms	5
	1.5 Delimitations	7
	1.6 Significance of the Problem	8
	1.6.1 Theoretical Significance	8
	1.6.2 Methodological Significance.....	9
	1.6.3 Practical Significance	10
	1.7 Organization of the Thesis	12
2	RELATED LITERATURE	
	2.1 Introduction	13
	2.2 Preference Structure.....	13
	2.2.1 Preference Models	13
	2.2.2 Expectancy-Value Attitude Models.....	14
	2.2.3 Choice Heuristics Models	15
	2.2.4 Integrative Models	18
	2.3 Conceptual Framework	22
	2.4 Swimming Service Preferences	24
	2.4.1 Fvaluative Criteria	24
	2.4.2 User Characteristics and Preferences.	30
	2.5 Summary	39

3 STUDY DESIGN AND ADMINISTRATION

3.1 Introduction 40

3.2 Overall Approach of the Study 40

3.3 Implementation 44

3.3.1 Interviews 44

3.3.2 Questionnaires 48

3.4 Summary 66

4 RESULTS

4.1 Introduction 67

4.2 Interview Results 67

4.2.1 Introduction 67

4.2.2 Location 68

4.2.3 Cleanliness and Maintenance 71

4.2.4 Staff 71

4.2.5 Hours of Operation 72

4.2.6 Variety of Facilities 73

4.2.7 Variety of Things to Do 74

4.2.8 Admission Price 75

4.2.9 Other Attributes 76

4.3 Questionnaire Results 78

4.3.1 Introduction 78

4.3.2 Questionnaire Reliability 79

4.3.3 User Priorities 79

4.3.4 User Characteristics and Priorities .. 85

4.3.5 Additional Tests 102

4.3.6 Other Attributes 116

4.4 Summary 118

5 DISCUSSION, CONCLUSIONS AND IMPLICATIONS

5.1 Introduction 121

5.2 Review of the Study 121

5.2.1 Objectives 121

5.2.2 Methodology 122

5.2.3 Results 123

5.3 Limitations 126

5.4 Discussion 130

5.4.1 Evaluative Criteria 130

5.4.2 User Characteristics and Priorities .133

5.4.3 Additional Tests 135

5.5 Conclusions 136

5.6 Implications and Recommendations 138

5.6.1 Theoretical 138

5.6.2 Methodological 140

5.6.3 Practical 140

5.7 Summary 142

BIBLIOGRAPHY 144

APPENDIX 1. 150

APPENDIX 2. 156

APPENDIX 3. 158

APPENDIX 4. 160

APPENDIX 5. 162

APPENDIX 6. 164

LIST OF TABLES

Table	Title	Page
1	Recreation Service Attribute Specifications.	26
2	The Sociodemographic Characteristics of the Swimming Service Users who participated in the Group Interviews.	46
3	Family Life Cycle Stages Used in the Study.	57
4a	The Gender, Age and Family Life Cycle Stages of the Swimming Service Users who completed Questionnaires.	59
4b	The Income, Education and Occupation of the Swimming Service Users who completed Questionnaires.	60
5	Attributes Considered Salient to the Evaluation of Recreational Swimming Services: Interview Subjects' Written Responses to Question 1.	69
6	User Priorities Regarding the Attributes Salient to the Evaluation of Recreational Swimming Services.	80
7	Importance Scores by Gender: Analysis of Variance Test Results.	87
8a	Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Age: Analysis of Variance Test Results.	89
8b	Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Age: Analysis of Variance Test Results.	90
9a	Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Family Life Cycle Stage: Analysis of Variance Test Results.	91
9b	Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Family Life Cycle Stage: Analysis of Variance Test Results.	92

10a	Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Average Annual Household Income per Person: Analysis of Variance Test Results.	94
10b	Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Average Annual Household Income per Person: Analysis of Variance Test Results.	95
11a	Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Education: Analysis of Variance Test Results.	97
11b	Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Education: Analysis of Variance Test Results.	98
12a	Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Occupation: Analysis of Variance Test Results.	99
12b	Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Occupation: Analysis of Variance Test Results.	100
13	Results of the Analysis of Variance Tests of Importance Scores by Social Grouping for Service Use.	101
14	Importance Scores by Means of Transport Used to Access Facilities: Analysis of Variance Test Results.	103
15	Importance Scores by Frequency of Service Use: Analysis of Variance Test Results.	104
16a	Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Pool Used: Analysis of Variance Test Results.	105
16b	Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Pool Used: Analysis of Variance Test Results.	106

17	Gender by Social Grouping for Service Use: Chi-square Test Results.	108
18	Gender by Average Annual Household Income per Person: Chi-square Test Results.	109
19	Gender by Means of Transport Used to Access Facilities: Chi-square Test Results.	110
20	Age by Frequency of Service Use: Chi-square Test Results.	112
21	Family Life Cycle Stage by Social Grouping for Service Use: Chi-square Test Results.	113
22	Family Life Cycle Stage by Frequency of Service Use: Chi-square Test Results.	114
23	Income by Frequency of Service Use: Chi-square Test Results.	115
24	Education by Frequency of Service Use: Chi-square Test Results.	117

LIST OF FIGURES

Figure	Title	Page
1	The Engel, Kollat and Blackwell Model of High Involvement Decision Making (1982).	20
2	The Conceptual Framework of the Study, based on the Engel, Kollat and Blackwell Model of High Involvement Decision Making.	23

1.STATEMENT OF THE PROBLEM

1.1 Introduction

> Marketing provides the link or bridge between the organization and its environment, moving the institution away from bureaucratic inertia towards responsiveness to customer needs and anticipation of continuing changes in the environment. In short, marketing helps an institution to fulfill its mission, keeping it relevant in a dynamic world. Growing competition in all sectors of the economy, heightened public demand for improved effectiveness in service delivery, and economic pressures have been catalysts in encouraging managers to adopt a marketing orientation.(Lovelock and Weinberg, 1984, p.viii)

Marketing-oriented management has become increasingly popular in public service agencies in the last decade. This style of management is based on the "marketing philosophy" or "marketing concept". This concept is that consumer satisfaction is essential to the success of businesses and service agencies.

The objective of marketing-oriented management is to satisfy customers, for organizational benefit. This is done by producing goods and services to accommodate the needs and preferences of clientele. Management uses information about consumer needs and desires, extensively, in deciding which "target markets" of consumers to serve, what types of goods or services to provide, and how these should be distributed, priced, and promoted.

Marketing-oriented management is applicable to both private and public sector organizations. However, the

management style has to be adapted somewhat in the public sector, because of the dependency of public sector organizations on support from the government and the general public. Management must consider the needs of these groups, or "publics", as well as those of their service users (Howard and Crompton, 1980; Lovelock and Weinberg, 1984). Despite the fact that public sector organizations may not be able to accommodate user preferences to the same degree as the private sector, user satisfaction is still considered to be very important to organizational success; it stimulates business for service agencies and can also generate political support (Howard and Crompton, 1980, p.323).

Marketing-oriented management is contrasted with other management styles which are said to have product or selling orientations. Managers with these latter orientations base decisions regarding product, or service, offerings on internal factors, such as their own opinions about what should be offered or what will be profitable, instead of on information about consumer needs and preferences. Sales volumes, or numbers of service users, may be important to these managers; however, consumer satisfaction is not considered essential to organizational success (Howard and Crompton, 1980; Lovelock and Weinberg, 1984).

Political and economic changes are the main factors which have led to the increased popularity of marketing-

oriented management in public service agencies. These changes have resulted in a decrease in the allocation of public funding to services like recreation, and an increase in competition from the private sector (Crompton and Lamb, 1986, p.31; Lovelock and Weinberg, 1984, p.12). In such environmental circumstances, attracting clientele and political support is particularly important.

The study reported in this thesis is an analysis of the preferences of users of the City of Edmonton recreational swimming services. Its design was based on consumer behavior theory, and the results of previous research related to this topic. It is hoped that the results of the study will be useful to managers of recreational swimming services operating according to the principles of marketing-oriented management.

1.2 Problem Statement

The purpose of the study was twofold. First, it was to determine the preferences and priorities of adult users of City of Edmonton recreational swimming services regarding the attributes of such services. Service attributes are service characteristics, such as the price of admission and the types of facilities offered. Second, it was to determine whether there were relationships between user priorities and either user sociodemographic characteristics or patterns of service use.

1.3 Research Objectives

The following research questions were addressed:

1. Which attributes did adult users of the City of Edmonton recreational swimming services consider salient in evaluating recreational swimming services?
2. What preferences did users have with respect to the attributes which were most frequently considered salient in service evaluation?
3. What priorities did users have regarding the attributes most frequently considered salient in service evaluation?
4. Was there a significant relationship between user priorities and user gender, age, family life cycle stage, income, education, or occupation?
5. Was there a significant relationship between user priorities and the type of social group in which consumers used the services, the means of transport consumers used to access services, frequency of service use, or the particular city pool which consumers used?

1.4 Definition of Terms

Attitude: Attitude is "a feeling or predisposition toward an object" (Lovelock and Weinberg, 1980, p.71). Preference is one type of attitude.

Attribute Importance: Attribute importance refers to the amount of influence which an attribute has on an evaluator's overall attitude toward a product or service (Olsen, Kanwar and Muderrisoglu, 1979, p.270).

City of Edmonton Recreational Swimming Services: City of Edmonton recreational swimming services were operationally defined as services provided by the municipal government of the City of Edmonton for public recreational swimming. These were comprised of the provision of swimming facilities and their operation, scheduling, staffing and management. They did not include the provision of organized swimming programs.

Conjoint Analysis: Conjoint analysis is "a method of obtaining the relative worth or value of each level of several attributes from rank order preferences or attitude combinations" (Aaker and Day, 1980, p.606).

Evaluative Criteria: Evaluative criteria are "desired outcomes from choice or use of an alternative expressed in the form of attributes or specifications used to compare various alternatives" (Engel and Blackwell, 1982, p.414).

Marketing, or Marketing-Oriented Management: Marketing, or marketing-oriented management, refers to "the analysis, planning, implementation and control of carefully formulated programs designed to bring about voluntary exchanges with target markets for the purpose of achieving agency objectives. It relies heavily upon designing offerings consistent with clients' wants, and on using effective pricing, communication and distribution to inform, motivate, and service the markets" (Howard and Crompton, 1980, p.320).

Preference: Preference is a favorable attitude toward one object relative to another.

Users of City of Edmonton Recreational Swimming Services: Users of City of Edmonton recreational swimming services were operationally defined as individuals who attended recreation or family swim at swimming pools operated by the City of Edmonton Parks and Recreation Department.

Salient Attributes: Salient attributes are "attributes which are taken into account in forming an attitude" (Olsen, Kanwar and Muderrisoglu, 1979, p.270).

Utility: Utility is a measure, used in conjoint analysis, which indicates "the worth or value of each level of each attribute relative to the other levels" (Aaker and Day, 1980, p.606).

1.5 Delimitations

The study was confined to an analysis of the preferences of the research sample of users of the City of Edmonton recreational swimming services. Subjects were recruited from 10 of the 13 indoor pools operated by the city. Two pools were excluded from the study because they were part of large multi-purpose sports complexes. The rationale for their exclusion was that attributes other than those directly related to aquatic services might be considered in service evaluation. The third pool was excluded because it was closed for renovation during the data collection period. The results were not considered to be truly representative of the user population of City recreational swimming services, since three pools were excluded from the sample, and since the sample was not randomly selected at the other pools.

The study was only concerned with user preferences during the data collection period: June to October 1988.

1.6 Significance of the Problem

1.6.1 Theoretical Significance

The theoretical significance of this study was that it contributed to the body of research concerned with how consumers evaluate services.

A large amount of research has been conducted in order to determine which service attributes consumers consider in service evaluation. Parasuramen, Zeithaml and Berry (1985, 1986) studied consumers of several different types of service, from banks to repair and maintenance companies. They found that many of the same criteria were considered in evaluating all of these services. They then identified five "service dimensions" on which they felt most services were evaluated. For example, two of these dimensions were reliability and responsiveness to service users' needs (1986, p.18); all five dimensions are discussed in detail in Chapter 2. Based on their research, Parasuramen et al. developed a measurement scale for consumer service evaluation called SERVQUAL. They contended that this instrument could be used to evaluate a variety of different types of service.

The scale was tested by Cravens, Dielman and Harrington (1985) in a study of consumers of architectural services. They found that the attributes considered by their subjects in service evaluation were similar to those in SERVQUAL; however, they were more specific to

architecture. For this reason they concluded that measurement tools for service evaluation should contain "both generic and situation-specific criteria" (Cravens et al., 1985, p.300). They also suggested that research should be undertaken to determine whether different types of attributes are considered in the evaluation of different classes of service.

One of the objectives of this study was to identify which service attributes consumers considered in the evaluation of recreational swimming services. This information was used to determine the applicability of SERVQUAL to recreational swimming services, and to identify specific criteria considered in the evaluation of swimming services. The results of the study could also be useful in determining whether the attributes considered in the evaluation of recreational services differ from those for other classes of service.

1.6.2 Methodological Significance

The methodological significance of the study was that conjoint analysis was used to determine recreation service users' preferences. Conjoint analysis is a relatively new marketing technique which generates particularly detailed information about the relative importance of different attributes considered at varying levels to consumers' overall evaluation of goods or services. The

merits of this technique are discussed in depth in Chapter 3.

Conjoint analysis has been widely used in marketing research; Cattin and Wittink (1982) estimated that more than one thousand applications have been reported in the last decade. It is applicable to the study of preferences of consumers of recreation and leisure services; however, it appears that very few studies of this type have been done. This writer was only able to locate published applications in tourism (Claxton, 1987) and in culture (Cosper and Kinsley, 1984; Currim, Weinberg and Wittink, 1981). Nevertheless, there has been some interest in further use of the technique in recreation and leisure studies; conjoint analysis was one of the topics listed in a recent call for papers by, the international journal, Leisure Sciences.

Since conjoint analysis is a relatively new research technique in the field of recreation and leisure studies, its implementation in this study was of methodological significance.

1.6.3 Practical Significance

The information generated in this study could be used by service managers operating according to the principles of marketing-oriented management. As discussed in the introduction, marketing-oriented managers use information about consumer needs and preferences in deciding which

"target markets" to serve, what types of services to offer and how these should be priced, promoted and distributed.

It is apparent that research is necessary to provide managers with comprehensive, objective information about consumer needs and preferences. Studies with managers of public recreation services (Absher, McAvoy, Burdge and Gramann, 1988) and managers of private sector companies of several types (Parasuraman and Zeithaml, 1982 and 1984) have found that managers are not always aware of the consumer perspective, or what is important to customers.

Research on the preferences of swimming service users should be particularly helpful, since it appears that very little has been done to date. Apparently no studies which directly address the topic have been published. Marketing research has been conducted by service agencies, including the City of Edmonton; however, this writer did not find any studies which analyzed swimmers' preferences in detail.

The findings of the study could be particularly useful to those associated with the planning and provision of the City of Edmonton recreation swimming services, since users of these services were the subjects of the study. They could also be useful to managers of similar services elsewhere, since the preferences of their clientele are likely to be comparable.

1.7 Organization of the Thesis

This chapter was concerned with the research problem. After a brief introduction, the research questions were listed, terminology was defined, the delimitations of the study were outlined, and the significance of the study was discussed. In Chapter 2 literature related to the research problem is reviewed and the conceptual framework is discussed. The design of the study and methodology are described in Chapter 3. In Chapter 4 the results are presented. Finally, conclusions and implications are discussed in Chapter 5.

2. RELATED LITERATURE

2.1 Introduction

In this chapter literature related to the research problem is reviewed and the conceptual framework of the study is described. The chapter is divided into three main sections. In the first section several models pertinent to the structure of preferences in general are reviewed. In the second section the conceptual framework for the study is described. This is based on one of the models discussed in the first section. In the third section literature which is more specifically related to the preferences of recreational swimming service users is reviewed. First, material pertinent to the evaluative criteria used by consumers of these services is discussed. Then, literature regarding the relationship between user characteristics and service priorities is covered.

2.2 Preference Structure

2.2.1 Preference Models

Preference models represent the structure of consumer preferences with respect to individual attributes (Green and Srinivasan, 1978, p.105-6). Three preference models are discussed here: vector, ideal-point, and part-worth function.

According to a vector model of preference, as the value of an attribute moves linearly in a given direction

attribute preference changes linearly. Consumer preference regarding admission costs may be evaluated according to this model; as price decreases preference toward price normally increases.

With the ideal-point model, the preferred level of an attribute is an ideal point. Preference is, therefore, negatively related to the distance which the attribute is from the ideal point. Pool water temperature may be evaluated this way; pool users prefer water to be at a given temperature; if it is either warmer or cooler than that point it will be less preferred.

With a part-worth function model, data about consumer preference toward an attribute at a few specified levels are plotted onto a graph to represent the structure of consumer preference toward that attribute. This model is the most flexible of the three; it can be used to represent a variety of different preference structures. Vector and ideal-point models can be depicted graphically. In addition preference structures of other types, such as consumer attitudes regarding attributes with categorical levels, can be accommodated. Consumer preference toward three different types of music is one example.

2.2.2 Expectancy-Value Attitude Models

Expectancy-value attitude models are concerned with how individuals form attitudes towards products or services. A large amount of research on consumer attitudes

has been based on these models. Expectancy-value models were first developed by Rosenberg (1956) and by Fishbein (1963); subsequently several variations have been developed by others (Engel and Blackwell, 1982, p.394).

According to these models, consumer evaluation of a product or service is a function of the evaluation of all of its salient attributes. Each attribute is evaluated by comparing beliefs about attribute characteristics ("expectancy") with an evaluation of the value of these characteristics ("value"). To illustrate, the following formula is used to calculate an evaluative score for an attribute according to the Fishbein model:

$$Ao = \sum_{i=1}^{N} Biai$$

where: Ao = Attitude toward the object

Bi = the ith belief about the object

ai = the evaluation of the belief

N = the total number of beliefs.

Belief (Bi) and evaluation (ai) scores are multiplied for each attribute. Then all of these scores are added to yield an evaluation score for the entire product or service (Engel and Blackwell, 1982, p.446).

2.2.3 Choice Heuristics Models

Choice heuristics models are concerned with how individuals combine attribute evaluations to evaluate entire products or services. There are several different

models that fall into two main categories, compensatory and noncompensatory (Engel and Blackwell, 1982, p.421; Stankey, McCool and Clark, 1984, p.3; Watson and Roggenbuck, 1984, p.55).

According to the compensatory models, a perceived weakness in one attribute can be compensated for by strengths in others. Two types of compensatory models are the expectancy-value models and the attribute-adequacy model (Engel and Blackwell, 1982, p.421-422). The expectancy-value models were discussed in the previous section. The attribute-adequacy model is similar except that the magnitude of difference between preferences and beliefs regarding each attribute is considered more important to service evaluation.

With noncompensatory models a weakness in one attribute is not compensated for by strengths in others. There are several different noncompensatory models including: lexicographic, sequential elimination, disjunctive, and conjunctive (Engel and Blackwell, 1982, p.422). The way in which consumers evaluate products or services is slightly different according to each of these. To illustrate some of these differences, the lexicographic and sequential- elimination models are compared in the following paragraphs.

According to the lexicographic model, consumers rank salient attributes from most to least important. The evaluation of an entire product or service is based on the

evaluation of its most important attribute. In the event of ties, when two services have the same rating for the most important attribute, the second most important attribute is considered, and so on (Engel and Blackwell, 1982, p.422; Stankey, McCool and Clark, 1984, p.3; Watson and Roggenbuck, 1984, p.55).

According to the sequential-elimination model, consumers establish minimally acceptable standards for each salient attribute. They compare product or service alternatives by considering one attribute at a time and eliminating options which do not meet this minimal standard (Engel and Blackwell, 1982, p.423; Weitz and Wright, 1979, p.257).

Regarding which model best represents how consumers actually make choices, Stankey, McCool and Clark (1982, p.3) stated:

> ..the compensatory model is complex and might represent an overrationalized view of recreationist decision behavior. The noncompensatory model is often supported as a simpler and more realistic approximation of how people make decisions, processing information in a sequential fashion from most to least important.

Green and Srinivasan (1978, p.107) agreed with this position. They indicated that research has found that noncompensatory choice heuristics are used most frequently; however, some consumers use each of the models. According to Engel and Blackwell (1982, p.423) at times a combination of different choice heuristics

strategies may be used together. This is referred to as a constructive process.

2.2.4 Integrative Models

Integrative models of consumer behavior integrate various theories from the behavioral sciences into comprehensive models of buyer behavior and the factors which influence it. Integrative models have been developed by Clawson (1950); Andreason (1965); Nicosia (1966); Howard (1974); Howard and Sheth (1977); and Engel, Kollat and Blackwell (1982).

