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# **The Measurement of Service Quality in New Zealand Heritage Attractions**

A thesis presented in partial fulfilment of the requirements  
for the degree of

**Doctor of Philosophy in Quality Management**

at

**Massey University**

**Department of Production Technology**

**Tan, Sin Week (Tammi)**

**1998**

# *Abstract*

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Museums and historic places are part of our national heritage, they have been consistently rated as the most popular destinations for overseas tourists to New Zealand. To attract tourists, the industry needs to understand what the tourists' needs are, what attracts them and how satisfied they are with their experience.

An initial investigation into the quality management practice in the New Zealand tourist industry was carried out using a mail survey in April, 1995. It aimed at providing a better understanding of the current status of quality management practice and identify the needs of quality management of the New Zealand tourist industry.

The findings of the survey identified a lack of awareness of Total Quality Management and quality management in the New Zealand tourist industry. This indicates that there could be potential for the tourist industry operators to improve their performance and competitiveness through the introduction of TQM and there is a need for a quantitative tool for measuring service quality in the tourist industry.

A modified SERVQUAL tool was developed to assist heritage attraction operators to measure their service quality. The tool was tested, using visitor surveys at three heritage attractions. This research shifted the focus of performance assessment from the institution to the customer and measured the customer satisfaction instead of just the number of visitors.

In the New Zealand heritage attractions, four service quality dimensions were identified: tangible, peripheral service, staff related functions and access. The importance of service quality dimensions is different from other service sectors and service quality dimensions are not generic across the service industries.

The different statistical analysis techniques used in this research include factor analysis, correlation analysis, ANOVA and correspondence analysis. Valuable information was obtained from these analyses which could be used by management in assessing their performance from the customer's perspective, developing strategic plans to improve service delivery and to improve their business competitiveness.



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**Queen Elizabeth II War Memorial Museum:** Major Colin Hodkinson (Director), Mr Mark O'Conner (ex-Marketing Manager) and Ms Angela Young (Education Officer).

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- Appendix A Quality Management Practice in the Tourist Industry
- Appendix B The Science Centre and Manawatu Museum Visitor Survey
- Appendix C New Zealand Historic Places Trust Visitor Survey
- Appendix D Queen Elizabeth II Army Memorial Museum Visitor Survey
- Appendix E Analysis of Variance of Measured Service Quality
- Appendix F Correspondence Analysis of Visitors' Perception of Service Quality



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# 1.

## Introduction

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### 1.1 BACKGROUND

In New Zealand, the tourist industry is the fastest growing foreign exchange earning business sector and is becoming a more competitive industry in the international market place [NZDB, 1996a,b]. The tourist industry contributed \$4.77 billion in 95/96 to the New Zealand economy and it directly supported 100,000 jobs in New Zealand [NZDB, 1996b]. It is therefore, a very important part of the New Zealand economy with an increasing average growth rate of 10% in international visitors numbers since 1991 [1996a]. To attract more tourists, the industry needs to understand what the tourists' needs are, what attracts them, and how satisfied they are with their tourist experience.

There are rising expectations of consumers with regard to the quality of products and services, coupled with the changing political and economic environment in New Zealand where companies are receiving decreasing government support. These changes have intensified the demands upon business management to be more competitive in product quality and service delivery. To meet rising expectations, which provides a critical driving force for tourism, the industry needs to know how well it is performing from the visitors' point of view and focus on improving their services to meet the customers' needs.

Total Quality Management (TQM) has been widely recognised as an important force leading to organisational success and company growth in national and international markets [Brown et al, 1990; Berry, 1991; Chase, 1991; Poon, 1993; Partlow, 1993] through an increasing focus on quality and customer satisfaction. A wide range of Total Quality Management (TQM) methodologies have been developed to measure quality in the manufacturing sector. Many of the strategies, techniques and philosophies are equally applicable to service sector organisations. However, research into quality in tourism is one area that TQM researchers have scarcely explored except in the area of hospitality services and airlines [Johns, 1992a,b; Partlow, 1993; Poon, 1993; Zaid, 1994; Farner, 1994; Thomson, 1994; Clark et al, 1993; Teare et al., 1994].

Museums and historic places are part of our national heritage. They have been consistently rated as one of the most popular activities for overseas tourists. 46% of overseas visitors visited museums when they were touring New Zealand [NZTB, 1996a].

This thesis reports the results of empirical investigation of quality management in the New Zealand tourist industry and the measurement of service quality in heritage attractions using a modified SERVQUAL model developed by the author for the selected heritage attractions studied.

The objectives of this research project were as follow:

1. To investigate the present status of quality management practice in the New Zealand tourist industry
2. To develop a tool for measuring service quality of the heritage attractions from the customer perspective
3. To assist heritage attraction management identify areas for improving their service delivery
4. To develop statistical analysis techniques for analysing the service quality results
5. To develop practical guidelines for improving service quality in heritage attractions

The tool used in this research for measuring the service quality of heritage attractions was a modified SERVQUAL model. It shifted the evaluation of performance from internal assessment by management only to include external assessment by customers. Three case studies were undertaken to test the reliability of the tool. They were The Science Centre and Manawatu Museum, the New Zealand Historic Places Trust, and the Queen Elizabeth II Army Memorial Museum. Statistical techniques were used to analyse the survey results and evaluate the reliability of the tool. Recommendations for future improvement and research were made.

## **1.2 OVERVIEW OF THE THESIS**

An initial investigation into quality management practice in the New Zealand tourist industry was carried out using a mail survey in April, 1995 [Tan et al, 1996c]. It was aimed at providing a better understanding of the current status of quality management practices and to identify the needs of quality management in the New Zealand tourist industry as a whole.

The survey findings identified that there was a lack of awareness of Total Quality Management, and quality management in general in the New Zealand tourist industry. 64% of the companies had heard of TQM but only 15% claimed that they used it. This indicated that there was potential for tourist industry operators to improve their performance and competitiveness through the introduction of TQM. Only 15% of respondents stated that they used TQM for managing service quality, but the results indicated that the reason for the low response may be due to a lack of understanding of TQM.

Based on the survey results and an extensive literature review on service performance measurement in the tourist industry, it was concluded that there was a need for a quantitative tool for measuring service quality in the tourist industry.

A modified SERVQUAL tool was developed to assist heritage attractions to measure the quality of the service. The tool was tested using visitor surveys at three New Zealand heritage attractions. Gap analysis was used to analyse the discrepancies between how management view *Visitors' Expectation* and measured *Visitors' Expectation*; the differences between *Visitors' Expectation* and their *Perception* of service quality; and finally management's knowledge of the availability of service quality standards and procedures. Further analysis was carried out using factor analysis to identify the service quality dimensions in heritage attractions. The results were compared to Parasuraman et al's [1990] SERVQUAL model.

The results from the study provided valuable data for the institutions about their visitors, who they were, what their needs were and where their needs were not being met. The results can be used as a vehicle for management to identify problem areas with quantitative data evaluated by "*the visitors*" and not by "*internal assessment*". They also can provide information for benchmarking and continuous improvement of service quality programmes and can assist tourist attraction operators in identifying their training needs, standards and procedures required for service delivery. Business strategies can then be set to improve service delivery to meet these tourists' needs and improve business competitiveness.

### **1.3 CONTENTS BY CHAPTER**

The thesis consists of ten chapters, each chapter starting with an introductory section that provides some background of the chapter content, and concludes with a summary to link to the next chapter. All the references are brought together in a comprehensive bibliography at the end of the thesis.

A brief summary of each chapter is presented below to enable the reader to have an overview of the thesis.

**Chapter 1:** provides an introductory background and broad overview of previous research in the quality management practice in the New Zealand tourist industry and the measurement of service quality in heritage attractions.

**Chapter 2:** reviews the definition of quality, service quality, the Total Quality Management philosophy and how the tourist industry could benefit from the implementation of Total Quality Management. Brief introductions to ISO 9000 quality systems, the Malcolm Baldrige Quality Award and the New Zealand Quality Award are given.

**Chapter 3:** reviews the definition and measurement of customer satisfaction. The traditional performance measurement tools used in heritage attractions which focus on internal measures (eg. financial performance and the number of visitors), and the new trend of performance measurement which has broadened from a quantitative approach of counting the number of museum visitations to a more visitor orientated approach, which measures visitors' satisfaction and needs. An extensive investigation into the most popular quantitative measuring tool for service quality - the SERVQUAL model - was carried out. More than one hundred and twenty published articles on empirical research concerning the measurement of service quality and the application of the SERVQUAL Model were reviewed. Problems related to the use of the SERVQUAL model in the service industry are identified and recommendations on improvement to the model are made.

**Chapter 4:** presents the results of a survey into Quality Management practice in the New Zealand tourist industry and explores the potential needs for further research into quality management and associated training.

**Chapter 5:** outlines the purpose of this research and the research methodology used for developing a quantitative tool for measuring service quality using a modified SERVQUAL model. Three New Zealand heritage attractions were selected as survey sites for this empirical research.

**Chapter 6:** presents the results of a visitor study carried out using a modified SERVQUAL model to measure visitors' expectations and perceptions of service quality provided by The Science Centre and Manawatu Museum in Palmerston North, New Zealand.

**Chapter 7:** presents the survey results of the New Zealand Historic Places Trust properties carried out in 1996. Seven properties were selected by the management of the Trust as the survey sites. These were Kemp House, Pompallier House and the Te Waimate Mission House in the Bay of Islands; two historic houses - Highwic and Alberton in Auckland, the School of Mines in Thames and Fyffe House in Kaikoura.

**Chapter 8:** presents the third case study, the Queen Elizabeth II Army Memorial Museum visitor survey, carried out during the period September - December 1996. The results help the QEII Museum management to identify its customers, their needs and their satisfaction with the service quality provided by the Museum. A recommendation for a continuous improvement programme for service quality is made based on the Juran Trilogy which provides some guidelines for improving the service quality problems highlighted in the survey.

**Chapter 9:** identifies the service quality dimensions in the heritage attractions by examining the causal relationship between factors using factor analysis of the important service quality elements evaluated by the visitors to the three heritage attractions. The results are then compared with the original SERVQUAL model developed by Parasuraman et al [1990]. Correlation analysis and correspondence analysis were used to identify the relationship between the service quality dimensions and visitor demographics. The results from these analyses has shown the information could be valuable to management for gaining a better understanding of different needs from different groups.

**Chapter 10:** summarises the importance of performance measures in the tourist industry and the uniqueness of the service quality dimensions in heritage attractions. It assesses the benefit of the modified SERVQUAL tool used in this research and the usefulness of the survey results to the management of the Museums and the New Zealand Historic Places Trust. Recommendations for using the tool as part of TQM improvement programmes are made and directions for future research are identified.

**Bibliography:** A summary of all the references from each chapter of the thesis is included here.

**Appendices:** The appendices provide a list of supporting information and data for the research. It consists of the quality management practice survey questionnaire, service quality survey questionnaires for the three case studies, gap analysis of service quality, management feedback and the statistical analysis of the survey findings.

## 1.4 REPORTS AND PAPERS PUBLISHED USING ELEMENTS OF THE RESEARCH

The following is a list of papers and reports written by the author that have previously been published during the period of August 1994 - July 1996, based on the elements of the research presented in this thesis.

- Tan, T.S.W. (1996a). Measuring the Service Quality Using Modified SERVQUAL Model - The Science Centre and Manawatu Museum, 1995 Visitor Survey. Unpublished Research Report. Department of Production Technology, Massey University, New Zealand.
- Tan, T.S.W. (1996b). Measuring the Service Quality Using Modified SERVQUAL Model - The Science Centre and Manawatu Museum, 1996 Visitor Survey. Unpublished Research Report. Department of Production Technology, Massey University, New Zealand.
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# 2.

## Total Quality Management In Service And Tourist Industries

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### 2.1 INTRODUCTION

This chapter introduces Total Quality Management, concept of service quality and service quality characteristics. They are different from those of quality in manufacturing or production industries. It uses examples from the tourist industry.

In the second section of this chapter the special aspects of service quality are related to the tourist industry and the measurement of customer satisfaction in tourist attractions, such as museums and historic places.

Quality in a business is of fundamental importance for success and gaining a competitive edge in today's quality performance oriented markets [Imai, 1985; Gronroos, 1987; Garvin, 1988; Scheung and Christopher, 1993]. The United States General Accounting Office [1991] reviewed twenty companies that were among the highest scoring applicants in 1988 and 1989 for the Malcolm Baldrige National Quality Award. The review indicated that companies that adopted quality management practices experienced an overall improvement in corporate performance. Ernst & Young [1991] conducted an international quality study in 1991, focused on selected areas of similarities and differences in management practices being applied by more than 500 business in Canada, Germany, Japan and the United States. The results showed that virtually every organisation in the sample believes that quality is a critical factor in its strategic performance.

Similar studies on 599 managers in five countries in the Asia and South Pacific region identified quality as a key strategic opportunity. [Adams et al, 1993; Maani et al, 1994].

In a best practice survey conducted by the Manufacturing Advisory Group of the Ministry of Industry and Australian Manufacturing Council [Profile Publishing, 1995], improving quality was identified by the top 100 companies as an important factor which has direct effect on profitability. The study has identified best practice and total quality as inseparable. In New Zealand, Corbett [1994] found that the most important competitive priorities for future New Zealand manufacturers was the conformance to quality.

Conformance to quality which has been identified as a critical factor in strategic performance in the world best practice companies both in the manufacturing industries and service industries, this could be adapted to the New Zealand tourist industry to gain competitive edge in the world tourism market.

## **2.2 DEFINITIONS OF QUALITY**

Quality has been defined by experts in a variety of ways. Initially quality management as it is known today was developed in manufacturing organisations. The definition of quality has evolved from a product-based and manufacturing-based view of quality which reflects the quantitative attributes of the product in the early 1930s, to a user-based view of quality which focused on meeting the customer's requirements.

The following definitions of quality although technically oriented and focused are equally relevant to services. With the growth in importance of service industries in modern economies these definitions have to be assessed for their relevance to tourism.

Certain key words or phrases are threaded throughout the definitions such as "fitness", "predictable", "conformance", "what the customer says", "meet the expectations by the customer", "meeting the customers' expectations", "totality of characteristics", and "satisfy stated and implied needs".

Juran [1988]

*"Quality is fitness for use"*

Deming [1986]

*"Quality is a predictable degree of uniformity and dependability, at low cost and suited to the market"*

Crosby [1980]

*"Quality is conformance to requirements"*

Tom Peters [1987]

*“Quality is what the customer says he needs”*

Feigenbaum [1991]

*“The total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which the product and service in use will meet the expectation by the customer”*

International Standard Organisation (ISO) [1987]

*“Quality is the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs”*

Garvin [1988]

*“Quality has eight dimensions: performance, features, reliability, conformance, durability, serviceability, aesthetics, perceived quality”*

Ishikawa [1985]

*“Narrowly interpreted, quality means quality of product, quality of information, quality of process, quality of division, quality of people, including workers, engineers, managers, and executives, quality of system, quality of company, quality of objectives etc.”*

Oakland [1993]

*“Quality is meeting the customer requirements”*

The tourism product, as with services in general, is built around the interaction of the visitor with the destination and in particular with industry employees as well as the community at large. Defining and delivering services to the customer therefore involves the industry in a succession of relationships all of which contribute only a part of the final quality value. Unlike an industrial manufacturing system which is basically located under one roof, the tourism product decomposes into a series of discrete but related experiences the “manufacture” of which is in the hands of different enterprises. These separate or dispersed production sites makes “meeting the customer requirements” harder to achieve in the collective sense since they involve different services creation and delivery systems.

Tourism products are a mix of the tangible and intangible. For example, they blend a real good such as a hotel restaurant meal with an intangible, such as a smile and pleasant manner. Both of these are essential to the overall quality of the product and the absence

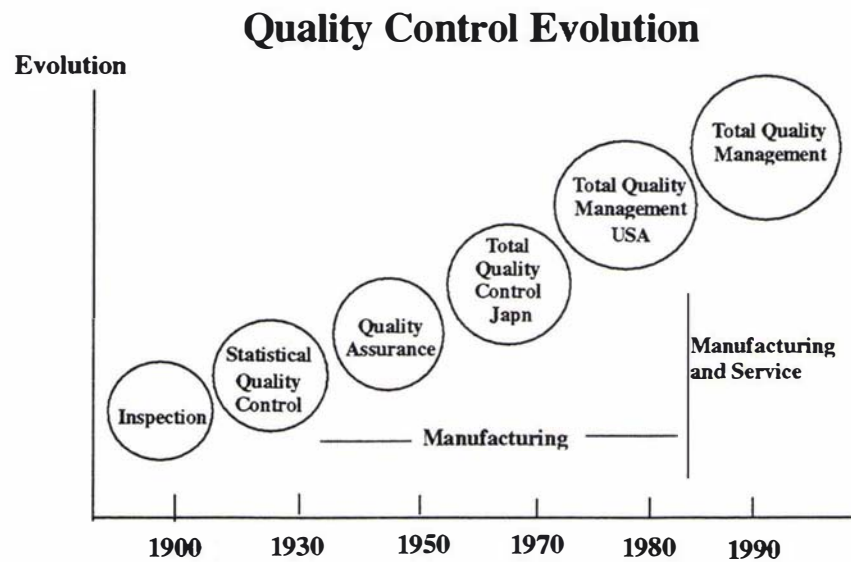
of either reduces the total quality. This mix or blend of elements is similar to the “totality of characteristics” that is referred to in the ISO definition.

Definitions of what is quality in tourism must encompass service, the somewhat complex personal needs and motivations that underlie leisure behaviour. The “fitness for use” aspect of quality is the responsibility of the developer, distributor and retailer of the tourism product. It is their responsibility to ensure that there is a successful match between the expectation and the delivery of the experience and that it has served the customer purpose.

In summary we can conclude that meeting customer’s requirement at the right time and lower cost is the key element in all of the definitions of quality. From the perspective of the tourist industry, tourists assess quality whenever they come into contact with a service provider or a product during their tour. Quality in tourism could, therefore, be defined as meeting and satisfying the tourists’ needs throughout their whole tourist experience at the right time and value for money.

## **2.3 The Evolution of Quality Movement**

In the eighteenth and nineteenth centuries, the quality of manufactured goods was controlled by the craftsmen who were proud of their craftsmanship. The apprentices were supervised by the masters of the trade. This was the beginning of quality in a product. Figure 2-1 shows the evolution of the quality movement from the inspection stage in the 1900s to the Total Quality Management with environmental emphasis in the 1990s.



**Figure 2-1. The Evolution of Quality Movement**

### 2.3.1 Inspection

The industrial revolution of the nineteenth century brought radical changes in the manufacturing process. The work of craftsman has transformed into a series of processes which required less skill and more machine controlled production. Frederick Taylor, who is often called the father of Scientific Management developed four principles of scientific management for managers to improve the productivity of people at work. Scientific management involves developing a science for every job including rules of motion, standardised work instruments, careful selection and training of workers, and proper supervisory support for workers [Schermerhorn, 1996]. This was the beginning of the first stage of Quality Movement - Inspection. Inspection became necessary with the rise of mass production and the division of labour with unskilled workers. The relevance of this is still to be found in the “craft” areas of tourism and hospitality in particular and especially in the training of Chefs and other kitchen staff where the size of operations in large kitchens can require very clear division of labour on the basis of function and task complexity.

### 2.3.2 Statistical Quality Control

In 1931, Walter A. Shewhart, who was one of a group of people at Bell Laboratories, was investigating problems of quality. He published “*Economic Control of Quality of*

*Manufactured Product*” which was the beginning of Statistical Quality Control for quality. His concept of quality was: “*The measure of quality is a quantity which may take on different numerical values. In other words, the measure of quality, no matter what the definition of quality may be, is a variable*” [Bounds, et al. 1994].

Shewhart recognised that variability was a fact of industrial life and it could be understood using the principles of probability and statistics [Gavin, 1988]. Shewhart developed simple statistical techniques for determining the process variation using graphical methods for process control which were the origin of the quality control chart that we use today. As a methodology this has relevance for tourism in large organisations using complex technology and systems such as airlines and resort hotels. Such large corporations employ large numbers of staff and are engaged in the production of many complex and varying products. SPC allows management the means to define and control the mix of systems at work.

### **2.3.3 Quality Assurance**

After the second World War, during the period of quality assurance, the quality movement evolved from a narrow process focus to a boarder management focus. Four elements of quality emerged during this period, they are: cost of quality, total quality control, reliability engineering and zero defects [Bounds, et al, 1994].

#### **Juran**

Juran is regarded as an important contributor to the evolution of the quality movement in this century. He published the “*Quality Control Handbook*” in 1951, which became the main source of information for quality practitioners and trainers during the 50-70s. The handbook set implementation guidelines for quality control, quality costs and the organisational structure for quality management.

Juran’s approach to quality is defined in “*The Quality Trilogy*” [Juran, 1988]. Three processes were identified in the Quality Trilogy are all interrelated.

1. Quality Planning - this is to provide the operating forces with the means of producing products that can meet customers’ needs.

2. Quality Control - this is to prevent things from getting worse. Control includes putting out the fires.
3. Quality Improvement - this is to take opportunity to improve the performance after the process is stabilised.

Juran also presented a “Quality Planning Road Map” which outlined the activities for quality planning of process and product required to meet customers’ needs.

### **Deming**

Deming, was first invited by the Japanese Union of Scientists and Engineers to teach the executives and engineers on statistical concept of quality management in 1950. He formulated the Fourteen Points which crystallise the key quality management practice that have come to be accepted at most high-quality companies in the United States and Japan [Gabor, A., 1990].

Deming’s Fourteen Points are:

- *Create constancy of purpose toward improvement of product and service*
- *Learn the new philosophy*
- *Cease dependence on inspection of the product to achieve quality. But require statistical evidence of process control along with incoming critical parts*
- *Buy materials only if the supplier has a quality process. End the practice of awarding business on the basis of the price tag alone.*
- *Use statistical methods to find trouble-spots and constantly improve the system*
- *Institute modern aids to training on the job*
- *Institute modern methods of supervision*
- *Drive out fear*
- *Break down barriers between departments*
- *Eliminate numerical goals*
- *Review work standards to account for quality*

- *Remove barriers that rob people of their pride of workmanship*
- *Institute a vigorous program for training people in new skills*
- *Create a structure in top management that will push the above 13 points everyday.*

Deming's 14 Points set a guideline of the key quality management practice, however, there is a lack of information on "how to" actually implement these 14 points. On the other hand, in Juran's Quality Control Handbook, he clearly defined the road map and provides a guideline on "how to" implement the quality programme.

### **Crosby**

Philip Crosby described quality as "free" [Crosby, 1980], he believed that zero defects was a desirable and achievable goal. The roots of Crosby's philosophy can be found in his five absolutes of quality management:

- *Quality is defined as conformance to requirements, not as "goodness" nor "elegance"*
- *There is no such thing as a quality problem.*
- *It is always cheaper to do it right first time.*
- *The only performance measurement is the cost of quality.*
- *The only performance standard is zero defects.*

### **Feigenbaum**

Armand Feigenbaum joined General Electric (GE) in Schenectady, New York, in 1944. While working on the jet engines he found that statistical techniques helped him improve their performance, and as a result, GE put him in charge of its quality program. Later in MIT he developed the concept of Total Quality Control (TQC) [Rao, et al., 1996].

Feigenbaum has similar view of quality as Juran, he stated that quality is defined by the customer. The concept of total quality was defined by Feigenbaum as an excellence-driven rather than a defect-driven concept [Feigenbaum, 1991], and the quality philosophy was extended beyond the factory floor to include all of the functions in an organisation.

Feigenbaum's approach to quality improvement emphasised on an integrated systemic approach to improving quality that is driven by top management. Feigenbaum believed that the job of the quality inspectors should be redefined and that they should act as internal consultants promoting new methods and techniques. The organisation focus should be on improving quality as defined by the customer. These improvements would be achieved primarily through statistical methods, through the control of processes starting with product design and through to installation and field service. This was the beginning of the Total Quality Management philosophy.

### **2.3.4 Quality Movement in Japan**

Three Japanese who have greatly contributed to the quality movement in the seventies are Kaoru Ishikawa, Genichi Taguchi and Singeo Shingo.

The Japanese developed the "Quality Control Circle" in 1962. The first Quality Circle registered in 1962 and the first Quality Circles Conference was held in Sendai, Japan [Ingle, 1982]. This was the infancy of Total Quality Control.

#### **Ishikawa**

Dr Ishikawa's philosophy for organisations is company-wide quality [Ishikawa, 1985]. He is considered as one of the world's foremost authorities on quality control. Dr Ishikawa's practical methods in quality control have helped the Japanese manufacturing industries and some American companies, such as IBM and Ford to achieve a higher quality product at a much lower cost [Ishikawa, 1985]. The Japanese approach to quality has differed from the western functional approach, all employees were encouraged to become involved in studying and promoting quality control since 1949.

Dr Ishikawa and other scientists recognised the importance of training and involving everyone in the company. The Japanese TQC involves everyone in every division of the company to study, practice and participate in quality control training to achieve a high standard of knowledge about a number of key technical tools is given to all employees. TQC is developed in Japan as an integrated quality control approach, it includes control of quality, cost and delivery date and it has a great impact on the development of TQM movement.

## **2.4 THE PHILOSOPHY OF TOTAL QUALITY MANAGEMENT (TQM)**

The term Total Quality Management (TQM) began to appear in the quality literature in the 1970's particularly outside Japan. The definition of TQM varies from country to country. In Japan, the Japanese use the terms Total Quality Control (TQC) or Company-Wide Quality Control (CWQC). Total Quality Control provides the fundamental basis of positive quality motivation for all company employees and representatives, from management through to assembly workers, office personnel, dealers, and service people [Ishikawa, 1985].

Today, there is a widespread consensus that TQM is a way of managing organisations to improve their performance, efficiency and competitiveness [Karatsu, 1988; Buzzell and Gale, 1987; Mizuno, 1988]. Garvin [1988] analysed the success of Japanese manufacturing industries, and the wide differences between the United States and Japanese performance. He pointed out that the roots of the Japanese companies' success could be traced to a system of Company-Wide Quality Control. Ishikawa [1985] examined the common purpose for engaging in Total Quality Control by companies that have received the Deming Prize. They were: improving the corporate health and character of the company, to build quality into products that can always satisfy customers, and to secure profit.

In 1972, the Strategic Planning Institute (SPI) initiated a research programme on competitive strategy called the PIMS (Profit Impact of Market Strategy) [Buzzell and Gale, 1987]. The programme maintains a proprietary database of 1,200 companies and studies the impact of product quality on corporate performance. The PIMS researchers found that the major factors that influenced corporate performance were the following:

1. The quality of product and services is the most important single determinant factor affecting business profitability.
2. Businesses offering premium quality products and services usually have large market shares and were early entrants into their markets.
3. Quality is positively and significantly related to a higher return on investment for almost all kinds of products and market situations.
4. A strategy of quality improvement usually leads to increased market share, but at a cost in terms of reduced short-run profitability.
5. High quality producers can usually charge premium prices.

Rao et al, [1996] described quality as a strategy used by successful companies like Motorola and Florida Power and Light (FPL) to regain market share and profitability. Surveys carried out in United States [GAO, 1991], New Zealand and Australia [Corbett, 1994] on best practice companies also identified TQM as one of the important success factors for companies to gain a competitive edge. There are a number of published success stories on the implementation of TQM such as Motorola, Xerox, Corning, American Express, FPL, AT&T and Ford Motors in America [Hudiburg, 1991; Haavind, 1992; Bounds et al, 1994; Pines, 1990]. Scandinavian Airlines System [Carlzon, 1987] and Ritz-Carlton Hotel Company [Partlow, 1993]. Toyota New Zealand, Interlock Industries, Clear Communications [NZQF, 1993] and the Regent Hotel [DTI, 1993] in New Zealand and the successful companies in Japan [Shingo, 1985; Hudiburg, 1991; Karatsu, 1988]. Similar success could be gained by the operators in the New Zealand tourist industry using the Total Quality Management approach.

#### **2.4.1 Definition of Total Quality Management (TQM)**

Total Quality Control (TQC) which could, perhaps, be considered the precursor of Total Quality Management (TQM) originated with Feigenbaum. He defined Total Quality Control as an effective system for integrating the quality development efforts of the various groups in an organisation so as to enable production and service at the most economical levels to allow for full customer satisfaction [Feigenbaum, 1991]. The Japanese style TQC is called Company-Wide Quality Control (CWQC). Company-Wide Quality Control has a broad range of quality control activities applied to all aspects of the company's operations [Mizuno, 1988]. It was first used by Shin-Etsu Chemical which was the Deming Prize winner in 1963. The term TQC was originated by Nippon Kayaku, a chemicals company and recipient of the 1963 Deming Prize. Since then, TQC has been promoted in Japan and grown into a purely Japanese-style TQC that surpassed the limitations of Feighenbaum's original concept. In 1962, the Deming Prize was established in Japan to recognise companies that have excelled in TQC.

Total Quality Management is defined differently by different researchers and practitioners. The following is a summary of different definitions of Total Quality Management.

Ishikawa [1985]

*“The Japanese-style TQC is a group of activities that requires teamwork from top to bottom, it involves everyone in the control of quality, cost, delivery date design, using QC circle and QC tools”*

British Standards Institution [1992]

*“Management philosophy and company practices that aim to harness the human and material resources of an organisation in the most effective way to achieve the objectives of organisation”.*

The Deming Prize Committee [1986]

*“TQM is a system of activities to ensure products and services of the quality required by the customers are produced and delivered economically”*

Feigenbaum [1991]

*“Total quality control is an effective system for integrating the quality-development, quality-maintenance, quality-improvement efforts of the various groups in an organisation so as to enable marketing, engineering, production, and service at the most economical levels which allow for full customer satisfaction”*

Rampey and Roberts [Bounds et al, 1994]

*“A people-focused management system that aims at continual increase in customer satisfaction at continually lower real cost. Total quality is a total system approach (not a separate area or programme), an integral part of high-level strategy. It works horizontally across functions and departments, involving all employees, top to bottom, and extends backwards and forwards to include the supply chain and the customer chain...”*

Atkinson [1990]

*“TQM is a strategic approach to producing the best product and service possible - through constant innovation”*

In conclusion, Total Quality Management could be defined as a total system approach involves everyone within the organisation as a team to ensure the quality of products and services are delivered at the most economical levels and achieve full customer satisfaction.

## **2.4.2 The elements of Total Quality Management**

The author carried out a review of the elements of TQM considered to be essential by experts and researchers in the field and the results are summarised in Table 2.1.

Although there are different views and definitions of Total Quality Management, there are common themes among these different definitions and approaches which differentiate Total Quality Management from other management approaches. The universal goals of TQM are lower costs, higher revenue, empowered employees and delighted customers [Karatsu, 1988; Ishikawa, 1985; Buzzell and Gale, 1987; Garvin, 1988; Mizuno, 1988; Hudiburg, 1991; Sheuing and Christopher, 1993; Soin, 1992; Rao et al, 1996]. TQM is a corporate business management philosophy that recognises customer needs and business goals as inseparable. It is applicable to both manufacturing and service industries [British Standards Institute, 1989].

**Table 2-1. Summary of Quality Experts' View of TQM Elements**

|   | Source            | The Prime elements of TQM  |
|---|-------------------|--|
| 1 | Juran [1992]      | <ul style="list-style-type: none"> <li>• Identifying customers and their needs</li> <li>• Establishing optimal quality goals</li> <li>• Creating measurements of quality</li> <li>• Planning processes of meeting goals</li> <li>• Producing continuing results in improved market share, premium prices and reduction of errors</li> </ul>  |
| 2 | Deming [1986]     | <ul style="list-style-type: none"> <li>• Create constancy of purpose for improvement of product and service</li> <li>• Adopt the new philosophy</li> <li>• Cease dependence on mass inspection</li> <li>• End the practice of awarding business on price tag alone</li> <li>• Improve constantly, and forever, the system of production and service</li> <li>• Institute training and retraining</li> <li>• Institute leadership</li> <li>• Drive out fear</li> <li>• Break down barriers between staff areas</li> <li>• Eliminate slogans, exhortations and targets for the workforce</li> <li>• Eliminate numerical quotas</li> <li>• Remove barriers to pride of workmanship</li> <li>• Institute a vigorous programme of education and retraining</li> <li>• Take action to accomplish the transformation</li> </ul> |
| 3 | Feigenbaum [1988] | <ul style="list-style-type: none"> <li>• Quality leadership</li> <li>• Company-wide introduction</li> <li>• Continuous motivation</li> <li>• Education</li> <li>• Measurement</li> </ul>   |
| 4 | Ishikawa [1985]   | <ul style="list-style-type: none"> <li>• Quality first - not short term profit first</li> <li>• Consumer orientation - not producer orientation. Think from the standpoint of the other party</li> <li>• The next process is your customer - breaking down the barrier of sectionalism</li> <li>• Using facts and data to make presentations - utilisation of statistical methods</li> <li>• Respect for humanity as a management philosophy - full participatory management</li> <li>• Cross-functional management</li> </ul>   |
| 5 | Crosby [1980]     | <ul style="list-style-type: none"> <li>• Management commitment</li> <li>• Quality improvement teams</li> <li>• Measurement</li> <li>• Cost of quality</li> <li>• Quality awareness</li> <li>• Corrective action</li> <li>• Zero defects day/goal-setting</li> <li>• Error cause removal</li> <li>• Recognition</li> <li>• Quality councils</li> </ul>  |

The common themes in TQM [Ishikawa, 1985; Soin, 1992; Schmidt and Finnigan, 1993; GAO, 1991; Bounds et al, 1994; Rao et al, 1996; Kanji, 1996] are that TQM should be:

- **Company-wide, involving everyone within the company as well as suppliers:** Organisations are made up of a complex system of customers and suppliers, with every individual executive, manager, and worker functioning as both a supplier and a customer.
- **Quality first:** Management has to set long term goals for profit and put quality first. Stressing quality first can gain customer confidence and increase long-term

profit. Build quality into the product and process, use the planning tools and quality function deployment once the prescribed quality level has been determined, take customer needs and demands into account when designing the products and services to ensure that all customer requirements are met.

- **Customer focused/ customer driven:** Satisfying the customer is the priority goal and is presumed to be the key to the organisation's survival and growth. If the organisation succeeds in "delighting" its customers, they will bring others with them and the company will flourish; if the company anticipates their customers' needs and satisfies them, the company will achieve the ultimate in quality.
- **Internal customer:** The next process in a production or service chain is your customer. Treat the next process as a customer. Each process is responsible to ensure that its customer's needs are met in terms of quality, cost, quantity and delivery date. Everyone must be able to talk to each other freely and frankly.
- **Management with facts:** Facts are important for control. The first order of business is to look at the facts and not to rely only on experience and "gut feelings". The next step is to translate the facts into data and utilise the data and statistical methods to solve problems and improve processes.
- **Continuous improvement:** This applies to the product or service produced as well as individual competence on the job. TQM organisations are learning organisations and depend on their people becoming increasingly competent and creative.
- **Teams:** Teams and groups are primary vehicles for planning and problem solving.
- **Quality Tools:** Use quality tools for problem solving and continuous improvement. The Quality Control tools such as control charts, histograms, Pareto diagrams, cause and effect diagrams and design of experiments are some of QC tools that would help teams in problem solving, continuous improvement and monitoring the improvement results.
- **Cross-functional teams:** Developing open relationships and trust among members of the organisation at all levels is a key condition for success. In an organisation, trust is a high priority and is nurtured in a variety of ways. It begins with the communication of organisational goals. Everybody should know what the targets are and how well they are being met. Barriers between divisions and departments are minimised. More work is done in teams, many of which are inter-departmental and cross-functional.

Building on these themes, the successful implementation of TQM depends on the following factors [Ishikawa, 1985; Hudiburg, 1991; Soin, 1992; Brown et al, 1994; Dale, 1994; Dale and Cooper, 1994]:

- **Leadership:** Dr Ishikawa warned that “*if there is no leadership from the top, stop promoting TQC*” [Ishikawa, 1985]. The CEO must determine the vision for the company. “*What do we want to be?*” Once the vision is clearly defined, top management is committed to set the policies to achieve the vision.
- **Top management commitment:** Brown et al, [1994] stressed that the foundation of an effective TQM effort is commitment. To successfully implement a TQM programme, the executive has to believe in it and be committed to it.
- **The need for a change of culture within the company:** TQM cannot be imposed from outside, it must be promoted by the companies themselves. It is important to create an organisational culture that is conducive to continuous quality improvement and in which everyone can participate [Soin, 1992 and Dale, 1994].
- **Listening to the voice of the customer:** To meet customer’s needs, we must find out what their needs are, satisfy those needs and re-evaluate their needs again. Listening to the customers and evaluating whether their needs are being met is an on-going, never ending process in the TQM journey.
- **Clearly defined policies:** The organisational quality policies must clearly define the company goals, such as “*Quality first, Customer first*” and set directions to achieve the goals. This includes the commitment to team building, empowerment and resources for the training and implementation of TQM. The long term strategy for TQM has to be integrated with other business strategies [Dale and Cooper, 1994].
- **Creating an infrastructure for continuous improvement:** Imai [1986] described *Kaizen* (continuous improvement) as ongoing improvement involving everyone. It is the essence of Japanese management practice. To achieve this, the responsibility and accountability of top management for quality assurance must be clearly defined. There must be a quality system and quality control in all of the organisation’s processes.
- **Training all employees in how to use the tools and techniques of TQM:** Training and education are essential to the implementation of quality control. Ishikawa [1985] and Dale [1994] recognised that employees need to be provided with the right level of education and training to ensure that their general awareness

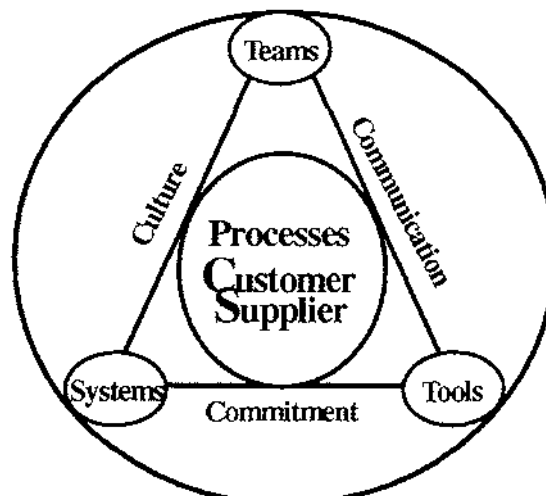
of quality management concepts, skills and attitudes is appropriate and suited to the continuous improvement philosophy.

- **Involving everyone within the company by using cross-functional teams:** Breaking down the barriers between departments and treating the next process as your customer [Mizuno, 1988].

The inter-relationships between these elements can be illustrated diagrammatically as in Figure 2-2 [Oakland, 1996]. Central to TQM is the management of the complete supplier-to-customer chain. To meet customer needs via this process will require systems for quality management tools and techniques for measuring and implementing continuous improvement and team building through human resource development.

The organisational environment must be one of commitment to meeting their customers requirements, starting at the highest level, coupled with a clear communication of the values and vision of the organisation to create an organisational culture, dedicated to quality excellence in all its operations.

It would be wrong to suggest that this, or any other construction of the elements, is a definitive representation of TQM. Every member in the TQM field has their own preferred model or concept. In general, the elements are similar and include most of the those listed above.



Source: Oakland, J.S. and Sobel, A.S. (1996). Total Quality Management. Text with Cases. pp. 31

**Figure 2-2. The Total Quality Model**

Customer focus is pivotal to competitive advantage. It is widely accepted that consumers seek one another out, and “word-of-mouth” is a vital source of consumer information [Mazany, 1993]. Without a customer focus, including, a specific process for gathering

customer information and responding to customer needs, there will be a serious gap in the ability of a business to build quality into its competitive offerings.

To achieve the goal, you need to have tools, systems and the people to support the whole programme (refer to Figure 2-2). The culture of the company must focus on customers and quality first. Then the company should set up the system and infrastructure to create a continuous improvement environment, and provide training to all employees on quality control tools and approaches to carry out continuous improvement.

Continuous Improvement or “Kaizen” in Japanese, is one of the most important concepts and tools in Total Quality Management. “Kaizen” means improvement involving everyone - top management, managers and workers [Imai, 1986]. This is one of the major success factors for Japanese companies in the competitive market. The Kaizen process is an ongoing and never ending process which involves everyone within the company seeking a better, more efficient and cost effective ways of doing business. The TQM and Kaizen philosophies have been shown to be generic and can be applied to every aspect of business to gain competitiveness. The ISO 9000 Quality Systems established a set of quality elements to assist the organisation to establish their basic quality management systems which could be used as foundation for Total Quality Management.

## **2.5 ISO 9000 QUALITY SYSTEMS AND THE MALCOLM BALDRIGE NATIONAL QUALITY AWARD**

A Quality System is defined as “*the organisational structure, responsibilities, procedures, processes and resources required to achieve the management goals or objectives*” [NIST, 1997d]. The companies possessing a quality system have documented their systems in writing, in the form of Manuals, Procedures and Instructions. The establishment of rules, the documentation of those rules, and ensuring that all employees maintain those rules are the nucleus of a company quality system. The documented system should cover all aspects of a company's operations. The ISO 9000 standards are internationally recognised quality standards and today, more than 80 countries have adopted the ISO 9000 series as their national standard. There have also been two large regional adoptions, CEN (European Committee for Standardisation) and COPANT (the Pan-American Standards Commission). In New Zealand, Standards Associated of New

Zealand (SANZ) adopted the ISO 9000 Standards as New Zealand Standard Series NZS 5601: 1987.

### **2.5.1 The ISO 9000 Standards**

In 1987, the ISO (International Organisation for Standardisation) in recognising the need for the harmonisation of various quality standards used world wide, issued the ISO 9000 series of standards [NIST, 1997d]. The ISO 9000 standards are a series of five international standards (ISO 9000, 9001, 9002, 9003, and 9004), which provide guidance on selection of an appropriate quality management programme (system) for a supplier's operations. These are [NIST, 1997e]:

ISO 9000 Quality Management And Quality Assurance Standards - Guidelines Selection And Use.

ISO 9001, 9002 and 9003 describe three distinct quality system models of varying stringency for use in different applications. Common elements in ISO 9001, 9002, and 9003 include the need for: an effective quality system; ensuring that measurements are valid, that measuring and testing equipment is calibrated regularly; the use of appropriate statistical techniques; a product identification and traceability system; maintaining an adequate record keeping system; an adequate product handling, storage, packaging and delivery system; an adequate inspection and testing system as well as a process for dealing with non-conforming items; and ensuring adequate personnel training and experience.

ISO 9000 (ANSI/ASQC Q 90), Quality Management and Quality Assurance Standards - Guidelines for Selection and Use, explains fundamental quality concepts; defines key terms; and provides guidance on selecting, using, and tailoring ISO 9001, 9002, and 9003.

ISO 9001 (ANSI/ASQC Q 91), Quality Systems - Model for Quality Assurance in Design/Development, Production, Installation and Servicing, is the most comprehensive standard in the series. ISO 9001 covers all elements listed in ISO 9002 and 9003. In addition, it addresses design, development, and servicing capabilities.

ISO 9002 (ANSI/ASQC Q 92), Quality Systems - Model for Quality Assurance in Production and Installation, addresses the prevention, detection, and correction of problems during production and installation. It is more extensive and more sophisticated than ISO 9003.

ISO 9003 (ANSI/ASQC Q 93), Quality Systems - Model for Quality Assurance in Final Inspection and Test, is the least comprehensive standard. It addresses requirements for the detection and control of problems during final inspection and testing.

ISO 9004 (ANSI/ASQC Q 94), Quality Management and Quality System Elements - Guidelines, provides guidance for a supplier to use in developing and implementing a quality system and in determining the extent to which each quality system element is applicable. ISO 9004 examines each of the quality system elements (cross-referenced in the other ISO 9000 standards) in greater detail and can be used for internal and external auditing purposes.

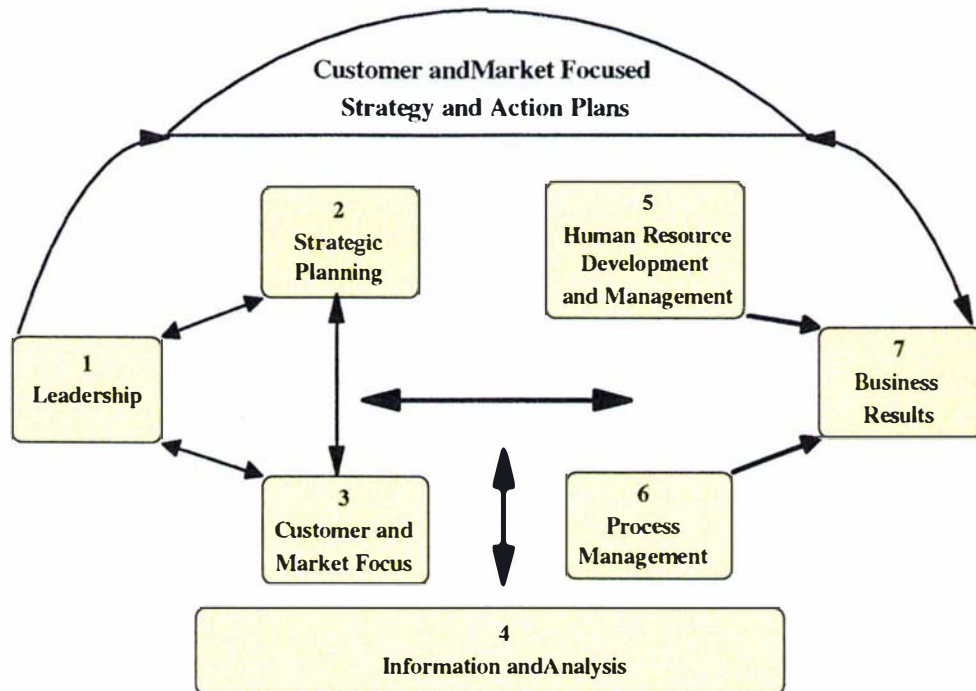
The guidance in ISO 9004-1 exceeds the requirements contained in ISO 9001, 9002, and 9003. ISO 9004-1 is intended to assist a supplier in improving internal quality management procedures and practices. It is not intended for use in contractual, regulatory or registration applications [NIST, 1997e].

The ISO 9000 standards represent an international consensus on the essential features of a quality system to ensure the effective operation of any business, whether a manufacturer or service provider, or other type of organisation, whether in public or private sector. It is not just about documentation, it is a more formalised system which allows a company to control its quality assurance systems. ISO 900 provides a way of accessing a company's conformance to a standard.

The ISO 9000 system provides a good measure of performance in an absolute sense but in the 1980's many United States companies were looking for a comparative assessment system. In response to this need and the perceived need to strive for excellence, the United States industry and government have joined together in supporting an Award for business excellence and quality achievement, that is the Malcolm Baldrige National Quality Award. Created by public law, the Malcolm Baldrige National Quality Award is the highest level of national recognition for quality that a U.S. company can receive.

### **2.5.2 The Malcolm Baldrige Quality Award**

The Malcolm Baldrige Quality Award was first introduced in the United States in 1987 [NIST, 1997a] as a means of promoting business excellence. Since 1987, it has been subjected to a TQM continuous improvement process itself and in 1996 underwent a major revision. Figure 2-3 is the 1997 Malcolm Baldrige Quality Award Criteria Framework [NIST, 1997f] which brings together the TQM elements into an overall quality system for an organisation wishing to implement an TQM approach or to evaluate its own quality management systems.



Source: Malcolm Baldrige National Quality Award's 1997 Criteria for Performance Excellence. National Institute of Standards and Technology, Gaithersburg, MD.

**Figure 2-3. The Malcolm Baldrige Quality Award Criteria Framework**

The assessment process for the Award looks at seven elements, namely:

1. **Leadership** - The Leadership category examines senior leaders' personal leadership and involvement in creating and sustaining values, company directions, performance expectations, customer focus, and a leadership system that promotes performance excellence. It also examined how the values and expectations are integrated into the company's leadership system, including how the company continuously learns and improves, and addresses its societal responsibilities and community involvement.
2. **Strategic Planning** - The Strategic Planning category examines how the company sets strategic directions, and how it determines key action plans. This category also examined how the plans are translated into an effective performance management system.
3. **Customer and Market Focus** - This section describes how the company determines and enhances the satisfaction of its customers to strengthen relationships, to improve current offerings, and to support customer- and market-related planning.
4. **Information and Analysis** - The Information and Analysis category examines the management and effectiveness of the use of data and information to support key company processes and the company's performance management system.

5. Human Resource Development and Management - The Human Resource Development and Management category examines how the work force is enabled to develop and utilise its full potential, aligned with the company's objectives. It examined the company's efforts to build and maintain an environment conducive to performance excellence, full participation, and personal and organisational growth.
6. Processes Management - The Process Management category examines the key aspects of process management, including customer-focused design, product and service delivery processes, support processes, and supplier and partnering processes involving all work units. The category examines how key processes are designed, effectively managed, and improved to achieve better performance.
7. Business Results - The Business Results category examines the company's performance and improvement in key business areas, a customer satisfaction, financial and marketplace performance, human resource, supplier and partner performance, and operational performance. Also examined are performance levels relative to competitors.

Each of these elements is further subdivided into a total of 20 sub-categories [NIST, 1997b]. As a means of reviewing an organisation in terms of the above factors for successful implementation, the Malcolm Baldrige criteria provide a valuable management approach which picks up the essential elements and philosophies of TQM. They link the elements into a system which start from the setting of the company vision through leadership to the identification of trends in the organisation's performance in the critical areas of customer satisfaction, financial results and human resources development. This system approach of TQM has been adapted by New Zealand government called New Zealand Quality Award. The Award was established to assist the industries to gain competitiveness in quality and productivity.

### **2.5.3 New Zealand National Quality Award**

The New Zealand Quality Foundation which was established by private enterprise, with the full endorsement of government. It was set up to develop and co-ordinate a Quality Awards programme to assist in the improvement of the quality, productivity and competitiveness of the New Zealand organisations [NZQF, 1997a]. The New Zealand National Quality Award (NZNQA) was introduced in 1993, based on the U.S. Malcolm Baldrige National Quality Awards (MBNQA) and administered by the New Zealand Quality Foundation. The Award promotes:

1. Awareness of quality as an increasingly important element in competitiveness,
2. Understanding of the requirements for performance excellence, and
3. Sharing of information on successful performance strategies and the benefits derived from implementation of these strategies.

The key differences between NZNQA and ISO 9000 are shown in Table 2-3 [NZQF, 1997b; NIST, 1997a].

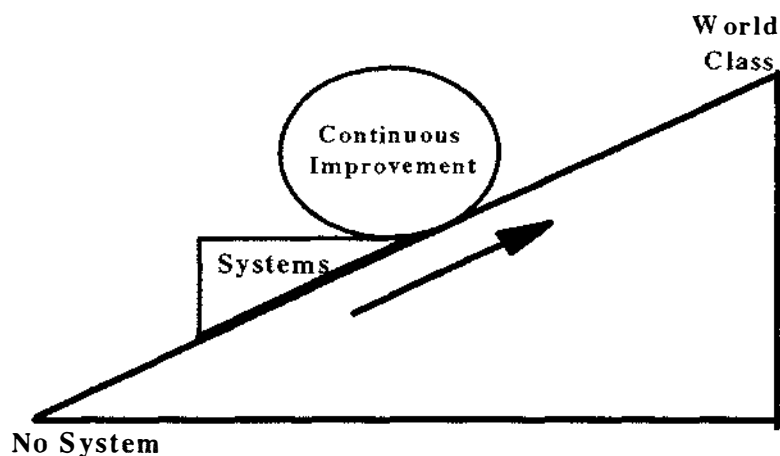
The Malcolm Baldrige National Quality Award process is designed to recognise and award those firms with outstanding records of quality performance. The purpose of the program is, therefore, very different from the purpose behind the development of the ISO 9000 criteria. While the use of the ISO 9000 standards may be a good starting point in establishing a quality system, the criteria used in evaluating candidates for the Baldrige Award are much more detailed and extend beyond those areas covered by the ISO 9000 series.

**Table 2-2. Key Differences Between NZNQA And ISO 9000**

| Core Element              | ISO 9000   | NZNQA   |
|---------------------------|--|---|
| <b>Focus</b>              | Conformity assessment  | Enhancing competitiveness   |
| <b>Purpose</b>            | Facilitate trade   | Increase customer values<br>Improve operational performance   |
| <b>Goal</b>               | Determine acceptable performance   | Recognise and share forefront quality strategies  |
| <b>Criteria</b>           | Basic quality systems requirement  | Beyond ISO criteria and extended to TQM   |
| <b>Evaluation Process</b> | Emphasis on documentation and compliance to the standards' criteria  | Emphasises the dynamics involved in the integration of all aspects of a firm's quality system and the firm's continuous improvements in quality       |
| <b>Auditing Process</b>   | Self-audits - Evaluated by the company<br>Second party evaluations - the buyer who requires and conducts quality system evaluations of his suppliers.<br>Third party evaluations are conducted by persons or organisations independent of both the supplier and the buyer. | Evaluated by members of the panel of evaluators. High-scoring applicants are selected for site visits. Award recipients are recognised at a ceremony. |

The ISO 9000 is more documentation orientated and they did not put emphasis on all operations, human resource and link them to the company strategic planning process. The other importance differences are the ISO 9000 focuses on the processes rather than on the overall system of TQM, it is not results and customer oriented. The Baldrige Award criteria are results and customer focused and cover all operations, processes, and work units of a company. The evaluation procedures emphasise the dynamics involved in

the integration of all aspects of a firm's quality system and the firm's continuous improvements in quality.



**Figure 2-4. Continuous Improvement Journey Using ISO 9000**

In summary, the main focuses of ISO 9000 Quality Standards on the process documentation of quality management requirements and the company performance are audited using the documentation. As shown in Figure 2-4, ISO 9000 Quality Standards could be used as a guide for company to set a basic foundation quality system and a wedge for continuous quality improvement journal to achieve word-class competitiveness. This is where Malcolm Baldrige National Quality Awards and New Zealand National Quality Awards criteria would be useful, they go beyond the basic requirements of quality management systems, they embodied the TQM philosophies and focus on the approach and deployment of quality concepts throughout the whole organisation to achieve its goal on customers satisfaction and high operational performance. This approach is more customer focus and results orientated.

## **2.6 BENEFITS OF IMPLEMENTING A TOTAL QUALITY MANAGEMENT PROGRAMME**

The benefits that can be gained from the TQM programme are identified by the surveys carried out by researchers [Ross, 1993; Adams et al, 1994, 1996; Corbett, 1994, Graham, 1992; Berry and Parasuraman, 1991; GAO, 1991; Haavind, 1992; Hudiburg, 1991; Spitzer, 1993; Wisner and Eakins, 1994; Powell, 1995; Neergaard, 1996; NIST, 1997c] as follows:

- Higher customer satisfaction
- Higher employee morale

- Better employee relations
- More efficient processes
- Higher productivity
- Improved quality of product and service
- Increased market share and profitability
- Decreased customer complaints
- Increased return on investment
- Lower cost
- Higher profits

Graham [1992] stated that dissatisfied customers will certainly try to change their supplier and will tell others of their dissatisfaction. On the other hand, satisfied customers may be loath to change suppliers because they feel that they have little reason to do so. A delighted customer who receives good value product or service features which they did not expect [Tenner, 1992], will stay loyal to their supplier and will tell others of their “*delight*”. In a service industry such as tourism this concept of focusing on customer needs is an essential element for continuous improvement and growth of the industry. Because most tourists visit each destination only a few times and because they often hear about a tourism region through word-of-mouth, “delighted” customers should be the objective of a TQM programme for any such service industry as tourism.

## **2.7 QUALITY IN SERVICE INDUSTRIES**

In contrast to manufacturing, service industries have only recently adopted quality management practices. Service industries are a major contributor to the world economy. In New Zealand, 69% of the total work force is involved in service industries and 31% in manufacturing and primary industries [Dept of Statistics, 1997]. Service industries are lagging behind in quality management compared to those manufacturing industries, many of whom have implemented Total Quality Management and are reaping the benefits that TQM has brought.

Service industries started to recognise some of the benefits and impact of quality management in the mid 1980s [Gronroos, 1990; Scheuing and Christopher, 1993]. They are facing the challenge of a more sophisticated customer who demands a more efficient and better quality service. The customer also wants a service which is good value for money.

Facing this new challenge, quality has become a strategic weapon for service industries to survive in this highly competitive market [Gronroos, 1987, Garvin, 1987, Scheuing and Christopher, 1993]. Service has distinctive characteristics which are different from a manufactured product. The distinct features of service industries include [Gronroos, 1987; Haywood-Farmer and Stuart, 1988; Edvardsson and Mattsson, 1993; Davidoff, 1994; Fitzsimmons, 1994]:

- Services cannot be produced in advance and then stored until use. It is not possible to check before delivery.
- The production and consumption in services are simultaneous. It is virtually impossible to prevent service deficiencies through preliminary inspection.
- Services are conditioned by human factors, which are very difficult to assess and to standardise.
- Customers are participants in the production process and this can make it difficult to control.
- The service provider's performance capability is time perishable and the performance varies with time.
- The service site location is dictated by customers, and the service provider has no total control over the customers' preference.
- The service production process is labour intensive which makes it difficult to control the consistency of service performance.
- The service product is intangible. You cannot touch or feel it and, therefore, it is difficult to measure and quantify.

These unique characteristics of service industries create difficulties in managing a company's service quality performance. Human factors relating to both the customers and the staff, are an integral part of the service delivery process. Service quality, therefore, is a specialist field of quality management requiring specialised measurement and management techniques. A number of researchers have worked in this field to develop service quality measurement and management tools, systems and processes.

One definition of quality in a service industry has been given by Parasuraman et al, [1990] as the difference between consumer service expectations and consumer service perceptions. Parasuraman claims that service quality and satisfaction are closely related, where the former is "*a global judgement, or attitude, relating to the superiority of the service, whereas satisfaction is related to a specific transaction*". Thus, service quality

is an attitude related to, but not equivalent to, customer satisfaction. The work of Parasuraman has been highly regarded in the management of service quality.

Gronroos [1990] defined good perceived service quality as when the experienced quality meets the expectations of the customer. He identified six criteria of good perceived service quality. They are professionalism and skills, attitudes and behaviour, accessibility and flexibility, reliability and trustworthiness, recovery and reputation, and credibility.

Fitzsimmons [1994] recognised that managers would have difficulty in identifying their product because of the intangible nature of services and the presence of the customer in the process creates a concern for the total service experience. He identified service as a “service package” which is defined as a bundle of goods and services provided in some environment. Four features were identified:

- Supporting facilities - the physical resources that must be in place before a service can be offered. For example, a ski lift, a hospital and a museum or historic house, the architecture, interior decorating, the layout and supporting equipment.
- Facilitating goods - the material purchased or consumed by the buyer or items provided by the customer, Examples are skis, food, legal documents, and medical supplies, the consistency, quantity and variety.
- Explicit services - the benefits that are readily observable by the senses and consist of the materials or intrinsic features of the service. Examples are the training of service personnel, the professional standards of doctors, pilots and the availability of service.
- Implicit services - Psychological benefits that the customer may sense only vaguely or extrinsic features of the service. Examples are the authentic features of a historic house, the attitude of service personnel, the convenience of the location, the atmosphere of the office and the waiting time to purchase a ticket.

Each of the service researchers have their own classification of service quality criteria. When the customer purchases a service, the way in which a customer regards a service will depend on a wide range of factors and not just the specific service provided. For example, in a restaurant the quality of the service, as seen by the customers, includes the atmosphere of the restaurant, the speed of service, the politeness and attitudes of the serving staff, as well as the price and quality of the food provided. The whole service experience, therefore, contributes to the evaluation of the service as seen by the customers. The factors include not only the main or core services but also what may be

regarded as peripheral services. In summary, the quality of service as seen by the customer relates to the whole service experience [Gronroos, 1987; Normann, 1991].

In the case of tourist attractions such as museums, the core service would include the conservation of artifacts and the displays and information about the artifacts. The peripheral services would include the reception service, tea room, toilet facilities, shops, tour guides and educational services. The third type of service is the supporting services which are used to increase the value or to differentiate the service from the service of competitors. Examples are: the extra services provided by the tourist attractions - a guided tour of a historic house in the traditional costume.

In this research, the service quality variables that were taken into consideration included the core services and the supporting facilities, explicit and implicit services relating to staff, access and the environment.

## **2.8 THE TOURIST INDUSTRY**

The tourist industry has all of the distinct features of service industries. The intangibility of the services and the critical involvement of human factors make the service process difficult to control and measure [Kraehenbuehl, 1987; Ruston and Carson, 1989; Austin, 1990]. Human factors, which include both the customers and the staff, are an integral part of the service delivery process and performance measures tend to be qualitative rather than quantitative in most of the service industries.

The most common definitions of tourism academic as well as industrial, describe it as a composite industry constructed out of varying mixes of other elements and parts. These are drawn together and reflect the variable needs of tourist. These definitions fall into two approaches: supply side and demand side. The demand side sees an industry as being developed around meeting the needs of the consumer - the tourist. The supplier side, although reflecting demand to an extent, pictures the industry as composed of a range of goods and services that can be purchased or "supplied" to meet these needs.

Lundberg [1990] describes tourism as a complex of inter-related businesses that serve the travelling public in one way or another. He suggests that the tourist business includes accommodation, transportation, destination development, travel research, government offices, travel expeditors, restaurants, recreational facilities, tourist attractions and miscellaneous. This perspective mixes together industrial components with elements of government and agencies with the development and management of destination areas.

Poon [1993] has a very similar classification of the tourist industry. He identifies nine core groups in the industry. They are airlines, holiday-makers, hoteliers, service suppliers, tour operators, incoming agents, travel agents, financial service suppliers and tourists. This writer and researcher chooses to emphasise financial service suppliers and de-emphasise the public sector component.

Another perspective on what constitutes a tourism industry has been developed by a number of observers and in particular Smith [1998]. These industry models seek to define tourism as consisting of overlapping or interlined sets of suppliers of goods and services tiered or ranked according to the degree of financial dependence they have on tourist purchases as well as the extent to which they see themselves as being behaviourally affiliated or aligned to tourism. The answer to both the financial and behavioural aspects of this would flow from an answer to the strategic question of what business are they in and what are their core competencies. Thus a hotel that sells liquor and meals to tourists may still define themselves as being in Hospitality rather than Tourism and see their tourist customers as being just another segment in their market. These approaches tend to picture a core group of business who deal exclusively or almost entirely with tourists such as travel agencies and tour operators; another business set that provides the industrial goods and services that these core businesses consume such as hotel suppliers; those who retail to tourists as part only of their customer segments - garages, pharmacies and the like. These industrial models help to quantify the direct and indirect consequences of tourism especially when required to build a statistical picture of tourism's impact on jobs and incomes and on Gross Domestic Product and trade.

Collier [1989] segments the New Zealand tourist industry into four sectors, i.e. transportation, accommodation, ancillary services and sales. The 1978 New Zealand Tourism Advisory Council Report describes the tourism sectors as a complex of independent, but interrelated trading function which are wholly or partially committed to serving travellers, more particularly leisure travellers [Collier, 1997]. This diversity of the tourism industry in New Zealand has been recognised as a basis of strength and resilience and taken full advantage of by the industry [NZTB, 1984]. This type of definition is common and is close in form and content to those of the World Tourism Organisation (WTO), the World Travel and Tourism Council (WTTC) and Pacific Asia Travel Association (PATA). These international agencies focus strongly on its composite nature and on its dispersal and inter-penetration of other sectors of the economy.

The public sector plays an important role in defining the New Zealand tourist industry. The government activities affect tourism in the following ways [NZTB, 1984]:

- They create the broad economic conditions in which the tourism industry operates. This includes the extent to which tourism intermixes with the other sector economies. At various times tourism has been harnessed with trade and especially agricultural trade to co-promote New Zealand as a destination area and boost export receipts.
- Government agencies advice for Ministers and Cabinet on actions and policies which have direct consequences for tourism.
- Market New Zealand overseas as an attractive tourist destination. The role of the National Tourist Organisation (NTO) is crucial to shaping a destination definition and image for New Zealand and by so doing developing a sense of identity between the New Zealand resident and the visitor. In this way the boundaries of the industry become somewhat blurred as promotional literature exhorts residents to become engaged as hosts, It is arguable that the social context in which the visitor finds themselves is also a part of tourism and that the industry may risk excessive intrusion into the personal spaces and lifestyles of the resident.
- Investment in, and operation of, tourism activities.
- Quasi-judicial bodies license and regulate economic and social activities. Tourism is a driver of the social framework and a stimulus to changing resident behaviours. The Occupational Safety and Health (OSH) requirements of adventure tourism has resulted from the need for better control of activities in which risk has become a key element in many recreational products. The boundaries of the industry have expanded to encompass these products that “new tourist” [Poon, 1993] now makes on industry administration and management.
- Government agencies manage the great majority of land and natural resources on which tourism depends. The tourism industry is a major user of the natural estate as part of growth in demand for both eco-tourism as well as adventure tourism experiences. With the advent of the Resource Management ACT [Hall and McArthur, 1993]. Recreational users of these estates, including the commercial arm of tourism, are joint venture partners with Department of Conservation in their care and long term sustainable use. For this purpose the industry needs official representatives to partake in such liaison and become actively engaged. Representative agencies of the industry have the responsibility to.

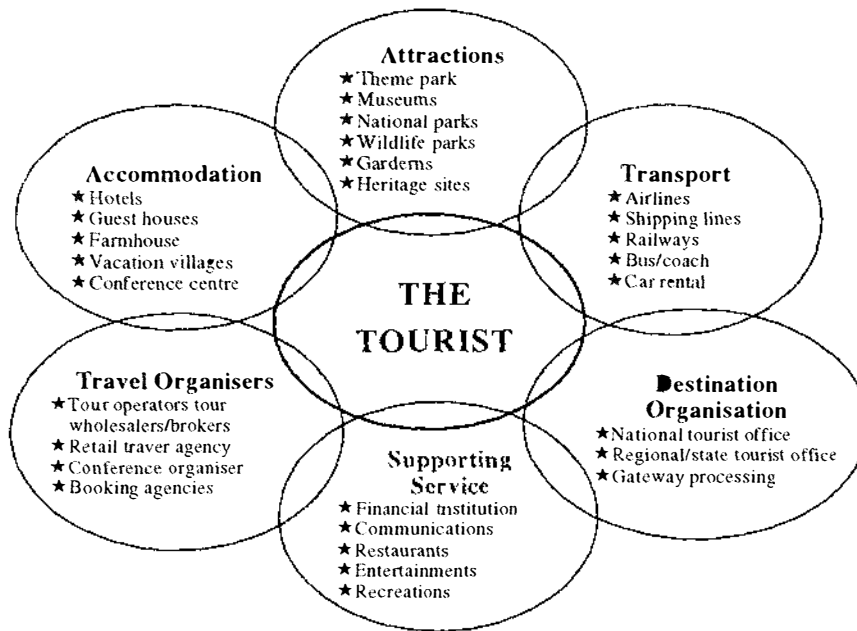
The New Zealand Tourism Board was established in 1991 under the New Zealand Tourism Board Act 1991. The mission of the Board is : *“To ensure that New Zealand is developed and marketed as a competitive tourism destination to maximise the long term benefits to New Zealand”*. One of the long term strategic goals of the Board for the

tourism sector is to achieve continuing improvements in visitor satisfaction, consistent with the positioning of New Zealand as a distinct, competitive and high-value visitor destination with authentic experiences and a friendly welcome [NZTB, 1996]. This is the main objective of this research project, it is an attempt to assist New Zealand heritage attractions in developing a tool for measuring customer satisfaction, which could help the attractions operators to identify areas for continuous improvement and achieve competitive edge. In this way, New Zealand tourism has evolved along with international trends and reflects the evolution of a new form of tourism which caters more for those seeking for educational and interactive experience [Poon, 1993]. The effect of this has been to further blur the boundaries of what we understand to mean by tourism and to extend the range of potential products to include much that was previously considered marginal.

In recent decades industry product and market scope has broadened to include many recreational activities that were formerly only rarely offered or sought by the tourist. Independent visitors in particular are becoming harder to distinguish from local residents in their pattern of impact on the host destination. The tourist industry is evolving from an “old” to a “new” form and this trend has consequences for human resources development. For example, “new” tourism requires employees to have:

- increased skill levels for activities involving a measure of risk such as bungy jumping, white water rafting, scuba diving, Training now emphasises the ability of staff to manage risk as well as ensure visitor satisfaction with the experience.
- a more detailed understanding of heritage and culture is now required to meet the demands of knowledge seeking tourists. Training now stresses the skills necessary to impart knowledge and awareness to the visitor of the underlying background to the social and cultural experience in which they are engaged.

Each of the above examples also illustrates a trend towards professionalisation within tourism at a functional or activity level, outdoor recreation operators group themselves into “trade: related bodies: “White Water Rafting Associations”, “Mountain Guides Associations”, “Adventure Tourism Association”. Businesses that depend on natural and built heritage group themselves into “Heritage Associations”. Each of these mini industrial clusters see themselves as being concerned with advancing the interests and status of their membership and this includes occupational and career matters.



**Figure 2-5. Network of the Tourist System**

In this thesis, the New Zealand Tourism Advisory Council's (NZTC) definition of the tourist industry has been adopted:

*"....a network of independent but inter-related trading functions within a range of service industries, which are wholly or partially committed to serving the tourist."*

It is proposed that there are six sectors in the tourism system grouped by the service functions they provide or supply to tourists. Namely, accommodation, attractions, transport, travel operators, destination organisations and the supporting services sector. These sectors are shown diagrammatically in Figure 2-5.

This perspective has been integrated with what has been termed the systems approach, the researcher and writer most closely associated with this position is Leiper [1990]. The underlying premise is concerned with conceptualising tourism in a holistic, systematic and integrated way. He describes what he terms "a whole tourism system" comprising five elements: at least one tourist, three geographical elements of which the first is a traveller generating region, the second are transit routes and the third are tourist destination regions and a fifth element, a travel and tourism industry.

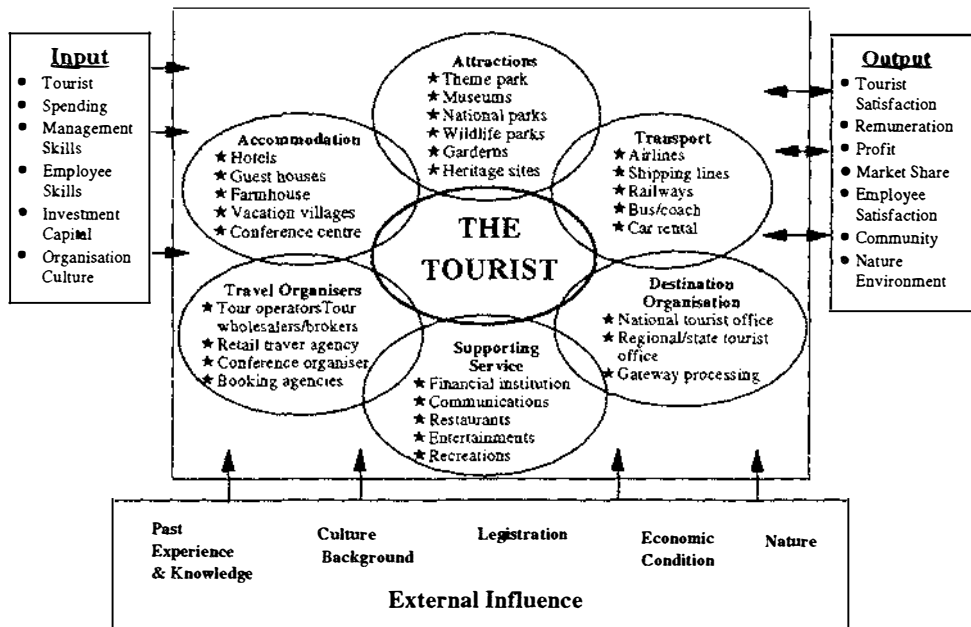
Laws [1992] also has used a system approach to analyse the tourist industry. He describes a system as an ordered set of components; each component is affected by being part of the system. Its behaviour is constrained by the needs and conditions of its setting. The entire system is affected if one component changes. The tourist's experience will be

affected by the changes taking place in the industry. Three stages were identified in the system processes by Laws [1992]:

1. Inputs: These include equipment, skills, resources and the client's demands for an organisation's outputs.
2. Outputs: These include the services which the tourist operator produces, the profit and the work which it creates in so doing and the satisfaction which its clients obtain.
3. System: A system is an ordered set of components; each component is affected by being part of the system. Its behaviour is constrained by the needs and conditions of its setting and the entire system is affected if one component changes.