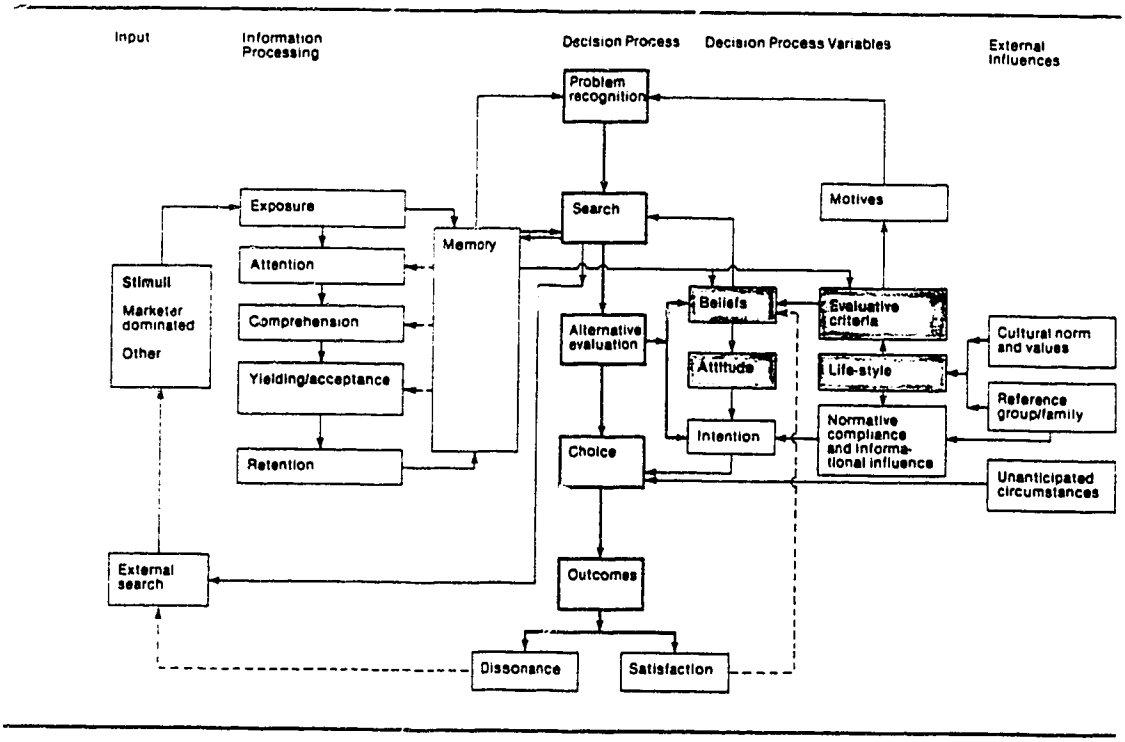
Engel and Blackwell (1982) indicated that the three models which are most widely accepted are those by Howard; Howard and Sheth; and Engel, Kollat and Blackwell. Most theoretically-based research has used these models. Though the three models differ in design and in the terminology used, they are fundamentally quite similar. All three models depict buyer behavior before, during and immediately after a purchase. They all indicate that change in attitude is a prerequisite to change in intention and behavior. Engel and Blackwell stated that the decision regarding which model the serious scholar should use as a conceptual basis for research "probably is more a matter of individual taste and preference than anything else given the high degree of similarity between the leading contenders" (1982, p 690).

The Engel, Kollat and Blackwell Model of High Involvement Decision Making is now described in more detail, since it was the basis of the conceptual framework of this study. The rationale for selecting this model and the direct applicability of the model to this study are discussed in the following section. Figure 1 is an illustration of the model.

The model illustrates the consumer decision process and the factors which affect it. The decision process includes problem recognition, that is recognition of the need for the purchase; search; alternative evaluation; choice; and satisfaction or dissatisfaction. Buyers are influenced by external factors and decision process variables. External factors include the influence of cultural norms and values and the influence of the family and other reference groups. Decision process variables pertain to the characteristics of individual buyers; they include evaluative criteria, lifestyle, and motives.

Evaluative criteria are defined as "desired outcomes from choice or use of an alternative expressed in the form of the attributes or specifications used to compare various alternatives" (Engel and Blackwell, 1982, p.414); they can be equated to preferences and priorities regarding a given product or service. As in the expectancy-value models, alternatives are evaluated by comparing evaluative criteria with beliefs about the

Figure 1. The Engel, Kollat and Blackwell Model of High Involvement Decision Making (1982).[1]



(Engel and Blackwell 1982, p.687).

1. The portions of the model most pertinent to this study are shaded.

characteristics of available products or services. The outcome is an attitude toward each alternative.

Consumer attitude affects intention to purchase an alternative. Normative compliance and informational influence also shape consumer intention. Normative compliance is being influenced by the opinions of others, such as family and peers. Informational influence is the effect of information which comes to the attention of the consumers and changes their attitudes.

Normally intention results in consumer choice. The only exception to this is when unanticipated circumstances arise which stop consumers from acting on their intentions. Outcome is alternative use, or non-use, resulting from choice. After this consumers experiences satisfaction or dissonance. These influence future decision making.

In addition to the generalized models of consumer behavior, there are several integrative-type models which are specifically concerned with recreation choice behavior. These include those by Bergier (1981); Harris, Driver and Bergerson (Stankey and McCool 1984, p.47); and Driver and Brown (1975). They are very similar to the model just described.

2.3 Conceptual Framework

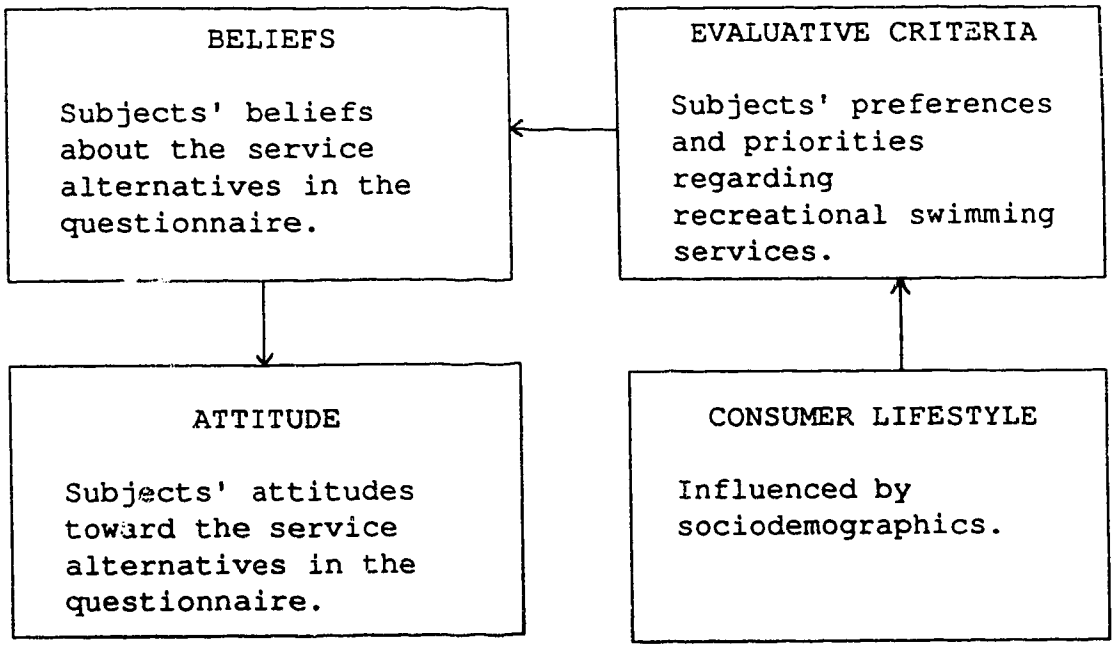
In this section the rationale for selecting the Engel Kollat and Blackwell model of High Involvement Decision Making (1982) as the basis for the conceptual framework of the study is discussed. Then the framework for this study is presented.

The reason for choosing to use an integrative model, rather than an expectancy-value model, was that integrative models include factors which influence preference. Since this study was concerned with determining whether consumer sociodemographic or service use characteristics were related to preference, a model including variables influencing preference was required.

The rationale for using a general model, instead of one specifically dealing with recreation, was that the general models are more widely used and more refined. Of these, the Engel, Kollat and Blackwell Model model was selected because it specifically identifies the most variables of interest in this study.

Figure 2 illustrates the conceptual framework for this study. Evaluative Criteria are consumer preferences and priorities regarding recreational swimming services. To evaluate a given swimming service, consumers compare their evaluative criteria regarding recreational swimming services with their beliefs about that specific service. The result of this comparison is an attitude toward that service.

Figure 2. The Conceptual Framework of the Study.



1. This model is based on the Engel, Kollat and Blackwell Model of High Involvement Decision Making (1982).

Note: In the study subjects' evaluative criteria were determined by means of interviews and conjoint analysis scores for the service alternatives given in the questionnaire. Then the relationship between evaluative criteria and the lifestyle variables of sociodemographics and service use patterns were analyzed.

Consumer lifestyle influences evaluative criteria. Sociodemographics affect lifestyle. Therefore, significant relationships between consumer sociodemographic characteristics and preferences and priorities may be expected.

In this study conjoint analysis was used to determine subjects' evaluative criteria about recreational swimming services. This technique uses data regarding consumer attitudes toward fictitious service alternatives in order to determine evaluative criteria.

The relationship between consumer patterns of use of City of Edmonton recreational swimming services and evaluative criteria regarding recreational swimming services in general were also analyzed. The latter analysis provided a profile of current service user preferences which management could use in formulating future marketing plans; it was also an indirect measure of consumer attitude toward the services provided by the City of Edmonton.

2.4 Recreational Swimming Service Preferences

2.4.1 Evaluative Criteria

No literature concerning which evaluative criteria consumers of recreational swimming services use could be found. Three sources of related material were helpful in addressing this problem, however. These were information on evaluative criteria used for services in general,

material on the evaluative criteria used for recreation services specifically, and marketing research on consumer satisfaction with swimming services.

The research work of Parsuraman et al. (1984, 1986) was discussed in Chapter 1. They studied consumers of four types of services: retail banking, credit card, security brokerage, and product repair and maintenance. They then identified five dimensions on which they felt most services are evaluated. These dimensions were: tangibles, reliability, responsiveness, assurance and empathy. Tangibles pertained to physical facilities, equipment and the appearance of personnel. Reliability was the ability to perform a service dependably and accurately. Responsiveness was willingness to help users, and to provide prompt attention. Assurance pertained to courteous, knowledgeable employees who conveyed trust and confidence. Finally, the empathy dimension was concerned with giving caring and individualized attention to service users. Regarding the importance of each of these dimensions, Parsuraman et al. stated:

> In general, irrespective of service category, customer expectations are highest on the reliability dimension followed in order by assurance, tangibles, and responsiveness, and lowest on the empathy dimension. (1986, p.23)

Mc Kay and Crompton (1988) conducted a study, based on the work of Parsuraman et al. (1986), in order to determine which evaluative criteria recreational service users consider. They developed a list of recreation service specifications (see Table 1) from Parsuraman et

Table 1. Recreation Service Attribute Specifications.

Tangibles:
Facilities which are visually and aesthetically attractive.
Staff who are well dressed and appear neat.
Up-to-date equipment.
A comfortable facility.
Other participants who are not bothersome.

Reliability:
Facilities/programs open/begin on time.
Information provided is accurate.
What is promised is delivered.
The staff performs duties consistently well.
The department is concerned with quality control.

Responsiveness:
Staff are willing to go an extra step to help participants.
Staff take time with participants.
Staff respond to requests quickly.
Problems are solved quickly.
The Department acts on participants' suggestions.

Assurance:
Staff are polite.
Staff are trustworthy.
Staff are competent.
Staff are credible.
Staff are enthusiastic.

Empathy:
Staff give individual attention to service users.
Staff understand the needs of service users.
The program/service is offered at a convenient time for you.
The program/facility is at a location convenient to service users.
The staff make service users feel as if they belong.

(McKay & Crompton, 1988, Measuring the Quality of Recreation Services, Table 1.).

al's service dimensions. They then asked participants in a variety of different municipal recreation programs to indicate the degree to which they felt these services should meet the specifications. They found that assurance was the most important dimension for all classes of recreation service, and that reliability was second. This was very similar to the finding of Parsuraman et al. (1986), that reliability was most important and assurance second. The mean scores for desirability of the other 3 dimensions varied according to the type of recreational service considered. The order of importance for services like recreational swimming, which is in Lovelock's high facility intensity-low staff intensity class, was: responsiveness, tangibles, empathy.

Stankey and McCool (1984, p.1-2) proposed a broader classification of evaluative criteria used in recreation services. They suggested that consumers consider the setting, social attributes and service management in making evaluations. The setting pertained to the facility or recreation area and its location. Social attributes were concerned with the number and type of other service users. Service management was concerned with the "type, amount and obtrusiveness of managerial activity" (Stankey and McCool, 1984, p.2). They stated that:

> The relative importance of each type of attribute will vary among recreationists depending upon a variety of factors, including activity interests, experience and expectations. (Stankey and McCool, 1984, p.2)

Marketing research on consumer satisfaction with existing swimming services is the last category of literature to be reviewed in this section. The problem with information on satisfaction is that it does not give any pure indication of user preference. Satisfaction is a type of attitude formed by comparing evaluative criteria to beliefs (Engel et al., 1982). Thus, information on satisfaction includes information on consumer beliefs about existing services. Despite this limitation, marketing research of this type is informative. First, the attributes considered salient to service evaluation which are included in the questionnaires are of interest. Second, information about what causes consumer satisfaction is useful in determining user preferences.

The attributes listed in the City of Edmonton Pool Users Survey (1985) were: staff friendliness and helpfulness, staff skill and knowledge, facility cleanliness, convenience of hours of operation, and admission cost. In the City of Calgary pool marketing studies (1985, 1986) the attributes were: staff attitude and helpfulness, safety and supervision, activities offered, atmosphere and aesthetics, amount of space per person, facility cleanliness, maintenance in the pool area, quality of water, water temperature, access and parking, hours of operation, and value for money. A space for comments was provided at the end of the questionnaire. No additional evaluative criteria were mentioned by

respondents there; this suggests that the list was fairly comprehensive.

One City of Calgary study (1984, p.9) asked service users to state why they had chosen to use a given pool. The majority answered that the facility was located close to home. Other popular answers were: that the facilities were attractive, that the facilities had a wading pool for children, and that it was not crowded. Evidently these specifications are desired by service users.

Several different classifications of factors relevant to the evaluative criteria used by consumers of recreational swimming services have been discussed in this section. These range from abstract service dimensions, which may be used in the evaluation of services in general, to criteria which are specific to swimming services, such as water temperature. No major discrepancies emerge from a comparison of the different classifications. However, it is not possible to summarize this information by listing each of the criteria specific to recreational swimming services under a general service dimension. The reason for this is that the specific criteria often apply to more than one of the abstract dimensions; for example, staff attitude and helpfulness are factors in responsiveness, assurance and empathy. In Chapter 5 the findings of this study regarding the evaluative criteria used by recreational swimming service

users are compared to each of the classifications of factors presented here.

2.4.2 User Characteristics and User Preferences and Priorities

In the following sections literature pertinent to the relationship between each of the user characteristic variables of interest in the study and user preferences and priorities is reviewed.

Sociodemographic Characteristics

Most researchers have found that there are relationships between consumer sociodemographic characteristics, and leisure preferences and behavior. Generally, the relationships have not been found to be strong enough to use sociodemographics alone as predictors of leisure preferences or behavior; however, these are useful indicators when considered with other factors, such as consumer lifestyle (Bergier, 1981, p.148; Engel and Blackwell 1982, p.190; Romsa and Girling, 1976).

Gender: Generally, females face more barriers to recreation than males do. Some of their service preferences are likely to be related to overcoming these barriers. There are also some differences in interests between the genders.

On average women have less free time than men (Bammel and Bammel 1982, p.252; Howard and Crompton, p.347), and

those who work in the home find it difficult to schedule blocks of time for recreational activity (Alberta Recreation and Parks, 1984, 21, p.9). As a result of time pressures, females may consider convenient service location and long hours of service availability more important than males.

Women often have to care for children during their leisure time; a Scottish pool marketing study confirmed that they swam with children more frequently than did men (Scottish Sports Council, 1979, p.105). For this reason child care and recreational opportunities for children are likely to be more important to females. Provisions for children's safety have also been found to be of greater concern to women (Scottish Sports Council, 1979, p.105).

Women tend to have less income than men. As a result they are likely to be more price sensitive (Bammel and Bammel 1982, p.254).

In the past females tended to refrain from participating in vigorous physical activity due to social conditioning; however, it appears that social norms have changed and this has ended. The Canada Fitness Survey (1983) and Fitness Ontario (1984) both report that very little difference exists between the levels of participation in physical activity of males and females. A 1981 study by the Government of Alberta also found that both genders were very interested in fitness activities;

in fact females actually expressed slightly more interest than males (Alberta Recreation and Parks, 1981, 3, p.4).

It has been found that women consider swimming facility cleanliness and nice changing rooms particularly important. Men place more value than females on equipment, such as diving boards (Scottish Sports Council, 1979, p.82).

Age: Several studies have found that age is related to recreational needs and preferences (Alberta Recreation and Parks, 1983, p.64; Canada Fitness Survey, 1883; Howard and Crompton, 1980, p.345; Wankel, 1988, p.375). Generally participation in physical activity declines with age. Motivation for involvement in recreational activity varies with age, and people in different age groups experience different barriers to recreation.

Excitement and opportunity to develop skills tend to be particularly motivating for young people; whereas, socializing is especially important to those who are older (Alberta Recreation and Parks, 1984, 21, p.6; McAvoy, 1979). The motivations of those who use the City of Edmonton recreational swimming services do not appear to vary significantly with age, however; fitness, relaxation and family activity were found to be the most popular motivators for all age groups in the 1985 Pool Users Survey (City of Edmonton, 1985, p.38a).

Barriers of particular concern to the under 25 age group are lack of partners and lack of transportation.

Family and work commitments are major barriers for the 25-44 age group. Seniors experience a variety of different barriers, such as: lack of physical ability, lack of transport, lack of partners, financial restrictions, and concerns about safety and security (Alberta Recreation and Parks, 1981, No 5, p.6; Alberta Recreation and Parks 1983, p.65; McAvoy, 1979).

Given the above information it is likely that facility location and the ability to socialize during recreational swimming would be of particular concern to those under 25. Child care services, recreational opportunities for children, and long hours of service availability are likely to be especially important to people in the 25-44 age group. The needs of seniors may include: accessible facility location, low admission costs, socializing, and security measures, such as handrails.

Family life cycle stage: The family life cycle is the pattern of stages which an individual typically passes through in family life. The stages include: young-single, young-married, young-married-children, middle-aged-married and/or middle-aged-married-children, elderly-married and elderly-single. Family life cycle stage has been found to be very strongly linked to leisure behavior (Howard and Crompton, 1980, p.346). Generally, single people enjoy spending their leisure time outside the home with peers. They participate in a wide variety of activities. Singles

have relatively few family commitments or financial restrictions that form barriers to recreation. Those in the preparental stage tend to spend most of their leisure time with their spouses. With parenthood, domestic responsibilities predominate and the amount of discretionary time and income for recreation decreases; leisure time is usually spent with the children, and it is often spent at home. By middle age financial and family responsibilities generally lessen. Elderly people have a large amount of discretionary time; however, as they age they experience the barriers to recreation discussed in the previous section. Finally, widowhood leaves people lonely and in need of partners for recreational activities (Alberta Recreation and Parks 1981, No 2, p.6; Alberta Recreation and Parks, 1983, p.71; Howard and Crompton, 1980, p.346; Witt and Goodale, 1981).

Since stage of family life cycle tends to be closely associated with age, these variables are likely to be related to consumer preferences regarding recreational swimming services in a similar manner.

Income: There is little doubt that income and participation in both recreation and physical activity are positively related. Fitness Ontario (1983) found that 75% of those with incomes of $30,000 or more participated in physical activity at least once per month, as opposed to 55% of those in the $9,999 and lower bracket. Wankel (1988) also cited statistics indicating the same trend in

the U.S.. According to the 1977 Gallup Poll, 16% of those with annual incomes above $19,999 participated in daily physical activity, compared to 10% of the $15,000 - $19,999 group and 7% of those with incomes less than $5,000 (Wankel 1988, p.376). Despite the fact that swimming is a relatively inexpensive activity, Canadians with low incomes have been found to swim less than others (Print Measurement Bureau, 1986, A18-D).

The Government of Alberta found that Albertans in low income categories experienced more barriers to recreation than others. These included: cost of admission and transportation, shyness, lack of partners, and physical inability (Alberta Recreation and Parks, 1983, p.69).