Figure 2-6 combines the NZTC Network of the Tourist System with Laws's three system's components to describe the Total Tourist System.

A feedback mechanism has to be put in place to provide for the "*voice of customers*" as shown in Figure 2-6 where the (two way arrows from the Output to the Network of the Tourist System represent a mechanism to facilitate feedback information flow). From the tourists' view point, what is important is that their expectations are being met and preferably exceeded. They should be more than satisfied with what they have gained from their tourism purchase. To achieve this output, the management needs to have a regular monitoring and feedback system in place. The feedback mechanism requires both internal and external customer feedback. The feedback information will help management to identify the weakness, in the system and take remedial action to improve the quality of service provided.



Modified "The Tourism System" from: Laws, E. 1991. *Tourism Marketing - Service & Quality Management Perspectives*. Stanley Thomas Ltd. pp. 7

**Figure 2-6. The Total Tourism System**

This system approach is a basic element in the Total Quality Management philosophy. It looks at the tourist industry from the holistic whole system perspective and focuses on the ultimate goal of satisfying the tourists' needs, and hence leading to survival, growth and profitability.

This research focused on one segment of the New Zealand tourist attractions, that is the heritage attractions. The heritage attractions studied in this research included the museums and historic places in New Zealand.

## 2.9 THE NEED FOR QUALITY IN THE TOURIST INDUSTRY

Quality has been recognised as a critical ingredient for competitive success in tourism [WTO, 1988; Poon, 1993; Brown et al, 1990; O'Neill et al, 1994; Lennon and Mercer, 1994; Olsen et al, 1996]. Gilbert and Joshi [1992] identified three main factors that may account for the increasing importance being placed on quality by marketers in the tourism and hospitality industry, namely:

- Intensified national and international competition for the leisure consumer
- Increased consumerism and greater media attention on quality issues within the tourism industry
- An increasing sophistication of consumer markets, with non-price factors becoming increasingly important.

It is increasingly the case that quality in service delivery is the means by which differentiation can be attained in the international marketplace. As competition increases with the availability of product, and as competing destinations appeal increasingly to the same market niches, quality will become the main driver of business success. Each of the three factors identified above refer to the increased ability and willingness of consumers to seek out the best mix of price and value available and the corresponding need for the product or destination concerned to ensure that they are abreast of the field. New Zealand competes for niche markets and the best long term strategy rests on its ability to build repeat visits in the higher value end of the market. An effective quality management process is essential for this purpose.

Poon [1993] identified that recent decades have brought changes in consumer behaviour and that new values and imperatives provide a critical driving force for a new tourism. He described the “*New tourists*” as more experienced, more green, more flexible, more independent, more quality conscious and harder to please than ever before than the old tourists. Poon [1993] identified that the “*New tourists*” go on vacation to experience something different and they want quality and value for money.

The World Tourism Organisation [1988] emphasised “Quality” as an imperative for a tourism professional. The president of Canadian Pacific Hotels and Resorts pointed out that [Brown, and Swartz, 1992]:

*“the competition for the accommodation industry dollar is fierce and will continue to be fiercer..... And the only thing that differentiates one service provider from another is the quality of the service that is provided. People will tolerate a degree of product deficiency if the service is great, but people won't tolerate poor service. And there is always somebody next door willing to provide excellent service and leave you out of business.”*

A study of UK tourist attractions managers' planning and policy intention has revealed a range of objectives [Laws, 1992] to,

- Increase visitor figures
- Diversify the attractions
- Appeal to different audiences
- Improve visitor services
- Achieve greater profit margins

The second to fourth of these objective have to with aspects of quality management and control as product market diversification proceeds and attempts are made to upgrade the visitor experiences themselves. Quality becomes a part of a larger strategy to reposition the attractions area and to grow demand.

The need to increase customer numbers by attracting different audiences and to improve visitor services to meet their needs were highlighted as important factors for tourist attractions. As stated above, although there is a wide recognition of the importance of quality and customer focus in the tourist industry, quality management is not well recognised and used. The reasons for this slow progress in quality management could be attributed to:

- The complexity in the tourist experience - when tourists join a package tour, they will have to share the transport, accommodation, restaurants, tourist attractions and other amenities during the tour. These activities involve different service suppliers and service encounters over which the tour operator has very little control.
- Different levels of expectations from the tourists - the level of tourist expectation differs from individual to individual based on the cultural background, country of origin, experience and educational background.

Marriot [1989] recognised that today's travellers are not equal anymore. They are better educated, more well-trained about the mechanics of travelling, and less likely to accept standardisation in the way they consume. They are not interested in having their needs and expectations met nearly; they expect that their needs and wants will be met exactly. Therefore, it is difficult for the tourist operator to meet differing tourists' expectations, unless they have a good understanding of the customers' needs. After understood their needs, the operators need to have a good management systems to incorporate these needs into strategic planning for improving the services to their customers. The Total Quality Management would be most appropriate to assist the operators to achieve this.

## **2.10 THE TQM PHILOSOPHY APPLIED TO THE TOURIST INDUSTRY**

There are a number of published success stories on the implementation of TQM such as the Scandinavian Airlines System [Carlzon, 1987], the Ritz-Carlton Hotel Company [Partlow, 1993], the Regent Hotel [DTI, 1993] and the Sheraton Hotel [Quality Australia, 1993]. The experience gained in the application of TQM can be applied to the other sectors of the tourist industry, such as attractions, travel organisers, destination

organisation and the supporting service sector. The following is a summary of the elements that constitutes the TQM philosophy with some examples from the tourist industry:

- **Customer focus** - To survive in any sector of the tourist industry, management has to assure the quality of the output. For example, an attraction has to find out what are their customers needs by, for example, using visitor surveys to identify areas to improve their services. If the customers enjoyed the visit and are satisfied, they will recommend the services to their friends.
- **Integral to company strategy** - To achieve customer focus requires not just lip service. The employees of the company must be committed to make it happen. For example, a museum wishing to expand its tourist services has to compete with other tourist attractions for visitor numbers. In addition, the management is accountable for their services to the community as well as providing a repositioning of local historical artifacts. This increasing public pressure for accountability and profitability forces the museum management to focus on attracting visitors and meeting their needs. To achieve this, management has to develop a vision and establish a long term plan based on meeting and exceeding the customer needs as part of the museum's overall strategic planning.
- **Total management commitment** - This is one of the major success factors in a TQM programme. Everyone within the organisation is responsible for quality and delivery of good service to the customers. For example, in the hospitality sector of the tourist industry the management of accommodation, be it a large hotel, or a family accommodation motel, must be committed to providing excellent service to their customers in every aspect. All services from cleaning, providing towels and reception to the appearance of the hotel or motel and facilities provided in the accommodation itself must exceed the customers expectations. It is management's responsibility to create the organisational culture and commitment to ensure that there are no dissatisfied customers and that all staff are dedicated to this end.
- **Quality is everyone's responsibility, company-wide** - Everyone working in the organisation is each other's customer. For example, in museums and art galleries, the planner, administrators and the caretaker all have inter-related functions. Any group on their own can let the whole organisation down by even one poor delivery of their individual service. Therefore, it is important to break down the barriers, open up the communications and work together responsibly as a team to achieve the organisation's objectives.
- **Continuous process improvement; TQM is a never-ending journey** - The tourist industry operators, such as travel agents, restaurants, and attraction

operators, must continuously seek to improve the quality of their service. This could be applied to restaurant food, order taking and the attitudes and speed of service delivery, or to luggage handling in the airport. Passengers would like to make sure that their luggage is in good condition on arrival and on time. In adventure tourism, the customer should feel that they are safe even though they are participating in dangerous activities. Continuous improvement of the existing facilities, safety and service delivery should '*delight*' the visitors and surpass their expectations.

- **On-going staff training** - The operators of tourist attractions depend heavily on their staff and, in many cases, volunteers from the community to deliver the service to the customers. Training of staff in the provision of quality service is as essential as it is in manufacturing industries. Often in museums, casual or volunteer staff are used and are left to struggle through museum service activities or guiding tours. Visitors to tourist attractions would be deeply disappointed if the staff cannot help them through lack of knowledge and training on the history of the place or such other information as may be required. On-going staff training to upgrade and update the knowledge and personal skills to provide a better service to the visitors will result in more satisfied customers.
- **Full participation of management and staff empowerment** - Human resources are the most important asset for the tourist attraction operators. The staff are the ones who provide the services to the visitors. Any mistake made during the service delivery results in dissatisfied customers. Therefore, it is crucial to have full staff participation, trust, and the empowerment of staff to perform their services. Staff should be able to respond to customer needs without reference to management. It should be clear what staff can and should undertake on their own initiative. To avoid delays in delivering services, staff should have a high level of autonomy. This requires mutual trust between staff and management as well as good staff training. Many organisations today see their managers' role as that of a coach rather than as a director.
- **Fact based decision making** - For tourist attractions to meet customer needs, the operators have to find out who are their customers, what are their customers' needs and measure their performance against these needs. In a museum, measuring customer satisfaction, or their problems and complaints can help management in making informed decisions on how to improve their displays, exhibits and education services to the public.
- **Design and manufacture of product or service right the first time** - Quality cannot be "inspected in" to a service. To prevent errors in the delivery of a service,

quality assurance has to be built into the process. The services provided by tourist attractions include the running and control of property as well as providing information for enquiries. To ensure that all of these functions are carried out correctly by the staff, written information and procedures should be used as guidelines for the staff to follow. This is particularly important where casual or volunteer staff are used to meet peak seasonal loads. Well documented procedures coupled with structured induction and staff development programmes can play a significant part in improving the services provided.

Smith and Lewis [1989] identified some further benefits of good service quality that are very similar to the benefits gained by implementing TQM. These are related to customer loyalty and attraction of new customers, opportunities for cross-selling, employee satisfaction and commitment, enhanced corporate image, reduced costs, and increased business performance. The adaptation of a TQM programme would help the tourist industry to achieve similar gains and benefits to those achieved by the manufacturing industries. These will help the industry to be more competitive, improve its organisational effectiveness and customer satisfaction and lead to higher levels of profitability.

## **2.11 QUALITY AWARDS AND STANDARDS IN THE NEW ZEALAND TOURIST INDUSTRY**

New Zealand Tourism Board (NZTB) has played an important role in assisting the growth of the industry through working with tourism and non- tourism companies in new partnerships, promoting New Zealand and addressing service standards [NZTB, 1996a]. The New Zealand Tourism Board recognised the importance quality management is to the success of the industry. In 1991 the Board initiated the New Zealand Tourism Awards with sponsors from the travel and financial services group, American Express [NZTB, 1997b].

The New Zealand Tourism Awards aim to encourage, reward and inspire tourism operators to strive for the highest standards of excellence, ultimately enhancing New Zealand's image as a quality tourism destination. The criteria of the awards are to identify the signs of excellence in the business. These are [NZTB, 1996d]:

- Your customers are your best advocates
- You view your staff as an investment
- You are leading your peers
- You use information sensibly to build your performance

- Your books are in good shape
- You have planned for success
- You manage your business with flair and innovation.

The annual Tourism Awards have become the country's most prestigious recognition of tourism excellence. Over the years, numerous tourism operators who were keen to obtain the industry's top honour have entered the awards. And many have succeeded in being recognised as the best in the business.

In addition to the award, the New Zealand Tourism Board also responded to the need for quality product by the development of quality service programmes. These are [NZTB, 1996a]:

- Qualmark classification and grading system
- KiwiHost training programme
- Visitor Information Network
- The New Zealand Way Brand

**Qualmark:** A national tourism classification and grading company was established in 1993 as a joint venture between the New Zealand Tourism Board and the New Zealand Automobile Association Inc. [NZTB, 1996e]. The objectives of Qualmark are to encourage and recognise higher standards of facilities, service and hospitality throughout the New Zealand tourism industry, and to provide a nationally consistent system through which visitors and travellers are able to make more informed decisions when choosing their accommodation and other requirements.

**KiwiHost :** The goal of the KiwiHost programme is to increase community commitment to the provision of quality service, particularly in the tourism industry [NZTB, 1996a]. The KiwiHost training programme consists of three specific programmes dealing with customer services and communication skills, skills in working with customers from diverse backgrounds, and management skills.

**Visitor Information Network (VIN):** The Visitor Information Network is an information distribution system within New Zealand [NZTB, 1996a]. The VIN is made up of 81 independently owned and managed information centres brought together, marketed and co-ordinated by the Tourism Board. The VIN aims to improve visitor satisfaction through the distribution of information to visitors once they are in New Zealand.

**The New Zealand Way:** In 1991 the New Zealand Tourism Board and Tradenz, two Government agencies, created a joint venture company, The New Zealand Way Limited,

to develop and manage the New Zealand Brand. In early 1993, a comprehensive registration process had been put in place in each of New Zealand's export markets and it is now protected as a trademark internationally [NZTB, 1996a]. The Brand programme was launched in May 1993. The New Zealand Brand campaign is a long term strategy to build and strengthen New Zealand's image in both traditional and developing international markets. The "New Zealand Way" brand is a mark of quality, environmental responsibility and the unique New Zealand character. It is a mark which is carried only by those companies whose products and service reflect the unique quality of New Zealand.

The Adventure Tourism Council in New Zealand has developed the Standards Assurance Programme (SAP) which implements minimum standards for adventure tourism [NZTB, 1996c]. SAP will focus on a blueprint of legal, environmental, safety and customer service components that different sectors of the adventure market will then be able to tailor to their needs. Tourist adventure operators, such as bungy jumping, have taken the lead in setting safety standards for their operation and have set a benchmark for other operators. The standard is the NZS 5848:1990 Code of Practice For Bungy Jumping - the Site, Equipment, Management and Operations. Bungy operators have benefited by having to evaluate their systems and operating parameters. It is an investment in the future [Standards of NZ, 1994].

There is increasing recognition and popularity of the above programmes in New Zealand. There are more than 70,000 New Zealand KiwiHost trained staff [NZTB, 1996d] and the Qualmark has become firmly ensconced in the motel and camp ground sectors. The scheme is set to move into the hotel, bus, coach, taxi and retail sectors [NZTB, 1996e]. These various schemes show that the industry has a greater awareness of quality standards and the need to have standards to protect and improve the quality of the customer and visitor experience as well as the growth of the industry.

## **2.12 THE TOURIST EXPERIENCE IN TOURIST ATTRACTIONS**

In world tourism, there is a growing demand for different cultural experiences. This has been recognised by the New Zealand Tourist Board who will place a focus on the unique culture of New Zealand in their future promotions [NZTB, 1995b]. This promotion of our national heritage will enhance New Zealand's appeal to world travellers. More than 50% of international tourists to New Zealand visited museums and art galleries, geothermal attractions and historic sites [NZTB, 1993]. According to the 1995/96 New Zealand International Visitor Survey, 46% of 1.41 million overseas tourists visited

Museums and Art Galleries [NZTB, 1996b]. It is therefore, a very important part of the New Zealand economy. This research focused on the heritage attractions such as museums, which are identified in the international visitor survey [NZTB, 1996b] as one of the popular destinations for tourists.

The heritage of New Zealand offers a valuable insight into the way our society has developed. It also links our inheritance of the past with the values of today. The tourists' experience of the service quality provided by tourist attractions plays a large part in how the tourists feel about their overall visit to New Zealand. The management of tourist attractions such as historic houses and museums are now facing a challenge to meet the changing demands of visitors.

The definition of tourist attractions varied from different researchers. This research focused on the man-made buildings like museums and historic places because they are the most visited tourist attractions in New Zealand for both international and national visitors.

### **2.12.1 Tourist attractions**

A tourist attraction is defined by the Scottish Tourist Board [1991] as:

*“A permanently established excursion destination, a primary purpose of which is to allow public access for entertainment, interest or education, rather than being principally a retail outlet or a venue for sporting, theatrical or film performances. It must be open to the public without prior booking, for published periods each year, and should be capable of attracting tourists and paying visitors as well as local residents.”*

Swarbrooke [1995] identified four types of tourist attractions. These are:

1. Features within the natural environment, for example, beaches, caves, rock faces, rivers, lakes forests and wildlife.
2. Man-made buildings, structures and sites that were designed for a purpose other than attracting visitors. For example, cathedrals and churches, stately homes and historic houses, archaeological sites and ancient monuments, historic gardens, industrial archaeology sites.
3. Man-made buildings, structures and sites that are designed to attract visitors and are purpose-built to accommodate their needs, such as theme parks, amusement parks and open air museums.

4. Special events such as art festivals, markets and fairs, traditional customs and folklore events, historical anniversaries and religious events.

Alan Lew [1987] examined the research methods used in the study of tourist attractions by researchers. He grouped these researches into three general perspectives: the ideographic listing, the organisation, and the tourist cognition of attractions. Alan Lew developed a comprehensive framework of tourist attractions based on this three general perspective.

In the ideographic perspective, Alan Lew identified nine categories of tourist attractions which classified into three groups based on a matrix of nature of the attractions, nature-human interface and human for the vertical categories; the three horizontal categories include general environments, specific features, and inclusive environments. The following table explains the composite of “*Ideograph Tourist Attraction Typology*”.

**Table 2-3. Composite Ideograph Tourist Attraction Typology**

(Lew, A. 1987. A Framework of Tourist Attraction Research. *Annals of Tourism Research*, 14, pp.558).

|                        | Nature   | Nature-Human Interface  | Human   |
|------------------------|--|---|---|
| General Environment    | 1. Panoramas <ul style="list-style-type: none"> <li>• mountain</li> <li>• sea coast</li> <li>• plan</li> <li>• arid and</li> <li>• island</li> </ul> | 4. Observational <ul style="list-style-type: none"> <li>• rural/agriculture</li> <li>• scientific gardens (animals, plants, rocks and archaeology)</li> </ul> | 7. Settlement infrastructure <ul style="list-style-type: none"> <li>• utility types</li> <li>• settlement morphology</li> <li>• settlement functions</li> <li>• institutions (government, education, science and religion)</li> <li>• people (way of life and ethnicity)</li> </ul> |
| Specific Features      | 2. Landmarks <ul style="list-style-type: none"> <li>• geological</li> <li>• biological (flora and fauna) and</li> <li>• hydrological</li> </ul>      | 5. Leisure nature <ul style="list-style-type: none"> <li>• trails</li> <li>• parks (beach, urban and others)</li> <li>• resorts</li> </ul>                    | 8. Tourist infrastructure <ul style="list-style-type: none"> <li>• forms of access</li> <li>• information and receptivity</li> <li>• basic needs (accommodations and meals)</li> </ul>  |
| Inclusive Environments | 3. Ecological <ul style="list-style-type: none"> <li>• climate</li> <li>• sanctuaries (national parks and nature reserves)</li> </ul>                | 6. Participatory <ul style="list-style-type: none"> <li>• mountain activities</li> <li>• water activities</li> <li>• other outdoor activities</li> </ul>      | 9. Leisure superstructure <ul style="list-style-type: none"> <li>• recreation entertainment (performances, sporting events and amusements)</li> <li>• culture, history and art (museums and monuments, performances, festivals and cuisine)</li> </ul>                              |

This research is focusing on the man-made heritage attractions identify by Swarbrooke and Alan Lew leisure superstructure such as museum and historic places in New Zealand. Museum is defined by the International Council of Museums (ICOM) as a non-profit, permanent institution, in the services of society and its development. It is open to the public, and its function is to acquire, conserve, research, communicate and show exhibits for purposes of study, education and enjoyment [Thomson, 1981].

### **2.12.2 The tourist experience and museum experience**

The museum experience is just a small part of the whole tour, but the results could leave an impression of the overall service quality. From the tourist viewpoint, service quality is not restricted to the service performance of any one sector. When there is an unhappy encounter of poor quality service, this could affect their impression of the whole touring experience.

The tourist experience is determined as “*A moment of truth*”. It is any episode in which the customer comes into contact with any aspect of the organisation and gets an impression of the quality of its service [Carlzon, 1987]. These moments of truth can be applied to the any sector of the tourist industry, whether they are at the travel agency, airline counter, on the plane, information centre, hotel, restaurant, shop and tourist attractions such as museums or historic houses. It is critical for the service provider in the tourist industry to manage every service encounter in a professional manner in order to meet their customers’ needs.

Ryan [1997] explains the tourist experience which links all the sectors of the tourist industry. He identified factors which affect the tourists’ satisfaction and dissatisfaction of the whole tourist experience. These factors include the environment (physical and atmospheric), the people (both the service provider and their customers) and the responsive mechanism. The people factor includes the behaviour patterns, experience, lifestyle and age-group. This approach to evaluate tourist experience is very similar to Parasuraman’s concept of customer assessment of service quality [Parasurman et al, 1990].

Most overseas tourists want to see “the heritage” during their visit when they come to New Zealand. Both the museums and historic places have a significant economic role to play, whether in attracting visitors from abroad or in providing venues for the visitor.

The quality of service provided by these tourist attractions will have an impact on the total tourist experience. The experience of visitors to the museums is affected by the following factors: the displays, events, artifacts, buildings, shops, toilet facilities, publications, orientation and most importantly, the people working in the museum as shown in Figure 2-7 [Hooper-Greenhill, 1994].



**Figure 2-7. The Museum Experience (Hooper-Greenhill, 1994)**

Falk and Dierking [1992] presented a total museum experience using an “Interactive Experience Model”. The “Interactive Experience Model” can be visualised as a three dimensional set of three interacting spheres, each representing one of the three contexts. The museum experience occurs within the physical context, a collection of structures and things we call the museum. Within the museum is the visitor, who perceives the world through his/her own personal context. Sharing this experience are various other people, each with their own personal context, which together create a social context.

Falk and Dierking [1992] considered that the visitor’s museum experience is a continually shifting interaction among personal, social, and physical contexts and in part this reflects changes in both the social environment within the museum as well as such things as physical layout and interpretation of the displays. This approach is very similar to Hooper-Greenhill’s [1994] view of museum experience. The visitor’s experience is continually changing with time, experience, environment and personal context and in part this reflects change in both the social environment within the museum as well as such things as physical layout and interpretation of the displays.

Socially, each point of interaction between the tourist and the organisation in the museum service delivery chain becomes a “moment of truth” encounter between the heritage experience provider and the tourist consumer. Visitor needs and motivations are required to be identified and met. Success in the delivery of the parts leads to success in the whole. Across the chain of visitor service experiences visitor satisfaction values accumulate to create a final value. The visitor experience at each point of value is underpinned by the job skills of the staff and the training substructure that have created

and delivered the experience to the point of consumption. These have been established in such a way as to meet the need and expectations of the visitor or tourist to the museum.

In the case of a museum or heritage property it would start with the approach to the site and progress through the whole of the exhibit and concern itself with such matters as content, layout and overall relevance. Any failures in the delivery sites and display environments along the chain have consequences for overall customer satisfaction levels and ultimately the desire on the part of the customer to repurchase and revisit. In the final instance this affects profitability and the jobs and incomes dependent of business performance.

This applies whether the visitor experience is considered within a single facility or attraction, such as a museum or historic place, or is taken across the whole of a heritage tour or destination visit.

The visitor experience is driven by the fact that tourism is first and foremost a service industry. Human interaction as both a process and an end in itself is core to its products. Increasingly it is concerned with the quality of that interaction and the delivery of the experience within a TQM framework. The quality of a heritage experience is closely coupled to the quality of the interpretation supplied by the guides and general approach to display and layout of the information. Good staff training is essential in such environments. Tourism training is concerned with both the acquisition and application of skills as well as the quality levels at which the service is delivered. In this way the human resource component becomes crucial to bottom line success. In particular:

- The most effective market differentiation is achieved through the abilities and motivation of employees and this rests in large part on the underlying quality of the skills base. The content and quality of this is driven by the emphasis given to human resources as a function among other competing resource functions of the business enterprise. Training strategies form part of the overall competitive positioning of any tourism business. For the human resource planner the strategic issue centres on developing, sustaining and retaining good quality staff within industry environments that are increasingly competitive.
- Employees are inextricably a part of the tourist experience. They both deliver the experience as well as becoming an inextricable part of the product themselves. For the majority of “new tourists”, it is the quality of human content in the service interaction and experience that counts.

As noted above, interaction occurs within the industry or organisational framework through the delivery interface between host and guest. The large number of service

providers that the tourist encounters will continue to create a challenge for integrating the quality levels of the visitor experience across the heritage product as a whole.

The experience of visitors to a museum and historic places is influenced by their past experience, their knowledge of artifacts, history, their interest in the subject, the environment and the people they meet during their visit. All these factors are very subjective to individual visitors. A visitor can sense whether or not he or she is welcome in a museum by the way small amenities are handled. Courtesy and helpfulness of attendants, cleanliness of exhibits, and thoughtful anticipation of orientation needs through well-prepared signs and other aids are specific examples of little things that communicate concern and interest to the visitor; neglecting them can present a negative image and spoil a visit.

## **2.13 SERVICE QUALITY STANDARDS IN HERITAGE ATTRACTIONS**

People play an important role in the service delivery process. In order to have a good team of people, a human resource management and development programme is an essential success factor for any service company. In the Malcom Baldrige National Awards and New Zealand National Quality Awards, human resources management and development, and customer focus are two important criteria on which the Awards winners are assessed.

### **2.13.1 Documented standards**

The ISO 9000 Standards have strong emphasis on the documented standards and procedures for all functions in a company. Documented standards, procedures and instructions for services provided by the institution are important elements of any good quality management system. The procedures should be published collectively in a document known as a "Quality Manual".

The quality manuals provide a convenient means of communicating to customers, staff and especially voluntary staff, an outline of what the institution's goals and service quality practices are. It is also most useful for staff training and referencing.

It is important that the standards of service should relate to all staff in any dealings with the public and other staff members. They should be developed using team effort and input from those who are carrying out the functions. All the service quality procedures should be well defined and not left to the interpretation of the staff. Nor should they

leave the staff to act on their own concept of quality standards based on previous experience and their own perception of work ethics.

There are two important factors that affect the service performance of the institution, these are the management system and the people who work within the system. The management system sets guidance and control of the functions performed by staff with standards, procedures and instructions. The people working in the system should be trained and be familiar with the standards and procedures used in the institution. This should be the basis for continuous improvement programmes for service delivery to the community.

### **2.13.2 Customer care**

Satisfied customers return, bring their friends, and tell others. Customer care is not only good service, it is good business [Carnegie United Kingdom Trust, 1992]. Visitors come to a museum for many reasons and the management want them to go away feeling enlightened and happy, feeling that they have good service encounter, enjoyed the displays and learnt about the history and heritage. Greene [1992] defined customer care as a *“shared responsibility of the entire museum staff and as an essential prerequisite for every subsequent action, including the development of a policy statement”*. This definition of customer care extended far beyond the interaction between paying visitors with front-of-house staff, to cover all contacts between people working for the museum, and everyone with whom they came into contact in the course of their work.

The management of the United Kingdom museums have recognised the importance of customer care in the museum and heritage organisations [Conway, 1992]. They consider that every member of staff is seen as an ambassador for the museum. Their attitude and approach influences the way the museum is perceived by the visitors. This can be applied to New Zealand tourist attractions. The National Audit Office of the United Kingdom and the British Tourist Board reviewed the quality of service of National Museums and Galleries in the United Kingdom in 1992 [National Audit Office, 1993].

The English Tourist Board published a National Code of Practice for Visitor Attractions, called the Visitor's Charter. It was published as a result of the review of the quality of service to the public at the national museums and galleries. It clearly stipulates the requirement that the owners and management of the tourist attractions have to undertake. These include:

- To describe accurately in any advertisement, brochure or any other printed means, the amenities, facilities and services provided.

- To display clearly at public entry points any charges for entry and hours of operation.
- To manage, and where appropriate, staff the attraction in such a way to ensure visitor safety, comfort and service by maintaining a high standard of customer care, cleanliness, courtesy and maintenance.
- Where appropriate to the nature, scale and location of the attraction, to provide adequate toilet facilities, coach and car parking and catering arrangements.
- To give due consideration to the requirements of disabled people and people with special needs, and to make suitable provision where practicable.
- To deal promptly and courteously with all enquiries, requests, reservations, correspondence and complaints from visitors.
- To provide public liability insurance or comparable arrangement and to comply with all applicable planning, safety and other statutory requirements.

This Code of Practice for Visitor Attractions covers most of the elements of the service quality in this survey. This is mandatory for membership of a tourist board and the UK Museums and Galleries Commission encourages every museum to adopt it and to exceed it [Museums and Galleries Commission, 1993]. This code of practice for tourist attractions could be used as a base for setting the standard of customer care in New Zealand tourist attractions.

### **2.13.3 Human resource management and development in heritage attractions**

Staff are a major resource in museums, and customer care has been identified as an important factor that influences the visitor's perception during their visit to the attractions. Therefore it is important to deliver a good, consistent service to satisfy the visitors' needs. To achieve these objectives, the staff who deliver the service must be informed and trained to perform their function. In addition, standards and procedures of service quality and customer care should be available to the staff.

In heritage attractions, such as museums and historic places, volunteers play a significant role in education projects and programmes. As a result of the diversification in the utilisation of museum resources and the programmes available to the public, there is a trend to recruit more and more individuals with a variety of skills and talents. Visitors to tourist attractions do not distinguish between the volunteers and paid staff. They are seen as part of the organisation and representing the organisation in delivery of the service to

the public. For this reason, the paid staff and volunteers should received the same customer care and service quality training.

All museums have a responsibility to establish a training and personal development policy and to train and develop their staff whether professional or voluntary. The availability of in-house training will encourage all staff to assess their own competence against industry standards appropriate to their area of work. The success of the museum will ultimately depend not on the users, or the displays, but on the skills and abilities of those working for the museum.

Standards and procedures for customer care and service delivery are closely linked to performance measurement. Museums can establish their own standards or use standards which have been developed externally. Measuring performance against standards can assist managers and individual staff members in gauging the success of their institution and their own achievements. These standards and procedures could be used as training material for the staff and as a base for a continuous improvement programme. The managers could monitor the performance according to the documented standards to ensure consistency in the service delivery.

## **2.14 CONCLUSIONS**

Quality is of fundamental importance to the survival and success of businesses in gaining a competitive edge in the world tourism market. The focus of the business should be emphasising on meeting customer's requirement at the right time and lower cost.

The continual changes in the consumer behaviour and values provide a critical driving force for the new tourism. The "*New tourists*" identified by Poon [1993] are more experienced, independent and more quality conscious and harder to please than ever before than the old tourists. They want quality and value for money. Total Quality Management provides a systematic approach with tools, systems combine with the culture for customer focus could be used by the tourist operators to meet the changing needs of the "*New Tourist*".

In the heritage attraction sector of tourist industry, there has been a shift from museums being static storehouses for artifacts into active learning environments for people in the past decade. This change in function requires changes in the organisation's structure, staff attitudes and working patterns to accommodate the changing demands from the public who in the first place, funded these institutions [Loomis, 1987; Hooper-Greenhill, 1994; Hawkey, 1995]. Management must provide their visitors with the sort of visit and

experience they want, adapt and improve the experience offered, so that visitor numbers are maintained and improved [Johnson and Thomas, 1990; Middleton, 1990].

To respond to the forces of change influencing heritage attractions such as museums, where the modern core product is often seen as the experience it provides to its visitors; there is a need for heritage attractions to consider the “experience” visitors have while visiting the museum in term of understanding, anticipating and satisfying customer needs and wants [Roger, 1987, Stevens, 1989], as well as being a repository of historical artifacts. Customer satisfaction should be the goal for the heritage attractions. This goal could be attained by knowing the customer, the needs, and by focusing on improving the service to meet those needs.

The implementation of TQM requires a clearly defined goals, standards, tools, customer focus culture within the company and most importantly management commitment. These requirements are clearly defined in the Malcolm Baldrige Quality Award, or the New Zealand Quality Award. The tourist operators could use ISO 9000 to assist them in quality system documentation and slowly progressing to a full TQM program.

On commencing this project it was not clear what the status of TQM in the tourist industry and what were their needs in terms of TQM in the tourist tools, systems and human resource development as well as their knowledge of the modern development in the fields of quality management. With the increasing competition for the tourist dollar around the world companies wishing to attract tourists to New Zealand will need to continue to improve the quality of the experience gained by tourists, particularly as a major marketing factor in tourism is “word-of-mouth”. As a first step in the investigation, therefore, it was decided to determine how well aware was the tourist industry in New Zealand of the ISO 9000 and TQM approaches to improving service quality and customer satisfaction and this will be discussed in Chapter 4.



# 3.

## The Measurement Of Customer Satisfaction In Service And Heritage Attractions

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### 3.1 INTRODUCTION

Management decision making is critical to any company's success and their commitment to quality and their customers are the central focus of the TQM philosophy. In any business, including tourism, customers are critical to the survival of the business. If there are no customers, there will be no reason for the facility or organisation to exist. To survive, be profitable and competitive, management needs to understand their customers' needs, while balancing these against the measurement of the stakeholders who provide the resources for the continuing existence of the museums and heritage projects.

In any service industry such as the tourist industry, it is important to know and measure how satisfied the customers are, so that the tourist operators can respond to their customers demands. Without some form of measurement it is difficult to determine whether an organisation is responding to customer needs and improving its service quality. However, it is not easy to measure service quality because it is intangible, it cannot be inspected and involves personal interactions during the service delivery process.

Research has shown that it is often difficult for staff to know whether the customer is satisfied or not with the service provided [Kloppenborg and Gourdin, 1992; Jessen, 1992; Thomson, 1994]. There are also different perceptions between management, staff and customers on what is good quality service. Horst Schulze [Schulze and Gonzalez, 1994], Chief Operating Officer of Ritz-Carlton Hotels said, "*It is dangerous for managers to think they know better than the staff and the customer*". Because if they do

think that they know better without gathering customer feedback to support their view, they may not be able to target the actual customers' needs and they may lose their competitive edge.

This chapter focuses on the approaches used in measuring customer satisfaction and the traditional methods of performance measurement in heritage attractions. A detailed review of the research studies carried out using the popular quantitative service quality measuring tool SERVQUAL. Problems encountered by the researchers who used the SERVQUAL model are highlighted and suggestions for improvements are made.

### **3.2 PERFORMANCE MEASUREMENT IN HERITAGE ATTRACTIONS**

Suchman [1967] described evaluation as *“a judgement of worth - an appraisal of value.”* Loomis [1987] also recognised the usefulness of evaluation research which can provide information to busy managers and professionals. This information will help them judge the worth of the commodity they are dealing with and guide their decision-making to strengthen museum management. Loomis also pointed out that *“evaluation of museum visitors provides objective information about visitors' identity, expectations, interests and motivations. Audience evaluation can help staff members understand visitors better and anticipate their needs in planning”*.

Dr Dieter Pesch [1995], Director Reheinisches Freilicht Museum in Germany, put it quite clearly. He said, *“As companies, museums must be customer-oriented. The customer orientation of a museum is an alignment of the management system, which is oriented towards the timely and complete awareness of the conscious and/or unconscious expectations of the customers, the conversion of these expectations by applying the principles of the division of labour to all functional areas of the museum - or generally of any enterprise. This customer-orientation is not restricted to one marketing expert. The entire management and staff must be aware of it. If not so, the marketing strategy will fail”*.

This view is supported by Hall and McArthur [1993], they link heritage planning to action and feedback from visitors. This feedback loop is very similar to the TQM continuous improvement process. The authors proposed that the visitor management framework should be adapted to changing visitor demands. However, the techniques for evaluation of the service provided to the visitor which are recommended by Hall and McArthur are restricted to visitor numbers and visitor profiles.

According to a US study of human behaviour carried out by TARP (Technical Assistance Research Programs), the average dissatisfied customer who has a problem with an organisation tells nine or ten people about it [Albrecht and Zemke, 1985]. Of the customers who register a complaint, between 54% and 70% will do business again with the organisation if their complaint is resolved. A satisfied customer will tell an average of five people about the treatment they received.

Word-of-mouth has been found by museum researchers to be the most influential factor in determining why tourists visit a particular museum or attraction. The percentage of visitors gaining information by word-of-mouth varied from 48% to a high of 84% [Adams, 1989, Slowik, 1980; Conner Prairie, 1982, 1986; Bitgood et al, 1986]. Prentice [1993] conducted a survey for Manx Natural Heritage in 1988. He determined that 31% of visitors found out about the heritage sites through word-of-mouth and that this was the most effective marketing tool in the heritage attractions sector. If a tourist has a poor experience, the impact on the market can be widespread. The tourist is unlikely to return and will not recommend the attraction to friends.

### **3.3 TRADITIONAL PERFORMANCE MEASUREMENT IN HERITAGE ATTRACTIONS**

Museums have been gathering information about their visitors since the late 1920s. The traditional approach to performance measurement used in heritage attractions is a visitor survey. Most of these studies for museum and heritage attractions focus on quantitative marketing information, for example, the number of visitors and visitor demographics.

FacFind [1986] carried out a marketing positioning survey for the Museum of York County. It was an attitudinal survey of current and prospective visitors to the museum which aimed at identifying programs and services that would increase membership and attendance rates at the museum. It was used to provide market direction for the strategic planning process under way at the time the survey was conducted.

Heady [1984] surveyed visitors to the Victoria and Albert, Science and National Railway Museums using the traditional method. It aimed to provide:

- *an accurate description of each museum's visiting public*
- *information about people's visits to the museum*
- *their reasons for visiting the museum in question*

- *their expectations*
- *the amount of time they spent in the museum and how much of it they attempted to see in one visit*
- *which galleries they visited and how interesting each gallery was*

The study also aimed to identify sections of the public for whom the museums had a particularly strong appeal as well as those who they did not seem to be attracting successfully.

Smyth and Ayton [1985] reported the results of a survey carried out at the National Maritime Museum by collecting the demographic information about the visitors. The main purpose was to provide information that would be of use to staff responsible for the design and organisation of the Museum.

A survey of the National Portrait Gallery was conducted by Harvey [1987]. The purpose of the survey was to provide the Gallery with information about the characteristics of visitors, visitors' impressions of the exhibits, the possible impact of a new cafeteria at the Gallery, the importance of the Gallery's current site in attracting visitors and the potential impact of a small admission charge.

Borun [1982] carried out a pilot study of museum effectiveness at the Franklin Institute Science Museum and Planetarium. The study was intended to develop models for testing visitor response, provide usable information to the museum staff and to test the feasibility of a large-scale investigation of science museums. The information collected was related to the visitor profile and their interests. A similar method was used by Booth, Anderson and Till, who surveyed the visitors to the Museum of New Zealand.

Bennett and Frow [1991] carried out a study of visitors to three Australian art galleries. The purposes of the survey were :

- to identify the demographic composition of the galleries' visitors
- to identify the attitudes of art gallery visitors about both art and art galleries
- to gather information about their visitors, eg. the visitors' general relations to art and art institutions
- to explore the relationships between the attitudinal, cultural and demographic characteristics of art gallery visitors.

The finding of the survey showed that the art gallery visitors differed significantly from one another in their aesthetic tastes and preferences, their reasons for visiting and their

social backgrounds [Bennett and Frow, 1991]. The survey information suggested that galleries have little success in attracting elderly visitors and children and need to give careful consideration to the vehicles they use for advertising.

Similar surveys of visitors to public and commercial Art Galleries and Museums were carried out in New Zealand [Stafford and Associates, 1991] and the United Kingdom [Jones, 1993].

The traditional museum survey information can be summarised into the following categories:

1. Characteristics of the visitors - gender and nationality, age-group, education background and occupation, source of information, travel method and company.
2. Characteristics of the visit - length of time spent, use of facilities, activities undertaken.
3. Number and distribution of visits - frequency of visits, sites visited within conservation area and sites at which visitors stayed overnight.
4. Visitor experience - reason for visit, reaction to visit.
5. Views of the visitor - improvements to be made.

Merriman [1991] described the traditional attitude of a museum very appropriately as:

*“Museums have been elitist, overly didactic, dry, impersonal, presented a partial view of the past, and not involved the people whose past they were supposed to be representing”.*

She suggested that a museum should be seen as a service, which tailors its different products to the needs of its users. This view is a starting point for customer focus in the museum community.

The traditional visitor survey methodology provided useful visitor profile information which helped the heritage attractions to identify their visitors, the reason for their visit, characteristics of their visit and their experiences. However, they do not provide information on the level of satisfaction of the visitors with their visit. Customer satisfaction with the service provided by heritage attractions was not the main focus of these surveys.

### **3.3.1 The new trends in performance measurement**

In recent years, there has been a shift from internal measures, which refer to financial performance, peer performance evaluation and programme evaluation, to external measures such as visitors experience and satisfaction. The collection of data has also broadened from a quantitative approach of counting the number of museum visitations to a more visitor orientated approach, which measures visitors' satisfaction and needs [Bourdieu and Darbel 1991; Hooper-Greenhill, 1994; Merriman, 1991; Shettle, 1989; Wash and Duke, 1991]. This shift to become visitor orientated is being advocated as the only way a museum will be able to survive the changes influencing them over the next decade [Beeho and Prentice, 1995].

Ian Johns [1995], a consultant, carried out a study for the Museum Directors Federation on measuring the performance of museums in New Zealand. Several performance measures were proposed based on Stephen Weil's [1993] "*Performance Indicators for Museums*". There are the internal measures such as: trends, proxies, benchmarking, ratios, financial and non-financial analysis, and qualitative measures, undertaking peer review, expert evaluation and critical reception given to a particular programme. He emphasised the importance of the measurement of quality outcomes. The major outcomes identified by McKinlay included contribution to education, recreation, community development, understanding of cultural heritage and the economy.

Approaches suggested for measuring the quality of outcomes are peer review, audience perception surveys, visitor satisfaction surveys and Delphi or focus group techniques [Johns, 1995]. Visitor perception and satisfaction surveys are quite a new concept to the museum community. This approach to performance measurement is different from the traditional visitor surveys which are commonly used in the heritage attractions sector. It shifts the evaluation of performance from internal assessment by the museum to external by the customers. It concentrates not only on who is coming and their background, but focuses on their needs and how satisfied they are with the services provided.

In recent years, performance measures have been more customer focused in the museums and heritage attractions. Beeho and Prentice [1995] proposed a "ASEB" (Activities, setting, experiences and benefits) Grid Analysis to evaluate the experiences and benefits gained by a tourist visiting a socio-industrial heritage museum in the United Kingdom. ASEB Grid Analysis is based on conventional SWOT (Strength, Weakness, Opportunity and Threat) Analysis and the Manning-Haas Demand Hierarchy. The tool is used to help the museum to become more visitor orientated. Wagner [1989] has undertaken a visitor survey for Philadelphia Zoological Gardens using the important-performance analysis

developed for market research to identify the weaknesses and to provide regular feedback for the operating staff and management.

In New Zealand, a visitor survey was carried out for the Waitangi National Trust to find the gaps in the delivery of customer services. The survey was designed to illustrate general visitor satisfaction with the Waitangi National Trust's services and to give support for the development of tearooms at Waitangi [Tourism Resource Consultants, 1994].

The tourist industry has begun to realise the importance of service quality and of their customers, but the progress of this change has been very slow. The traditional way of performance measurement using visitor numbers and demographics, is no longer sufficient as the managers require more information about the visitors' expectation and perception of the service and, more importantly, whether their needs are being met. It is an important step before starting any improvement programme.

### **3.3.2 Performance measurement in New Zealand museums and art galleries**

In New Zealand, a museum is judged according to the following performance criteria [Johns, 1995] :

- *its purpose (ie. Does it have a clear sense of what objectives external to itself it is seeking to accomplish?)*
- *its capability (ie. Is it achieving these objectives?)*
- *its effectiveness (ie. How well is it achieving its objectives?)*
- *its efficiency (ie. Is it able to accomplish those objectives in a maximally efficient way?)*

Performance measurement is a requirement of the statutory obligations imposed by the Public Finance Act and Local Government Act. It is a key accountability mechanism for both external reporting and internal management purposes. In addition, performance measurement is also a crucial mechanism by which desirable organisational improvement is specified and focussed on within the organisation, and is a critical tool for the individual performance assessment of management and staff within the organisation [Johns, 1995].

The Department of National Heritage [KPMG, 1994] recognised that performance assessment for museums and galleries has traditionally been strongly biased towards

financial measures. There is a need to broaden the performance measurement approach to encompass both financial and non-financial, quantitative and qualitative measurements, which follows the general experience with TQM in manufacturing as well as other service sectors.

With the increasing requirements for accountability, public funded organisations such as museums and the Historic Places Trust are increasingly under pressure to demonstrate their performance and contribution to the public good. In 1995, the Museum Directors Federation of Aotearoa New Zealand and Taonga O Aotearoa National Service of the Museums of New Zealand started to look into how to measure the performance of museums in New Zealand. The purpose of performance measurement was to allow judgements to be made about how well an organisation, a unit or function, and a team or individual within an organisation was carrying out the expected services [MacKinlay, 1995].

A survey of international visitors to museums in New Zealand was conducted in conjunction with the New Zealand Tourism Board and Museums of New Zealand [NZTB, 1996]. The objective was to understand international visitors' museums experience and to gather information that would help a museum improve the experience for its international visitors. The survey questionnaires included the visitors' demographics, the expectations and perceptions of museums, type and price of goods and services that the visitors wanted and used. It was found that for all visitors, museums over-delivered on expectations. Those who made an active choice to visit the museum had a slightly more favourable perception of the museum than those who went because they were part of a group such as a guided tour [NZTB, 1996b].

### **3.4 CUSTOMER SATISFACTION**

Customer satisfaction is an essential element in the measurement of quality in both manufacturing and service industries. The Malcolm Baldrige National Quality Award [NIST, 1997] places high importance on customer focus and satisfaction. Two criteria in the Award are dedicated to the customer. They are Customer and Market Focus and Business Results, which include Customer Satisfaction Results. The customer focus and customer satisfaction items address the following areas:

1. Knowledge of customer requirements and expectations
2. Customer relationship management
3. Customer service standards

4. Commitment to customers
5. Complaint resolution for quality improvement
6. Customer satisfaction results and
7. Customer satisfaction comparisons

Winners of the Malcolm Baldrige National Quality Award are expected to use customer satisfaction to:

- obtain a knowledge of customer requirements and expectations
- develop service standards
- measure satisfaction
- identify trends
- make comparisons with competition.

Customer focus and customer satisfaction are the ultimate goal of Total Quality Management efforts in service industries. In services, customer satisfaction refers to the management of individual service encounters between the ultimate customer and representative of the firm [Bitner, 1990] or “*the moment of truth*” [Carlzon, 1987]. Bitner and Hubbert [1994] distinguishes two types of customer satisfaction, namely service encounter satisfaction and overall service satisfaction. Their definition of these two categories are:

- *Service Encounter Satisfaction: the consumer’s dis/satisfaction with a discrete service encounter, for example, an experience at a hotel check-in desk.*
- *Overall Service Satisfaction: The consumer’s overall dis/satisfaction with the organisation based on all encounters and experiences with that particular organisation.*

Bolton and Drew [1991] have a similar view. They viewed the overall satisfaction as a function of satisfaction with multiple experiences or encounters with the organisation. Bitner and Hubbert [1994] described satisfaction as an antecedent of service quality. Their views of service quality is of a higher order construct that relates to the overall organisation and its offering.

Assarl [1987] suggested satisfaction “*re-inforces positive attitudes toward the brand, leading to a greater likelihood that the same brand will be purchased again ...*”

*dissatisfaction leads to negative brand attitudes and lessens the likelihood of buying the same brand again”.*

Parasuraman et al. [1990] proposed that customer satisfaction is a function of the customer's assessment of service quality, product quality and price and that the constructs of service quality and customer satisfaction can both be examined on the transaction-specific and the global levels of analysis.

Satisfaction was described by Zeithaml et al. [1991] as the difference between the predicted service and perceived service. The main difference between satisfaction and perceived service quality is that the concept of satisfaction is connected with a specific transaction, ie. the moment of truth. It is thus possible to perceive service quality as good, according to the SERVQUAL model, even though one moment of truth may have failed and caused dissatisfaction. Therefore service quality is considered to be the consumers' overall evaluation of the service [Parasuraman et al, 1988; Bitner, 1990; Bolton and Drew, 1991; Carman, 1990; Zeithaml et al, 1991].

There is relatively little theoretical and empirical research that has been conducted on customer satisfaction in tourism. Whipple and Thach [1988] investigated the customer satisfaction of group tour management. Cadotte, Woodruff and Jenkins [1987] measured the expectations and norms in models of consumer satisfaction/dissatisfaction in consumerism of restaurant customers in fast-food, family, and atmosphere/speciality restaurants. Their findings support the disconfirmation theory of Oliver [1980] which is discussed below. However, there was evidence that customers use other standards in addition to expectations. It would be logical to assume that tourism satisfaction or dissatisfaction is no different from consumer satisfaction or dissatisfaction with all services. Arweiler [1995] investigated the relationship between underlying components of a service and overall visitors' satisfaction with the service of the New Zealand tourism industry using personal interviews with tourists who had just completed their holiday in New Zealand.

Customer satisfaction research methodologies can be divided into qualitative and quantitative research. Qualitative research involves free-format responses in which words and observations are used [Dutka, 1994]. The results provide in-depth information obtained from a few cases which are used as exploratory research. The results, however, cannot establish statistically reliable information for generalisations to a larger population. The common qualitative research methods are the focus group interview and the critical incident technique (CIT) [Gummesson, 1991]. Focus group uses interactions among the group members to stimulate ideas on a specific research topic. Critical incident technique is a method similar to direct observation. Bitner et al. [1985] uses CIT

for analysing the service encounter. They commented that the technique generates data with the level of details and richness that puts the researchers close to the realities of the process being studied. Quantitative research concentrates on numbers to represent viewpoints and opinions. The information is usually obtained from survey questionnaires. It is used to develop statistically reliable information from sample data that can be generalised to a larger population.

Hayes [1992] suggested measuring customer satisfaction using a questionnaire survey technique to assess customer perceptions and attitudes. Ryan [1995] used gap analysis to measure the tourists' satisfaction. The most widely used approach for explaining the consumer satisfaction or dissatisfaction is the one proposed by Richard Oliver who had developed the expectancy disconfirmation theory [Oliver, 1980]. In 1993 Oliver proposed a model that intended to integrate the satisfaction and the service quality literature. He suggested that satisfaction is a function of a disconfirmation of predictive expectations regarding both quality dimensions and non-quality dimensions.

There are two popular quantitative approaches for measurement of customer satisfaction. The gap analysis approach developed by Parasuraman et al. [1990] called the SERVQUAL model is one of the most common approaches used in measurement of customer's expectation and perception. The other approach, developed by Cronin and Taylor [1992, 1994], is a performance-based approach, which examines the use of service providers' performance for evaluating the service quality and satisfaction [Cronin and Taylor, 1992].

A number of researchers [Bitner, 1990; Bolton and Drew, 1991; Oliver, 1993] considered service quality as a long term attitude whereas customer satisfaction is a transitory judgment made on the basis of a specific service encounter. Service quality perceptions reflect a consumer's evaluation perception of a service encounter at a specific point in time. In contrast, according to Oliver [1993] consumer satisfaction judgments are experimental in nature, involving both an end state and a process reflecting emotional and cognitive elements. The SERVQUAL and SERVPERF scales are tools designed for the measurement of service quality and measures a specific long term customer attitude to the service provided at a single point in time.

SERVPERF was put forward by Cronin and Taylor [1992] as a competing model of service quality. This model measures service quality through an examination of consumer evaluations of performance on the 22 service attributes. Cronin and Taylor [1992] argued that the consumer's evaluation of a firm's performance on the service attributes identical to those identified by Parasuraman, et al. [1988]. They suggested that

SERVPERF scale has greater and easier managerial applicability because it employs a single scale rather than different scores.

Prentice [1993] recognised the importance of understanding tourists' experience at the heritage attractions. He conducted a survey on the Isle of Man which investigated the benefits gained by the tourist from visiting the heritage attractions.

The information on service quality, customer satisfaction and the experience of the visitors are valuable to the operators of heritage attractions. The combination of the qualitative and quantitative research methodologies could be used to gather this information. This information could be used for further development and improvement to make the attractions more appealing to the visitors. The attractions operators should take action to rectify and improve areas where customers highlighted as not satisfactory and feedback to customers. This type of response to service recovery can cement customer loyalty [Hart, Heskett and Sasser, 1990].

Qualitative research such as focus group meetings and the critical incident technique help the researcher to gather information related to the specific research topic. To improve the performance of a service industry, quantitative data is needed. Adapting the quantitative measuring tool like the SERVQUAL model developed by Parasuraman for measuring the customer satisfaction in the heritage attractions allows the researchers to quantify the service quality performance. The tool has been well tested and validated by the service industries researchers. A detailed review of service quality research and the SERVQUAL model are presented in Section 3.5 of this chapter.

### **3.5            EXISTING EMPIRICAL RESEARCH ON THE                   MEASUREMENT OF SERVICE QUALITY**

To relate quality measurement in service industries in general to the specific measurement of service quality in heritage attractions, a literature review was carried out on the measurement of quality in service industries. The findings show that 78.7% of the studies used the SERVQUAL model or modified SERVQUAL model to measure the service quality, 21.3% of the studies used other methods as shown in Table 3-1.

**Table 3-1. Summary of Major Empirical Researches on the Measurement of Service Quality**

| Industry Sector       | Using SERVQUAL | Not Using SERVQUAL | Total |
|-----------------------|----------------|--------------------|-------|
| Health Care           | 18             | 2                  | 20    |
| Tourism               | 5              | 8                  | 13    |
| Hospitality           | 15             | 6                  | 21    |
| Banking               | 10             | 3                  | 13    |
| Business Professional | 4              | 1                  | 5     |
| Airline               | 2              | 2                  | 4     |
| Education             | 9              | 2                  | 11    |
| Retailing             | 6              | 0                  | 6     |
| Sales and Marketing   | 11             | 1                  | 12    |
| Business Service      | 4              | 1                  | 5     |
| Service               | 7              | 0                  | 7     |
| Government Service    | 5              | 0                  | 5     |
| Total                 | 96             | 26                 | 122   |

The SERVQUAL model or modified SERVQUAL model has been used by researchers to study a variety of services: health care, business professionals, hotel and hospitality services, education services, government services, market research, sales, banking and business services.

### 3.5.1 The conceptual model of service quality (SERVQUAL)

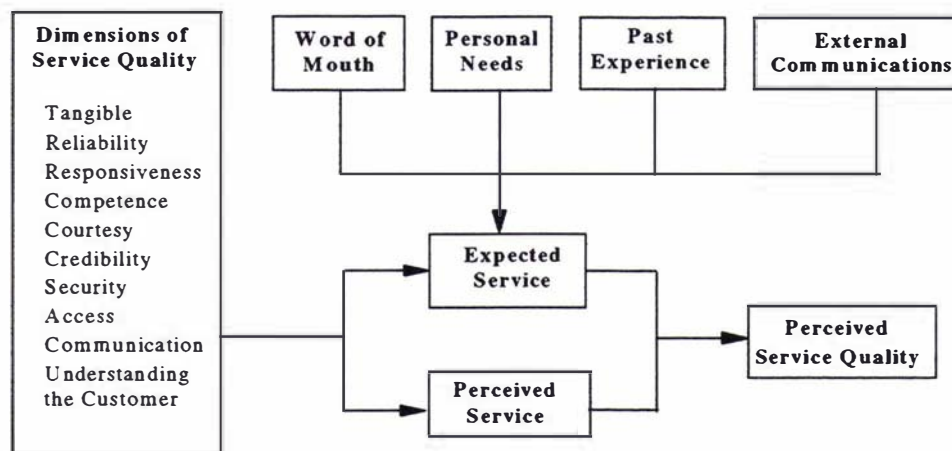
Parasuraman et al. [1990] developed 97 items for expectations and 97 items for perceptions which captured what they defined as the 10 dimensions of service quality based on focus group interviews. They called this model the SERVQUAL Conceptual Model of Service Quality.

The SERVQUAL Conceptual Model of Service Quality identified ten service quality elements:

- Tangibles - includes the physical evidence of the service
- Reliability - involves consistency of performance and dependability
- Responsiveness - concerns the willingness or readiness of employees to provide service
- Competence - means possession of the required skills and knowledge
- Courtesy - involves politeness, respect, consideration, and friendliness of contact personnel
- Credibility - involves trustworthiness, believability, honesty, and having the customers best interest at heart

- Security - is the freedom from danger, risk, or doubt
- Access - involves approachability and ease of contact
- Communication - means keeping customers informed in a language they can understand and listening to them
- Understanding/knowing the customer - involves making the effort to understand the customer's needs

A scale purification procedure reduced the initial scale from 97 items to 34 items through a series of repeated data-collection and analysis steps. The customers' views of service quality from the focus group findings are as shown in Figure 3-1.



Source: Parasuraman, A.; Zeithaml, V. and Berry, L. (1990). *Delivery Quality Services - Balancing Customer Perceptions and Expectations*, pp. 23.

**Figure 3-1. Customer Assessment of Service Quality**

These ten dimensions of service quality were further reduced to five dimensions. The final instrument consists of 22 items, spanning the five dimensions of service quality as shown below [Parasuraman et al, 1990]:

- **Tangibles** - physical facilities, equipment and appearance of personnel
- **Reliability** - ability to perform the promised service dependably and accurately
- **Responsiveness** - willingness to help customers and provide prompt service
- **Assurance** - competence, courtesy, credibility and security are grouped into this category. It includes knowledge and courtesy of employees and their ability to inspire trust and confidence.
- **Empathy** - access, communication and understanding the customers are placed into this category. It concerns on the caring and individualised attention which the firm provides to its customers.

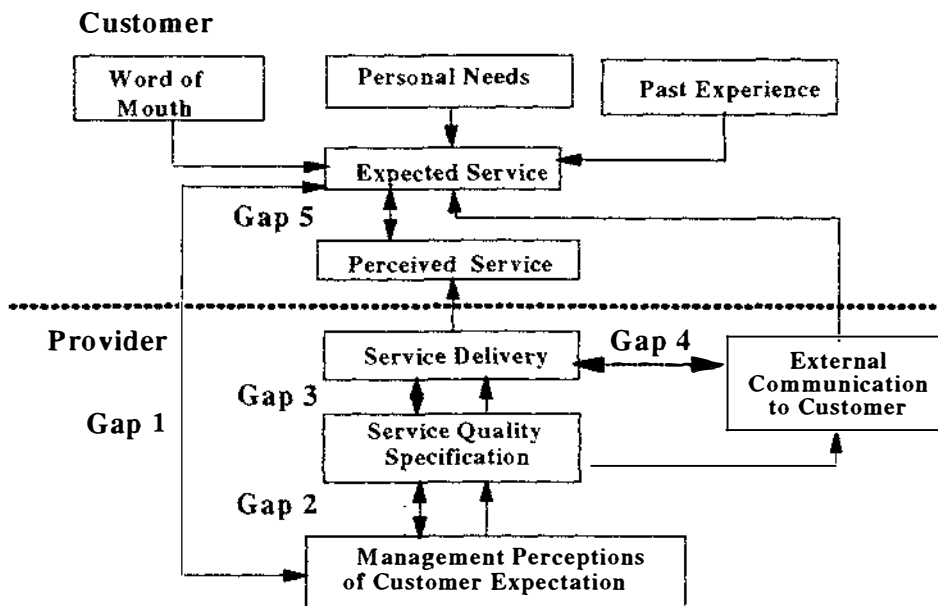
This reduced scale of 22 items was then used to collect a second sample from 200 consumers as shown in Table 3-2.

**Table 3-2. The Reduced Scale of 22 Items of the SERVQUAL Model**

(Adapted from Parasuraman et al, 1990, pp. 181-186)

| No | Features, Exhibits and Services   |
|----|---|
| 1  | XYZ Co. has modern-looking equipment                                      |
| 2  | XYZ Co.'s physical facilities are visually appealing                      |
| 3  | XYZ Co.'s employees are neat-appearing                                    |
| 4  | Materials associated with the service are visually appealing at XYZ Co.   |
| 5  | When XYZ Co. promises to do something by a certain time, it does so.      |
| 6  | When you have a problem, XYZ Co. shows a sincere interest in solving it   |
| 7  | XYZ Co. performs the services right the first time                        |
| 8  | XYZ Co. provides its services at the time it promises to do so            |
| 9  | XYZ Co. insists on error-free records                                     |
| 10 | Employees in XYZ Co. tell you exactly when the services will be performed |
| 11 | Employees in XYZ Co. give you prompt service                              |
| 12 | Employees in XYZ Co. are always willing to help you                       |
| 13 | Employees in XYZ Co. are never too busy to respond to your requests       |
| 14 | The behavior of employees in XYZ Co. instills confidence in you           |
| 15 | You feel safe in your transactions with XYZ Co.                           |
| 16 | Employees in XYZ Co. are consistently courteous with you                  |
| 17 | Employees in XYZ Co. have the knowledge to answer your questions          |
| 18 | XYZ Co. gives you individual attention                                    |
| 19 | XYZ Co. has operating hours convenient to all its customers               |
| 20 | XYZ Co. has employees who give you personal attention                     |
| 21 | XYZ Co. has your best interests at heart                                  |
| 22 | Employees in XYZ Co. understand your specific needs                       |

A survey of Chief Executives conducted by Parasuraman et al. [1990] found that there are four key discrepancies or gaps pertaining to executives' perception of service quality and the tasks associated with service delivery to customers. They are shown in Figure 3-2.



Source: Parasuraman, A.; Zeithaml, V. and Berry, L. (1990). *Delivery Quality Services - Balancing Customer Perceptions and Expectations*. pp. 46

**Figure 3-2. Conceptual Model of Service Quality**

The gaps identified by Parasuraman et al. are:

**Gap 1: Customers' Expectations - Management Perceptions Gap.** This gap arises when the managers do not know what their customers want.

**Gap 2: Management's Perception - Service-Quality Specification Gap.** This refers to the discrepancy between management's perceptions of tourist expectations and the quality standards set for the delivery of the service.

**Gap 3: Service-Quality Specifications - Service Delivery Gap.** This is a service performance gap. It happens when the service is not delivered at the desired level.

**Gap 4: Service Delivery - External Communication Gap.** This refers to the discrepancy between the service that the company promises to deliver and what it actually delivers.

These four gaps were identified by Parasuraman et al. [1990] as the major causes of the perception of poor service quality by the customers. In addition, Parasuraman et al. referred to a fifth gap, namely:

**Gap 5: Customers' Expectations - Customers' Perceptions Gap:** This is the service quality gap where service quality is determined as the discrepancy between Perception and Expectation. This discrepancy is called the SERVQUAL score.

**SERVQUAL score = Perception score - Expectation score**

The SERVQUAL methodology can be helpful in determining where, and to what extent, the service differs from customers' expectations.

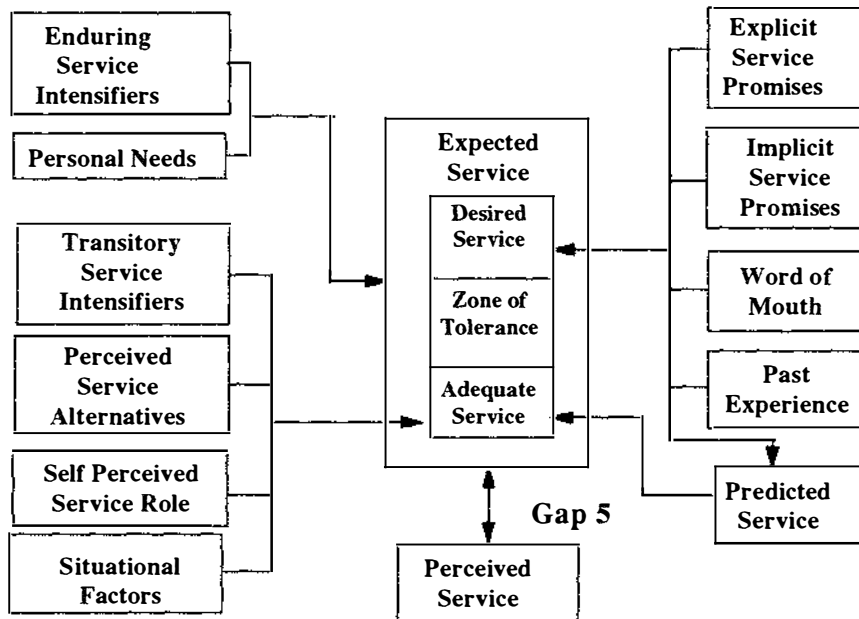
When perception equals expectation, according to Parasuraman et al's SERVQUAL model, this represents good service quality. This is supported by Gronroos [1990] who expressed service quality as the result of comparing a customer's expectation prior to receiving the service with the customer's experiences of the service. If expectations are met or exceeded, service quality is perceived to be satisfactory. Empirical studies [Bitner, 1990; Taylor et al, 1993] show that SERVQUAL is in fact a measurement of the attitude towards, and experience of, the service by comparing the customer's expectation prior to receiving the service with the customer's experience of the service. It does not measure the service quality itself. It measures how the tourist felt and judged the services before and after they are delivered without taking into consideration what knowledge the tourist has on the standard of performance the company is offering.

**3.5.2 Zone of tolerance**

Zeithaml et al. [1991] recognised that there is a gap between different levels of expectations and their relationship to perceived service quality and satisfaction. They introduced a modified model called "*The Concept of Zone of Tolerance*" as shown in Figure 3-3.

Two levels of expectations were identified, the first is called "desired service" and defined as the level of service the customer hopes to receive, that is, the "wished for" level of performance. The lower level expectation is called adequate service, this is the level of service the customer will accept [Zeithaml et al, 1996]. The zone of tolerance falls between these two levels (refer to Figure 3-3).

Zeithaml et al. [1991] defined the "*Zone of Tolerance*" in terms of the extent to which customers recognise and are willing to accept this variation. If service drops below the minimum level considered acceptable, the customer will be frustrated and the satisfaction with the company will be undermined. If service performance is outside the "*Zone of Tolerance*", at the top end, where performance exceeds desired service, the customer will be very pleased and probably quite surprised as well.



Source: Zeithaml, Berry and Parasurman, 1993. The Nature and Determinants of Customer Expectations of Service. *Journal of Academy of Marketing Science*, 21(1), pp. 1-12.

**Figure 3-3. Nature and Determinants of Customer Expectations of Service**

The customer-related factors that influence the expectation formation process and the zone of tolerance are what Davidow and Uttal [1989] described as “*Enduring Service Intensifiers*”. They are individual, stable factors that lead the customer to a heightened sensitivity of service. Another enduring service intensifier is the personal service philosophy - the customer’s underlying generic attitude about the meaning of service and the proper conduct of the service provider [Zeithaml et al, 1991].

Pizam [Pizam and Sussman, 1995; Pizam and Jeong, 1996] studied cross-cultural tourist behaviour of different nationalities and they found that there was a significant perceived difference between the nationalities. This indicates different customers from different cultural backgrounds may view and consider the different attributes of service quality differently. This will alter the service quality score considerably when the attributes that are weighted as most critical are the ones that failed. Zeithaml et al. [1991] recognised the importance of the weighting of different attributes of quality. They proposed assessing the quality of a service by computing the difference between the ratings that customers assign to the paired expectation/ perception statement.

### 3.5.3 The application of the SERVQUAL Model in the tourist industry

Tourist industry researchers have shown that the hotel and hospitality sectors have a higher awareness of the importance of the customers, and meeting their needs, in today’s competitive market place than other sectors of the tourist industry.

In the hotel and hospitality sector, the SERVQUAL model was used to:

- Measure guest's expectation and perception [Lewis, 1987; Saleh and Ryan, 1991; Webster and Hung, 1994; Gabbie and O'Neill, 1996].
- Compare the perceptions of travel industry journalists and hotel managers [Callan, 1990].
- Assess the usefulness and applicability of the SERVQUAL model to the restaurant sector [Lee and Hing, 1995].
- Examine whether the quality dimensions included in the SERVQUAL model are appropriate for a cross-cultural environment in Turkey [Perran, 1995].
- Measure the service quality of the food and catering industry [Johns and Tyas, 1996].
- Learn about specific ways in which employees come to understand what service quality means within an organisation [Brownell and Jameson, 1996].

Two sub-models were developed from the SERVQUAL model in the hotel and hospitality industry. Knutson et al, [1991] developed LODGSERV for the accommodation industry to tap various aspects of the five service quality dimensions. LODGSERV was first used in USA. It was then translated into native languages of the target culture and the translated versions of LODGSERV were used in Japan, Taiwan, Hong Kong, Australia and the United Kingdom [Patton et al, 1994]. The quality dimension identified by LODGSERV were : reliability, tangibles, empathy assurance and responsiveness. Patton et al. [1994] found that human psychological needs should be incorporated into the SERVQUAL model and that service quality was directly affected by perceptions and evolved over time.

DINSERV model was another sub-model developed from the SERVQUAL model to measure the quality of service in the restaurant industry [Stevens et al, 1995].

The application of the SERVQUAL model in the hotel and hospitality industry was found to have some validity and reliability problems. Factor analysis failed to confirm the five dimensions identified by Parasuraman et al [Saleh and Ryan, 1991; Callan, 1990; Perran, 1995]. Johns and Tyas [1994] commented that the instrument was long and clumsy to administer and the catering services did not conform to the five factors.

Fick and Ritche [1991] used the SERVQUAL model to measure the performance of five sectors of the tourist industry, ie. airlines, hotels, restaurants, ski area services and banking services. The instrument was found to be useful in gauging the views of

consumers regarding a service encounter. However, there were a number of problems faced by the authors. These were:

- Some of the negative wording of the questions
- The seven-point Likert scale did not appear to have the ability to distinguish the subtle difference in the levels of expectations and perceptions.
- The items categorised as measuring perceptions of performance of service encountered may be more accurately categorised as measuring the quality of services provided by firms.

Since then, the SERVQUAL model has been used by other tourist researchers to assess the service quality in other sectors of the tourist industry. These include:

- Assessing the performance of the leisure service setting to determine which service quality dimensions influence customer satisfaction [Taylor et al, 1993].
- Assessing travel agencies' service quality through clients [Cliff and Ryan, 1994].
- Examining the service quality gaps in New Zealand airlines [Jenssen, 1992].

### **3.5.4 The usefulness of the SERVQUAL Model and problems encountered by the researchers**

There are several different views of the findings from empirical research using the SERVQUAL model. The model has been found by researchers to be a consistent and reliable scale to measure service quality [Scardina, 1994; Bojanic, 1991; Fick and Ritchie, 1991; Day, 1992; Lam, 1995ab; Cowley, 1991; Webster and Hung, 1994; Pitt et al, 1995; Quiram, 1995; Youssef et al, 1995; Johns and Tyas, 1996]. The instrument provided a qualitative approach to measure service quality and was found to be very useful in:

- Helping management with strategic planning and decision-making for service improvement [McCormack et al, 1994; Wisniewski and Donnelly, 1996].
- Monitoring the continuous improvement process [Nel and Pitt, 1993; Blanchard, 1994; Lam, 1995a].
- Comparing service quality within the same industry or inter-firm comparison [Wisniewski and Donnelly, 1996; Lee and Hing, 1995].
- Finding the service performance from the customer view point [Andrews et al, 1987; Finn and Lamb, 1991; Cowley, 1991; Babakus and Boller, 1992; Bouman et al, 1992; Gagliano and Hathcote, 1994; Lam, 1995a; Samson and Parker,

1994; Rigotti and Pitt, 1992; Cuthbert, 1996; Anderson, 1995; Callan, 1990; Perran, 1995; Youssef et al, 1995].

- Evaluating the effectiveness of communications between management and employees [Blanchard and Galloway, 1994; Lam, 1995a; Chaston, 1995; Brownell and Jameson, 1996].
- Comparing the difference between the management view and the customer view of service quality [Jessen, 1992; Jordan, 1993; Bojanic, 1991; Palmer and Maani, 1993; Lewis, 1987; Fick and Ritche, 1991; Haywood-Farmer and Stuart, 1988; Brown and Swartz, 1989; Walbridge and Delene, 1993; Mangold and Babakus, 1991].