Given the above information, it is likely that recreational swimming service users with low incomes would consider low admission costs and having swimming services close to home more important to service evaluation than others. Furthermore, this group may consider friendly staff and the ability to socialize with other service users a priority, since these compensate for shyness and lack of partners.

Education: Generally, there is a positive correlation between the number of years of formal education which an individual has and level of participation in recreational activity (Bammel and Bammel 1982, p.244; Howard and Crompton 1980, p.349). This trend

has been found to apply to fitness oriented activities in general (Alberta Recreation and Parks, 1981, No 3, p.5; Canada Fitness Survey, 1983; Fitness Ontario, 1983) and to swimming specifically (Print Measurement Bureau, 1986, A18-D).

A study by the Government of Alberta found that those with little formal education experienced the same barriers to recreation as those with low incomes: financial barriers, lack of transport, lack of physical ability and shyness (Alberta Recreation and Parks, 1983, p.68). Thus, the relationship between education and service preferences is likely to be similar to that of income.

Occupation: There is very little information regarding the relationship between occupation and recreation service preferences. It has been found that blue collar workers generally prefer passive leisure pursuits, such as being entertained, while white collar workers tend to participate in pastimes involving more physical or mental activity (Bammel and Bammel, 1982, p.243; Canada Fitness Survey, 1983; Howard and Crompton, 1980, p.349; Wankel, 1988, p.377). However, to date, findings regarding the relationship between specific types of work and leisure preferences have not been conclusive (Howard and Crompton, p.349).

Service Use Characteristics

Very little has been written regarding the relationship between consumer service use characteristics and preferences. Nevertheless, a brief review of literature pertinent to this is included here.

Social grouping: The social grouping in which recreationists use services has been found to be a factor in preferences regarding leisure activities and leisure settings. Field and O'Leary (1973) studied participants in outdoor aquatic activities, including swimming at a beach and fishing. They concluded:

> ..when a social group variable is treated simultaneously with social aggregate variables such as age and gender, the amount of variance explained with regard to frequency of participation in a specific activity increases significantly. (Field and O'Leary, 1973, p.23)

Cheek and Burch (1976) found that social grouping was related to the type of location chosen for swimming; children's friendship groups tend to use swimming pools whereas family groups predominate at the beach (Howard and Crompton, 1980, p.351).

It is likely that social grouping is related to consumer preferences regarding recreational swimming services. However, there is insufficient information to speculate about the nature of this relationship.

Transportation: User service preferences may be related to means of transport used to access services. No previous research regarding this relationship was found. Nevertheless, it is seems likely that there is a

connection between some of these variables; for example, preferences regarding service location are probably related to means of transport used.

Frequency of service use: The final variable discussed in this review is frequency of service use. Howard and Crompton (1980, p.353) indicated that it is important to recognize that the service preferences of high, medium and low frequency users may differ and that different marketing strategies may be appropriate for each of these groups.

Frequency of service use may be related to the degree to which a service meets a consumer's needs and preferences (Howard and Crompton, 1980; Lovelock and Weinberg 1984). Thus, high frequency users are likely to be more satisfied with services than others.

Sociodemographics may also contribute to differences in the preferences of those who use services with different frequencies. Literature which was reviewed in previous sections of this chapter indicated that frequency of service use is related to sociodemographic variables such as age, stage of the family life cycle, education and income. This literature also indicated that relationships between sociodemographics and consumer preferences and priorities are likely to exist.

2.5 Summary

In this chapter literature related to the study was reviewed. Selection of the conceptual framework for the study and the independent variables used in data analysis was based on the review of this literature. First, models pertinent to the structure of preferences were discussed. Then, the conceptual framework of the study, which was based on one of these models, was described. Lastly, literature specifically related to the preferences of consumers of recreational swimming services was reviewed. This included material regarding the evaluative criteria used for recreational swimming services and literature regarding the relationship between user characteristics and service preferences.

3. STUDY DESIGN AND ADMINISTRATION

3.1 Introduction

This chapter is concerned with the methodology used in the study. First the overall approach of the study is discussed and the data collection methods which were used are described. Then the manner in which the study was carried out is outlined in detail. Information on how subjects were recruited, on data collection procedures, and on data analysis is included. The rationale for the major decisions regarding the design of the study are described throughout the chapter.

3.2 Overall Approach of the Study

The study was conducted in two phases. In Phase A data were collected by means of group interviews; in Phase B questionnaires were used.

Phase A of the study was designed to answer research questions 1 and 2. These were:

1. Which attributes did adult users of the City of Edmonton recreational swimming services consider salient in evaluating recreational swimming services?
2. What were user preferences about the attributes which were most frequently considered salient in service evaluation?

Group interviewing is a widely used marketing research technique. Generally groups range in size from six to ten people. Group members discuss research

questions with guidance from a moderator. The interview transcripts are then analyzed by means of one of several qualitative techniques, in the same manner that interviews with individuals are processed (Lincoln and Guba, 1985).

Group interviews are particularly well suited to exploratory research. Wells stated that this research technique is "a superb mechanism for generating hypotheses when little is known .... group interviews are highly productive idea breeders" (1974, p.2-133). They are effective for two reasons. First, interviews provide flexibility in exploring topics, because the moderator interacts with the subjects and is able to respond to their comments. Second, group members interact with one another; in many instances they stimulate each others' ideas and a variety of different points of view are discussed. Other assets of group interviews are that they are a relatively fast and inexpensive data collection method.

Like any other research technique, group interviewing has its weaknesses; many of these are shared with other qualitative research methods (Lincoln and Guba, 1985).

> Samples are invariably small and never selected by probability methods. Questions are not asked in the same way each time. Responses are not independent. Some respondents inflict their opinions on others; some contribute little or nothing at all. Results are difficult or impossible to quantify and are not grist for the statistical mill. Conclusions depend on the analyst's interpretive skill. The investigator can easily influence the results.(Wells, 1974, p.2-145)

When group interviews are used in conjunction with quantitative research techniques, as was done in this study, many of these weaknesses can be overcome.

Questionnaires were used for Phase B of data collection. The objectives of this phase were to answer research questions 3, 4, and 5. These were concerned with user priorities regarding service attributes, they were:

3. What were user priorities regarding the attributes most frequently considered salient in service evaluation?
4. Was there a significant relationship between user priorities and user gender, age, family life-cycle stage, income, education, or occupation?
5. Was there a significant relationship between user priorities and the type of social group consumers use the services in, the means of transport used to access services, frequency of service use, or which city pool is used?

Conjoint analysis was used to determine user priorities. Green and Srinivasan describe this technique in the following manner:

> We use the term conjoint analysis broadly to refer to any decompositional method that estimates the structure of a consumer's preferences (e.g., part worths, importance weights, ideal points) given his/her overall evaluations of a set of alternatives that are prespecified in terms of levels of different attributes. (1978, p.104)

Subjects are asked to indicate their preferences for a number of different product or service alternatives. The attributes of each of the alternatives are at different

levels. For example, in one price would be $2.50 and the service would be half an hour away, while another would cost $3.50 and be 15 minutes away. The preference data are analyzed to yield utility scores regarding the value of each attribute considered at each level. The utility scores are then compared to determine the preferred level of each attribute, in situations in which all attributes can not be at ideal levels, and the relative importance of each attribute to overall product or service evaluation.

There are a variety of other research techniques which also determine user priorities regarding service attributes. Several of these, such as: importance-performance analysis, constant sum scaling and the Single Unit Marketing Model, are discussed by Aaker and Day (1980). Conjoint analysis was selected for use in this study because it measures the relative value of service attributes considered at varying levels in a more realistic and detailed manner than these other methods.

Some proponents of conjoint analysis also claim that it has better predictive validity than other methods (Neslin, 1981); however, there is a degree of controversy regarding this. Leigh, MacKay and Summers (1984) did not find its predictive validity to be superior to other techniques. Several other researchers have concluded that further study is required regarding the predictive validity of conjoint analysis (Akaah and Korgaonkar, 1983, p.189; Cattin and Wittink, 1980, p.51).

One disadvantage of conjoint analysis is that it can involve lengthy data collection procedures which overburden subjects (Akaah and Korgaonkar, 1983, p.188). Another problem, shared with many other research techniques, is that the manner in which questions are asked can bias results. Cattin and Wittink (1982, p.51) cited a study by Wittink Krishnamurthi and Nutter which found that the number of attribute levels used in conjoint questionnaires affects results regarding attribute importance. The format of the service alternatives, regarding which attribute levels are combined for each alternative, may also affect the results.

3.3 Implementation

3.3.1 Interviews

Interviewing Procedure

Six group interviews were conducted. The first of these was a pilot interview with university students. Then, four group interviews were conducted with users of the City of Edmonton recreational swimming services. Finally, a group of city pool managers were interviewed.

The pilot group interview was conducted at the University of Alberta. Six graduate students who use recreational swimming services volunteered as the subjects.

The next four group interviews were with adult users of City of Edmonton recreational swimming services.

They were conducted at Bonnie Doon Swimming Pool. The rationale for conducting all of the group interviews with the city service users at the same pool was that it eased the organization and administration of these sessions, and minimized inconvenience to pool management and patrons. The service users volunteered to be interviewed in response to posters soliciting subjects and/or personal recruitment by the researcher.

The groups had seven, six, four and five members respectively. The subjects were of varying sociodemographic characteristics, as documented in Table 2. Sixty four per cent were female and 36% male. Subjects ranged in age from 25 to 64. All of the family life-cycle stages except for young-married and elderly-married were represented. The annual household incomes of the majority of subjects were in the $20,000 to $60,000 range; however, those with lower and higher incomes were also represented. Subjects had varying degrees of formal education, from incomplete high school to graduate studies. Finally, all of the occupational groups in the Pineo-Porter-McRoberts scale were represented, with the exception of unskilled/ semiskilled manual laborer and crafts and trades.

The last group interview was with six city pool managers. Managers from the following pools attended: A.C.T., Bonnie Doon, Eastglen, Hardisty, O'Leary and Confederation.

Table 2. Sociodemographic Characteristics of the Swimming Service Users who Participated in the Group Interviews.

Variable	Group	Frequency	Percent
Gender	Male	8	36%
	Female	14	64%
Age	18-19	0	0%
	20-24	0	0%
	25-30	4	17%
	30-34	8	35%
	35-44	5	21%
	45-54	2	17%
	55-64	1	3%
	65+	0	0%
	No Response	2	7%
Family Life Cycle Stage	Young-Single	6	28%
	Young-Married	0	0%
	Young-Married Children	5	23%
	Middle Aged-Married	1	4%
	Middle Aged-Married-Children	7	33%
	Elderly-Married	0	0%
	Elderly-Single	1	4%
	No Response	2	8%
Annual Household Income	Less than $20,000	1	4%
	$20,000-$39,999	10	46%
	$40,000-$60,000	7	32%
	More than $60,000	2	9%
	No Response	2	9%
Education	Less than Grade 9	0	0%
	Less than High School	1	5%
	High School	2	10%
	Some College/Technical/University	7	31%
	College/Technical Training	2	10%
	University	6	27%
	Post Graduate Studies	1	5%
	No Response	3	12%
Occupation	Unskilled/Semiskilled Manual	0	0%
	Crafts and Trades	0	0%
	Clerical/Sales/Service	6	27%
	Middle Management	4	18%
	Technician	2	9%
	Semiprofessional	0	0%
	High Level Management	1	5%
	Professional	6	27%
	No Response	3	14%

N=22

The interviews were approximately 1 hour long. For the first half hour the subjects discussed the question of which attributes consumers consider in evaluating recreational swimming services. After that each participant was asked to write down the five attributes which they personally considered most salient, in order of importance.

It is not standard practice to include a measure of individual subjects' views of this type in group interviewing. This was done to provide an objective record of all of the subjects' opinions. It was a measure to compensate for the weaknesses of group interviewing that were discussed in the preceding section.

During the second half of the interviews participants were asked to discuss their preferences about the service attributes considered in service evaluation. They were then asked to write down descriptions of good and poor ratings for each of the attributes which they had previously identified as being salient.

At the end of the interviews participants completed forms which gathered the sociodemographic and service use information for Table 2. They were given complimentary pool passes as tokens of appreciation for participating in the study.

Data Analysis

All of the interviews were recorded on audio tape. They were subsequently transcribed and analyzed according

to the guidelines proposed by Lincoln and Guba (1985). This involved three steps:

1. Unitizing: identifying, recording, and coding all units of information. Information units are the smallest pieces of information in transcripts which can be understood without explanation.
2. Categorizing: provisionally organizing the units into categories.
3. Filling in the patterns: finalizing the categorization system, assessing the relationships between categories and completing analysis of all of the data.

Subjects' written responses to the service evaluation questions were processed in the following manner. Data regarding which five attributes each subject considered most important in service evaluation, were recorded in a frequency table. Subjects' descriptions of good and poor ratings for each salient attribute were consolidated into one written record.

Details regarding the incorporation of the Phase A interview data into the design of the questionnaire for Phase B are outlined in the following section.

3.3.2 Questionnaires

Design

The questionnaire was designed in accordance with general guidelines on survey methodology by Dillman (1978) and Platek, Pierre-Pierre and Stevens (1985). Recommendations by Green and Srinivasan (1978) were used

extensively in the design of the conjoint analysis question.

The survey had three parts. In Part 1 data regarding subjects' patterns of use related to the City of Edmonton recreational swimming services were collected. In Part 2 subjects were asked to evaluate several different recreational swimming services; this information was subsequently used for conjoint analysis. Part 3 collected information about the subjects' sociodemographic characteristics.

Questions on service use were posed at the beginning of the questionnaire. The rationale for asking these questions first was that they would be easy for the respondents to address, and that they would not be threatening. Dillman (1978) and Platek et al. (1985) both stressed the importance of motivating subjects to do questionnaires by beginning with easy and yet interesting questions. They recommended that questions which are difficult or threatening be asked toward the end of a survey, since people are more likely to feel committed to respond to these after having completed other sections.

Subjects were asked in which type of grouping they usually use City of Edmonton recreational swimming services: alone, with other adults, with children, or with children and adults. Another question was concerned with the means of transport used to access the services.

Finally, subjects were asked to indicate their frequency of service use during three different time periods.

The conjoint analysis question was in Part 2. Subjects were asked to evaluate 9 different descriptions of recreational swimming services. Green and Srinivasan (1978) discussed 5 factors which have to be considered in the design of this type of question, each of which can be dealt with in a variety of ways. These factors are discussed in the following sections. They are: the models of preference which subjects are assumed to use in evaluating alternatives, the data collection method used, the design of service alternatives, the method used for presenting the alternatives to the subjects for evaluation, and the measurement scale for alternative evaluation.

The first step in designing a conjoint analysis question is deciding which preference models and choice heuristics model the majority of subjects are likely to use in evaluating alternatives. Studies can be designed in a variety of different ways to accommodate different models. This study was based on a part-worth preference model, as described in section 2.2.1, and compensatory choice heuristics, which were discussed in section 2.2.3.

The decision regarding the preference model was based on the group interview data. This data indicated that some recreational swimming service attributes are evaluated on the vector model, while others are evaluated according to

the ideal point model; the part-worth model accommodates both of these.

Preliminary research regarding which choice heuristics model was used did not yield any conclusive results. Some pool users who were subjects in the piloting of the questionnaire stated that they used a noncompensatory model. Others, who participated in group interviews, said that their evaluation process was compensatory. Due to the uncertainty regarding which choice heuristics model was in effect, the compensatory model was chosen. Researchers generally conclude that most decisions are based on noncompensatory choice heuristics; however, if there is uncertainty about choice heuristics models, the compensatory model is most appropriate as the basis for research.

> The compensatory model of conjoint analysis can approximate the outcomes of other decision rules quite closely. ...Thus, even if the respondent's information processing strategy and decision model are complex, the compensatory model can usually produce good predictions. (Green and Srinivasan 1978 p.107)

Two different data collection methods can be used in conjoint analysis studies: alternatives can be presented in full-profile or in a trade-off matrix. In full-profile all of the attributes considered salient to service evaluation are described for each alternative. In a trade-off matrix two attributes are considered at a time, and subjects are asked to evaluate each of the possible combinations of levels of these two attributes.

There are advantages and disadvantages to each approach. The main advantage of the full-profile approach is that it is more realistic than the matrix. Its biggest disadvantage is that subjects may become overwhelmed by the large amount of information which must be considered in alternative evaluation, and so may be unable to respond accurately. For this reason Green and Srinivasan (1978, p.108) recommended that no more than 6 attributes be included in a full-profile questionnaire.

The full-profile approach was used in this study, because of its realism. According to Green and Srinivasan's (1978) recommendation, only six attributes were included in the service alternatives. Seven factors were identified as being frequently considered salient to service evaluation in the interviews, so "variety of facilities" and "variety of things to do" were combined into attribute called "facilities and equipment" for the questionnaire. The other 5 attributes were: facility location, facility cleanliness and maintenance, staff attitude and competency, hours of operation, and admission cost.

Green and Srinivasan suggested that the ranges of attribute levels should be "larger than reality, but not so large as to be unbelievable" (Green and Srinivasan, 1978, p.109). They also state that correlation between attributes, or the degree to which attributes are related to one another, should be slightly smaller than reality.

The rationale for this is that subjects' responses will have higher validity if the alternatives are realistic; however, estimation of attribute utility is easier if the range in attribute levels and the degree of independence between attributes is exaggerated slightly.

The next factor to consider in the design of conjoint analysis questions is the design of the product or service alternatives. First the number of alternatives which subjects will evaluate has to be decided on. It is recommended that the number be as large as subjects can reasonably manage without becoming bored or tired. The larger the number the lower the prediction error, however if subjects lose concentration the accuracy of their responses will decrease (Green and Srinivasan, 1978, p.109).

The number of possible combinations of attribute levels in most marketing research problems would be overwhelming to subjects. For this reason, fractional factoral designs are often used to develop alternatives which best represent the full range of choices between levels in a reasonably small number of alternatives. These design methods involve the use of mathematical formulae in order to generate combinations of attribute levels which enable the researcher to determine main effects. They are discussed in detail by Green (1974) and by Green, Douglas and Carmone (1978).

In this study subjects were asked to evaluate 9 service alternatives. During questionnaire piloting it was determined that this was the largest number of alternatives which subjects could realistically assess. The attribute levels were based on the interview data, and on Green and Srinivasan's suggestion that the differences between levels be exaggerated slightly. The attributes salient to recreational swimming service evaluation did not appear to be environmentally correlated, so no exaggeration of the independence between attributes was required. The researcher did not have access to a computer program in order to use fractional factorial designs for the service alternatives; however, these were balanced so that each had an approximately equal number of attributes at high, medium and low levels. The number of attributes at each level was balanced across the rows of the service-alternative grid and down the columns.

Product or service alternatives can be presented to subjects in three different ways: brief descriptions written in point form, paragraph-long written descriptions, or pictoral representations. Each of these methods has advantages and disadvantages. In this study brief descriptions written in point form were used. This method is better suited to describing a large number of alternatives than paragraph-long descriptions. It is less costly and less time consuming than preparing pictures.

Subjects can be asked to evaluate alternatives on a metric or a nonmetric measurement scale. According to Green and Srinivasan

> The main advantage of the metric methods is the increased information content potentially present in these scales... (however) Ranked data are likely to be more reliable, since it is easier for a respondent to say which he/she prefers more as compared to expressing the magnitude of his/her preference. (1978, p.112)

In this study subjects were asked to place the alternatives in rank order of preference.

Questions on subjects' sociodemographic characteristics were left until the end of the survey in accordance with recommendations by Dillman (1978) and Platek et al. (1985). These authors indicated that some subjects may consider sociodemographic questions to be intrusive, for this reason they recommended that they be asked last.

Questions regarding the following variables were included: gender, age, marital status, the ages of dependant children, education, employment status, occupation, household income, and the number of people in the household income unit. Most of these questions were designed using scales from Dillman (1978) and Platek et al. (1985). One exception was that the response options for the multiple choice question on occupation were based on the Pineo-Porter-McRoberts Socioeconomic Classification of Occupations (Pineo, 1981). Another was that Murphy and Staples' (1979) Modernized Family Life Cycle scale was

used. No direct question about life cycle stage was included in the questionnaire; subjects' responses to questions regarding age, marital status, and children were combined to determine stages (see Table 3 for a detailed description of each stage).

Administration

A preliminary draft of the questionnaire was piloted at the University of Alberta with six graduate students. The questionnaire was then revised and piloted with 15 recreational swimming service users at Londonderry Pool. Following further revision, the survey was circulated for comments to Drs B.Andressen and L.L.Lanier, Department of Recreation and Leisure Studies, and to Mr G.Deacon and Mr B.Monahan, Edmonton Parks and Recreation. Their recommendations were used in completing the final draft of the survey (see Appendix 1). This survey took respondents an average of 20 minutes to complete.

The questionnaire was distributed at 10 city pools: A.C.T., Bonnie Doon, Confederation, Eastglen, Grand Trunk, Hardisty, Jasper Place, Londonderry, O'Leary, and Strathcona. The characteristics of these services are similar; however, each one is unique and has distinguishing characteristics. Most of the services have one pool, with dimensions of approximately 25m by 10m; however, pool sizes vary from location to location, and two services have two pools. Most locations have a

Table 3. Family Life Cycle Groups Used in the Study.[1]

Name and Abbreviation		Description		
		Age	Marital Status	Dependent Children
Young-Single	YS	18 to 35	Single	No
Young-Married	YM	18 to 35	Married	No
Young-Married -Children	YMC	18 to 35	Married	Yes
Middle Aged -Married	MM	35 to 64	Married	No
Middle Aged -Married -Children	MMC	35 to 64	Married	Yes
Elderly -Married	EM	65 and Up	Married	No
Elderly -Single	ES	65 and Up	Widowed	No

1. Life Cycle Groups were defined according to Murphy and Staples (1979).

whirlpool and a steamroom, some also have a sauna. The amount and type of equipment available at each location differs. The number of hours of recreational swimming per week also varies, from a minimum of approximately 18 to a maximum of 44 (Edmonton Parks and Recreation, 1988).

The data collection period was September 20th to October 20th, 1988. Subjects were recruited in three ways: through posters, through requests from pool staff and management and through direct requests by the researcher. The pool cashiers were responsible for survey distribution and collection. Forty questionnaires were given out at each pool. The sample was stratified to include a proportionate sample of service users from three different time periods. Cashiers were asked to give out 8 surveys (20%) on weekdays before 5pm, and 16 surveys (40%) each on weekdays after 5pm and on weekends. They were encouraged to try to get subjects of varying sociodemographic characteristics to complete the survey whenever possible. A total of 296 completed surveys were returned. The sociodemographic characteristics of the respondents are provided in Tables 4a and 4b. Every respondent was given a recreational swimming pass as a token of thanks for participating in the study.

Data Analysis

The first step in processing the data was computing the attribute utility scores. The ranking scores for each

Table 4a. The Gender, Age and Family Life Cycle Stage of the Swimming Service Users who Completed Questionnaires.

Variable	Group	Frequency	Percent
Gender	Male	121	41%
	Female	175	59%
Age	18-19	9	3%
	20-24	24	8%
	25-29	43	14%
	30-34	47	16%
	35-44	102	34%
	45-54	26	9%
	55-64	32	11%
	65+	8	3%
	No Response	5	2%
Family Life Cycle Stage	Young-Single	43	14%
	Young-Married	17	6%
	Young-Married-Children	57	19%
	Middle Aged-Married	105	35%
	Middle Aged-Married-Children	49	17%
	Elderly-Married	5	2%
	Elderly-Single	2	1%
	No Response	18	6%

N= 296

1. See Table 3 for detailed descriptions of each life cycle stage.

Table 4b. The Income, Education and Occupation of the Swimming Service Users who Completed Questionnaires.

Variable	Group	Frequency	Percent
Annual Household Income per Person	$1 - $4,999	18	6%
	$5,000 - $9,999	80	27%
	$10,000 - $14,999	53	18%
	$15,000 - $19,999	43	14%
	$20,000 - $24,999	12	5%
	$25,000 - $75,000	36	12%
	No Response	54	18%
Education	Less than Grade 9	7	2%
	Less than High School	31	10%
	High School	67	23%
	Some College/Technical/University	80	27%
	College/Technical Training	42	14%
	University	43	15%
	Post Graduate Studies	23	8%
	No Response	3	1%
Occupation	Unskilled/Semiskilled Manual	14	5%
	Crafts and Trades	26	9%
	Clerical/Sales/Service	53	17%
	Middle Management	20	7%
	Technician	12	4%
	Semiprofessional	25	8%
	High Level Management	5	2%
	Professional	35	12%
	No Response	106	36%

N = 296

alternative were reversed, so that the service which was most preferred received nine points, and that which was least preferred got one. Then the average score for each level of each attribute was calculated. This was done by adding up the total number of points which were allotted to services including each attribute at each level and then dividing by the number of times which each attribute level appeared in the service alternatives. After that the utility scores for each level of each attribute were calculated according to the following formula:

$$Wij = .1+.9\frac{(V - M)}{R}$$

where Wij = utility of a given level of a given attribute,

V = the mean score for that level of that attribute,

M = the highest mean score for any level of any attribute, and R = the range between the highest and the lowest mean score for all attribute levels.

A personal computer with Lotus software was used to calculate the utility scores for every subject. The utility scores were then compared to determine the level of each attribute with the highest utility, and attribute importance. Attribute importance was computed by comparing the range of utility scores of each attribute with that of every other attribute.

Ranges of utility scores for attribute levels are used as the basis of assessing attribute importance in

conjoint analysis because attributes of high importance would have higher ranges than those of lesser importance. For example, if staff attitude was very important to consumers they would rank service alternatives with above average staff highly and services with below average staff would receive poor rankings, thus there would be a large range of utility scores. On the other hand if facility cleanliness was of little concern there would be less of a difference in the utility scores for the different levels of this attribute.

In order to further illustrate the procedures involved in deriving conjoint analysis results, the manner in which one subject's utility and importance scores for location were calculated is described in this paragraph. First the subject's rankings of the service alternatives were reversed, so that the most preferred option got nine points and the least preferred got one. Then the average score for level 1 of location was calculated by adding up the total scores of all service alternatives which included this attribute at level 1 and dividing by the number of times which level 1 location appeared in the service alternative grid. Next the same procedure was followed in order to calculate similar scores for each of the other attribute levels. Following this the minimum and maximum of these scores were noted, as well as the range. The utility score for level 1 of location was then calculated according to the formula which was given in the

preceeding paragraph; .1 was added to .9 of average score for location at level 1, divided by the range. Utility scores for every other attribute level were calculated in the same way. The range of utility scores for location was then assessed, by subtracting the highest utility score for any level of this attribute from the lowest. Range scores for the other attributes were also noted. Next the range scores were added together. Then the total was converted to 100%, and the degree to which each utility range score contributed to this total was noted as a percentage. These percentages constituted the attribute importance scores, location got 12%.

The relationship between user characteristics and user priorities was assessed by means of analysis of variance. Attribute importance scores of subjects in different categories for each variable were compared using this method.

Additional tests were also conducted in order to determine whether relationships between the user characteristic variables, which would have been expected from the literature, existed. This analysis was done to gain insight into the meaning behind relationships between user characteristics and priorities. Chi square tests were used.

Questionnaire Validity and Reliability

Validity is defined as "the degree to which a test measures what it purports to measure" (Borg and Gall, 1983, p.275). Reliability refers to "the level of internal consistency or stability of the measuring device over time" (Borg and Gall, 1983, p.281). Several different tests can be used to assess different aspects of each of these factors.

Two types of validity were considered in this study. The first was content validity; this is "the degree to which the sample of test items represents the content that the test is designed to measure" (Borg and Gall, 1983, p.276). Content validity is assessed by systematically comparing the items in the test to the universe of items which it is purported to measure. In this study group interview data were used to determine which attributes should be included in the questionnaire, and to determine attribute levels. This systematic evaluation insured that the survey had content validity. Face validity was considered next, that is the degree to which a test appears to have validity, on subjective evaluation. Face validity was assessed when the questionnaire was reviewed by University of Alberta professors and by management from Edmonton Parks and Recreation.

Two different tests of the reliability of the questionnaire were conducted. The first measured the coefficient of stability; the second was concerned with

the coefficient of equivalence. The coefficient of stability is a measure of the consistency of test results over time. It is also referred to as test-retest validity. This is because it is assessed by having subjects complete a test twice, with an intervening time period, and then analyzing the consistency of the results. The coefficient of equivalence is a measure of the consistency of results when two alternate forms of the same test are administered.

Test-retest formats were used to assess the questionnaire regarding both of these types of reliability. Swimming service users were given a copy of Part 2 of the questionnaire to complete. Then, one week later, half of these volunteers completed a second copy of the same question, while the other half did an alternate form of the question. This alternative was designed in the same manner as the original question; a copy is included in Appendix 2. Pearson's correlation coefficients were computed to determine the degree of consistency between the test and retest results.

The reliability tests were conducted in two stages. Initially twenty recreation students from the University of Alberta completed the tests. Ten of these did tests of the stability of the questionnaire, while the others did the equivalence test. The tests were then reconducted with 38 swimming pool users in Canmore, Alberta. Retesting was conducted because the initial correlation scores were

unusually low and it was considered worthwhile to investigate this.

Volunteers for the first tests were recruited at the university, instead of at city pools, for two reasons. First, completing two tests might have overly inconvenienced city patrons. Second, it was easier for the researcher to contact university students regarding retests. The second tests were conducted at a community swimming pool in Canmore in order to ease administration; this is where the researcher lived.

3.4 Summary

In this chapter the methodology of the study was discussed. First, the design of the study was described. This included a discussion of the rationale for using group interviews and conjoint analysis questionnaires for data collection. After that, the manner in which the study was implemented was described. This included details regarding data collection procedures, such as how subjects were recruited, and a description of the methods which were used for data analysis.

4. RESULTS

4.1 Introduction

This chapter is concerned with the results of the study. The results of the group interviews are discussed first. After that the results of the questionnaires are presented.

4.2 Interview Results

4.2.1 Introduction

The interviews were designed to answer research questions 1 and 2. Question 1 was to identify which attributes recreational swimming service users considered salient to service evaluation. Question 2 was to identify user preferences about these attributes.

The interview subjects generally agreed that a number of different attributes were considered in service evaluation. Some subjects also stated that the evaluation process was compensatory.

There was a high degree of consensus about which attributes were considered salient to service evaluation. These were: facility location; facility cleanliness and maintenance; staff friendliness, manners and competency; hours of operation; variety of facilities; variety of things to do; and admission cost. There was widespread agreement regarding subjects' preferences about each of these attributes. However, there tended to be less unanimity regarding what would actually constitute a good

or poor rating for each attribute. For example, subjects agreed that location was a salient attribute and that proximity to home was preferred. However, they had differing opinions on the distance which a facility would have to be from a subject's residence to receive a good rating for location.

Very few differences in preferences appeared to be related to subjects' sociodemographic characteristics. A few exceptions are discussed in subsequent sections of this chapter.

The results of the interview with the pool managers were very similar to those with the service users. The only difference was that managers were slightly more concerned with scheduling and regulations.

Table 5 indicates the frequency with which each attribute was identified as being considered salient to service evaluation in subjects' individualized written responses to question 1. In the following sections the attributes most frequently considered salient to service evaluation are described in detail.

4.2.2 Location

Location was the attribute which was most frequently identified as being salient to service evaluation. Several different aspects of location were discussed. The most prevalent of these were distance and time required to reach swimming facilities from home. Service

Table 5. Attributes Considered Salient to the Evaluation of Recreational Swimming Services: Interview Subjects' Written Responses to Question 1.

Attribute	Frequency
Location	21
Cleanliness and Maintenance	19
Staff	16
Hours Available	15
Variety of Facilities	15
Variety of Activities	11
Admission Cost	8
Degree of Crowding	3
Water Temperature	3
Privacy of Changing Rooms	1
Consistency in Product Offerings	1
Convenience Services (eg shampoo for sale)	1
Provision for the Disabled	1
Decor (sky light)	1

accessibility by various means of transport was also discussed. These modes of transportation were: walking, bicycle, bus and car.

Distance and time required to access facilities were evaluated according to a vector model of preference. Subjects preferred facilities to be as close to home as possible. Distances which received good ratings ranged from one to three kilometers, while any more than five kilometers away was generally considered poor. Subjects preferred facilities which took little time to reach. Times which were considered good ranged from 5 to 20 minutes, while 30 minutes and over rated poorly.

Proximity of location, in the one to three kilometer range, was particularly important to subjects who accessed facilities by foot and by bicycle. Those who used the bus stressed the importance of facilities being located close to bus stops on routes with frequent service. Motorists preferred facilities which were easily accessible by major roadways. Some stated that these roads should not be too congested and that they should be well maintained. Others discussed parking, stating that they liked to be able to park reasonably close to swimming facilities. The importance of having well placed, highly visible signs to facilities was also stressed.

4.2.3 Cleanliness and Maintenance

The second most frequently mentioned attribute salient to service evaluation was facility cleanliness and maintenance. This attribute was also evaluated according to a vector model of preference. Interviewees preferred facilities to be as clean and well maintained as possible. The most frequently mentioned aspects of cleanliness were a lack of visible dirt and debris, such as sand and hair, and a lack of litter, such as paper towels in the washroom area. Subjects stated that the most important aspect of maintenance was keeping the facilities operational. Inoperational whirlpools, broken toilets and showers with insufficient water pressure were cited as examples of poor maintenance. Participants also said that the supply of paper towels and toilet paper in the washrooms should not be allowed to run out.

4.2.4 Staff

Pool staff characteristics were frequently considered in service evaluation. Subjects were particularly concerned with staff attitude and competency. Their preference was for staff with positive attitudes and high degrees of competency; these characteristics appeared to be evaluated according to a vector model of preference.

The interviewees stated that staff should be well mannered, helpful, cheerful and friendly. Several subjects stressed the importance of staff smiling and taking the

time to greet service users. One woman also stated that staff should appear alert and interested in their work.

The subjects felt that staff should be well trained, knowledgeable about the facility and services offered, and able to handle any problems which might arise. One interviewee also stressed the importance of having a sufficient number of lifeguards on duty.

Familiarity was another aspect of staffing which emerged as being important. Several respondents stated that they preferred staff whom they knew, and who knew them by name.

4.2.5 Hours of Operation

Hours of availability of recreational swimming services was another salient attribute. The subjects stated that recreational swimming should be scheduled at times convenient to the majority of service users. They also expressed a preference for having recreational swimming at a variety of times, of at least two hours duration, to allow patrons a choice of when to swim. Furthermore, they stated that some times should be made available to those on atypical schedules, for example those working night shifts.

Generally, high ratings for this attribute were given to services offered on weekday afternoons, evenings and weekends. Services with limited or inconvenient hours rated poorly. These included services with very few hours

of recreational swimming, those which scheduled recreational swimming for less than two hours duration, and those which offered recreational swimming during mealtimes.

Some pool managers stated that their patrons were concerned with consistent scheduling. They said that service users dislike frequent rescheduling and that they like to be informed prior to changes.

On an individual basis, it appears that subjects used an ideal point preference model in evaluating hours of operation. Their foremost concern was that services be offered at times convenient to them. On an aggregate level, increasing the total number of hours increases the likelihood of meeting the needs of service users on different schedules. Thus, a variation of the vector model may more accurately depict the structure of consumer preference.

4.2.6 Variety of Facilities

Generally, subjects preferred services with pools to accommodate toddler bathing, water play and relaxation, lane swimming and diving. The following amenities were also considered to be important: saunas, whirlpools, hot tubs and steam rooms.

Most subjects expressed a preference for as large a number of facilities as possible; thus, they evaluated this attribute by means of a vector model of preference.

However, a small minority disagreed. These people preferred small neighborhood pools to those with more extensive facilities. These individuals evaluated this attribute by means of an ideal point preference model.

4.2.7 Variety of Things to Do

Several subjects stated that it was important for there to be a variety of things to do during recreational swimming. This was evaluated according to the vector model of preference. It was particularly important to those who swam with family members of different ages and abilities, since the interests and needs of members of these groups were varied.

Variety of facilities was identified as one important factor in providing varied activities for service users. Equipment and pool management were also discussed. Several types of equipment for activities during recreational swimming were mentioned. These included toys, slides, ropes, exercise equipment and poolside furniture.

Subjects stated that pool managers could increase the number of things for patrons to do by designating areas for different types of activity, and by programming special events. Several subjects stated that designated areas for lane swimming, and for children's play were desirable. Some added that these areas could be further subdivided into lanes for different speeds of swimmer, and play areas for different age groups. Both pool managers

and service users stated that special events could enhance variety of things to do during recreational swimming. Children's parties and social events for seniors were cited as two examples which are very popular.

4.2.8 Admission Price

Admission price was the last attribute which was frequently identified as salient to the evaluation of recreational swimming services. Most subjects were concerned with the single price of admission to recreational swimming. Multiple admission passes and family rates were also discussed by some.

All other things being equal, subjects preferred lower admission costs, in accordance with a vector model of preference. Generally subjects agreed that an admission cost of $1.50 or less was good, while anything above $3.00 rated poorly. Several subjects stated that the free swims which Edmonton Parks and Recreation schedules periodically are very popular.

Some subjects said that they liked the convenience and cost saving of being able to purchase multiple admission passes and family passes. One woman stated that she felt more motivated to swim after purchasing a multiple use ticket. Another service user stated that he liked the flexibility of being able to use multiple admission passes at any pool operated by the city.

4.2.9 Other Attributes

Some other recreational swimming service attributes were also discussed during the interviews and/or recorded in the written responses to the interview questions. These are briefly discussed here.

Several subjects stated that they considered the degree of crowding at a facility in service evaluation, preferring not to use pools which were too busy. This point was not discussed in depth, so the researcher could not determine the point at which subjects would consider facilities overcrowded. Furthermore, no conclusion could be reached regarding which model of preference this attribute was evaluated on. Service users may use a vector model, and prefer facilities to be as empty as possible; or they may use an ideal point model, and prefer to swim with some other people.

Water temperature was also mentioned. This attribute was evaluated according to an ideal point preference model. However, subjects' opinions regarding ideal water temperature were varied. Some of this variance was related to the type of activities patrons participated in while at the pool; those who swam for exercise generally preferred cooler water.

Locker rooms were discussed by some subjects. This was the only attribute in which subjects preferences appeared to be related to gender. Having clean, well equipped locker rooms was of greater concern to females

than males. One woman stated that she liked to have a private cubicle to change in; several others agreed. Some subjects stated that having hair dryers and full length mirrors in the locker room was desirable. Mothers also stressed the importance of having playpens for toddlers, and facilities for changing babies. Furthermore, they stated that provision should be made for young boys to change with their mothers without offending other female patrons. The male service users who participated in the interviews expressed little concern for any of these items, however one pool manager said that they were desired by some men.

The existence and enforcement of pool rules and regulations was another attribute which the pool managers discussed. They stated that patrons like staff to maintain order, but dislike excessive regulation. They said that service users are much more amenable to adhering to regulations if they understand the rationale behind them. Furthermore, they stated that service users prefer staff to enforce rules in a consistent manner.

Convenience services were identified as another attribute salient to service evaluation by some subjects. One manager stated that service users appreciate being able to purchase shampoo at the pool. Service users also stated that child care services and cafeterias were desirable. Towel and bathing suit rentals were discussed

by one interview group, but the general consensus was that these were unnecessary.

Provision for disabled service users was of concern to one interviewee. She stated that those with limited mobility require ramps to access pools.

Lastly, facility decor was discussed. Most service users and managers felt that elaborate decor was not necessary at public swimming services. Nevertheless, some subjects did mention attributes related to decor in their written responses to question 1. These included: bright atmosphere, natural light and having a sky light.

4.3 Questionnaire Results

4.3.1 Introduction

The remainder of this chapter is concerned with the results of the questionnaire. The questionnaire was administered in order to answer research questions 3, 4, and 5. Question 3 was to determine user priorities regarding the attributes most frequently considered salient to service evaluation. Question 4 was to analyze the relationship between user priorities and the following user sociodemographic variables: gender, age, family life-cycle stage, income, education, and occupation. Lastly, question 5 was to analyze the relationship between user priorities and consumer service use variables. These were: the type of social group in which services were used, means of transport used to access services, frequency of service use, and city pool used.

4.3.2 Questionnaire Reliability

The results of the tests of the reliability of the questionnaire are listed in Appendix 3, 4, 5, and 6. The tables list the Pearson's correlation coefficients between subjects' test and retest attribute utility scores, and median correlation coefficients for each test.

The results of the first tests were indicative of a very low level of reliability. The stability test had 5 correlation coefficients which were significant at the 0.05 level of probability, and a median correlation coefficient of 0.56. The equivalence test had 1 correlation coefficient significant at the 0.05 level of probability, and a median score of 0.32.

According to the second tests the reliability was better. Fourteen of the 17 correlation coefficients for stability were significant at the 0.05 level of probability, and the median coefficient for this test was 0.70. Ten of the correlation coefficients in the equivalence test were significant at the 0.05 level, and the median score was 0.46.

4.3.3 User Priorities

Table 6 summarizes the questionnaire results regarding the priorities of all respondents, considered

Table 6. User Priorities Regarding the Attributes Salient to Evaluation of Recreational Swimming Services.