Although the SERVQUAL model is a popular and reliable tool for measuring service quality, there were problems encountered by the researchers related to the model that needed to be considered before its application:

1. The validity and reliability of the results can be affected by a low response rate [Callan, 1990].
2. Where a small sample is used, the results have the potential for non-response bias [Saleh and Ryan, 1991; Lee and Hing, 1995; Whitman-Smithe, 1995]. Large samples are required [Mels and Boshoff, 1995].
3. On the one hand, some researchers considered that the SERVQUAL model is not a generic model and may not easily be applicable to all service industries, such as health care services [Vandamme and Leunis, 1993; Carman, 1990], gas utilities [Boulding et al, 1993], consulting services [Samson and Parker, 1994], hospitality [Lee and Hing, 1995; Johns and Tyas, 1996], education [Brown and Swartz, 1989; Rosen and Karwan, 1994; Finn and Lamb, 1991], business services [Freeman and Dart, 1993; Goodwin, 1992; Mels and Boshoff, 1995] and government services [Orwig, 1994]. On the other hand, most of the dimensions that Parasuraman et al. [1990] recommended were found to be appropriate in the study of the medicine, hotel and hospitality services, education, business research and travel industries. Validity checks suggested that these dimensions are not completely generic, so that users should add new factors that they believe are important in the quality equation [Carman, 1990].
4. The treatment of expectations in the applications of the SERVQUAL scale is suspect. It is not necessarily generic or universal. Importance weighting should be included in measures of service quality [Taylor et al, 1993; Carman, 1990; Perran, 1995].

5. The conceptualisation and operation of service quality is inadequate [Cronin and Taylor, 1992, 1994]. They developed an alternative model called SERVPERF using a performance-based approach to measure service quality. They found the SERVPERF scale explains more of the variation in service quality than does SERVQUAL.
6. The absence of a core service construct, which is an important service attribute in professional services, makes the application of the SERVQUAL model difficult. Core services have been identified by researchers using the SERVQUAL model to measure services provided in medical, accounting and consulting professions. The core services are the essential set of services that a firm must provide just to participate in the market. Peripheral services facilitate the core services or are expected features of the service bundles. Amenities are add-ons that are not essential to the core services but that might sway a customer's buying decision. The firm must provide basic competency level in core and peripheral services to survive. Core services were ranked higher by the professional practitioners because good service depends on satisfying customers rather than displaying merely technical competence. The analysis confirmed that core services form a particularly important component of the quality equation in professional services [Freeman and Dart, 1993; Samson and Parker, 1994; Day, 1992; Haywood-Farmer and Stuart, 1988].
7. Negatively worded statements, although conceptually correct, may result in respondent confusion and subsequently cause an increase in bias. Nine out of twenty-two questions of Parasuraman et al. [1990] are worded negatively which bothered the retailers and customers. Caution is needed when interpreting data obtained using scales with mixed positive and negative wording [Fick and Ritchie, 1991; Carman, 1990; Boulding et al, 1993; Parasuraman et al, 1988; ].
8. The expectation data for the SERVQUAL instrument may not be collected in the most desirable manner. Parasuraman et al. [1988] asked the same respondents to complete both the expectations and perceptions items at one survey administration. Expectation should be measured before the interaction occurs. When expectations are measured in retrospect, a subtle interaction between actual outcomes and prior expectancies can be introduced [Carman, 1990].
9. In many cases where factor analysis was used, it failed to confirm the five dimensions that have common factors, and as a result the research's validity and reliability in these cases were in doubt [Saleh and Ryan, 1991; Cliff and Ryan, 1994; Carman, 1990; Babakus and Boller, 1992; Bell and Shieff, 1990; Goodwin, 1992]. In catering service, Johns and Tyas [1996] found that the dimensions did not conform to the five factor structure model. This is supported by the findings

in the banking service [Lam, 1995b], information service [Pitt et al, 1995], health care [Saleh and Ryan, 1991; Walbridge and Delene, 1993; Bowers et al, 1994], car service [Bouman et al, 1992], retail stores [Gagliano and Hathcote, 1994], marketing service [Innes and Hartman, 1995], education service [Brown et al, 1993, Rosen and Karwan, 1994], business-to-business [Kong and Mayo, 1993] and government services [Triplett et al, 1994; Orwig, 1994]. Babakus and Boller [1992] suggested that *“the dimensionally of service quality may depend on the type of service industry studied”*.

10. In the research reviewed by the authors, no measurement of satisfaction was undertaken separately from expectation and perception, despite the recognition by the researchers [Zeithaml et al, 1991; Cronin and Taylor, 1992; Salleh and Annuar, 1995] that these two measurements are not necessarily equivalent. Cowley [1991] supported this view; he commented that the SERVQUAL model in the form suggested by Parasuraman et al. [1990] is not a valid measure of the dissatisfaction of a customer's experience with a service provider. However, it can be used to measure the quality of “excellent” service providers [Lynch et al, 1994].
11. Human psychological needs should be incorporated into the SERVQUAL model [Patton et al, 1994] because perceptions and satisfaction are influenced by occasion-experiences. The expectations of the visitors could be higher than normal when it is a special occasion.
12. The SERVQUAL model was long and clumsy to administer. Some respondents were reluctant to participate due to the poor design of the questionnaire [Carman, 1990; Cronin and Taylor, 1992; Jessen, 1992; Johns and Tyas, 1996].
13. There may be some overlap amongst the items measuring responsiveness, assurance and empathy [Mels et al, 1995]
14. The classification of the attitudinal factors in the model is confusing [Johnson et al, 1990].

From the problems identified by the researchers who used SERVQUAL to measure service quality in different service sectors, we can conclude that SERVQUAL is a useful tool and well tested tool for measuring service quality, however, it is not a generic tool that can be applied to any service industry sector without modification. In the process of applying the tool, researchers also have to be aware of the sample size, sample bias, the used of negative wording, the length of questionnaire, inclusion of core service into the questionnaire to reflect the type of service measured.

### **3.5.5 The dimensions of service quality identified by the empirical research**

Parasuraman et al. [1990] identified five service quality dimensions in their research in four different service companies. The five dimensions identified were tangibility, reliability, responsiveness, assurance and empathy. Empirical research confirmed that service quality dimensions identified by Parasuraman et al. are not the same across different sectors of service industry.

Cronin and Taylor [1992] argue that there is very weak evidence suggesting that SERVQUAL is multi-dimensional. In their measurements of the service quality of four industries: banking, pest control, dry cleaning and fast food, only a single dimension was identified during the analysis. This is supported by Lam [1994a,b] who measured the service quality of retail banking, the results showed that the expectations, performance perceptions and the gap scores have emerged as uni-dimensional measures without any meaningful underlying dimensions.

A two-factor structure was found by Mels, Boshoff and Nel [1995] in different service industries. Their empirical research showed that almost all of the items referred to the actions of employees directly (responsiveness, assurance, empathy or indirectly reliability). They referred to it as 'interaction quality' or intrinsic service quality'. The other factor they identified was the 'extrinsic service quality' which referred to the tangible aspects of service delivery.

A three-factor structure was suggested by Cliff and Ryan [1994] in the travel agency service. The factors were identified as re-assurance, reliability and tangibles. On the other hand, Le Blanc [1992] identified a five factor structure in his research in travel agencies. The five-factors identified were responsiveness, courtesy/competence, accessibility, corporate image and competitiveness.

A four-factor structure was identified by Kettinger and Lee [1994] in the information system service. The factors were reliability, responsiveness, assurance and empathy. Gagliano and Hathcote [1994] used the SERVQUAL model to measure the service quality of retail apparel specialty stores. Four factors were found: personal attraction, reliability, tangibles and convenience. A myriad of reliability, responsiveness, assurance and empathy characteristics were grouped together as one factor.

In the research carried out by Fullerton [1996], he identified a six factor structure in the student extended bar service. There was also evidence that the tangible items lead to more than one factor, consistent with the findings of Parasuraman et al. [1990].

Seven factors of service quality were found by Reidenbach and Sandifer-Smallwood [1990] in their study of hospitals. Seven service dimensions were identified which indicated the patients' overall service perception. There were: patient confidence, business competence, treatment quality, support services, physical appearance, waiting time and empathy.

From the above summary of the empirical research, it is concluded that each sector of the service industries has its unique features which appear to contribute to different groupings of the service quality dimensions. Despite these reservations, it was felt that the SERVQUAL model could be used as a base to provide a measurement tool for customer satisfaction in the New Zealand tourist industry. Accordingly a programme of investigation of the application of SERVQUAL to heritage attractions was undertaken.

### **3.6 CONCLUSIONS**

In conclusion, although there are many modifications required to the SERVQUAL model, the researchers generally agree that the SERVQUAL model can be used with the appropriate degree of caution and attention to its limitations mentioned above. It was concluded from the review of previous research that it could be used in the New Zealand tourist industry for measuring the quality of service provided. To overcome the problems highlighted above by the researchers, the questionnaire design should:

- Be modified to include the core services and professional skills and other dimensions suited to a particular service sector.
- Avoid the use of negative and biased wording.
- Consider areas where separate expectation and satisfaction scores should be used.
- Provide the opportunity for participants to weigh the importance of quality attributes.
- Carry out validity and reliability analysis on the data collected.
- Evaluate the quality attributes identified by previous studies and tested during any pilot survey.

In the tourist industry, the expectations of customers vary with culture, experience, knowledge, time and, most importantly, with people's service encounters. The services delivered by the tourist service provider may meet the basic standard laid down but may not satisfy the customers. This could be caused by a poor service encounter - the

moment of truth. In terms of Total Quality Management, we need a measure of performance against which the service can be measured and continuously improved.

From the review of case studies of measuring quality in the service industries, it was concluded that the SERVQUAL model could be used as the basis for measuring tourist expectations and perceptions, as well as a tool for measuring the performance of service providers. The results of the empirical surveys of service quality highlight that great care has to be taken using the SERVQUAL model to measure service quality. Modifications would need to be made to adapt the model to a particular industry. These modifications include the wording, timing of the survey, scales used in the survey, the administration of the survey and the analysis of the differences between the expectations and perceptions.

In the SERVQUAL model, Parasuraman et al. [1990] did not use a satisfaction measure. It was assumed that if the service quality score is positive, the customer will be satisfied. However, there is little research evidence to prove that service quality, service encounter satisfaction and overall satisfaction are related.

From this survey of previous works it was decided to carry out a research programme to combine both qualitative and quantitative research methods reviewed in this chapter to measure the service quality in heritage attractions. Focus group meetings were used to gather information for the modification of a SERVQUAL based survey questionnaires. The survey questionnaires measured the visitors' expectation, perception and satisfaction of individual service encounter. Overall service satisfaction was also measured. In addition to these, a qualitative questionnaire on the specific experience/incidents that the visitors enjoyed most and their opinion of how the service could be improved was asked. The information gathered from this qualitative survey questionnaire will help the heritage attraction operators to have a better understanding of the experience of visitors, establish management systems to maintain and improve their service delivery to visitors. The aim is to make their institutions more attractive to visitors.

# 4.

## **A Review Of Quality Management Practice In The New Zealand Tourist Industry**

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### **4.1 INTRODUCTION**

Chapter 2 reviewed the current initiatives that have been taken by the New Zealand tourist industry and the New Zealand Tourism Board [NZTB, 1996] relating to Tourism Awards and the quality service programmes such as QualMark classification and grading system, KiwiHost training programme, Visitor Information Network, and the New Zealand Way Brand.

The increasing recognition and popularity of the above programmes initiated by the industry and the New Zealand Tourism Board [NZTB, 1996] indicated that the industry has an increasing awareness of quality standards and the need to be more efficient and competitive in the industry.

The first objective of this research project was to investigate the present status of quality management practice in the New Zealand tourist industry. The reason for initiating this investigation was because there was a lack of formal research into quality management in the tourist industry and there is also a lack of primary information on the quality management practice of New Zealand industry. Before embarking on research of the implementation of Total Quality Management (TQM) in the tourist industry it was decided that a better understanding and appreciation of the need for quality management in New Zealand was required. Therefore a survey on quality management practices was conducted in April 1995 with a high response rate of 49% using a mail survey. This chapter presents the results of the survey and explores the potential needs for quality management and associated training.

## **4.2 OBJECTIVES OF THE INITIAL SURVEY**

The main objectives of this research were :

- To explore the current extent of quality management practice in the New Zealand tourist industry.
- To identify areas of potential need for quality management.
- To identify the TQM tools and techniques currently used by the industry.
- To investigate the extent of knowledge and the use of the SERVQUAL model of service quality.
- To identify the methods of service quality assessment used by the industry.
- To determine if a relationship existed between quality management practice and company size.

## **4.3 METHODOLOGY**

An exploratory study on quality management practice in the New Zealand tourist industry was carried out using a simple, short, easy to complete questionnaire.

### **4.3.1 The population**

The tourist industry is made up of a network of independent but inter-related trading functions within a range of service industries, which are wholly or partially committed to serving the tourist. Six components identified in the tourism network system are accommodation, attractions, transport, travel operators, destination organisations and the supporting services sector as discussed in Section 2.7 of this thesis.

The aim of this survey was to focus on these six components in the tourism network system. It covered fully the five components which are directly related to the tourist as well as the restaurant sector which is one major sub-component of the Supporting Service Sector.

A complete up-to-date company list of the tourist industry was not available. However there were other sources of information on the companies in the tourist industry in New Zealand, such as the Travel Industry Directory and Information Guide, AA Accommodation Guide, an attractions sites list from Deloitte Touche Tohmatsu New Zealand, the New Zealand Adventure Annual and Directory and, in addition, the Yellow Pages.

### **4.3.2 The sample**

Eight hundred and sixty four organisations were selected from the six sectors of the tourist industry from a population of approximately six thousand New Zealand tourist service organisations. A stratified random sampling method was used to ensure there was a good representation of the population of the organisations in the New Zealand tourist industry.

A random sample was taken from each of the four sectors - accommodation, attraction sites, adventure activities and restaurants which have larger populations than the other categories. A sample of restaurants was taken from the three main centres of Auckland, Wellington and Christchurch.

The transport, travel, conference centres and destination sectors have less than one hundred operators in each, so a 100% sample of operators known to the author was used.

### **4.3.3 Survey procedure**

Due to time and financial constraints, a mail survey was used. A very simple and easy to complete questionnaire was designed to obtain the quality management practice information required. The respondents were assured of anonymity. The questionnaire was sent to 864 organisations with a covering letter explaining the research project (refer to Appendix A.1), containing directions for completing the questionnaire and a postage paid return envelope.

A pilot test of the survey questionnaire was carried out using respondents with limited knowledge of quality management to fill out the questionnaire.

The questionnaires were despatched on 6th March 1995 and expected to be returned by the end of March. A follow-up was sent out to non-responding companies on the 5th April. No further follow-up was carried out due to time and financial constraints.

The questionnaire contained 12 questions and consisted of two parts:-

- Part One. Information on the extent of quality management practice, knowledge and use of TQM, the SERVQUAL model and several TQM tools and techniques.
- Part Two. The respondents' company profile and comments.

The generality of the results should be accepted with caution. While little, if any, bias is evident in the responding sub-population, it is not possible to assess the bias in the non-responding sub-population. We cannot conclude that there is a uniformity of characteristics and problems across both the responding and non-responding population. For example, it is likely that the non-responding group will have less knowledge of quality management and hence the response would be skewed towards those companies who have some knowledge of TQM principles.

## **4.4 RESULTS OF THE SURVEY**

Of the 864 questionnaires despatched, 417 responses were received, including eight which claimed no interest in the study. There were 17 questionnaires returned by New Zealand Post with unknown addresses for one of the following reasons:

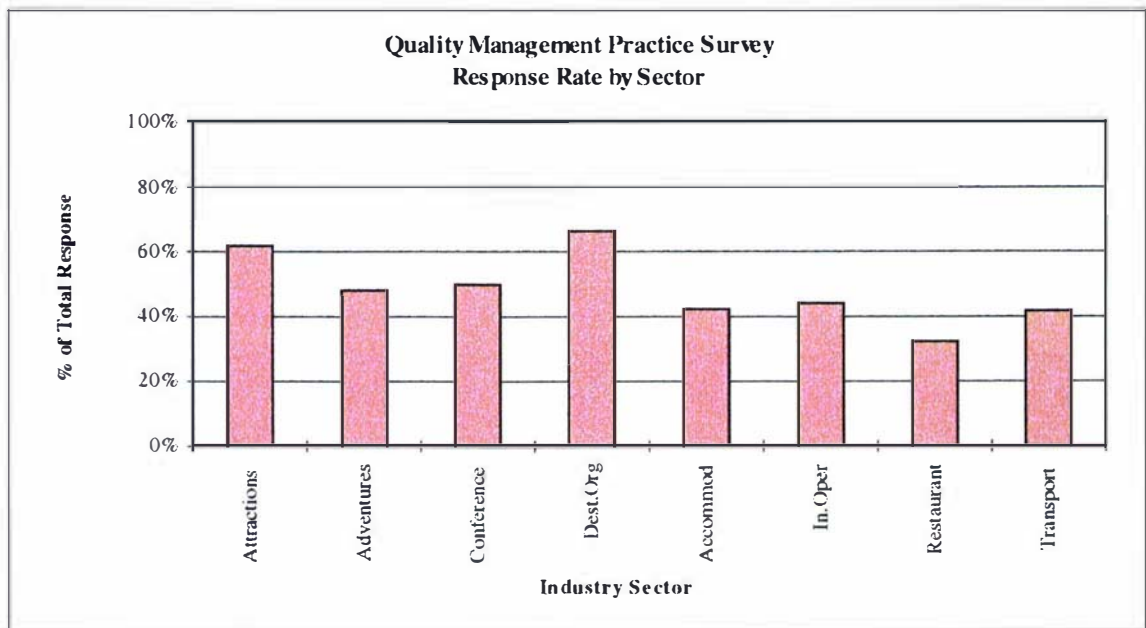
- The firm had gone out of business
- The business was not at the stated address

The total unusable responses represented 1.92% of the total sample. A total of 409 useable questionnaires were returned. The unusable questionnaires were deducted from the sample size and the response rate is then calculated as 49.2%. After follow-up, the response rate increased by 17.2%, from an initial response rate of 32%, to a final rate of 49.2%. This response rate is considered very high for a mail survey.

### **4.4.1 Respondent characteristics**

The response from all sectors of the tourist industry was high; it varied from restaurants at 32% to destination organisations with the highest response of 66.7% (Figure 4-1).

There may be more bias from the restaurant sector than the others because of the lower response rate. This may have been caused by the lack of understanding of the questionnaire or the quality management terminology used. Several respondents from small companies felt that their company size was too small to take part in the survey. Some non-profit organisations also expressed an opinion that the survey was not relevant to their organisations.



**Figure 4-1. Response from Industry**

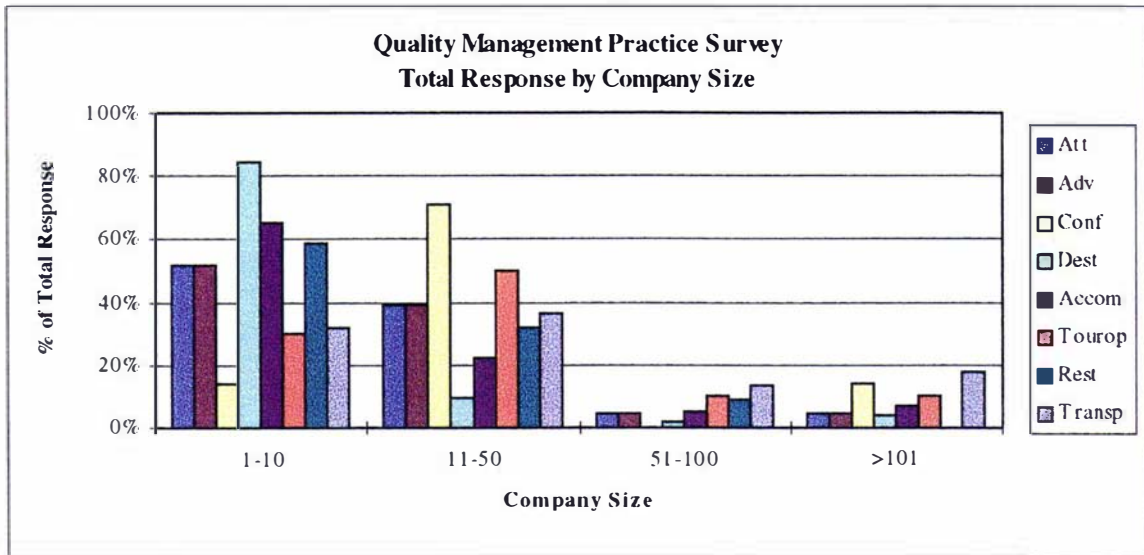
#### 4.4.2 Company size

In the tourist industry company size is generally small. 80% of the respondents' companies had under 50 employees (including both full-time and part-time employees). 53% of the respondents were small companies with 1 to 5 employees (Table 4-1). In the New Zealand industry, companies in the "0-5 full-time employees" group make up 84% of the total industry population [Dept of Statistics, 1994].

**Table 4-1. Company Size**

| Size    | No. Response | %      |
|---------|--------------|--------|
| 0-5     | 217          | 53.1%  |
| 6-9     | 42           | 10.3%  |
| 10-49   | 109          | 26.7%  |
| 50-99   | 17           | 4.2%   |
| 100-199 | 14           | 3.4%   |
| >200    | 10           | 2.5%   |
| Total   | 409          | 100.0% |

The tourist industry has a lower representation in the "0-5" group (lower by 31%) compared to the overall New Zealand industries, but the percentage is high in both the "6-9" and "10-49" groups (higher by 3% and 19% respectively).



**Figure 4-2. Total Response by Company Size**

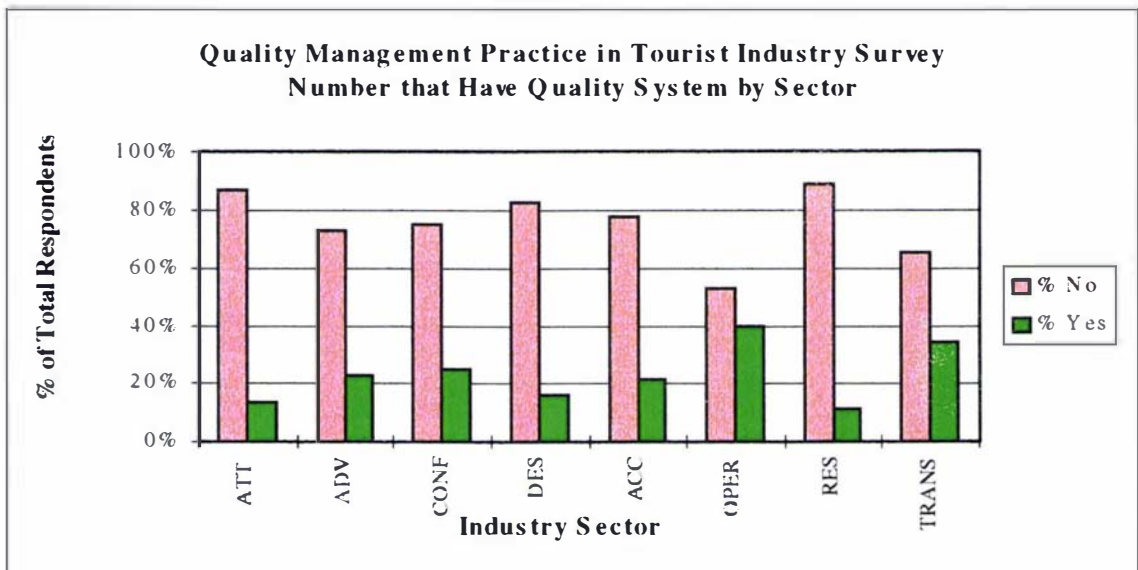
Figure 4-2 shows the total respondents analysed by company size and by sector. The majority of respondents in the accommodation and destination sectors were from less than 10 employees group. The majority of attractions and adventure sectors were in the size group of “1-10” and “11-50”. Seventy percent of conference centre sector respondents were from size group of “11-50”. The size groups of more than 51 employees represented 10% of the total respondents except in the transportation sector.

## 4.5 SURVEY FINDINGS

### 4.5.1 Companies that have a formal quality system

Seventy-eight percent of the respondents from the tourist industry said they do not have a formal quality system in the company. 20% of the respondents' companies had formal quality systems. These were the inbound operator sector (40%), transport sector (32%), conference centre sector (25%), tourist adventure sector (22.9%) and accommodation sector (21.5%), as shown in Figure 4-3.

The accommodation sector had their own quality programmes, such as Best Western and Flag International. The transport sector was involved in the Civil Aviation Audit (CAA) and safety audits.



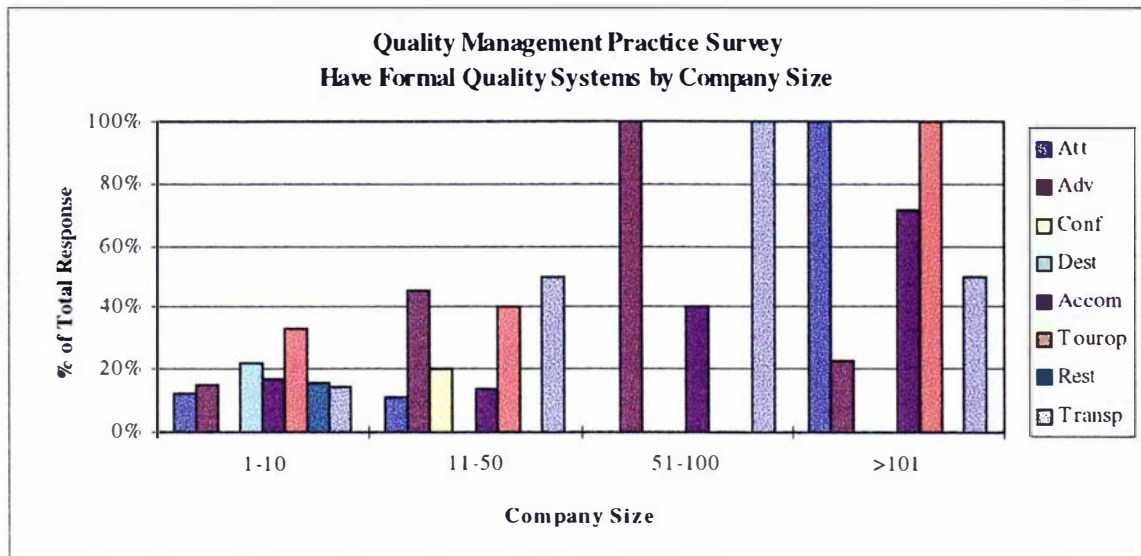
**Figure 4-3. Formal Quality System**

Of the 321 respondents who had no formal quality system, 32% intended to introduce a quality system, 65% had no intention of introducing a quality system into their company and 2% had an informal system. Company size did affect the implementation of quality systems. The larger the company size, the higher was the rate of respondents who had formal quality systems.

Thirteen percent of the tourist attraction respondents stated that they had a formal quality system and 34% of those who had no formal quality system intended to introduce formal quality systems into their organisation.

Seventy-nine percent of the transport sector respondents stated that they intended to introduce a quality system into their company. This sector was followed by the conference centre sector (55.6%), the tourist adventure sector (44.4%) and the tourist attraction sector (38.9%).

Eighty percent of the accommodation sector respondents stated that they did not intend to introduce a quality system into their company, this was followed by the restaurant sector (72.7%), the destination sector (70.4%), and the travel operator sector (66.7%).



**Figure 4-4. Have Formal Quality Systems by Company Size**

The analysis of having formal quality systems by company size and by sector shown in Figure 4-4, indicated that the majority of the respondents in the greater than 50 employee size group had formal quality systems. The graph shows a distinctive difference between the small company size group and the company size group with more than 51 employees. Less than 20% of respondents in the less than 10 employees group had formal quality systems.

Correspondence analysis was used to examine the relationship and interaction between the company size and the company who had a formal quality system. The results showed that the medium and larger companies had a higher tendency to have a formal quality system (refer to Appendix A.2).

### 4.5.2 Companies who had heard of ISO 9000 Standards

The respondents from all sectors of the tourist industry had heard about ISO 9000 Standards. Figure 4-5 shows that majority of the respondents from the conference organiser, destination organiser, tour operator and transportation sectors had heard about the ISO 9000 Standards. ISO 9000 Standards were less known to the respondents from the smaller size group (1-10) in the attractions, adventure, accommodation and restaurant sectors. ISO 9000 Standards were least known in the restaurant sector. Only 23% in the “1-10” group had heard of ISO 9000 standards.

Figure 4-5 shows the conference, tour operator, destination organiser and transportation sectors of the tourist industry were better informed about ISO 9000 Standards than the other sectors. This was more obvious in respondents who came from a company size with less than 50 employees.

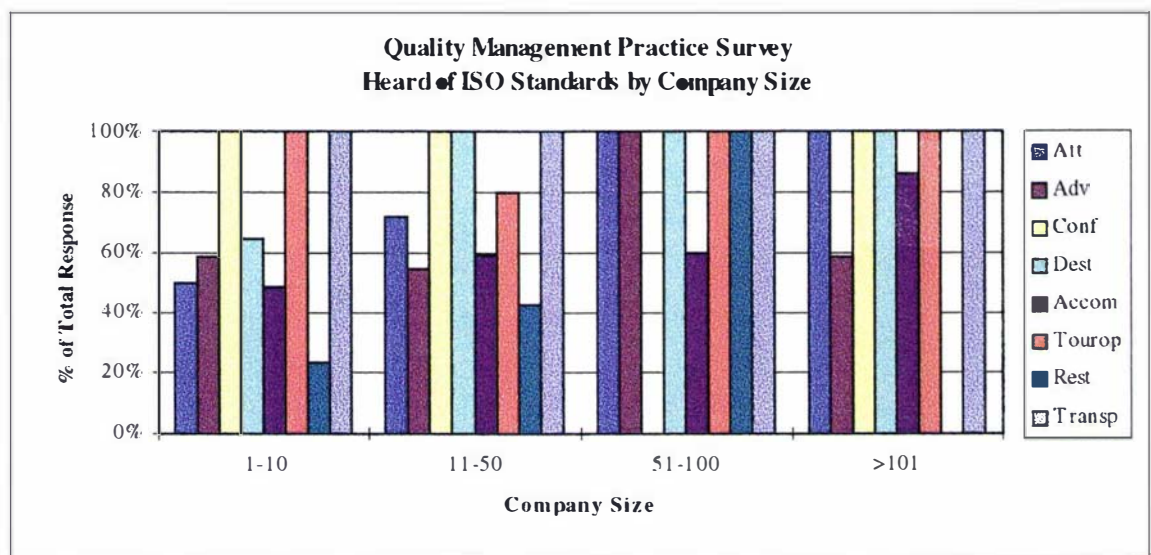


Figure 4-5. Heard of ISO Standards by Company Size

### 4.5.3 Companies accredited to ISO 9000 Standards

Sixty-seven percent of the respondents had heard about ISO 9000. However there were only 9 respondents’ companies which were accredited to ISO 9000. This constituted 2.2% of the total sample. The transport sector had the highest percentage of companies accredited to ISO 9000 (11.5%). The adventure sector (2.9%) was the second highest, and the accommodation sector had 2.5% accredited to ISO 9000 as shown in Figure 4-6.



Figure 4-6. ISO 9000 Accreditation

Most of the tourist attractions were not accredited to ISO 9000. Only 2% were accredited to ISO 9000. 84% of those who were not accredited were not considering ISO accreditation.

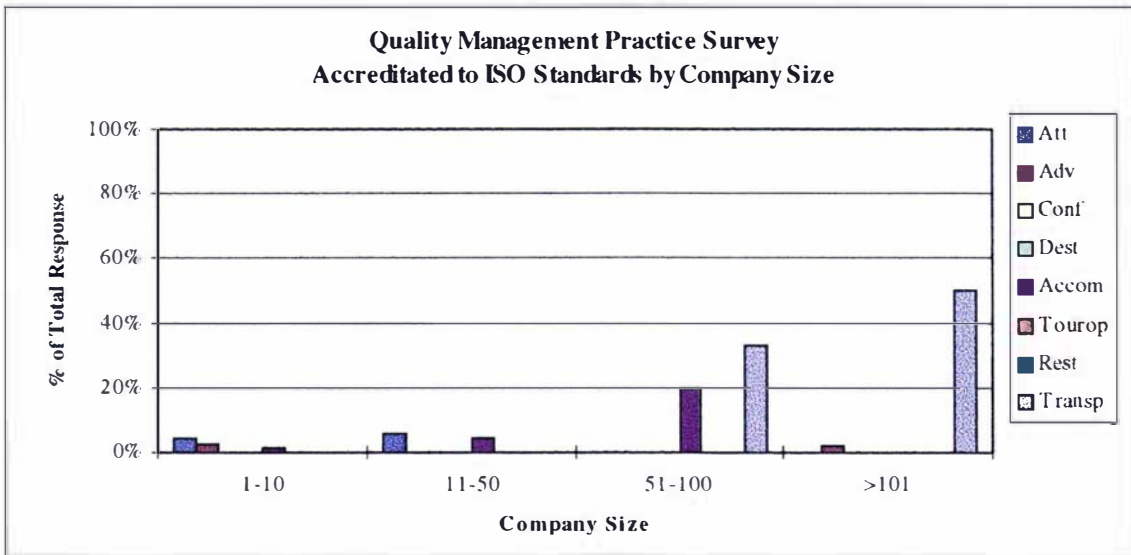


Figure 4-7. Accredited to ISO Standards by Company Size

ISO 9000 accreditation was shown in Figure 4-6 and 4-7 as an uncommon practice in the tourist industry. A company in the accommodation and transportation sectors with more than 50 employees is more likely to adopt ISO 9000. Company size appeared to be one of the influencing factors for the ISO 9000 accreditation. On the other hand, in the tourist attractions and adventure sectors, 12% of companies who had less than 50 employees were accredited to ISO 9000.

There has been a major nationwide push to change the face of transportation in New Zealand. The transportation companies have recognised the importance of safety and the need to meet the customers' needs [Standards of NZ, 1995]. 16.6% of the respondents who were not accredited to ISO 9000 were considering accreditation to ISO 9000 in the future.

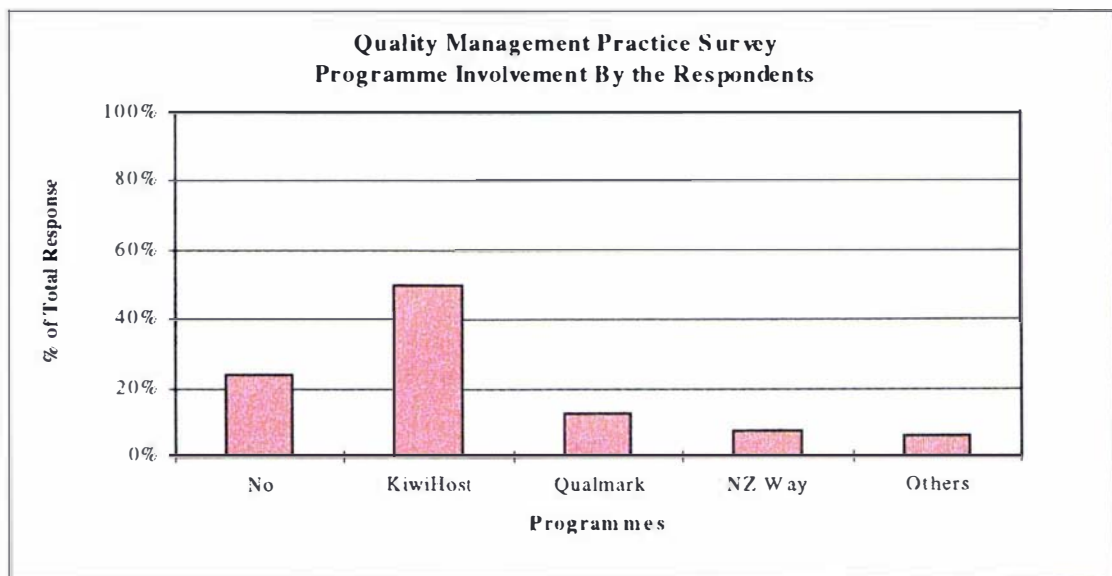
Conference organisers, destination organisers, tour operators and restaurants showed no involvement in implementing the ISO 9000 Standards.

Comments from the restaurant sector showed that there was a lack of knowledge and understanding of TQM, quality management systems and TQM tools and techniques.

Some respondents suggested that the ISO 9000 Standard may not be appropriate for small businesses and museums. The museum community had just commenced the process of looking into a more suitable accreditation programme.

#### 4.5.4 Programmes the respondents were involved in

Seventy-six percent of the respondents were involved in one or more programmes (Figure 4-8) such as KiwiHost, QualMark, the New Zealand Way, TQM and the Visitor Information Network for the Visitor Information Centres. As noted earlier, the accommodation sector have their own international group programs such as Best Western and Flag International.



**Figure 4-8. Programme Involvement**

Forty-eight percent (48%) of the respondents were involved in the KiwiHost programme. It was the programme that the industry was most familiar with and it also

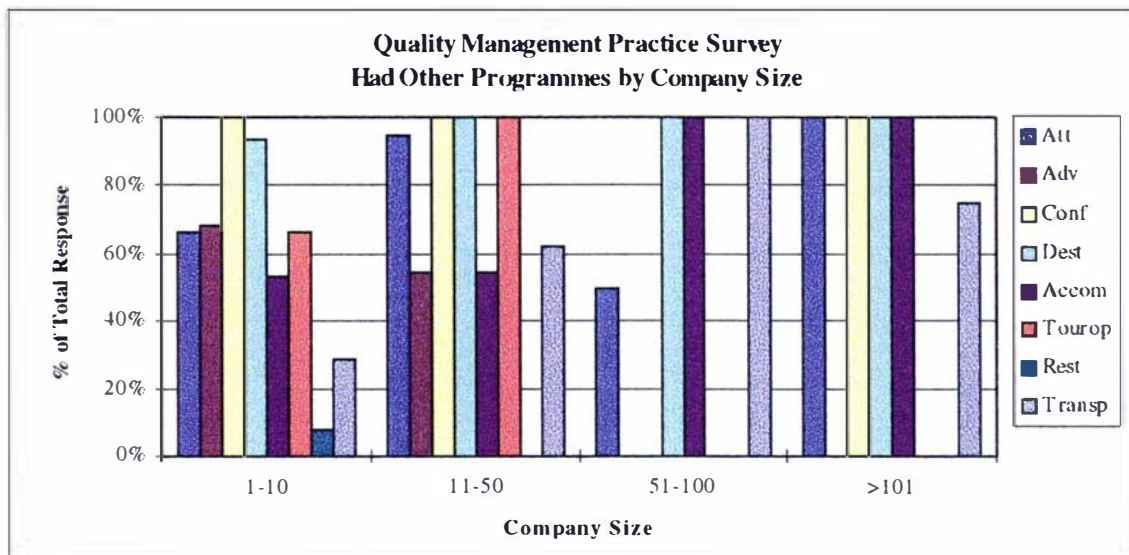
had the highest overall participation rate. 13% of respondents were involved in QualMark and 8% in the New Zealand Way.

The majority of tourist attraction companies were involved with the KiwiHost programme (71%), 3.2% were involved with the New Zealand Way and 25.8% of the respondents were not involved in any programmes.

78% of the restaurants were not involved with any of these programmes. 19% were involved in the KiwiHost programme and 2.7% were involved in the New Zealand Way.

The results highlighted in the survey show that tourist industry operators have adopted some of the schemes promoted by the New Zealand Tourism Board such as: KiwiHost, Visitor Information Network, the New Zealand Tourism Awards and QualMark.

Tourist adventure operators, such as bungy jumping, have taken the lead in setting safety standards for their operation and set a benchmark for other operators. The bungy industry has benefited by having to evaluate their systems and operating parameters. It is an investment in the future [Standards of NZ, 1994].

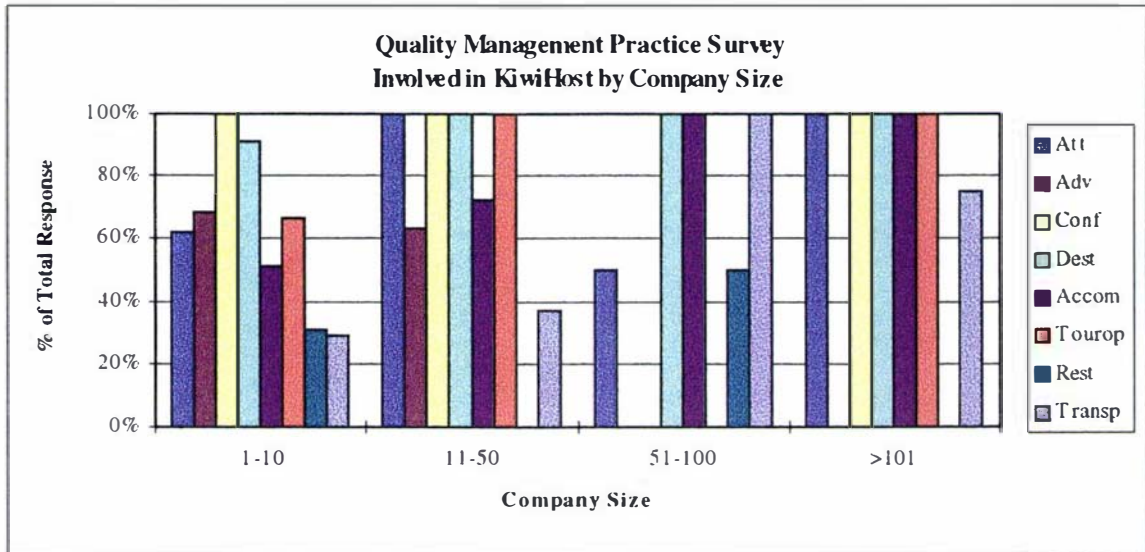


**Figure 4-9. Had other Programmes by Company Size**

From Figure 4-9, we could conclude that there was high involvement in quality programmes such as KiwiHost, QualMark and New Zealand Way by the respondents' companies in other programme in all sectors. The exception was the restaurant sector, and small transportation companies.

Further analysis was carried out to find out which sectors had high involvement in the KiwiHost Programme as shown in Figure 4-10. The respondents from the company size

group of “1-10” has a lower involvement of the KiwiHost programme compared to other size groups.

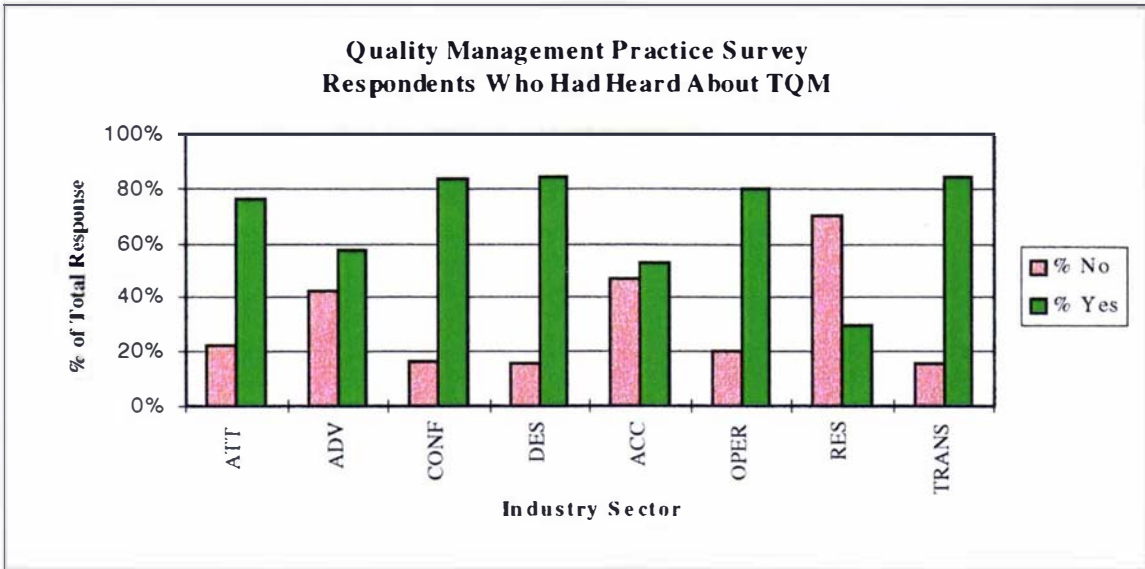


**Figure 4-10. Involved in KiwiHost Programme by Company Size**

Small operators in the tourist attractions, adventure, accommodation, restaurant and transport sectors had lower involvement in the KiwiHost programme. On the other hand, there was a higher involvement in this programme as the company size increased.

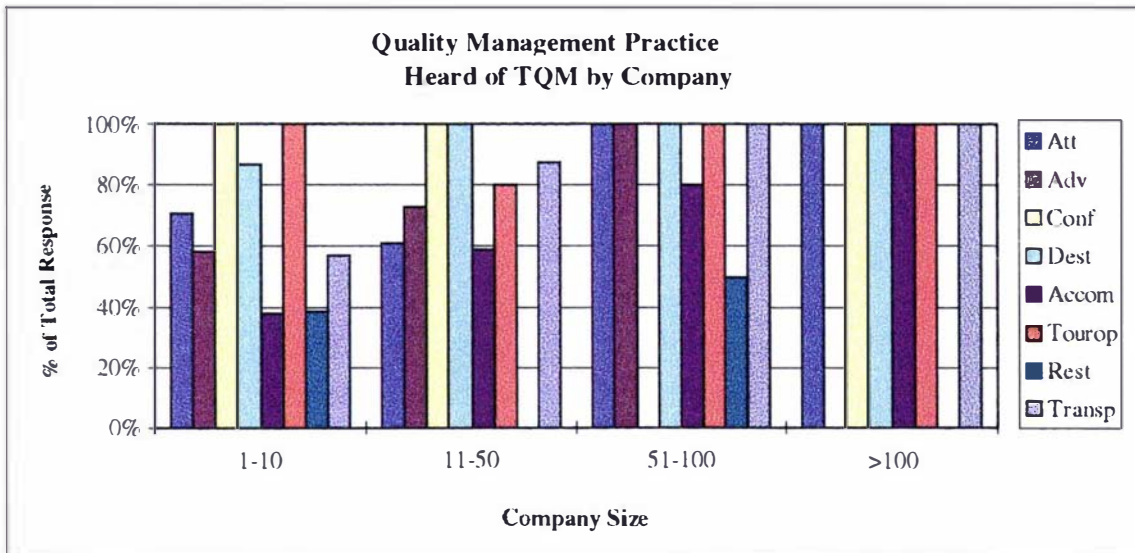
#### **4.5.5 Respondents that had heard about Total Quality Management**

Sixty-four percent (64%) of the respondents had heard about Total Quality Management (TQM). In the transport, destination organisers, conference centre and inbound operator sectors, 80% or more of the respondents had heard about TQM. However, TQM was least known by the restaurant sector. Only 30% of the respondents from the restaurant sector had heard of TQM (Figure 4-11). Seventy six percent of tourist attractions sector respondents had heard about TQM.



**Figure 4-11. Heard of Total Quality Management**

There was interest shown by the respondents from different sectors to know more about TQM and how the techniques could be applied in the industry.



**Figure 4-12. Heard of Total Quality Management by Company Size**

In Figure 4-12 it shows that TQM is less known to the respondents from the small company size group (1-10), this is especially so in the accommodation and restaurant sectors.

### 4.5.6 Use of TQM for managing service quality

Only 15% of the respondents stated that they were using TQM for managing their service quality. Again, the transport and inbound operator sectors had the highest percentage of respondents (26%) using TQM techniques. The others ranged from restaurants with 5.4% to destination organisers with 17.18%, as shown in Figure 4-13.

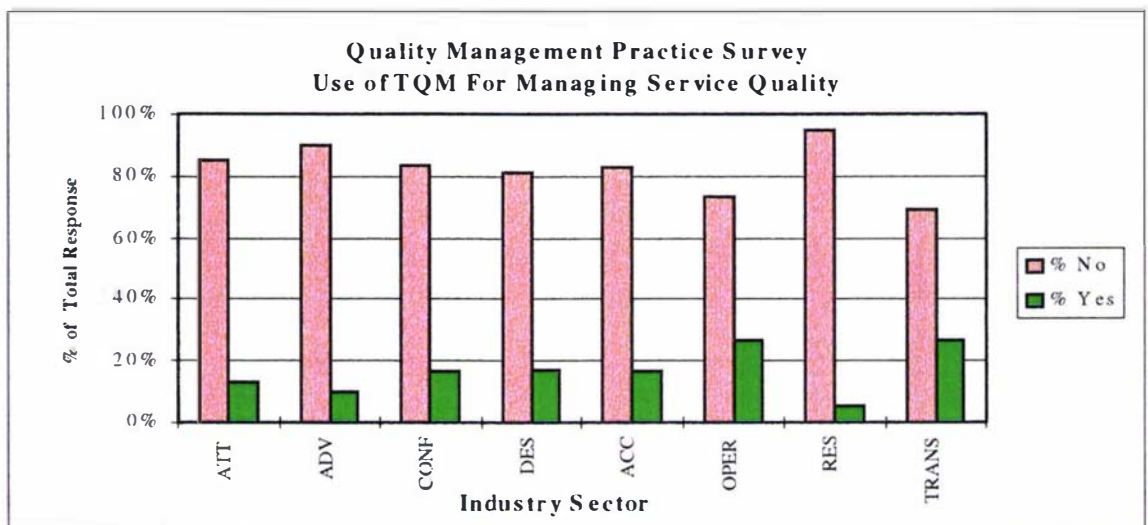


Figure 4-13. Use of TQM for Managing Service Quality

In the tourist attraction sector, only 13% of respondents stated that they used TQM for managing service quality, however, 30.6% of the companies used customer surveys and customer feedback to measure service quality.

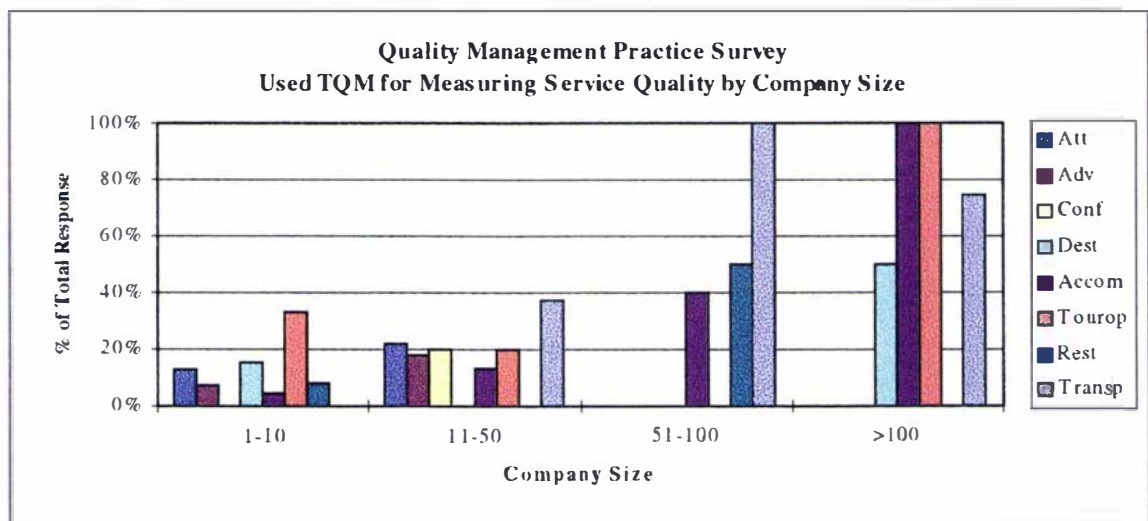


Figure 4-14. Use of TQM for Measuring Service Quality By Company Size

Figure 4-14 shows that TQM is not commonly used by the respondents from company size groups of less than 50 employees where 94% of the respondents were. However,

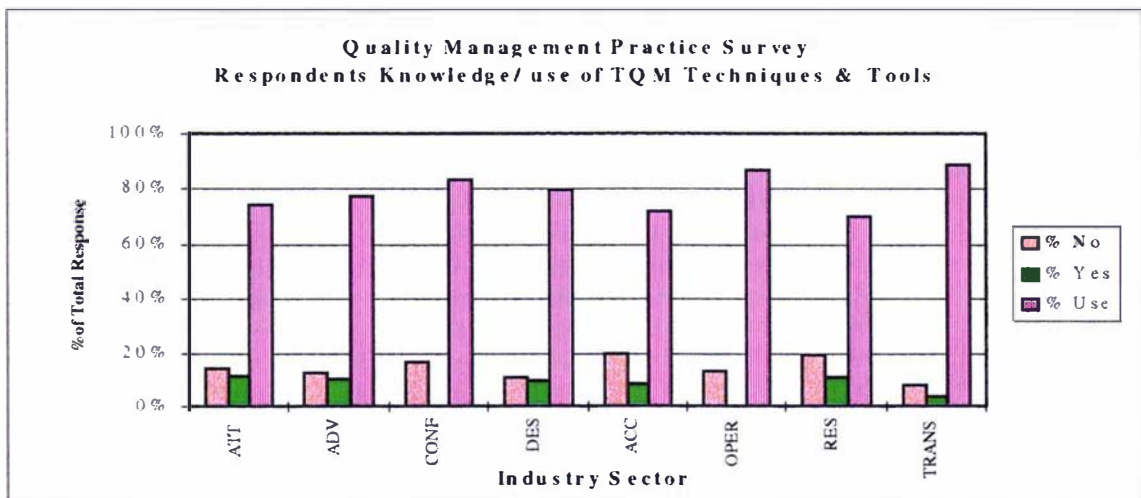
respondents from the accommodation and tourist adventure sectors expressed strongly their belief in customer focus and meeting the customer needs despite the majority of the industry sector indicating that they had not heard of TQM. Customer focus of course, is one of the major philosophies of Total Quality Management. Therefore we could conclude that although they had not heard of TQM. They do practice some of its elements.

Correspondence analysis was used to examine the relationship and interaction between the use of TQM for measuring service quality and company size. The results showed that larger companies have more tendency to use TQM for measuring the service quality (refer Appendix A.2)

From the comments made by the respondents, it could be inferred that they were practising some sort of TQM in their business without recognising it. This is because many of the TQM philosophies are common sense business practices aimed at meeting or exceeding the customer needs.

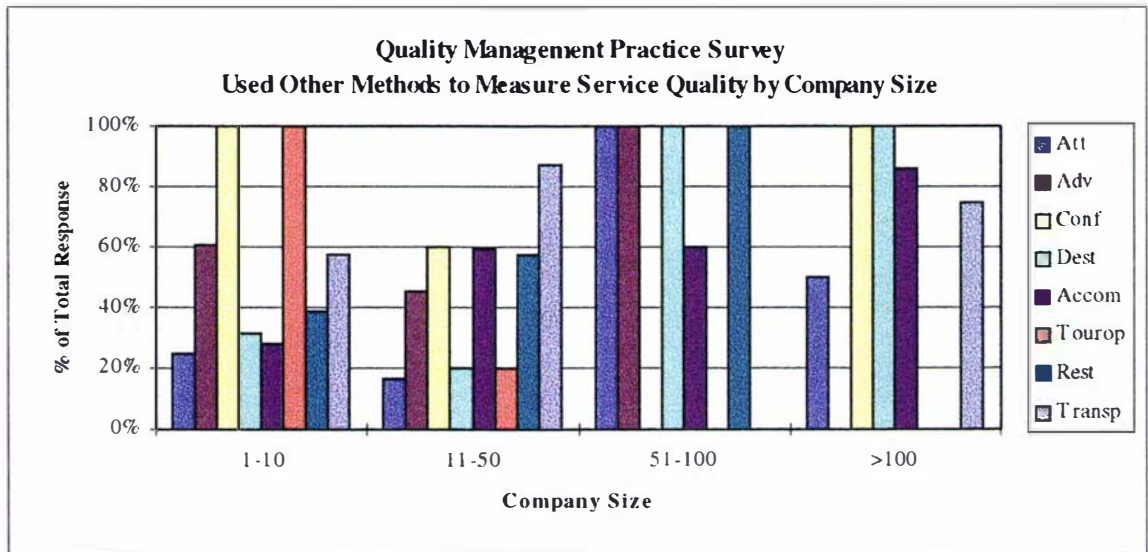
#### 4.5.7 Use of other service quality assessment methods

Forty-six percent (46%) of the respondents used other methods to measure their service quality. Customer surveys, client feedback and internal assessment were the three most common service quality assessment methods used by the tourist industry (Figure 4-15).



**Figure 4-15. Use of other Service Quality Assessment Methods**

The customer surveys used by the respondents were surveys carried out using questionnaires, comment cards and customer feedback forms. These formal customer survey methods were popular amongst tourist attractions, conference centres, inbound operators, accommodation and destination organisations.



**Figure 4-16. Used other Tools to Measure Service Quality**

Informal methods of service quality assessment through customer feedback were used by the adventure, attraction and restaurant sectors. Internal assessment was used by all sectors of the tourist industry.

Other methods used were “*mystery shopper*”<sup>1</sup>, and the QualMark classification and grading system (refer to Ch2, section 2.10) in the accommodation sector. The transport sector used customer complaints, client response and Civil Aviation audit. The travel operator sector used customer surveys, formal reviews and mystery shoppers for assessing their service quality.

Figure 4-16 shows that less than 60% of the respondents from most sectors, except conference and tour operator sectors who had less than 10 employees, used other tools to measure service quality. Most of the respondents from the larger companies did use other tools for measurement of service quality, except for attractions and accommodation.

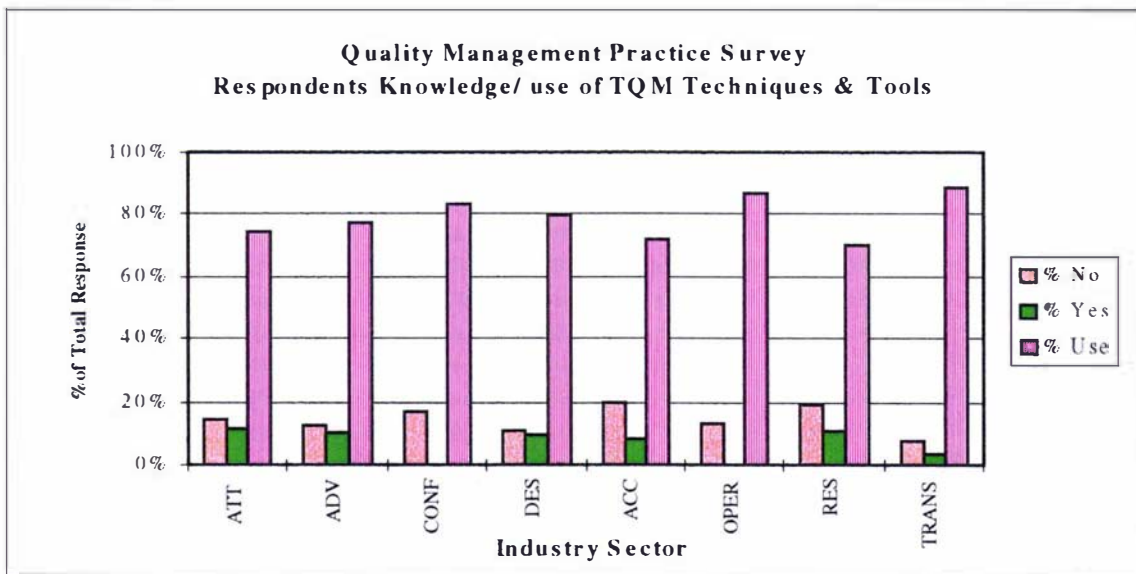
<sup>1</sup> Mystery Shopper refers to a form of research where companies hire outside research organisations to send people into service establishments and experience the service as if they were customers.

#### 4.5.8 Respondents who have heard of the SERVQUAL model for measuring service quality

The SERVQUAL model is not a well known tool and is not commonly used by the tourist industry. Only 4.7% of the total respondents had heard about the SERVQUAL model for measuring service quality and one respondent in the destination organisation sector used the SERVQUAL model informally for measuring the service quality.

#### 4.5.9 Knowledge and use of TQM techniques and tools

There was a very high percentage of the respondents (76%) who used one or more TQM tools and techniques in their companies. 8.6% of the respondents knew about TQM tools and techniques but were not using them. In the transport, conference centre and inbound operator sectors, there were more than 80% of the respondents using TQM tools and techniques (Figure 4-17).



**Figure 4-17. Knowledge/ Use of TQM Techniques and Tools**

Figure 4-18 shows that more than 70% of the respondents in the company, who had less than 50 employees had used the TQM tools. All respondents from the larger companies indicated that they had used some TQM tools.

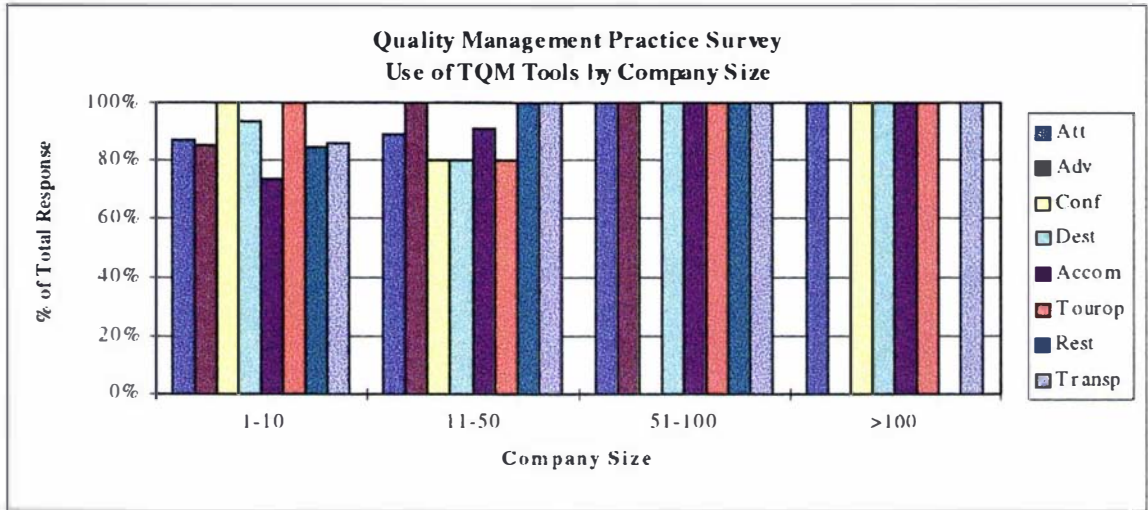
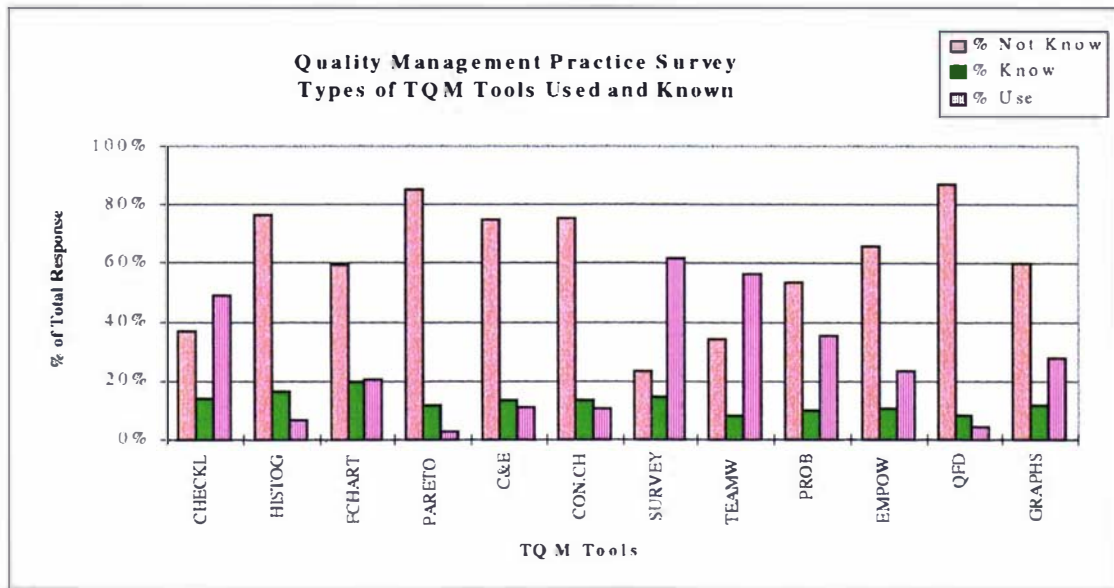


Figure 4-18. Use of TQM Tools by Company Size

**4.5.10 Types of TQM tools and techniques known and used by the respondents**

The most common TQM techniques and tools used by respondents from the tourist industry were customer surveys, customer feedback, checklists, graphs and teamwork. More than 50% of the respondents did not know about histograms, flow-charts, Pareto charts, cause and effect diagrams, control charts, empowerment and quality function deployment (Figure 4-19).

Team work, customer survey, problem solving, check sheets and graphs were the most popular tools used in the tourist attraction sector. The least popular tools used were quality function deployment, Pareto charts, histograms, cause and effect diagrams, empowerment and control charts.



**Figure 4-19. Type of TQM Techniques and Tools Used**

## 4.6 CONCLUSIONS

The survey of quality management practice in the New Zealand tourist industry achieved a high response rate of 49.2%. Ninety four percentage of the respondents were from small size companies of less than 50 employees.

From the results of the survey, the following conclusions can be made:

- There is a lack of awareness of Total Quality Management and quality management systems in the tourist industry.
- The majority of the companies in the New Zealand tourist industry had no formal quality system (79%). Only 20% of the respondents stated that they had a formal quality system in their company. For those who had no formal quality system in the company, 65% stated that they did not intend to introduce it to their company.
- The majority of respondents' companies that have formal quality systems were from a company of more than 50 employees except the adventure and accommodation sectors. There was a close relationship between company size and companies who have a formal quality system and those who use TQM for measuring service quality.
- There was a low percentage of respondents accredited to the ISO 9000. Some of the respondents suggested that the standard might not be suitable for the majority of small operators in the industry. They commented that this

could be due to high accreditation costs and the complicated requirements of the system. There is an opportunity for quality practitioners to look into the designing of a quality management system that is suitable for small operators in the tourist industry.

- TQM is used by the tourist industry to some extent. 64% of the companies had heard of TQM but only 15% claimed that they used TQM. This indicates that there could be potential for the tourist industry operators to improve their performance and competitiveness through the introduction of TQM.
- Only 15% used TQM for managing service quality. This may be due to a lack of understanding of TQM.
- The survey may have a response bias due to the lack of response from those who have no or limited knowledge of TQM and quality management practice. This was reflected in the response received from the restaurant sector.
- The results highlighted in the survey show that tourist industry operators have adopted some of the following schemes promoted by the New Zealand Tourism Board: KiwiHost, Visitor Information Network, the New Zealand Tourism Awards and QualMark.
- KiwiHost was the most popular programme in all sectors of the industry.
- There were a number of respondents who felt that quality management was not relevant to them, or there was no requirement for them to use TQM since their businesses had been successful without them. Surprisingly enough, some of those commented that they were practising “customer focus” and “meeting customer needs”. It was clear that they were using some of the TQM tools and techniques without realising this. This shows that the operators knew that they have to be customer focused and meet the customer needs to survive - which is the main philosophy of TQM. The operators could probably gain further benefits of TQM by undertaking training and by implementing the full TQM programme.
- Total Quality Management was known by most respondents in all sectors except restaurant sector but commonly used by the respondents from companies with more than 50 employees.
- Customer survey (37%) and customer feedback (27%) were the most common methods used for measuring service quality in the tourist attraction

sector. 29% of respondents used internal assessment. This was carried out using a formal in-house review or an informal self-assessment.

- In the tourist adventure sector, visitor surveys and customer response forms and in-house forums were the most popular methods used by the respondents' companies. The accommodation sector used a wide range of methods to measure service quality. The most common methods were customer surveys, guest response forms and self-assessment. In the transport sector, the same methods were used as in the tourist attraction sector. In addition, they used customer complaints, and the Civil Aviation audit to measure their service quality.
- SERVQUAL is not a well known tool in the companies in the tourist industry. Only 4.6% of the respondents had heard about SERVQUAL and 1.2% had used SERVQUAL to measure service quality.
- The most common TQM tools used by the respondents were customer surveys, customer feedback, checklists, graphs and teamwork.

In conclusion, this research project has provide primary information on the quality management practice of New Zealand industry which gives the research a better understanding of the current status of the industry. The survey results also help the research to identify area where further research are required to assist the industry to improve the service delivery. There would appear to be a lack of awareness and knowledge of TQM principles in the tourist industry. The industry may be able to gain similar benefits to those achieved by the manufacturing sector in the areas of efficiency, performance enhancement, and competitiveness by adopting the TQM philosophies, tools and techniques. Only 46% of the respondent's stated that they have tools to measure their service performance and the main tools used were customer surveys and customer feedback and internal assessment.

The research has identify that the there is need for a performance measuring tool in the tourist industry and a special quality management system for the small operators in the industry and to assist them to adopt modern management systems and tools for continuous improvement. This finding is the prime reason for focusing this research project in developing a tool of measuring service quality performance for the heritage attractions.

# 5.

## **The Purpose And Methodology Of The Research Into Measurement Of Service Quality**

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### **5.1. INTRODUCTION**

The results of the survey of quality management practice in the New Zealand tourist industry presented in Chapter 4 [Tan et al, 1996c] indicate that the understanding and awareness of quality management is low. Further, few tools exist for measuring service quality. In the tourist attraction sector, only 13% of respondents stated that they use TQM for managing service quality. The most common methods used by tourist operators for measuring service quality are customer surveys and customer feedback. The surveys used comment cards and customer feedback was mainly verbal without documentation and could not be quantified.

This research was the initiation of a comprehensive programme to develop systems and tools to improve the overall quality in the New Zealand tourist industry. Establishing a measuring tool for customer satisfaction was selected as the focus of this research. Museum and heritage was chosen because of the location and the Director of The Science Centre and Manwatu Museum was interested to understand their customers' needs and keen to commence a quality programme. Following on from this study the New Zealand Historic Places approached Massey University to undertake a survey for them.

This chapter outlines the research methodology used to develop a quantitative tool for measuring service quality based on the Parasuraman et al. [1990] SERVQUAL model. This tool was designed to measure the visitors' expectations and perceptions of service quality provided by a selection of New Zealand tourist attractions. The attractions studied were museums and heritage properties.

## **5.2. PURPOSE OF THE RESEARCH INTO THE MEASUREMENT OF SERVICE QUALITY**

The results of the quality management practice in the New Zealand tourist industry conducted in 1995 showed that there was a lack of awareness of quality management principles and TQM in the industry, and no suitable tool for the measurement of customer satisfaction was used universally. For this reason the main objective of this research was to develop a customer satisfaction measurement tool. The SERVQUAL model was chosen as the basis of this as it was the most universally-used tool for the measurement of service quality.

Two secondary objectives were also set for the research programme. The first was to identify the target market of the attractions and some of the customers' demographics which may affect their overall satisfaction with their visit to attraction. The second objective was to measure the availability of standards and procedures for staff who were responsible for delivery of the services. This last objective was identified because of the importance of the staff in providing a high quality service.

A tool was designed to help New Zealand tourist attractions to measure their service quality and to identify customers' needs. It measured the following:

### **a. Service Quality Performance**

- What levels of service quality do the visitors expect to find in terms of the variables identified by the focus group, ie. "*Visitors' Expectations*"?
- What did the visitors receive, ie. their "*Perception*" of the quality of service relative to their "*Expectation*"?
- Management and staff's knowledge of the availability of standards and procedures for service quality.

### **b. Demographics**

- Who are the customers of the tourist attraction?
- What are the reasons for visiting the tourist attraction?

The results obtained from this research could be used for the following purposes:

- Establishing the visitors' perception of service quality
- Identifying the market segment serviced by the tourist attraction

- Identifying the needs of the customers of tourist attractions
- Benchmarking for continuous improvement of service performance
- Identifying areas of concern (system and service delivery process)
- Identifying training needs and
- Strategic planning for future development programmes.

The tool is a quantitative measuring tool used for measuring the service performance of the institution as seen by the customers. A continuous improvement programme could be established and monitored by repeating the survey at regular intervals and assessing if there is a reduction in the critical negative gaps identified by the modified SERVQUAL methodology.

Altogether nine sites were selected to carry out the research as case studies for the development of the customer satisfaction measurement tool. The first case study was with The Science Centre and Manawatu Museum. This is a cultural centre located in Palmerston North providing historical displays of the Manawatu region and a science and technology display centre with both permanent and seasonal displays of various aspects of science and technology.

The second group consisted of properties of the New Zealand Historic Places Trust which represent specific aspects of New Zealand's historical development. Seven properties of the New Zealand Historic Places Trust were used as case studies for this research.

The third case study investigated the Queen Elizabeth II Army Memorial Museum. This museum is situated in Waiouru, on the main highway between Auckland and Wellington. It has displays of New Zealand's involvement in wars of military conflicts from the 1800's onwards. It is also a convenient stopping point on the journey from Auckland to Wellington with a well appointed cafeteria and toilets.

Further details of the sites of each of these case studies will be given in the chapters describing each case study and the results from the investigation at each of the above sites.

### 5.3. RESEARCH METHODOLOGY

The Science Centre and Manawatu Museum (referred to as The Science Centre from hereinafter) in Palmerston North was selected as a site for the first study because of its proximity to Massey University and as it is one of the main cultural attractions for the city. A project proposal for the research was submitted to the Director of The Science Centre which outlined the tool and the possible use of the survey information. The Director was interested in assessing The Science Centre's performance as perceived by visitors. This was followed by a presentation to The Science Centre management.

Content validity is the extent to which the survey measurement provides an adequate coverage of the topic under study. If the instrument contains a representative sample of the universe of the subject matter of interest, then content validity is good [Emory and Cooper, 1991].

Parasuraman et al. used focus groups to determine the service quality variables, then tested and refined the instrument. This research adopted a similar approach. Focus groups were used to generate ideas from management and staff on the service quality variables that applied to tourist attractions. Interactions among the group members helped to stimulate ideas on the management perception of what their customer's needs are, and the services provided by the museum to the public. The information gathered from the focus group meetings was used to identify the specific requirements of the institutions and to identify the services provided by the institution.

A list of questions was developed in advance to guide the focus group discussions. Transcripts of the focus group discussions were used to modify the survey questionnaire. The modified SERVQUAL questionnaires consisted of questions which covered the five service quality dimensions, namely, tangibles, reliability, responsiveness, assurance and empathy dimensions, and the unique services provided by the attractions. The final questionnaires were divided into two sets:

- **Management Survey Questionnaire:** The first questionnaire consisted of questions on *Expectation* and *Importance* as seen by the Museum management and the availability of service quality standards and documented procedures.

A management survey was carried out with the management and staff of the surveyed institutions on a voluntary basis. Staff and management were also asked to evaluate their perception of the availability of documented procedures and performance standards in each of the service quality dimensions.

- **Visitor Survey Questionnaire:** The second questionnaire consisted of questions on *Expectation* and *Perception* as seen by the visitors to the Museum. Two

additional parts were added to the modified SERVQUAL questionnaire for visitors to help management gather information on visitor demographics. These parts were, “*The Overall Impression*” and “*The Visitor Profile*” sections.

A seven point Likert scale was used by Parasuraman et al. [1990], with 1 being “*Strongly Disagree*” and 7 being “*Strongly Agree*”. There were two scales levels 3 and 5 with no scale identification. To ensure that each scale is identified, to reduce confusion, a Likert Scale of 1 to 5 was selected for this study to quantify the level of *Importance*, *Expectation* and *Perception*.

The respondents (management, staff and visitors) were asked to choose a number from 1 to 5 which best represented how they felt about the features, exhibits and services provided by the institution. If they felt that the question was not relevant to the institution, they were asked to choose “*N/A*”.

The completed questionnaire and information sheet were submitted to the Massey University Human Ethics Committee for approval. The committee advised the researcher to provide information to the participants on the purpose of the research and to assure the respondents that the individual survey results would be kept confidential. Modifications were made and approved by the Human Ethics Committee before the start of the survey (refer to Appendix B-1).

An information sheet was used to explain the purpose of the research and ensure confidentiality of the information given by the visitors (refer to Appendix-B.1, C.1 and D.1). When visitors gave their consent to participate in the survey, they were asked to fill in Part One of the “*Expectation*” section of the questionnaire before they looked around the attraction. The “*Perception*” section of the questionnaire was to be filled in after their visit. The completed questionnaire was collected by the staff before the visitors left. Completed questionnaires were sent to the researcher at Massey University on a weekly basis for analysis.

The target sample of visitors to the attractions was restricted to those above 15 years of age. This was because the design and the length of the questionnaire was not suitable for those below 15 years old. The survey was carried out using a random sampling of visitors to the attractions. Staff were trained to conduct the survey by the researcher.

The first survey of management and visitors was carried out at The Science Centre and Manawatu Museum in May 1995 [Tan, 1996a; Tan et al, 1996b]. The results indicated that there was a high correlation between the *Importance* and *Expectation* scores ( $R=0.891$ ), which means that there is a close match between the two factors. When the visitor identified the service quality dimension as “*Very Important*”, they were more

likely to have a high *Expectation* score from this dimensions. A high correlation of 0.953 was found between *Satisfaction* and *Perception* scores.

In the first survey, visitors were asked to indicate their level of *Satisfaction* with respect to each of the service quality variables. These results were correlated with the *Perception* score and *Satisfaction* score as defined in the SERVQUAL model. The SERVQUAL model assumes that the customers are satisfied if the *Perception* score is higher than the *Expectation* score. Otherwise the customer is said to be dissatisfied. The original researchers [Parasuraman et al, 1990] did not specifically measure customer satisfaction. The *Satisfaction* measure in this research was designed to find out if there was any relationship between *Satisfaction*, *Perception*, and *Service Quality*. This survey has established that when the visitors perceived the service quality as good, they also were satisfied with the service provided.

Data analysis and respondent's feedback from the first survey were used to refine the questionnaire. Comments made by the respondents regarding the design of the questionnaire were:

- *it is too long*
- *the questions are similar or asking the same thing twice*
- *the questions related to staff should be grouped together*

Changes made to the second survey questionnaire included deleting the *Importance* and *Satisfaction* section from the first questionnaire. Other changes made included deleting similar questions and grouping the staff questions together. Details of the changes are shown in the research methodology section of each case study.

There was an important lesson learned from the first and second survey at The Science Centre. At the initial stage of the survey, the Director was very interested in obtaining information about their organisation's performance as assessed by their customer. Some management staff were not very keen about the visitor survey because they perceived the role of the museum as conservation and preservation of artifacts and heritage objects which are important to the people of Manawatu region. The peripheral and supporting services provided by the museum such as, the services provided by the staff, the knowledge and attitude of the staff, the provision of toilets and cafe, indoor signs and outdoor signs, wheelchair access and car parking were not seen by the management of The Science Centre as a vital part of the museum service to the public. Commitment from the other management staff had a significant impact on the use of the research results to improve areas highlighted as not meeting the customers' needs.

Commitment and customer focus are two important factors necessary for the success of any improvement and quality management programme. The researcher recognised the weakness of the first surveys. The subsequent survey sites chosen for this research study were the New Zealand Historic Places Trust properties and the Queen Elizabeth II Army Memorial Museum. These two institutions were approached with a proposal and published results obtained from The Science Centre. Management of the two institutions were briefed with introduction to the research, the information that could be obtained from the survey, the possible use of this information, the methodology and time frame. Management and staff were also requested to participate in developing the questionnaires to meet their needs.

This approach to involve management and staff helped to ensure that they had a good understanding of their involvement, the type of information that they could obtain, and the benefits to be gained from the survey results. The results of the surveys were used by the institutions. The positive attitudes and recognition of the importance of customer satisfaction by the management of the two institutions led them to participate in this research.

#### 5.4. THE SAMPLE

It was known that the validity and reliability of the results could have been affected by the low response rate and that the sample size is important for factor analysis [Callan,1990]. The minimum samples size suggested by different statisticians varied from 100 to 200 samples [Guilford, 1956; Kline, 1994]. Table 5-1 listed the three survey sites and the sample size taken from each site.

**Table 5-1. Sample Size of Service Quality Surveys**

| Heritage Attractions                    | Survey Period                   | Visitor Sample Size | Management Sample Size |
|---|---------------------------------|---------------------|------------------------|
| The Science Centre                      | May 1995 and May 1996           | 400                 | 19                     |
| New Zealand Historic Places Trust       | October 1996, February-May 1997 | 1087                | 20                     |
| Queen Elizabeth II Army Memorial Museum | September- December 1997        | 454                 | 7                      |
| Total                                   |                                 | 1941                | 46                     |

The visitor sample sizes for the three case studies carried out in this research are more than 200, which meets the above sample size criteria for factor analysis and reliability of data analysis. A total of 1941 samples were taken from the three survey sites and 46

management samples were taken from the three survey sites were chosen to test the reliability and repeatability of the research tool.

#### **5.4.1 The Science Centre and Manawatu Museum**

A survey of management's view of the *Importance* of service quality, their perception of *Visitors' Expectation* and the knowledge of the availability of procedures and standards was carried out in May 1995 on a voluntary basis. Nineteen responses were received.

Two visitor surveys were conducted over two periods - May 1995 [Tan, 1996a; Tan et al, 1996b] and April 1996 [Tan, 1996b; Tan et al, 1996b,e and Appendix B]. The first survey questionnaire had four sections which included the *Importance*, *Expectation*, *Perception* and *Satisfaction* scores. Some changes were made after obtaining visitors' feedback. The second survey questionnaire used in this case study, two sections were deleted, these were the *Importance* and *Satisfaction* scores. A total of 424 visitors were surveyed. Four hundred useable samples were obtained from the two surveys (200 useable samples from each period) to ensure the reliability of the data analysis.

#### **5.4.2 New Zealand Historic Places Trust**

Seven properties were selected by the management of the New Zealand Historic Places Trust (referred to as the Trust from hereinafter) as the survey sites. These were: Kemp House, Pompallier House and Te Waimate Mission House in the Bay of Islands; two historic houses - Highwic and Alberton in Auckland, the Thames School of Mines in Thames and Fyffe House in Kaikoura. (A brief introduction to the selected properties is presented in Appendix C.4). The criteria for the selection were based on two aspects: firstly, there were staff in attendance to receive visitors; secondly, the strategic importance of the properties to the Trust.

A survey of management and staff's knowledge of the availability of procedures and standards was carried out in October 1995 on a voluntary basis. Twenty responses were received.

A pilot test of the completed questionnaires was conducted in October 1995 with the survey being carried out on a random sample of 50 visitors to the seven properties. The actual survey was carried out over a period of three months from February to May 1996 [Tan, 1997a; Tan et al, 1996d,f and Appendix C]. A total of 1087 samples were taken from the seven selected properties.

### 5.4.3 Queen Elizabeth II Army Memorial Museum

A survey of management and staff of the Queen Elizabeth II Army Memorial Museum (referred to as the QEII Museum from hereinafter) was carried out in September 1996 on a voluntary basis. Staff and management were also asked to evaluate their perception of the availability of procedures and performance standards in each of the service quality dimensions. Seven responses were received and this constituted a response rate of 20.5% from a total of thirty-four management and staff.

The visitor survey was carried out over a period of four months from September to December 1996 [Tan, 1997b and Appendix D]. Four hundred and fifty-four useable responses were obtained from the visitor survey.

## 5.5. GAP ANALYSIS OF DATA

Gap analysis was used in this research to measure the discrepancies between the management and staff's view of *Importance* and their *Visitors' Expectation*, and the differences between *Visitors' Perception* and *Expectation*. These are referred to by Parasuraman et al. [1990] as: "*Gap 1: Customers' Expectations - Management Perceptions Gap*" and most importantly, "*Gap 5: Customers Expectations - Customers Perceptions Gap*". The latter is the *Service Quality Gap* where service quality is determined by using the discrepancy between Perception and Expectation. This discrepancy is called the SERVQUAL score.

A positive *Expectation Gap* in the comparison of the management and the visitor's view of *Expectation* indicates that management have a higher *Expectation* or place more *Importance* on a particular service dimension than do the visitors. A positive *Service Quality Gap* in the *Visitor Perception* and *Expectation* means that the visitors' needs are being met.

A negative *Service Quality Gap* shows that the *Visitors' Expectations* are higher than their *Perception*, which means that their needs are not being met. This analysis identifies areas that management should investigate to improve the quality of services they provide to meet their customers' needs.

A *Weighted Service Quality Gap* method was developed in this research to determine the degree of importance of a particular *Service Quality Gap* as assessed by management and visitors. This was obtained by using the average *Service Quality Gap* multiplied by the *Expectation* score of each service quality variable. The *Weighted Service Gap* analysis has the advantage over the unweighted gap analysis in that a relatively large gap

may be identified in an area of low importance. On the other hand, a smaller gap in an area rated “*Very High*” in *Expectation* is probably more significant. Weighting emphasises gaps in the areas considered to be important. The overall analysis highlights problem areas and provides information about where improvements could be made.

The survey of management and staff was analysed separately to identify the level of management and staff’s understanding and knowledge of service quality standards and procedures in the organisation. This analysis can be used to identify areas where formal standards and procedures are lacking and where training is needed.

## **5.6. FACTOR ANALYSIS OF SERVICE QUALITY**

Parasuraman et al. [1990] used factor analysis from which they identified five service quality dimensions in their research in four different service companies as described in Chapter 3. The empirical research confirmed that each sector of the service industries has its unique features which appear to contribute to different groupings of the service quality dimensions.

Because of this inconsistency in factor structure for the measurement of service quality, an exploratory factor analysis was used in this research to determine the main service quality dimensions in the tourist attractions studied. Factor analysis helps to identify the groupings of service quality variables that are important to the tourist attractions studies, in this case the historic houses and museums.

Minitab, a statistical analysis software was used to conduct the factor analysis on the visitor surveys database which was stored using (DBase 5). This database stored the raw data from the survey questionnaires. The factor analysis was carried out using the *Weighted Service Quality Gap* data from the three case studies. Eigenvalues were used to assess the importance of each service quality variable and to assist in selecting the number of factors needed to account for the maximum portion of the variance represented in the original set of variables [Hair et al, 1992]. Principal component analysis model was used to identify significant factors using the Scree tests of the *Weighted Service Quality Gap* data.

After the factors were extracted through principal component analysis, they were rotated using orthogonal rotation (*VARIMAX*). The reason for using orthogonal rotation was to achieve a simpler and theoretically more meaningful factor solution. This would help to improve the interpretation of factors by reducing some of the ambiguities that appeared in the unrotated factor analysis. The data were then rotated using a number of factors

identified with factor loadings greater than 0.3 which were considered as significant [Hair et al, 1992; Kline, 1994].

Further analysis was carried out to find out the causal relationship between the service quality variables with the outcome [Hair et al, 1992] using structural equation modelling. A structured model emerges from the structural modelling analysis. A regression using goodness-of-fit measure was used to assess the casual relationship of the variables and the factor. This is presented in a casual diagram which was used in the structural model of dimensional of service quality for each case study.

In addition, correspondence analyses [Greenacre, 1993] were carried out for all three case studies to find relationships between the visitors' demographics and their assessment of service quality, by experience, ethnic groups and by gender. In the New Zealand Historic Places Trust case study, further analysis was carried out to find differences between the properties.

## 5.7. RELIABILITY OF THE DATA

A statistical significance test was used to examine whether a significant difference exists in the population means. In this research, a reliability test of the data was carried out using analysis of variance (referred to as ANOVA from hereinafter) to test for the significance of the differences among more than two sample means. This enabled the researcher to make inferences about whether our samples were drawn from populations having the same or different means for the service quality measurements.

Hypothesis testing was used to determine whether a difference existed in population and sample means. The null hypothesis is that the mean of the service quality variable scores for the samples are equal [Levin, 1987]. The ANOVA hypothesis is stated symbolically:

$$H_0 : \mu = \bar{X} \quad \text{or} \quad \mu - \bar{X} = 0$$

Where  $H_0$  is the null hypothesis if there is no difference between the population means and sample mean

$\mu$  is the population and  $\bar{X}$  is the sample mean

The alternative hypothesis is:

$$H_1 : \mu \neq \bar{X} \quad \text{or} \quad \mu - \bar{X} \neq 0$$

Where  $H_1$  is the alternative hypothesis if there is a difference between the population means and sample means.

If the null hypothesis is true, then any difference we observe in sample means is due to sampling error or other chance factors.

Conversely, if the null hypothesis is determined not likely to be true, then we can assume that the difference in sample means reflects a real difference in the population from which the samples were drawn.

Minitab was used to perform ANOVA of measured *Service Quality* data from the three case studies. TUKEY one-way ANOVA provided confidence intervals for all pair-wise differences between the means and the 95 or selected percent confidence level was used. If the confidence interval for the difference does not include zero, the alternative hypothesis, ie. the difference is not zero, is accepted. The null hypothesis of no difference between the means is rejected, if and only if, zero is not contained in the confidence interval for the difference.

## **5.8. LIMITATIONS OF THIS RESEARCH STRATEGY**

The interpretation of data requires caution as the sample data in each case was taken over a short period which varied from two to four months. Therefore, the sample may not be representative of the whole population of visitors to the attractions. For example, there could be seasonal variation in the type of visitors to the museum. To reduce errors from the source, in particular, one survey was carried out in winter and the other in summer.

Due to time constraints and the design of the questionnaire, it is not suitable for visitors who were under 15 years of age and tour groups. Therefore, this survey did not include these two groups.

The focus of this research was on the measurement of overall service quality performance in the selected tourist attractions as seen by the visitors. It is not an evaluation of a specific display or exhibit, or the education services provided by the museums to the school groups and organised groups. The evaluation of these activities requires specially designed measurement tools or further modification of the questionnaire used in this research. The results of the three selected sites are presented as case studies in Chapter 6, 7 and 8.

These results cannot be used for an absolute comparison between other museums and historic places either in New Zealand and overseas, because the questionnaire has been adapted to meet the specific needs of the attractions studied. They do, however, provide a relative indication of potential problem areas as well as a relative performance indicator

for the major service dimensions. The results can be used as a tool for measuring the service performance of the institution. A continuous improvement programme could be established and monitored by repeating the survey at regular intervals and assessing if there is a reduction in the critical negative gaps, or whether there are changes in the visitors assessment of their expectations.

In conclusion it was decided to proceed with the SERVQUAL approach and apply it to The Science Centre, the Trust and the QEII Museum to provide a quantitative measure of customer satisfaction which could be utilised in the future by a wide range of small business, tour and tourist attraction operators.



# 6.

## Case Study 1

# The Science Centre And Manawatu Museum

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### 6.1 INTRODUCTION

The first study undertaken was The Science Centre and Manawatu Museum Te Whare Pupuri Taonga o Manawatu (referred to The Science Centre from hereinafter). The Science Centre is a combination of the 22 year old Manawatu Museum and The Science Centre, first opened in June 1992 [Schwartz, 1995].

This chapter presents the results of the visitor study carried out using the modified SERVQUAL model to measure the visitors' expectations and perceptions of service quality provided by The Science Centre in Palmerston North, New Zealand.

### 6.2 THE SCIENCE CENTRE AND MANAWATU MUSEUM

The Science Centre is unique to Palmerston North and it plays an important role in attracting visitors to the city and the region. Therefore, it was considered important to identify key visitors' needs and their expectations to enable The Science Centre's management to improve the services provided to visitors.

The institution provides services in the areas of education, regional heritage, preservation, research, and facilities to help meet the cultural, recreational and educational needs of the community.

The purpose of The Science Centre is to [Schwartz, 1995]:

- *enrich the cultural fabric of the community by stimulating public interest and appreciation of natural and cultural heritage, science and technology, and*
- *increase awareness of the influence that these areas of human endeavour have on people's lives now and in the future.*

The institution is unique in that it is [Schwartz, 1995]:

- *the only institution in New Zealand that joins an interactive science centre and regional museum equally in one purpose-designed building*
- *the only institution of its kind in New Zealand with substantial financial and administrative support from its City Council.*

Because of financial pressures within the Palmerston North City Council and increasing demands for accountability from institutions funded by the City Council, the Director of The Science Centre was looking for measures which could indicate the degree of visitor satisfaction with The Science Centre.

Accordingly, The Science Centre was chosen as a test site for the development of the SERVQUAL tool.

### **6.3 SURVEY IMPLEMENTATION**

A project proposal was submitted to the management and staff of The Science Centre. This was followed by a project presentation on research methodology during December 1994. The Science Centre and Manawatu Museum Trust Board approved the research project with one provision in January 1995. They stated that the research methodology must be approved by an appropriate ethics committee which reviews such research.

A series of meetings were held with the top management to discuss the type of information which would be useful to the institution. Some modifications of the questionnaire was made by changing the wording of the original SERVQUAL questionnaire [Parasuraman et al, 1990] to meet the institution's requirements.

A focus group meeting of staff and management was then held to identify the needs of the institution based on the modified questionnaire. The ideas generated from the focus group were analysed and counter-checked with the modified questionnaire to ensure that the survey would provide information that met the management's requirements. The final questionnaire was submitted to the Massey University Ethics Committee for review.

Approval from the Ethics Committee was granted after minor modifications to the wording of the Visitor Information Sheet were made (refer to Appendix B.1).

The modified SERVQUAL questionnaires consisted of 23 questions which covered the five service quality dimensions (refer to Table 6-1). In addition, as with all sites, a demographic survey was added.

**Table 6-1. Visitor Survey Questions Relating to Service Quality**

| Service Quality | Service Quality Variables |  |
|-----------------|---------------------------|--|
|                 | No                        | Features, Exhibits and Services  |
| Tangible        | 1                         | The physical appearance of the facility                                      |
|                 | 2                         | The layout and information level of the exhibitions                          |
|                 | 3                         | The exhibition themes and content  |
|                 | 4                         | The appearance of the staff  |
| Reliability     | 5                         | The information provided about the facility                                  |
|                 | 6                         | The provision of toilets and parenting facilities                            |
|                 | 7                         | The services provided by the cafe and shop                                   |
|                 | 8                         | The provision of the promised service (public programmes) by the staff       |
|                 | 9                         | The information provided by staff is accurate                                |
| Responsiveness  | 10                        | Visitors are informed about when the services will be performed              |
|                 | 11                        | The staff are willing to help visitors                                       |
|                 | 12                        | Staff respond to visitor needs as quickly as possible                        |
|                 | 13                        | Staff inspire trust and confidence in visitors                               |
| Assurance       | 14                        | Visitors feel comfortable during the visit                                   |
|                 | 15                        | Staff are friendly, courteous and polite to visitors                         |
|                 | 16                        | Staff have the knowledge to respond to visitors' requests                    |
| Empathy         | 17                        | Opening hours are convenient   |
|                 | 18                        | The organisation has the visitor's best interests at heart                   |
|                 | 19                        | Staff understand the needs of visitors                                       |
|                 | 20                        | There is easy access for visitors with wheelchairs, prams and young children |
|                 | 21                        | Signs in the building make it easy to find your way around                   |
|                 | 22                        | Outdoor signs make it easy to locate the building                            |
|                 | 23                        | There is adequate car parking for visitors                                   |

The first survey of visitors to The Science Centre was carried out in May 1995 [Tan, 1996a; Tan et al, 1996a]. The survey questionnaire for the visitors had four columns which measured the visitors' response to *Importance* and *Expectation* of service quality before their visit; and measured their *Perception and Satisfaction* after their visit. The *Satisfaction* measure was designed to find a relationship between the *Satisfaction*, *Perception*, and *Service Quality*.

A survey of management and staff of The Science Centre was carried out during the first survey on a voluntary basis. Nineteen responses were received. From the visitor survey, two hundred usable samples were taken using the interview survey method.

**Table 6-2. Service Quality Standards and Procedures**

| Std | Service Quality Standards   |
|-----|---|
| 1   | The appearance of the physical facilities, exhibitions, personnel, and communication materials    |
| 2   | The ability to perform the promised service reliably and accurately                               |
| 3   | The willingness of the staff to help visitors and provide prompt service                          |
| 4   | The knowledge and courtesy of the staff and their ability to convey trust and confidence          |
| 5   | The caring, individualised attention The Science Centre and Manawatu Museum provides its visitors |

The visitors were approached as they came into The Science Centre. When the visitor agreed to take part the survey, the researcher gave him/her the first part of the questionnaire: the *Importance and Expectation* section of the survey form to fill in, and then gave them the second part: the *Perception and Satisfaction* section, the *Overall Impression* and *Visitor Profile* to take with them and fill in after they had completed their visit to The Science Centre. The questionnaire was collected before the respondents left The Science Centre.

The results of the first survey indicated that there was a high correlation between *Importance* and *Expectation* ( $R=0.891$ ) (refer to Table 6-3). When the visitor identified the service quality variable as “*Very Important*”, they were more likely to have a higher *Expectation* from this variable. A high correlation of  $R=0.953$  is shown between *Satisfaction* and *Perception*. This survey has established that when visitors perceived the service quality as good they were satisfied with the service provided.

**Table 6-3. Correlation Between Importance, Expectation, Satisfaction, Perception and Service Quality**

|                 | Importance | Expectation | Satisfaction | Perception | Service Quality |
|-----------------|------------|-------------|--------------|------------|-----------------|
| Importance      | 1.000      |             |              |            |                 |
| Expectation     | 0.891      | 1.000       |              |            |                 |
| Satisfaction    | 0.344      | 0.493       | 1.000        |            |                 |
| Perception      | 0.495      | 0.610       | 0.953        | 1.000      |                 |
| Service Quality | -0.445     | -0.410      | 0.514        | 0.427      | 1.000           |

The respondents comments regarding the first survey questionnaire were:

- *it is too long*
- *too many repetitions*
- *the staff related questions seems to appear at different places - very confusing.*

Based on the first survey results, the second visitor survey questionnaire for 1996 was modified. Since high correlations were found between *Importance* and *Expectation*, the *Importance* column was deleted. Since *Perception* and *Satisfaction* were found to be

highly correlated (refer to Table 6-3), the *Satisfaction* column was deleted [Tan et al, 1996a]. The length of service quality questionnaire was reduced by 50% after the deletion of two columns. No changes were made in the service quality variables, the “*Overall Impression*” and the “*Visitor Profile*”.

The improved questionnaire which measured the *Visitors’ Expectation* and *Perception* was used for a second survey which was carried out during the period of 13-28 April 1996. Two hundred usable samples were taken using the same approach.

The survey of management and staff was not repeated after the first survey. The combination of the first survey and the second survey was used to test the consistency of the survey results and the reliability of the tool.

The visitor surveys were carried out on a random sample of visitors. The sample size of 424 visitors was taken over two periods - May 1995 and April 1996. A total of four hundred useable samples were obtained from the two surveys to ensure the reliability of the data analysis.

## 6.4 THE RESULTS OF THE VISITOR SURVEY

As discussed in Chapter 5, gap analysis was used to measure the discrepancies between management’s and visitors’ view of *Importance* and *Expectation*, and the differences between the visitors’ *Perception* and *Expectation*. The gap analysis was carried out using the results collected from the 1995 and 1996 visitor surveys. To evaluate the consistency and repeatability of the survey methodology and to monitor the changes for the two periods, a comparison of the results from the two surveys was made.

The data for the gap analysis of the *Importance* of service quality was restricted to data collected in the 1995 visitor survey. The two reasons being:

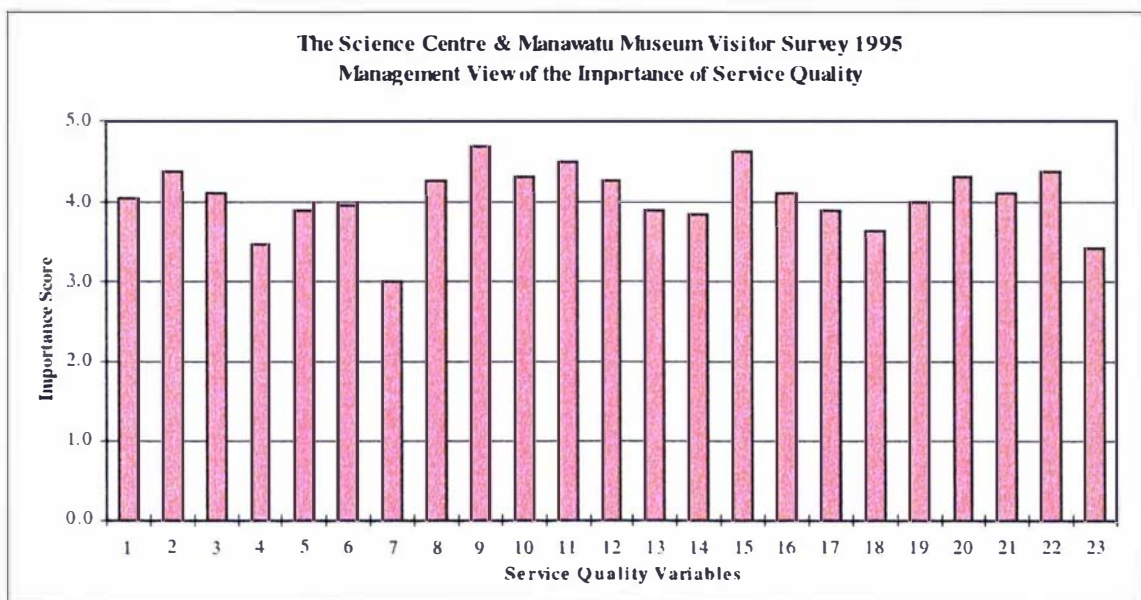
1. The management survey was carried out in 1995 and was not repeated in 1996, because there was no evidence that management opinions had changed in the intervening period. It was considered unlikely that a second survey would have identified any change and there was some resistance to carrying out the exercise again for that reason by the staff and management.
2. The visitors’ view of *Importance* was measured in 1995. The *Importance* section in the visitor survey questionnaire was deleted in the 1996 survey because of the high correlation between the *Importance* and *Expectation* scores found in the previous survey.

The data for the gap analysis of *Expectation* and *Service Quality* was a combination of the two surveys. A positive *Expectation Gap* in the first instance indicated that the visitors had higher *Expectation* or put more importance on particular service factors than The Science Centre management and staff. In the second instance, positive gaps in *Visitors' Perception* and *Expectation* mean that visitors' needs were being met and exceeded.

The negative *Service Quality Gaps* show that the *Visitors' Expectations* are higher than their *Perception*, which meant that their needs were not met. These negative *Service Quality Gaps* identified areas that could be investigated to improve the quality of services provided to their customer to meet the visitor needs.

#### 6.4.1 The management and staff's view of the importance of service quality

The 1995 survey results [Tan et al, 1996a] showed that, the management and staff of The Science Centre had a good understanding of the visitors' view with respect to the *Importance* of service quality in every area. Management and staff placed high *Importance* on the tangible, responsiveness and empathy dimensions (refer to Figure 6-1 and Appendix B.3, Table 1).



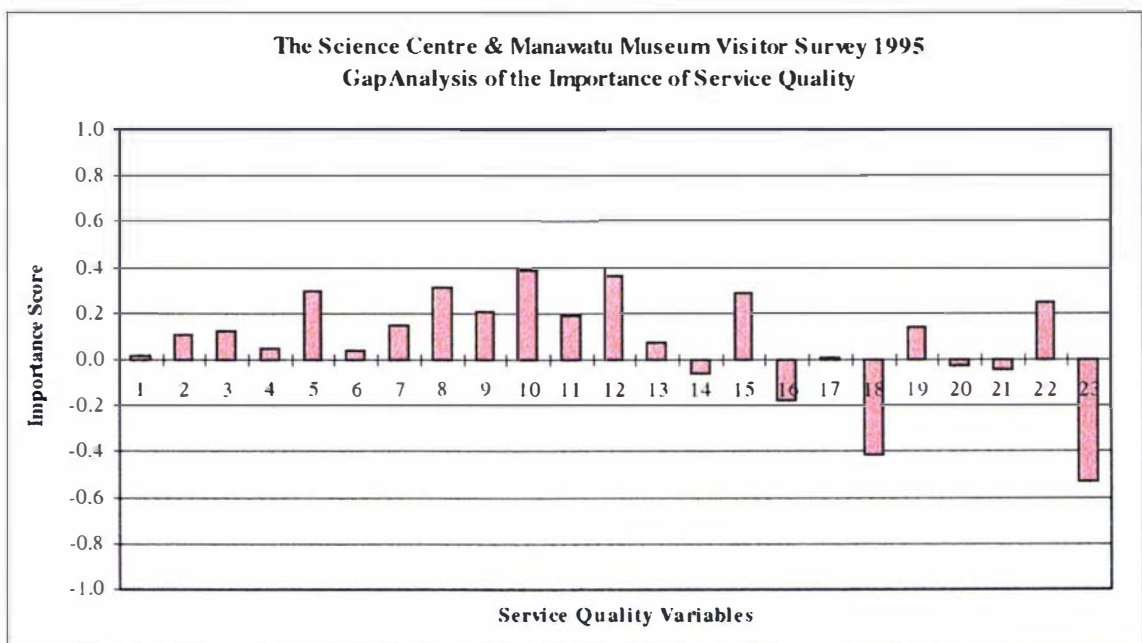
**Figure 6-1. Management and Staff's View of the Importance of Service Quality**

"The service provided by café and shop" (SQ7) was not seen by management and staff as an important service to the visitors. This was because the café and shop were not considered as part of The Science Centre and were leased out to a private caterer. They

were not managed by The Science Centre. The visitors, however, evaluated the cafe as part of the service provided by the institution.

The difference between the management and staff, and the visitors' view of the *Importance* of service quality is shown in Figure 6-2. The gaps were very small for all five dimensions. Six negative *Importance Gaps* were:

- *Visitors feel comfortable during the visit (SQ14) -0.06*
- *Staff have the knowledge to respond to visitors' requests (SQ16) -0.17*
- *The organisation has the visitor's best interests at heart (SQ18) -0.41*
- *There is easy access for visitors with wheelchairs, prams and young children (SQ20) -0.02*
- *Signs in the building make it easy to find your way around (SQ21) -0.04*
- *There is adequate car parking for visitors (SQ23) -0.53*



**Figure 6-2. Gap Analysis of the Importance of Service Quality**

The negative *Importance* gaps indicated that management and staff placed lower *Importance* on these areas. This would seem to be an important result which is generally confirmed by later survey. Visitors evaluated the total service and expect the supporting facilities to be of equally high standard as the direct services provided by the institution. The management and staff considered the supporting services as peripheral to the general activities of the museum. The visitors, however, felt that these services do contribute to their overall experience in visiting the museum. Therefore, their perception of the quality of the service is just as likely to be conditioned by aspects such as plenty of parking,

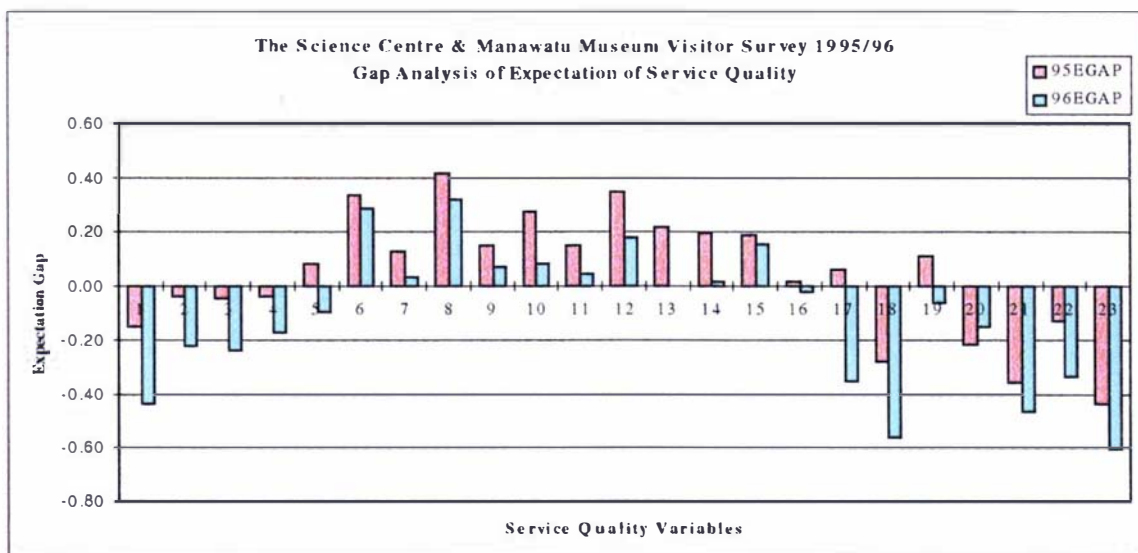
good service in the cafeteria, clear and easy to interpret signs both inside and outside the museum.

In many cases, it may be difficult to make major changes in these supporting services. For example, the provision of extra car parking for a museum in a central city can be difficult. Nevertheless, these aspects should be considered by planners wishing to establish or improve a public facility such as a museum.

### 6.4.2 Gap analysis of the expectation of service quality

The data obtained from the survey of management and staff in 1995 was used for the analysis of the *Expectation* gap. The *Expectation* gap is the difference between the management and staff's view of visitors' *Expectations* and actual visitor's *Expectation* of service quality [Tan et al, 1996a] (refer to Figure 6-3 and Appendix B.3, Table 2).

The overall results of this section showed that management had a good understanding of the visitors' expectations. The average management *Expectation* score varied from a low of 3.45 on "cafe and shop services" (SQ7) to a high of 4.23 on "The staff are friendly, courteous and polite to visitors" (SQ15).



**Figure 6-3. Gap Analysis of the Expectation of Service Quality**

The variations between the management and visitors' view of *Expectations* were small (refer to Figure 6-3). Management and staff in general had higher *Expectations* scores on staff related performance, information provided to the visitors and the environment (SQ8 to SQ16) when compared with the visitors' *Expectation* scores.

Both visitor surveys [Tan, 1996a,b; Tan et al, 1996a,b,c] showed that visitors had higher *Expectation* for service quality relating to tangible variables (SQ1 to SQ4) and empathy variables (SQ18 to SQ23).

The highest negative *Expectation Gaps* which appeared in the 1995 visitor survey were in the following areas:

- *The physical appearance of the facility* (SQ1) -0.15
- *The layout and information level of the exhibitions* (SQ2) -0.04
- *The exhibition themes and content* (SQ3) -0.04
- *The appearance of the staff* (SQ4) -0.05
- *The organisation has the visitor's best interest at heart* (SQ18) -0.56
- *There is easy access for visitors with wheelchairs, prams and young children* (SQ20) -0.22
- *Signs in the building make it easy to find your way around* (SQ21) -0.36
- *Outdoor signs make it easy to locate the building* (SQ22) -0.13 and
- *There is adequate car parking for visitors* (SQ23) -0.43

These can be compared with the second survey results carried out in April 1996 where visitors had higher *Expectation* in the following areas:

- *The physical appearance of the facility* (SQ1) -0.44
- *The layout and information level of the exhibitions* (SQ2) -0.23
- *The exhibition themes and content* (SQ3) -0.24
- *The appearance of the staff* (SQ4) -0.17
- *The information provided about the facility* (SQ5) -0.09
- *Staff have the knowledge to respond to visitors' requests* (SQ16) -0.02
- *Opening hours are convenient* (SQ17) -0.35
- *The organisation has the visitor's best interest at heart* (SQ18) -0.56
- *Staff understand the needs of visitors* (SQ19) -0.06
- *There is easy access for visitors with wheelchairs, prams and young children* (SQ20) -0.15
- *Signs in the building make it easy to find your way around* (SQ21) -0.46

- *Outdoor signs make it easy to locate the building (SQ22) -0.33*
- *There is adequate car parking for visitors (SQ23) -0.60*

The 1996 survey results showed a higher negative *Expectation Gaps* score and there were three additional gaps which were not shown in the 1995 survey results. These were:

- *The information provided about the facility (SQ5)*
- *Opening hours are convenient (SQ17)*
- *Staff understand the needs of visitors (SQ19)*

In summary, both surveys showed that there were common *Expectation Gaps* in the following areas: tangibles dimension such as the physical appearance, layout and information, themes and content of exhibitions, the empathy dimension such as opening hours, organisation has visitors' best interest, access for disable people, indoor and outdoor signs and car parking. The results shows a consistency in the *Expectation Gap* where visitors had a higher *Expectation* on the tangible and empathy dimensions. This was reflected in both surveys.

The Science Centre is located in the centre of the city. There is limited free car parking for the visitors. There are, however, City Council car parks which are not free. In these surveys, the results identified service quality relating to signs, car parking and access for wheelchairs and prams are areas where visitors have higher expectation and improvement of service quality could be made.

### 6.4.3 Gap analysis of service quality

The gaps between *Perception* and *Expectation* in the visitors survey were very small. They varied from "0.38" to "-0.22" (refer to Figure 6-4, Appendix B.3 and Tables 3 and 4). A positive score signified that the service quality was meeting and exceeding the expectation. A negative score meant that the service quality was not meeting the expectation of visitors.

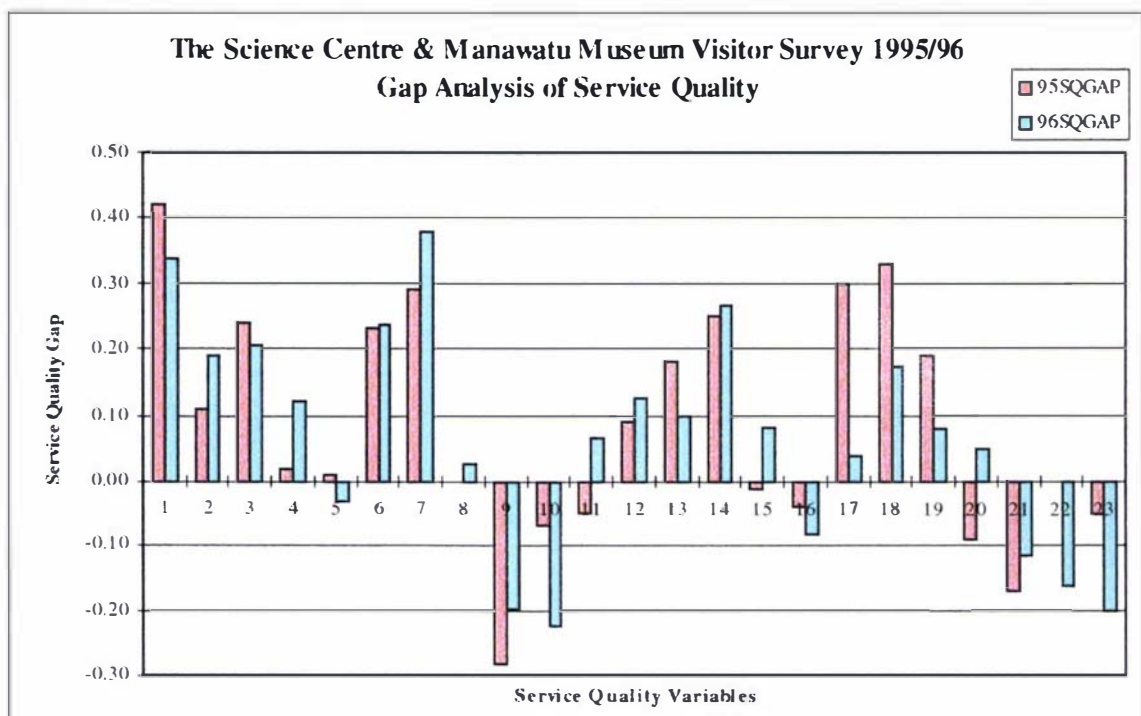
The *Service Quality Gaps* for each of the variables for the 1995 and 1996 visitor surveys were similar (Figure 6-4). The gap analysis of visitors' *Perceptions* and *Expectations* in Figure 6-4 showed that all visitors' *Expectations* on tangibles and reliability were being met and exceeded. In the 1995 survey, according to the visitors' view, the highest positive *Service Quality Gaps* identified were:

- *The physical appearance of the facility (SQ1) 0.42*

- *Opening hours are convenient* (SQ17) 0.30
- *The organisation has the visitor's best interests at heart* (SQ18) 0.33

Two positive *Service Quality Gaps* that appeared in 1995 did not appear to be significant in the 1996 survey. In the 1996 survey, the highest positive *Service Quality Gaps* identified were:

- *The physical appearance of the facility* (SQ1) 0.34
- *The provision of toilets and parenting facilities* (SQ6) 0.24
- *The services provided by the cafe and shop* (SQ7) 0.38



**Figure 6-4. Gap Analysis of Service Quality**

The negative *Service Quality Gaps* were small and varied from -0.05 to -0.28 in the 1995 survey and from -0.03 to -0.22 in the 1996 survey (refer to Figure 6-4, Appendix B.3. and Tables 3 and 4). These negative *Service Quality Gaps* indicated the areas that visitors felt that their expectation were not met.

In 1995, the major negative *Service Quality Gaps* from the visitors' view point were:

1. *The information provided by staff is accurate* (SQ9) -0.28
2. *Visitors are informed about when the services will be performed* (SQ10) -0.07
3. *The staff are willing to help visitors* (SQ11) -0.05

4. *Staff are friendly, courteous and polite to visitors (SQ15) -0.01*
5. *Staff have the knowledge to respond to visitors' requests (SQ16) -0.04*
6. *There is easy access for visitors with wheelchairs, prams and young children (SQ20) -0.09*
7. *Outdoor signs make it easy to locate the building (SQ21) -0.17 and*
8. *There is adequate car parking for visitors (SQ23) -0.05*

In the 1996 survey, the visitors' view of negative *Service Quality Gaps* were:

1. *The information provided about the facility (SQ5) -0.03*
2. *The information provided by staff is accurate (SQ9) -0.20*
3. *Visitors are informed about when the services will be performed (SQ10) -0.22*
4. *Staff have the knowledge to respond to visitors' requests (SQ16) -0.08*
5. *Signs in the building make it easy to find your way around (SQ21) -0.12*
6. *Outdoor signs make it easy to locate the building (SQ22) -0.16 and*
7. *There is adequate car parking for visitors (SQ23) -0.20*

This result was very similar to the first survey carried out in May 1995 [Tan et al, 1996a]. There was consistency in the three main problem areas highlighted in these surveys. These related to the information provided to visitors, the knowledge of staff, indoor signs and car parking. The exception was wheelchair access and outdoor signs; these did not appear in the 1996 survey. Car parking had a -0.20 *Service Quality Gap* in 1995. However, the gap was not prominent in the 1995 survey.

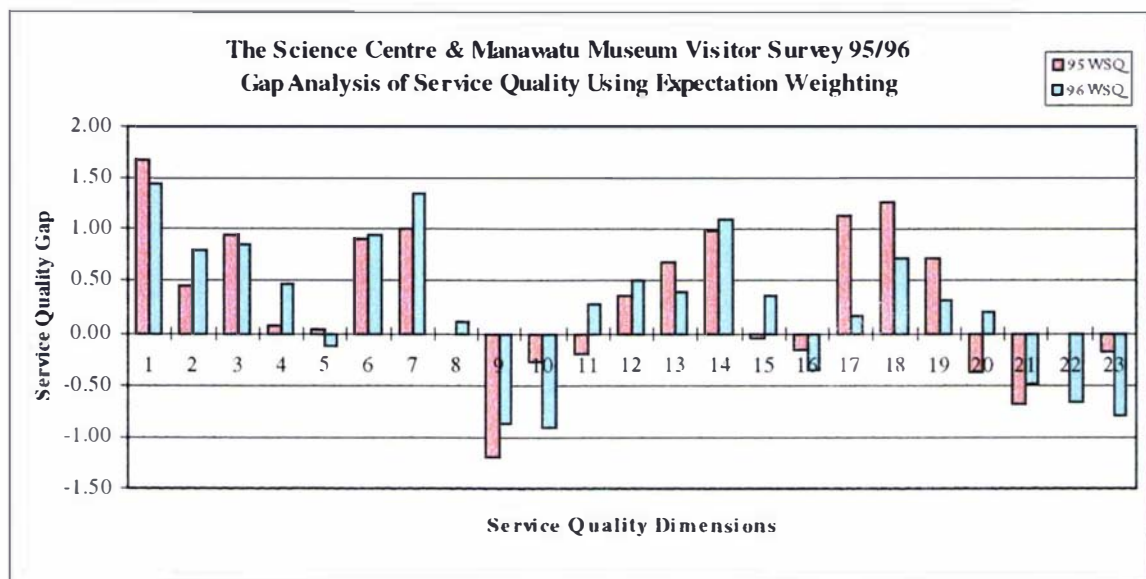
#### **6.4.4 Gap analysis of service quality using expectation weighting**

A *Weighted Service Quality Gap* method was used to determine the degree of importance of a particular *Service Quality Gap* as assessed by management and visitors. The *Weighted Service Quality Gap* analysis has the advantage that a relatively large gap may be identified in an area of low importance. On the other hand, a smaller gap in an area rated "High" in *Expectation* is probably more significant. Therefore, to highlight the gaps in the areas of greater importance, a *Weighted Service Quality Gap* analysis was used. The average *Service Quality Gap* was multiplied by the average *Expectation* weighting in each dimension as shown in Table 6-4.

There is relatively little difference between the 1995 and 1996 survey [Tan, 1996a,b] as shown in Table 6-4 except for the opening hours (SQ17). Therefore, there appeared to

be very little change in the visitors' evaluation of service quality in the two surveys. As far as the researcher is aware, the management and staff of The Science Centre did not act on the results of the two surveys within the intervening period. This gives the researcher reasonable confidence in the consistency and the reliability of the measuring methodology.

Figure 6-5 shows that there was a consistency in the *Weighted Service Quality Gaps* during the two periods. The positive *Weighted Service Quality Gaps* were in the tangible dimensions (SQ1 to SQ4), reliability dimensions (SQ5 to SQ8), some responsiveness dimensions (SQ11 to SQ13) and assurance dimensions (SQ14 to SQ15).



**Figure 6-5. Gap Analysis of Service Quality Using Expectation Weighting**

The average negative *Weighted Service Quality Gaps* over the two years are shown in Table 6-4 and Figure 6-5:

- **Information** - “The information provided about the facility” (SQ5) -0.04; “The information provided by staff is accurate” (SQ9) -1.03; and “Visitors are informed about when the services will be performed” (SQ10) -0.58
- **Reliability** - “Staff have the knowledge to respond to visitors’ requests” (SQ16) -0.26
- **Access and Signs** - “There is easy access for visitors with wheelchairs, prams and young children” (SQ20) -0.09; “Signs in the building make it easy to find your way around” (SQ21) -0.58; and “Outdoor signs make it easy to locate the building” (SQ22) -0.33
- **Car Parking** - “There is adequate car parking for visitors” (SQ23) -0.49

Two factors appeared in the 1995 survey as negative *Weighted Service Quality Gaps* but appeared in the 1996 survey as positive *Weighted Service Quality Gaps*. They related to the willingness of staff to help visitors and wheelchair access.

Two new negative *Weighted Service Quality Gaps* appeared in the 1996 survey. They were information provided about the facility and outdoor signs.

**Table 6-4. Gap Analysis of Service Quality Gap Using Expectation Weighting**

| Service Quality | SQ | Service Quality Dimensions   | Service Quality Gap Using Expectation Weighting |       |       |
|-----------------|----|--|---|-------|-------|
|                 | No |  | Features, Exhibits and Services                 | 1995  | 1996  |
| Tangible        | 1  | The physical appearance of the facility                                      | 1.68  | 1.44  | 1.56  |
|                 | 2  | The layout and information level of the exhibitions                          | 0.44  | 0.80  | 0.62  |
|                 | 3  | The exhibition themes and content  | 0.95  | 0.86  | 0.90  |
|                 | 4  | The appearance of the staff  | 0.07  | 0.47  | 0.27  |
| Reliability     | 5  | The information provided about the facility                                  | 0.04  | -0.11 | -0.04 |
|                 | 6  | The provision of toilets and parenting facilities                            | 0.92  | 0.95  | 0.93  |
|                 | 7  | The services provided by the cafe and shop                                   | 1.00  | 1.34  | 1.17  |
|                 | 8  | The provision of the promised service by the staff                           | 0.00  | 0.11  | 0.06  |
|                 | 9  | The information provided by staff is accurate                                | -1.20   | -0.86 | -1.03 |
|                 | 10 | Visitors are informed about when the services will be performed              | -0.27   | -0.90 | -0.58 |
| Responsiveness  | 11 | The staff are willing to help visitors                                       | -0.21   | 0.28  | 0.04  |
|                 | 12 | Staff respond to visitor needs as quickly as possible                        | 0.35  | 0.51  | 0.43  |
|                 | 13 | Staff inspire trust and confidence in visitors                               | 0.67  | 0.39  | 0.53  |
| Assurance       | 14 | Visitors feel comfortable during the visit                                   | 0.99  | 1.10  | 1.04  |
|                 | 15 | Staff are friendly, courteous and polite to visitors                         | -0.04   | 0.35  | 0.16  |
|                 | 16 | Staff have the knowledge to respond to visitors' requests                    | -0.16   | -0.35 | -0.26 |
| Empathy         | 17 | Opening hours are convenient   | 1.13  | 0.16  | 0.65  |
|                 | 18 | The organisation has the visitor's best interests at heart                   | 1.27  | 0.71  | 0.99  |
|                 | 19 | Staff understand the needs of visitors                                       | 0.72  | 0.31  | 0.51  |
|                 | 20 | There is easy access for visitors with wheelchairs, prams and young children | -0.38   | 0.20  | -0.09 |
|                 | 21 | Signs in the building make it easy to find your way around                   | -0.69   | -0.48 | -0.58 |
|                 | 22 | Outdoor signs make it easy to locate the building                            | 0.00  | -0.65 | -0.33 |
|                 | 23 | There is adequate car parking for visitors                                   | -0.19   | -0.79 | -0.49 |

The three highest negative gaps of service quality variables found in 1995 were in the areas of signs, information and access and reliability variables.

These were supported by the comments made by the respondents. The comments relating to car parking were:

- *The parking facilities are not the best*
- *More free car parking during week days*

Comments relating to signs were:

- *The location was difficult to find from the city centre - including the City Council*
- *Directions to the Science Centre must be improved*
- *Don't hide No Entry sign behind displays of balloons*
- *We would like a map showing what's on and where with directions*
- *Great display for enquiring minds, but confusing layout*
- *More obvious direction of what and next, where to go*

Comments relating to staff were:

- *There could have been more staff around to help, and answer our questions*
- *We need a wee bit more explanation on exhibitions*
- *Occasionally there are needs to have more supervisors in Kids Own, parents should control their own kids*

For the high negative service quality gaps, the possible reasons are:

- Lack of training for voluntary staff
- Lack of standards, instructions and information on service quality for the voluntary staff
- Insufficient signs throughout the building
- Inadequate access for visitors with wheelchairs, prams and young children

The five negative *Weighted Service Quality Gaps* appeared in both surveys. This indicated that this tool does provide consistent results and the data collected from the survey has identified areas where visitors' needs were not being met, such as access, signs, and information from the staff.

## 6.5 COMPARISON OF VISITORS' SATISFACTION AND PERCEPTION OF SERVICE QUALITY

The assumptions made by most of the researchers on the relationship between customers satisfaction and service quality were: *Satisfaction* is measured by using the difference between the customer's *Perceptions* and *Expectations*. The customer is satisfied if the service quality score is positive and dissatisfied when the service quality score is negative. There was, however, little evidence in the literature to show that the two attributes are necessarily related. This survey introduced *Satisfaction* as a measure into the questionnaire, with the objective of determining if there is a relationship between the *Satisfaction*, *Perceptions*, and the *Service Quality Gaps*.

**Table 6-5. Comparison of Visitors' Perception of and Satisfaction with Service Quality**

| SQ | Visitor Satisfaction and Perception Gap |            |            | t-Test on S and P 99% CI |                  |
|----|---|------------|------------|--------------------------|------------------|
|    | Satisfaction                            | Perception | Difference | t-Two Tail               | df>120, CV=2.576 |
| 1  | 4.43                                    | 4.41       | 0.02       | 0.34                     | -2.24            |
| 2  | 4.21                                    | 4.15       | 0.06       | 0.84                     | -1.74            |
| 3  | 4.28                                    | 4.18       | 0.10       | 1.49                     | -1.09            |
| 4  | 3.86                                    | 3.74       | 0.12       | 1.65                     | -0.93            |
| 5  | 3.73                                    | 3.66       | 0.07       | 0.85                     | -1.73            |
| 6  | 4.23                                    | 4.21       | 0.02       | 0.25                     | -2.33            |
| 7  | 3.92                                    | 3.74       | 0.18       | 2.12                     | -0.46            |
| 8  | 3.86                                    | 3.90       | -0.04      | -0.46                    | -3.04            |
| 9  | 3.99                                    | 3.99       | 0.00       | 0.00                     | -2.58            |
| 10 | 3.75                                    | 3.76       | -0.01      | -0.04                    | -2.62            |
| 11 | 4.11                                    | 4.06       | 0.05       | 0.53                     | -2.05            |
| 12 | 4.06                                    | 3.95       | 0.11       | 1.22                     | -1.36            |
| 13 | 4.03                                    | 3.91       | 0.12       | 1.34                     | -1.24            |
| 14 | 4.43                                    | 4.21       | 0.22       | 3.00                     | 0.42             |
| 15 | 4.30                                    | 4.22       | 0.08       | 0.94                     | -1.64            |
| 16 | 4.12                                    | 4.05       | 0.07       | 0.83                     | -1.75            |
| 17 | 4.13                                    | 4.08       | 0.05       | 0.70                     | -1.88            |
| 18 | 4.18                                    | 4.19       | -0.01      | -0.06                    | -2.64            |
| 19 | 4.02                                    | 3.97       | 0.05       | 0.57                     | -2.01            |
| 20 | 4.13                                    | 4.13       | 0.00       | 0.02                     | -2.56            |
| 21 | 3.94                                    | 3.87       | 0.07       | 0.81                     | -1.77            |
| 22 | 3.89                                    | 3.81       | 0.08       | 0.94                     | -1.64            |
| 23 | 3.79                                    | 3.70       | 0.09       | 1.08                     | -1.50            |

The survey showed that there was a positive correlation between *Satisfaction* and *Perception*. If the *Perception* was "Very Good" (4) the *Satisfaction* score was "Satisfied"(4). The t-Test and correlation analysis shown in Table 6-5 and the gap

analysis in Figure 6-5 indicate that the two factors were well matched and related at the 95% confidence level.

Table 6-5 shows that 22 out of 23 items' calculated t values are smaller than the table value at 5 degrees of freedom. Therefore, in these cases we accept the null hypothesis that:

$$H_0 : \mu_{Satisfaction} = \mu_{Perception}$$

We can conclude that based on the statistical results, the mean of *Satisfaction* score and the mean of *Perception* score are similar. They are closely matched, except that SQ14 - "Visitors feel comfortable during the visit" had a higher *Satisfaction* score than the *Perception* score. It has a positive t value, which means that the *Satisfaction* and *Perception* factor were not matched.

As a result of the t-Test analysis using the first survey data, the questionnaire for the actual survey was modified. The *Satisfaction* score was taken out from the questionnaire for the second survey. There was only one question in the "Overall Impression" section which asked the visitor's overall satisfaction with the service quality provided by The Science Centre.

## **6.6 MANAGEMENT AND STAFF'S KNOWLEDGE OF THE AVAILABILITY OF SERVICE QUALITY STANDARDS**

Parasuraman et al. [1990] recognised that understanding customers' expectation is the first step in delivering high service quality. Management should understand their customers' expectations and use this knowledge to set their service quality standards. This is part of the requirement for any good Quality Management System. Once the standards are set, performance measuring tools can be put in place to monitor the performance.

The gap classed as gap number two by Parasuraman et al. [1990], ie. the gap between management's perceptions of customers' expectations and service quality specifications, occurs when the specifications for service quality are not well defined and left to the interpretation and initiative of the staff. The outcome of service delivery may not be the same as what management expected and the quality of service is likely to be highly varied.

To establish the level of knowledge amongst staff about the service quality procedures and standards at The Science Centre, a survey of management and staff on the availability of written procedures and performance standards was carried out using the five service quality dimensions as shown in Table 6-6. The written procedures and performance standards may be either formal (written, explicit and communicated to staff) or informal (verbal, implicit and assumed to be understood by staff).

Staff and management were asked to evaluate their perception of the availability of written procedures and performance standards in each of the service quality dimensions. The results shown in Table 6-6 indicate a wide variation of knowledge on the availability of written procedures and performance standards. These ranged from “0” (*Do not know*) to “4” (*Have documented standards*).

**Table 6-6. Management and Staff’s Knowledge of the Availability of Written Procedures and Performance Standards**

| Service Quality Dimension | Don't Know | No Standard | Have Informal Std | Have Formal Std | Have Documented Std | Score |
|---------------------------|------------|-------------|-------------------|-----------------|---------------------|-------|
| <b>Tangible</b>           | 6%         | 0%          | 41%               | 29%             | 24%                 | 3.65  |
| <b>Reliability</b>        | 6%         | 6%          | 47%               | 18%             | 24%                 | 3.47  |
| <b>Responsiveness</b>     | 6%         | 6%          | 59%               | 29%             | 6%                  | 3.36  |
| <b>Assurance</b>          | 24%        | 6%          | 41%               | 29%             | 6%                  | 2.84  |
| <b>Empathy</b>            | 24%        | 18%         | 47%               | 18%             | 6%                  | 2.77  |

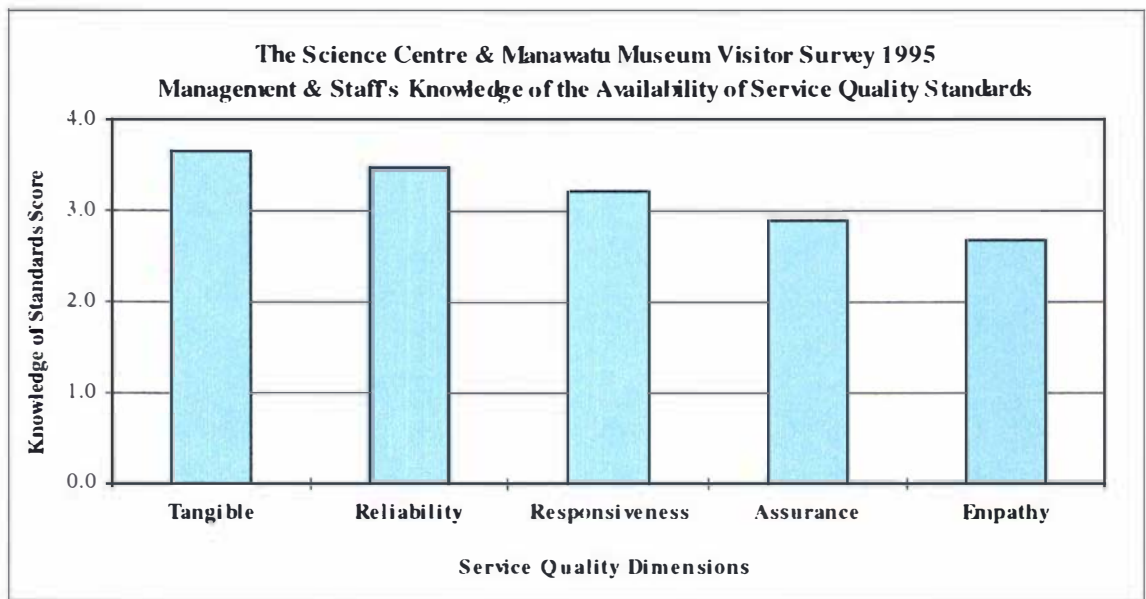
Table 6-6 showed that 52% of the staff knew that there were informal written procedures and performance standards for all the service quality dimensions. 25% of the staff identified that formal but not documented procedures and standards existed in tangibles, responsiveness and assurance. 6% of the staff did not know whether there were procedures and standards in the tangibles, reliability and responsiveness dimensions. 24% of the staff did not know whether the procedures and standards existed in the assurance and empathy dimensions.

The management and staff’s knowledge on the availability of standards was not evenly spread throughout the organisation. To identify the areas where there was a lack of documented formal standards or procedures, and what was management and staff’s knowledge of the existence of documented standards, the scoring system below was used to give each category a value and determine the average score for each quality standard area.

|            |             |                        |                      |                          |
|------------|-------------|------------------------|----------------------|--------------------------|
| 1          | 2           | 3                      | 4                    | 5                        |
| Don't know | No Standard | Have Informal Standard | Have Formal Standard | Have Documented Standard |

Figure 6-6 shows the score for each category, presented in a bar graph. The score cannot be interpreted as an absolute value but gives a relative indication of the knowledge or availability of written procedures and performance standards. From the graph it can be seen that, overall, there was a higher level of knowledge or availability of written procedures and performance standards in the tangible, reliability and responsiveness dimensions. The lowest score areas were the assurance and empathy dimensions.

In general, there is a lack of staff awareness of the availability of service related standards and procedures at The Science Centre. A discussion with the Director of The Science Centre, confirmed that there was a lack of procedures and standards of service delivery.



**Figure 6-6. Management and Staff's Knowledge of the Availability of Service Quality Written Procedures and Performance Standards**

In general the level of the staff's knowledge of service standards and procedures was not high. This was further strengthened by staff comments on the lack of standards and procedures relating to their work as customer contact people. Comments made by the staff stated that because there were no standards, the staff were left to do the best they could with the services that they provide. However, these may not meet management's expectation, as the requirements were not specified clearly in the documentation as standards and procedures. The staff had no clear indication of what was expected from them.

## 6.7 VISITORS' OVERALL IMPRESSIONS OF THE SCIENCE CENTRE

The following is a summary of the visitors' overall impression of the facility from the two surveys. The detailed results are in Appendix B.5.

- A significant majority of respondents (94.4%) rated the overall quality of services provided by The Science Centre as “*Good*” to “*Very Good*”. Only 0.8% rated the service quality as “*Very Poor*” to “*Poor*” and 4.8% rated the service quality as “*Acceptable*”.
- The overall level of satisfaction with the visit was closely related to quality rating. 93% of the respondents were “*Satisfied*” or “*Very Satisfied*” with the service quality provided by The Science Centre. These first two figures indicated a high level of satisfaction amongst the visitors.
- 60% of respondents had visited other similar facilities before. Of these 47% said that The Science Centre was “*Very Good*” compared with other similar facilities and 39% rated “*Good*”, 10% rated as “*Acceptable*” and 3.3% rated it “*Very Poor*” to “*Poor*” compared to other similar facilities. In comparison with other similar facilities, the majority of the experienced visitors rated The Science Centre favourably.
- 64.5% of respondents paid an admission charge. 58% who paid an admission charge expressed that it was value for money. 42% said it was not value for money and stated that the admission fee was too expensive. Visitors who had family stated that the admission charge to The Science Centre was too high, especially \$5 for pre-schoolers or \$20 for an adult student with family.
- The respondents were also asked to indicate how long they spent in The Science Centre. 61% of respondents spent 1-2 hours, 18% spent less than an hour and 17% spent from 2-3 hours. 3% spent more than 3 hours. On average, the visitors spent approximately one and a half hours in The Science Centre.
- 86% of respondents said they will recommend the facility to their friends. 80% of the respondents said that they are likely to visit the facility again in the next year. The visitors' indication of their willingness to recommend the facility to their friends is a good measure of customer satisfaction.

The demography of visitors to The Science Centre showed very similar characteristics when compared to other visitor surveys carried out in the UK and USA [Prentice, 1993;

Yale, 1991]. The visitor profile of the Trust's properties are summarised as followed (refer to Appendix B.5 for detailed information).

## 6.8 CONCLUSIONS

The visitor survey represents a methodological approach that allows The Science Centre to establish and identify their customers, their needs and how satisfied they are with the services provided. In particular, the gap analysis aspect can be used to identify differences in management perception and customer expectations.

One of the lessons learnt is that while SERVQUAL is developed as a generic model for measuring service quality [Parasuraman et al, 1990], it requires modification to ensure that the data reflects the services provided by The Science Centre.

The results of the first survey indicated that there was a high correlation between *Importance* and *Expectation*. When the visitor identified the service quality variable as "Very Important", they were more likely to have a higher *Expectation* from this variable. A high correlation is also shown between *Satisfaction* and *Perception*. This survey has established that when visitors perceived the service quality as good they were satisfied with the service provided.

The respondents' feedback on the survey questionnaire were: the length, too much repetition and the staff related questions appearing at different places. Based on the pilot test results, the 1996 visitor survey questionnaire was modified, the *Importance* column and *Satisfaction* column were deleted from this pilot test questionnaire [Tan et al, 1996a]. The length of service quality questionnaire was reduced by 50% after the deletion of two columns. There were no changes, however, in the service quality questions. Further improvement could be made on the wording of the questionnaire, reducing repetition by grouping the staff related questions together to reduce confusion.

The two surveys have shown a consistency in the evaluation of service quality performance by the visitors to The Science Centre using the modified SERVQUAL model. The negative service quality gaps identified by the visitors to the institution were similar for both surveys.

This form of visitor survey is designed to help the institution identify the current status of its service performance. Before embarking on the improvement, it could be used to find out what level of service quality their customers expect. The 1996 survey result is very similar in three areas to the pilot test carried out in May 1995. The highest negative gaps in service quality variables identified during the pilot test were:

- **Information** - *The information provided by staff is accurate (Q9) -1.25*
- **Access** - *There is easy access for visitors with wheelchairs, prams and young children (SQ20) -0.39*
- **Signs** - *Signs in the building make it easy to find your way around (SQ21) -0.70*
- **Car Parking** - *There is adequate car parking for visitors (SQ22) -0.20*

These negative service quality gaps also appeared in the 1996 survey, which also highlighted problem areas where visitors' expectations were not being met.

The general level of service quality provided by The Science Centre was confirmed as very good and the management had a good understanding of their customers' needs. However, there were areas which were highlighted as negative service gaps by the visitors to the institution. The results showed that The Science Centre could improve its performance by focusing on improving the negative service quality highlighted by the survey and monitoring the visitor satisfaction to ensure that their needs are being met.

A further area addressed in this case study was the documented standards, procedures and instructions for service quality provided by The Science Centre. The survey of management and staff highlighted that there were different views and levels of knowledge on the availability of service quality standards, instructions and procedures of service related functions existing in the institution. The Science Centre has documented policies for operations and conservation and preservation of artifacts, but not documented standards, procedures and instructions for service quality.

The management survey results suggest that there is room for further training of staff in the procedures and processes of quality of service expected by management and visitors. The results appear to show a significant gap between management and staff perception of the quality of service requirements and the service quality expected to be produced by staff.

It was also observed that, if the visitor scored the service quality as “*Very Good*” in *Perception*, it indicated that he/she would score their satisfaction as “*Very Satisfied*”. Conversely, if the visitor scored the service quality as “*Very Poor*”, it indicated that he/she was “*Very Unsatisfied*”. A quality improvement program could be used to establish plans for improving service quality in the problem areas highlighted in this survey. There appeared to be little need to use both these variables in any future survey. The modified SERVQUAL model could be used as a tool to monitor the ongoing improvement in service quality performance of The Science Centre and Manawatu Museum.



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# 7.

## Case Study 2

### New Zealand Historic Places Trust

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#### 7.1 INTRODUCTION

The second group of case studies undertaken was for the New Zealand Historic Places Trust (referred to hereinafter as the Trust). There has been no comprehensive user or non-user survey apart from an admission survey to the properties in 1979-1984 which provided basic visitor demographic information for the Trust properties [Shum, 1986] and a membership survey in 1995 [Barclay, 1995].

A research proposal for the measurement of service quality using the modified SERVQUAL model was submitted to the senior management of the Trust. The Trust was interested in obtaining feedback from visitors on service quality provided by the Trust properties using the modified SERVQUAL model for measuring the service quality of tourist attractions developed by the Department of Production Technology, Massey University. This chapter presents the results of the survey carried out at seven historic places sites from October 1995 to February 1996.