Attribute	Level with Highest Mean Utility Score	Importance
Staff Attitude and Competency	3: Above Average	25%
Facility Cleanliness and Maintenance	2: Average	23%
Facility Location	3: 15 Minutes Away by bus or car, easily accessible by bicycle and by foot.	12%
Times Available	2: 1 hour/day at a convenient time	10%
Facilities and Equipment	1: 25m pool	15%
Admission Price	1: $3.50	15%
		100%

1. Considered together, attribute utility scores and importance scores are good indicators of consumer priorities. Attributes which are of high priority receive high utility scores for high attribute levels combined with high importance scores. Those of low priority receive high utility scores for low levels combined with high importance scores (see section 4.3.3. for further explanation).

collectively, concerning recreational swimming service attributes. This table lists the level of each attribute which got the highest mean utility score. It also lists importance scores for each attribute.

Utility scores are a measure of the value of each level of each attribute relative to all other attributes at all levels (Aaker and Day, 1980, p.606). Importance scores are concerned with the degree to which each attribute is considered in overall service evaluation (Olsen, Kanwar and Nuderrisoglu, 1979, p.270). Considered together, importance scores and utility scores indicate what consumer priorities are, and where they would be willing to make compromises if they could not have all attributes at preferred levels.

Conjoint analysis subjects give favorable evaluations to product or service alternatives which include the attributes of highest priority to them at preferred levels. In this process they also accept attributes of lesser priority at levels which are not preferred. For example, if location was a high priority service alternatives with locations close to home would receive top rankings and consumers might accept higher price than they would ideally like in order to ensure that location was close.

As a result of this process, the highest mean utility scores of attributes of high priority are the preferred levels, whereas the highest mean utility scores for low

priority attributes are less preferred levels. To continue with the previous example, if location received its highest mean utility score for the close to home level, which group interviews had indicated would be preferred if other attributes were not considered, and the highest mean utility score for price was $3.50, which would not normally be preferred, then it could be concluded that location was probably of higher priority than price.

Attribute importance scores add depth to the analysis by indicating the degree to which each attribute was considered in overall service evaluation. Importance scores are computed by comparing the range in utility scores for any one attribute with that of the other attributes. If an attribute is of very high priority service alternatives which include this at preferred levels receive top evaluations, and those with this attribute at undesirable levels are ranked or rated last. Thus, there is a large range in utility scores which results in an high importance score. Attributes of medium priority tend to have lower importance scores, because these are not given as much consideration in overall alternative evaluation. Low priority attributes generally have higher importance scores than those of medium priority; however, these are combined with high utility scores for undesirable attribute levels. This results from the fact that that subjects compromise on low priority items readily; thus the range in utility scores is high.

In summary, utility scores and importance scores are interpreted in the following manner. Attributes which are of high priority receive high utility scores for high attribute levels combined with high importance scores. Those of low priority receive high utility scores for low levels and high importance scores. Further illustrations are provided in the following paragraphs.

In this study staff friendliness, manners and competency were the top priority. The highest mean utility score for this attribute went to the level 3 , "Above Average". This attribute had a 24.6% importance rating. These scores indicate service users put a high value on having pool staff who are above average in terms of friendliness, manners and competency; they were prepared to accept other attributes at less than optimal levels in order to ensure that staff were above average.

Facility cleanliness and maintenance are discussed next since this attribute got the second highest importance score, 23.3%. The highest mean utility score for cleanliness and maintenance went to the level 2 rating "Average". These results mean that respondents wanted facility cleanliness and maintenance to be at average levels. They were not prepared to make compromises on other attributes to get above average cleanliness and maintenance; however, they were very reluctant to accept below average standards.

The highest mean utility score for location went to the level 3 rating, this was described as "15 minutes away by bus or car, easily accessible by bicycle and by foot". The importance score for this attribute was 12.3%. These results indicate that proximity of location was preferred, but it was not as important to overall service evaluation as the attributes which were previously discussed.

The highest mean utility score for times available went to the level 1 option, "1 hour per day at a convenient time". This attribute got a 9.8% importance score. The meaning behind the high utility score for the level 1 rating is that respondents were prepared to compromise on this attribute in order to ensure that other attributes were at desired levels. The relatively low importance score indicates that respondents made this compromise less readily than compromises on the next 2 attributes to be discussed.

The highest utility score for facilities and equipment went to the level 1 rating. Its importance score was 14.7%. These scores mean that service users placed a relatively low priority on facilities and equipment.

Price of admission also received its highest utility score for the level 1 rating. This attribute got a 15.2% importance score. Evidently consumers were more prepared to compromise on price than on any other attribute.

4.3.4 User Characteristics and Priorities

The relationship between user priorities and the user characteristic variables listed in questions 4 and 5 were assessed by means of analysis of variance tests. For the purpose of these tests user priorities were operationalized as attribute importance scores. Thus analysis of variance tests were conducted on each attribute's importance score by each user characteristic variable. In cases where significant differences were found to exist Scheffe' tests were run. These tests provide detailed information about the nature of differences between groups.

Very few significant relationships were found to exist between the user characteristic variables and the attribute importance scores. There were a few instances in which the analysis of variance tests were significant at the 0.05 level; however, in most of these cases the Scheffe' tests found no significant relationships.

Only two relationships were found to be significant. The first of these was between gender and the importance of staff. The second was between frequency of service use and the importance of location.

The discrepancies between the analysis of variance test results and the Scheffe' test results which were found in some cases could have been caused by the fact that Scheffe' tests are very conservative. Four additional factors could also have come into play. The first of these

is that the confidence intervals of the groups being compared may have been overlapping. The second is that some groups may have had small numbers of subjects. Third, the results could be attributed to a lack of homogeneity of variance between the groups. Finally, analysis of variance tests could have found significant relationships due to chance alone. At the 0.05 level of significance there is a 1 in 20 chance that no difference between groups actually exists. In the following subsections the results of the tests to analyze the relationship between the user characteristic variables and user priorities are discussed in further depth.

Sociodemographic Variables.

Gender: The results of the analysis of variance tests of attribute importance scores by gender are documented in Table 7. Only one relationship was found to be significant. This was that between gender and the importance of staff. Females had a higher mean importance score for this attribute than males. No other significant trends between gender and attribute importance were apparent. Since there were only two response categories for gender as an independent variable, a Scheffe' test was not required.

Table 7. Importance Scores by Gender: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	Male	107	0.62	1.29	0.26
	Female	152	0.59		
Times Available	Male	107	0.27	0.01	0.90
	Female	152	0.27		
Admission Price	Male	107	0.61	0.56	0.11
	Female	152	0.57		
Cleanliness and Maintenance	Male	107	0.56	1.87	0.17
	Female	152	0.60		
Facility Location	Male	107	0.42	0.42	0.52
	Female	152	0.40		
Staff	Male	107	0.56	4.45	0.04*
	Female	152	0.63		

N = 259

* Significant at 0.05 level of probability according to the analysis of variance test.

Table 11a. Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Education: Analysis of Variance Test Results.

Age: The results of the analysis of variance tests of the attribute importance scores by age are reported in Tables 8a and 8b. Age was found to be significantly related to the importance of only one attribute; this was staff. A Scheffe' test, which was conducted to explore this relationship, found no significant differences at the 0.05 level. For this reason it can be concluded that age was not significantly related to subjects' importance scores. The discrepancy between the findings of the analysis of variance test and the Scheffe test regarding age and staff could have been caused by any or all of the factors discussed in the previous section. The confidence intervals for some age categories were overlapping. Some categories had very few subjects, for instance there were only 4 people in the over 65 group. Furthermore, the probability score for a Cochran's test of homogeneity of variance was 0.01, indicating that the category variances were different.

No other trends were apparant in the results of the analysis of variance tests on age.

Family life cycle stage: The results of the analysis of variance tests for attribute importance scores by family life cycle stage are reported in Tables 9a and 9b. According to the analysis of variance tests, family life cycle stage was significantly related to facilities and equipment and to staff. Facilities and equipment were particularly important to the young-single group, and

Table 8a. Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Age: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	18-19	7	0.47	1.16	0.32
	20-24	22	0.62		
	25-29	39	0.57		
	30-34	39	0.57		
	35-44	96	0.62		
	45-54	22	0.54		
	55-64	26	0.58		
	65+	4	0.82		
Times Available	18-19	7	0.33	1.13	0.34
	20-24	22	0.29		
	25-29	39	0.24		
	30-34	39	0.26		
	35-44	96	0.30		
	45-54	22	0.22		
	55-64	26	0.23		
	65+	4	0.25		
Admission Price	18-19	7	0.67	1.21	0.29
	20-24	22	0.64		
	25-29	39	0.64		
	30-34	39	0.58		
	35-44	96	0.57		
	45-54	22	0.56		
	55-64	26	0.62		
	65+	4	0.72		

N = 255

Table 8b. Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Age: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Cleanliness and Maintenance	18-19	7	0.62	0.55	0.82
	20-24	22	0.55		
	25-29	39	0.57		
	30-34	39	0.60		
	35-44	96	0.59		
	45-54	22	0.59		
	55-64	26	0.58		
	65+	4	0.39		
Facility Location	18-19	7	0.48	0.94	0.49
	20-24	22	0.35		
	25-29	39	0.41		
	30-34	39	0.45		
	35-44	96	0.43		
	45-54	22	0.46		
	55-64	26	0.33		
	65+	4	0.35		
Staff	18-19	7	0.55	2.41	0.01* #
	20-24	22	0.60		
	25-29	39	0.61		
	30-34	39	0.60		
	35-44	96	0.58		
	45-54	22	0.71		
	55-64	26	0.67		
	65+	4	0.22		

N = 255

* Significant at the 0.05 level of probability according to the analysis of variance test.

Not significant 0.05 level of probability according to a Scheffe' test.

Table 9a. Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Family Life Cycle Stage: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	YS	37	0.67	2.99	0.01* #
	YM	17	0.53		
	YMC	47	0.50		
	MM	98	0.63		
	MMC	40	0.55		
	EM	3	0.80		
	ES	1	0.90		
Times Available	YS	37	0.30	0.55	0.76
	YM	17	0.26		
	YMC	47	0.24		
	MM	98	0.29		
	MMC	40	0.26		
	EM	3	0.23		
	ES	1	0.29		
Price	YS	37	0.61	1.10	0.36
	YM	17	0.65		
	YMC	47	0.61		
	MM	98	0.58		
	MMC	40	0.55		
	EM	3	0.76		
	ES	1	0.58		

N = 243

* Significant at the 0.05 level of probability according to the analysis of variance test.

Not significant 0.05 level of probability according to a Scheffe' test.

1. Life Cycle Stage Abbreviations:

YS Young-Single
YM Young-Married
YMC Young-Married-Children
MM Middle Aged-Married
MMC Middle Aged-Married-Children
EM Elderly-Married
ES Elderly-Single

See Table 3 for detailed descriptions of each stage.

Table 9b. Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Family Life Cycle Stage: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Cleanliness and Maintenance	YS	37	0.56	0.68	0.66
	YM	17	0.63		
	YMC	47	0.60		
	MM	98	0.58		
	MMC	40	0.59		
	EM	3	0.37		
	ES	1	0.48		
Location	YS	37	0.41	1.25	0.28
	YM	17	0.40		
	YMC	47	0.42		
	MM	98	0.45		
	MMC	40	0.33		
	EM	3	0.31		
	ES	1	0.48		
Staff	YS	37	0.58	2.69	0.01*#
	YM	17	0.72		
	YMC	47	0.60		
	MM	98	0.58		
	MMC	40	0.67		
	EM	3	0.26		
	ES	1	0.11		

N = 243

* Significant at the 0.05 level of probability according to the analysis of variance test.

Not significant 0.05 level of probability according to a Scheffe' test.

1. Life Cycle Stage Abbreviations:

YS Young-Single
YM Young-Married
YMC Young-Married Children
MM Middle Aged-Married
MMC Middle Aged-Married-Children
EM Elderly-Married
ES Elderly-Single

See Table 3 for detailed descriptions of each stage.

staff were very important to those in the young-married category. However, Scheffe' tests, which were subsequently undertaken, found no significant relationships between family life cycle and either of these attributes. Overlapping confidence intervals, small numbers of subjects in some categories and chance may have caused the discrepancy between the results of the analysis of variance tests and Scheffe' tests in both of these cases. Furthermore, the homogeneity of variance test was significant for staff.

Income: Tables 10a and 10b document the results of the analysis of variance tests of importance scores by income. The measure of income used for these tests was average annual household income per person in the household income unit. This measure was used so that subjects in different sizes of household income units could be compared realistically. No significant relationships were found to exist between income and attribute importance. Admission price was found to be significantly related to income in the analysis of variance tests; it was particularly important to those in the less than $5,000 bracket. However, this trend was not found to be significant according to a Scheffe' test. In this case confidence intervals overlapped, there were relatively small numbers of subjects in some categories, and the variances were found to be significantly different by a Cochran's test.

Table 10a. Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Average Annual Household Income per Person: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	Up to $4,999	18	0.63	1.57	0.17
	$5,000-$9,999	80	0.56		
	$10,000-$14,999	53	0.62		
	$15,000-$19,999	43	0.53		
	$20,000-$24,999	12	0.63		
	$25,000 and up	36	0.67		
Times Available	Up to $4,999	18	0.25	0.33	0.89
	$5,000-$9,999	80	0.28		
	$10,000-$14,999	53	0.27		
	$15,000-$19,999	43	0.26		
	$20,000-$24,999	12	0.22		
	$25,000 and up.	36	0.29		
Admission Price	Up to $4,999	18	0.72	2.26	0.05* #
	$5,000-$9,999	80	0.58		
	$10,000-$14,999	53	0.59		
	$15,000-$19,999	43	0.55		
	$20,000-$24,999	12	0.65		
	$25,000 and up.	36	0.60		

N = 242

* Significant at the 0.05 level of probability according to the analysis of variance test.

Not significant 0.05 level of probability according to a Scheffe' test.

Table 10b. Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Average Annual Household Income per Person: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Cleanliness and Maintenance	Up to $4,999	18	0.54	0.59	0.70
	$5,000-$9,999	80	0.59		
	$10,000-$14,999	53	0.59		
	$15,000-$19,999	43	0.61		
	$20,000-$24,999	12	0.55		
	$25,000 and up	36	0.54		
Facility Location	Up to $4,999	18	0.41	0.95	0.45
	$5,000-$9,999	80	0.38		
	$10,000-$14,999	53	0.41		
	$15,000-$19,999	43	0.47		
	$20,000-$24,999	12	0.34		
	$25,000 and up.	36	0.40		
Staff	Up to $4,999	18	0.55	0.81	0.54
	$5,000-$9,999	80	0.64		
	$10,000-$14,999	53	0.61		
	$15,000-$19,999	43	0.58		
	$20,000-$24,999	12	0.61		
	$25,000 and up.	36	0.55		

N = 242

Education: Tables 11a and 11b are concerned with the relationship between education and attribute importance scores. No significant relationships were found between these variables, and there were no apparent trends.

Occupation: The results of the tests regarding occupation and attribute importance are documented in Tables 12a and 12b. Again, these variables do not appear to be related. One relationship was found to be significant in the analysis of variance tests; however, it was not significant according to the Scheffe' test. This relationship was between occupation and admission price. Price was of particularly high importance to the crafts and trades group and of low priority to those in high level management. Confidence intervals of different occupation categories did overlap for this test. Furthermore, one category had only 5 subjects. However, no significant differences were found in the variances.

Service Use Characteristics.

Social grouping: No significant relationships or apparent trends were found by the analysis of variance tests of attribute importance scores by social grouping for service use. The results of these tests are presented in Table 13.

Transportation: The results of tests to analyze the relationship between attribute importance scores and the means of transport used to access facilities are listed in

Table 11a. Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Education: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	Gr 9 or Less	6	0.66	0.69	0.66
	Less than H.S.	25	0.54		
	High School	60	0.55		
	Some Col/Tech/U	67	0.60		
	College/Tech	38	0.60		
	University	40	0.61		
	P.Grad	22	0.56		
Times Available	Gr 9 or Less	6	0.40	1.36	0.23
	Less than H.S.	25	0.34		
	High School	60	0.38		
	Some Col/Tech/U	67	0.43		
	College/Tech	38	0.39		
	University	40	0.48		
	P.Grad	22	0.45		
Admission Price	Gr 9 or Less	6	0.61	0.89	0.50
	Less than H.S.	25	0.58		
	High School	60	0.62		
	Some Col/Tech/U	67	0.57		
	College/Tech	38	0.68		
	University	40	0.58		
	P.Grad	22	0.56		

N = 258

Table 11b. Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Education: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Cleanliness and Maintenance	Gr 9 or Less	6	0.66	0.69	0.66
	Less than H.S.	25	0.54		
	High School	60	0.55		
	Some Col/Tech/U	67	0.60		
	College/Tech	38	0.60		
	University	40	0.61		
	P.Grad	22	0.56		
Facility Location	Gr 9 or Less	6	0.40	1.36	0.23
	Less than H.S.	25	0.34		
	High School	60	0.38		
	Some Col/Tech/U	67	0.43		
	College/Tech	38	0.39		
	University	40	0.48		
	P.Grad	22	0.45		
Staff	Gr 9 or Less	6	0.61	0.89	0.50
	Less than H.S.	25	0.58		
	High School	60	0.62		
	Some Col/Tech/U	67	0.57		
	College/Tech	38	0.68		
	University	40	0.58		
	P.Grad	22	0.56		

N = 258

Table 12a. Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Occupation: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	Semi/Unskilled	14	0.60	0.56	0.78
	Crafts/Trades	21	0.55		
	Cleric/Sales/Serv	49	0.57		
	Middle Management	19	0.64		
	Technician	11	0.61		
	Semiprofessional	21	0.61		
	High L Management	5	0.64		
	Professional	30	0.67		
Times Available	Semi/Unskilled	14	0.37	1.66	0.12
	Crafts/Trades	21	0.23		
	Cleric/Sales/Serv	49	0.25		
	Middle Management	19	0.31		
	Technician	11	0.25		
	Semiprofessional	21	0.30		
	High L Management	5	0.42		
	Professional	30	0.35		
Admission Price	Semi/Unskilled	14	0.57	2.79	0.01* #
	Crafts/Trades	21	0.73		
	Cleric/Sales/Serv	49	0.57		
	Middle Management	19	0.58		
	Technician	11	0.57		
	Semiprofessional	21	0.52		
	High L Management	5	0.39		
	Professional	30	0.55		

N = 170

* Significant at the 0.05 level of probability according to the analysis of variance test.

Not significant 0.05 level of probability according to a Scheffe' test.

Table 12b. Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Occupation: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Cleanliness and Maintenance	Semi/Unskilled	14	0.57	0.37	0.92
	Crafts/Trades	21	0.56		
	Cleric/Sales/Serv	49	0.54		
	Middle Management	19	0.58		
	Technician	11	0.52		
	Semiprofessional	21	0.62		
	High L Management	5	0.60		
	Professional	30	0.57		
Facility Location	Semi/Unskilled	14	0.36	1.47	0.18
	Crafts/Trades	21	0.31		
	Cleric/Sales/Serv	49	0.42		
	Middle Management	19	0.38		
	Technician	11	0.50		
	Semiprofessional	21	0.48		
	High L Management	5	0.56		
	Professional	30	0.45		
Staff	Semi/Unskilled	14	0.58	0.37	0.92
	Crafts/Trades	21	0.60		
	Cleric/Sales/Serv	49	0.62		
	Middle Management	19	0.54		
	Technician	11	0.53		
	Semiprofessional	21	0.58		
	High L Management	5	0.51		
	Professional	30	0.55		

N = 170

Table 13. Importance Scores by Social Grouping for Service Use: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	Alone	61	0.63	0.55	0.65
	Adults	71	0.60		
	Children	38	0.57		
	Ch & Adults	86	0.58		
Times Available	Alone	61	0.28	0.37	0.77
	Adults	71	0.27		
	Children	38	0.24		
	Ch & Adults	86	0.28		
Admission Price	Alone	61	0.57	1.76	1.55
	Adults	71	0.63		
	Children	38	0.62		
	Ch & Adults	86	0.57		
Cleanliness and Maintenance	Alone	61	0.56	0.54	0.65
	Adults	71	0.58		
	Children	38	0.56		
	Ch & Adults	86	0.60		
Facility Location	Alone	61	0.41	0.72	0.54
	Adults	71	0.38		
	Children	38	0.43		
	Ch & Adults	86	0.44		
Staff	Alone	61	0.61	0.10	0.95
	Adults	71	0.60		
	Children	38	0.58		
	Ch & Adults	86	0.59		

N = 256

Table 14. Again, no significant relationships or obvious trends were found by these tests.

Frequency of service use: In Table 15 the results of tests to determine whether frequency of service use was significantly related to user priorities are presented. One significant relationship was found by these tests. Facility location was found to be more important to subjects who used services at least once per week than those who used them at least once per month.

Pool used: The last user characteristic variable which was considered was which city pool subjects used. The attribute importance scores of subjects who completed the questionnaire at each of the pools were compared in order to determine if there were any significant differences. The results of these tests are displayed in Tables 16a and 16b. No significant relationships or trends were found to exist.

4.3.5 Additional Tests

In Chapter 2 several predictions were made regarding the relationships between users' sociodemographic characteristics and service preferences. Many of these projections were made on the basis of existing knowledge about how sociodemographic characteristics are related to leisure preferences, barriers and behavior. One example is that it was assumed that females would be more concerned with provisions for children than males, since

Table 14. Importance Scores by Means of Transport Used to Access Facilities: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	Foot	17	0.54	1.23	0.30
	Bicycle	6	0.62		
	Bus/LRT	2	0.29		
	Car/M.Cycle	224	0.59		
	Other	2	0.77		
Times Available	Foot	17	0.23	1.44	0.22
	Bicycle	6	0.14		
	Bus/LRT	2	0.41		
	Car/M.Cycle	224	0.28		
	Other	2	0.13		
Admission Price	Foot	17	0.57	1.16	0.33
	Bicycle	6	0.50		
	Bus/LRT	2	0.70		
	Car/M.Cycle	224	0.60		
	Other	2	0.81		
Cleanliness and Maintenance	Foot	17	0.53	2.20	0.07
	Bicycle	6	0.56		
	Bus/LRT	2	0.21		
	Car/M.Cycle	224	0.59		
	Other	2	0.32		
Facility Location	Foot	17	0.43	2.16	0.07
	Bicycle	6	0.66		
	Bus/LRT	2	0.28		
	Car/M.Cycle	224	0.41		
	Other	2	0.20		
Staff	Foot	17	0.62	2.06	0.86
	Bicycle	6	0.36		
	Bus/LRT	2	0.81		
	Car/M.Cycle	224	0.61		
	Other	2	0.35		

N = 251

Table 15. Importance Scores by Frequency of Service Use: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	Several times/wk	81	0.61	1.34	0.25
	At least 1/wk	102	0.60		
	At least 1/mth	51	0.54		
	Less than 1/mth	23	0.66		
	Practically never	2	0.45		
Times Available	Several times/wk	81	0.24	0.85	0.50
	At least 1/wk	102	0.30		
	At least 1/mth	51	0.27		
	Less than 1/mth	23	0.25		
	Practically never	2	0.23		
Admission Price	Several times/wk	81	0.57	1.71	0.15
	At least 1/wk	102	0.58		
	At least 1/mth	51	0.66		
	Less than 1/mth	23	0.59		
	Practically never	2	0.64		
Cleanliness and Maintenance	Several times/wk	81	0.60	0.92	0.45
	At least 1/wk	102	0.56		
	At least 1/mth	51	0.61		
	Less than 1/mth	23	0.52		
	Practically never	2	0.54		
Facility Location	Several times/wk	81	0.41	2.96	0.02*
	At least 1/wk	102	0.45		
	At least 1/mth	51	0.32		
	Less than 1/mth	23	0.46		
	Practically never	2	0.32		
Staff	Several times/wk	81	0.59	2.17	0.07
	At least 1/wk	102	0.59		
	At least 1/mth	51	0.67		
	Less than 1/mth	23	0.49		
	Practically never	2	0.72		

N = 259

* Significant at 0.05 level of probability according to the analysis of variance test.

According to a Scheffe' test there was a significant difference, at 0.05 level of probability, between the scores of subjects who used the services at least once per week and those who used the services at least once per month.

Table 16a. Importance Scores for Facilities and Equipment, Times Available, and Admission Price by Pool Used: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Facilities and Equipment	A.C.T.	25	0.56	0.73	0.68
	Bonnie Doon	24	0.65		
	Confederation	28	0.55		
	Grand Trunk	32	0.63		
	Eastglen	22	0.66		
	Hardisty	18	0.55		
	Jasper Place	23	0.55		
	Londonderry	32	0.62		
	O'Leary	30	0.61		
	Strathcona	25	0.62		
Times Available	A.C.T.	25	0.25	1.04	0.40
	Bonnie Doon	24	0.27		
	Confederation	28	0.29		
	Grand Trunk	32	0.27		
	Eastglen	22	0.30		
	Hardisty	18	0.24		
	Jasper Place	23	0.30		
	Londonderry	32	0.22		
	O'Leary	30	0.34		
	Strathcona	25	0.23		
Admission Price	A.C.T.	25	0.54	0.81	0.60
	Bonnie Doon	24	0.63		
	Confederation	28	0.58		
	Grand Trunk	32	0.59		
	Eastglen	22	0.55		
	Hardisty	18	0.56		
	Jasper Place	23	0.61		
	Londonderry	32	0.55		
	O'Leary	30	0.58		
	Strathcona	25	0.58		

N = 259

Table 16b. Importance Scores for Cleanliness and Maintenance, Facility Location, and Staff by Pool Used: Analysis of Variance Test Results.

Attribute	Group	N	Mean	F	Probability
Cleanliness and Maintenance	A.C.T.	25	0.61	0.56	0.82
	Bonnie Doon	24	0.53		
	Confederation	28	0.59		
	Grand Trunk	32	0.60		
	Eastglen	22	0.61		
	Hardisty	18	0.62		
	Jasper Place	23	0.61		
	Londonderry	32	0.57		
	O'Leary	30	0.52		
	Strathcona	25	0.58		
Facility Location	A.C.T.	25	0.39	0.74	0.67
	Bonnie Doon	24	0.42		
	Confederation	28	0.46		
	Grand Trunk	32	0.38		
	Eastglen	22	0.41		
	Hardisty	18	0.36		
	Jasper Place	23	0.34		
	Londonderry	32	0.37		
	O'Leary	30	0.43		
	Strathcona	25	0.46		
Staff	A.C.T.	25	0.62	0.55	0.84
	Bonnie Doon	24	0.62		
	Confederation	28	0.59		
	Grand Trunk	32	0.65		
	Eastglen	22	0.54		
	Hardisty	18	0.64		
	Jasper Place	23	0.61		
	Londonderry	32	0.59		
	O'Leary	30	0.54		
	Strathcona	25	0.63		

N = 259

women recreate with children more frequently than do men. This section is concerned with the results of chi square tests to determine whether the relationships between sociodemographic variables and leisure barriers, preferences, and behavior which are normally found to apply existed for the subjects in this study.

Eight chi square tests were conducted. Their results are tabulated in Tables 17 to 24. Significant relationships were found in 3 instances. Each of the tests are discussed in the following sections.

The relationship between gender and social grouping for service use was analyzed first. As discussed in the previous section, it has generally been found that females recreate with children more often than males. This trend was found to exist in this case, however the relationship was not statistically significant at the 0.05 level.

The second test analyzed the relationship between gender and income. Generally females tend to have less income than males, thus it was speculated that they might be more price sensitive. In this case no relationship between gender and income was found.

Next the variable gender was analyzed by means of transport used to access services. The Scottish Sports Council (1979) found that females access services by public transport more than do males. In this study no significant relationship was found. The vast majority of

Table 17. Gender by Social Grouping for Service Use: Chi-square Test Results.

Gender	Male	Female
Social Grouping		
Alone		
Frequency:	38	41
Col Percent:	32%	24%
With Adults		
Frequency:	35	43
Percent:	29%	25%
With Children		
Frequency:	15	30
Percent:	13%	17%
With Children and Adults		
Frequency:	31	60
Percent:	26%	34%

Chi-square statistic = 5.03
Degrees of Freedom = 3
Significance = 0.17

Table 18. Gender by Annual Household Income per Person: Chi-square Test Results.

Gender	Male	Female
Income		
Up to $4,999.		
Frequency:	9	10
Col Percent:	8%	6%
$5,000 - $9,999.		
Frequency:	34	56
Percent:	30%	36%
$10,000 - $14,999.		
Frequency:	25	36
Percent:	22%	23%
$15,000 - 19,999.		
Frequency:	17	30
Percent:	15%	19%
$20,000 - 24,999.		
Frequency:	5	10
Percent:	4%	6%
$25,000 and Up.		
Frequency:	25	15
Percent:	21%	10%

Chi-square statistic = 8.90
Degrees of Freedom = 5
Significance = 0.11

Table 19. Gender by Means of Transport Used to Access Facilities: Chi-square Test Results.

Gender	Male	Female
Transport		
By Foot.		
Frequency:	7	12
Col Percent:	6%	7%
By Bicycle.		
Frequency:	3	4
Percent:	3%	2%
By Bus or L.R.T.		
Frequency:	1	2
Percent:	1%	1%
By Car or Motorcycle.		
Frequency:	104	153
Percent:	89%	89%
Other.		
Frequency:	1	1
Percent:	1%	1%

Chi-square statistic = 0.25
Degrees of Freedom = 4
Significance = 0.99

subjects accessed services by car or motorcycle. Only 1% of male subjects and 2% of females used the bus.

The relationship between age and frequency of service use was addressed in the following test (see Table 20). In general participation in sports decreases as individuals age. In this case a significant relationship was found to exist between the variables; however, it was not exactly as would have been expected. Frequency of service use decreased with age up until the age of 44 and then it increased again.

Table 21 is concerned with family life cycle stage and social grouping for service use. A significant relationship was found to exist between these variables. Individuals with children swam with children more than others.

The relationship between family life cycle and frequency of service use was also found to be significant. The results of this test are reported in Table 22. Those in the young-married, young-married-children and middle aged-married-children groups swam less frequently than others.

Income and frequency of service use was analyzed next (see Table 23). According to the literature income is positively related to frequency of recreation participation. In this study the relationship was found to be at the 0.06 level of probability. Those in the

Table 20. Age by Frequency of Service Use: Chi-square Test Results.

Age	18-19	20-24	25-29	30-34	35-44	45-54	55-64	65+
Frequency								
Several Times/Week								
Frequency:	4	6	13	13	18	14	19	8
Col Percent:	44%	25%	30%	28%	18%	54%	59%	100%
At Least Once/Week								
Frequency:	4	14	19	17	39	9	13	0
Percent:	44%	58%	44%	36%	38%	35%	41%	0%
At Least Once/Month								
Frequency:	0	2	9	12	29	2	0	0
Percent:	0%	8%	21%	25%	28%	8%	0%	0%
Less Than Once/Month								
Frequency:	1	1	2	5	16	0	0	0
Percent:	0%	0%	1%	2%	5%	0%	0%	0%
Practically Never								
Frequency:	0	1	0	0	0	1	0	0
Percent:	0%	4%	0%	0%	0%	4%	0%	0%

Chi-square statistic = 77.67
Degrees of Freedom = 28
Significance = 0.0 *

* Significant at the 0.05 level of probability.

Table 21. Family Life Cycle Stage by Social Grouping for Service Use: Chi-square Test Results.

Life Cycle Stage	YS	YM	YMC	MMC	MM	EM	ES
Social Grouping							
Alone							
Frequency:	18	2	4	23	24	1	1
Col Percent:	42%	12%	7%	23%	49%	20%	50%
With Adults							
Frequency:	23	15	4	3	22	4	1
Percent:	53%	88%	7%	3%	45%	80%	50%
With Children							
Frequency:	0	0	18	24	1	0	0
Percent:	0%	0%	32%	23%	2%	0%	0%
With Children and Adults							
Frequency:	2	0	30	53	2	0	0
Percent:	5%	0%	54%	51%	4%	0%	0%

Chi-square statistic = 182.9
Degrees of Freedom = 18
Significance = 0.0 *

* Significant at the 0.05 level of probability.

1. Life Cycle Stage Abbreviations:

YS Young-Single
YM Young-Married
YMC Young-Married-Children
MM Middle Aged-Married
MMC Middle Aged-Married-Children
EM Elderly-Married
ES Elderly-Single

See Table 3 for detailed descriptions of each stage.

Table 22. Family Life Cycle Stage by Frequency of Service Use: Chi-square Test Results.

Life Cycle Stage	YS	YM	YMC	MMC	MM	EM	ES
Frequency							
Several Times/Week							
Frequency:	16	8	8	22	27	5	2
Percent:	37%	47%	14%	21%	55%	100%	100%
At Least Once/Week							
Frequency:	25	5	22	37	20	0	0
Percent:	58%	29%	39%	35%	41%	0%	0%
At Least Once/Month							
Frequency:	2	2	19	29	2	0	0
Percent:	5%	12%	33%	28%	4%	0%	0%
Less Than Once/Month							
Frequency:	0	1	8	16	0	0	0
Percent:	0%	6%	14%	15%	0%	0%	0%
Practically Never							
Frequency:	0	1	0	1	0	0	0
Percent:	0%	6%	0%	1%	0%	0%	0%

Chi-square statistic = 82.2
Degrees of Freedom = 24
Significance = 0.0 *

* Significant at the 0.05 level of probability.

1. Life Cycle Stage Abbreviations:

YS Young- Single
YM Young-Married
YMC Young-Married-Children
MM Married-Middle Aged
MMC Middle Aged-Married-Children
EM Elderly-Married
ES Elderly-Single

See Table 3 for detailed descriptions of each stage.

Table 23. Income by Frequency of Service Use: Chi-square Test Results.

Income	Up to $4999	$5000-$9999	$10000-$14999	$15000-$19999	$20000-$24999	$25000 and up
Frequency						
Several Times/Week Frequency:	2	28	23	16	5	15
Percent:	10%	31%	38%	34%	33%	37%
At Least Once/Week Frequency:	11	35	20	14	7	17
Percent:	58%	39%	33%	30%	47%	42%
At Least Once/Month Frequency:	5	22	14	6	2	3
Percent:	26%	24%	23%	13%	13%	7%
Less Than Once/Month Frequency:	1	4	4	11	1	4
Percent:	5%	4%	7%	23%	7%	10%
Practically Never Frequency:	0	1	0	0	0	1
Percent:	0%	1%	0%	0%	0%	2%

Chi-square statistic = 30.2
Degrees of Freedom = 20
Probability = 0.06

middle income groups swam more frequently than those with high or low incomes.

The final chi square test was concerned with education and frequency of service use (see Table 24). Previous research has found years of formal education to be positively related to frequency of recreation participation. In this case no significant relationship was found.

4.3.6 Other Attributes

In the second question of part 2 of the survey respondents were asked to identify any attributes other than those included in the service alternatives listed in question 1 which they would consider in evaluating recreational swimming services. Very few additional attributes were listed, and most of these had already been discussed in the interviews.

Several subjects responded with specifics related to the attributes which were included in the service alternatives. Most of these had been discussed in the interviews, but had been omitted from the questionnaire in order to minimize its complexity. Some examples are: warm water, deep water, a lack of excessive chlorine, and reduced rates for multiple-admission passes.

Some additional service attributes which were mentioned in the interviews but not included in the questionnaire were also listed. These were: crowding,

Table 24. Education by Frequency of Service Use: Chi-square Test Results.

Education	Gr 9 or less	Less than H.S.	H.S.	Some Coll Tech Uni	Coll Tech	Uni	Post Grad
Frequency							
Several Times/Week							
Frequency:	3	15	25	26	9	11	6
Percent:	43%	48%	37%	32%	21%	26%	26%
At Least Once/Week							
Frequency:	2	11	26	33	16	18	10
Percent:	29%	35%	39%	41%	38%	42%	43%
At Least Once/Month							
Frequency:	1	2	11	15	9	10	6
Percent:	14%	6%	16%	19%	21%	23%	26%
Less Than Once/Month							
Frequency:	1	3	5	6	7	4	0
Percent:	14%	10%	7%	7%	17%	9%	0%
Practically Never							
Frequency:	0	0	0	0	1	0	1
Percent:	0%	0%	0%	0%	2%	0%	4%

Chi-square Statistic = 23.7
Degrees of Freedom = 24
Significance = 0.48

child care, cafeterias, parking, and privacy in the changing rooms.

Finally, two respondents added attributes which had not been discussed by the interview participants. These were provisions for hosting parties at pools, and a phone recording of hours of operation.

4.4 Summary

This chapter was concerned with the results of the study. The results of the group interviews were discussed first. Following that the questionnaire results were presented.

The main objective of the interviews was to determine which service attributes were considered salient to the evaluation of recreational swimming services by the majority of service users. The following seven attributes were identified: facility location, facility cleanliness and maintenance, staff attitude and competency, hours of operation, variety of facilities, variety of things to do, and admission cost. In the body of this chapter each of these attributes was described in detail, and user preferences with regard to each were discussed.

The questionnaires were used to analyze user priorities regarding the attributes salient to service evaluation. Their results indicate that subjects consider the service attributes in the following order of priority:

staff, facility cleanliness and maintenance, facility location, times available, facilities and equipment and admission price. Only two significant relationships were found to exist between the user characteristic variables listed in research questions 4 and 5 and user priorities. The first of these was between gender and the importance of staff; females considered staff to be more important than males. The second was between frequency of service use and the importance of location; those who used services at least once a week considered location more important than those who used services approximately once per month.

Chi square tests were conducted to determine the relationship between user characteristics and factors associated with leisure preferences, barriers and behavior patterns which were discussed in the literature review. Significant relationships were found to exist between age and frequency of service use, and between family life cycle stage and both social grouping and frequency of service use. Frequency of service use declined with age up to the age of 40; it then increased again. Those with children swam less frequently than others, and when they did swim they were more likely to swim with children.

The survey included a question asking subjects to list any attributes which they would consider in service evaluation in addition to those listed in the questionnaire service alternatives. Very few additional

attributes were identified, and almost all of these had been discussed in the interviews.

5. DISCUSSION, CONCLUSIONS AND IMPLICATIONS.

5.1 Introduction

The final chapter of this thesis is concerned with the conclusions and implications arising from the study. The chapter commences with a review of the study. After this possible limitations of the methodology are discussed. The next section is concerned with how the results relate to the findings of previous research, as summarized in Chapter 2. Following this, conclusions are drawn, the implications are discussed, and recommendations are made.

5.2 Review of the Study

5.2.1 Objectives

The study had two main objectives. The first of these was to determine the preferences and priorities of adult users of recreational swimming services regarding the attributes of such services. The second objective was to determine whether user preferences were related to either user sociodemographic characteristics or patterns of service use.

Three research questions were posed with regard to the first objective. These were:

1. Which attributes did adult users of the City of Edmonton recreational swimming services consider salient in evaluating recreational swimming services?

2. What preferences did users have with respect to the attributes which were most frequently considered salient in service evaluation?
3. What priorities did users have regarding the attributes most frequently considered salient in service evaluation?

Two additional questions were concerned with the second objective. These were:

4. Was there a significant relationship between user priorities and user gender, age, family life cycle stage, income, education, or occupation?
5. Was there a significant relationship between user priorities and the type of social group in which consumers used the services, the means of transport consumers used to access services, the frequency of service use, or the particular city pool which consumers used?

5.2.2 Methodology

Two data collection methods were used in the study. These were group interviews and questionnaires.

The exploratory research phase was conducted by means of group interviews. Interview data were used to address research questions 1 and 2. The group interview transcripts were analyzed according to qualitative data analysis procedures outlined in Lincoln and Guba (1985); these were described in Chapter 3. Subjects' written responses were consolidated into a frequency table and a report.

Questionnaires were used to gather data to answer questions 3 to 5. The surveys included questions regarding the sociodemographic and service use characteristics of respondents. They also had a question which gathered data to be used for conjoint analysis, in order to determine subjects' priorities with regard to service attributes. The conjoint analysis data were analyzed according to procedures outlined in Chapter 3. These procedures yielded utility scores and attribute importance scores. Analysis of variance tests were then conducted, in order to determine whether significant relationships existed between subjects' attribute importance scores and the sociodemographic or service use characteristics. Chi square tests were also done, in order analyze relationships between subjects' sociodemographic and service use characteristics.

5.2.3 Results

According to the interview results, the following service attributes were most frequently considered salient in evaluating recreational swimming services: facility location, facility cleanliness and maintenance, staff attitude and competency, hours of operation, variety of facilities, variety of things to do, and cost of admission.

Users preferred facilities to be located as close to home as possible, and to take as little time as possible

to reach. The subjects indicated that they wanted facilities to be clean and well maintained. Desired characteristics in pool staff were friendly, helpful attitudes and competency. Subjects wanted services to be available at a variety of times convenient to the majority of service users, they also indicated that each time period should be of at least two hours' duration. The interview participants expressed the desire for a variety of facilities and amenities at pools. These included: diving boards, roped off lanes, shallow water suitable for young children, saunas, whirlpools, hot tubs, and steam rooms. Further to this, they stressed the importance of having a variety of things for pool users to do. A variety of facilities and amenities, pool toys and equipment, and management policies encouraging varied activity were all considered important in enhancing this. Admission price was the last attribute which was considered salient to service evaluation by the majority. All other things being equal, low admission prices were preferred.