#### 7.2 NEW ZEALAND HISTORIC PLACES TRUST/ POUHERE TAONGA

The New Zealand Historic Places Trust/Pouhere Taonga was established in 1955. It is responsible for administering the provisions of the Historic Places Act 1985 (Section 5). In 1987, as a result of the Conservation Act, the Department of Conservation was established with responsibility for management and conservation of all natural and historic resources included in the Crown status. The Trust is funded through the Department of Conservation and has been given increasing recognition and resources in its role of interpreting historic places for the public visitors. In 1992, the Historic Places

Bill gave the Trust autonomy from the Department of Conservation [Hall and McArthur, 1993].

The New Zealand Historic Places Trust/Pouhere Taonga's mission is to promote the identification, protection, preservation and conservation of the historical and cultural heritage of New Zealand.

The goals of the Trust are heritage conservation and to hold, conserve and manage the selected trust properties [NZHPT, 1996]. These are carried out by:

- *Helping New Zealanders to be aware and protective of their historical and cultural heritage*
- *Encouraging communities, territorial authorities and private individuals to maintain, conserve and protect the historic heritage places and areas in their care*
- *Holding, conserving and effectively managing selected historic heritage places and areas, and*
- *Encouraging the highest standards of scholarship and performance in heritage interpretation and education.*

The Trust's property portfolio comprises cultural heritage properties of regional and national importance, thematically varied and geographically dispersed from the northern to southern regions of New Zealand. There are approximately 60 properties in the Trust's portfolio, including historic sites and curators' houses. The set of attributes of each property is unique and, therefore, it is helpful to consider the portfolio within thematic and functional groups. These include: Maori sites, mission stations, ecclesiastical properties, educational properties, residential properties, hospitality sites, civic assets and agricultural and industrial sites [NZHPT, 1996].

### **7.3 SURVEY IMPLEMENTATION**

The project proposal was submitted to the Trust management on May 1995. This was followed by a presentation to the senior management of the Trust on the research methodology, and on the outcome and potential use of the information from the survey. The Trust management was interested to know how their customers evaluated the services provided by the Trust properties.

During the meeting, the needs of the Trust were identified. The Trust management reviewed the results of The Science Centre. They stated that the information would be

useful for their strategic planning for site development. They recognised that the information on problems highlighted by the visitors to the Trust properties could be used to support their development proposals. They wanted to know who their customers were and their demographics, and requested that the results be analysed and presented on a national and regional basis for the Trust properties surveyed.

The criteria for the selection of the survey sites was based on two aspects. Firstly, those properties where there are staff in attendance to receive visitors and, secondly, the relative strategic importance of the properties to the Trust. Seven properties were selected by the management of the Trust as the survey sites. These were Kemp House, Pompallier House and the Te Waimate Mission House in the Bay of Islands; two historic houses - Highwic and Alberton in Auckland, the School of Mines in Thames and Fyffe House in Kaikoura (refer to Appendix C.4 for a brief introduction of each property).

A series of meetings were arranged to meet the curators and staff of the selected Trust properties. The development of the questionnaire was carried out using focus group discussions with management and staff to meet the specific requirements of the Trust. The questionnaire was modified based on The Science Centre's questionnaire.

A few modifications were made to reflect the nature of historic houses, these included:

- Changing the wording - the use of “authentic nature” and “historical atmosphere is captured” in the tangible variables to reflect the physical nature of the historic places under study (refer to Table 7-1, SQ2- SQ7).
- Re-grouping of the service quality dimensions - that is, arranging the staff related service quality factors as a consecutive series of questions. During the focus group discussion with management and staff, it was felt that there was repetition in the original questionnaire and they felt that the arrangement was not logical and would confuse the visitors. Therefore, questions relating to staff performance were rewritten to avoid repetition. These were then grouped together in a different grouping instead of the five service quality dimensions as suggested by Parasuraman et al. [1990] (refer to Table 7-1, SQ13-SQ18).
- Inserting the services, in some cases not provided - due to the structure and limited resources, the majority of the Trust's properties did not provide services such as, refreshments, wheelchair access and some properties do not have toilet facilities and seating for visitors. The management of the Trust recognised the need for these services to be provided to visitors at tourist attractions. For their strategic planning, they wanted customers' feedback on the need for these facilities. Therefore, the questions relating to toilet facilities, refreshments,

seating and wheelchair access were included in the questionnaire (refer to Table 7-1, SQ9-SQ12).

- Expanding the service quality standards and procedure section to identify different types of service quality standards in each of the dimensions (refer to Table 7-2).

The modified SERVQUAL questionnaire consisted of 22 questions which covered the five service quality dimensions (refer to Table 7-1). The final questionnaire was divided into two parts:

**Table 7-1. Visitor Survey Questions Relating to Service Quality**

| Service Quality           | SQ NO | Service Quality Dimensions<br>Features, Displays and Services |
|---------------------------|-------|---|
| <b>Tangible</b>           | 1     | The physical appearance of the place                          |
|                           | 2     | The authentic nature of the place                             |
|                           | 3     | The contents are interesting                                  |
|                           | 4     | The building and contents are well cared for                  |
|                           | 5     | The grounds/gardens are well cared for                        |
|                           | 6     | The information provided about the place is informative       |
|                           | 7     | Historical atmosphere is captured                             |
| <b>Empathy</b>            | 8     | Finding your way around in the building is easy               |
| <b>Peripheral Service</b> | 9     | Toilets are provided  |
|                           | 10    | Toilets are clean   |
|                           | 11    | Refreshments are provided                                     |
|                           | 12    | Seating is provided   |
|                           | 13    | Staff are presentable   |
| <b>Responsiveness</b>     | 14    | Staff are willing to help visitors                            |
| <b>Reliability</b>        | 15    | Staff inspire confidence in visitors                          |
| <b>Assurance</b>          | 16    | The information provided by staff is consistent               |
|                           | 17    | Staff are friendly, courteous and polite to visitors          |
|                           | 18    | Staff have the knowledge to respond to visitors' requests     |
| <b>Empathy</b>            | 19    | Opening hours are convenient                                  |
|                           | 20    | Wheelchair access is available                                |
|                           | 21    | Adequate road signs make it easy to find the place            |
|                           | 22    | There is adequate car parking for visitors                    |

- **Visitor Survey Questionnaire:** This part consisted of questions on *Expectation* and *Perception* (refer to Table 7-1). “*The Overall Impression*” and “*The Visitor Profile*” (refer to Appendix C.2) were added to the modified SERVQUAL questionnaire for visitors. Minor modifications to “*The Visitor Profile*” included the type of merchandise visitors wanted to buy and where visitors stay when they are in the area.
- **Management and Staff Survey Questionnaire:** This part consisted of questions on *Expectation* and *Importance*, and the availability of service quality standards (refer to Table 7-2 and Appendix C.2).

**Table 7-2. Service Quality Standards and Procedures**

| <b>Dimension</b>      | <b>Std</b> | <b>Service Quality Standards</b>  |
|-----------------------|------------|---|
| <b>Tangible</b>       | 1          | The appearance of the physical facilities                                 |
|                       | 2          | Conservation  |
|                       | 3          | Personnel   |
|                       | 4          | Information materials   |
| <b>Reliability</b>    | 5          | The ability to perform the job and service reliably and accurately        |
|                       | 6          | Administration  |
| <b>Responsiveness</b> | 7          | Visitor assistance  |
|                       | 8          | The willingness of staff to help visitors and provide service to visitors |
| <b>Assurance</b>      | 9          | The ability to convey confidence to visitors                              |
| <b>Empathy</b>        | 10         | The ability of New Zealand Historic Places Trust to individually care for |

In addition, a survey of management and staff's knowledge of the procedures and standards for the operation of the various historic properties was carried out in October 1995. Staff and management were asked to state their perception of the availability of procedures and performance standards in each of the service quality dimensions.

A pilot test was conducted in October 1995 with the survey carried out with the Trust's management and staff on a voluntary basis, and on a random sample of approximately 50 visitors to each of the properties. The main survey was carried out over a period of three months from February to May 1996. A total of 1087 samples were taken from the seven selected properties [Tan, 1996]. The results of the survey were analysed and presented to management in three levels. These were the national, regional and individual property results. This chapter presents the overall average score and regional average score in the following section. The detailed information refers to the unpublished reports presented to the Trust [Tan, 1996 and Appendix C.5].

## 7.4 RESULTS OF THE VISITOR SURVEY

The gap analysis for the Trust was carried out, firstly, using the overall average score of seven selected properties and, secondly, the average of the three regions as follows:

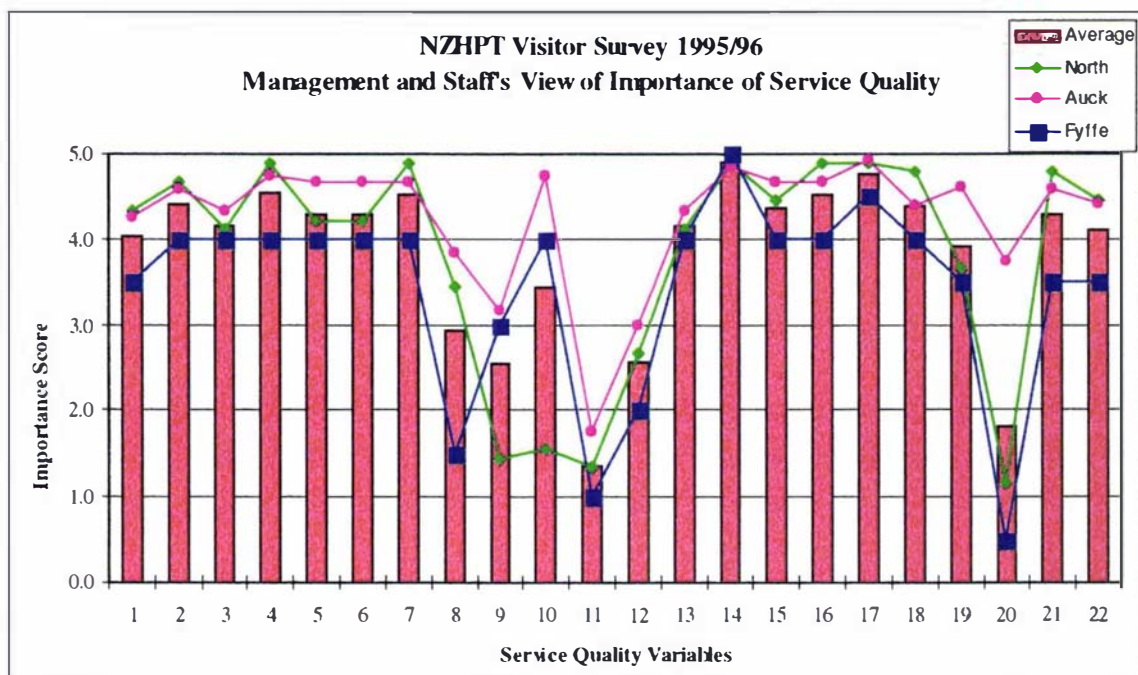
- **Bay of Islands region:** The properties surveyed were Kemp House at Kerikeri, Te Waimate Mission House at Waimate North and Pompallier House at Russell. (Abbreviated as “North” in the legend of the graph and refer to Appendix C.5.2 for detail Gap Analysis of Bay of Islands region) [NZHPT, 1992a, 1995a; Pickmere, 1995].
- **Auckland/Thames region:** The properties surveyed were historic houses namely, Alberton and Highwic in Auckland and the School of Mines at Thames. (Abbreviated as “Auck” in the legend of the graph and refer to Appendix C.5.3. for detail Gap Analysis of Auckland and Thames Region) [NZHPT, 1989, 1992b, 1995d].
- **South Island:** Fyffe House at Kaikoura was the only property selected in the South Island. (Abbreviated as “Fyffe” in the legend of the graph and refer to Appendix C.5.4. for detail Gap Analysis of Fyffe House) [NZHPT, 1992b, 1995c; Harris, 1994].

The average scores for the seven properties are presented in a bar graph and the average scores for the regions are presented in a line graph (see Figure 7-1).

Where there was no management and staff rating for a variable, a large negative gap will be generated. Special consideration needs to be given to provide a true comparison with other service quality variables (an \* will be used where appropriate to indicate where management and staff did not give a rating for a variable).

### 7.4.1 The management and staff’s view of the importance of service quality

A survey of the Trust management and staff assessment of the *Importance* of each service quality dimension and their views of visitors’ *Expectation* was undertaken. The group included the staff from Head office, the regional office and the seven selected historic sites. The management and staff’s view of the *Importance* of service quality in the Trust properties varied from site to site. However, there was a general consensus that the tangible variables (SQ1 to SQ7), staff related functions (SQ13 to SQ18) and access variables (SQ21 to SQ22) were very important as shown in Figure 7-1.



**Figure 7-1. Trust's Management and Staff's View of the Importance of Service Quality**

The overall average *Importance* score for the tangible variables varied from 4.0 to 4.6, where 4 is "*Very Important*" and 5 is "*Extremely Important*". The tangible variables were the physical appearance of the place, the authentic nature, the contents, the grounds and gardens, information provided about the place and the capturing of the historic atmosphere (refer to Figure 7-1, and Appendix C.5.1, Table 1).

Staff related functions had overall average *Importance* scores which varied from 4.3 to 4.8. Two extremely important staff related functions that appeared in the survey were: "*Staff are willing to help visitors*" (SQ14:4.91) and "*Staff are friendly, courteous and polite to visitors*" (SQ17:4.77). The access variables which were highlighted as important were the road signs and car parking. The overall average *Importance* scores for the access variables were road signs (SQ21:4.3) and car parking (SQ22:4.1).

A low *Importance* was placed by management and staff on the services or facilities that were not provided by a majority of the Trust properties. These areas were related to the provision and cleanliness of toilets, refreshments, seating and wheelchair access. Management and staff of two of the Trust properties in the Bay of Islands region did not score the *Importance* of these areas because they were not providing these services. Therefore the average of the *Importance* score from the Bay of Islands region was lower than the overall average of the Trust properties. However, high *Importance* scores were given by the management and staff of the Trust properties in the Auckland region and Fyffe House on the provision and cleanliness of toilets and wheelchair access.

In general, the management view of the *Importance* of service quality at the various Trust properties was quite similar except in the areas of toilet facilities and wheelchair access. The management and staff of the Auckland region Trust properties had placed higher *Importance* in most areas of service quality compared to the properties in the Bay of Islands region and Fyffe House.

#### 7.4.2 Gap analysis of the expectation of service quality

In the analysis of the *Expectation* gap shown in Figure 7-2 (Appendix C.5.1, Table 4), the gap was calculated using the average of the management and staff's perception of visitors' *Expectation* score deducted from the measured visitors' *Expectation* score.

The Trust management and staff's view of their *Visitors' Expectation* was higher in the authentic nature of the building and contents, the historical atmosphere, and staff related functions. The common negative gaps for all properties were for those services that were not provided and for which the management had a low rating of the *Importance* and perception of *Visitors' Expectation* as noted above.

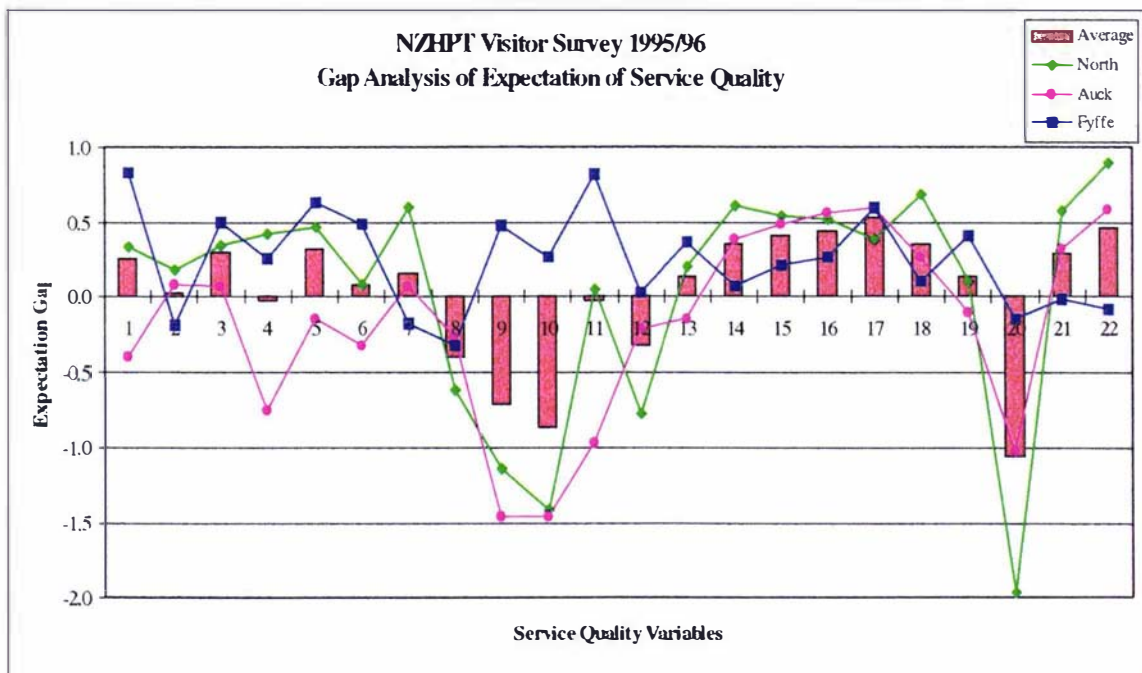


Figure 7-2. Gap Analysis of Expectation of Service Quality

#### Tangible variables

Figure 7-2 shows that the Auckland/Thames region Trust properties had twelve negative *Expectation* gaps, some tangible variables including:

- *The physical appearance of the place* (SQ1) -0.40

- *The building and contents are well cared for (SQ4) -0.76*
- *The grounds/gardens are well cared for (SQ5) -0.15*
- *The information provided about the place is informative (SQ6) -0.33*

The negative *Expectation* gaps indicated that the actual visitors' *Expectation* were higher than management and staff's view.

### **Service not provided**

In the Bay of Island region, the management and staff of Kemp House did not give a score to their view of *Visitors' Expectation* of the variables relating for the services not provided\*. The management and staff of the Te Waimate Mission House scored the *Visitors' Expectation* of toilet facilities as "Very High", but had a lower rating for the other services not provided, such as the provision of refreshments and seating. On the other hand, the management and staff of Pompallier House rated the *Visitors' Expectation* of toilet facilities as neither high nor low (3) (refer to Appendix C.5.2).

In the Auckland/Thames region, the management and staff of Alberton House rated the services not provided as neither high nor low (3) for the provision of toilet facilities, seating and wheelchair access. The management of Highwic, however, gave a higher rating to these variables. A lower rating of *Visitors' Expectation* has given by Alberton and Highwic management and staff on the provision of refreshments. In the Thames School of Mines, all the services not provided were not scored by the management and staff (refer to Appendix C.5.3).

From the visitors' point of view, they have "High" *Expectation* scores on the services not provided, including the provision and cleanliness of toilets, seating, and wheelchair access for all properties. The provision of refreshments was scored "Low" in *Expectation* scores for all properties.

These views were reflected in the average negative *Expectation* gaps for the services not provided by most of the historic places, for example:

- *Toilets are provided (SQ9) -0.71\**
- *Toilets are clean (SQ10) -0.87\**
- *Refreshments are provided (SQ11) -0.04\**

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\* Where there was no management and staff rating for a variable, a large negative gap will be generated. Special consideration needs to be given to provide a true comparison with other service quality variables.

- *Seating is provided* (SQ12) -0.33
- *Wheelchair access is available* (SQ20) -1.05\*

The Thames School of Mines in the Auckland/Thames region is a mining school, an experimental crushing plant and a mineralogical museum. There were distinct differences in the management and staff's view of visitors' *Expectation* compared to the historic houses in Auckland, such as Highwic and Alberton, because of the nature of the displays and contents. For example, the management and staff of the Thames School of Mines perceived that their visitors would have high *Expectation* on staff related functions. On the other hand, they felt that the visitors would have low *Expectation* of the physical appearance, the care taken of the buildings and contents and the "*Information provided about the place is informative*" (SQ6) (refer to Appendix C.5.B). This indicates that the management and staff's perception of the visitors' *Expectation* was based on the nature of the place, however, the visitors expect the school to be kept as the other historic places.

High negative *Expectation Gaps* were found in the Thames School of Mines. The management and staff of the Thames School of Mines did not score three of the services not provided, these included the provision and cleanliness of toilets, the provision of refreshments and wheelchair access. There were five negative *Expectation Gaps* from the tangible variables. Four negative *Expectation Gaps* appeared in the services not provided, one from the staff related functions and three from access variables.

The level of *Expectation* from the visitors to the Bay of Islands and the Auckland/Thames region was higher than the Trust management and staff perceived for the services not provided by most of the historic places.

On the whole, the overall average scores of the management and staff's perception of the visitors' *Expectation* was lower than the actual *Visitors' Expectation* except for toilet facilities, seating and wheelchair access.

### 7.4.3 Gap analysis of service quality using expectation weighting

The *Weighted Service Quality Gap* method was used (see Chapter 5) to determine the degree of importance of a particular *Service Quality Gap* as assessed by management and visitors (refer to Figure 7-3, Table 7-3 and Appendix C.5.1. Tables 6 and 7).

**Table 7-3. Gap Analysis of Service Quality Using Expectation Weighting**

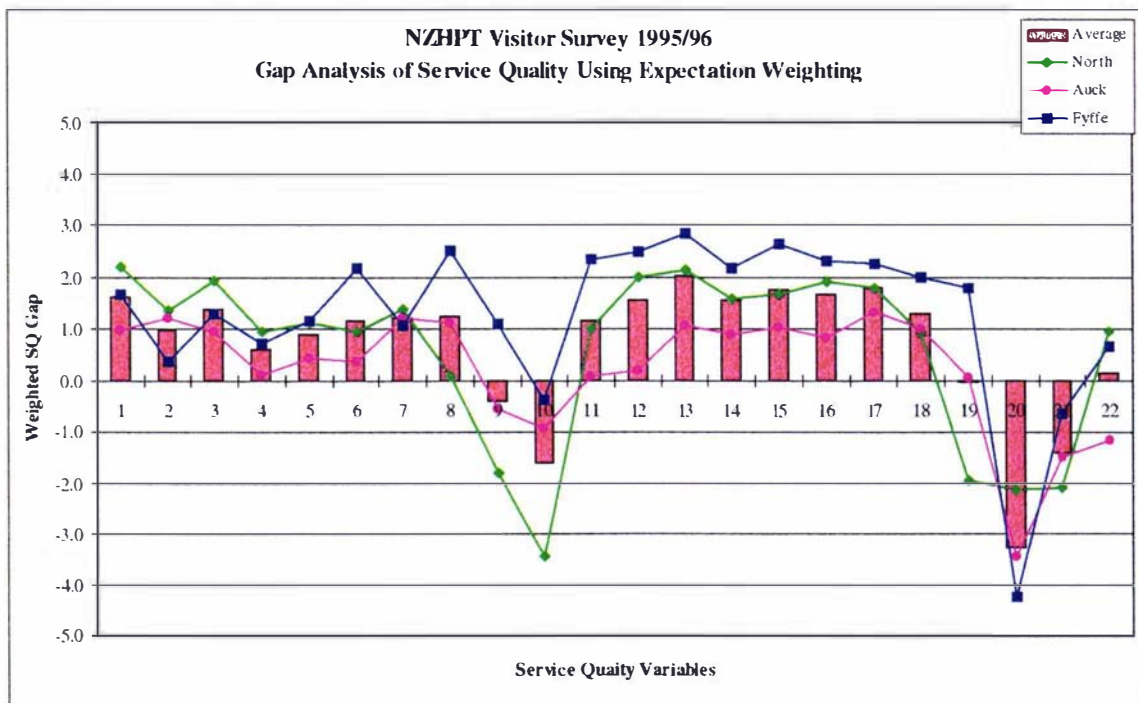
| Service Quality    | SQ No | Service Quality Dimensions                                | Weighted Service Quality Gap |       |       |       |
|--------------------|-------|---|------------------------------|-------|-------|-------|
|                    |       | Features, Displays and Services                           | North                        | Auck  | Fyffe | Avg   |
| Tangible           | 1     | The physical appearance of the place                      | 2.17                         | 0.97  | 1.67  | 1.60  |
|                    | 2     | The authentic nature of the place                         | 1.35                         | 1.21  | 0.37  | 0.98  |
|                    | 3     | The contents are interesting                              | 1.92                         | 0.95  | 1.29  | 1.39  |
|                    | 4     | The building and contents are well cared for              | 0.95                         | 0.09  | 0.70  | 0.58  |
|                    | 5     | The grounds/gardens are well cared for                    | 1.11                         | 0.41  | 1.15  | 0.89  |
|                    | 6     | The information provided about the place is informative   | 0.94                         | 0.36  | 2.17  | 1.16  |
|                    | 7     | Historical atmosphere is captured                         | 1.38                         | 1.19  | 1.05  | 1.20  |
| Empathy            | 8     | Finding your way around in the building is easy           | 0.08                         | 1.10  | 2.51  | 1.23  |
| Peripheral Service | 9     | Toilets are provided                                      | -1.81                        | -0.57 | 1.09  | -0.43 |
|                    | 10    | Toilets are clean   | -3.47                        | -0.95 | -0.40 | -1.61 |
|                    | 11    | Refreshments are provided                                 | 0.99                         | 0.08  | 2.33  | 1.13  |
|                    | 12    | Seating is provided                                       | 1.98                         | 0.19  | 2.48  | 1.55  |
|                    | 13    | Staff are presentable                                     | 2.14                         | 1.06  | 2.83  | 2.01  |
| Responsiveness     | 14    | Staff are willing to help visitors                        | 1.57                         | 0.88  | 2.15  | 1.54  |
| Reliability        | 15    | Staff inspire confidence in visitors                      | 1.65                         | 1.02  | 2.61  | 1.76  |
| Assurance          | 16    | The information provided by staff is consistent           | 1.89                         | 0.83  | 2.31  | 1.67  |
|                    | 17    | Staff are friendly, courteous and polite to visitors      | 1.77                         | 1.31  | 2.26  | 1.78  |
|                    | 18    | Staff have the knowledge to respond to visitors' requests | 0.91                         | 1.00  | 2.00  | 1.30  |
| Empathy            | 19    | Opening hours are convenient                              | -1.96                        | 0.05  | 1.77  | -0.05 |
|                    | 20    | Wheelchair access is available                            | -2.14                        | -3.47 | -4.23 | -3.28 |
|                    | 21    | Adequate road signs make it easy to find the place        | -2.09                        | -1.50 | -0.65 | -1.41 |
|                    | 22    | There is adequate car parking for visitors                | 0.94                         | -1.18 | 0.66  | 0.14  |

#### Tangible variables

Positive *Weighted Service Quality Gaps* were found in the tangible variables (SQ1 to SQ8), the provision of refreshments (SQ11), seating (SQ12) and staff related functions (SQ13 to SQ18), where the *Visitors' Expectations* were met and exceeded (refer to Figure 7-3) at all the Trust properties which were surveyed except in the Thames School of Mines.

The visitors to the Thames School of Mines had higher *Expectation* scores than their *Perception* in the tangible variables, these included “*The building and contents are well cared for*” (SQ4:-0.1), “*The grounds/gardens are well cared for*” (SQ5:-0.8) and “*The information provided about the place is informative*” (SQ6:-1.1) (refer to Table 7-3). The following suggestions for improvements were made by the visitors to Thames School of Mines relating to the tangible variables:

- *Needs more technical information on exhibits, especially useful with step by step explanation of processes and examples of work*
- *Have Clearer signs at displays*
- *Improvement in display's lighting and more written information*
- *A restored building without draught, more room for the collection*
- *Better presentation, better relevance to school pupils*
- *More room so displays are not crowded*
- *They suggest toilets be provided and maintain the general cleanliness of interior of buildings*



**Figure 7-3. Gap Analysis of Service Quality Gap Using Expectation Weighting**

### Staff related functions

All the visitors to the seven surveyed Trust properties were satisfied with the services provided by the staff as reflected by the high positive *Weighted Service Quality Gaps* for the staff related functions (SQ13 to SQ18) as shown in Figure 7-3. They expressed their appreciation of the guided tour and the enthusiasm shown by the curator during their visit.

Pompallier House in the Bay of Islands region is a working museum, where the curator and staff demonstrate printing, tanning and book binding. The visitors enjoyed the contact with staff. Some of the comments about what they enjoyed most relating to staff were as follows:

- *Chatting with staff members and gaining knowledge*
- *Contact with staff actually working - tanning, printing, binding - bring the whole place alive*
- *Explanation of tanning method and printing method*
- *Explanation of the tannery and seeing the historical remains from the restoration process*
- *Helpfulness of staff-pamphlet information and displays*
- *Talking with the staff who were demonstrating book binding*
- *The commentary on the making of the books using the traditional method*

The Thames School of Mines offered guided tours to the visitors. The visitors' comments on what they most enjoyed included:

- *The interest in the school of mines, is in its history, an informative guided walk is essential to realise the potential of the place*
- *Very enjoyable - great to have someone that actually worked the very mine discussed - very knowledgeable and interesting*
- *Friendly and knowledgeable gentleman*
- *Talk by our host from historic society*
- *Talking with the staff*
- *The books on display, information given by staff*

Fyffe House in the South Island provided a guided tour to all visitors. The visitors enjoyed the guided tour and the information provided by the curator. Comments made by visitors to Fyffe House about what they enjoyed included:

- *Listening to the friendly guide tell stories*
- *The interesting history provided by the guide*
- *The excellent commentary about the history of the house*
- *The enthusiastic and enjoyable presentation*
- *Interesting history described by assistant curator*
- *The guided tour by the assistant curator- the lively history*
- *Enthusiasm of deputy curator and the history*
- *The tour, excellent, delivered with humour*
- *The sense of humour with which the information was given*
- *The information given was clear and had some humour which was good*

This indicates that staff play an important role in the delivery of service to visitors. It is seen by visitors as part of the total package of service provided by tourist attractions and Trust properties.

### **Services not provided**

Five negative *Weighted Service Quality Gaps* appeared from this survey relating to toilet facilities, wheelchair access, road signs and opening hours:

- *Toilets are provided (SQ9) -0.43*
- *Toilets are clean (SQ10) -1.61*
- *Opening hours are convenient (SQ19) -0.05*
- *Wheelchair access is available (SQ20) -3.28*
- *Adequate road signs make it easy to find the place (SQ21) -1.41*

In general, visitors to the Trust properties expected these services to be better than what they actually received and in particular, they identified the need for toilet facilities at the properties. This survey has found that their needs were not being met. Comments made by the respondents relating to toilet facilities were:

- *Better toilet facilities (Kemp House)*

- *Provision of toilet and refreshments* (Kemp House)
- *Provision of toilets* (Pompallier House)
- *Toilet - I didn't find them* (Pompallier House)
- *Toilets would be appreciated* (Pompallier House)

Although the overall average *Weighted Service Quality Gaps* did not highlight the provision of refreshments as having a negative gap, the analysis results from Alberton House and the Thames School of Mines showed that visitors to these two properties had a higher expectation score for “*Refreshments are provided*”. They have a negative *Weighted Service Quality Gaps* of -0.8 from Alberton House and -0.3 from the Thames School of Mines. In general, the visitors stated that they would have enjoyed the possibility of a “*Devonshire tea on the verandah or in the garden*” or a “*Picnic in the grounds available to relax and enjoy the atmosphere*” (Alberton). Similar comments were made at other sites.

### Access variables

The second negative *Service Quality Gap* was the provision of wheelchair access by the Trust properties. It is recognised that it may not always be practical *to* provide for the needs of disabled people due to the structure of historic sites. However, where significant features or facilities are inaccessible, this should be clearly relayed when enquiries are made by phone, or stated by the curator or staff at the point of entry. Alternative display media, such as videos or photos could be used for the historic sites for those people who have difficulty in accessing the facilities. This was supported by comments from the respondents:

- *Easier access - facilities for wheelchairs needed* (Highwic)
- *If we could move closer to some of the objects* (Highwic)

The availability of road signs did not appear to be significant in the *Expectation* gap analysis. However, using *Weighted Service Quality Gap* analysis, road signs appeared to be a significant problem. This was supported by visitors’ comments for example:

- *Perhaps brighter signs outside- to be more inviting* (Thames School of Mines)
- *Better on road signposting and listing as a major Auckland attraction* (Alberton)
- *Better signposting* (Te Waimate Mission House)
- *Better signs to show directions and property* (Te Waimate Mission House)

- *Perhaps brighter signs outside - to be more inviting* (Te Waimate Mission House)
- *Did not notice a sign in the town directing to this house* (Kemp House)
- *Advance road signing* (Highwic)

Car parking was not highlighted as a problem in the regional analysis of the *Weighted Service Quality Gap*. However, the average *Weighted Service Quality Gap* for the Auckland/Thames region, had a negative gap of -1.18 which was more important than the lack of toilet facilities for this region, as shown in Figure 7-3. They commented that they had difficulty in finding the place and on the lack of car parking for visitors. Comments made by the respondents to the Auckland and Bay of Islands region Trust properties relating to car parking were:

- *Car parking signs need to be improved* (Highwic)
- *More direction for parking from Newmark Street* (Highwic)
- *Regrettable parking is very limited and crossing rather dangerous* (Kemp House)

In support of these results, it was noted that the English Tourist Board's Code of Practice [1992] recommended that, where appropriate to the nature, scale and location of the attraction, it is important to provide adequate toilet facilities, car parking and catering facilities. These facilities are seen as part of the essential services that should be provided to visitors at the attractions.

In summary, each New Zealand Historic Places Trust property has its unique characteristics that visitors enjoy. However, there were areas highlighted by the survey where services required improvement. They were highlighted using the *Weighted Service Quality Gap* method, and were related to the peripheral services which are not provided in most of the Trust properties such as toilets, adequate car parking, wheelchair access and refreshments.

## 7.5 MANAGEMENT AND STAFF'S KNOWLEDGE OF THE AVAILABILITY OF SERVICE QUALITY STANDARDS AND PROCEDURES

As with the other case studies an assessment was made of the standards and procedures used to achieve high quality customer service. The staff and management of the Trust were asked to evaluate their perception of the availability of written procedures and performance standards in each of the service quality dimensions. The information was grouped together and presented as a percentage of the total respondents for the ten areas identified (refer to Table 7-4).

**Table 7-4. Management and Staff's Knowledge of the Availability of Service Quality Standards and Procedures**

| Std | Service Quality Standards and Procedures   | Knowledge of the Availability of Service Quality Standards and Procedures |             |                   |                   |                    | Score |
|-----|--|---|-------------|-------------------|-------------------|--------------------|-------|
|     |  | Don't Know<br>1   | No Std<br>2 | Have Inf.Std<br>3 | Have For.Std<br>4 | Have Writ.Std<br>5 |       |
| 1   | The appearance of the physical facilities  | 11%   | 0%          | 28%               | 33%               | 28%                | 3.7   |
| 2   | Conservation   | 6%  | 0%          | 0%                | 11%               | 83%                | 4.7   |
| 3   | Personnel  | 17%   | 0%          | 39%               | 33%               | 11%                | 3.2   |
| 4   | Information materials  | 22%   | 0%          | 17%               | 22%               | 39%                | 3.6   |
| 5   | The ability to perform the job and service reliably and accurately                 | 17%   | 0%          | 39%               | 17%               | 28%                | 3.4   |
| 6   | Administration   | 10%   | 0%          | 25%               | 20%               | 45%                | 3.9   |
| 7   | Visitor assistance   | 6%  | 6%          | 59%               | 24%               | 6%                 | 3.2   |
| 8   | The willingness of staff to help visitors and provide service to visitors          | 6%  | 6%          | 75%               | 6%                | 6%                 | 3.0   |
| 9   | The ability to convey confidence to visitors                                       | 6%  | 12%         | 65%               | 12%               | 6%                 | 3.0   |
| 10  | The ability of New Zealand Historic Places Trust to individually care for visitors | 24%   | 12%         | 53%               | 12%               | 0%                 | 2.5   |

The survey showed that there were written procedures for the following service quality variables:

- *The appearance of the physical facilities (ST1)*
- *Conservation (ST2)*
- *Personnel (ST3)*
- *Information materials (ST4)*

- *The ability to perform the job and service reliably and accurately (ST5)*
- *Administration (ST6)*
- *Visitor assistance (ST7)*

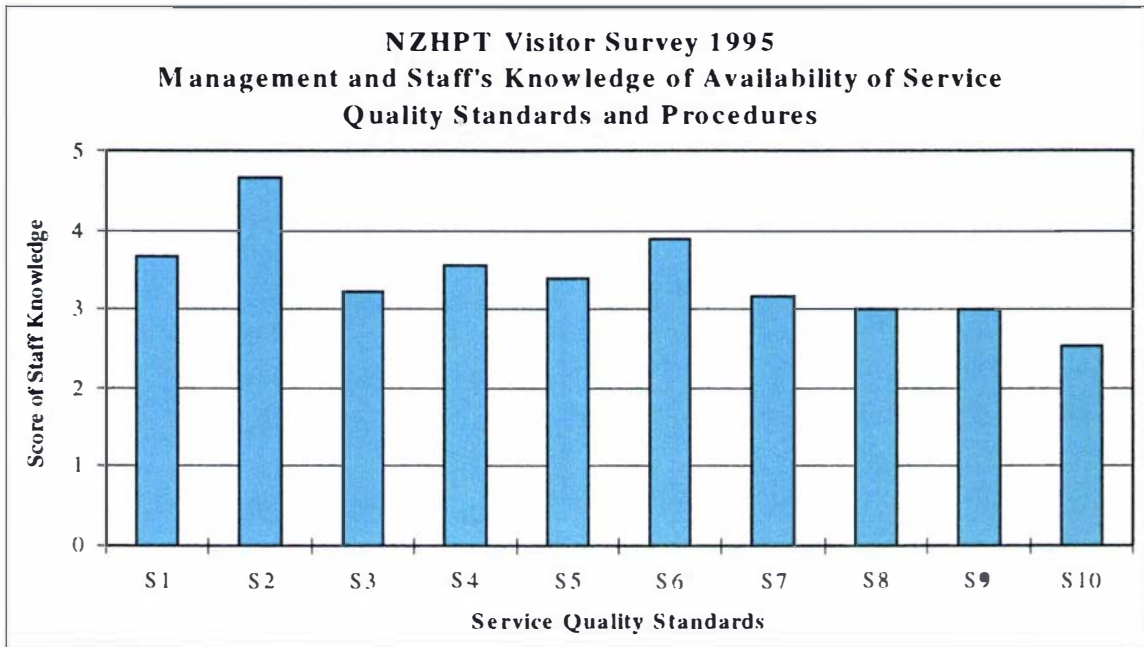
Most staff members agreed that there were informal procedures for most of the service quality variables. Most of these informal procedures related to staff performance and customer care. Some staff members considered that there were no written procedures and performance standards for services relating to customer care.

From the analysis shown in Table 7-4, we can conclude that the Trust's management and staff have different levels of knowledge and views on the availability of the written procedures and performance standards. The percentage of staff stating that they did not know that there were written procedures and performance standards relating to the services provided by the Trust to their visitors varied between 6% and 22% (as listed in Table 7-4). The majority of staff knew that there were informal written procedures and performance standards available for the services. Similarly, the majority of the staff stated that there were documented standards and procedures for conservation (ST2), administration (ST6) and 39% said that there were documented standards and procedures for information materials. The areas where there is a lack of documented standards and procedures were for the appearance of the physical facilities, personnel, the ability to perform the job and service reliably and accurately, visitor assistance, the willingness of staff to help visitors and provide service to visitors. There were no documented standards and procedures for the staff of the New Zealand Historic Places Trust to individually care for visitors.

A scoring system similar to that used in The Science Centre was employed to identify the areas where there is a lack of documented formal standards or procedures, and management and staff's knowledge of the existence of documented standards was low.

Figure 7-4 shows that there was higher level of knowledge or availability of written procedures and performance standards in the following areas:

- *Physical appearance of the building (ST1)*
- *Conservation (ST2)*
- *Administration (ST6)*



**Figure 7-4. Management and Staff's Knowledge of the Availability of Service Quality Standards**

The lowest scored areas were related to customer care service variables. These included:

- *Personnel (ST3)*
- *Visitor assistance (ST7)*
- *The willingness of staff to help visitors and provide service to visitors (ST8)*
- *The ability to convey confidence to visitors (ST9)*
- *The ability of New Zealand Historic Places Trust to individually care for visitors (ST10)*

It would appear that conservation and preservation of property are not really visitor-focused in that they relate to the conservation of the historic value of the property. While important in the overall preservation of property, this is seen by the visitors to be less important than items S7-S10 above. Clearly, as the interest of visitors increases, the importance of the visitor-related activities of the Trust also will increase. More attention is required by management to documentation and staff training in visitor services and customer care. ST7, 8, 9 and 10 are services relating to customer care.

The survey results shows that there is a lack of staff knowledge on customer care standards and procedures. When there is a lack of documented standards and procedures and the functions that the staff have to perform, the level of performance would depend on individual staff member's ability and their initiative in doing their job. This finding is

very similar to the first case study in Chapter 6. The management focus in The Science Centre was on the appearance of the facility and staff and the information provided by the staff. There is a lack of focus on the services relating to customer care.

## 7.6 VISITORS' OVERALL IMPRESSION OF THE TRUST PROPERTIES

The following is a summary of the visitors' overall ratings of the quality of service provided by the Trust properties. The detailed results are in Appendix C.6.

- 92.6% of the respondents were satisfied with their visit while only 7.3% stated that they were not satisfied. Visitors from the Thames School of Mines indicated that they were dissatisfied with the displays, presentation of exhibits and the tidiness of the property. These areas were reflected in the *Weighted Service Gap* analysis shown in Appendix C.5.2.
- 65.6% of the respondents were experienced visitors who had visited other similar places before. 82% of these respondents rated the property that they visited as "Good" to "Very Good". 11.9% rated it as acceptable and 6.2% rated it as "Poor" to "Very Poor". The majority of the experienced visitors were satisfied with the visit. Those who rated the visit as "Poor" were visitors to the Thames School of Mines.
- 67.3% of the respondents paid an admission charge. 67.8% of those stated that the visit was value for money.
- The majority of the respondents visited the property for 15-60 minutes (74%) and 22.7% stayed for more than 60 minutes. When asked whether they would stay longer, 38% said "Yes". The average time visitors spent at the property was between 30 to 60 minutes.
- 90.7% of the respondents said that they would recommend the property they visited to their friends, but only 53.8% said that they would visit the property again. This indicated that the visitors had a good impression of the Trust property and may use word-of-mouth to advertise for the Trust.
- 70% of the respondents were not looking for something to buy. Visitors to different properties have indicated that they were looking for different merchandise. This suggests that there may be a marketing opportunity to generate some funds from selling merchandise that the visitors want.

- The respondents who visited the Trust's properties enjoyed the personal attention and information given to them by the curators during the visit and the authentic features and history of the site. This confirms the important role that staff play in the delivery of good service in the tourist attractions.
- Suggestions were made by the respondents which would make the visit more enjoyable. They included guided tours, provision of refreshments, better lighting, more information on prints, photos, future development and lower admission fees, bigger print on the information, better car parking, road signs and the provision of toilet facilities.

In summary, the visitor's overall impression of the Trust properties are good and 90% of visitors would recommend the property to their friends. This could be used as an indication of customer satisfaction. The improvement suggestions made by the visitors could be used by the Trust for setting improvement programmes for their services delivery to the customer. The demography of visitors to the Trust's properties showed very similar characteristics when compared to other visitor surveys carried out in the UK and USA [Prentice, 1993; Yale, 1991] and with The Science Centre (refer to Appendix C.7 for detailed information).

## 7.7 CONCLUSIONS

The survey results were presented to the management and staff of the Trust in December 1996. The Trust management indicated that the information was to be used for the following areas [Appendix C.3]:

- *Assistance in guiding budget planning for a modest marketing programme of the Trust properties*
- *Providing feedback to staff on performance*
- *Providing reference materials for assisting the Trust in undertaking a major business and strategic planning exercise.*

This research shows that 49% of respondents found out about the properties by word-of-mouth. Therefore, it is important for management to focus on improving the service and to devise ways to use word-of-mouth to retain old customers and to attract new customers to visit the institution.

In general, it can be concluded that the management and staff of the New Zealand Historic Places Trust have a good understanding of the visitors' needs except for toilet facilities, seating and wheelchair access. The *Expectation Gap* analysis indicated the

areas where the management and staff have put a different priority on services compared to that of the visitors.

The respondents who visited the Trust's properties enjoyed the personal attention and information given to them by the curators and the authentic features and history of the houses. These could be a good foundation for the Trust to improve its image to attract more visitors.

The survey showed that the information provided by staff affected the *Visitors' Perception* of service quality. Visitors to the Trust properties in the Bay of Islands and the Thames region, and Fyffe House stated that they enjoyed the information and guided tours provided by staff, as well as the personal contact with the curators. This visitor feedback reinforced the important role that staff play in the process of service delivery at tourist attractions, and re-confirmed the findings from the United Kingdom Museums [Conway, 1992]. They consider that every member of staff was seen as an ambassador for the museum. Their attitude and approach influences the way the museum was perceived by visitors. This applies to the Trust and other tourist attractions.

The survey respondents from all seven properties had high expectations for those peripheral services that are not provided by most of the properties. We classified these services as "Services not provided" in this case study. The survey results showed that their satisfaction was not being met in these areas. The provision of toilet facilities, wheelchair access and refreshments are seen by the English Tourist Board as part of the essential services that should be provided to visitors at the attractions. The suggestions made by the respondents on how their visit could be more enjoyable emphasise the importance of these services. They could enhance their whole visitor experience to the property and make it more enjoyable. The suggestions included guided tours, provision of refreshments, better lighting, more information on prints, photos, future development and lower admission fees, bigger print on the information, better car parking, road signs and the provision of toilet facilities. With the smaller Trust properties some of these may not be feasible.

Five negative *Weighted Service Quality Gaps* appeared from this survey relating to toilet facilities, wheelchair access, road signs and opening hours were highlighted in the gap analysis. Visitors to the Trust properties had identified the needs not being met for the services related to these access variables.

In the regional analysis, gap analysis highlighted different areas where visitors' needs were not being met and this were supported by their suggestions for improvement.

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Conservation and administration are often not visitor-focused in that they relate to the conservation of the historic value of the property. While important in the overall preservation of the property, they are less important to visitors than the services relating to customer care.

Where there are no standards or written procedures and where functions relating to customer care are deemed important, investigation may be required to find out whether there is a need for appropriate written standards or procedures to assist with assurance of high quality customer service. Improvement programmes may be established based on the outcome of the investigation. Written standards and procedures for service related functions can be used to ensure the standard of performance is monitored. These documents could be used for staff training and as a basis for on-going improvement of service performance. This is particularly important when dealing with volunteer staff or where there is considerable staff turnover.

In summary, the general levels of service quality provided by the Trust were confirmed as very good and that management and staff have a good understanding of their customers. However, there are areas which were highlighted as negative *Service Quality Gaps* by the visitors to the institution. Some of these areas, in particular, the provision of toilets and car parking may be difficult to improve without substantial investment. Other aspects such as road signs and refreshments may be easier to improve in the larger properties.

More importantly, the survey results reaffirmed that the modified SERVQUAL model can be used as a tool to evaluate service performance in the Trust properties as seen through the visitors' eyes. It is easy to monitor and could be used to monitor the on-going improvement of service quality performance and as a fact-based decision tool for developing future strategic plans for the New Zealand Historic Places Trust.



# 8.

## Case Study 3

# Queen Elizabeth II Army Memorial Museum

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### 8.1 INTRODUCTION

The Queen Elizabeth II Army Memorial Museum (referred to as the QEII Museum from hereinafter) was opened in 1978. A market survey was carried out in 1993 to investigate the needs and visitors' attitude towards the QEII Museum [Molloy et al, 1993]. Several major changes were made based on the recommendations of the 1993 survey. A two storey complex which housed the Kippenberger Military Archive and Library on the upper level, the cafe and souvenir shop on the lower level and the Tears on Greenstone Roimata Pounamu in the old museum building was opened in March 1995 [QEII, 1996].

With an increasing number of visitors and the improvements made, it was becoming more important to re-evaluate and to improve the quality of the tourist experience for those visiting the QEII Museum. This chapter presents the results of the application of the modified SERVQUAL model to evaluate the service quality provided by the QEII Museum.

## 8.2 QUEEN ELIZABETH II ARMY MEMORIAL MUSEUM

The QEII Museum is situated at Waiouru, the centre of North Island, a crossroad on main traffic route from the northern to the southern part of the North Island. The building was designed by Miles Warren of Christchurch and it presents rather a stark and forbidding image as it rises from the red tussock on the southern approach to the Waiouru township.

In 1977, the Chief of General Staff, Major General Hassett, launched a campaign to raise funds to build a memorial museum which would house and preserve for all time the mementoes and paraphernalia of war. The Governor General, the Rt. Hon. Sir Keith Holyoake officially opened the building on October 1978 and the QEII Museum was open to the public the next day [Thomson, 1981].

The philosophy behind the building was to create and develop a centre which preserved and displayed relics and records of New Zealand military history, to show how history has contributed to the development of the nation and the moulding of the national character and to promote public recognition of that contribution [QEII, 1990]. It has four major roles in meeting this responsibility [QEII, 1996]:

- *To serve as a memorial to those who have served in the New Zealand Army in peace and in war*
- *To collect, preserve and display items which illustrate New Zealand's military history*
- *To educate serving soldiers and the general public about the roles, traditions, and responsibilities of the Army*
- *To provide, as appropriate, facilities for research and study of New Zealand military history*

The museum's displays are put in a chronological order. They are the various wars in which New Zealand has been involved, from the New Zealand wars through to the Vietnam war. Other displays deal with specialist subjects such as women at war, prisoners of war and medals.

In its eighteen years of operation, the QEII Museum has developed into a heritage and tourism destination of national and international significance. With over 950,000 objects in its collections, it is regarded as a repository housing some of New Zealand's most

significant military items. Annually some 66,000 visitors enjoyed a variety of exhibitions depicting aspects of New Zealand's military history [QEII, 1996].

### **8.3 SURVEY IMPLEMENTATION**

A draft questionnaire was prepared using the experiences and feedback obtained from the previous case studies - The Science Centre and the Trust. This draft questionnaire was used during the focus group meetings with the management and staff to develop a final questionnaire. The modifications made included the following:

- a) Re-grouping of the service quality variables - that is, to arrange the staff related service quality factors as a consecutive series of questions.
- b) Inserting questions relating to services provided by the cafe and shop - the cafe and shop are an important part of services of the QEII Museum and a new addition to the QEII Museum. The management would like to measure their customer satisfaction with the services provided, product range and prices. Seven items were added to the questionnaire.
- c) Adding the question of the usefulness of floor plan guide - some of the management of the QEII Museum were aware of the need to improve the existing floor plan guide for visitors and wanted to obtain the visitors' feedback on the plan.

The modified SERVQUAL questionnaire consisted of 29 questions which covered the five service quality dimensions (refer to Table 8-1 and Appendix D.-2). The final questionnaire was divided into two parts, as were the previous two case studies.

Table 8-1 shows 29 questions used in the visitor survey questionnaires relating to service quality. The actual visitor survey was carried out over a period of four months from September to December 1996. Four hundred and fifty-four useable responses were obtained from the visitor survey.

A survey of the management and staff was carried out in September 1996 on the same voluntary basis as for previous studies. The staff and management were also asked to evaluate their perception of the availability of written procedures and performance standards in each of the service quality dimensions (refer to Table 8-2). Seven responses were received from management and staff, this constituted a response rate of 20.5% from a total of thirty-five management and staff.

**Table 8-1. Visitor Survey Questions Relating to Service Quality**

| Service Quality    | SQ No. | Service Quality Variables   |
|--------------------|--------|---|
|                    |        | Features, Displays and Services   |
| Tangible           | 1      | The physical appearance of the facility                                     |
|                    | 2      | The layout and information level of the exhibitions                         |
|                    | 3      | The exhibition themes and content   |
|                    | 4      | The appearance of the staff   |
|                    | 5      | The information provided about the facility                                 |
|                    | 6      | The provision of toilets and parenting facilities                           |
| Peripheral Service | 7      | The usefulness of floor plan (map)  |
|                    | 8      | The range of products provided by cafe                                      |
|                    | 9      | The pricing of food in cafe   |
|                    | 10     | The services provided by cafe   |
|                    | 11     | The range of products provided by shop                                      |
|                    | 12     | The pricing of products in shop   |
|                    | 13     | The services provided by shop   |
| Reliability        | 14     | Staff can be relied on to provide the promised service                      |
|                    | 15     | The information provided by staff is accurate                               |
|                    | 16     | Visitors are informed about when the services will be performed             |
| Responsive-ness    | 17     | The staff are willing to help visitors                                      |
|                    | 18     | Staff respond to visitor needs as quickly as possible                       |
| Assurance          | 19     | Staff inspire trust and confidence in visitors                              |
|                    | 20     | Visitors feel comfortable during the visit                                  |
|                    | 21     | Staff are friendly, courteous and polite to visitors                        |
|                    | 22     | Staff have the knowledge to respond to visitor requests                     |
| Empathy            | 23     | Opening hours are convenient  |
|                    | 24     | The organisation has the visitor's best interests at heart                  |
|                    | 25     | Staff understand the needs of visitors                                      |
|                    | 26     | There is easy access for visitors with wheelchair, prams and young children |
|                    | 27     | Signs in the building makes it easy to find your way around                 |
|                    | 28     | Outdoor signs makes it easy to locate the building                          |
|                    | 29     | There is adequate car parking for visitors                                  |

**Table 8-2. Service Quality Standards and Procedures**

| Service Quality | Std | Standards  |
|-----------------|-----|--|
| Tangibles       | 1   | The appearance of the physical facilities                                |
|                 | 2   | The appearance of the exhibitions  |
|                 | 3   | The appearance of staff  |
| Reliability     | 4   | The ability to perform the promised service reliably and accurately      |
| Responsiveness  | 5   | The willingness of the staff to help visitors and provide prompt service |
| Assurance       | 6   | The knowledge and courtesy of the staff                                  |
|                 | 7   | The ability of staff to convey trust and confidence                      |
| Empathy         | 8   | The caring, individualised attention QE II Museum provides its visitors  |

## 8.4 SURVEY RESULTS

As with the other case studies the results of the QEII Museum visitor survey were analysed using gap analysis.

### 8.4.1 The management and staff's view of the importance of service quality

The QEII Museum management and staff scored all of the service quality dimensions identified as “*Important*” to “*Very Important*” (refer to Figure 8-1, Appendix D.4, Table 1). The score varied from 3.43 to 4.57 (with 3 is “*Important*”, 4 is “*Very Important*” and 5 is “*Extremely Important*”).

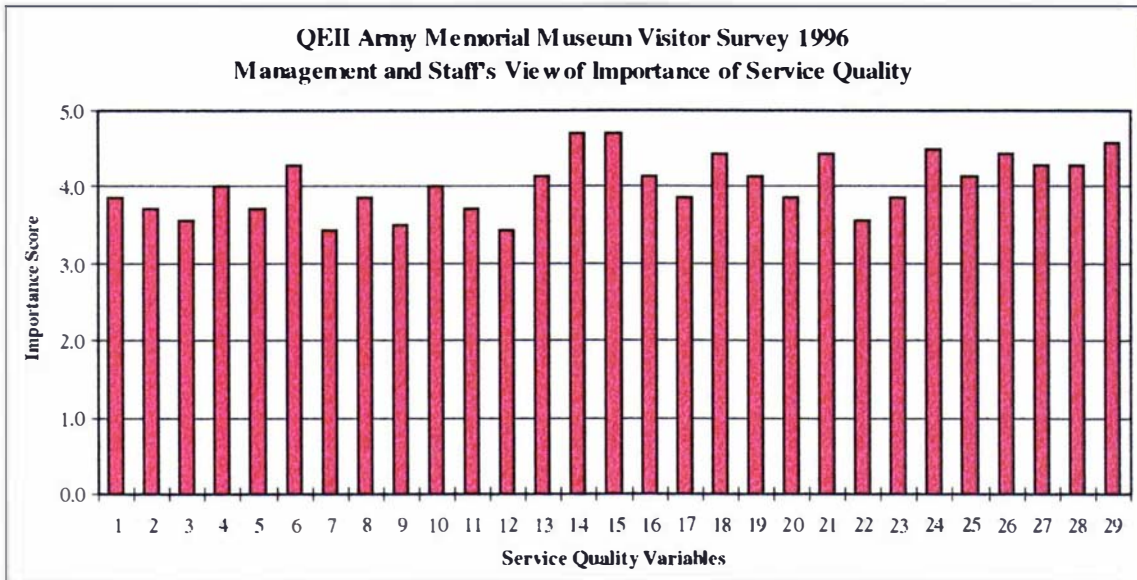
The tangible variables of service quality that were scored as “*Important*”, included:

- *The physical appearance of the facility (SQ1)*
- *Layout and information level of the exhibitions (SQ2)*
- *Exhibition themes and content (SQ3)*
- *Appearance of staff (SQ4)*
- *The information provided about the facility (SQ5)*
- *Usefulness of floor plan (SQ7)*
- *The product range and product prices in the cafe and shop (SQ8-SQ13).*

Variables that relating to staff related functions were scored as “*Very Important*” by the management and staff, included:

- *Information provided by staff is accurate (SQ15)*
- *Staff are willing to help the visitors (SQ17)*
- *Staff respond to visitors as quickly as possible (SQ18)*
- *Staff are friendly, courteous and polite to the visitors (SQ21)*

This finding is very similar to the previous two case studies, the staff related functions were scored highly by the management and staff.



**Figure 8-1. The Management and Staff's View of the Importance of Service Quality**

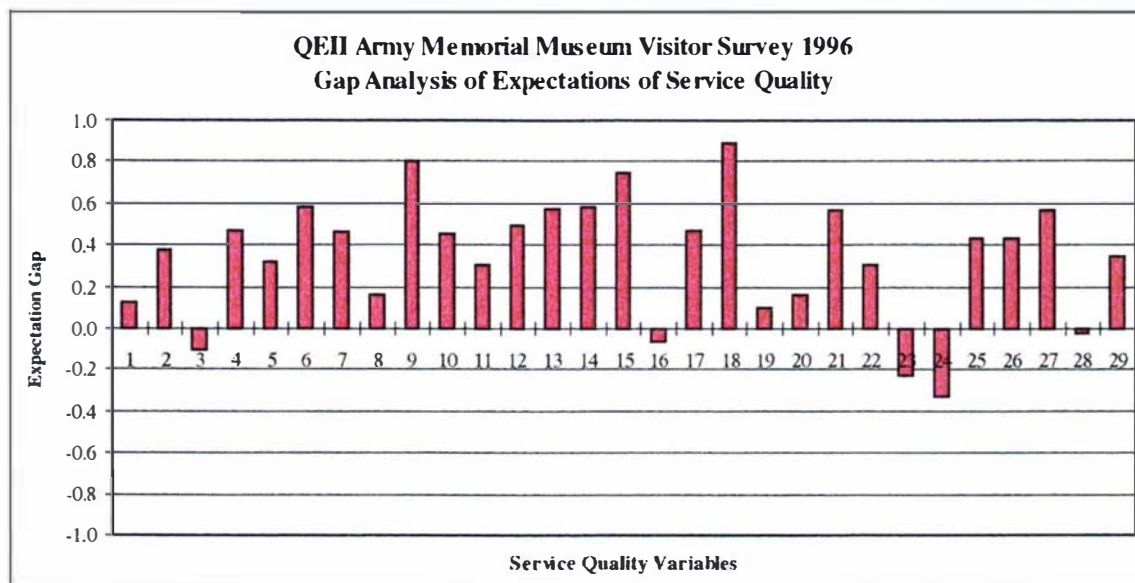
Access variables which related to indoor and outdoor signs (SQ27-28), wheelchair access (SQ26) and car parking (SQ29) were also rated as “*Very Important*” by the management except for the opening hours (SQ23) which was scored at 3.5.

#### 8.4.2 Gap analysis of expectation of service quality

The management and staff's assessments of their *Visitors' Expectation* were high in all aspects of service quality (refer to Appendix D.4, Table 2). The QEII management and staff expected that visitors would have “*Very High*” *Expectation* in the following service quality variables:

- *The provision of toilets and parenting facilities* (SQ6) 4.67
- *The information provided by staff is accurate* (SQ15) 4.83
- *Staff respond to visitor needs as quickly as possible* (SQ18) 4.83
- *Staff are friendly, courteous and polite to visitors* (SQ21) 4.67

The analysis of the *Expectation* gap shown in Figure 8-2, (refer to Appendix D.4, Table 2) indicated that on average, the visitors had lower levels of *Expectation* than the management and staff's perception of their visitors' *Expectation*. These were expressed as positive *Expectation Gaps*.



**Figure 8-2. The Gap Analysis of Expectation of Service Quality**

In general, the *Expectation* gaps were small. This indicates that the management and staff had a good understanding of their visitors' *Expectation*. However, five negative *Expectation* gaps appeared in this analysis:

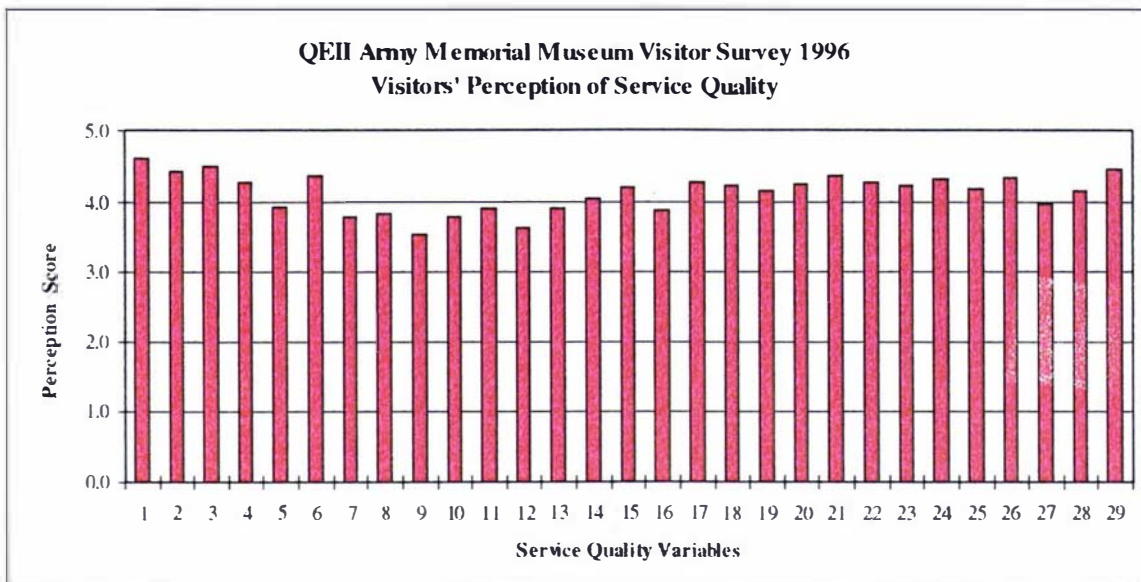
- *The exhibition themes and contents (SQ3) -0.10*
- *Visitors are informed when the services will be performed (SQ16) -0.06*
- *Opening hours are convenient (SQ23) -0.23*
- *The organisation has the visitor's best interests at heart (SQ24) -0.33*
- *Outdoor signs makes it easy to locate the building (SQ28) -0.02*

The negative *Expectation Gaps* did not appear to be very significant except for the "Opening hours" and "The organisation has the visitor's best interests at heart". This is supported by the comment from one of the visitor: "I wish the museum could be opened at 8am as I often leave Wellington early and have visitors with me" (the current opening hours are from 9am to 5pm daily).

### 8.4.3 Gap analysis of service quality using expectation weighting

The *Weighted Service Quality Gap* method was used to determine the degree of importance of a particular *Service Quality Gap* as assessed by visitors and shown in Table 8-3.

The average *Visitors' Perception* scores for service quality were mainly high (refer to Figure 8-3 and Appendix D.4, Table 3). The average *Visitors' Perception* scores varied from a low of 3.53 (SQ9) to a high of 4.61 (SQ1). “*The usefulness of floor plan*” (SQ7) and services related to the café and shop (SQ8) were scored as “Average” by the visitors.

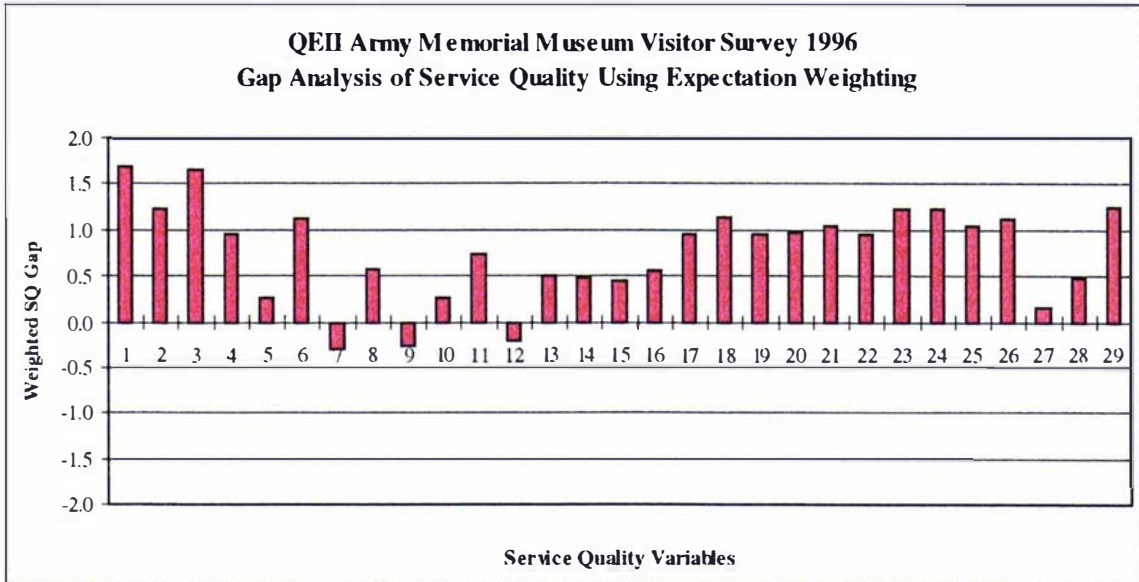


**Figure 8-3. Visitors' Perception of Service Quality**

On the whole, the *Weighted Service Quality Gap* analysis indicated that visitors rated service quality performance at the QEII Museum as “*Very Good*” to “*Excellent*”. This is shown in Figure 8-4 as positive *Weighted Service Quality Gaps*. It indicated the *Visitors' Expectation* of the service quality provided by the QEII Museum was exceeded in the majority of cases.

**Table 8-3. Gap Analysis of Service Quality Using Expectation Weighting**

| Service Quality           | SQ | Service Quality Dimensions  | Visitors' View                  |             | Service Quality Gap |        |
|---------------------------|----|---|---------------------------------|-------------|---------------------|--------|
|                           | No |   | Features, Displays and Services | Expectation | Perception          | SQ Gap |
| <b>Tangible</b>           | 1  | The physical appearance of the facility                                     | 4.21                            | 4.61        | 0.40                | 1.69   |
|                           | 2  | The layout and information level of the exhibitions                         | 4.13                            | 4.42        | 0.30                | 1.24   |
|                           | 3  | The exhibition themes and content   | 4.10                            | 4.51        | 0.40                | 1.65   |
|                           | 4  | The appearance of the staff   | 4.03                            | 4.26        | 0.24                | 0.96   |
|                           | 5  | The information provided about the facility                                 | 3.85                            | 3.91        | 0.07                | 0.26   |
|                           | 6  | The provision of toilets and parenting facilities                           | 4.08                            | 4.35        | 0.27                | 1.12   |
| <b>Peripheral Service</b> | 7  | The usefulness of floor plan  | 3.87                            | 3.79        | -0.08               | -0.30  |
|                           | 8  | The range of products provided by cafe                                      | 3.67                            | 3.83        | 0.16                | 0.57   |
|                           | 9  | The pricing of food in cafe   | 3.60                            | 3.53        | -0.07               | -0.26  |
|                           | 10 | The services provided by cafe   | 3.71                            | 3.78        | 0.07                | 0.26   |
|                           | 11 | The range of products provided by shop                                      | 3.69                            | 3.89        | 0.20                | 0.74   |
|                           | 12 | The pricing of products in shop   | 3.67                            | 3.61        | -0.06               | -0.21  |
| <b>Reliability</b>        | 13 | The services provided by shop   | 3.76                            | 3.89        | 0.13                | 0.50   |
|                           | 14 | Staff can be relied on to provide the promised service                      | 3.92                            | 4.04        | 0.12                | 0.48   |
|                           | 15 | The information provided by staff is accurate                               | 4.08                            | 4.19        | 0.11                | 0.44   |
| <b>Responsiveness</b>     | 16 | Visitors are informed about when the services will be performed             | 3.73                            | 3.88        | 0.15                | 0.55   |
|                           | 17 | The staff are willing to help visitors                                      | 4.03                            | 4.27        | 0.24                | 0.96   |
| <b>Assurance</b>          | 18 | Staff respond to visitor needs as quickly as possible                       | 3.94                            | 4.23        | 0.29                | 1.13   |
|                           | 19 | Staff inspire trust and confidence in visitors                              | 3.90                            | 4.15        | 0.25                | 0.96   |
|                           | 20 | Visitors feel comfortable during the visit                                  | 4.00                            | 4.24        | 0.24                | 0.97   |
|                           | 21 | Staff are friendly, courteous and polite to visitors                        | 4.10                            | 4.36        | 0.26                | 1.05   |
| <b>Empathy</b>            | 22 | Staff have the knowledge to respond to visitor requests                     | 4.03                            | 4.27        | 0.24                | 0.96   |
|                           | 23 | Opening hours are convenient  | 3.90                            | 4.22        | 0.32                | 1.23   |
|                           | 24 | The organisation has the visitor's best interests at heart                  | 4.00                            | 4.31        | 0.31                | 1.24   |
|                           | 25 | Staff understand the needs of visitors                                      | 3.90                            | 4.17        | 0.27                | 1.05   |
|                           | 26 | There is easy access for visitors with wheelchair, prams and young children | 4.07                            | 4.34        | 0.28                | 1.13   |
|                           | 27 | Signs in the building makes it easy to find your way around                 | 3.93                            | 3.97        | 0.04                | 0.15   |
|                           | 28 | Outdoor signs makes it easy to locate the building                          | 4.02                            | 4.14        | 0.12                | 0.48   |
|                           | 29 | There is adequate car parking for visitors                                  | 4.15                            | 4.46        | 0.30                | 1.25   |



**Figure 8-4. Gap Analysis of Service Quality Using Expectation Weighting**

Figure 8-4 shows that the five highest positive *Weighted Service Quality Gaps* were:

- *The physical appearance of the facility (SQ1:1.69)*
- *The exhibition themes and content (SQ3:1.65)*
- *There is adequate car parking for visitors (SQ29:1.25)*
- *The layout and information level of the exhibition (SQ2:1.24)*
- *The organisation has the visitor's best interests at heart (SQ24:1.24)*

Positive comments were received from 65% of the respondents, with 25% of these respondents stating that they enjoyed all the displays. Some examples of the positive comments made by the respondents were:

- *A first class place*
- *Excellent keep up the good work*
- *Excellent Museum. I could not fault it, keep up the same high standard and congratulations*
- *Extremely interesting. I am happy and satisfied with everything here*
- *Found museum excellent and improvements made make the facility a credit to all concerned*
- *Good overall. I would recommend a visit here to anyone*

- *I have passed the museum several times and have not been tempted to stop. I now wish I had visited the museum*
- *Kids really enjoyed looking around unhurried*
- *The Vietnam exhibit was good. The museum is very moving and needs just more time to spend in it*

Other visitors enjoyed the displays of military equipment and weapons, New Zealand history, the audio and video displays, the theatre, life-like displays, information on exhibits, interactive displays, quality of displays, the recognition of fellow servicemen, the atmosphere, the changes made since the last visit and the food provided by the cafe.

The respondents also enjoyed specific exhibits, for example, the Vietnam War, World War I and World War II, Gallipoli, New Zealand Wars and the Tears on Greenstone. Some respondents enjoyed the guided tour and the chance to talk to staff and an archivist.