The conjoint analysis results indicated that the attributes were considered in the following order of priority: staff, facility cleanliness and maintenance, facility location, times available, facilities and equipment, and admission price. Staff attitude and competency were of greatest concern to service users; facility cleanliness and maintenance were second, and so on.

Only two significant relationships were found to exist between the user characteristic variables, listed in research questions 4 and 5, and user priorities. The first of these was between gender and the importance of staff; females considered staff to be more important than did males. The second was between frequency of service use and the importance of location; facility location was more important to those who used the services at least once per week than to those who used them at least once per month.

Three significant relationships between the user characteristic variables were found. The first of these was between age and frequency of service use. Frequency of service use decreased with age until middle age, it then increased. The next significant relationship was between family life cycle stage and frequency of service use. Those in the young- and middle-aged-married-with-children groups swam less than others. The third relationship was between family life cycle stage and social grouping for service use; those with children swam with children more frequently than others.

5.3 Limitations

Before the results of the study are discussed, or conclusions concerning these are drawn, the possible limitations of the study must be addressed. Possible weaknesses in the methodology are outlined in the following paragraphs.

One possible weakness in the manner in which the group interviews were conducted was that all of the interview subjects were users of one pool, Bonnie Doon. The interviews were conducted in one location in order to lessen the amount of work involved in administration, and to minimize inconvenience to City of Edmonton recreational service users, staff and management. It is possible that the opinions of users of other city pools may have differed from those of Bonnie Doon patrons. In this case collecting all of the interview data at Bonnie Doon could have limited the results. The aforementioned problem seems unlikely for two reasons. The first is that many of the interview subjects indicated that they used several city pools. The second is that the services offered at each pool are very similar. Nevertheless, this possible limitation must be considered in interpreting the results of the study.

The next possible areas of weakness in the methodology are concerned with the design of the conjoint analysis question in the questionnaire. The order in which attributes were listed may have affected the degree to

which they were considered in service evaluation. Green and Srinivasan (1978, p.3) cited a study by Acito (1977) in which attribute order was found to influence the results of a conjoint analysis study. Similarly, the format of each service alternative, in terms of which attribute levels were grouped together, may have affected the results. These problems could have been addressed by distributing several different versions of the questionnaire; however, this would have complicated questionnaire administration. The number of attribute levels included in product or service alternatives, and the magnitude of difference between levels, can also affect the results of conjoint analysis studies (Cattin and Wittink, 1982, p.51). Furthermore, the use of objective descriptions of attribute levels, such as "above average cleanliness", may have been a weakness. Each subject's interpretation of these descriptions would have been unique; thus, generalizations would be less valid than with attributes which were described objectively. Objective descriptions were used where possible; however, subjective descriptions were used when it would have been difficult to write concisely in objective terms.

The reliability of the questionnaire is another concern. The results of the first tests were indicative of very low reliability. Those of the second tests were better; however, their correlation coefficients were still lower those reported in the literature. McCullough and

Best (1979) cited several studies of the reliability of conjoint analysis questionnaires with median correlation coefficients of above 0.90. The first tests conducted in this study may have been inaccurate due to the small sample sizes, or due to the fact that the subjects were students who were not sufficiently committed to the study to give serious consideration to the manner in which they ranked service alternatives. Nevertheless, it appears that the reliability of the questionnaire was lower than desirable. One likely explanation for this is that the magnitude of differences between attribute levels was insufficient; if subjects perceived little difference between service alternatives they would have had difficulty in evaluating them consistently.

Two aspects of the data analysis methodology may be considered to be weaknesses of the study. The first is the use of importance scores for the analysis of variance tests. An attribute can have a high importance score for two reasons. The first is that consumers would readily make compromises to have this attribute at the desired level. The second is that service users would readily compromise on this attribute in order to have other attributes at desired levels (see section 4.3.3 for further details). The meaning behind attribute importance scores could not be considered in the comparison of scores in this study. For example, if males and females had the same importance score for facilities and equipment it

would be concluded that there was no difference in priority regarding this attribute according to gender; however, males may have had a high importance score because facilities and equipment were a high priority, while females had the same score because it was a very low priority.

Using analysis of variance tests, to determine whether user sociodemographic or service use characteristics were related to consumer priorities, could also have been a limitation. This method involved doing numerous tests, a total of 60, and in each case there was a 5% chance of getting a significant result due to chance alone. If a multivariate technique, such as multiple discriminant analysis, had been used fewer tests could have been conducted and the likelihood of getting significant findings when relationships between variables did not exist would have been lower. In this study very few significant relationships were found, so the use of analysis of variance does not appear to have been a big problem. Nevertheless, the possibility remains that some of the relationships which were found to be significant may have been due to chance alone.

5.4 Discussion

5.4.1 Evaluative Criteria

Salient Attributes

The results of the study pertaining to which attributes consumers considered in service evaluation are consistent with the literature.

Parsuraman et al. (1984, 1986) indicated that most services are evaluated on five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Each of these were described in Chapter 2.

Most of the attributes considered salient to service evaluation in this study fall under one or more of Parsuraman et al.'s dimensions. For example, variety of facilities, and facility cleanliness and maintenance are tangibles; staff attitude and competency are aspects of assurance; and, variety of things to do and times available relate to empathy. Neither price nor location were mentioned specifically by Parsuraman et al.; however, it seems that price would be a tangible, and location could be classified under tangibles or empathy.

The salient attributes in this study were not closely related to either the reliability or the responsiveness service dimensions; however, aspects of each of these dimensions were discussed during the group interviews. Consistent scheduling was discussed by the pool managers; this is a factor in reliability. Responsiveness was one

aspect of staff attitude and competency which the service users talked about.

McKay and Crompton (1988) developed a list of recreation service specifications based on the work of Parsuraman et al (1984, 1986). The results of this study are related to these service specifications in a similar manner to those of Parsuraman et al. One addition is that McKay and Crompton did mention location specifically, under the empathy dimension.

Stankey and McCool (1984) suggested that consumers consider the setting, social attributes, and service management in evaluating recreation services. All of the attributes discussed in the interviews fall into these categories; however, social attributes were not considered salient to service evaluation by the majority.

The following service attributes were included in the City of Edmonton Pool Users' Survey (1985): staff friendliness and helpfulness, staff skill and knowledge, facility cleanliness, convenience of hours of operation, and admission cost. All of these attributes were identified as being salient to service evaluation in this study; however, this study also found that location, variety of facilities and variety of things to do were considered.

City of Calgary (1985, 1986) questionnaires included the following: staff attitude and helpfulness, safety and supervision, activities offered, atmosphere and

aesthetics, amount of space per person, facility cleanliness, maintenance in the pool area, quality of water, water temperature, access and parking, hours of operation, and value for money. Variety of facilities and location are not mentioned specifically in this instance, though the former is related to variety of activities offered, and access and parking are aspects of the latter. All of the other items in the the City of Calgary questionnaires were discussed in the interviews in this study, though some had to be omitted from the questionnaire because they were not considered salient to evaluation by the majority of subjects.

Preferences Regarding Attributes

For the most part, the findings of this study regarding user preferences about the salient attributes are in accordance with what would be expected from the literature. The only discrepancies which emerged related to the degree of detail in which desired characteristics were described. For example, the literature describes desired qualities in staff members in greater detail than did interview participants in this study.

Priorities

In this study service users were found to consider swimming service attributes in the following order of priority: staff attitude and competency, facility

cleanliness and maintenance, facility location, times available, facilities and equipment, and admission price.

User priorities were only given detailed attention by two of the sources in the literature review: Parsuraman et al. (1986) and McKay and Crompton (1988). Parsuraman et al. indicated that service users normally consider their service dimensions in the following order of priority: reliability, assurance, tangibles, responsiveness, empathy (1986, p.23). McKay and Crompton (1988) found that the order of importance for consumers of services such as recreational swimming was: assurance, reliability, responsiveness, tangibles, empathy.

The only aspect of the results of this study which was in accordance with the literature on priorities was that staff attitude and competency, part of assurance, were a high priority to service users. The order of priority of the other attributes in this study was in no way related to the findings of Parsuraman et al (1984, 1986) or MacKay and Crompton (1988). Furthermore, none of the attributes salient to service evaluation in this study were related to Parsuraman et al's reliability and responsiveness dimensions.

5.4.2 User Characteristics and Priorities

User priorities were found to be unrelated to the majority of the user characteristic variables listed in questions 4 and 5. Only two significant relationships were

found. The first was that staff were more important to females than to males. The second was that location was more important to subjects who used the services at least once per week than to those in the at-least-once-per-month group.

The overall lack of significant relationships between user characteristics and user priorities in this study seems to reflect the reality that most adult service users are very similar in terms of their expectations about swimming services. Very few differences in consumer priority were apparent during the interviews, and differences in preferences which existed were related to aspects of lower priority attributes. For example, most of the subjects considered facility location, cleanliness and maintenance, and staff to be the top priorities; and they shared the same preferences regarding these attributes. Differences in preference were concerned with items of lower priority, such as pool water temperature and the availability of toys for children. These differences would have been too subtle to be reflected in the results of this study. The service configurations for the conjoint analysis question were too general to detect minor differences in preferences of this type.

A significant relationship between gender and the importance of staff would not be expected according to the literature. The relationship between frequency of service use and the importance of location seems logical; those

who use services frequently would be more concerned with having services conveniently located than others. However, the results of the analysis of variance test in this instance do not indicate that there is a consistent trend between frequency of service use and the importance of location. Subjects who used the services several times a week had a lower mean importance score for location than those in the at-least-once-per-week group.

5.4.3 Additional Tests

Many of the results of the chi square tests were in accordance with what would be expected from the literature. In a few cases the results differed, but there were explanations for most of the discrepancies.

The three significant relationships which were found were between family life cycle and social grouping for service use, family life cycle and frequency of service use, and age and frequency of service use. The finding that individuals with children swam with children more frequently than others was to be expected. The fact that frequency of service use declined for those in the young- and middle- aged-with-children life cycle groups was also in accordance with the literature. Those with young children have less discretionary time and income for recreation than others, and they often spend leisure time at home. In this study frequency of service use declined until middle age and then increased; generally sports

participation decreases as individuals age. It appears that decreased participation associated with having children was a factor in the results in this instance.

In this study there was no significant relationship between gender and frequency of swimming with children; however, the normal trend, that females participate with children more than males, did exist. No relationship between gender and income was found; however, this is understandable, since average household incomes were used. Lastly, income was found to be related to frequency of service use at the 0.06 level of significance. Normally, recreation participation increases with income. In this instance frequency of service use increased until the middle income ranges and then decreased. This is the pattern that would be expected in a public facility, since those in the upper income brackets would have access to health clubs and private pools.

5.5 Conclusions

The following conclusions can be drawn regarding the results of the study:

1. The results provide an accurate profile of the subjects' preferences and priorities regarding recreational swimming services. Generalizations about the applicability of the findings to other populations must be made with caution, since the subjects were a nonprobability sample and not selected to represent a

larger population. Nevertheless, it is believed that the the preferences and priorities of participants would be generally similar to those of users of swimming services in general.

2. The existing literature on consumer service priorities, does not accurately describe the structure of consumer priorities regarding recreational swimming services (see section 5.4.2 for further discussion).

3. Consumer priorities regarding recreational swimming services are not closely related to either consumer sociodemographic characteristics or consumer service use characteristics.

4. Conjoint analysis is valuable research technique for assessing consumer priorities, and is very appropriate for use in marketing studies in recreation and leisure. Limitations of the technique were discussed in section 5.3. These must be considered in using conjoint analysis, and steps should be taken to overcome them whenever possible. Nevertheless, conjoint analysis is better than most of the available options for assessing priorities; it is far superior to the importance-performance type questionnaires which currently receive popular use in recreation (see section 5.6.1).

5.6 Implications and Recommendations

5.6.1 Theoretical

Existing theory appears to be strong regarding which attributes consumers consider in service evaluation. However, further study is required in order to more fully understand consumer priorities. Research regarding how priorities differ for different types of service would be particularly valuable. Furthermore, service-quality-measurement instruments, such as Parsuraman et al.'s SERVQUAL (1984, 1986), could be adapted in order to take consumer priorities into account.

Parsuraman et al. contended that consumer priorities for all classes of service were very similar. However, the priorities of the subjects in this study did not correspond to those established by Parsuraman et al. Furthermore, it seems very unlikely that service priorities would be homogeneous given the wide variety of types of services which exist.

Two sources of variation in the importance of service attributes, or dimensions, are likely. First, consumer priorities may differ in accordance with the type of service provided. For example, responsiveness is much more likely to be of concern in evaluating services which involve personalized service, such as tailoring, than in others, like recreational swimming. Second, consumer expectations vary according to the norms which individuals become accustomed to. Standards differ for different types

of service; this may cause variation in the types of attributes which are considered salient to service evaluation. Attributes relating to reliability are less likely to be salient for services which are generally considered to be reliable than for those which are frequently unreliable. It is possible that reliability was not considered salient to service evaluation in this study because municipal services are consistently provided in a reliable manner.

In its present state, SERVQUAL is unable to fully assess consumer priorities. Service users are given a scale of 1 to 7 and are asked to indicate the degree to which they feel services of the type being evaluated should possess a list of features. These scores are then compared to scores regarding consumer perceptions about the characteristics of a given service, in order to yield an overall quality rating for that service. This instrument is an example of an importance-performance questionnaire. The weakness of this type of survey is that respondents may indicate that all desirable features are very important, thus they are unlikely to be able to generate accurate data regarding priorities. In conjoint analysis consumer priorities are assessed from data in which subjects made trade-offs. SERVQUAL could be refined by including a conjoint analysis question.

5.6.2 Methodological

Continued use of conjoint analysis in recreation and leisure studies is highly recommended. It is one of the best methods presently available for analysis of consumer priorities. There are several variations on the methodology which was employed in this study which can be used; each has its strengths and weaknesses.

Most conjoint analysis studies do not include detailed comparisons of the priorities of different groups of subjects, as this one did. This type of comparison is useful in generating detailed marketing information about potentially different market segments. However, the comparison method used in this study may need refinement.

The problems associated with comparing attribute importance scores were discussed earlier in this chapter. An alternative method, which might be better for future studies, would be to compare attribute utility scores. Componential segmentation studies which adopted this approach have been conducted in the past (Green and DeSarbo, 1979).

5.6.3 Practical

It is hoped that the information generated in this study will be useful to swimming pool managers. The data could be used to develop operation guidelines in order to enhance consumer service satisfaction.

Managers should be particularly aware of the high priority which consumers placed on staff attitude and competency. They should also note the importance of facility cleanliness and maintenance. Pool managers and supervisors are able to influence each of the aforementioned attributes on a daily basis. Considering their importance to consumers, they should be treated as very high priorities. Time and money should be spent on training front line staff and ensuring that they maintain positive attitudes on the job. Sufficient resources should also be allocated in order to ensure that facility cleanliness and maintenance are at at least average levels.

Much of the other information generated in the study could be useful in long term planning. For example, consumer preferences regarding location and variety of facilities could be considered in planning new facilities. According to this study consumers prefer facilities to be located close to home, and they place a relatively high priority on this. Thus, catchment areas for pools should be estimated to include consumers who live less than 30 minutes from the facility location. Facilities and equipment were of a lower priority to subjects. This indicates that it may be more cost effective to spend money on satisfying consumer demand for services close to home than on building a few large aquatic centres with more elaborate facilities.

In this study very few differences in the priorities of service users of different types were found. Though few differences may actually exist, it seems that additional marketing research to explore this further would be worthwhile. One approach would be to conduct a series of group interviews with service users of varying characteristics and then to compare the results. For example, a comparison of interview data from a group of senior citizens and that of a group of young mothers could be made.

5.7 Summary

This chapter began with a review of the study. After that, possible limitations in the methodology were addressed. In the next section the results of the study were compared with what would have been expected from the literature. Finally, conclusions were drawn, and implications and recommendations were discussed.

The results of the study were in accordance with the literature regarding consumer preferences; however, there were major discrepancies concerning priorities. Apparently, further study is required in order to refine existing theory about consumer service priorities.

Very few significant relationships were found to exist between consumer priorities and either sociodemographic or service use characteristics. It appears that consumer expectations regarding recreational swimming services are relatively homogeneous. More

detailed study would be required to fully explore any differences in the preferences and priorities of different types of service users.

The chapter concluded with the implications and recommendations arising from the study. Recommendations were made regarding directions for future research on consumer priorities. The writer concluded that continued use of conjoint analysis in recreation and leisure studies should be undertaken. She also discussed the practical implications of the study for pool managers.

BIBLIOGRAPHY

Aaker, D.A. & Day, G.S. (1980). Marketing research. New York: John Wiley and Sons.

Absher, J.D., McAvoy L.H., Burdge, R.J., & Gramann, J.H. (1988). Public and commercial managers predicting recreationist opinions. Journal of Parks and Recreation Administration, 6 (3), 66-73.

Akaah, I.P. & Korgaonkar, P.K. (1983). An empirical comparison of the predictive validity of self-explicated, huber-hybrid, traditional conjoint and hybrid conjoint models. Journal of Marketing Research, 20, 187-197.

Alberta Recreation and Parks. (1981, 1984). A look at leisure. Edmonton, Alberta: Government of Alberta.

Alberta Recreation and Parks. (1983). A study of barriers to recreation participation. Edmonton, Alberta: Government of Alberta.

Axelrod, M.D. (1975). Ten essentials of good qualitative research. Marketing News. March 14.

Bammel, G. & Bammel L.L., (1982). Leisure and human behavior. Dubuque, Iowa: Wm. C. Brown Publishers.

Beringer, M.J. (1981). A conceptual model of leisure-time choice behavior. Journal of Leisure Research. Second Quarter, 139-158.

Best, R.J. (1978). Validity and reliability of criterion-based preferences. Journal of Marketing Research, 15, 154- 159.

Boatwright, E.W. (1984). The use of conjoint utilities to segment the shopping center market. Doctoral Dissertation, University of Arkansas. Dissertation Abstracts International, 45, 8426122.

Borg, W.R. & Gall, M.D. (1983). Educational research (4th ed.). New York: Longman.

Calder, B.J. (1977). Focus groups and the nature of qualitative marketing research. Journal of Marketing Research 14, 353-364.

Calgary Parks and Recreation. (1983 - 1986). Market research reports 3, 4, 5 and 6; Consumer Satisfaction Index Acadia Pool; and Consumer Satisfaction Index Beltline Pool. Unpublished.

Canada Fitness Survey. (1983). Fitness and lifestyle in Canada. Ottawa, Ontario: Fitness and Amateur Sport, Government of Canada.

Cattin, P. & Wittink, D.R. (1982). Commercial use of conjoint analysis: A survey. Journal of Marketing, 46, 44-53.

Cheek N.H. & Burch, W.R. (1976). The social organization of leisure in human society. New York: Harper and Row.

Claxton, J.D. (1987). Conjoint analysis in travel research: A manager's guide. In Ritchie, J.B. and Goldner, C.R. (Eds.), Travel, tourism and hospitality research. New York: Wiley.

Cosper,R. & Kinsley B.L. (1984) An application of conjoint analysis to leisure research: Cultural preferences in Canada. Journal of Leisure Research, 16 (3), 224-233.

Cravens, D.W., Dielman, T.E. & Harrington, C.K. (1985). Using buyers' perceptions of service quality to guide strategy development. In The 1985 A.M.A. Educators' Proceedings. Chicago: American Marketing Association, 297-301.

Currim, I.S., Weinberg, C.B. & Wittink, D.R. (1981). The design of subscription programs for a performing arts series: issues in applying conjoint analysis. Journal of Consumer Research, 8, 67-75.

Dillman, D. A. (1978). Mail and telephone surveys. New York: John Wiley and Sons.

Driver, B.L. & Brown, P.J. (1975). A social-psychological definition of recreation demand with implications for recreation resource planning. In Assessing demand for outdoor recreation (Appendix A, pp 68 - 87). Washington, D.C.: National Academy of Sciences.

Edmonton Parks and Recreation (1985). Pool user survey. Unpublished.

Edmonton Parks and Recreation. (1988). Public swimming schedule and descriptions of pools. Unpublished.

Engel, J.F. & Blackwell, R.D. (1982). Consumer behavior (4th Ed). Chicago: The Dryden Press.

Fetell, H.A. (1977, January). Conjoint analysis helps in sorting out consumer weighting of product attributes. Marketing News.

Field, D.R. & O'Leary, J.T. (1973). Social groups as a basis for assessing participation in selected water activities. Journal of Leisure Research, 5, 16-25.