Eighty percent of the respondents stated that they would recommend the QEII Museum to their friends. This is another indication of customer satisfaction and that satisfied visitors would recommend this facility to their friends using word-of-mouth.

Only three negative *Weighted Service Quality Gaps* appeared in the *Weighted Service Quality Gap* analysis. The order of the negative *Service Quality Gaps* did not change after taking the *Visitors' Expectation* weighting into account. The negative *Weighted Service Quality Gaps* were:

- *The usefulness of floor plan (map) (SQ7) -0.30*
- *The pricing of food in cafe (SQ9) -0.26*
- *The pricing of products in shop (SQ12) -0.21*

Comments made by the visitors related to floor plan were as follow:

- *One way traffic flow to see everything*
- *Bottom floor being more clearly sign-posted*
- *It might be a good idea to have signposts up and lead the visitor on a set path in a historical order*
- *More logical sequence to follow the exhibits*
- *Better signage of overall layout - inside the building*
- *Many of the exhibits and displays have no or very little signs*

- *The map could be improved. It is difficult to see what is where at a glance. Instead of number on map, use a heading*
- *The map provided needs to be more user-friendly, difficult to follow. Map needs to be more up-market, perhaps on glossy paper with some colour*

“The pricing of food in cafe” was scored as a negative *Service Quality Gap* by the visitors who visited the museum and cafe. 10.4% of respondents who visited the cafe during the survey period had a positive *Service Quality Gap* with score of 0.25 compared to an overall score of -0.07 from the whole surveyed population. Comments relating to the pricing of food included “I got charged 50 cents for a cup of water” and “Cheaper prices in the cafe”.

Further analysis of the cafe visitors’ service quality evaluation showed that they rated the “Staff are friendly, courteous and polite to visitors” (SQ21) as a negative *Service Quality Gap* with a score of -0.13. Comment relating to this was: “Cafe - people could be more happy and welcoming”. This negative *Service Quality Gap* was not shown in the overall analysis.

“The pricing of products in the shop” appeared to be a general concern to the respondents. Both cafe and museum visitors felt that their expectations were not met.

Visitors to the museum evaluated their visit as a total museum experience. This evaluation included the quality of the core services and peripheral services. The core services offered are the conservation of artifacts, displays and information about the artifacts. The peripheral services offered are the reception service, cafeteria, toilet facilities, shops, guided tours and education services. In this survey some visitors scored their *Perception* of the peripheral services offered by the QEII Museum as “Poor” to “Very poor” in the following areas:

- *The Information provided about the facility (SQ5)*
- *Service provided by the cafe (SQ10)*
- *The information provided by the staff is accurate (SQ15)*
- *Visitors are informed about when the services will be performed (SQ16)*
- *Staff understand the needs of visitors (SQ25)*
- *Signs in the building makes it easy to find your way around (SQ27)*

These areas were not highlighted as negative *Service Quality Gaps*. However the positive *Service Quality Gap* score was below 1.0. The negative *Service Quality Gaps*

were small and did not appear to be very significant. A further analysis was carried out using *Visitors' Expectation* weighting to highlight the significant *Service Quality Gaps*.

Suggestions for improvement were made by the respondents relating to information provided by the staff to visitors, indoor and outdoor signs, services provided by the cafe and the products in the cafe and shop. These were also reflected in Table 8-3 and Figure 8-4 where the *Weighted Service Quality Gaps* scored below 1.0. This suggests that although the service was meeting the visitor's expectation, there may be room for improvement.

The survey also showed that the majority of *Visitors' Expectations* were being met and that they enjoyed their visit to the museum. 32.6% of respondents stated that they enjoyed all the displays and exhibits. Others enjoyed the peaceful environment, convenient location, car parking, cafe, computer records, military vehicles outside the building, audio and video displays, New Zealand history and military information.

31% of the respondents made good constructive suggestions on how to make their visit more enjoyable:

#### **Information**

- *More information about rifles and guns, WWI battles involving New Zealand and early New Zealand wars*
- *Explanation about evolution of the wars*
- *To be able to access information on people*

#### **Facilities**

- *A playground for children, could have military theme*
- *An operative crèche*
- *Lights put in vehicles to be able to see in tank*
- *The Vietnam part - need seats, more explanation*

#### **Access and signs**

- *A pre-warning sign into parking area for vehicles coming from the north*
- *Easier access - I did not notice new park area*
- *Better signage of overall layout inside the building*
- *Bigger and better displays*

- *Signs on roadside with opening times*
- *The bottom floor being more clearly signposted*
- *Being allowed to go into tanks, touch/hold guns, practical stuff*

#### **Displays and exhibits**

- *Computer wax figure*
- *Display with today's technology and devices*
- *Displays, medal exhibit, true stories*
- *Exhibits changing (once a year)*
- *Exhibits that children can experience and learn*
- *More audio visual displays, demo, exhibitions*
- *More on New Zealand's peace keeping activities*
- *More parachuting exhibits*
- *To see more about women's involvement*

#### **Guided tours**

- *Guided tours/staff to answer questions*

## **8.5 MANAGEMENT AND STAFF'S KNOWLEDGE OF THE AVAILABILITY OF SERVICE QUALITY STANDARDS AND PROCEDURES**

The response rate from management and staff was 20.5%. Table 8-4 shows that 29% of the staff stated that they did not know of the existence of written procedures and performance standards for the appearance of the physical facilities (ST1).

29% responded that there were no written procedures and performance standards for "*The ability to perform the promised service reliably and accurately*" (ST1) and "*The caring, individualised attention QE II Museum provides its visitors*" (ST2).

14% of staff stated that there were no written procedures and performance standards in the following areas:

- *The appearance of the physical facilities (ST1)*
- *The appearance of staff (ST3)*

- *The willingness of the staff to help visitors and provide prompt service (ST5)*
- *The knowledge and courtesy of the staff (ST6)*
- *The ability of staff to convey trust and confidence (ST7)*

**Table 8-4. Management and Staff's Knowledge of the Availability of Service Quality Standards and Procedures**

| Std | Service Quality Standards and Procedures                                 | Knowledge of the Availability of Service Quality Standards and Procedures |          |                |                |                 | Score |
|-----|--|---|----------|----------------|----------------|-----------------|-------|
|     |  | Don't Know 1  | No Std 2 | Have Inf.Std 3 | Have For.Std 4 | Have Writ.Std 5 |       |
| 1   | The appearance of the physical facilities                                | 29%   | 14%      | 14%            | 14%            | 29%             | 3.00  |
| 2   | The appearance of the exhibitions  | 0%  | 0%       | 29%            | 57%            | 14%             | 3.86  |
| 3   | The appearance of staff  | 0%  | 14%      | 14%            | 0%             | 71%             | 4.29  |
| 4   | The ability to perform the promised service reliably and accurately      | 0%  | 29%      | 14%            | 29%            | 29%             | 3.57  |
| 5   | The willingness of the staff to help visitors and provide prompt service | 0%  | 14%      | 57%            | 14%            | 14%             | 3.29  |
| 6   | The knowledge and courtesy of the staff                                  | 0%  | 14%      | 57%            | 14%            | 14%             | 3.29  |
| 7   | The ability of staff to convey trust and confidence                      | 14%   | 14%      | 29%            | 29%            | 14%             | 3.14  |
| 8   | The caring, individualised attention QE II Museum provides its visitors  | 29%   | 29%      | 14%            | 14%            | 14%             | 2.57  |

Table 8-4 showed that 57% of management and staff stated that the Museum had formal written procedures and performance standards for “*The appearance of the exhibitions*” (ST2), and 71% stated that there were written procedures and performance standards for “*The appearance of staff*” (ST3). 14 to 29% of staff stated that there were written procedures and performance standards for all of the service quality dimensions identified in the survey.

14% of management and staff stated that there were written procedures and performance standards for the customer care functions performed by staff, for example, “*The willingness to help the visitors*” (ST5), “*The knowledge and courtesy of the staff*” (ST6) and “*The caring and individualised attention the organisation provides to its visitors*” (ST8).

The results indicated that there were differences in the opinions of management and staff's knowledge about the availability of written procedures and performance standards in different service areas provided by the QEII Museum.

A scoring system was used to give each category below a value and determine the average score for each quality standard area. The information was grouped together and presented as a percentage of the total respondents for the eight areas identified (refer to Table 8-4)



**Figure 8-5. Management and Staff's Knowledge of the Availability of Service Quality Standards and Procedures**

From the graph, Figure 8-5, it can be seen that, overall, the level of knowledge or availability of written procedures and performance standards was high in ST2 (*Appearance of exhibitions*), ST3 (*Appearance of staff*) and ST4 (*The ability to perform the promised service reliably and accurately*). The lowest score area is ST8 (*The caring, individualised attention Queen Elizabeth II Army Memorial Museum provides its visitors*) and (ST1) (*The physical appearance of the building*). Because the visitors' overall impression of the museum is particularly affected by both the individual attention received by the visitors and the appearance of the facilities, it would seem that some effort should be made to improve the documented procedures and standards for these areas and make them known to all staff.

## 8.6 VISITORS' OVERALL IMPRESSIONS OF THE QEII MUSEUM

The results of visitors' overall impression are summarised as follow. The detailed analysis is presented in Appendix D.6.

- 94% of respondents rated the quality of services provided by the QEII Museum as “*Good*” to “*Very Good*”. The overall satisfaction score for the visit was very high (93%). This result indicated to management and staff that the visitors have a good impression of the services provided by the museum.
- 46% of respondents had visited other similar facilities before. We could conclude that 46% of the visitors to the QEII Museum were experienced visitors. 88% of respondents rated the Museum as “*Good*” and “*Very Good*” compared with other similar facilities.
- 68% of respondents paid an admission charge. For those that paid an admission charge, 60.8% of respondents considered that the visit was value for money. Some stated that the admission fee was too expensive.
- 62.7% of respondents spent 1-2 hours in the Museum. 22% of respondents spent less than an hour, 13% spent from 2-3 hours and 2.4% spent more than 3 hours. The average time spent in the Museum was approximately 1.5 hours.
- 80% of the visitors to the QEII Museum said that they would recommend this place to their friends. This could mean that 80% of the customers are satisfied with the service provided.
- Only 28.4% of respondents surveyed said that they were likely to visit the facility again in the next year and 71.6% said “*No*”. The reason could be that most of the displays of the QEII Museum are static displays. Some visitors stated that they would like to see variety and interactive displays. Although others commented that they liked the changes made since their last visit.
- Visitors stated that they enjoyed most of the exhibits and displays (65%) and in particular, they stated that they enjoyed:

**Displays and exhibits** - Computer and audio visual presentation, life-like displays, playing on the tanks, the greenstone wall, firearm and machines displays, interactive computer displays, the displays of Vietnam, Gallipoli, the Maori war, the nursing clinic, military memorabilia, first European war, WWI and WW2 exhibitions.

**Information** - Personal records, historical film, New Zealand military and wars, recognition of fellow servicemen and theatres of operation and service person computer search.

**Staff** - Guided tour, staff are friendly and courteous, time with the archivist.

**Facilities** - Food and coffee.

**Access** - Location, signs, car parking, peaceful environment, good toilet facilities.

- 32.6% of respondents took time to make constructive comments. 31% of these comments were expressing their enjoyment and satisfaction of the visit. The other 69% made constructive comments on what can be done to improve the services provided by the Museum as listed in Section 8.4.

In summary, the level of visitors satisfaction was high. Good constructive suggestions were given by the visitors and could be used by management and staff for establishing the continuous improvement programmes for service delivery. The visitor profile for the QEII Museum was analysed and the detailed information is presented in Appendix D.7.

## 8.7 CONCLUSIONS

The results show that this visitor survey could be used by the QEII Museum to establish and identify their customers, their needs and how satisfied they are with the services provided. In particular the gap analysis can be used to identify differences in management and staff's perception and their customers' expectations.

The survey results showed that the overall satisfaction and impression of quality of services provided by the QEII Museum were both very high. 80% of the respondents indicated that they would recommend this facility to their friends. In addition to the gap analysis, these are just some of indicators for customer satisfaction.

The *Weighted Service Quality Gap* analysis identified three negative *Weighted Service Quality Gaps*. They were:

- *The usefulness of floor plan (map) (SQ7)*
- *The pricing of food in cafe (SQ9)*
- *The pricing of products in shop (SQ12).*

Some of these areas, in particular, usefulness of floor plan, the prices of food in the cafe and the products in the shop could be improved easily. These are good constructive suggestions made by the respondents which could make the QEII Museum more

attractive to their visitors. These improvements may require some investment, however, the improvements should make the facilities more attractive to visitors. This is very important when word-of-mouth is one of the main sources of information and respondents commented that they enjoyed seeing the changes and improvements made since their previous visit.

This research shows that 39% of the respondents found out about the QEII Museum by word-of-mouth, therefore, it is important for management to focus in improving the service and to devise ways to use word-of-mouth to retain old customers and attract new customers to visit the institution.

It is widely recognised in the quality management system that a standardisation of procedures enables staff to perform consistently and the documented procedures form a basis for staff training and development. The survey of management and staff showed that the level of knowledge or availability of written procedures and performance standards was not very high except in appearance of exhibitions and the appearance of staff. The lowest score area is the caring and individualised attention that the Museum provided to visitors.

The QEII Museum is planning to enter the New Zealand Tourism Award [NZTB, 1996]. One of the major Tourism Award criteria is customer focus and satisfaction. This survey results provide a measure of the visitors' satisfaction and their overall impression rating. Most importantly, the *Service Quality Gaps* analysis provides information on where visitors needs are being met and areas where needs are not being met. The senior management of the QEII Museum indicated that the results obtained will be used for the following purposes:

- *Establishing the visitors' perception of service quality*
- *Benchmarking for continuous improvement of the service quality programme*
- *Identifying areas of concern (system and service delivery process)*
- *Identifying training needs*
- *Strategic planning for future development programmes.*

At the end of the project, the research results were presented to the QEII Museum management with positive feedback received. They commented that the information provided valuable data about their visitors. The senior management of the QEII Museum said that the *Service Quality Gap* analysis confirmed some problem areas they had already identified but did not have quantitative evidence to prove their claims. The

modified SERVQUAL tool provides the vehicle for them to identify these problem areas with quantitative data evaluated by “the visitors” not “the management”.

# 9.

## **Evaluation Of The Research Methodology**

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### **9.1 INTRODUCTION**

This chapter evaluates the validity and reliability of the research methodology. Statistical techniques used in this research including the factor analysis, correlation analysis, structural modelling and correspondence analysis. Factor analysis was used to identify the service quality dimensions of the heritage attractions. Correlation and structural modelling were used to link the service quality dimensions. Correspondence analysis was used to seek the relationships between visitors' assessment of service quality and the visitor demographics.

### **9.2 CONTENT VALIDITY**

Content validity is the extent to which the content provides an adequate coverage of the topic under study. If the instrument contains a representative sample of the subject matter of interest, then the content validity is good [Emory and Cooper, 1991]. Parasuraman et al. [1990] used focus groups to determine the dimensions of service quality, then tested and refined the instrument. This research adopted a similar approach. A focus group was used to generate ideas from management and staff on which service quality variables should be used to evaluate heritage attractions.

Questionnaires were modified to meet the requirements of the respective institution. The modifications took place at different stages of this research through feedback from respondents and management of the surveyed institutions [Tan, 1996a,b, 1997a,b]. The modifications made included:

- Changing the wording to reflect the unique characteristics of the attraction

- Adding the peripheral services in the questionnaire to reflect the nature of the specific services provided to visitors
- Deleting similar questions which appeared twice in the original questionnaire
- Reducing the length of the questionnaire by deleting the *Importance* and *Satisfaction* columns used in the pilot test at The Science Centre and Manawatu Museum
- Grouping similar category questions together to reduce confusion
- Expanding the survey questionnaire to include the “*Visitor Impression*” and “*Visitor Profile*”
- Providing a comment section to seek visitors’ feedback on what they enjoyed most during the visit and how the services could be improved to make it more enjoyable
- Adding the survey of management and staff’s knowledge of the availability of standards and procedures of service quality.

In summary, it is considered that the overall questionnaire development process provides a high level of content validity for the assessment of service quality in the case studies undertaken. Modifications to the questionnaires were made to ensure that the instrument was measuring the service quality that was provided by the institution, and to meet the needs of the institution and their customers.

### **9.3 SERVICE QUALITY DIMENSIONS OF HERITAGE ATTRACTIONS**

Parasuraman et al [1990] identified five service quality dimensions in their research of four different service companies. The five dimensions identified were tangible, reliability, responsiveness, assurance and empathy. The research reported here showed that the service quality dimensions identified by Parasuraman et al. are not the same across different sectors of service industry. Each sector of the service industry has its own unique feature which may contribute to different groupings of service quality dimensions.

In New Zealand heritage attractions, the service quality variables identified by the three heritage attractions carried out in this research, using the modified SERVQUAL model, were very similar to the original SERVQUAL model except for the peripheral services, such as: toilet facilities, shop, cafe, seating and wheelchair access. Factor analysis identified four dimensions, not five dimensions, as found by Parasuraman et al. [1990].

The four dimensions identified in this study were tangibles, peripheral services, staff related functions and access.

In all three case studies, a dimension called “Staff Related Functions” was identified by visitors as an important dimension. In the original SERVQUAL model, Parasuraman et al. [1990] categorised the service quality dimension relating to staff as: reliability, responsiveness, assurance and empathy. These four dimensions were not clearly distinguished by visitors as four separate dimensions. They were grouped into one dimension in all three studies at the different locations as a single “Staff Related Functions” dimension.

Our findings in heritage attractions are similar to those of Gronroos [1984] who suggested the staff related functions quality can be related to both technical and functional quality. Technical quality in this case refers to the reception of visitors, the guided tour, knowledge and the ability to explain to visitors about the house and displays. This quality has a great influence on the perception the customer receives of the quality of service, and this result is found to be consistent for all three case studies in this research.

Services are people-oriented. Employees meet the visitors and the way in which they behave and treat the customer can give a feeling of trust and pleasure. Functional or process quality refers to the approach of delivery of the service to visitors. For example, staff are friendly, courteous, polite, and willing to help. Good quality service requires both functional and relational quality to complement each other.

In the New Zealand Historic Places Trust study, there is an overlap in the access dimension where visitors identified access to the Trust property in terms of accessibility to the physical facility, and to the staff and the curator. The accessibility of staff refers to the knowledge, ability to respond to visitors’ requests, friendliness, courtesy and politeness shown to visitors by the staff. This confirms the important role that the staff and curator play in the Trust properties. They can be described as ambassadors of the Trust. Their ability to transfer the message to visitors in a professional manner is one of the important services that the visitors expect.

In the three case studies, variables identified in the access dimension were: outdoor signs, opening hours, signs in the building, car parking, easy access for wheelchairs and prams and making visitors feel comfortable during their visits. This is a separate dimension found in the heritage attractions and is different from the Parasuraman et al. studies [1990]. They grouped the access variables into empathy dimension which included access, communication, and understanding the customer variables.

The tangible factor in The Science Centre was the third dimension and in the QEII Museum case study it was the fourth dimension. In the Trust case study, *Visitors' Expectation* of service quality changed after their visit. They had high expectation of staff and access dimensions and identified these dimensions as important service quality measures before the visit. Their perception of service quality in historic places changed after their visit and the tangible dimension became the most significant service quality dimension, ie. the first factor.

“Peripheral services” is another important service quality dimension identified in all three case studies. The peripheral services include: toilets, seating, refreshments, wheelchair access, shop and cafe. As noted previously, this dimension was classified as significant in the British studies as follows:

*“Where appropriate to the nature, scale and location of the attraction, to provide adequate toilet facilities, coach and car parking and catering arrangements”* [English Tourist Board, 1993].

The service quality dimensions identified in this research do not appear to be the same as Parasuraman et al. finding in other service sectors. “Staff related functions” are interdependent; the variables identified by the SERVQUAL are relevant to heritage attractions, however, they are not categorised into four service quality dimensions as suggested by Parasuraman et al. [1990]. Heritage attractions have unique features. The grouping of the service quality variables in the dimensions appears to be different from those obtained in studies of other service sectors. However, the grouping developed for the case studies are reasonably consistent across all of the attractions studies.

## 9.4 CORRELATION BETWEEN THE SERVICE QUALITY MEASUREMENT

The correlation coefficient between the average scores of 1055 samples on *Expectation*, *Perception*, *Service Quality Gap* and *Weighted Service Quality Gap* of the New Zealand Historic Places Trust are shown in the matrix Table 9-1.

The correlation coefficient was calculated to measure the degree of agreement between *Expectation*, *Perception* and *Service Quality Gap*. The correlation matrix analysis in Table 9-1 shows that elements in each category were highly correlated with other categories. The results show there was a correlation of 0.88 between *Expectation* and *Perception* and this indicated 77% agreement between the two scores. A high correlation of 0.83 between *Perception* and *Service Quality* was also found indicating a 69% agreement between the two scores. The results obtained from a sample size of 1055

provided a high confidence level, therefore confirming a true relationship between the different variables measured [Kline, 1994].

**Table 9-1. Correlation Matrix of Expectation, Perception, Service Quality Gap and Weighted Service Quality Gap**

| Correlation              | Expectation | Perception | Service Quality | Weighted Service Quality |
|--------------------------|-------------|------------|-----------------|--------------------------|
| Expectation              | 1.00        |            |                 |                          |
| Perception               | 0.886       | 1.00       |                 |                          |
| Service Quality          | -0.474      | -0.828     | 1.00            |                          |
| Weighted Service Quality | -0.526      | -0.859     | 0.996           | 1.00                     |

Other researchers [Brown, Churchill and Peter, 1993; Cliff and Ryan, 1994; Quiram, 1995] did not achieve such a high degree of correlation suggesting that there was not such a strong relationship between expectation and perception. This may indicate that visitors to the Trust properties knew what they expected to see and, in general, the visit met their expectations. The gaps indicated that there are small areas where some, even small improvement can be achieved.

## 9.5 FACTOR STRUCTURE OF SERVICE QUALITY IN HERITAGE ATTRACTIONS

The empirical research carried out by other researchers using the SERVQUAL model has proved that it is a reliable tool for measuring service quality. However, they found difficulty in confirming the five dimensions identified by Parasuraman et al [1988] in the original research [Carman, 1990; Bell and Shieff, 1990; Saleh and Ryan, 1991; Babakus and Boller, 1992; Bouman et al, 1992; Godwin, 1992; Walbridge and Delene, 1993; Kong and Mayo, 1993; Bowers et al, 1994; Cliff and Ryan, 1994; Gagliano and Hathcote, 1994; Rosen and Karwan, 1994; Triplett et al, 1994; Orwig, 1994; Kettinger and Lee, 1994; Pitt et al, 1995; Innes and Hartman, 1995; Lam, 1995; Johns and Tyas, 1996].

Factor analysis identifies the underlying factors which explain the variation in the total sample. The underlying factors are groupings of the factors which could be considered as one derived factor which can explain significant elements of the variation in the samples obtained from the surveys. It is a useful technique for clarifying the main components of the factors which affect the variation and hence is a useful conceptual tool for analysing the data collected from the case studies.

In this research, factor analysis was used to identify the service quality dimensions in the heritage attractions by examining the relationship between factors and the important

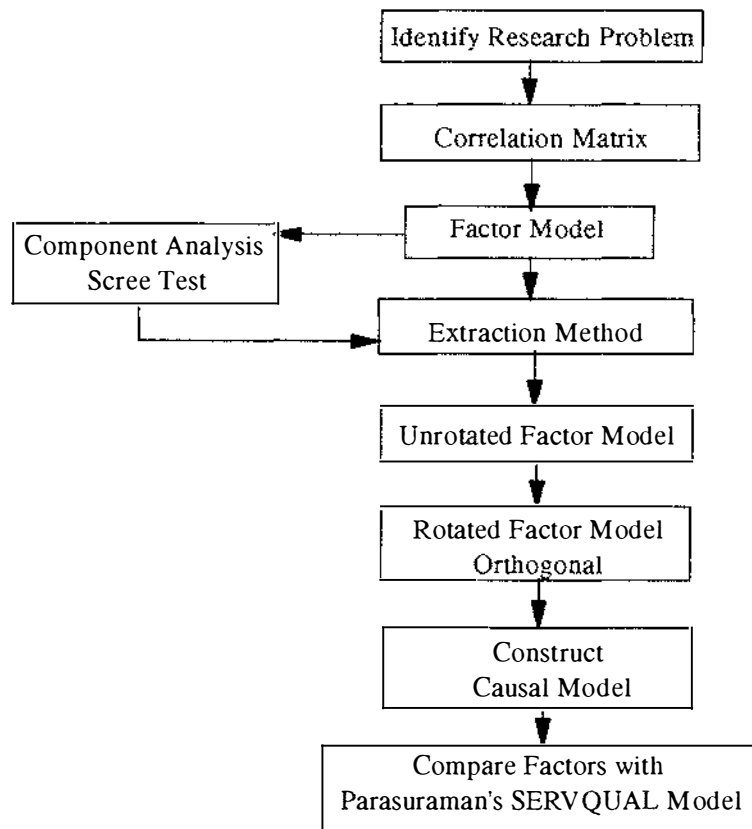
service quality elements as evaluated by visitors to heritage attractions. The raw data was collected from visitor surveys of three New Zealand heritage attractions, namely, The Science Centre and Manawatu Museum, the New Zealand Historic Places Trust properties and the Queen Elizabeth II Army Memorial Museum. The results were analysed and then compared with the original SERVQUAL model developed by Parasuraman et al. [1990].

Callan [1990] stated that the validity and reliability of the results from factor analysis can be affected by low response rate and the sample size is important when using factor analysis. Guilford [1956] argued that 200 was a minimum figure for factor analysis. Kline [1994], however, suggested that in data with a clear factor, samples of 100 were quite sufficient. Hair et al, [1987] suggested that the general rule is that there should be *“four or five times as many observations as there are variables”*.

The sample sizes for the three case studies carried out in this research are greater than 200:

1. The Science Centre and Manawatu Museum with a sample size of 400.
2. The New Zealand Historic Places Trust with a sample size of 1055.
3. Queen Elizabeth Army Memorial Museum with a sample size of 454.

A factor analysis decision structure suggested by Hair et al. [1992] provides a guideline for conducting this data analysis. Figure 9-1 shows the analysis steps taken for this research.



**Figure 9-1 . Factor Analysis Decision Diagram**

An exploratory factor analysis was conducted to explore the main service quality dimensions in the heritage attractions. The service quality elements used in this research were different from the original SERVQUAL model developed by Parasuraman et al. [1990]. It was considered that factor analysis would help to identify the service quality variables important to heritage attractions such as historic houses and museums. These service quality variables were then grouped into service quality dimensions using factor analysis and the results were compared with the original SERVQUAL model [Parasuraman et al, 1990].

Minitab software was used to conduct factor analysis on the visitor surveys database (DBase 5). This database stored the raw data from the survey questionnaires. The factor analysis was carried out using *Weighted Service Quality Gap* data from the three case studies. A Principal Component Analysis model was used to identify factors and the Scree test was used to select the significant factors on the *Weighted Service Quality Gap* data. Eigenvalues were used to assess the importance of each component and assist in selecting the number of factors needed to account for the maximum portion of the variance represented in the original set of variables [Hair et al, 1992].

After the factors were extracted through principal component analysis, they were rotated using orthogonal rotation (*VARIMAX*). The reason for using orthogonal rotation was to

achieve a simpler, and theoretically, more meaningful factor solution. This helps to improve the interpretation by reducing some of the ambiguities that appear in the unrotated factor analysis. The data was then rotated using factors with loadings greater than 0.3 [Hair et al, 1992; Kline, 1994].

Further analysis was carried out to find the causal relationship between service quality variables [Hair et al, 1992] using structural equation modelling. The structure model emerges from structural modelling analysis. A regression, using a goodness-of-fit measure was used to assess the causal relationship of the variables and the factors. A causal diagram was drawn of the structural model of the dimensions of service quality for each case study.

Correspondence analysis [Greenacre, 1993] was used to examine the association, or interaction between the service dimensions identified from the factor analysis and the visitors' demographics.

### **9.5.1 The Science Centre and Manawatu Museum**

The Scree test on the factor analysis was undertaken and a principal component analysis used in The Science Centre identified four factors, using the *Weighted Service Quality Gap* data. These four factors contributed to the visitors evaluation of service performance (refer to Table 9-2).

**Table 9-2. Principal Component Factor Analysis of the Weighted Service Quality Gap of The Science Centre**

| The Science Centre and Manawatu Museum<br>Factor Analysis for Weighted Service Quality Gap |   |       |        |          |                    |            |
|--|---|-------|--------|----------|--------------------|------------|
| SQ   | Service Quality Variables                                       | Staff | Access | Tangible | Peripheral Service | Comm-unity |
| 11   | The staff are willing to help visitors                          | 0.796 | 0.000  | 0.000    | 0.000              | 0.713      |
| 12   | Staff respond to visitor needs as quickly as possible           | 0.776 | 0.000  | 0.000    | 0.000              | 0.677      |
| 13   | Staff inspire trust and confidence in visitors                  | 0.727 | 0.330  | 0.000    | 0.000              | 0.644      |
| 9  | The information provided by staff is accurate                   | 0.674 | 0.000  | 0.000    | 0.319              | 0.588      |
| 16   | Staff have the knowledge to respond to visitor requests         | 0.665 | 0.407  | 0.000    | 0.000              | 0.616      |
| 8  | Staff can be relied on to provide the promised service          | 0.657 | 0.000  | 0.309    | 0.000              | 0.557      |
| 15   | Staff are friendly, courteous and polite to visitors            | 0.632 | 0.000  | 0.360    | 0.000              | 0.593      |
| 19   | Staff understand the needs of visitors                          | 0.625 | 0.415  | 0.000    | 0.000              | 0.579      |
| 10   | Visitors are informed about when the services will be performed | 0.582 | 0.000  | 0.000    | 0.429              | 0.564      |
| 22   | Outdoor signs make it easy to locate the building               | 0.000 | 0.797  | 0.000    | 0.000              | 0.688      |
| 17   | Opening hours are convenient                                    | 0.000 | 0.776  | 0.000    | 0.000              | 0.684      |
| 21   | Signs in the building   | 0.000 | 0.776  | 0.000    | 0.000              | 0.671      |
| 18   | The organisation has the visitor's best interests at heart      | 0.000 | 0.754  | 0.000    | 0.000              | 0.698      |
| 23   | There is adequate car parking for visitors                      | 0.000 | 0.749  | 0.000    | 0.000              | 0.656      |
| 20   | There is easy access for visitors with wheelchairs, prams       | 0.381 | 0.505  | 0.000    | 0.000              | 0.418      |
| 14   | Visitors feel comfortable during the visit                      | 0.000 | 0.488  | 0.485    | 0.000              | 0.562      |
| 1  | The physical appearance of the facility                         | 0.000 | 0.000  | 0.765    | 0.000              | 0.685      |
| 2  | The layout and information level of the exhibitions             | 0.000 | 0.000  | 0.756    | 0.000              | 0.651      |
| 3  | The exhibition themes and content                               | 0.000 | 0.000  | 0.717    | 0.000              | 0.616      |
| 4  | The appearance of the staff                                     | 0.386 | 0.000  | 0.624    | 0.000              | 0.540      |
| 5  | The information provided about the facility                     | 0.356 | 0.000  | 0.520    | 0.000              | 0.450      |
| 6  | The provision of toilets and parenting facilities               | 0.000 | 0.000  | 0.000    | 0.793              | 0.703      |
| 7  | The cafe and shop provide important services                    | 0.000 | 0.000  | 0.000    | 0.765              | 0.675      |
|  | Variance  | 4.990 | 4.215  | 3.165    | 1.856              | 14.22      |
|  | % Var   | 0.217 | 0.183  | 0.138    | 0.081              | 0.619      |

### First Factor - Staff Related Functions

Parasuraman et al. [1990] identified five dimensions of service quality. In The Science Centre case study however, the dimensions relating to responsiveness, assurance and reliability did not appear to be separate dimensions. All staff related functions variables (SQ8, 9, 12, 13, 15, 16 and 19) in this analysis were grouped together as one dimension by the visitors. This is different from Parasuraman et al. [1990] studies, where "Staff

Related Functions” variables were grouped into responsiveness, assurance and reliability and empathy dimensions. This first new dimension was labelled “Staff Related Functions”. This first factor contributed to 21.7% of the variance of all variables.

The structural model of dimensionality of service quality shows the loading of the “Staff Related Functions” factor has an R squared value of 0.871 (refer to Figure 9-2). The major explanatory variables of staff related function have a loading of 0.796 to 0.414, and are the variables 8, 9, 11, 12, 13, 15, 16 and 19.

### **Second Factor - Access Dimension**

The second factor identified in this case study was the grouping of the “Access” dimension (SQ14, 17, 18, 20, 21 and 23). This “Access” dimension contributed to 18.3% of the variance of all variables. Variables identified in this dimension were outdoor signs, opening hours, signs in the building, car parking, easy access for wheelchairs and prams and visitors feel comfortable during their visits. In the Parasuraman et al. studies [1990], they grouped the access variables into the empathy dimension which included access, communication and understanding the customer variables.

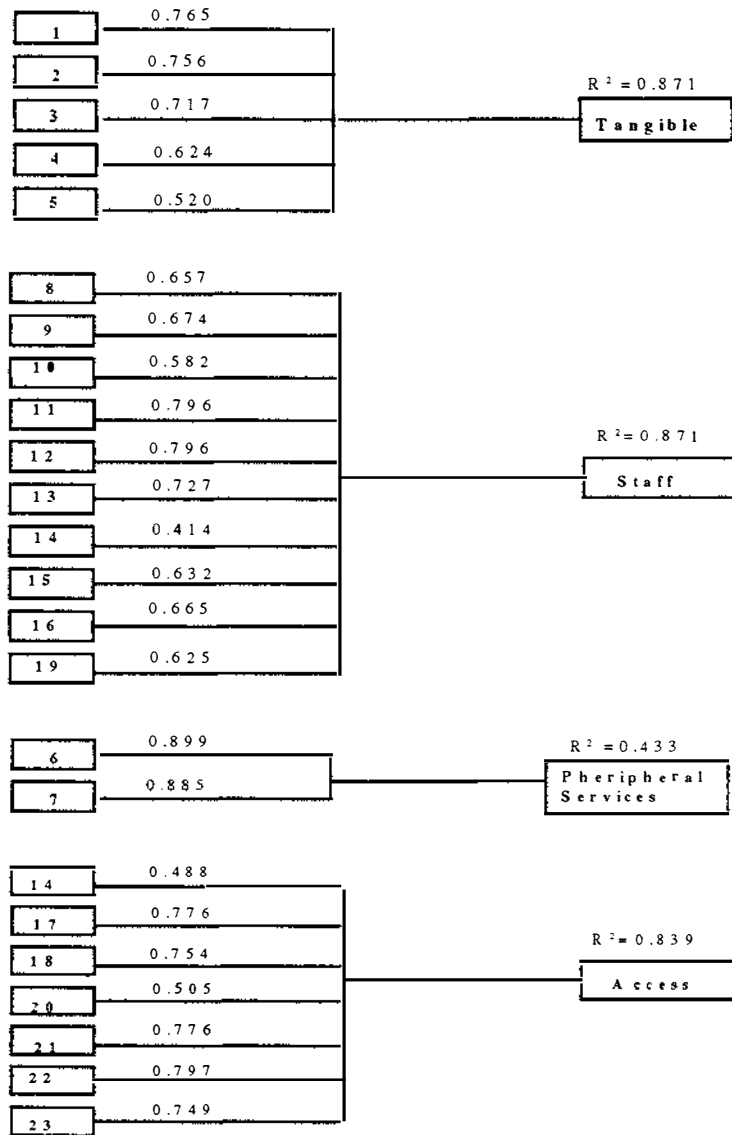
The “Access” dimension identified by factor analysis has a R squared value of 0.839 and it explained 83.9% of the variation of access dimension (refer to Figure 9-2). The major explanatory variables of “Access” dimension are the variables 17, 18, 20, 21, 22 and 23.

### **Third Factor - Tangible Dimension**

The tangible dimension (SQ1-5) was the third factor identified in this case study and was the same as the Parasuraman et al. studies [1990]. The tangible dimension explained 13.8% of the variance of all variables. This dimension included the physical appearance of the facility, layout and information, exhibition themes and content, the appearance of staff, and the information provided about the facility. One variable in the tangible dimension overlapped the access dimension, namely the variable “*visitors feel comfortable during the visit*”.

The loading of the tangible variable, gives an R squared value of 0.754 (refer to Figure 9-2). This means that the structural relationship amongst the variables of the tangible dimension explains 75.4% of the variation in the overall variables with the major explanatory variables of the tangible dimension being variables 1, 2 and 3.

**Figure 9-2. Structural Model of Dimensionality of Service Quality of The Science Centre**



**Fourth Factor - Peripheral Services Dimension**

The provision of toilet and parenting facilities and the provision of a cafe and/or shop was the fourth factor identified (SQ6, 7). This is classified as “Peripheral Services” dimension and explained 8.1% of the variance of all variables. In heritage attractions, the provision of toilet facilities, cafe and/or shop was recognised as an essential part of the service [Conway, 1992]. These peripheral services are identified by museum visitors as part of the total museum experience [Hooper-Greenhill, 1994] and they are services that could be expected to be available to visitors but not part of the core functions [English Tourist Board, 1993].

The “Peripheral Services” dimension has a lower R squared value of 0.433 (refer to Figure 9-2). This dimension related to the provision of toilets and parenting facilities and services provided by shop and/or cafe. Both variables have high loadings which indicate high causal relationships for the factor.

### **9.5.2 New Zealand Historic Places Trust**

In the case of the New Zealand Historic Places Trust (hereinafter called the Trust) case study [Tan, 1997a], 22 factors of *Weighted Service Quality Gap* were used and their explanatory power was expressed by their eigenvalues using principle component analysis. A Scree test indicated that the four factors should be retained.

Table 9-3 shows the factor analysis of the *Weighted Service Quality Gap* with four factors being identified and analysed. These four factors accounted for 57.9% of the variance for the 22 variables.

#### **First Factor - Tangible and Staff Related Functions**

Two dimensions: the tangible dimensions (SQ1-SQ8) and the two “Staff Related Functions” (SQ14-SQ15) were grouped together and identified as the first factors in the factor analysis of the *Weighted Service Quality Gap*. The inclusion of the staff related function in this grouping is different from the grouping of The Science Centre case study. This factor accounted for 26.7% of all variables. Tangible dimensions include the physical appearance, authentic nature, contents and buildings, the grounds and gardens, information about the place, the historical atmosphere, and staff appearance. This factor is similar to the original SERVQUAL model except that the nature of the tangible variables were modified to reflect the nature of the historic places.

The structural model of dimensionality of the service quality of the Trust showed that the loading of tangible factor with the R squared value is 0.621 (refer to Figure 9-3). This meant that the structural part of tangible factor explains 62.1% of the variations. The major explanatory variables of tangible factor are variables 1, 2, 3, 4, 5, 6, 7, 8, 13, 14 and 15.

The analysis of the results confirmed that the tangible dimension is an important service quality dimension when visitors evaluate the service performance of a historic place.

**Table 9-3. Principal Component Factor Analysis of the Weighted Service Quality Gap of the Trust (Sorted Rotated Factor Loadings and Communalities)**

| New Zealand Historic Places Trust<br>Factor Analysis for Weighted Service Quality Gap |   |                  |        |        |                     |             |
|---|---|------------------|--------|--------|---------------------|-------------|
| SQ  | Service Quality Dimensions                                | Tangible & Staff | Staff  | Access | Peripheral Services | Communality |
| 2   | The authentic nature of the place.                        | 0.757            | 0.000  | 0.000  | 0.000               | 0.594       |
| 7   | Historical atmosphere is captured                         | 0.756            | 0.000  | 0.000  | 0.000               | 0.610       |
| 1   | The physical appearance of the place                      | 0.755            | 0.000  | 0.000  | 0.000               | 0.593       |
| 3   | The contents are interesting                              | 0.755            | 0.000  | 0.000  | 0.000               | 0.583       |
| 14  | Staff are willing to help visitors                        | 0.737            | -0.336 | 0.000  | 0.000               | 0.691       |
| 4   | The building and contents are well cared for              | 0.680            | 0.000  | 0.000  | 0.000               | 0.496       |
| 8   | Finding your way around in the building is easy           | 0.668            | 0.000  | 0.000  | 0.000               | 0.483       |
| 13  | Staff are presentable                                     | 0.667            | 0.000  | 0.000  | 0.000               | 0.545       |
| 5   | The grounds/gardens are well cared for                    | 0.662            | 0.000  | 0.000  | 0.000               | 0.458       |
| 15  | Staff inspire confidence in visitors                      | 0.653            | -0.388 | 0.000  | 0.000               | 0.606       |
| 6   | The information provided about the place is informative   | 0.628            | 0.000  | 0.000  | 0.000               | 0.428       |
| 18  | Staff have the knowledge to respond to visitors' requests | 0.000            | -0.796 | 0.000  | 0.000               | 0.682       |
| 17  | Staff are friendly, courteous and polite to visitors      | 0.387            | -0.713 | 0.000  | 0.000               | 0.663       |
| 16  | The information provided by staff is consistent           | 0.000            | -0.704 | 0.000  | 0.000               | 0.558       |
| 19  | Opening hours are convenient                              | 0.000            | -0.620 | 0.000  | 0.000               | 0.446       |
| 20  | Wheelchair access is available                            | 0.000            | 0.000  | 0.692  | 0.000               | 0.540       |
| 11  | Refreshments are provided                                 | 0.000            | 0.000  | 0.681  | 0.000               | 0.543       |
| 22  | There is adequate car parking for visitors                | 0.000            | -0.442 | 0.597  | 0.000               | 0.554       |
| 21  | Adequate road signs make it easy to find the place        | 0.000            | -0.483 | 0.527  | 0.000               | 0.522       |
| 12  | Seating is provided                                       | 0.378            | 0.000  | 0.502  | 0.000               | 0.408       |
| 9   | Toilets are provided                                      | 0.000            | 0.000  | 0.000  | 0.899               | 0.866       |
| 10  | Toilets are clean   | 0.000            | 0.000  | 0.000  | 0.885               | 0.865       |
|   | Variance  | 5.8798           | 2.9696 | 2.0722 | 1.812               | 12.733      |
|   | % Var   | 0.267            | 0.135  | 0.094  | 0.082               | 0.579       |

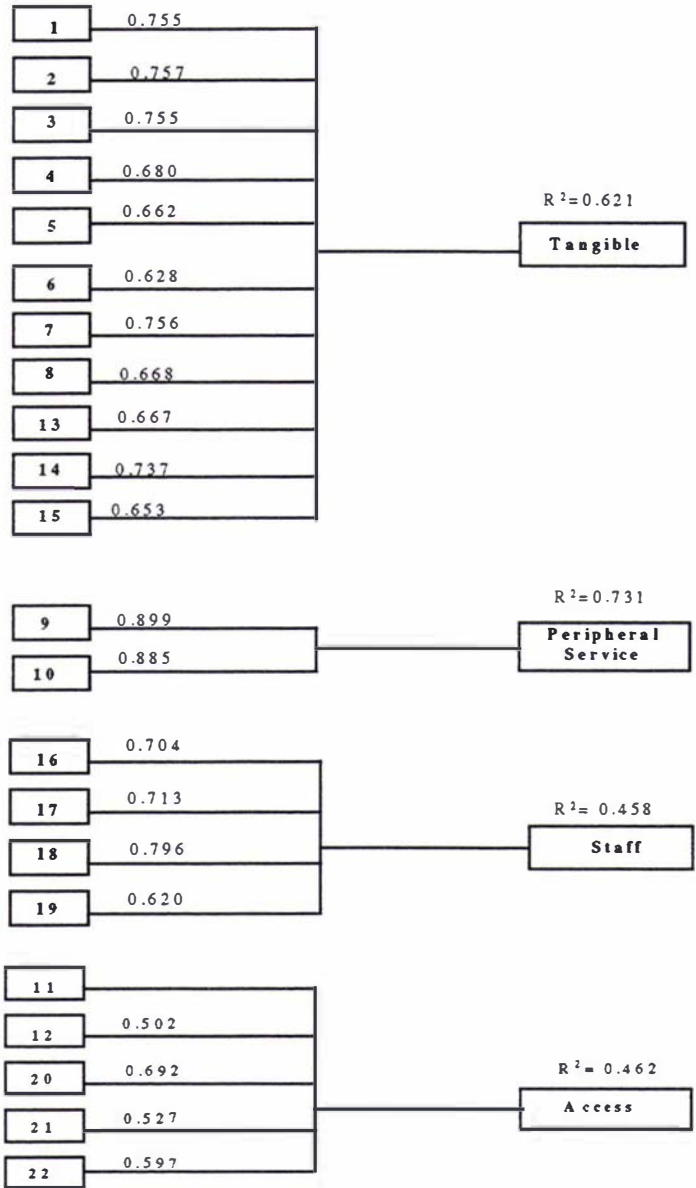
### Second Factor - Staff related functions

The remaining “Staff Related Functions” (SQ13-SQ18) were grouped together and identified as the second factor. This factor accounted for 13.5% of the variance of all variables. The “Staff Related Functions” dimension included the variables: appearance, helpfulness, friendliness, accessibility of staff and knowledge of staff.

The “Staff Related Functions” dimension had an R squared value of 0.458 (refer to Figure 9-3). This factor related to staff’s willingness to help, knowledge, attitude and the consistency of information provided. Only three staff variables have high loadings which indicate high causal relationships for the factor, the variables being 16, 17 and 18.

Visitors identified the above two dimensions as important to the property’s service quality. It is important to note that “Staff Related Functions” in this case study were grouped together as one dimension as in The Science Centre.

Figure 9-3. Structural Model of Dimensionality of Service Quality of the Trust



### **Third Factor - Access Dimension**

The “Access” dimension was identified as the third factor in the *Weighted Service Quality Gap*. This factor accounted for 9.4% of the variance including opening hours, wheelchair access, road signs and car parking.

The “Access” dimension identified by factor analysis had an R squared value of 0.462 (refer to Figure 9-3) and it explains 46.2% of variables for the “Access” dimension. The major explanatory variables of “Access” dimension are the variables 11, 12, 20, 21 and 22.

### **Fourth Factor - Peripheral Services**

In this Trust case study, peripheral services such as toilet facilities, refreshments, seating and wheelchair access (SQ9-SQ12, 20) were grouped together and identified as the fourth factor. This factor accounted for 8.2% of the variance.

The “Peripheral Services” dimension has an R squared value of 0.731 (Figure 9-3). The major explanatory variables of “Peripheral Services” dimension have a loading of 0.899 to 0.885, and are the variables relating to toilets (SQ9, 10).

The majority of the properties do not provide refreshments and are lacking in wheelchair access and seating. Toilets are available at most properties but in some properties they may not be easily found. All these services were identified by visitors who responded to the survey as important and were identified as the fourth factor in the factor analysis.

## **9.5.3 Queen Elizabeth II Army Memorial Museum**

Queen Elizabeth II Army Memorial Museum (hereinafter called QEII Museum) was the third case study [1997b] and 29 service quality variables were identified in this case study. These included the five dimensions identified by Parasuraman et al. and 6 other variables relating to café and/or shop which are an important part of the operation of the museum. The factor analysis of the QEII Museum identified four factors which accounted for 53% of variation as shown in Table 9-4.

**Table 9-4. Principal Component Factor Analysis of the Weighted Service Quality Gap of the QEII Museum**

| Queen Elizabeth II Army Memorial Museum<br>Factor Analysis for Weighted Service Quality |   |        |                    |        |          |            |
|---|---|--------|--------------------|--------|----------|------------|
| SQ  | Features, Displays and Services   | Staff  | Peripheral Service | Access | Tangible | Comm-unity |
| 19  | Staff inspire trust and confidence in visitors                              | 0.804  | 0.000              | 0.000  | 0.000    | 0.689      |
| 22  | Staff have the knowledge to respond to visitor requests                     | 0.798  | 0.000              | 0.000  | 0.000    | 0.674      |
| 18  | Staff respond to visitor needs as quickly as possible                       | 0.792  | 0.000              | 0.000  | 0.000    | 0.680      |
| 17  | The staff are willing to help visitors                                      | 0.770  | 0.000              | 0.000  | 0.000    | 0.687      |
| 25  | Staff understand the needs of visitors                                      | 0.737  | 0.000              | 0.000  | 0.000    | 0.628      |
| 15  | The information provided by staff is accurate                               | 0.622  | -0.390             | 0.000  | 0.000    | 0.546      |
| 21  | Staff are friendly, courteous and polite to visitors                        | 0.572  | 0.000              | 0.344  | 0.000    | 0.478      |
| 14  | Staff can be relied on to provide the promised service                      | 0.507  | -0.490             | 0.000  | 0.000    | 0.507      |
| 16  | Visitors are informed about when the services will be performed             | 0.323  | 0.000              | 0.000  | 0.000    | 0.264      |
| 9   | The pricing of food in cafe   | 0.000  | -0.748             | 0.000  | 0.000    | 0.579      |
| 10  | The services provided by cafe   | 0.000  | -0.731             | 0.000  | 0.000    | 0.559      |
| 8   | The range of products provided by cafe                                      | 0.000  | -0.729             | 0.000  | 0.000    | 0.554      |
| 12  | The pricing of products in shop   | 0.000  | -0.699             | 0.000  | 0.000    | 0.506      |
| 11  | The range of products provided by shop                                      | 0.000  | -0.686             | 0.000  | 0.000    | 0.542      |
| 13  | The services provided by shop   | 0.000  | -0.664             | 0.000  | 0.000    | 0.551      |
| 28  | Outdoor signs makes it easy to locate the building                          | 0.000  | 0.000              | 0.770  | 0.000    | 0.634      |
| 29  | There is adequate car parking for visitors                                  | 0.000  | 0.000              | 0.747  | 0.000    | 0.576      |
| 26  | There is easy access for visitors with wheelchair, prams and young children | 0.000  | 0.000              | 0.655  | 0.000    | 0.449      |
| 27  | Signs in the building makes it easy to find your way around                 | 0.393  | 0.000              | 0.623  | 0.000    | 0.575      |
| 20  | Visitors feel comfortable during the visit                                  | 0.000  | 0.000              | 0.548  | 0.000    | 0.444      |
| 23  | Opening hours are convenient  | 0.337  | 0.000              | 0.499  | 0.000    | 0.377      |
| 24  | The organisation has the visitor's best interests at heart                  | 0.398  | 0.000              | 0.478  | 0.000    | 0.433      |
| 3   | The exhibition themes and content   | 0.000  | 0.000              | 0.000  | 0.790    | 0.629      |
| 2   | The layout and information level of the exhibitions                         | 0.000  | 0.000              | 0.000  | 0.758    | 0.594      |
| 1   | The physical appearance of the facility                                     | 0.000  | 0.000              | 0.000  | 0.744    | 0.571      |
| 4   | The appearance of the staff   | 0.000  | 0.000              | 0.000  | 0.513    | 0.397      |
| 7   | The usefulness of floor plan (map)  | 0.302  | -0.342             | 0.000  | 0.493    | 0.452      |
| 6   | The provision of toilets and parenting facilities                           | 0.000  | 0.000              | 0.000  | 0.456    | 0.296      |
| 5   | The information provided about the facility                                 | 0.000  | 0.000              | 0.000  | 0.521    | 0.399      |
|   | Variance  | 4.9639 | 3.7983             | 3.2946 | 2.8138   | 14.8706    |
|   | % Var   | 0.177  | 0.136              | 0.118  | 0.100    | 0.531      |

### First Factor - Staff Related Functions

The "Staff Related Functions" dimension was identified the first factor. This factor accounted for 17.7% of the variance of all variables, and the individual variables were

identified as: staff inspire trust and confidence; their knowledge when they respond to visitor requests and needs, their willingness to help and understand the needs of visitors, the information provided by staff is accurate, staff are friendly, courteous and polite to visitors, and can be relied on to provide the promised service.

The structural model analysis indicated that there is a high causal relationship between staff related functions variables. The “Staff Related Functions” dimension has an R squared value of 0.812 (refer to Figure 9-4). This means that the structural part of this factor explains 81% of the variance of all variables in the staff related functions. The major explanatory variables of the “Staff Related Functions” dimension are variables 15, 17, 18, 19, 22 and 25.

### **Second Factor - Peripheral Services**

Peripheral services of the QEII Museum, such as the cafe and shop were grouped together as the second factor in this case study. The new cafe and shop were opened twelve months prior to the study. Management identified these two operations as an important business operation of the institution. This “Peripheral Services” dimension explained 13.6% of the variance of all variables and included: pricing, product range and services provided by the cafe and shop.

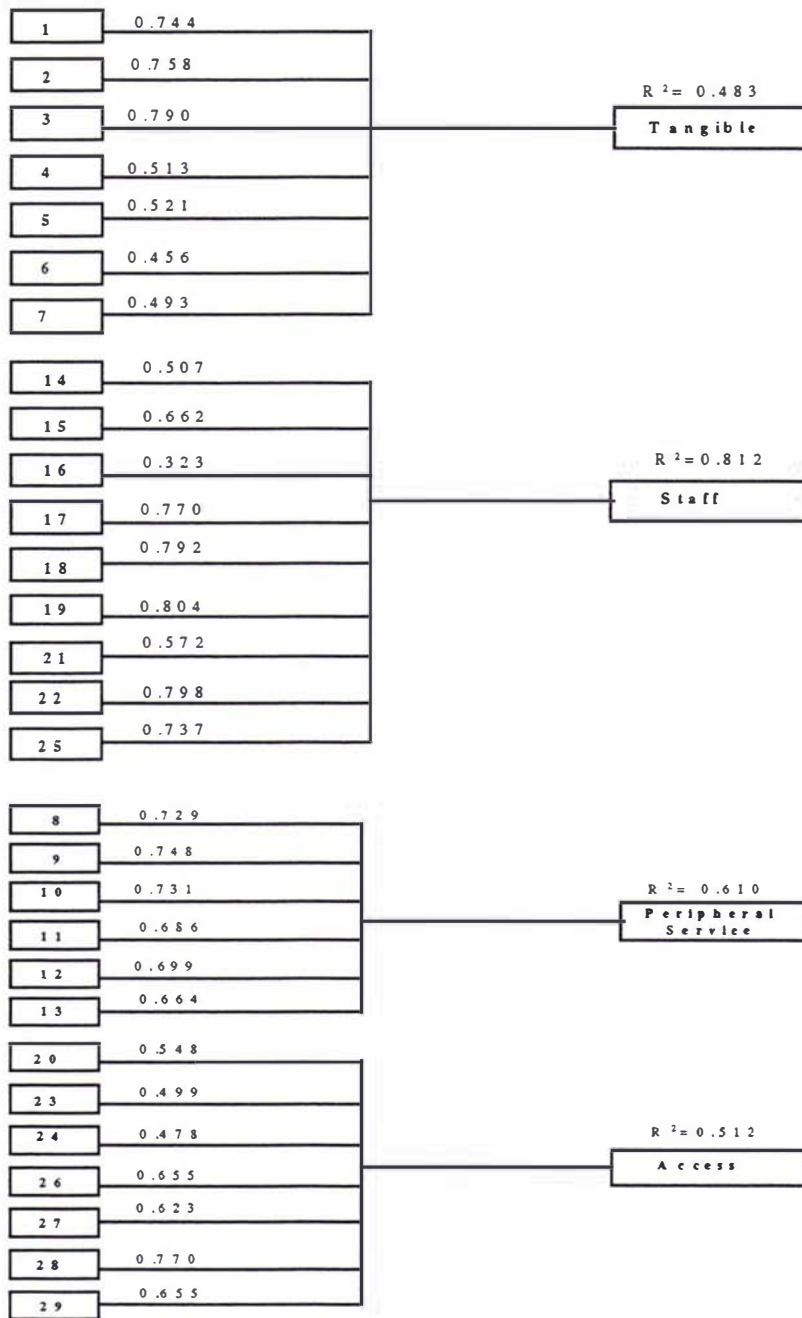
The “Peripheral Services” dimension has an R squared value of 0.61 (refer to Figure 9-4). The major explanatory variables of the peripheral service dimension have a loading of 0.664 to 0.748, and are the variables relating to services, price and the range of products provided by shop and cafe (8, 9, 10, 11, 12 and 13).

### **Third Factor - Access dimension**

“Access” dimension was the third factor identified by the factor analysis and accounted for 11.8% of the variation. The “Access” dimension includes outdoor and indoor signs, car parking, wheelchair access, opening hours, environment, and the organisation has the visitors’ best interest at heart. This “Access” dimension is similar to that of Parasuraman et al [1990].

The “Access” dimension identified by factor analysis has an R squared value of 0.512 (refer to Figure 9-4). It explained 51.2% of the variation of the access dimension. The major explanatory variables were car parking, signs, opening hours, and that visitors feel comfortable in the building.

**Figure 9-4. Structural Model of Dimensionality of Service Quality of the QE II Museum**



**Fourth Factor - Tangible Dimension**

The fourth factor identified by factor analysis was the tangible dimension and accounted for 10% of the variance of all variables. This dimension included variables such as: exhibit themes, layout, physical appearance of the facility, staff appearance, floor plan, toilet and parenting facilities, and information about the facility.

The tangible dimension has a lower R squared value of 0.483 (refer to Figure 9-4). It explained 48.3% of the variation in the tangible dimension. The major explanatory variables were appearance, layout, exhibition themes, toilet facilities, and floor plan.

#### 9.5.4 Summary of the factor analysis of heritage attractions

The principal component factor analysis consistently identified four dimensions in the three case studies although there were some overlapping of staff and access dimensions in one of the case studies as shown in Table 9-5. This could have been affected by the wording and visitor's interpretation of the questionnaire. The four dimensions identified were: staff related functions, access, tangible and peripheral services dimension.

**Table 9-5. Summary of Factor Analysis for Three Case Studies**

| Factor Analysis for Weighted Service Quality Gap<br>Percentage of Variance of all Variables |       |        |          |                    |             |
|---|-------|--------|----------|--------------------|-------------|
| Case Studies  | Staff | Access | Tangible | Peripheral Service | Communality |
| The Science Centre  | 0.217 | 0.183  | 0.138    | 0.081              | 0.619       |
| The Trust   | 0.267 | 0.094  | 0.082    | 0.135              | 0.579       |
| QE II Museum  | 0.177 | 0.118  | 0.100    | 0.136              | 0.531       |

The percentage of variables for each factor varied. This variation could be due to the difference in questions used in each case study, however, the finding of this research consistently grouped the staff related functions as one group. They are not identified as four separate dimensions as found by Parasuraman et al. [1990]. They categorised the staff related functions in four factors, namely, reliability, assurance, responsiveness and empathy dimensions. Another feature of this research is the access dimension which has been identified as a distinct dimension in this research and cannot be grouped into the empathy dimension of the original model [Parasuraman et al, 1990].

A structural model helps to link the causal relationship and the factors (Figure 9-2,3,4). There is a consistent causal relationship between the service variables and the four dimensions identified in the three case studies. However, low correlation was found between the overall impression and overall satisfaction of service quality with service quality gaps in all three case studies. This suggests that the actual impression is not a good indicator of the need and the areas for improvement.

An unique feature of the heritage attractions is the peripheral services provided by the attractions. Peripheral services are seen as part of the total service package provided by heritage attractions to visitors. It is, therefore, an important service quality dimension in the heritage attractions and it appeared in other studies as a separate factor.

## **9.6 CORRESPONDENCE ANALYSIS OF SERVICE QUALITY AND VISITORS' DEMOGRAPHICS**

Correspondence analysis compares the frequency distributions of the responses received to each of the question between different groupings or classifications of the respondents. The analysis technique is particularly suitable for survey response data where the frequency distribution of the data is not normal. It provides an opportunity to identify differences or commonalities in the responses of selected groups such as groups selected by age or ethnic origin. It also provides a cross tabulation or a relationship map between the responses produced by older age groups and higher qualified visitors. This process can be very useful for identifying the needs of these groups where they are a significant sector of the target market. With the time constraints on the project the analysis which could be undertaken using this methodology was limited to the evaluation of a few nominal variables to see if the results could be of value. It was clear that there was a wealth of further information which could be gleaned from the data using this technique. This, therefore, is an important recommendation for future work.

Simple correspondence analysis [Greenacre, 1993] was used in this research to find relationships between the visitors' demographics and their assessment of service quality, by experience, ethnic groups, and gender. In the New Zealand Historic Places Trust case study, further analysis was carried out to find differences among the Trust properties.

Before conducting the simple correspondence analysis, raw data were grouped into four dimensions according to the results obtained from the factor analysis for each case study as discussed in Section 9.4. The analysis was carried out using Minitab on the average of the variables within each dimension.

A joint map was produced using both asymmetric and symmetric mapping. It was found that the symmetric scaling provided the better interpretation of the data and was chosen to present in this section scaling (refer to Appendix F). The interpretation involves reviewing the spread of the data points on one axis at a time, and using the relative positions of the points to give a descriptive name to the axis from the symmetric maps.

All statements used in the interpretation of results are relative and it is not possible to judge the absolute difference in perception scores between the groups unless they are referred back to the original data.

### **9.6.1 The Science Centre and Manawatu Museum**

In the case of The Science Centre it was decided to test for differences or similarities using correspondence analysis between experienced and non-experienced visitors and the differences in evaluation of service quality by ethnic groups.

The results showed that the non-experienced visitors gave a higher score for the peripheral services, staff and access dimensions of services quality than the experienced visitors (refer to Appendix F.1). However, they gave a lower score for tangible dimension than the experienced visitors. It would seem that their expectations for the tangible dimension of the service were not met in comparison with the less experienced visitors.

There was a difference between the different ethnic groups on the perception of the four dimensions of the services. The overseas visitors and New Zealand Chinese generally gave lower scores than the New Zealand European, Maori and New Zealand Indian.

In general, female visitors gave a higher score than the male visitors to The Science Centre for all four dimensions.

### **9.6.2 New Zealand Historic Places Trust**

In the case of New Zealand Historic Places Trust, similar method was used to test for differences or similarities using correspondence analysis between experienced and non-experienced visitors and the differences in evaluation of service quality by ethnic groups.

The results showed that in the New Zealand Historic Places Trust case study, there were no differences identified between the experienced or non-experienced visitors for the assessment of the four dimensions of service quality (refer to Appendix F.2).

The perception score given by the New Zealand European and others were higher than the New Zealand Chinese in the tangible and staff related functions dimensions. There was not much difference in the perception of the peripheral services and access dimensions by the different ethnic groups.

There were some differences between gender perception of the services provided by the Trust. In general, female visitors gave higher scores than male visitors in all four dimensions. This finding is similar to The Science Centre.

Further analysis was conducted to find out the different relationships between the scores of different properties. In the tangible dimension, all properties had above average scores. In the staff dimensions, Fyffe House has the best score compared to the other

properties. Alberton House was scored lower than the average. The others were scored between good to very good.

### **9.6.3 Queen Elizabeth II Army Memorial Museum**

Similar analysis was carried out for the Queen Elizabeth II Army Memorial Museum to test for differences or similarities using correspondence analysis between experienced and non-experienced visitors and the differences in evaluation of service quality by ethnic groups.

The results of the QEII Museum correspondence analysis showed that the non-experienced visitors to the QEII Museum generally gave higher scores to the services provided compared with the scores given by the experienced visitors (refer to Appendix F.3).

The perception scores given by the New Zealand European and others were higher than the New Zealand Chinese for all dimensions, as noted in the other case studies.

In general, female visitors gave higher scores to all service dimensions as found in the two other case studies.

### **9.6.4 Summary of simple correspondence analysis for heritage attractions**

The correspondence analysis helped to identify the differences in the perception of service quality between gender, experience and ethnic groups.

There were differences between the perception of experienced and non-experienced visitors of The Science Centre and the QEII Museum. This could indicate that the experienced visitors tended to be more critical than the non-experienced visitors. This difference is of considerable importance as visitors who have visited similar facilities elsewhere are in better position in assessing the relative standards of the service provided. First time visitors do not have the experience to make a judgement of how the service would compare with other facilities.

In assessing customer satisfaction with a product or service it is important that the customer has experienced the range of services available elsewhere. For example if the visitor is unaware of the new developments in museum attractions, such as the recently opened New Zealand Museum Te Papa in Wellington, they may feel perfectly satisfied with the service being provided by a traditional museum. However, once they have visited a museum with a different experience or range of interactive displays using

advanced multimedia and so on, their expectations may be raised considerably and they may no longer be satisfied with a traditional museums approach. This is being recognised as a particularly important aspect of customer satisfaction evaluation.

Female visitors to the three surveyed attractions generally had a higher perception score than the male visitors. This indicated that the female visitors enjoyed their visits more than the male visitors.

The survey also found that the overseas visitors and New Zealand Chinese tend to have a lower perception score for the New Zealand attractions. This is an indication that they have a different set of standards or different needs compared with the New Zealand Europeans, New Zealand Indians and Maori. As noted in the literature review, different customers from different cultural backgrounds view and consider the different attributes of service quality differently [Ryan, 1991]. This result is important if a heritage attraction is focusing its attention on overseas visitors and in this case, two visitor groups, ie. the New Zealand and overseas visitors should be analysed separately.

The application of correspondence analysis allows the management of attractions to focus on special groups of visitors representing a particular target market. For example experienced visitors are defined as those who have visited similar heritage attractions elsewhere. This implies that they are carrying out a comparison with their visit to other sites. Their assessment, therefore, would be expected to be more critical. This suggests that they compare their overseas experiences with the local attractions more discriminately than the casual or first time visitors.

This analysis allows the researcher to evaluate the difference in service quality evaluation for different demographic groups. The management of heritage attractions or operators in other sectors of tourist industry could use the information to identify the preference of targeted market. More effective marketing strategy could then be implemented on the target groups to increase the market share.

## 9.7 VISITORS ASSESSMENT OF THEIR OVERALL IMPRESSION AND SATISFACTION

The visitors were asked to score their overall impression and satisfaction of the service quality provided by the surveyed attractions. These were correlated with the results from the factor analysis which identified the service quality groupings of the service quality questions. It was found that there was low correlation between the overall impression, overall satisfaction and the service quality dimensions (refer to Table 9-5, 9-6 and 9-7).

**Table 9-6. Correlation Analysis of Overall Assessment and Service Quality Dimensions - The Science Centre**

| The Science Centre and Manawatu Museum                                    |          |                    |                         |        |                    |
|---|----------|--------------------|-------------------------|--------|--------------------|
| Correlation Analysis of Overall Assessment and Service Quality Dimensions |          |                    |                         |        |                    |
|   | Tangible | Peripheral Service | Staff Related Functions | Access | Overall Impression |
| Peripheral Service  | 0.288    |                    |                         |        |                    |
| Staff Related Functions   | 0.369    | 0.304              |                         |        |                    |
| Access  | 0.253    | 0.182              | 0.273                   |        |                    |
| Overall Impression  | 0.176    | 0.111              | 0.136                   | 0.114  |                    |
| Overall Satisfaction  | 0.104    | -0.011             | 0.149                   | 0.086  | 0.558              |

In Table 9-6, the correlation analysis of The Science Centre showed that there was low correlation between the overall impression, satisfaction and all service quality dimensions. The correlation values varied from a low of 0.011 to a high of 0.176 for the overall measures and the service quality dimensions. There was a closer relationship between the overall impression and satisfaction (0.588).

**Table 9-7. Correlation Analysis of Overall Assessment and Service Quality Dimensions - The Trust**

| New Zealand Historic Places Trust   |          |                    |                         |        |                    |
|---|----------|--------------------|-------------------------|--------|--------------------|
| Correlation Analysis of Overall Assessment and Service Quality Dimensions |          |                    |                         |        |                    |
|   | Tangible | Peripheral Service | Staff Related Functions | Access | Overall Impression |
| Peripheral Service  | 0.126    |                    |                         |        |                    |
| Staff Related Functions   | 0.416    | 0.039              |                         |        |                    |
| Access  | 0.325    | 0.110              | 0.287                   |        |                    |
| Overall Impression  | 0.218    | 0.048              | 0.177                   | 0.196  |                    |
| Overall Satisfaction  | 0.171    | -0.008             | 0.131                   | 0.114  | 0.738              |

Similar results were found in the Trust correlation analysis as shown in Table 9-7. The correlation values varied from a low of -0.008 to a high of 0.218 for the overall measures

and the service quality dimensions. There was a higher correlation value of 0.738 between overall impression and satisfaction compared to The Science Centre.

**Table 9-8. Analysis of Overall Assessment and Service Quality Dimensions - The QEII Museum**

| Queen Elizabeth II Army Memorial Museum                                   |          |                    |                         |        |                    |
|---|----------|--------------------|-------------------------|--------|--------------------|
| Correlation Analysis of Overall Assessment and Service Quality Dimensions |          |                    |                         |        |                    |
|   | Tangible | Peripheral Service | Staff Related Functions | Access | Overall Impression |
| <b>Peripheral Service</b>   | 0.409    |                    |                         |        |                    |
| <b>Staff Related Functions</b>  | 0.469    | 0.454              |                         |        |                    |
| <b>Access</b>   | 0.476    | 0.433              | 0.630                   |        |                    |
| <b>Overall Impression</b>   | 0.091    | 0.015              | 0.079                   | 0.199  |                    |
| <b>Overall Satisfaction</b>   | 0.127    | 0.006              | 0.115                   | 0.171  | 0.915              |

The results of the correlation analysis of QEII Museum in Table 9-8 indicate that there were low correlation between the visitors' assessment of overall impression, satisfaction and four service quality dimensions. The correlation value varied from a low of 0.006 to a high of 0.199. There was a high correlation between the overall impression and overall satisfaction (0.915).

Cronin and Taylor [1992, 1994] claimed that SERVPERF scale explains more of the variation in service quality than does SERVQUAL. The research finding showed that by merely measuring the perception it would not be possible to identify the problem areas easily. Gap analysis identified the negative service gaps and, therefore, highlighted to management areas where improvement are required with tourist attractions studied in this thesis.

In many of the customer performance surveys undertaken by museums and other service facilities, the overall customer satisfaction is the only measure used. The results of this study indicated that the overall satisfaction measures are not sensitive to the specific gaps between expectation and perception of the service quality received. Hence, they do not identify specific areas in which the organisation should be focusing its attention to improve its service quality. This research using the gap analysis as shown in the case studies in Chapter 6, 7 and 8, identified areas where visitors' expectations were not being met and where improvements could be made.

Word-of-mouth has been identified in all three case studies as the most popular way that visitors used to find out about the attraction. The percentage of visitors found out about the attraction through word-of-mouth varied from 30% (average of The Trust) to a high of 58% (The Science Centre). It was found by researchers that satisfaction or dissatisfaction to be an antecedent to word-of-mouth behaviour [Yi, 1990]. Further

correlation analysis was carried out to investigate the effect of visitors' evaluation of "Overall Satisfaction" and "Overall Impression" on their decision to recommend the attraction to their friends. The results of the correlation analysis for the three case studies show that there is a high correlation between visitors' evaluation of "Overall Satisfaction" and "Overall Impression" and their intention to recommend the attraction to their friend as shown in Table 9-9 to Table 9-11.

**Table 9-9. Correlation Analysis of Overall Assessment and Recommendations - The Science Centre**

| The Science Centre   | Overall Impression | Overall Satisfaction |
|----------------------|--------------------|----------------------|
| Overall Satisfaction | 1.000              |                      |
| Recommend to Friends | 0.572              | 0.576                |

**Table 9-10. Correlation Analysis of Overall Assessment and Recommendations - The Trust**

| The Trust            | Overall Impression | Overall Satisfaction |
|----------------------|--------------------|----------------------|
| Overall Satisfaction | 0.976              |                      |
| Recommend to Friends | 0.974              | 0.980                |

**Table 9-11. Correlation Analysis of Overall Assessment and Recommendations - QE II Museum**

| QE II Museum         | Overall Impression | Overall Satisfaction |
|----------------------|--------------------|----------------------|
| Overall Satisfaction | 0.869              |                      |
| Recommend to Friends | 0.786              | 0.823                |

The correlation index of Visitors' evaluation of "Overall Impression" to "Recommendation to Friends" varied from 0.572 to 0.974. The correlation index of Visitors' evaluation of "Overall Satisfaction" to "Recommendation to Friends" varied from 0.576 to 0.980. The findings imply that when visitors are satisfied, there is a higher probability that they will recommend the attraction to their friends. This indicated that the word-of-mouth behaviour and recommendations in the tourist attractions are influenced by the overall satisfaction and the impression of the institution. This is an important message that indicating to the tourist attractions operators that meeting customer's needs is a critical factor for attracting more visitors.

## 9.8 RELIABILITY OF THE DATA

In this research, a reliability test of the data was carried out using a multiple comparison analysis of variance (this will be referred to as ANOVA from hereinafter).

The test was applied to the data on the measured *Service Quality* from all three case studies. Tables 9-12 to Table 9-14 show the resultant output from the one-way analysis of variance tests. Where the value of p is low, the alternative hypothesis is accepted. When the null hypothesis is determined not likely to be true, then we can assume that the difference in sample means reflects a real difference in the population from which the samples were drawn. This proved to be so for all three case studies indicating a high degree of significance in the relative differences between the average scores from the variables.

Minitab also calculates the 95% confidence interval for each of the variables and displays the results graphically. It can be deduced from the graphs that when the mean of one variable is not contained in the confidence interval of another variables, the two means are different with a 95% degree of confidence.

**Table 9-12. Summary Table of One-Way ANOVA of Weighted Service Quality Gap - The Science Centre**

| The Science Centre and Manawatu Museum<br>One-Way ANOVA of Weighted Service Quality Gap |       |          |        |        |       |
|---|-------|----------|--------|--------|-------|
| Source  | DF    | SS       | MS     | F      | P     |
| WSQ   | 22    | 119813.2 | 5446.1 | 183.90 | 0.000 |
| Error   | 24241 | 717896.1 | 29.6   |        |       |
| Total   | 24263 | 837709.3 |        |        |       |

**Table 9-13. Summary Table of One-Way ANOVA of Weighted Service Quality Gap - The Trust**

| New Zealand Historic Places Trust<br>One-Way ANOVA of Weighted Service Quality Gap |       |          |        |        |       |
|--|-------|----------|--------|--------|-------|
| Source   | DF    | SS       | MS     | F      | P     |
| WSQ  | 22    | 119813.2 | 5446.1 | 183.90 | 0.000 |
| Error  | 24241 | 717896.1 | 29.6   |        |       |
| Total  | 24263 | 837709.3 |        |        |       |

**Table 9-14. Summary Table of One-Way ANOVA of Weighted Service Quality Gap - The QEII Museum**

| Queen Elizabeth II Army Memorial Museum<br>One-Way ANOVA of Weighted Service Quality |       |          |       |       |       |
|--|-------|----------|-------|-------|-------|
| Source   | DF    | SS       | MS    | F     | P     |
| WSQ  | 28    | 15476.8  | 552.7 | 19.20 | 0.000 |
| Error  | 13601 | 391456.8 | 28.8  |       |       |
| Total  | 13629 | 406933.6 |       |       |       |

To determine where the difference occurred, a Tukey multiple comparison test was applied, again using Minitab. The results of these tests for each of the three case studies are shown in Table 4 to Table 6 in Appendix E. In almost all of the tests the differences with a five percent family error rate, the results showed that the alternative hypothesis should be accepted and therefore the differences between the scores can be considered significant.

## 9.9 CONCLUSIONS

In summary, the findings from the evaluation of the three case studies are as followings:

Four dimensions for the assessment of service quality by visitors to the attractions were identified using factor analysis. These were: tangible, staff related functions, peripheral services and access dimensions.

The grouping of the service quality dimensions is different from the original SERVQUAL model. Therefore, we could conclude that quality assessment variables are different from other service operations reported in other studies (see Chapter 3).

There are low correlation between the visitor assessment of overall impression, overall satisfaction and the measured service quality obtained from the gap analysis (refer to Chapter 5-7). This indicates that the two overall assessments are not particularly sensitive measures and are not a good performance indicator for a service quality continuous improvement programme for heritage attractions.

Correspondence analysis is a useful tool for highlighting the relative differences between assessment of satisfaction through gap analysis by different groups. It was found in all three case studies, that female visitors gave higher scores to all service dimensions compared to the male visitors.

Two museum case studies showed that experienced visitors tended to give a lower rating than the non-experienced visitors. There were differences in the level of perception of service quality as evaluated by different ethnic groups. Overseas visitors and New

Zealand Chinese gave lower perception scores to all service quality compared to New Zealand European and New Zealand Indians in all three case studies.

Correspondence analysis could be used for further analysis to find the relationships between the visitor demographics and the service quality variables. It also appears to be a useful strategic planning and marketing tool for the tourist attractions in targeting a specific market sector.

The results of correlation analysis of overall satisfaction and each service quality dimensions indicated that the overall satisfaction measures are not sensitive to the specific gaps between expectation and perception of the service quality received. Hence, they do not identify specific areas in which the organisation should be focusing its attention to improve its service quality.

However, the correlation index of Visitors' evaluation of "*Overall Satisfaction*" to "*Recommendation to Friends*" was very high, this implied that when visitors are satisfied, there is a higher probability that they will recommend the place to their friends. This is an important message to the tourist attractions operators that meeting customer's needs so that they will tell their friends and acquaintances about their experiences and hence this is a critical factor for attracting more visitors.

The results of the statistical analysis used in this chapter shows a consistency in the factor analysis for all three case studies. The findings confirmed that the SERVQUAL model could be used as a basis for evaluating service quality in heritage attractions. However, due to the special features of the heritage attractions, the service quality dimensions found in these case studies are different from studies in other service industries (refer to Chapter 3).



# 10.

## Conclusions and Recommendations for Future Research

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### 10.1 CONCLUSIONS

A study was undertaken to determine the state and knowledge of quality management in the New Zealand tourist industry. The results of quality management practice in the New Zealand tourist industry survey carried out in 1996 shows that only 20% of respondents employed a formal quality system and 15% of respondents used TQM for managing service quality [Tan et al, 1996]. The three most popular methods of service quality assessment used by tourist operators are customer survey, client feedback and internal assessment. Quantitative measurement techniques such as the SERVQUAL model, which is used for measuring service quality, were not well known in the industry. The research showed that there was a need for a tool to measure customer needs and satisfaction in the industry.

The objectives of this research project were as follows:

1. To investigate the present status of quality management practices in the New Zealand tourist industry
2. To develop a tool for measuring service quality of the heritage attractions from the customer perspective
3. To assist the management of heritage attractions to identify areas for improving their service delivery
4. To develop statistical analysis techniques for analysing the service quality results
5. To develop practical guidelines for improving service quality in the heritage attractions

The tool chosen to measure service quality was based on the SERVQUAL model of service industry, using visitors perception and satisfaction surveys. Visitors' perception and satisfaction surveys are new concepts to the tourist industry. The new approach developed from the SERVQUAL model has shifted the evaluation of performance from internal assessment by management to external assessment by customers. It concentrates not only on who is coming, and their background, but also to develop and test the methodology on visitors' needs and how satisfied they are with the services provided.

This study focused on the visitor needs and satisfaction instead of market research on the evaluation of promotional and marketing activities. The modified SERVQUAL model designed to meet this need, provides a source of reliable information to tourist operators on customer needs and identifies where their needs are not being meet.

In the literature review, two valuable documents were found which provided a very useful guide for the improvement in the quality of service. The first document was the "*Guidelines on Quality of Service in Museums*" published by Museums and Galleries Commission [1993], a comprehensive document which detailed the museum management's responsibility for undertaking the museum practice, collections management, customer care policy, access, marketing, display and education, training, museum support, on-site care, safety, monitoring and evaluation. The second document was the National Tourist Board's Code of Practice for Visitor Attractions called the "*Visitor's Charter*" [English Tourist Board, 1993]. The code clearly stipulated the requirements that the owners and management of the heritage attractions have to undertake. These two documents could be used by the industry to establish guidelines for service quality in the heritage attractions in New Zealand.

### **Case Studies**

The research used an on-site visitor survey methodology. When compared with a mail survey the face-to-face interventions provides a more direct response. The modified SERVQUAL model was found to be easy to use and can be used to measure and monitor service quality in heritage attractions such as museums and historic places. The tool would be more efficient if it is shortened and used on a regular basis to monitor the trends and improvements made in service delivery.

The three case studies undertaken in this project were:

1. The Science Centre and Manawatu Museum
2. The New Zealand Historic Places Trust
3. The Queen Elizabeth II Army Memorial Museum.

The institutions under study were assessing their performance based on the traditional evaluation methods, such as financial performance and visitors numbers. There was a lack of information on performance assessment from external customers. Management was keen to know how they performed as assessed by their customers.

Parasuraman et al. [1990] suggested the SERVQUAL model is generic for all service industries. This research found that although it provides the basis for the measurement of customer satisfaction with the services provided by the attractions studied, it requires modifications to reflect the special characteristics of a particular industry. The service quality variables identified in the three heritage attractions case studies were very similar to the original SERVQUAL model, except peripheral services have been identified as a special factor in the quality assessment of the heritage attractions studied.

The original questionnaire was proposed to the management of The Science Centre without major modification. The reactions from the management was that it was not suitable for their organisation and they did not see that this research could benefit them. A focus group meeting was arranged to discuss the needs of management and the type of information they wanted to gain from the survey. Modification of the questionnaire was carried out for the three sites based on the needs of management, staff and customers. This approach was used for the later two case studies. The responses were more positive and more acceptable to management and staff of the institutions.

The questionnaires for the Trust and the QEII Museum were modified based on The Science Centre survey questionnaire to reflect the nature of historic houses and the QEII Museum. The modification included change of wording, re-grouping of the service quality dimensions, inserting the peripheral services, expanding the service quality standards and procedures section to identify different types of service quality standards in each of the dimensions. Overall impressions and visitors' profiles were added. In addition, qualitative survey questions were included to seek visitors' feedback on what they enjoyed most and what could be done to make it more enjoyable.

The qualitative survey questions provided valuable feedback from visitors which supported the results obtained from the gap analysis. Constructive suggestions given by visitors were useful to management in identifying areas for improvement.

The addition of information gathered from overall visitor impressions and profiles were used to relate the evaluation of service quality to different groups as demonstrated in the correspondence analysis in Chapter 9. The analysis showed that there is a considerable depth of information which can be extracted from the results to identify areas where heritage attractions should be focused for further service improvement.

The Science Centre is a combination of the 22 year old Manawatu Museum and The Science Centre located in Palmerston North. The institution provides services in the areas of education, regional heritage, preservation, research, and facilities to help meet the cultural, recreational and educational needs of the community. In The Science Centre case study the negative *Weighted Service Quality Gaps* were wheelchair access, information to visitors, staff knowledge, indoor and outdoor signs, and car parking. The outdoor signs and car parking problems were known to management and were under the control of the Palmerston North City Council.

The New Zealand Historic Places Trust/Pouhere Taonga has the responsibility for management and conservation of all natural and historic resources included in the Crown status. It's mission is to promote the identification, protection, preservation and conservation of the historical and cultural heritage of New Zealand. In the Trust case studies, the negative *Weighted Service Quality Gaps* identified were related to the "peripheral services" such as the provision of toilet facilities, wheelchair access, seatings, refreshments and car parking. These were the services not provided by most of the Trust properties, and management and staff now recognise the need for these services to be provided in the heritage attractions.

The Queen Elizabeth II Army Memorial Museum is situated at Waiouru, the centre of North Island. It is an army museum which preserved and displayed relics and records of New Zealand military history, to show how history has contributed to the development of the nation and the moulding of the national character and to promote public recognition of that contribution [QEII, 1990]. In the QEII Museum case study, the negative *Weighted Service Quality Gaps* were related to the floor plan, the pricing of food in the café, and products in the shop. The management of the QEII Museum identified a need to improve the floor plan. However, they wanted to seek visitors' feedback and the results have confirmed the need for improvement. The management were unaware that the food in the cafe and products in the shop were seen as problem areas by visitors. Visitor feedback will be used by management to improve these services provided to their visitors.

The survey variables were grouped into dimensions based on factor analysis. The dimensions of heritage attractions found in this research were different from the five dimensions reported by Parasuraman et al. [1990]. Four dimensions were found in the heritage attractions studied. They were the "tangible", "peripheral services", "access" and "staff related functions" dimensions.

The tangible dimension found in this research was similar to the finding from other service industries (see reference in Chapter 3).

Peripheral service was another important service quality dimension identified in all three case studies. The peripheral services include: toilets, seating, refreshments, wheelchair access, shop and cafe. This dimension has been highlighted in the factor analysis as a special feature of heritage attractions that did not appear in the other industries.

The “access” dimension identified in this heritage attractions research was an independent dimension. It includes variables such as outdoor signs, opening hours, signs in the building, car parking, easy access for wheelchairs and prams and visitors feeling comfortable during their visits. This finding was different from Parasuraman et al studies [1990] where they grouped the access variables into an empathy dimension which included access, communication, and understanding the customer variables. In heritage attractions, the “access” dimension was a separate and distinctive dimension which is important to the visitors.

In this research, staff related functions were interdependent variables; the variables identified by the modified SERVQUAL model are relevant to heritage attractions. However, they are not categorised into four service quality dimensions as suggested by Parasuraman et al. [1990]. Visitors to the heritage attractions studied in this research did not distinguish these staff related functions variables as four categories. Factor analysis grouped these staff related functions variables into one dimension in all three case studies. This new dimension is called the “staff related functions” dimension.

In heritage attractions, the quality of staff related functions had a great influence on the visitors’ perception of the quality of their visit. Services are people-oriented, employees meet the visitor and the way they behave and treat the customer can give a feeling of trust and pleasure. Staff working in the institution represent the institution to the general public. They are the ambassadors of the institution as well as the New Zealand tourist industry.

In addition to the visitor survey, a survey of management and staff was carried out at the three survey sites. The results of the surveys highlighted that there was a lack of formal management systems relating to service delivery and customer care in all three case studies. Management and staff showed a lack of knowledge of the existing service quality standards and procedures within the institution. This was also confirmed by the lack of a quality system and lack of knowledge of service quality measurement tools which was found in the quality management practice survey in the New Zealand heritage attractions.

The SERVQUAL model assumes that the customers are satisfied if the *Perception* score is higher than the *Expectation* score. Otherwise the customer is said to be dissatisfied. The original researchers [Parasuraman et al, 1990] did not specifically measure customer satisfaction. The *Satisfaction* measure in this research was designed to find out

if there was any relationship between *Satisfaction*, *Perception*, and *Service Quality*. This survey has established that when the visitors perceived the service quality as good, they also were satisfied with the service provided.

The evaluation of the research methodology in this research did not stop at factor analysis, which was used by most of the other researchers who adapted the SERVQUAL model for other service industries. Other analyses were carried out using structural modelling and simple correspondence analysis to identify the relationships between different service quality dimensions and the visitor demographics, such as visitor experience, gender and ethnic groups.

Structural modelling has found high correlations between the different variables in the factors which confirm the reliability of the factor analysis. For example, in The Science Centre case study, the correlation of service dimensions varied from a high R squared value of 0.87 in the staff related function to a low R squared value of 0.433 in the peripheral services.

The senior management of the QEII Museum identified that the information could be used as a base for identifying staff training needs, areas for continuous improvement, benchmarking, and future strategic planning.

### **Documentation and Procedures for Service Quality**

This study has shown that the staff related functions are considered very important by visitors to the heritage attractions. To achieve good quality service, researchers and the Baldrige Awards winners have identified training as an important factor for success [Ishikawa, 1985; Kenworthy, 1986; Barker, 1990; Everett et al, 1993; Messenger and Atkins, 1994; Kessler, 1995, NIST, 1997]. This factor is also built into both ISO 9000 and Baldrige Awards assessment (refer to Chapter 2). However, in reviewing the standards and procedures for staff and the training in the heritage attractions, it was found that there was a lack of awareness and formality associated with procedures, standards and training in service delivery, and customer care in all three case studies. Professionally related areas, such as conservation policies and procedures were found to be well covered.

Delivering good quality services to visitors consistently in any tourist attraction begins and ends with the way employees are trained, nurtured, and led. This requires a rigorous process for selecting and training new employees. The employees must understand their role in delivering superior service and must have the power and ability to deal with customer problems. To achieve this there must be good leadership, commitment and organisational infrastructure to set guidelines and management systems to monitor and

improve the service delivery [Ishikawa, 1985; Imai, 1986; Deming, 1986; Juran, 1992a,b].

### **Staff and Volunteers Training**

Some historic places surveyed provided a guided tour to visitors. The visitors enjoyed the guided tour and the information provided by the curator. Similar responses were received from the two museums studied. The results showed that staff (paid or volunteers) play an important role in the delivery of service to visitors in the museums and Trust properties. It is seen by visitors as part of the total package of service provided by heritage attractions and Trust properties.

It was clear from the responses that volunteers are seen by visitors as the front-line staff who represent the institutions. Visitors to the heritage attractions studied did not differentiate between paid staff and volunteers. In many public museums, volunteers serve as guides for museum visitors. Therefore, it is very important to train the volunteers to have the skills and knowledge to perform their duties. This will enhance the visitors learning and provide a framework of ideas and skills which connect visitors with the museum experience.

Staff and volunteer training in heritage attractions should also involve customer-focus, language and interpersonal skill development and the knowledge of service provided by the institution [Museums and Galleries Commission, 1993; Ambrose, 1993; Cooper, 1996; Museum of Science, 1997; Ruda, 1997]. Effective customer service training requires a continuous process that is reinforced by management. The customer-focused service training with good documented standards and procedures in place could be used for continuous staff training that will enhance the quality of public service [Ambrose, 1993; Cooper, 1996].

## **10.2 CONTRIBUTIONS TO THE SERVICE QUALITY MEASUREMENT**

This research has contributed the measurement of customer satisfaction in the tourist attractions using the quantitative approach. It also confirmed that the application of SERVQUAL in heritage attractions requires modification to reflect the unique feature of the attractions. The finding also identified four service quality dimensions which are not the same as Parasurman original study. Using factor analysis or correspondence analysis showed that visitors' experience will affect their service quality evaluation of the heritage attractions.

The correlation analysis from the three case studies indicate that there were low correlations between the visitors' assessment of overall impression, satisfaction and four service quality dimensions. In many of the customer performance surveys undertaken by museums and other service facilities, the overall customer satisfaction is the only measure used. The results of this study indicated that the overall satisfaction measures are not sensitive to the specific gaps between expectation and perception of the service quality received. Hence they do not identify specific areas in which the organisation should be focusing its attention to improve its service quality.

Correlation analysis on the effect of visitors' evaluation of "*Overall Satisfaction*" and "*Overall Impression*" on their decision to recommend the place to their friends was carried out. The results showed that there is a high correlations between visitors' evaluation of "*Overall Satisfaction*" and "*Overall Impression*" and their intention to recommend the place to their friend. This indicated to management that when visitors sgave high scores to overall satisfaction, they are more likely to recommend the institution to their friends.

In the organisations studied, the programmes for continuous improvement were not established in service delivery and the formalised standards and procedures were not as common as in manufacturing organisations who are practicing Total Quality Management. The heritage attractions should set up a management system and infrastructure to create a continuous improvement environment and to provide training to all employees on quality control tools and approaches to carry out continuous improvement of their service delivery.

The modified SERVQUAL model used to measure three heritage attractions in New Zealand has proven to be reliable and has produced consistent results. It provided valuable information to the management of the attractions studied which could be used for their strategic planning for future marketing development. The statistical analysis carried out using correspondence analysis and correlations analysis in this research has shown the research results could provide in-depth information for management to have better knowledge of their customers from different selected groups. The last objective was not completely achieved due to time and resource constraints, however, a continuous improvement programme based on the Juran Trilogy [1992] was recommended in this report. Further studies are required to be carried out in other types of heritage attractions using the modified SERVQUAL model and the recommended continuous improvement programme.

Another contribution of this research is using the simple correspondence analysis to differentiate service quality evaluations in different demographic groups. This could be

used by operators attractions as a useful marketing tools for market segmentation and strategic planning.

### **10.3           IMPLICATIONS OF THE MODIFIED SERVQUAL TOOL TO THE MANAGEMENT OF HERITAGE ATTRACTIONS**

Measurement often is the only way of getting top management's attention. What gets measured is usually what gets managed in an institution. Negative service quality gaps, customer complaints and improvement suggestions gathered from the visitor survey should be valued as window or opportunity for the institution to prove its commitment to their customers. Service recovery should be part of management system which embraces customer satisfaction as a primary goal of business and an integral part of a service company's strategy.

To make use of this service quality information the heritage attractions' management should identify a formal service quality improvement programme which is based on the Juran Trilogy [1992]. The trilogy suggests that quality is achieved by the use of three management processes of planning, control and improvement. These steps are:

1. The first step is to establish action plans for the quality improvement process. This operates in three areas, 'Quality Planning' in which quality goals are set, customer needs are identified and processes which can respond to these needs are developed.
2. The second part of the Trilogy involves the establishment of 'Quality Control' by evaluating actual quality performance and comparing the actual performance to quality goals. This is the purpose of this survey. The final step of the second phase, ie. quality control, is to act on the difference. This is the next step which should be able to make full use of the survey results. From the survey of visitors, we have established a set of priority areas for improvement and deficiencies which may need attention.
3. The third phase of the Juran Trilogy is 'Quality Improvement' which would involve raising the quality performance to '*unprecedented levels*' (Juran, 1992). Juran suggests that this involves a series of universal steps, namely:
  - *Diagnose the cause*
  - *Stimulate establishment of remedies*
  - *Establish controls to hold the gains.*

These procedures lead us into what would be a fairly well-defined programme. Starting at the 'act on the difference', the proposed sequence of events would be:

1. *Establish work group discussions with staff using brain-storming sessions to generate ideas for action to achieve improvement.*
2. *At the same time, the brain-storming sessions would identify areas where standards are lacking and where new procedures are required based on the information from the survey.*

In establishing the infrastructure, it is necessary to secure continuous quality improvement, or as Juran puts it, '*critical*' quality improvement. This moves the quality management process to the quality improvement phase - phase three of the trilogy.

From the brain-storming sessions, projects are established to improve the specific areas such as signs and access identified in both surveys with well defined goals. These projects should diagnose the cause of the deficiencies, establish remedies and controls to hold the gains. Most importantly, the institution has to feedback to their customer about the improvement to close the loop.

To maintain the continuous improvement momentum, operators in the tourist industry could adapt the basic quality system structure provided by the ISO Standards; or the Malcolm Baldrige Quality Award Criteria Framework [NIST, 1997f] which brings together the TQM elements into an overall quality system for an organisation wishing to implement an TQM approach or to evaluate its own quality management systems. To implement quality management programme successfully, management must be committed to ensure that there is customer focus culture within the company. The processes are documented and staff are trained.

Correlation analysis of Visitors' "*Overall Satisfaction*", "*Overall Impression*" and their decision to recommend the place to their friends indicated to management that the word-of-mouth behaviour and recommendations in the tourist attractions are influenced by the overall satisfaction and impression of the institution. Since word-of-mouth is the main information source for getting information about the attractions and is a powerful advertising tool for tourist attractions operators. To attract more visitors, attractions operators have to be customer focus and set their business goals and strategies to satisfy customer needs. This business strategy should include service recovery plan on rectifying the service quality problems identified by service quality gap analysis.

This research provides management a set of measuring tools, introduces new analysis methodologies and to explains the systematic approach to help the tourist operator in achieving the competitive edge.

## **10.4 RECOMMENDATIONS FOR FUTURE RESEARCH**

The results of the quality management practice survey found there was a lack of formal quality systems in the tourist industry. Some of the respondents suggested that the ISO standards might not be suitable for the majority of small operators in the industry. Further research is needed to investigate the design of a quality management system that is suitable for small operators in the tourist industry.

In heritage attractions such as museums and historic places, the core services include the conservation and preservation of selected historic heritage places and areas and to encourage the highest standards of scholarship and performance in heritage interpretation and education. Further research into the measurement of service quality in museums and historic places needs to include other core services such as conservation, preservation and education. The core services are the essential set of services that a firm must provide just to participate in its market.

The absence of a core service construct, which is an important service attribute in professional services, has been identified as a weakness by researchers using the SERVQUAL model to measure services provided by medical professionals, accountants and consultants [Haywood-Farmer and Stuart, 1988; Walbridge and Delene, 1993].

The target audience for this research was the general public and visitors who were above 15 years old. Further research should include other visitor categories such as special organised groups and education groups. Questionnaires for the special interest groups would need to be modified to accommodate these groups, for example, in the school groups, the pupils would have difficulty in using the questionnaire in providing a full or consistent answer. It may be necessary to focus on the teacher to provide the feedback for the group. As for the organised tour group, they are unlikely to be prepared to answer a lengthy questionnaire due to time restrictions. It may be possible to undertake the survey in the tour bus or the hotel during an overnight stay.

The length of questionnaires used in this research was too long [Tan, 1996a,b; Tan et al, 1997a,b; NZHPT, 1996]. This is due to the additional information required by the institution on the overall impression and the visitor profile. This information was collected using the traditional methods of visitor survey and performance measure for heritage attractions. To increase the effectiveness of the survey, the size of questionnaire has to be reduced. This could be achieved by :

1. eliminating the highly correlated factors found in the factor analysis

2. identifying specific areas where changes or improvements need to be made or have been made.

The correspondence analysis found valuable information which could be useful to management for strategic planning and marketing to attract new visitors in different market segments. Further analysis of different tourist groups to New Zealand, in other sectors of the tourist industry, would be worthwhile and useful for marketing and targeting different market segments.

As noted in the previous section, due to time and resource constraints, a continuous improvement programme for service quality was recommended but not implemented. It is recommended that the tool be tested in other sectors of the tourist industry and further research is required to test the recommended programme in the tourist attraction, so that modifications could be made to develop a practical and effective continuous improvement programme which could be used by all sectors of the industry.

## **10.5 SUMMARY**

This research has achieved the first four objectives which were:

1. To investigate the present status of quality management practice in the New Zealand tourist industry
2. To develop a tool for measuring service quality of the tourist attractions from the customer perspective
3. To assist tourist attraction management identify areas for improving their service delivery
4. To develop statistical analysis techniques for analysing the service quality results
5. To develop practical guidelines for improving service quality in tourist attractions

In summary, the modified SERVQUAL model and the analysis methods developed have been demonstrated to be useful tools in the measurement of service quality in the heritage attractions studied. The research methodology used in this research has taken the comments and problems identified by other research. Modifications were made to improve the content of the information gathered which not only identified the service quality elements of the heritage attractions studied, but also reflected the unique characteristics of the attractions. The management of the attractions studied found that the gap analysis identified problem areas where improvements could be made. They also

indicated that they are going to use the information for future strategic planning in marketing and development of the attractions.

Small sample size has been identified by the researchers as a problem which will cause non-response bias [Saleh and Ryan, 1991; Lee and Hing, 1995; Whitman-Smithe, 1995]. To overcome this problem, this research has used a minimum of 200 samples from each survey sites, with a total 1941 samples from the three case studies. These three case studies, The Science Centre, the Trust and the QEII Museum were selected to test the repeatability and reliability of the survey methodology. The research findings have shown a consistency in the service quality dimensions in all three case studies. Four dimensions for the assessment of service quality by visitors to the attractions were identified using factor analysis. These were: tangible, staff related functions, peripheral services and access dimensions.

Comprehensive statistical analysis were used in this research. They are the simple correspondence analysis and correlation analysis. An important contribution of this research is the use of the simple correspondence analysis to differentiate service quality evaluations in different demographic groups. This methodology is very popular in the medical research but not generally used in service quality research. It was found in all three case studies, that female visitors gave higher scores to all service dimensions compared to the male visitors. The analysis also showed that experienced visitors tended to give a lower rating than the non-experienced visitors. More interestingly, there were differences in the level of perception of service quality as evaluated by different ethnic groups. The simple correspondence analysis has shown to be an useful tool for researchers to assist the operators in identifying differences in the perception of service quality from different groups. The information could be used for developing marketing strategy for different market segment.

In addition to the simple correspondence analysis, correlation analysis of Visitors' "Overall Satisfaction", "Overall Impression" and their decision to recommend the place to their friends were used to find out the link between the relationship between these assessment from the visitors. The results of correlation analysis showed that the word-of-mouth behaviour and recommendations in the tourist attractions are influenced by the overall satisfaction and impression of the institution. This finding is a major contribution to the service quality research were used to determine the link of the these three assessments.

Further research should look into testing this tool on a wider range of heritage attractions. The modified SERVQUAL tool provides an important component in the development programme to continuously improve the quality of service in the tourist

industry using the Total Quality Management Approach to achieve a competitive advantage.

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# *Appendices*

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**Appendix A Quality Management Practice In Tourist Industry**

**Appendix B The Science Centre & Manawatu Museum Visitor Survey**

**Appendix C New Zealand Historic Places Trust Visitor Survey**

**Appendix D Queen Elizabeth II Army Memorial Museum Visitor Survey**

**Appendix E Analysis of Variance of Measured Service Quality**

**Appendix F Simple Correspondence Analysis of Visitors' Perception of Service Quality**



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# *Appendices*

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**Appendix A Quality Management Practice In Tourist Industry**

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# **Appendix A.**

## **Quality Management Practice in the Tourist Industry**

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**A.1 Survey Questionnaire**

**A.2 Correspondence Analysis of Quality Management Practice  
and Company Size**



1 March 1995

Dear Manager



**MASSEY  
UNIVERSITY**

Private Bag 11222  
Palmerston North  
New Zealand  
Telephone 64-6-356 9099  
Facsimile 64-6-350 5604

**FACULTY OF  
TECHNOLOGY**

**DEPARTMENT OF  
PRODUCTION  
TECHNOLOGY**

## Quality Management Practice in The Tourist Industry Survey

*Quality has been identified as a critical ingredient for competitive success in tourism. Total Quality Management (TQM) is widely recognised as an important force leading to organisational success and company growth in national and international markets in the manufacturing and service industries. TQM can be applied to the Tourist Industry, and can be used as a very effective management tool for assisting industries to gain a competitive edge and to survive in the present competitive economic environment.*

The enclosed is a simple and easy to fill in questionnaire which is designed to elicit information about the current state of Quality Management Practice in the New Zealand Tourist Industry.

This survey is conducted by a postgraduate student of Department of Production Technology and Management Systems at Massey University. The questionnaire is being sent out to a wide representation of the members of New Zealand Tourist Industry. We invite your organisation to participate. To have an overview of the current status of the industry on the quality management practice, each response is important to the overall validity of the survey results.

Your contribution is important to the industry to identify areas that are already applying those techniques and other areas where the TQM methods might be applicable. Returned questionnaires will be kept strictly confidential.

We would be very grateful for your assistance. If you are interested in receiving a summary of the results please indicate this at the end of the questionnaire which should not take long to complete. Please make use of the enclosed freepost envelope and return the questionnaire by 31 March 1995.

Your sincerely

Tammi Tan  
PhD Student  
Department of Production Technology

Don Barnes  
Professor of Manufacturing and Quality Systems  
Department of Production Technology

## Quality Management Practice in the Tourist Industry Survey

Please put a ✓ in the appropriate box

1. Do you have a formal Quality System in your company?

Yes  Go to Q3                      No  Go to Q2

2. Do you intend to introduce a quality system into your company?

Yes                                       No

3. Have you heard of ISO 9000?

Yes  Go to Q4                      No  Go to Q6

4. Are you accredited to ISO 9000?

Yes  Go to Q6                      No  Go to Q5

5. Are you considering ISO 9000 accreditation?

Yes                                       No

6. Are you involved in any of the following programmes?

KiwiHost                       Qualmark                       New Zealand Way

No                       Others (Please specify) : \_\_\_\_\_

7. Have you heard of Total Quality Management?

Yes  Go to Q8                      No  Go to Q9

8. Do you use Total Quality Management for managing the service quality?

Yes                                       No

9. Do you use any other method of service quality assessment?

Yes                                       No

If Yes please specify: \_\_\_\_\_

10. Have you heard of the SERVQUAL model for measuring the service quality?

Yes  Go to Q11                      No  Go to Q12

11. Do you use SERVQUAL for service quality measurement?

Yes                                       No

12. Do you know/use any of the following Total Quality Management techniques and tools?

|                         | Know                     | Use                      |                             | Know                     | Use                      |
|-------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|
| Checklists              | <input type="checkbox"/> | <input type="checkbox"/> | Customer survey             | <input type="checkbox"/> | <input type="checkbox"/> |
| Histograms              | <input type="checkbox"/> | <input type="checkbox"/> | Team Work                   | <input type="checkbox"/> | <input type="checkbox"/> |
| Flow Charts             | <input type="checkbox"/> | <input type="checkbox"/> | Problem Solving Methods     | <input type="checkbox"/> | <input type="checkbox"/> |
| Pareto Analysis         | <input type="checkbox"/> | <input type="checkbox"/> | Empowerment                 | <input type="checkbox"/> | <input type="checkbox"/> |
| Cause & Effect Analysis | <input type="checkbox"/> | <input type="checkbox"/> | Quality Function Deployment | <input type="checkbox"/> | <input type="checkbox"/> |
| Control Charts          | <input type="checkbox"/> | <input type="checkbox"/> | Graphs                      | <input type="checkbox"/> | <input type="checkbox"/> |

Others (Please specify): \_\_\_\_\_

Please continue to next page

**Quality Management Practice in the Tourist Industry Survey**

**Company Profile**

**Company Name:** \_\_\_\_\_

**Type of Business Service/Product:** \_\_\_\_\_

**Size (no. Of employees):** \_\_\_\_\_

**Years of Operation:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Your Name:** \_\_\_\_\_

**Your Title :** \_\_\_\_\_

**Do you want a summary of the results ?**

Yes

No

*Thank you very much for completing this questionnaire.*

**Comments\ Suggestions:**

**We welcome any other comments or suggestions you feel would be helpful to the survey.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# 1. Correspondence Analysis of Having a Formal Quality System Vs Company Size

## Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0291  | 0.7449     | 0.7449     | *****     |
| 2     | 0.0100  | 0.2551     | 1.0000     | *****     |
| Total | 0.0390  |            |            |           |

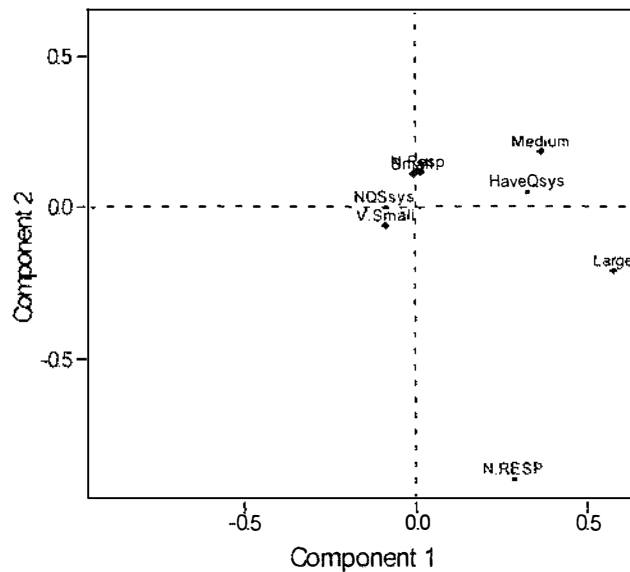
## Row Contributions

| ID Name   | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|-----------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|           |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 V.Small | 1.000 | 0.573 | 0.157 | -0.084              | 0.660 | 0.139 | -0.060              | 0.340 | 0.209 |
| 2 Small   | 1.000 | 0.265 | 0.084 | -0.010              | 0.008 | 0.001 | 0.110               | 0.992 | 0.325 |
| 3 Medium  | 1.000 | 0.053 | 0.229 | 0.368               | 0.804 | 0.247 | 0.182               | 0.196 | 0.176 |
| 4 Large   | 1.000 | 0.053 | 0.512 | 0.580               | 0.891 | 0.613 | -0.202              | 0.109 | 0.218 |
| 5 N.Resp  | 1.000 | 0.055 | 0.019 | 0.010               | 0.008 | 0.000 | 0.114               | 0.992 | 0.073 |

## Column Contributions

| ID Name    | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|------------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|            |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 HaveQsys | 1.000 | 0.202 | 0.572 | 0.329               | 0.980 | 0.752 | 0.047               | 0.020 | 0.046 |
| 2 NQsSys   | 1.000 | 0.786 | 0.160 | -0.089              | 1.000 | 0.214 | 0.001               | 0.000 | 0.000 |
| 3 N.RESP   | 1.000 | 0.012 | 0.269 | 0.286               | 0.094 | 0.034 | -0.888              | 0.906 | 0.954 |

Symmetric Plot



## 2. Correspondence Analysis of Using TQM for Measuring Service Quality Vs Company Size

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.1532  | 0.9686     | 0.9686     | *****     |
| 2     | 0.0050  | 0.0314     | 1.0000     |           |
| Total | 0.1581  |            |            |           |

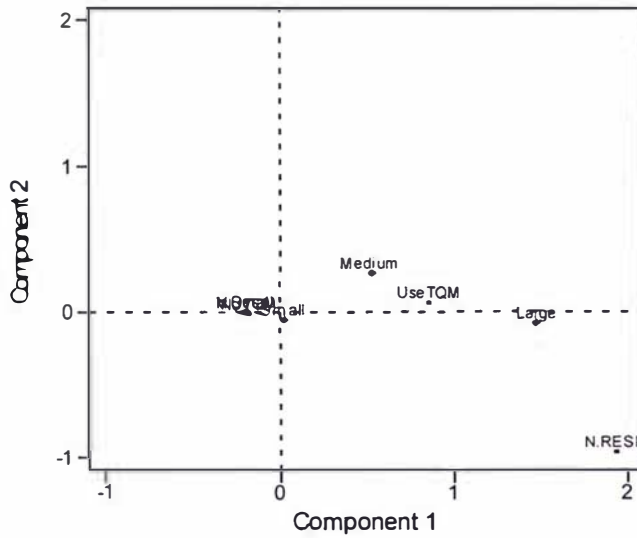
### Row Contributions

| ID Name   | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|-----------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|           |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 V.Small | 1.000 | 0.573 | 0.119 | -0.181              | 0.998 | 0.123 | 0.008               | 0.002 | 0.007 |
| 2 Small   | 1.000 | 0.265 | 0.007 | 0.030               | 0.233 | 0.002 | -0.055              | 0.767 | 0.159 |
| 3 Medium  | 1.000 | 0.053 | 0.118 | 0.529               | 0.795 | 0.097 | 0.268               | 0.205 | 0.767 |
| 4 Large   | 1.000 | 0.053 | 0.743 | 1.487               | 0.997 | 0.765 | -0.079              | 0.003 | 0.067 |
| 5 N.Resp  | 1.000 | 0.055 | 0.013 | -0.196              | 1.000 | 0.014 | 0.002               | 0.000 | 0.000 |

### Column Contributions

| ID Name  | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|----------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|          |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 UseTQM | 1.000 | 0.152 | 0.712 | 0.859               | 0.995 | 0.731 | 0.062               | 0.005 | 0.117 |
| 2 NUTQM  | 1.000 | 0.843 | 0.146 | -0.166              | 0.999 | 0.151 | -0.006              | 0.001 | 0.006 |
| 3 N.RESP | 1.000 | 0.005 | 0.142 | 1.938               | 0.806 | 0.118 | -0.951              | 0.194 | 0.877 |

Symmetric Plot



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# **Appendix B.**

## **The Science Centre and Manawatu Museum Visitor Survey**

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- B.1 Information Sheet for Visitors and Letter of Approval from the Human Ethics Committee, Massey University**
- B.2 Survey Questionnaire**
- B.3 Gap Analysis of Service Quality**
- B.4 Visitors' Overall Impression**
- B.5 Visitor Profile**





**MASSEY  
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**FACULTY OF  
TECHNOLOGY**

**DEPARTMENT OF  
PRODUCTION  
TECHNOLOGY**

## Information Sheet For Visitor

### Visitor Survey The Science Centre and Manawatu Museum

My name is Tammi S. W. Tan, a PhD student from Massey University, Department of Production Technology, Palmerston North. My supervisors are Professor Don Barnes from the Department of Production Technology and Dr Robin Smith from the Department of Management Systems. I am conducting a Visitor Survey at The Science Centre and Manawatu Museum as part of my PhD research project on "The Application of Total Quality Management in the Tourist Industry".

The purpose of the questionnaire is to measure the expectations and satisfactions of visitors to The Science Centre and Manawatu Museum. The information will help The Science Centre and Manawatu Museum to identify customer needs and improvements required to meet those needs.

Information provided will be treated in confidence and those taking part will do so anonymously. If you decide to take part in the survey you will have to fill in Part One of the questionnaire before you look round The Science Centre and Manawatu Museum. When you have finished looking round and before you leave, you will need to fill in the rest of the questionnaire. Each part will take approximately 5-10 minutes to complete. You have the right to refuse to answer any particular question and to clarify with me any issues regarding the research.

Participating in the survey is voluntary and filling in the questionnaire implies consent to take part in the survey. The results of the survey may be published in scientific or management journals or in the local newspaper. This will be done after consultation with The Science Centre and Manawatu Museum. It will not be possible to identify any respondent from the published results.

Yours Sincerely

Tammi S.W. Tan  
Department of Production Technology  
Massey University,  
Private Bag, Palmerston North

14 February, 1995

Tammi S W Tan  
Department of Production Technology  
& Department of Management Systems



**MASSEY  
UNIVERSITY**

Private Bag  
Palmerston North  
New Zealand  
Telephone 0-6-356 9099  
Facsimile 0-6-350 5603

Office of  
THE REGISTRAR

Dear Tammi,

**Re: HUMAN ETHICS APPLICATION 95/4  
MEASURING THE SCIENCE CENTRE AND MANAWATU  
MUSEUM VISITOR'S EXPECTATION AND SATISFACTION.**

Thank you for attending the Human Ethics Committee meeting held 10 February with your Supervisors Professor D Barnes and Dr R Smith.

The Committee outlined their concerns regarding the initial application and survey questionnaire.

Thank you for your advice and clarification that the presented document is the outline for an ongoing application and a modified questionnaire will be re-submitted for ethical review.

The Committee noted that the questionnaire should be formed in simplified language. A separate Consent Form will not be necessary if the clause "*Filling in this questionnaire implies consent*" is placed at the top of the Information Sheet.

The Information Sheet should have an introduction regarding the Researcher, the purpose of the research and the estimated time it will take to participate in the survey.

The Committee had no problems with the principle of the application and look forward to further reviewing the re-submitted application.

Yours sincerely

A handwritten signature in cursive script, appearing to read 'Margaret Tennant'.

Dr Margaret Tennant  
(Acting Chairperson)  
**Human Ethics Committee**

Copy to: Professor D Barnes  
Dr R Smith

## Visitor Survey

### The Science Centre and Manawatu Museum

#### Part One: Level of Importance and Expectations - Management Perception of Visitor's Expectations & Importance

We would like you to think about the kind of exhibits and services that you would like to see at The Science Centre and Manawatu Museum.

For each of the items listed below please indicate how important you think each one is. Then for each of the items listed below please indicate what you would expect in terms of exhibits and services provided by The Science Centre and Manawatu Museum.

Make your choice by circling the number which best represents how you feel about the exhibits and services provided by The Science Centre and Manawatu Museum.

| No | Features, Exhibits and Services   | Level of Importance |                      |                     |                          |                          | Level of Expectations |          |              |           |                |     |     |
|----|---|---------------------|----------------------|---------------------|--------------------------|--------------------------|-----------------------|----------|--------------|-----------|----------------|-----|-----|
|    |   | Not Important<br>1  | Some Importance<br>2 | Very Important<br>3 | Extremely Important<br>4 | Extremely Important<br>5 | Very Low<br>1         | Low<br>2 | Neither<br>3 | High<br>4 | Very High<br>5 | N/A |     |
| 1  | The physical appearance of the facility eg. cleanliness, layout etc.                                | 1                   | 2                    | 3                   | 4                        | 5                        | 1                     | 2        | 3            | 4         | 5              | N/A |     |
| 2  | The layout and information level of the exhibitions   | 1                   | 2                    | 3                   | 4                        | 5                        | 1                     | 2        | 3            | 4         | 5              | N/A |     |
| 3  | The exhibition themes and content   | 1                   | 2                    | 3                   | 4                        | 5                        | 1                     | 2        | 3            | 4         | 5              | N/A |     |
| 4  | The appearance of the staff   | 1                   | 2                    | 3                   | 4                        | 5                        | 1                     | 2        | 3            | 4         | 5              | N/A |     |
| 5  | The information provided about the facility eg. brochures, adverts, programme information           | 1                   | 2                    | 3                   | 4                        | 5                        | 1                     | 2        | 3            | 4         | 5              | N/A |     |
| 6  | The provision of toilets and parenting facilities   | 1                   | 2                    | 3                   | 4                        | 5                        | 1                     | 2        | 3            | 4         | 5              | N/A |     |
| 7  | The cafe and shop provide important services  | 1                   | 2                    | 3                   | 4                        | 5                        | 1                     | 2        | 3            | 4         | 5              | N/A |     |
| 8  | Staff can be relied on to provide the promised service. eg. public programmes                       | 1                   | 2                    | 3                   | 4                        | 5                        | 1                     | 2        | 3            | 4         | 5              | N/A |     |
| 9  | The information provided by staff is accurate   | 1                   | 2                    | 3                   | 4                        | 5                        | N/A                   | 1        | 2            | 3         | 4              | 5   | N/A |
| 10 | Visitors are informed about when the services will be performed. eg. public programmes, exhibitions | 1                   | 2                    | 3                   | 4                        | 5                        | N/A                   | 1        | 2            | 3         | 4              | 5   | N/A |

|  |
|--|
| <b>Part One: Level of Importance and Expectations - Management</b> |
|--|

| No | Features, Exhibits and Services  | Level of Importance |                      |                     |                     |                          | Level of Expectations |               |          |              |           |                |     |
|----|--|---------------------|----------------------|---------------------|---------------------|--------------------------|-----------------------|---------------|----------|--------------|-----------|----------------|-----|
|    |  | Not Important<br>1  | Some Importance<br>2 | Very Important<br>3 | Very Important<br>4 | Extremely Important<br>5 | N/A                   | Very Low<br>1 | Low<br>2 | Neither<br>3 | High<br>4 | Very High<br>5 | N/A |
| 11 | The staff are willing to help visitors   | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 12 | Staff respond to visitor needs as quickly as possible                          | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 13 | Staff inspire trust and confidence in visitors                                 | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 14 | Visitors feel comfortable during the visit eg. enough seats, heating, lighting | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 15 | Staff are friendly, courteous and polite to visitors                           | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 16 | Staff have the knowledge to respond to visitor requests                        | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 17 | Opening hours are convenient.  | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 18 | The organisation has the visitor's best interests at heart                     | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 19 | Staff understand the needs of visitors   | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 20 | There is easy access for visitors with wheelchair, prams and young children    | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 21 | Signs in the building makes it easy to find your way around                    | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 22 | Outdoor signs makes it easy to locate the building.                            | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 23 | There is adequate car parking for visitors                                     | 1                   | 2                    | 3                   | 4                   | 5                        | N/A                   | 1             | 2        | 3            | 4         | 5              | N/A |

|  |
|--|
| <b>Part Two. Importance Weighting for The Science Centre and Manawatu Museum</b> |
|--|

We would like to know how important each of these features is to visitors when they evaluate The Science Centre and Manawatu Museum. Please circle the number which best represents the importance that you place on the five features of service according to how important you think each feature is to visitors.

| No | Quality Service Features   | Level of Importance On The Service |            |           |           |           |
|----|--|------------------------------------|------------|-----------|-----------|-----------|
|    |  | Not                                | Some       | Very      | Extremely |           |
|    |  | Important                          | Importance | Important | Important | Important |
|    |  | 1                                  | 2          | 3         | 4         | 5         |
| 1  | The appearance of the physical facilities, exhibitions, personnel, and communication materials | 1                                  | 2          | 3         | 4         | 5         |
| 2  | The ability of the facility to perform the promised service dependably and accurately          | 1                                  | 2          | 3         | 4         | 5         |
| 3  | The willingness of the staff to help visitors and provide prompt service                       | 1                                  | 2          | 3         | 4         | 5         |
| 4  | The knowledge and courtesy of staff and their ability to convey trust and confidence           | 1                                  | 2          | 3         | 4         | 5         |
| 5  | The caring, individualised attention the facility provides its visitors                        | 1                                  | 2          | 3         | 4         | 5         |

**Part Three. To identify the current status of The Science Centre and Manawatu Museum on Performance Standards**

**Availability of Standards**

Performance standards in The Science Centre and Manawatu Museum can be formal - written, explicit and communicated to staff. They can also be informal - verbal, implicit, and assumed to be understood by staff. For each of the following features, Please place a tick (✓) to the appropriate boxes.

| No | Standards   | No Standards Exist | Have Informal Standards | Have Formal Standards not Documented | Have Documented Standards | Do not Know |
|----|---|--------------------|-------------------------|--------------------------------------|---------------------------|-------------|
| 1  | The appearance of the physical facilities, exhibitions, personnel, and communication materials    |                    |                         |                                      |                           |             |
| 2  | The ability to perform the promised service reliably and accurately                               |                    |                         |                                      |                           |             |
| 3  | The willingness of the staff to help visitors and provide prompt service                          |                    |                         |                                      |                           |             |
| 4  | The knowledge and courtesy of the staff and their ability to convey trust and confidence          |                    |                         |                                      |                           |             |
| 5  | The caring, individualised attention The Science Centre and Manawatu Museum provides its visitors |                    |                         |                                      |                           |             |

*Thank you for completing this questionnaire.*

**Comments\ Suggestions:**

We welcome any other comments or suggestions you feel would help us to improve the quality of our services.

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## Visitor Survey

### The Science Centre & Manawatu Museum

#### Part One: What Are Your Expectations Before Your Visit and How Do You Feel After Your Visit To The Science Centre & Manawatu Museum?

We would like to know before your visit, what your expectations are with the facilities, exhibits and services, and how do you feel about this after your visit to The Science Centre & Manawatu Museum.

Make your choice by circling the number which best represents how you feel about the facilities, exhibits and services provided by The Science Centre & Manawatu Museum. Circle "N/A" if you have no expectations or you feel that it is not relevant.

| No | Features, Exhibits and Services   | Before Your Visit<br>What Do You Expect? |          |              |           |                   | After Your Visit<br>How do you feel? |                   |           |              |                   |                       |     |
|----|---|--|----------|--------------|-----------|-------------------|--------------------------------------|-------------------|-----------|--------------|-------------------|-----------------------|-----|
|    |   | Very<br>Low<br>1<br>N/A                  | Low<br>2 | Neither<br>3 | High<br>4 | Very<br>High<br>5 | N/A                                  | Very<br>Poor<br>1 | Poor<br>2 | Average<br>3 | Very<br>Good<br>4 | Excellent<br>5<br>/NA |     |
| 1  | The physical appearance of the facility eg. cleanliness, layout etc.                                | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 2  | The layout and information level of the exhibitions   | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 3  | The exhibition themes and content   | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 4  | The appearance of the staff   | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 5  | The information provided about the facility eg. brochures, adverts, programme information           | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 6  | The provision of toilets and parenting facilities   | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 7  | The café and shop provide important services  | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 8  | Staff can be relied on to provide the promised service. eg. public programmes                       | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 9  | The information provided by staff is accurate   | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 10 | Visitors are informed about when the services will be performed. eg. public programmes, exhibitions | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 11 | The staff are willing to help visitors  | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 12 | Staff respond to visitor needs as quickly as possible   | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 13 | Staff inspire trust and confidence in visitors  | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 14 | Visitors feel comfortable during the visit eg. enough seats, heating, lighting                      | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |
| 15 | Staff are friendly, courteous and polite to visitors  | 1  | 2        | 3            | 4         | 5                 | N/A                                  | 1                 | 2         | 3            | 4                 | 5                     | N/A |

**Part One: What Are Your Expectations Before Your Visit and How Do You Feel After Your Visit To The Science Centre & Manawatu Museum?**

| No | Features, Exhibits and Services   | Before Your Visit<br>What Do You Expect? |          |              |           |                          | After Your Visit<br>How do you feel? |           |              |                   |                       |  |
|----|---|--|----------|--------------|-----------|--------------------------|--------------------------------------|-----------|--------------|-------------------|-----------------------|--|
|    |   | Very<br>Low<br>1                         | Low<br>2 | Neither<br>3 | High<br>4 | Very<br>High<br>5<br>N/A | Very<br>Poor<br>1                    | Poor<br>2 | Average<br>3 | Very<br>Good<br>4 | Excellent<br>5<br>N/A |  |
| 16 | Staff have the knowledge to respond to visitor requests                     | 1  | 2        | 3            | 4         | 5<br>N/A                 | 1                                    | 2         | 3            | 4                 | 5<br>N/A              |  |
| 17 | Opening hours are convenient.   | 1  | 2        | 3            | 4         | 5<br>N/A                 | 1                                    | 2         | 3            | 4                 | 5<br>N/A              |  |
| 18 | The organisation has the visitor's best interests at heart                  | 1  | 2        | 3            | 4         | 5<br>N/A                 | 1                                    | 2         | 3            | 4                 | 5<br>N/A              |  |
| 19 | Staff understand the needs of visitors                                      | 1  | 2        | 3            | 4         | 5<br>N/A                 | 1                                    | 2         | 3            | 4                 | 5<br>N/A              |  |
| 20 | There is easy access for visitors with wheelchair, prams and young children | 1  | 2        | 3            | 4         | 5<br>N/A                 | 1                                    | 2         | 3            | 4                 | 5<br>N/A              |  |
| 21 | Signs in the building makes it easy to find your way around                 | 1  | 2        | 3            | 4         | 5<br>N/A                 | 1                                    | 2         | 3            | 4                 | 5<br>N/A              |  |
| 22 | Outdoor signs make it easy to locate the building.                          | 1  | 2        | 3            | 4         | 5<br>N/A                 | 1                                    | 2         | 3            | 4                 | 5<br>N/A              |  |
| 23 | There is adequate car parking for visitors                                  | 1  | 2        | 3            | 4         | 5<br>N/A                 | 1                                    | 2         | 3            | 4                 | 5<br>N/A              |  |

**Part Two. How Important Are These Services To You?**

We would like to know how important each of these features is to visitors when they evaluate The Science Centre & Manawatu Museum. Please circle the number which best represents the importance that you place on the five service quality features.

| No | Service Quality Features   | How Important Are These Services To You? |                         |                        |                             |                             | N/A |
|----|--|--|-------------------------|------------------------|-----------------------------|-----------------------------|-----|
|    |  | Not<br>Important<br>1                    | Some<br>Importance<br>2 | Very<br>Important<br>3 | Extremely<br>Important<br>4 | Extremely<br>Important<br>5 |     |
| 1  | The appearance of the physical facilities, exhibitions, personnel, and communication materials | 1  | 2                       | 3                      | 4                           | 5                           | N/A |
| 2  | The ability of the facility to perform the promised service dependably and accurately          | 1  | 2                       | 3                      | 4                           | 5                           | N/A |
| 3  | The willingness of the staff to help visitors and provide prompt service                       | 1  | 2                       | 3                      | 4                           | 5                           | N/A |
| 4  | The knowledge and courtesy of staff and their ability to convey trust and confidence           | 1  | 2                       | 3                      | 4                           | 5                           | N/A |
| 5  | The caring, individualised attention the facility provides its visitors                        | 1  | 2                       | 3                      | 4                           | 5                           | N/A |

|  |
|--|
| <b>Part Three : Overall Impression of the Facility</b> |
|--|

1. What is your overall rating of the quality of the services provided by The Science Centre & Manawatu Museum ?  
 Very Poor     Poor     Acceptable     Good     Very Good
  
2. Overall, how satisfied were you with your visit today ?  
 Very dissatisfied     Dissatisfied     Neither dissatisfied nor Satisfied     Satisfied     Very Satisfied
  
3. Have you visited other similar facility before ?  
 Yes  Go to Q4    No  Go to Q5
  
4. How do you compare this facility with others that you have visited ?  
 Very Poor     Poor     Acceptable     Good     Very Good
  
5. Did you pay an admission charge ?  
 Yes  Go to Q6    No  Go to Q7
  
6. Do you think this visit is value for money ?  
 Yes     No  please comment: \_\_\_\_\_
  
7. How long was your visit today ?  
 Less than one hour     1 - 2 hours     2 - 3 hours     Over 3 hours
  
8. Would you recommend this facility to your friends ?  
 Yes     No
  
9. Are you likely to visit this facility again in the next year ?  
 Yes     No
  
10. Which areas of the facility did you visit today ?  

|  |  |
|--|--|
| Tangata Whenua Gallery <input type="checkbox"/>    | Kids Own <input type="checkbox"/>              |
| Taonga Gallery <input type="checkbox"/>            | Electricity in Action <input type="checkbox"/> |
| Slices of Lives <input type="checkbox"/>           | Gargantuans <input type="checkbox"/>           |
| Children of the Holocaust <input type="checkbox"/> | Awahou South School <input type="checkbox"/>   |
| Bob Marley <input type="checkbox"/>                | Totaranui Cottage <input type="checkbox"/>     |

|                                   |
|-----------------------------------|
| <b>Part Four. Visitor Profile</b> |
|-----------------------------------|

**We would like to know more about our visitors. All information will be treated as confidential. Please make your choice by (✓) ticking the appropriate box and writing the other information in the spaces provided.**

1. How often have you visited The Science Centre & Manawatu Museum in the last 12 months?

First time       2 - 3 times       4 - 6 times       7 or more times

2. Are you a member of the societies of The Science Centre & Manawatu Museum?

Yes       No

3. Who did you come here with today ?

Alone       Family       Family & friends       Organised Group

4. Where did you find out about this place ?

Brochures       Advertisement       Word of Mouth       Information Centre

Others, please specify: \_\_\_\_\_

5. What is the main reason for this visit ? (you could tick more than one)

To see a particular exhibition       To learn something   
 Something to do       Sightseeing   
 To visit the cafe/shop       Others, please specify : \_\_\_\_\_

6. What age group are you in:

15 - 19       25 - 29       35 - 39       45 - 49       55 - 59   
 20 - 24       30 - 34       40 - 44       50 - 55       60 & above

7. What is your occupation?

Agriculture & Fishing       Clerk       Student   
 Domestic Worker       Professional       Technician   
 House person       Retired       Trade Worker   
 Manager/ Administrator       Sales/ Service       Unemployed   
 Operator/ Assembler       Other (please specify): \_\_\_\_\_

8. What is your education level ?

Primary       Intermediate       Secondary   
 Technical Training       Tertiary Qualification       Others (please specify): \_\_\_\_\_

9. Where do you live (town/ country) ?

\_\_\_\_\_

10. What is the purpose of your visit to this area ?

Visiting friends & relatives       Holiday       N/A

Others (please specify): \_\_\_\_\_

11. What is your ethnic origin ?

- NZ European       Maori  (Tribal affiliations): \_\_\_\_\_  
NZ Chinese       Pacific Islands  (Island) : \_\_\_\_\_  
NZ Indian       Other (please specify): \_\_\_\_\_

12. Gender      Male       Female

***Thank you for completing this questionnaire.***

**Comments\ Suggestions:**

We welcome any other comments or suggestions you feel would help us to improve the quality of our services.

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## Gap Analysis of Service Quality

**Table 1. The Management and Visitors' View of the Importance of Service Quality**

| Service Quality       | SQ | Service Quality Variables  | Importance of Service Quality   |            | Importance Gap |
|-----------------------|----|--|---------------------------------|------------|----------------|
|                       | No |  | Features, Exhibits and Services | Management |                |
| <b>Tangible</b>       | 1  | The physical appearance of the facility                                      | 4.05                            | 4.04       | 0.01           |
|                       | 2  | The layout and information level of the exhibitions                          | 4.37                            | 4.26       | 0.11           |
|                       | 3  | The exhibition themes and content  | 4.11                            | 3.98       | 0.13           |
|                       | 4  | The appearance of the staff  | 3.47                            | 3.42       | 0.05           |
|                       | 5  | The information provided about the facility                                  | 3.89                            | 3.60       | 0.29           |
|                       | 6  | The provision of toilets and parenting facilities                            | 3.95                            | 3.91       | 0.04           |
| <b>Reliability</b>    | 7  | The services provided by the cafe and shop                                   | 3.00                            | 2.85       | 0.15           |
|                       | 8  | The provision of the promised service by the staff                           | 4.26                            | 3.95       | 0.31           |
|                       | 9  | The information provided by staff is accurate                                | 4.68                            | 4.48       | 0.20           |
|                       | 10 | Visitors are informed about when the services will be performed              | 4.32                            | 3.93       | 0.39           |
| <b>Responsiveness</b> | 11 | The staff are willing to help visitors                                       | 4.50                            | 4.31       | 0.19           |
|                       | 12 | Staff respond to visitor needs as quickly as possible                        | 4.26                            | 3.90       | 0.37           |
| <b>Assurance</b>      | 13 | Staff inspire trust and confidence in visitors                               | 3.89                            | 3.82       | 0.08           |
|                       | 14 | Visitors feel comfortable during the visit                                   | 3.84                            | 3.90       | -0.06          |
|                       | 15 | Staff are friendly, courteous and polite to visitors                         | 4.63                            | 4.34       | 0.29           |
|                       | 16 | Staff have the knowledge to respond to visitors' requests                    | 4.11                            | 4.28       | -0.17          |
| <b>Empathy</b>        | 17 | Opening hours are convenient   | 3.89                            | 3.89       | 0.00           |
|                       | 18 | The organisation has the visitor's best interests at heart                   | 3.65                            | 4.06       | -0.41          |
|                       | 19 | Staff understand the needs of visitors                                       | 4.00                            | 3.86       | 0.14           |
|                       | 20 | There is easy access for visitors with wheelchairs, prams and young children | 4.32                            | 4.34       | -0.02          |
|                       | 21 | Signs in the building make it easy to find your way around                   | 4.11                            | 4.15       | -0.04          |
|                       | 22 | Outdoor signs make it easy to locate the building                            | 4.37                            | 4.12       | 0.25           |
|                       | 23 | There is adequate car parking for visitors                                   | 3.42                            | 4.00       | -0.53          |

**Table 2. Gap Analysis of Expectation of Service Quality**

| Service Quality | SQ | Service Quality Variables<br>Features, Exhibits and Services                 | Expectation of Service Quality |              |              | Expectation Gap |       |
|-----------------|----|--|--------------------------------|--------------|--------------|-----------------|-------|
|                 | No |  | 1995 Mgt                       | 1995 Visitor | 1996 Visitor | 1995            | 1996  |
| Tangible        | 1  | The physical appearance of the facility                                      | 3.84                           | 3.99         | 4.28         | -0.15           | -0.44 |
|                 | 2  | The layout and information level of the exhibitions                          | 4.00                           | 4.04         | 4.23         | -0.04           | -0.23 |
|                 | 3  | The exhibition themes and content  | 3.89                           | 3.94         | 4.13         | -0.05           | -0.24 |
|                 | 4  | The appearance of the staff  | 3.68                           | 3.72         | 3.86         | -0.04           | -0.17 |
|                 | 5  | The information provided about the facility                                  | 3.74                           | 3.65         | 3.83         | 0.09            | -0.09 |
|                 | 6  | The provision of toilets and parenting facilities                            | 4.32                           | 3.98         | 4.03         | 0.34            | 0.29  |
| Reliability     | 7  | The services provided by the cafe and shop                                   | 3.58                           | 3.45         | 3.54         | 0.13            | 0.03  |
|                 | 8  | The provision of the promised service (public programmes) by the staff       | 4.32                           | 3.90         | 3.99         | 0.42            | 0.32  |
|                 | 9  | The information provided by staff is accurate                                | 4.42                           | 4.27         | 4.35         | 0.15            | 0.07  |
|                 | 10 | Visitors are informed about when the services will be performed              | 4.11                           | 3.83         | 4.02         | 0.28            | 0.09  |
| Responsiveness  | 11 | The staff are willing to help visitors                                       | 4.26                           | 4.11         | 4.22         | 0.15            | 0.05  |
|                 | 12 | Staff respond to visitor needs as quickly as possible                        | 4.21                           | 3.86         | 4.03         | 0.35            | 0.18  |
| Assurance       | 13 | Staff inspire trust and confidence in visitors                               | 3.95                           | 3.73         | 3.95         | 0.22            | 0.00  |
|                 | 14 | Visitors feel comfortable during the visit                                   | 4.16                           | 3.96         | 4.14         | 0.20            | 0.02  |
|                 | 15 | Staff are friendly, courteous and polite to visitors                         | 4.42                           | 4.23         | 4.26         | 0.19            | 0.16  |
|                 | 16 | Staff have the knowledge to respond to visitors' requests                    | 4.11                           | 4.09         | 4.13         | 0.02            | -0.02 |
| Empathy         | 17 | Opening hours are convenient   | 3.84                           | 3.78         | 4.19         | 0.06            | -0.35 |
|                 | 18 | The organisation has the visitor's best interests at heart                   | 3.58                           | 3.86         | 4.14         | -0.28           | -0.56 |
|                 | 19 | Staff understand the needs of visitors                                       | 3.89                           | 3.78         | 3.96         | 0.11            | -0.06 |
|                 | 20 | There is easy access for visitors with wheelchairs, prams and young children | 4.00                           | 4.22         | 4.15         | -0.22           | -0.15 |
|                 | 21 | Signs in the building make it easy to find your way around                   | 3.68                           | 4.04         | 4.15         | -0.36           | -0.46 |
|                 | 22 | Outdoor signs make it easy to locate the building                            | 3.68                           | 3.81         | 4.02         | -0.13           | -0.33 |
|                 | 23 | There is adequate car parking for visitors                                   | 3.32                           | 3.75         | 3.92         | -0.43           | -0.60 |

**Table 3. Gap Analysis of Service Quality for 1995**

| Service Quality       | SQ | Service Quality Variables  | Measured Visitor                |             | Service Quality Gap |       |
|-----------------------|----|--|---------------------------------|-------------|---------------------|-------|
|                       | No |  | Features, Exhibits and Services | Expectation | Perception          | P-E   |
| <b>Tangible</b>       | 1  | The physical appearance of the facility                                      | 3.99                            | 4.41        | 0.42                | 1.68  |
|                       | 2  | The layout and information level of the exhibitions                          | 4.04                            | 4.15        | 0.11                | 0.44  |
|                       | 3  | The exhibition themes and content  | 3.94                            | 4.18        | 0.24                | 0.95  |
|                       | 4  | The appearance of the staff  | 3.72                            | 3.74        | 0.02                | 0.07  |
|                       | 5  | The information provided about the facility                                  | 3.65                            | 3.66        | 0.01                | 0.04  |
|                       | 6  | The provision of toilets and parenting facilities                            | 3.98                            | 4.21        | 0.23                | 0.92  |
| <b>Reliability</b>    | 7  | The services provided by the cafe and shop                                   | 3.45                            | 3.74        | 0.29                | 1.00  |
|                       | 8  | The provision of the promised service by the staff                           | 3.90                            | 3.90        | 0.00                | 0.00  |
|                       | 9  | The information provided by staff is accurate                                | 4.27                            | 3.99        | -0.28               | -1.20 |
|                       | 10 | Visitors are informed about when the services will be performed              | 3.83                            | 3.76        | -0.07               | -0.27 |
| <b>Responsiveness</b> | 11 | The staff are willing to help visitors                                       | 4.11                            | 4.06        | -0.05               | -0.21 |
|                       | 12 | Staff respond to visitor needs as quickly as possible                        | 3.86                            | 3.95        | 0.09                | 0.35  |
| <b>Assurance</b>      | 13 | Staff inspire trust and confidence in visitors                               | 3.73                            | 3.91        | 0.18                | 0.67  |
|                       | 14 | Visitors feel comfortable during the visit                                   | 3.96                            | 4.21        | 0.25                | 0.99  |
|                       | 15 | Staff are friendly, courteous and polite to visitors                         | 4.23                            | 4.22        | -0.01               | -0.04 |
|                       | 16 | Staff have the knowledge to respond to visitors' requests                    | 4.09                            | 4.05        | -0.04               | -0.16 |
| <b>Empathy</b>        | 17 | Opening hours are convenient   | 3.78                            | 4.08        | 0.30                | 1.13  |
|                       | 18 | The organisation has the visitor's best interests at heart                   | 3.86                            | 4.19        | 0.33                | 1.27  |
|                       | 19 | Staff understand the needs of visitors                                       | 3.78                            | 3.97        | 0.19                | 0.72  |
|                       | 20 | There is easy access for visitors with wheelchairs, prams and young children | 4.22                            | 4.13        | -0.09               | -0.38 |
|                       | 21 | Signs in the building make it easy to find your way around                   | 4.04                            | 3.87        | -0.17               | -0.69 |
|                       | 22 | Outdoor signs make it easy to locate the building                            | 3.81                            | 3.81        | 0.00                | 0.00  |
|                       | 23 | There is adequate car parking for visitors                                   | 3.75                            | 3.70        | -0.05               | -0.19 |

**Table 4. Gap Analysis of Service Quality for 1996**

| Service Quality       | SQ | Service Quality Variables  | Measured Visitor                |             | Service Quality Gap |       |
|-----------------------|----|--|---------------------------------|-------------|---------------------|-------|
|                       | No |  | Features, Exhibits and Services | Expectation | Perception          | P-E   |
| <b>Tangible</b>       | 1  | The physical appearance of the facility                                      | 4.28                            | 4.62        | 0.34                | 1.44  |
|                       | 2  | The layout and information level of the exhibitions                          | 4.23                            | 4.42        | 0.19                | 0.80  |
|                       | 3  | The exhibition themes and content  | 4.13                            | 4.34        | 0.21                | 0.86  |
|                       | 4  | The appearance of the staff  | 3.86                            | 3.98        | 0.12                | 0.47  |
|                       | 5  | The information provided about the facility                                  | 3.83                            | 3.80        | -0.03               | -0.11 |
|                       | 6  | The provision of toilets and parenting facilities                            | 4.03                            | 4.26        | 0.24                | 0.95  |
| <b>Reliability</b>    | 7  | The services provided by the cafe and shop                                   | 3.54                            | 3.92        | 0.38                | 1.34  |
|                       | 8  | The provision of the promised service by the staff                           | 3.99                            | 4.02        | 0.03                | 0.11  |
|                       | 9  | The information provided by staff is accurate                                | 4.35                            | 4.15        | -0.20               | -0.86 |
|                       | 10 | Visitors are informed about when the services will be performed              | 4.02                            | 3.79        | -0.22               | -0.90 |
| <b>Responsiveness</b> | 11 | The staff are willing to help visitors                                       | 4.22                            | 4.28        | 0.07                | 0.28  |
|                       | 12 | Staff respond to visitor needs as quickly as possible                        | 4.03                            | 4.16        | 0.13                | 0.51  |
| <b>Assurance</b>      | 13 | Staff inspire trust and confidence in visitors                               | 3.95                            | 4.04        | 0.10                | 0.39  |
|                       | 14 | Visitors feel comfortable during the visit                                   | 4.14                            | 4.41        | 0.27                | 1.10  |
|                       | 15 | Staff are friendly, courteous and polite to visitors                         | 4.26                            | 4.35        | 0.08                | 0.35  |
|                       | 16 | Staff have the knowledge to respond to visitors' requests                    | 4.13                            | 4.04        | -0.08               | -0.35 |
| <b>Empathy</b>        | 17 | Opening hours are convenient   | 4.19                            | 4.23        | 0.04                | 0.16  |
|                       | 18 | The organisation has the visitor's best interests at heart                   | 4.14                            | 4.31        | 0.17                | 0.71  |
|                       | 19 | Staff understand the needs of visitors                                       | 3.96                            | 4.04        | 0.08                | 0.31  |
|                       | 20 | There is easy access for visitors with wheelchairs, prams and young children | 4.15                            | 4.20        | 0.05                | 0.20  |
|                       | 21 | Signs in the building make it easy to find your way around                   | 4.15                            | 4.03        | -0.12               | -0.48 |
|                       | 22 | Outdoor signs make it easy to locate the building                            | 4.02                            | 3.85        | -0.16               | -0.65 |
|                       | 23 | There is adequate car parking for visitors                                   | 3.92                            | 3.72        | -0.20               | -0.79 |

**Table 5. Gap Analysis of Weighted Service Quality for 1995/96**

| Service Quality       | SQ | Service Quality Variables  | Service Quality Gap             |       |       | Weighted Service Quality Gap |       |       |
|-----------------------|----|--|---------------------------------|-------|-------|------------------------------|-------|-------|
|                       | No |  | Features, Exhibits and Services | 1995  | 1996  | Average                      | 1995  | 1996  |
| <b>Tangible</b>       | 1  | The physical appearance of the facility                                      | 0.42                            | 0.34  | 0.38  | 1.68                         | 1.44  | 1.55  |
|                       | 2  | The layout and information level of the exhibitions                          | 0.11                            | 0.19  | 0.15  | 0.44                         | 0.80  | 0.64  |
|                       | 3  | The exhibition themes and content  | 0.24                            | 0.21  | 0.22  | 0.95                         | 0.86  | 0.88  |
|                       | 4  | The appearance of the staff  | 0.02                            | 0.12  | 0.07  | 0.07                         | 0.47  | 0.27  |
|                       | 5  | The information provided about the facility                                  | 0.01                            | -0.03 | -0.01 | 0.04                         | -0.11 | -0.03 |
|                       | 6  | The provision of toilets and parenting facilities                            | 0.23                            | 0.24  | 0.23  | 0.92                         | 0.95  | 0.94  |
| <b>Reliability</b>    | 7  | The services provided by the cafe and shop                                   | 0.29                            | 0.38  | 0.33  | 1.00                         | 1.34  | 1.16  |
|                       | 8  | The provision of the promised service by the staff                           | 0.00                            | 0.03  | 0.01  | 0.00                         | 0.11  | 0.06  |
|                       | 9  | The information provided by staff is accurate                                | -0.28                           | -0.20 | -0.24 | -1.20                        | -0.86 | -1.03 |
|                       | 10 | Visitors are informed about when the services will be performed              | -0.07                           | -0.22 | -0.15 | -0.27                        | -0.90 | -0.59 |
| <b>Responsiveness</b> | 11 | The staff are willing to help visitors                                       | -0.05                           | 0.07  | 0.01  | -0.21                        | 0.28  | 0.05  |
|                       | 12 | Staff respond to visitor needs as quickly as possible                        | 0.09                            | 0.13  | 0.11  | 0.35                         | 0.51  | 0.43  |
| <b>Assurance</b>      | 13 | Staff inspire trust and confidence in visitors                               | 0.18                            | 0.10  | 0.14  | 0.67                         | 0.39  | 0.53  |
|                       | 14 | Visitors feel comfortable during the visit                                   | 0.25                            | 0.27  | 0.26  | 0.99                         | 1.10  | 1.03  |
|                       | 15 | Staff are friendly, courteous and polite to visitors                         | -0.01                           | 0.08  | 0.04  | -0.04                        | 0.35  | 0.17  |
|                       | 16 | Staff have the knowledge to respond to visitors' requests                    | -0.04                           | -0.08 | -0.06 | -0.16                        | -0.35 | -0.26 |
| <b>Empathy</b>        | 17 | Opening hours are convenient   | 0.30                            | 0.04  | 0.17  | 1.13                         | 0.16  | 0.64  |
|                       | 18 | The organisation has the visitor's best interests at heart                   | 0.33                            | 0.17  | 0.25  | 1.27                         | 0.71  | 0.99  |
|                       | 19 | Staff understand the needs of visitors                                       | 0.19                            | 0.08  | 0.13  | 0.72                         | 0.31  | 0.50  |
|                       | 20 | There is easy access for visitors with wheelchairs, prams and young children | -0.09                           | 0.05  | -0.02 | -0.38                        | 0.20  | -0.09 |
|                       | 21 | Signs in the building make it easy to find your way around                   | -0.17                           | -0.12 | -0.14 | -0.69                        | -0.48 | -0.58 |
|                       | 22 | Outdoor signs make it easy to locate the building                            | 0.00                            | -0.16 | -0.08 | 0.00                         | -0.65 | -0.34 |
|                       | 23 | There is adequate car parking for visitors                                   | -0.05                           | -0.20 | -0.13 | -0.19                        | -0.79 | -0.49 |

**Table 6. Gap Analysis of Average Weighted Service Quality for 1995/96 (Sorted according to descending gap order)**

| SQ<br>No | Service Quality Variables<br>Features, Exhibits and Services                 | Service Quality<br>Gap | Weighted Service<br>Quality Gap |         |
|----------|--|------------------------|---------------------------------|---------|
|          |  | 1995                   | 1996                            | Average |
| 9        | The information provided by staff is accurate                                | -1.20                  | -0.86                           | -1.03   |
| 21       | Signs in the building make it easy to find your way around                   | -0.69                  | -0.48                           | -0.58   |
| 10       | Visitors are informed about when the services will be performed              | -0.27                  | -0.90                           | -0.58   |
| 23       | There is adequate car parking for visitors                                   | -0.19                  | -0.79                           | -0.49   |
| 22       | Outdoor signs make it easy to locate the building                            | 0.00                   | -0.65                           | -0.33   |
| 16       | Staff have the knowledge to respond to visitors' requests                    | -0.16                  | -0.35                           | -0.26   |
| 20       | There is easy access for visitors with wheelchairs, prams and young children | -0.38                  | 0.20                            | -0.09   |
| 5        | The information provided about the facility                                  | 0.04                   | -0.11                           | -0.04   |
| 11       | The staff are willing to help visitors                                       | -0.21                  | 0.28                            | 0.04    |
| 8        | The provision of the promised service by the staff                           | 0.00                   | 0.11                            | 0.06    |
| 15       | Staff are friendly, courteous and polite to visitors                         | -0.04                  | 0.35                            | 0.16    |
| 4        | The appearance of the staff  | 0.07                   | 0.47                            | 0.27    |
| 12       | Staff respond to visitor needs as quickly as possible                        | 0.35                   | 0.51                            | 0.43    |
| 19       | Staff understand the needs of visitors                                       | 0.72                   | 0.31                            | 0.51    |
| 13       | Staff inspire trust and confidence in visitors                               | 0.67                   | 0.39                            | 0.53    |
| 2        | The layout and information level of the exhibitions                          | 0.44                   | 0.80                            | 0.62    |
| 17       | Opening hours are convenient   | 1.13                   | 0.16                            | 0.65    |
| 3        | The exhibition themes and content  | 0.95                   | 0.86                            | 0.90    |
| 6        | The provision of toilets and parenting facilities                            | 0.92                   | 0.95                            | 0.93    |
| 18       | The organization has the visitor's best interests at heart                   | 1.27                   | 0.71                            | 0.99    |
| 14       | Visitors feel comfortable during the visit                                   | 0.99                   | 1.10                            | 1.04    |
| 7        | The services provided by the cafe and shop                                   | 1.00                   | 1.34                            | 1.17    |
| 1        | The physical appearance of the facility                                      | 1.68                   | 1.44                            | 1.56    |

## The Science Centre and Manawatu Museum Visitors' Overall Impression

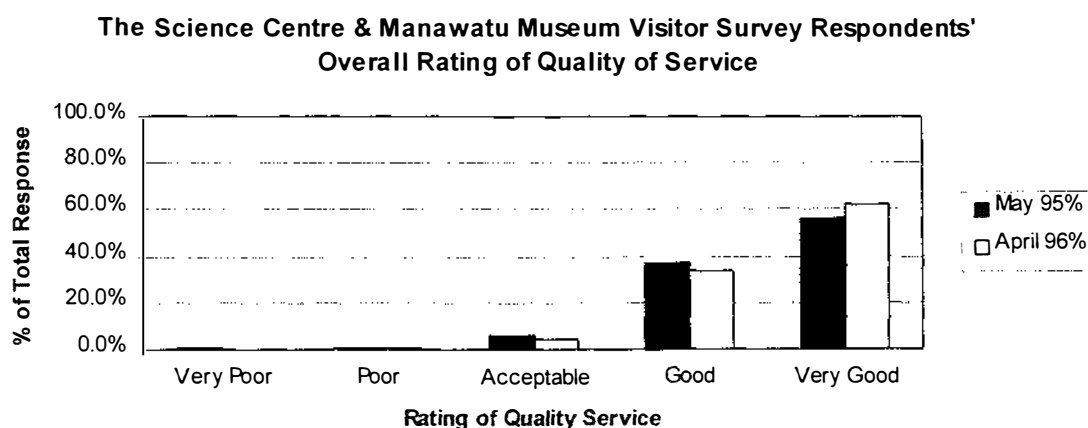
The results of the overall impression of the facility for the two periods were combined and summarised with the average result of the two periods being presented. The description of the graphs will be based on 1996 survey results.