Fitness Ontario. (1983). Physical Activity Patterns in Ontario 11. Toronto: Ministry of Tourism and Recreation, Government of Ontario.

Fitness Ontario. (1984). Physical Activity Patterns in Ontario 11a (1982-83 Update). Toronto: Ministry of Tourism and Recreation, Government of Ontario.

Fitness Ontario. (1984). Physical Activity Patterns in Ontario, Winter Patterns. Toronto: Ministry of Tourism and Recreation, Government of Ontario.

Green, P.E. (1974). On the design of choice experiments involving multifactor alternatives. Journal of Consumer Research, 1, 261-288.

Green, P.E. (1977). A new approach to market segmentation. Business Horizons, 20 (1).

Green, P.E., Caroll, J.D. & Carmone, F.J. (1978). Some new types of fractional factorial designs for marketing experiments. In Sheth,J.N. (Ed.) Research in marketing, Vol 1. Greenwich, CT: J.A.I, Press.

Green, P.E. & DeSarbo, W.S. (1979). Componential segmentation in the analysis of consumer trade-offs. Journal of Marketing, 43, 83-91.

Green, P.E. & Rao, V.R. (1971). Conjoint measurement for quantifying judgmental data. Journal of Marketing Research, 355-63.

Green, P.E. & Srinivasan V. (1978). Conjoint analysis in consumer research: Issues and outlook. Journal of Consumer Research, 5, 103-123.

Green, P.E. & Tull, D.S. (1978). Research for marketing decisions. Englewood Cliffs, N.J.: Prentice Hall Inc.

Green, P.E. & Wind, Y.(1975). New way to measure consumers' judgments. Harvard Business Review 53, 107-117.

Howard, D.R. & Crompton, J.L. (1980). Financing, managing and marketing recreation and park resources. Dubuque,Iowa: Wm C.Brown.

Howard, J.A. & Sheth, J.N. (1969). The theory of buyer behavior. New York: John Wiley and Sons.

Kelly, J.R. (1980). Outdoor recreation participation: a comparative analysis. Leisure Sciences. 3 (1), 129-154.

Kerby, J.K. (1975). Consumer behavior: Conceptual foundations. New York:Dun-Donnely Publishing Corp.

Lautman, Martin R. (1981). Focus groups: Theory and method. In Advances in Consumer Research Vol 1X. Urbana, Illinois: Association for Consumer Research.

Leigh, T.W., MacKay, D.B. & Summers, J.O. (1984). Reliability and validity of conjoint analysis and self explicated weights: a comparison. Journal of Marketing Research, 21, 456-462.

Lincoln, Y.S. & Guba, E.G.(1985). Naturalistic inquiry. Beverly Hills: Sage Publications.

Louden, D.L. & Della Bitta, A.J. (1979). Consumer behavior. New York: McGraw Hill Book Co.

Louviere, J.J. (1988). Analyzing decision making metric conjoint analysis. Newbury Park: Sage Publications.

Lovelock, C.H. & Weinberg, C.B. (1984). Marketing for public and nonprofit managers. N.Y.:John Wiley and Sons.

MacKay, K.J. & Crompton J.L. (1988). Measuring the quality of recreation services. Unpublished manuscript.

McAvoy, L.H. (1979). The leisure preferences, problems and needs of the elderly. Journal of Leisure Research. 11 (1), 40-47.

McCool, S.F., Stankey, G.H. & Clark, R.N. (1984). Choosing recreation settings: processes, findings and research directions. In Stankey, G.H. and McCool, S.F. (Eds.). Proceedings Symposium on Recreation Choice Behavior (pp. 1-8). USDA Forest Service General Technical Report INT-184. Ogden, UT: Intermountain Forest Experiment Station.

McCullough, J. & Best, R. (1979). Conjoint measurement: Temporal stability and structural reliability. Journal of Marketing Research, 16, 26-31.

Murphy, P.E. & Staples, W.A. (1979). A modernized family life-cycle. Journal of Consumer Research, 6, 12-22.

Neslin, S.A. (1981). Linking product features to perceptions: self stated versus statistically revealed importance weights. Journal of Marketing Research, 18, 80- 86.

Olson, J.C. , Kanwar, R. & Muderrisoglu, A. (1979). Clarifying the confusion regarding salience, importance and determinance concepts in multiattribute attitude research. In Wilkie, W.L. (Ed.), Advances in consumer research, 6 (pp.269-275). Ann Arbor, MI: Association for Consumer Research

P.M.B. Product Profile, 1986. Toronto: Print Measurement Bureau.

Parasuraman, A., Zeithaml, V. & Berry L.L. (1986). Servqual: A multiple-item scale for measuring customer perceptions of service quality. Report No 86-108, Marketing Science Institute, Cambridge, MA.

Parasuraman, A., Zeithaml, V. & Berry, L.L. (1984). A conceptual model of service quality and implications for future research. Report No 84-106, Marketing Science Institute, Cambridge MA.

Parsuraman, A. & Zeithaml, V. (1982). Differential perceptions of suppliers and clients of industrial services. In Berry, L.L, Shostack, L.G. & Upah, G.D. (Eds.), Emerging perspectives on services marketing (pp. 35-39). Chicago: American Marketing Association.

Pineo, P.C. (1985). Revisions of the Pineo-Porter-Mc Roberts socioeconomic classification of occupations for the 1981 census. (QSEP Research Report No. 125). Hamilton, Ontario: McMaster University, Faculty of Social Sciences.

Platek, R., Pierre-Pierre, F.K. & Stevens, P. (1985). Development and design of survey questionnaires (Catalogue No. 12-519E). Ottawa: Statistics Canada, Census and Household Survey Methods Division.

Qualitative Research Council of the Advertising Research Foundation. (1985). Focus groups: Issues and approaches. New York: Advertising Research Foundation Inc.

Roberts, K., Cook F.G., Clark, S.C., & Semeonoff, E. (1976). The family life cycle, domestic roles and the meaning of leisure. Society and Leisure. 8 (3), 7-20.

Romsa, G.H. & Girling, S. (1976). The identification of outdoor recreation market segments on the basis of frequency of participation. Journal of Leisure Research. 8 (4), 247-255.

Scottish Sports Council. (1979). A study of sports centres and swimming pools. Edinburgh. ISBN 0-906599-00-8.

Simmons Study of Media and Markets, 1987, Part 10. New York: Simmons Market Research Bureau Inc.

Stankey, G.H. & McCool, S.F.(Eds). (1984). Proceedings - Symposium on Recreation Choice Behavior. USDA Forest Service General Technical Report INT-184. Ogden, UT: Intermountain Forest Experiment Station.

Unkel, M.G. (1981). Physical recreation participation of females and males during the adult life cycle. Leisure Sciences. 4 (1), 1-28.

Wankel, L.M. (1988). Exercise adherence and leisure activity: Patterns of involvement and interventions to facilitate regular activity. In R.K.Dishman (Ed), Exercise Adherence: Its impact on public health (pp 369-396). Champaign, Illinois: Human Kinetics.

Warwick, D.P. & Lininger, C.A. (1975). The sample survey: theory and practice. New York: McGraw Hill.

Wells, William D. (1974) Group interviewing. In Robert Ferber (Ed), Handbook of marketing research (pp. 2133-2143). New York: McGraw Hill.

Wind, Yoram. (1978). Issues and advances in segmentation research. Journal of Marketing Research, 15, 317-337.

Witt, P.A. (1981) The relationship between barriers to leisure enjoyment and family stages. Leisure Sciences, 4(1), 29-49.

Yorke, D.A. The definition of market segments for leisure centre services: Theory and practice. European Journal of Marketing, 18 (2), 100-113.

APPENDIX 1.
The Questionnaire.

University of Alberta
Edmonton

Department of
Recreation and Leisure Studies

Canada T6G 2H9

E401 Van Vliet Physical Education and Recreation Centre
Telephone (403) 432-5171

September, 1988.

Dear Recreation/Family Swimmer,

Thank you for volunteering to complete the survey on the preferences of users of the City of Edmonton recreational swimming services.

This study is part of a university master's thesis. Edmonton Parks and Recreation Department is in full support of the project. It hopes to be able to use the results in the planning and provision of public recreational swimming services.

The success of the study is dependant on getting a high response rate from service users. Therefore, your completion and return of the survey to the pool cashier, prior to October 8th, would be greatly appreciated.

Your responses will remain confidential. If you have any concerns about the study you may contact Dr. L.L.Lanier, Recreation and Leisure Studies, University of Alberta, at 432-5171 or Mr. Graham Deacon, Director of Marketing, Edmonton Parks and Recreation Department, at 428-3647.

Upon return of the completed questionnaire you will receive a FREE pass for one recreation swim as a token of appreciation.

Thank you in advance for your participation, it is really appreciated.

Yours Truly,

L.L.Lanier, PhD.
Thesis Supervisor

Diana Gallivan.
Graduate Student.

RECREATIONAL SWIMMING SERVICES USERS SURVEY

Please circle the appropriate answers to the multiple choice questions, and fill in the blanks. The shaded area is for office use only.

PART I.

Please tell us a bit about your use of the city's recreational swimming services.

1. A. With whom do you **usually** attend recreation/family swim? (Circle one response)

   a. Alone
   b. With other adults
   c. With children
   d. With children and adults

   If you circled c or d above, please complete question 1.B, otherwise go on to question 2.

   B. Please circle the ages/approximate ages of the children whom you usually swim with:

   Baby 1 2 3 4 5 6 7 8 9 10 11 12 Teenager

2. How do you **usually** get to the swimming pool? (Circle one response)

   a. By foot
   b. By bicycle
   c. By bus/L.R.T.
   d. By car/motorcycle
   e. Other (please specify) ____ _____

3. Please indicate how frequently you attend recreation or family swim in each of the time periods given. (Circle one frequency for each time period)

   A. Weekdays before 5 p.m.
      a. Several times per week
      b. At least once per week
      c. At least once per month
      d. Less than once per month
      e. Practically never.

   B. Weekdays after 5 p.m.
      a. Several times per week
      b. At least once per week
      c. At least once per month
      d. Less than once per month
      e. Practically never.

   C. Weekends
      a. Several times per week
      b. At least once per week
      c. At least once per month
      d. Less than once per month
      e. Practically never.

PART II.

The main purpose of this survey is to determine your preferences about selected aspects of swimming services, such as location and price, and to determine the relative importance of each of these to you.

1 Nine different descriptions of swimming pool services are given below. Please indicate your order of preference for these from most preferred, 1, to least preferred, 9 (You may find it easier to put services into high, medium and low preference groups first and then to rank them)

DESCRIPTIONS OF SWIMMING POOL SERVICES

DESCRIPTION #	FACILITIES & EQUIPMENT	TIMES RECREATIONAL SWIMMING AVAILABLE	ADMISSION PRICE	FACILITY CLEANLINESS & MAINTENANCE	FACILITY LOCATION	STAFF FRIENDLINESS, MANNERS & COMPETENCY	YOUR ORDER OF PREFERENCE 1 most preferred to 9 least preferred
A	25m pool	1 hour/day at a convenient time	$1.50	ABOVE AVERAGE	1.2 hour away by bus or car	BELOW AVERAGE	
B	25m pool sauna whirlpool toys	Most of the time	$3.50	ABOVE AVERAGE	3/4 hour away by bus or car	ABOVE AVERAGE	
C	25m pool	Most of the time	$1.50	AVERAGE	15 minutes away by bus or car easily accessible by bicycle & by foot	BELOW AVERAGE	
D	50m pool, dive tank paddling pool whirlpool, sauna steamroom, slide ropes, toys	1 hour/day at a convenient time	$2.50	BELOW AVERAGE	15 minutes away by bus or car easily accessible by bicycle & by foot	AVERAGE	
E	50m pool dive tank paddling pool whirlpool sauna steamroom, slide ropes, toys	1 hour/day at a convenient time	$2.50	ABOVE AVERAGE	3/4 hour away by bus or car	BELOW AVERAGE	
F	25m pool	1 hour/day at a convenient time	$1.50	AVERAGE	15 minutes away by bus or car easily accessible by bicycle & by foot	ABOVE AVERAGE	
G	25m pool sauna whirlpool toys	Most of the time	$1.50	BELOW AVERAGE	3/4 hour away by bus or car	AVERAGE	
H	50m pool, dive tank paddling pool whirlpool, sauna steamroom, slide ropes, toys	1 hour/day at a convenient time	$3.50	AVERAGE	1/2 hour away by bus or car	ABOVE AVERAGE	
	25m pool sauna whirlpool toys	Most of the time	$2.50	BELOW AVERAGE	1/2 hour away by bus or car.	AVERAGE	

2. In the previous question service location, facilities, equipment, cleanliness, maintenance, staff, hours, and admission fees were considered. Is there anything else which is important to you in evaluating recreational swimming services, such as recreation or family swim? If so, please explain.

_____

_____

_____

_____

PART III.

Please tell us a bit about yourself. We will use this information to determine whether user preferences are related to user characteristics.

1. What is your sex?
   a. Male
   b. Female

2. What is your age? _____

3. What is your marital status?
   a. Never married
   b. Married and living with spouse/Common-law relationship
   c. Divorced/Separated
   d. Widowed

4. A. Do you have children under 18?
   a. Yes
   b. No

   If your answer to question 4 was yes, please go to question 4.B., otherwise go on to question 5.

   B. Which age categories do your children belong to? (Circle all correct responses)
   a. Under 4 years old.
   b. 4-12 years old.
   c. 12-18 years old.

5. What is the **highest** level of education which you have completed? (Circle one response)
   a. Grade Nine or less
   b. Some High School
   c. Completed High School
   d. Some College/Technical Training/University
   e. College/Technical Graduate
   f. University Graduate
   g. Post-Graduate Studies

6. A. What is your employment status? (Circle the one category which applies most to you)

   a. Employed full time
   b. Employed part-time
   c. Unemployed
   d. Retired
   e. Student
   f. Keeping house
   g. Other (please specify) _____

If your answer to question 6 was a or b, please go to question 6.B. and 6.C., otherwise go to question 7.

B. What is your occupation? (please describe your work)

_____

C. Which category does your occupation belong to?

   a. Semi-skilled/Unskilled Manual
   b. Farmer
   c. Skilled Crafts and Trades
   d. Clerical/Sales/Service
   e. Middle Management/Supervisor/Foreman
   f. Technician
   g. Semi-Professional
   h. High Level Management
   i. Professional

7. What is your approximate annual **household** income?

   a. Less than $20.000
   b. $20,000 to $29,999
   c. $30,000 to $39,999
   d. $40,000 to $49,999
   e. $50,000 to $59,999
   f. $60,000 to $69,999
   g. $70,000 and over

8. How many adults and children are in your household income unit?

   Total Number of Adults: _____ Total Number of Children: _____

THANK YOU VERY MUCH.

Please return the questionnaire to the pool cashier by October 8th, you will be given your free swim pass then.

APPENDIX 2.
Coefficient of Equivalence Test.

PART B.

The main purpose of this survey is to determine your preferences about selected attributes of swimming services, such as location and price, and to determine the relative importance of each of these to you.

1. Nine different descriptions of swimming pool services are given below. Please indicate your order of preference for these from most preferred, 1, to least preferred, 9. (This is a fairly difficult task, you may find it easier to put services into high, medium and low preference groups first and then to rank them).

DESCRIPTIONS OF SWIMMING POOL SERVICES

SERVICE #	FACILITIES & EQUIPMENT	TIMES RECREATIONAL SWIMMING AVAILABLE	ADMISSION PRICE	FACILITY CLEANLINESS & MAINTENANCE	FACILITY LOCATION	STAFF FRIENDLINESS MANNERS & COMPETENCY	YOUR ORDER OF PREFERENCE 1 most preferred to 9 least preferred
1	25m pool	1 hour/day at a convenient time for you	$1.50	ABOVE AVERAGE	1/2 hour away by bus or car	BELOW AVERAGE	
2	25m pool	1 hour/day at a convenient time for you.	$2.50	BELOW AVERAGE	1/2 hour away by bus or car	ABOVE AVERAGE	
3.	25m pool	Most of the time	$1.50	AVERAGE	15 minutes away by bus or car easily accessible by bicycle & by foot	BELOW AVERAGE	
4	25m pool, dive tank paddling pool whirlpool, sauna steamroom, slide ropes, toys	1 hour/day at a convenient time for you	$2.50	BELOW AVERAGE	15 minutes away by bus or car easily accessible by bicycle & by foot	AVERAGE	
5	25m pool, dive tank paddling pool whirlpool, sauna steamroom, slide ropes, toys	1 hour/day at a convenient time for you	$2.50	ABOVE AVERAGE	3/4 hour away by bus or car	BELOW AVERAGE	
6.	25m pool	1 hour/day at a convenient time for you	$1.50	AVERAGE	15 minutes away by bus or car easily accessible by bicycle & by foot	ABOVE AVERAGE	
7	25m pool sauna whirlpool toys	Most of the time	$1.50	BELOW AVERAGE	3/4 hour away by bus or car	AVERAGE	
8.	25m pool, dive tank paddling pool whirlpool, sauna steamroom, slide ropes, toys	1 hour/day at a convenient time for you.	$3.50	AVERAGE	1/2 hour away by bus or car	BELOW AVERAGE	
9	25m pool sauna whirlpool toys	Most of the time	$3.50	BELOW AVERAGE	1/2 hour away by bus or car.	BELOW AVERAGE	

APPENDIX 3.
Coefficient of Stability of the Questionnaire.

Appendix 3. Coefficient of Stability of the Questionnaire: Results, Test 1.

Attribute	Level	Pearson's Coefficient	Significance
Facilities and Equipment	1	0.80	0.01 *
	2	0.46	0.18
	3	0.04	0.90
Times Available	1	0.09	0.79
	2	- 0.03	0.94
Admission Price	1	0.56	0.09
	2	0.61	0.06
	3	0.58	0.08
Cleanliness and Maintenance	1	0.59	0.07
	2	0.95	0.00 *
	3	0.41	0.23
Facility Location	1	0.63	0.05 *
	2	0.20	0.57
	3	0.88	0.00 *
Staff	1	0.61	0.06
	2	0.51	0.13
	3	0.42	0.23

N = 10

* Significant at 0.05 level of probability.

APPENDIX 4.
Coefficient of Stability of the Questionnaire:
Results, Test 2.

Appendix 4. Coefficient of Stability of the Questionnaire: Results, Test 2.

Attribute	Level	Pearson's Coefficient	Significance
Facilities and Equipment	1	0.70	0.00*
	2	0.54	0.17
	3	0.62	0.00*
Times Available	1	0.35	0.14
	2	0.41	0.08
Admission Price	1	0.69	0.00*
	2	0.49	0.04*
	3	0.60	0.01*
Cleanliness and Maintenance	1	0.75	0.00*
	2	0.76	0.00*
	3	0.81	0.00*
Facility Location	1	0.77	0.00*
	2	0.47	0.04*
	3	0.75	0.00*
Staff	1	0.77	0.00*
	2	0.75	0.00*
	3	0.74	0.00*

N = 19

* Significant at 0.05 level of probability.

APPENDIX 5.
Coefficient of Equivalence of the Questionnaire: Results, Test 1.

Appendix 5. Coefficient of Equivalence of the Questionnaire: Results, Test 1.

Attribute	Level	Pearson's Coefficient	Significance
Facilities and Equipment	1	0.10	0.78
	2	- 0.43	0.22
	3	0.37	0.29
Times Available	1	0.59	0.07
	2	0.05	0.89
Admission Price	1	0.56	0.09
	2	- 0.10	0.78
	3	0.30	0.39
Cleanliness and Maintenance	1	0.39	0.27
	2	0.31	0.39
	3	0.32	0.37
Facility Location	1	0.37	0.29
	2	- 0.01	0.97
	3	0.63	0.05 *
Staff	1	- 0.26	0.46
	2	0.04	0.92
	3	0.39	0.27

N = 10

* Significant at the 0.05 level of probability.

APPENDIX 6.
Coefficient of Equivalence of the Questionnaire: Results, Test 2.

Appendix 6. Coefficient of Equivalence of the Questionnaire: Results, Test 2.

Attribute	Level	Pearson's Coefficient	Significance
Facilities and Equipment	1	0.28	0.25
	2	0.49	0.03*
	3	0.51	0.02*
Times Available	1	0.25	0.30
	2	0.66	0.00*
Admission Price	1	-0.66	0.00*
	2	-0.13	0.58
	3	0.11	0.65
Cleanliness and Maintenance	1	0.63	0.00*
	2	0.56	0.01*
	3	0.72	0.00*
Facility Location	1	0.89	0.00*
	2	0.42	0.07
	3	0.34	0.15
Staff	1	0.45	0.05*
	2	0.74	0.00*
	3	0.42	0.07

N = 20

* Significant at the 0.05 level of probability.