### 1. What is your overall rating of the quality of the services provided by The Science Centre and Manawatu Museum ?

A significant majority of the respondents (94.4%) rated the service quality as good to very good. Only 0.8% rated the service quality as "Very Poor" to "Poor", and 4.5% rated the service quality as "Acceptable". Comments made by the respondents who enjoyed and satisfied with their visit were: "an excellent facility, displays are interesting", "I find it an enjoyable outing - children enjoyed and learned", "very good place for children", "children area is an exceptional facility, Gargantuan's outstanding, a good days entertainment".

Those who rated the quality of service as acceptable commented: "huge building but not enough variation to see", "there could have been more staff around to help and answer", "we would like a map showing what's on and where with direction", "more obvious direction of what and next, where to go. For example, signs on the door at the exit of Science Centre to Museum".

| Rating     | May-95 | May 95% | April 96 | April 96% | Average % |
|------------|--------|---------|----------|-----------|-----------|
| Very Poor  | 1      | 0.5%    | 0        | 0.0%      | 0.3%      |
| Poor       | 1      | 0.5%    | 1        | 0.5%      | 0.5%      |
| Acceptable | 11     | 5.6%    | 8        | 4.0%      | 4.8%      |
| Good       | 73     | 37.4%   | 68       | 33.8%     | 35.6%     |
| Very Good  | 109    | 55.9%   | 124      | 61.7%     | 58.8%     |
|            | 195    | 100.0%  | 201      | 100.0%    | 100.0%    |

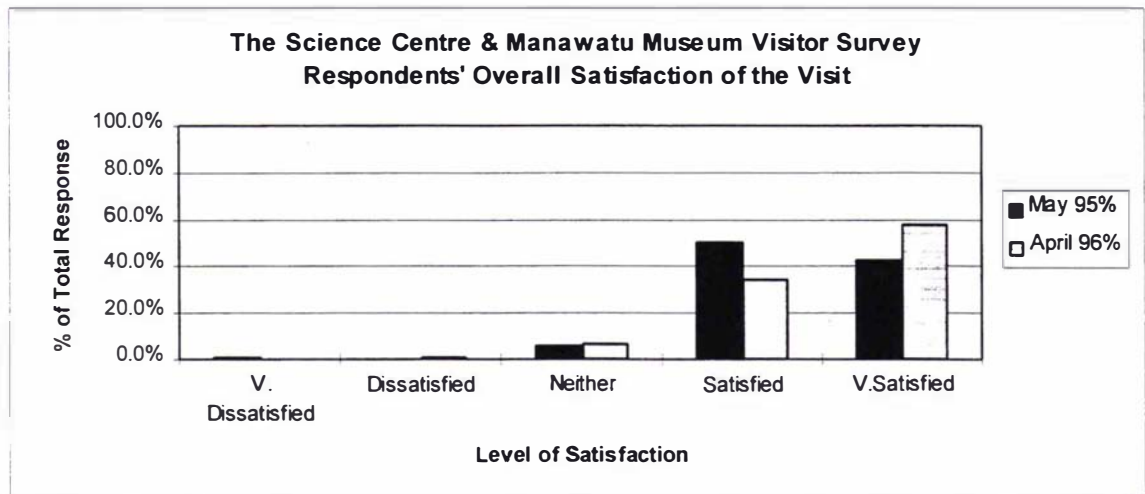


**2. Overall, how satisfied were you with your visit today ?**

The response to the question on satisfaction was closely related to question one. In 1996 survey, 92.9% of the respondents were satisfied with the service quality provided by The Science Centre and Manawatu Museum. 34.2% expressed that they are “Satisfied” and 58.2% “Very Satisfied” with the service quality provided.

| Satisfaction Level | May-95 | May 95% | April 96 | April 96% | Average % |
|--------------------|--------|---------|----------|-----------|-----------|
| Very Dissatisfied  | 2      | 1.0%    | 0        | 0.0%      | 0.5%      |
| Dissatisfied       | 0      | 0.0%    | 2        | 1.0%      | 0.5%      |
| Neither            | 11     | 5.6%    | 13       | 6.6%      | 6.1%      |
| Satisfied          | 99     | 50.3%   | 67       | 34.2%     | 42.2%     |
| Very Satisfied     | 85     | 43.1%   | 114      | 58.2%     | 50.7%     |
|                    | 197    | 100.0%  | 196      | 100.0%    | 100.0%    |

In the average of two periods, 92.9% of visitors indicated that they were very satisfied with the visit. Only 1% stated that they were “Dissatisfied” with the service provided.



**3. Have you ever visited any other similar facilities before ?**

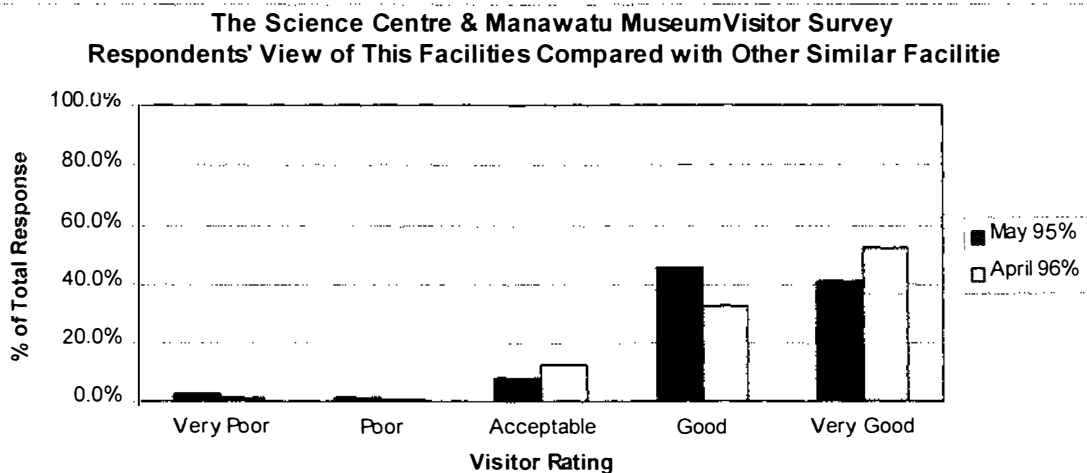
60.2% of respondents had visited other similar facilities before. We could conclude that 60.2% of the visitors to The Science Centre and Manawatu Museum were experienced visitors.

|     | May-95 | May 95% | April 96 | April 96% | Average % |
|-----|--------|---------|----------|-----------|-----------|
| Yes | 133    | 67.2%   | 107      | 53.2%     | 60.2%     |
| No  | 65     | 32.8%   | 94       | 46.8%     | 39.8%     |
|     | 198    | 100.0%  | 201      | 100.0%    | 100.0%    |

#### 4. How do you compare this facility with others that you have visited ?

Of those who had visited other similar facilities before, 47.2% of respondents rated The Science Centre and Manawatu Museum as "Very Good" compared with other similar facilities and 39.3% rated it as "Good". 10.3% rated it as "Acceptable" and 3.3% gave a rating of "Very Poor" to "Poor".

| Rating     | May-95 | May 95% | April 96 | April 96% | Average % |
|------------|--------|---------|----------|-----------|-----------|
| Very Poor  | 4      | 2.9%    | 2        | 1.5%      | 2.2%      |
| Poor       | 2      | 1.4%    | 1        | 0.7%      | 1.1%      |
| Acceptable | 11     | 7.9%    | 17       | 12.6%     | 10.3%     |
| Good       | 64     | 46.0%   | 44       | 32.6%     | 39.3%     |
| Very Good  | 58     | 41.7%   | 71       | 52.6%     | 47.2%     |
|            | 139    | 100.0%  | 135      | 100.0%    | 100.0%    |



#### 5. Did you pay an admission charge ?

64.5% of the respondents paid an admission charge.

| Admission Charge | May-95 | May 95% | April 96 | April 96% | Average % |
|------------------|--------|---------|----------|-----------|-----------|
| Yes              | 107    | 53.2%   | 153      | 75.7%     | 64.5%     |
| No               | 94     | 46.8%   | 49       | 24.3%     | 35.5%     |
|                  | 201    | 100.0%  | 202      | 100.0%    | 100.0%    |

## 6. Do you think that this visit is value for money ?

For those that paid an admission charge, 57.7% of respondents considered that the visit was value for money. 42.3% said that it was not value for money. Comments made by those who answered "No" to the question commented that the admission fee was too expensive:

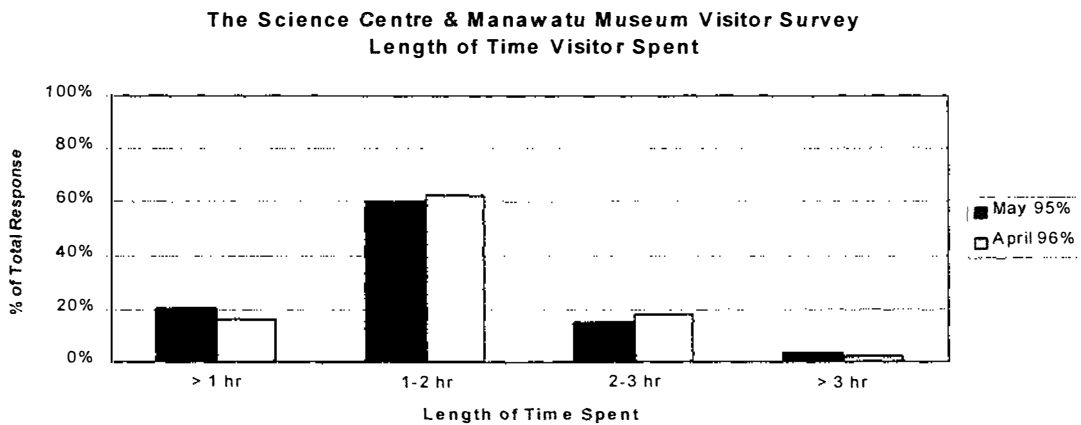
- *"Too high, low socio-economic groups may miss out with expensive admission charge"*
- *"Shouldn't be so expensive"*
- *"\$5 for a 3yr old is not good value, pre-schooler should be free"*
- *"At \$5 each, there should be more exhibits"*
- *"Bit expensive for me a student with family \$20!"*
- *"Too expensive for one off family visit"*

| Value for money | May-95 | May 95% | April 96 | April 96% | Average % |
|-----------------|--------|---------|----------|-----------|-----------|
| Yes             | 111    | 55.8%   | 120      | 59.7%     | 57.7%     |
| No              | 88     | 44.2%   | 81       | 40.3%     | 42.3%     |
|                 | 199    | 100.0%  | 201      | 100%      | 100.0%    |

## 7. How long was your visit today ?

61.5% of respondents spent 1-2 hours in The Science Centre and Manawatu Museum. 18.6% spent less than an hour and 16.8% spent from 2-3 hours. 3.1% spent more than 3 hours.

| Length of Visit | May-95 | May 95% | April 96 | April 96% | Average % |
|-----------------|--------|---------|----------|-----------|-----------|
| > 1 hr          | 40     | 20.6%   | 32       | 16.6%     | 18.6%     |
| 1-2 hr          | 117    | 60.3%   | 121      | 62.7%     | 61.5%     |
| 2-3 hr          | 30     | 15.5%   | 35       | 18.1%     | 16.8%     |
| > 3 hr          | 7      | 3.6%    | 5        | 2.6%      | 3.1%      |
|                 | 194    | 100.0%  | 193      | 100.0%    | 100.0%    |



## 8. Would you recommend this facility to your friends ?

An overwhelming 86.5% of respondents would recommend the facility to their friends.

| Recommend to Friends | May-95 | May 95% | April 96 | April 96% | Average % |
|----------------------|--------|---------|----------|-----------|-----------|
| Yes                  | 191    | 95.0%   | 32       | 78.0%     | 86.5%     |
| No                   | 10     | 5.0%    | 9        | 22.0%     | 13.5%     |
|                      | 201    | 100.0%  | 41       | 100.0%    | 100.0%    |

## 9. Are you likely to visit this facility again in the next year ?

79.8% of respondents surveyed said that they were likely to visit the facility again in the next year and 20.3% said no.

| Visit Again | May-95 | May 95% | April 96 | April 96% | Average % |
|-------------|--------|---------|----------|-----------|-----------|
| Yes         | 161    | 80.9%   | 159      | 78.7%     | 79.8%     |
| No          | 38     | 19.1%   | 43       | 21.3%     | 20.2%     |
|             | 199    | 100.0%  | 202      | 100.0%    | 100.0%    |

## 10. Which areas of the museum did you visit today ?

In 1995, the areas visited by respondents were “*Tangata Whenua*”, “*Taonga*”, “*Slices of Lives*”, “*Discover Bones*” and “*House Lot*”. The areas visited by respondents surveyed in 1996 were evenly spread from “*Tangata Whenua*”, “*Children of Holocaust*” to “*Bob Marley*”. Only 6.3% and 5.9% visited Totaranui Cottage and Awahou S. School respectively.

| No | Museum            | May-95 | May 95% | Museum                | April 96 | April 96% |
|----|-------------------|--------|---------|-----------------------|----------|-----------|
| 1  | Tangata Whenua    | 110    | 19.9%   | Tangata Whenua        | 99       | 18.4%     |
| 2  | Taonga            | 91     | 16.4%   | Taonga                | 79       | 14.7%     |
| 3  | Slices of Lives   | 92     | 16.6%   | Slices of Lives       | 101      | 18.7%     |
| 4  | Discover Bones    | 125    | 22.6%   | Children of Holocaust | 109      | 20.2%     |
| 5  | House Lot         | 80     | 14.4%   | Bob Marley            | 85       | 15.8%     |
| 6  | Totaranui Cottage | 28     | 5.1%    | Totaranui Cottage     | 34       | 6.3%      |
| 7  | Awahou S. School  | 28     | 5.1%    | Awahou S. School      | 32       | 5.9%      |
|    |                   | 554    | 100.0%  |                       | 539      | 100.0%    |

## 11. Which areas of the Science Centre did you visit today ?

The survey respondents visited all parts of the Science Centre.

| No | Science Centre | May-95 | May 95% | Science Centre        | April 96 | April 96% |
|----|----------------|--------|---------|-----------------------|----------|-----------|
| 1  | Kids Own       | 94     | 26.7%   | Kids Own              | 116      | 28.2%     |
| 2  | Puzzles        | 80     | 22.7%   | Electricity in Action | 142      | 34.5%     |
| 3  | Sportlabs      | 85     | 24.1%   | Gargantuans           | 153      | 37.2%     |
| 4  | Street Science | 93     | 26.4%   |                       |          |           |
|    |                | 352    | 100.0%  |                       | 411      | 100.0%    |

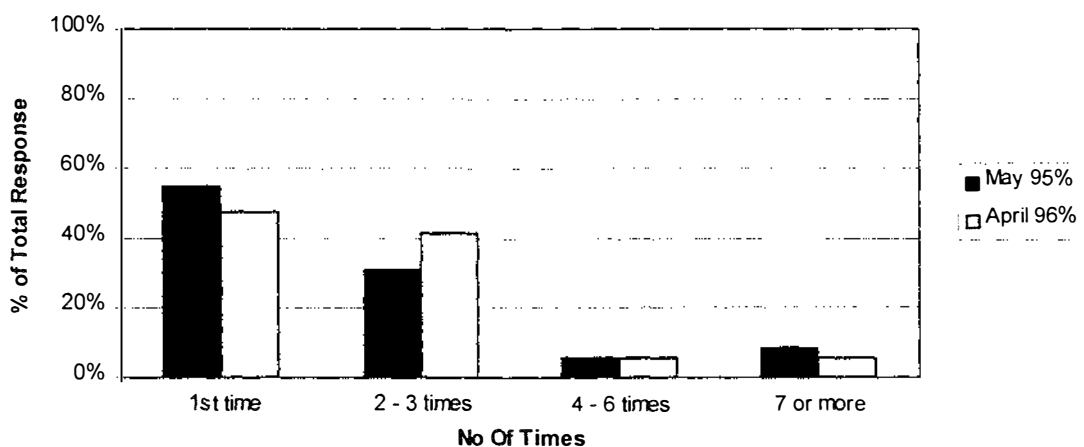
## The Science Centre and Manawatu Museum Visitor Profile

### 1. How often have you visited The Science Centre and Manawatu Museum in the last 12 months?

51.4% of respondents surveyed were visiting The Science Centre and Manawatu Museum for the first time. 36% had visited 2-3 times. 5.6% of respondents had visited more than 4 times in the past 12 months.

| No of Times | May-95 | May 95% | April 96 | April 96% | Average % |
|-------------|--------|---------|----------|-----------|-----------|
| 1st time    | 108    | 55.0%   | 95       | 48.0%     | 51.4%     |
| 2 - 3 times | 60     | 30.6%   | 82       | 41.0%     | 35.9%     |
| 4 - 6 times | 11     | 5.6%    | 11       | 5.5%      | 5.6%      |
| 7 or more   | 17     | 8.8%    | 11       | 5.05%     | 7.1%      |
|             | 196    | 100.0%  | 199      | 100.0%    | 100.0%    |

**The Science Centre & Manawatu Museum Visitor Survey**  
No of Times Respondents Visited the Facility



### 2. Are you a member of the societies of The Science Centre and Manawatu Museum?

Only 14% of respondents belonged to the societies of The Science Centre and Manawatu Museum. The remaining of 86% were not members of societies.

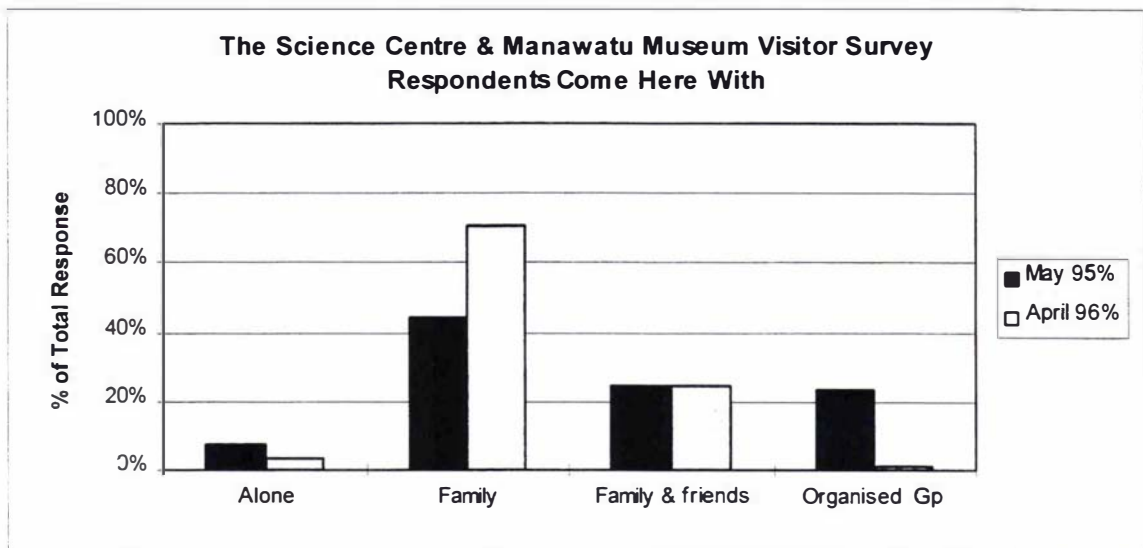
In the average of the two periods surveyed, only 14% of visitors were members of societies. This indicates that there is an opportunity for the institution to target the 86% of non-members who visited the facilities to become a member of the society.

| Member | May-95 | May 95% | April 96 | April 96% | Average % |
|--------|--------|---------|----------|-----------|-----------|
| Yes    | 21     | 11%     | 35       | 17%       | 14%       |
| No     | 179    | 90%     | 167      | 83%       | 86%       |
|        | 200    | 101%    | 202      | 100%      | 100%      |

### 3. Who did you come here with today ?

In the 1996 survey, the majority of respondents came to visit The Science Centre and Manawatu Museum with family and friends (82.3%). 12.1% came with organised groups and 5.6% came alone. The length of the survey questionnaire is not suitable for visitors with organised groups. Organised groups have a limited time to spend in the facility and were reluctant to participate in the survey.

| No of Times      | May-95 | May 95% | April 96 | April 96% | Average % |
|------------------|--------|---------|----------|-----------|-----------|
| Alone            | 15     | 7.7%    | 7        | 3.5%      | 5.6%      |
| Family           | 86     | 44.3%   | 142      | 71.0%     | 57.7%     |
| Family & friends | 48     | 24.8%   | 49       | 24.5%     | 24.6%     |
| Organised Group  | 45     | 23.2%   | 2        | 1.0%      | 12.1%     |
|                  | 194    | 100.0%  | 200      | 100.0%    | 100.0%    |



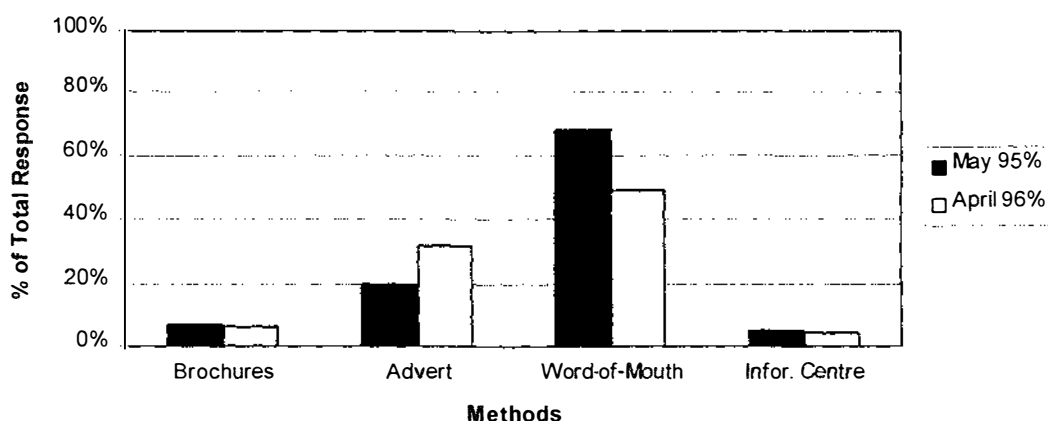
#### 4. Where did you find out about this place ?

Word-of-mouth was found to be the most effective advertising tool for The Science Centre in both periods. In the 1996 survey, approximately 58.4% of respondents found out about The Science Centre by word-of-mouth. 25.8% found it through advertising, 7% from brochures and 4.6% from the Information Centre. 4.2% found The Science Centre while driving past or from AA maps. Others found out from newspapers, monthly membership newsletters or general knowledge.

On average, 58.4% of visitors found out about the institution by word-of-mouth. Advertisement was another effective promotion tool used by The Science Centre.

| Information        | May-95 | May 95% | April 96 | April 96% | Average % |
|--------------------|--------|---------|----------|-----------|-----------|
| Brochures          | 12     | 7.3%    | 15       | 6.7%      | 7.0%      |
| Advertising        | 33     | 20.0%   | 71       | 31.6%     | 25.8%     |
| Word-of-Mouth      | 112    | 67.9%   | 110      | 48.9%     | 58.4%     |
| Information Centre | 8      | 4.8%    | 10       | 4.4%      | 4.6%      |
| Others             | 0      | 0%      | 19       | 8.4%      | 4.2%      |
|                    | 165    | 100.0%  | 225      | 100.0%    | 100.0%    |

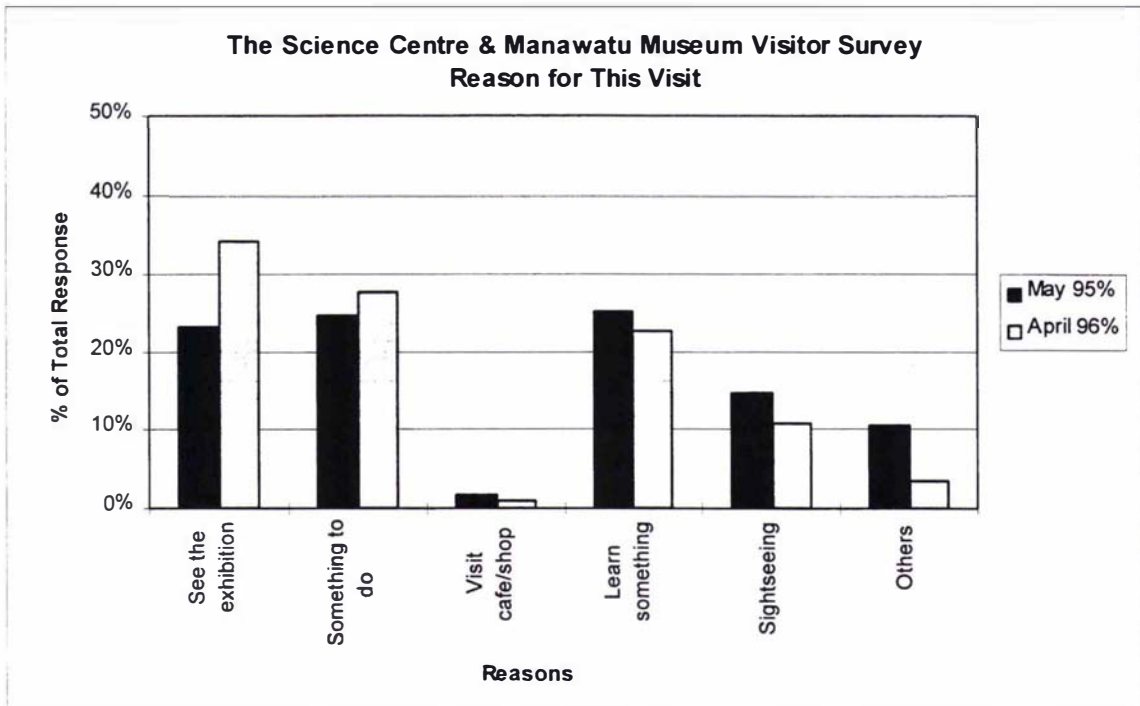
**The Science Centre & Manawatu Museum Visitor Survey  
Method of Getting Information of the Facility**



**5. What is the main reason for this visit ?**

The main reasons given by visitors for this particular visit were spread from “to see a particular exhibition” (28.6%), “something to do” (26.4%) and “learning something” (23.9%).

| Reason for Visit   | May-95 | May 95% | April 96 | April 96% | Average % |
|--------------------|--------|---------|----------|-----------|-----------|
| See the exhibition | 68     | 23.1%   | 98       | 34.1%     | 28.6%     |
| Something to do    | 73     | 24.8%   | 80       | 27.8%     | 26.4%     |
| Visit cafe/shop    | 5      | 1.7%    | 3        | 1.0%      | 1.4%      |
| Learn something    | 74     | 25.2%   | 65       | 22.6%     | 23.9%     |
| Sightseeing        | 43     | 14.6%   | 31       | 10.8%     | 12.7%     |
| Others             | 31     | 10.5%   | 10       | 3.5%      | 7.0%      |
|                    | 294    | 100.0%  | 287      | 100.0%    | 100.0%    |

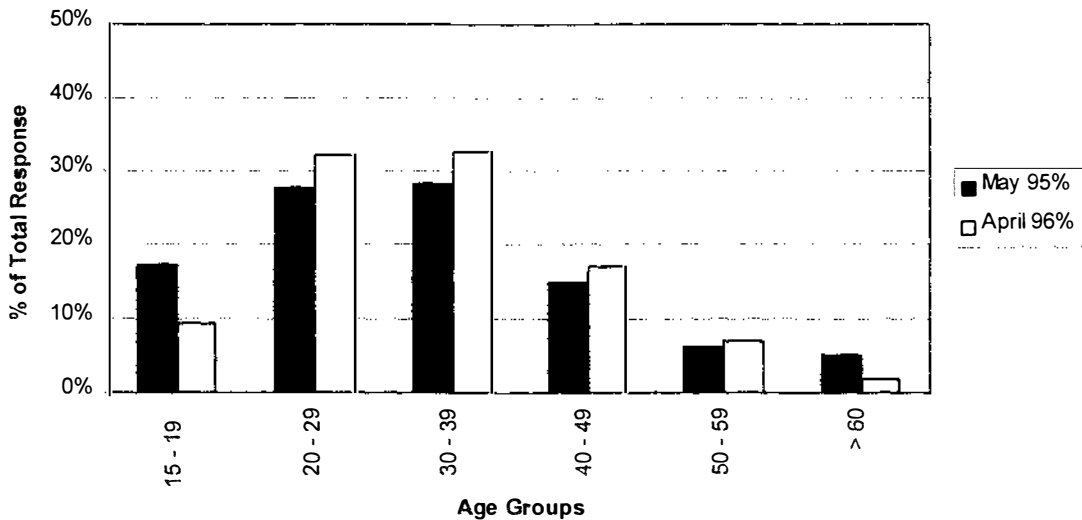


## 6. What age group are you in:

43.4% of respondents were in the 15 to 29 years age group. This is very similar to the age group distribution of Palmerston North city. According to the 1991 Palmerston North city Census [Hilson, 1993]. 33% of population was in the 15-29 years age group, this being a reflection of the number of tertiary students in the city. 30% of respondents were in the 30-39 years age group. Most of them were young couples taking their children to The Science Centre and Manawatu Museum.

| Age Group | May-95 | May 95% | April 96 | April 96% | Average % |
|-----------|--------|---------|----------|-----------|-----------|
| 15 - 19   | 34     | 17.5%   | 16       | 9.5%      | 13.5%     |
| 20 - 29   | 54     | 27.8%   | 54       | 32.0%     | 29.9%     |
| 30 - 39   | 55     | 28.3%   | 55       | 32.5%     | 30.4%     |
| 40 - 49   | 29     | 14.9%   | 29       | 17.1%     | 16.1%     |
| 50 - 59   | 12     | 6.2%    | 12       | 7.1%      | 6.6%      |
| > 60      | 10     | 5.2%    | 3        | 1.8%      | 3.5%      |
|           | 194    | 100.0%  | 169      | 100.0%    | 100.0%    |

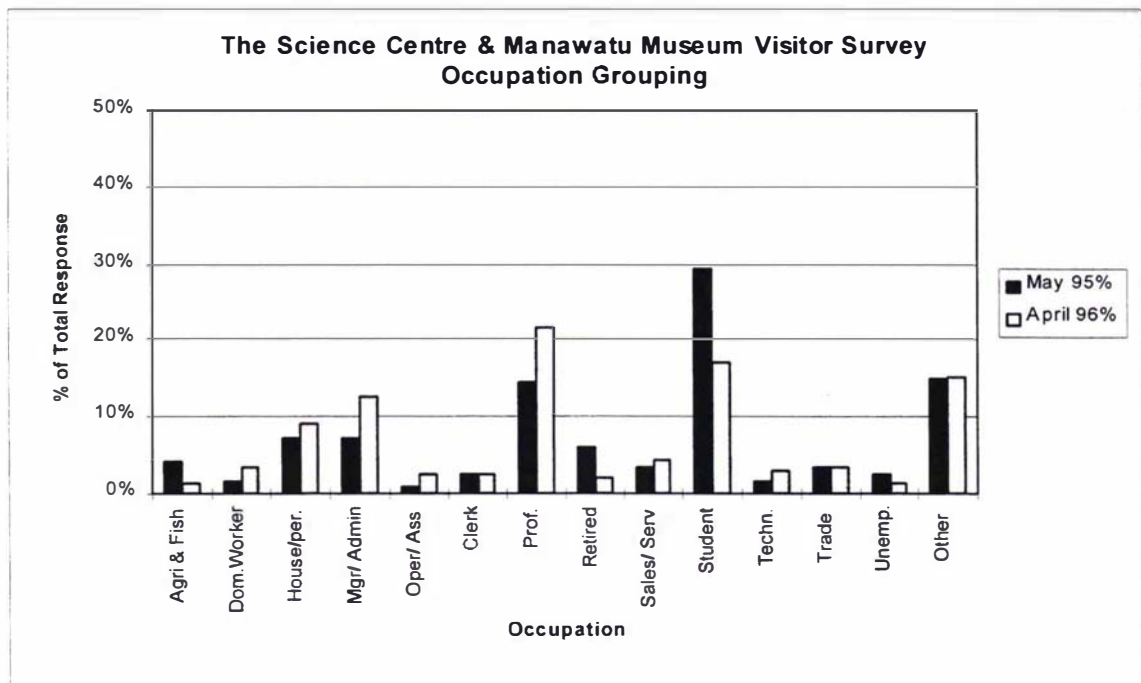
The Science Centre & Manawatu Museum Visitor Survey  
Respondents Age Groups



### 7. What is your occupation?

18% of respondents were professional and 23% of respondents were students. Again this is a reflection of Palmerston North city's population group [Hilson, 1993]. 10% of respondents were managers/administrators. 8% were house persons and 3% were domestic workers. 4% were sales and services. 15% of the others had a wide spread of occupations such as mothers, social worker, artist, farmer, teacher, lecturer, nurse, midwife, manager, bus driver, secretary, traveller, horticulturist, care-giver, dietitian, reporter and archaeologist.

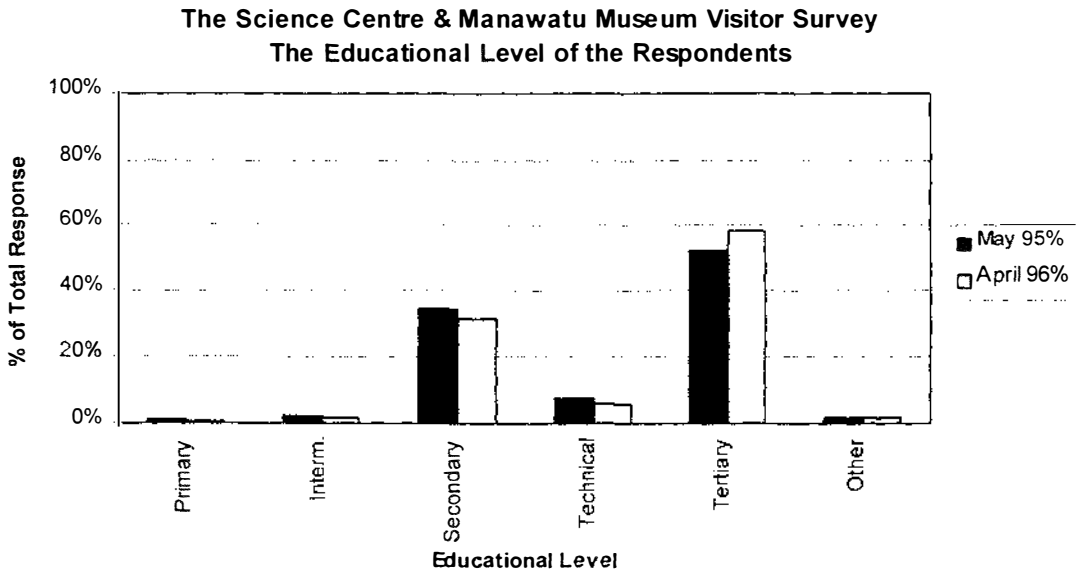
| Occupation                | May-95 | May 95% | April 96 | April 96% | Average % |
|---------------------------|--------|---------|----------|-----------|-----------|
| Agr. & Fishery            | 8      | 4.1%    | 3        | 1.5%      | 3%        |
| Domestic Worker           | 3      | 1.5%    | 7        | 3.5%      | 3%        |
| House Person              | 14     | 7.2%    | 18       | 9.0%      | 8%        |
| Manager/<br>Administrator | 14     | 7.2%    | 25       | 12.6%     | 10%       |
| Oper/ Assembler           | 2      | 1.0%    | 5        | 2.5%      | 2%        |
| Clerk                     | 5      | 2.6%    | 5        | 2.5%      | 3%        |
| Professional              | 28     | 14.4%   | 43       | 21.6%     | 18%       |
| Retired                   | 12     | 6.2%    | 4        | 2.0%      | 4%        |
| Sales/ Services           | 7      | 3.6%    | 9        | 4.5%      | 4%        |
| Student                   | 57     | 29.4%   | 34       | 17.1%     | 23%       |
| Technical                 | 3      | 1.5%    | 6        | 3.0%      | 2%        |
| Trade                     | 7      | 3.6%    | 7        | 3.5%      | 4%        |
| Unemployed                | 5      | 2.6%    | 3        | 1.5%      | 2%        |
| Other                     | 29     | 14.9%   | 30       | 15.1%     | 15%       |
|                           | 194    | 100.0%  | 199      | 100.0%    | 100%      |



## 8. What is your education level ?

Palmerston North city is significantly better educated with more people over 15 years having gone on to higher education when compared to other cities in New Zealand [Hilson, 1993]. This visitor survey showed that 55% of respondents had received tertiary education qualifications and 33% had received only secondary education. This is related to the large population of students and academic staff in teaching and research institutions in Palmerston North city.

| Educational Level | May-95 | May 95% | April 96 | April 96% | Average % |
|-------------------|--------|---------|----------|-----------|-----------|
| Primary           | 2      | 1.0%    | 1        | 0.5%      | 0.8%      |
| Intermediate      | 5      | 2.6%    | 4        | 2.1%      | 2.3%      |
| Secondary         | 67     | 34.7%   | 61       | 31.8%     | 33.2%     |
| Technical         | 15     | 7.8%    | 11       | 5.7%      | 6.8%      |
| Tertiary          | 100    | 51.8%   | 112      | 58.3%     | 55.1%     |
| Other             | 4      | 2.1%    | 3        | 1.6%      | 1.8%      |
|                   | 193    | 100.0%  | 192      | 100.0%    | 100.0%    |



## 9. Where do you live ?

52.9% of respondents were local and 35% of respondents were from central and southern parts of the North Island. There were only 3.6% international visitors from Australia, Japan, England and Israel.

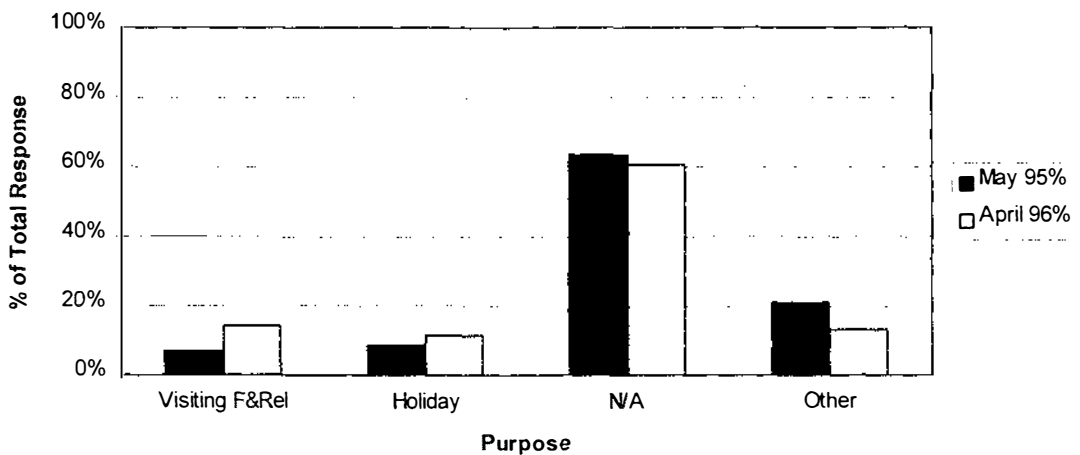
| Town/Country     | April 96 | April 96% | Cum Sum |
|------------------|----------|-----------|---------|
| Palmerston North | 99       | 52.9%     | 52.9%   |
| Masterton        | 2        | 1.1%      | 54.0%   |
| Feilding         | 7        | 3.7%      | 57.8%   |
| Levin            | 3        | 1.6%      | 59.4%   |
| Linton           | 1        | 0.5%      | 59.9%   |
| Tokomaru         | 1        | 0.5%      | 60.4%   |
| Huntly           | 1        | 0.5%      | 61.0%   |
| Bunnythorpe      | 1        | 0.5%      | 61.5%   |
| Ashhurst         | 4        | 2.1%      | 63.6%   |
| Foxton           | 2        | 1.1%      | 64.7%   |
| Woodville        | 2        | 1.1%      | 65.8%   |
| Rangotea         | 3        | 1.6%      | 67.4%   |
| Pohangina        | 2        | 1.1%      | 68.4%   |
| Te Horo          | 1        | 0.5%      | 69.0%   |
| Marton           | 3        | 1.6%      | 70.6%   |
| Pahiatua         | 1        | 0.5%      | 71.1%   |
| Dannevirke       | 2        | 1.1%      | 72.2%   |
| Taihape          | 1        | 0.5%      | 72.7%   |
| New Plymouth     | 3        | 1.6%      | 74.3%   |
| Wanganui         | 8        | 4.3%      | 78.6%   |
| Auckland         | 5        | 2.7%      | 81.3%   |
| Hawera           | 1        | 0.5%      | 81.8%   |
| Waikato          | 3        | 1.6%      | 83.4%   |
| Napier           | 4        | 2.1%      | 85.6%   |
| Rotorua          | 1        | 0.5%      | 86.1%   |
| Wellington       | 11       | 5.9%      | 92.0%   |
| Paraparaumu      | 3        | 1.6%      | 93.6%   |
| Otaki            | 1        | 0.5%      | 94.1%   |
| Waikanae         | 1        | 0.5%      | 94.7%   |
| Christchurch     | 2        | 1.1%      | 95.7%   |
| Dunedin          | 1        | 0.5%      | 96.3%   |
| Australia        | 4        | 2.1%      | 98.4%   |
| Japan            | 1        | 0.5%      | 98.9%   |
| England          | 1        | 0.5%      | 99.5%   |
| Israel           | 1        | 0.5%      | 100.0%  |
|                  | 187      | 100.0%    |         |

## 10. What is the purpose of your visit to this area ?

A total of 62% of respondents were local residents. Only 10.7% were visiting friends and family and 10% were here on holiday. 17.4% of the respondents came here for other reasons, such as playing golf, visiting the town, family day out, shopping, meetings, short term study and sports functions.

| Reason For Visit             | May-95 | May 95% | April 96 | April 96% | Average % |
|------------------------------|--------|---------|----------|-----------|-----------|
| Visiting Friends & Relatives | 14     | 7.0%    | 30       | 14.4%     | 10.7%     |
| Holiday                      | 17     | 8.5%    | 24       | 11.5%     | 10.0%     |
| N/A                          | 127    | 63.2%   | 127      | 60.8%     | 62.0%     |
| Other                        | 43     | 21.4%   | 28       | 13.4%     | 17.4%     |
|                              | 201    | 100.0%  | 209      | 100.0%    | 100.0%    |

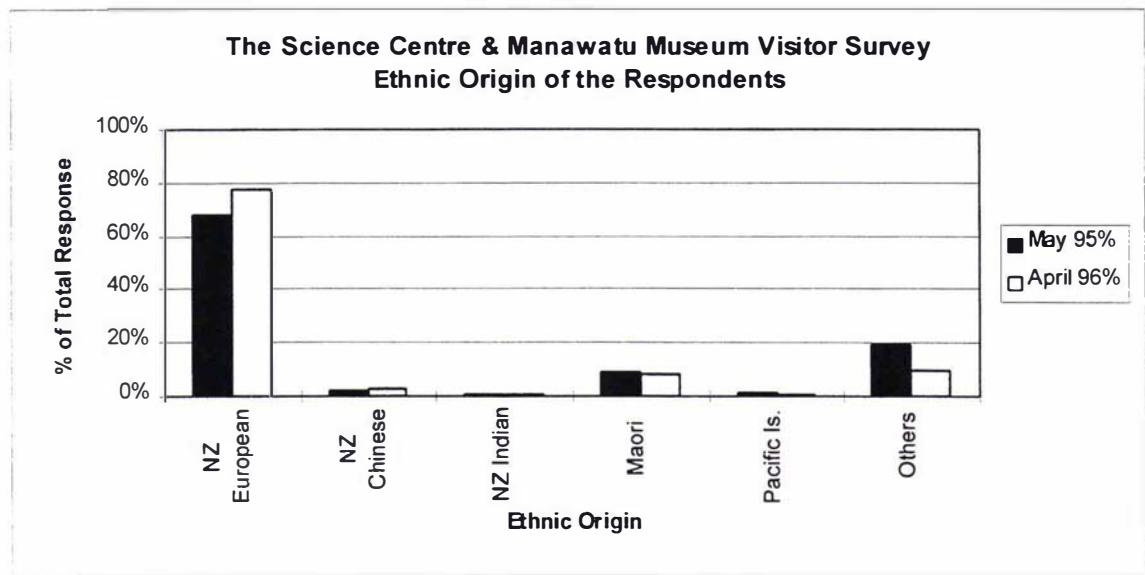
**The Science Centre & Manawatu Museum Visitor Survey  
Purpose for Visiting This Area**



### 11. What is your ethnic origin ?

73% of the respondents were New Zealand Europeans and 8.5% were Maori. 3% were Chinese, 0.8% were New Zealand Indian and 1% were from the Pacific Islands. Of the 14% who made up the others, 4.5% identified themselves as New Zealanders or Kiwis. The others were from countries all over the world such as England, Australia, Thailand, Japan, Israel, Canada, Serbia, Israel, Sri Lanka, USA and Germany. The majority were students, exchange student or professionals and families working in New Zealand.

| Ethnic Origin  | May-95 | May 95% | April 96 | April 96% | Average % |
|----------------|--------|---------|----------|-----------|-----------|
| NZ European    | 134    | 67.7%   | 149      | 77.6%     | 72.6%     |
| NZ Chinese     | 5      | 2.5%    | 6        | 3.1%      | 2.8%      |
| NZ Indian      | 1      | 0.5%    | 2        | 1.0%      | 0.8%      |
| Maori          | 17     | 8.6%    | 16       | 8.3%      | 8.5%      |
| Pacific Island | 3      | 1.5%    | 1        | 0.5%      | 1.0%      |
| Others         | 38     | 19.2%   | 18       | 9.4%      | 14.3%     |
|                | 198    | 100.0%  | 192      | 100.0%    | 100.0%    |



### 12. Gender

The average of the two periods was 43% male and 57% female respondents.

| Gender | May-95 | May 95% | April 96 | April 96% | Average % |
|--------|--------|---------|----------|-----------|-----------|
| Male   | 98     | 49%     | 64       | 36%       | 43%       |
| Female | 100    | 51%     | 114      | 64%       | 57%       |
|        | 198    | 100%    | 178      | 100%      | 100%      |

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# **Appendix C.**

## **New Zealand Historic Places Trust Visitor Survey**

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- C.1 Information Sheet for Visitors**
- C.2 Survey Questionnaires**
- C.3 Letter from the Trust**
- C.4 Brief Introduction of Surveyed Trust Properties**
- C.5 Gap Analysis of Service Quality**
- C.5 Visitors' Overall Impression**
- C.6 Visitor Profile**





## INFORMATION SHEET FOR VISITORS

Tammi Tan, a PhD student from Massey University, Palmerston North, is currently conducting a Visitor Survey in conjunction with the New Zealand Historic Places Trust on "The Application of Total Quality Management in the Tourism Industry".

The purpose of this questionnaire is to measure the expectations and satisfaction of visitors to New Zealand Historic Places Trust properties. The information will assist the Trust in identifying customer needs and any improvements which may be required in order to meet those needs.

The information provided in the questionnaires will be treated in the strictest confidence and those taking part will do so anonymously. If you decide to take part in the survey you will be required to fill in Part One of the questionnaire **before** you look around the property. When you have completed your visit around the property and before you leave, you will be required to fill in the rest of the questionnaire. Each part will take approximately 5-10 minutes to complete. You are not obliged to answer all the questions, and may refuse to provide details on any particular question. Please feel free to clarify with the property staff any issues relating to this research.

Participation in this survey is voluntary and filling in the questionnaire implies your consent to take part in this survey. The results of the survey may be published in scientific or management journals or in a local newspaper. This will only be done after consultation between Tammi Tan, Massey University and the New Zealand Historic Places Trust. It will not be possible to identify any respondent from the published results.

Thank you for your participation and support.

Warren Barclay  
Manager Marketing & Communications

Sherry Reynolds  
Manager Trust Properties



## Management Survey

### New Zealand Historic Places Trust

#### Part One: How Important are they to visitors and what are their Expectations

We would like to know how important the facilities, displays and services are to the visitors and what their expectations are about this New Zealand Historic Places Trust property.

Make your choice by circling the number which best represents your understanding about the visitors' feeling about the facilities, displays and services provided by this property.

| No | Features, Displays and Services   | What Did You Expect? |          |              |           |                | How Important Is It To You? |                      |                     |                          |       |
|----|---|----------------------|----------|--------------|-----------|----------------|-----------------------------|----------------------|---------------------|--------------------------|-------|
|    |   | Very Low<br>1        | Low<br>2 | Neither<br>3 | High<br>4 | Very High<br>5 | Not Important<br>1          | Some Importance<br>2 | Very Important<br>3 | Extremely Important<br>4 | 5     |
| 1  | The physical appearance of the place ie. Visual appeal  | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 2  | The authentic nature of the place.  | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 3  | The contents are interesting  | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 4  | The building and contents are well cared for  | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 5  | The grounds/gardens are well cared for  | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 6  | The information provided about the place is informative ie. Promotional brochures and advertisements. | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 7  | Historical atmosphere is captured   | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 8  | Finding your way around in the building is easy   | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 9  | Toilets are provided  | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 10 | Toilets are clean   | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 11 | Refreshments are provided   | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 12 | Seating is provided   | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 13 | Staff are presentable   | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 14 | Staff are willing to help visitors  | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |
| 15 | Staff inspire confidence in visitors  | 1                    | 2        | 3            | 4         | 5 N/A          | 1                           | 2                    | 3                   | 4                        | 5 N/A |

**Part One: How Important are they to visitors and what are their Expectations**

| No | Features, Displays and Services                           | What are Your Expectations? |          |              |           |                | How Important Are They To You? |                      |                     |                          |       |
|----|---|-----------------------------|----------|--------------|-----------|----------------|--------------------------------|----------------------|---------------------|--------------------------|-------|
|    |   | Very Low<br>1               | Low<br>2 | Neither<br>3 | High<br>4 | Very High<br>5 | Not Important<br>1             | Some Importance<br>2 | Very Important<br>3 | Extremely Important<br>4 | 5     |
| 16 | The information provided by staff is consistent           | 1                           | 2        | 3            | 4         | 5 N/A          | 1                              | 2                    | 3                   | 4                        | 5 N/A |
| 17 | Staff are friendly, courteous and polite to visitors      | 1                           | 2        | 3            | 4         | 5 N/A          | 1                              | 2                    | 3                   | 4                        | 5 N/A |
| 18 | Staff have the knowledge to respond to visitors' requests | 1                           | 2        | 3            | 4         | 5 N/A          | 1                              | 2                    | 3                   | 4                        | 5 N/A |
| 19 | Opening hours are convenient                              | 1                           | 2        | 3            | 4         | 5 N/A          | 1                              | 2                    | 3                   | 4                        | 5 N/A |
| 20 | Wheelchair access is available                            | 1                           | 2        | 3            | 4         | 5 N/A          | 1                              | 2                    | 3                   | 4                        | 5 N/A |
| 21 | Adequate road signs make it easy to find the place        | 1                           | 2        | 3            | 4         | 5 N/A          | 1                              | 2                    | 3                   | 4                        | 5 N/A |
| 22 | There is adequate car parking for visitors                | 1                           | 2        | 3            | 4         | 5 N/A          | 1                              | 2                    | 3                   | 4                        | 5 N/A |

**Part Two. Importance Weighting for New Zealand Historic Places Trust - Management**

We would like to know how important each of these features is to visitors when they evaluate a New Zealand Historic Places Trust property. Please circle the number which best represents how important you think each feature is to visitors.

| No | Quality Service Features  | How Importance Are They To The Visitors |                      |                     |                          |   |
|----|---|---|----------------------|---------------------|--------------------------|---|
|    |   | Not Important<br>1                      | Some Importance<br>2 | Very Important<br>3 | Extremely Important<br>4 | 5 |
| 1  | The appearance of the physical facilities, displays, personnel, and information materials | 1                                       | 2                    | 3                   | 4                        | 5 |
| 2  | The ability of the facility to perform the promised service dependably and accurately     | 1                                       | 2                    | 3                   | 4                        | 5 |
| 3  | The willingness of the staff to help visitors and provide prompt service                  | 1                                       | 2                    | 3                   | 4                        | 5 |
| 4  | The knowledge and courtesy of staff and their ability to convey confidence                | 1                                       | 2                    | 3                   | 4                        | 5 |
| 5  | The caring, individualised attention the facility provides its visitors                   | 1                                       | 2                    | 3                   | 4                        | 5 |

**Part Three. To identify the current status of The New Zealand Historic Place Trust on Performance Standards - Management**
**Availability of Standards**

Performance standards in New Zealand Historic Places Trust can be formal - written, explicit and communicated to staff. They can also be informal - verbal, implicit, and assumed to be understood by staff. For each of the following features, please place a tick (✓) in the appropriate boxes.

| No | Standards  | Do not Know | No Standards Exist | Have Informal Standards | Have Formal Standards not Documented | Have Documented Standards |
|----|--|-------------|--------------------|-------------------------|--------------------------------------|---------------------------|
| 1  | The appearance of the physical facilities  |             |                    |                         |                                      |                           |
|    | - Conservation   |             |                    |                         |                                      |                           |
|    | - Personal   |             |                    |                         |                                      |                           |
|    | - Information materials  |             |                    |                         |                                      |                           |
| 2  | The ability to perform the job, service reliably and accurately                  |             |                    |                         |                                      |                           |
|    | - Administration   |             |                    |                         |                                      |                           |
|    | - Visitor Assistance   |             |                    |                         |                                      |                           |
| 3  | The willingness of the staff to help visitors and provide service to visitors    |             |                    |                         |                                      |                           |
| 4  | The ability to convey confidence to visitors                                     |             |                    |                         |                                      |                           |
| 5  | The ability of New Zealand Historic Places Trust to individual care for visitors |             |                    |                         |                                      |                           |

**Thank you for completing this questionnaire.**
**Comments\ Suggestions:**

We welcome any other comments or suggestions you feel would help us to improve the quality of our services.

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## Visitor Survey

### New Zealand Historic Places Trust

#### Part One: What Are Your Expectations Before Your Visit and How Do You Feel After Your Visit To This Place?

We would like to know before your visit, what your expectations are with the facilities, displays and services, and how do you feel about this New Zealand Historic Places Trust property after your visit. Your comments will help us with future planning for the conservation and interpretation of this unique property.

Make your choice by circling the number which best represents how you feel about the facilities, displays and services provided by this property. Circle "N/A" if you have no expectations or you feel that it is not relevant to this property.

| No | Features, Displays and Services   | Before Your Visit<br>What Do You Expect? |          |              |           |                |     | After Your Visit<br>How do you feel? |           |              |                |                |     |
|----|---|--|----------|--------------|-----------|----------------|-----|--------------------------------------|-----------|--------------|----------------|----------------|-----|
|    |   | Very Low<br>1                            | Low<br>2 | Neither<br>3 | High<br>4 | Very High<br>5 | N/A | Very Poor<br>1                       | Poor<br>2 | Average<br>3 | Very Good<br>4 | Excellent<br>5 | N/A |
| 1  | The physical appearance of the place ie. Visual appeal  | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 2  | The authentic nature of the place.  | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 3  | The contents are interesting  | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 4  | The building and contents are well cared for  | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 5  | The grounds/gardens are well cared for  | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 6  | The information provided about the place is informative ie. Promotional brochures and advertisements. | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 7  | Historical atmosphere is captured   | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 8  | Finding your way around in the building is easy   | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 9  | Toilets are provided  | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 10 | Toilets are clean   | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 11 | Refreshments are provided   | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 12 | Seating is provided   | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 13 | Staff are presentable   | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 14 | Staff are willing to help visitors  | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |
| 15 | Staff inspire confidence in visitors  | 1  | 2        | 3            | 4         | 5              | N/A | 1                                    | 2         | 3            | 4              | 5              | N/A |

**Part One: What Are Your Expectations Before Your Visit and How Do You Feel After Your Visit To This Place?**

| No | Features, Displays and Services                           | Before Your Visit<br>What Do You Expect? |          |              |           |                | After Your Visit<br>How do you feel? |                |           |              |                |                |     |
|----|---|--|----------|--------------|-----------|----------------|--------------------------------------|----------------|-----------|--------------|----------------|----------------|-----|
|    |   | Very Low<br>1                            | Low<br>2 | Neither<br>3 | High<br>4 | Very High<br>5 | N/A                                  | Very Poor<br>1 | Poor<br>2 | Average<br>3 | Very Good<br>4 | Excellent<br>5 | N/A |
| 16 | The information provided by staff is consistent           | 1  | 2        | 3            | 4         | 5              | N/A                                  | 1              | 2         | 3            | 4              | 5              | N/A |
| 17 | Staff are friendly, courteous and polite to visitors      | 1  | 2        | 3            | 4         | 5              | N/A                                  | 1              | 2         | 3            | 4              | 5              | N/A |
| 18 | Staff have the knowledge to respond to visitors' requests | 1  | 2        | 3            | 4         | 5              | N/A                                  | 1              | 2         | 3            | 4              | 5              | N/A |
| 19 | Opening hours are convenient                              | 1  | 2        | 3            | 4         | 5              | N/A                                  | 1              | 2         | 3            | 4              | 5              | N/A |
| 20 | Wheelchair access is available                            | 1  | 2        | 3            | 4         | 5              | N/A                                  | 1              | 2         | 3            | 4              | 5              | N/A |
| 21 | Adequate road signs make it easy to find the place        | 1  | 2        | 3            | 4         | 5              | N/A                                  | 1              | 2         | 3            | 4              | 5              | N/A |
| 22 | There is adequate car parking for visitors                | 1  | 2        | 3            | 4         | 5              | N/A                                  | 1              | 2         | 3            | 4              | 5              | N/A |

**Part Two. How Important Are The Services To You**

We would like to know how important each of these features is to visitors when they evaluate a New Zealand Historic Places Trust property. Please circle the number which best represents how important you think each feature is.

| No | Quality Service Features  | Level of Importance On The Service |                      |                |                     |                          |
|----|---|------------------------------------|----------------------|----------------|---------------------|--------------------------|
|    |   | Not Important<br>1                 | Some Importance<br>2 | Important<br>3 | Very Important<br>4 | Extremely Important<br>5 |
| 1  | The appearance of the physical facilities, displays, personnel, and information materials | 1                                  | 2                    | 3              | 4                   | 5                        |
| 2  | The ability of the facility to perform the promised service dependably and accurately     | 1                                  | 2                    | 3              | 4                   | 5                        |
| 3  | The willingness of the staff to help visitors and provide prompt service                  | 1                                  | 2                    | 3              | 4                   | 5                        |
| 4  | The knowledge and courtesy of staff and their ability to convey confidence                | 1                                  | 2                    | 3              | 4                   | 5                        |
| 5  | The caring, individualised attention the facility provides its visitors                   | 1                                  | 2                    | 3              | 4                   | 5                        |

**Part Three : Your Overall Impression of this Place**

1. What is your overall rating of the quality of the services provided at this property by the New Zealand Historic Places Trust?

Very Poor  Poor  Acceptable  Good  Very Good

2. Overall, how satisfied were you with your visit today ?

Very dissatisfied  Dissatisfied  Neither dissatisfied nor Satisfied  Satisfied  Very Satisfied

3. Have you ever visited any other similar place before ?

Yes  Go to Q4 No  Go to Q5 Please Specify where: \_\_\_\_\_

4. How do you compare this place with others that you have visited ?

Very Poor  Poor  Acceptable  Good  Very Good

5. Did you pay an admission charge today?

Yes  Go to Q6 No  Go to Q7

6. Do you think this visit is value for money ?

Yes  No  Please comment: \_\_\_\_\_

7. How long was your visit today ?

Less than 15mins  15 - 30 mins  31- 60mins  Over 1 hour  Over 2 hours

8. Would you stay longer if you could ?

Yes  No

9. Would you recommend this place to your friends ?

Yes  No

10. Are you likely to visit this place again?

Yes  No

11. What did you most enjoy?

\_\_\_\_\_

12. How could your visit be made more enjoyable ?

\_\_\_\_\_

13. Are you looking for something special to buy?

Yes  No

Please specify \_\_\_\_\_

14. Other comments : \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Part Four. Visitor Profile

**We would like to know more about our visitors. All information will be treated as confidential. Please make your choice by (✓) ticking the appropriate box and writing the other information in the spaces provided.**

1. How often have you visited New Zealand Historic Places Trust properties in the last 3 years?

First time  2 - 3 times  4 - 6 times  7 or more times

2. Are you a member of the New Zealand Historic Places Trust or affiliated overseas trust?

Yes  No

3. Who did you come here with today ?

Alone  Family  Friends  Partner  Organised Group  School

4. Where did you find out about this place ?

Brochures  Advertisement  Word of Mouth  Information Centre

Sign  Travel Guide  Other, please specify: \_\_\_\_\_

5. What is the main reason for this visit ? (you may tick more than one)

To see the displays  To learn something  Something to do   
To buy goods  Interest in old houses  Sightseeing

Other, please specify : \_\_\_\_\_

6. What age group are you in:

15 - 19  25 - 29  35 - 39  45 - 49  55 - 59   
20 - 24  30 - 34  40 - 44  50 - 54  60 & above

7. What is your occupation?

Agriculture & Fishing  Clerk  Student   
Domestic Worker  Professional  Technician   
House person  Retired  Trade Worker   
Manager/ Administrator  Sales/ Service  Unemployed   
Operator/ Assembler  Other (please specify): \_\_\_\_\_

8. What is your education level ?

No Secondary education  3 years Secondary  Technical Training   
Other Tertiary Qualification  University Degree/Diploma/Post Graduate

Other (please specify): \_\_\_\_\_

9. Which group does your household income fit?

Up to \$10,000  \$30,001 - \$40,000  \$65,001 - \$80,000   
\$10,001 - \$20,000  \$40,001 - \$50,000  \$80,001 - \$95,000   
\$20,001 - \$30,000  \$50,001 - \$65,000  Over \$95,000

10. Where do you live ? (please specify town and country)

\_\_\_\_\_

11. Where are you staying?

- Hotel                       Motel                       Family                       Friends
- Home
- Other (please specify): \_\_\_\_\_

12. What is the purpose of your visit to this area ?

- Visiting friends & relatives                       Holiday                       Business                       Live here
- Other (please specify): \_\_\_\_\_

13. What is your ethnic origin ?

- New Zealander of British descent                       New Zealander of Maori descent
- New Zealander of European descent                       New Zealander of Chinese descent
- New Zealander of Pacific Island descent                       Other (please specify): \_\_\_\_\_

14. Gender      Male  Female

***Thank you for completing this questionnaire.***

**Comments\ Suggestions:**

We welcome any further comments or suggestions you feel would help us to improve the quality of our services.

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New Zealand Historic Places Trust  
Pouhere Taonga



sl0399

*From*  
His Excellency The Right Honourable  
Mr. Michael Hardie Boys GNZM, GCMG  
Governor General of New Zealand

15 May 1997

To: Tammi Tan  
Fax: 06-3505-604  
From: Sherry Reynolds

Dear Tammi

### VISITOR SURVEY REPORTS

In answer to your fax about the surveys you undertook at Trust properties:

1 Use of information

- Assisted in guiding budget planning for modest marketing of properties
- Provide feedback to staff on performance.
- Provided excellent reference material for assisting the Trust in undertaking a major business and strategic planning exercise at the Stone Store/Kemp House complex in Kerikeri. Development implementation from December 1997.

2 Advantage/disadvantage

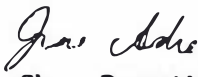
- Easy to manage on site
- Entry/exist surveying unrealistic given length of site visit, do exit only.
- Visitors to some properties low so survey sample took longer to complete than expected.
- Survey quite lengthy
- Range of data useful for planning purposes
- Staff well trained to administer
- Summer range visitation only - continual monitoring would be useful

3 Improvement

See note in (2).

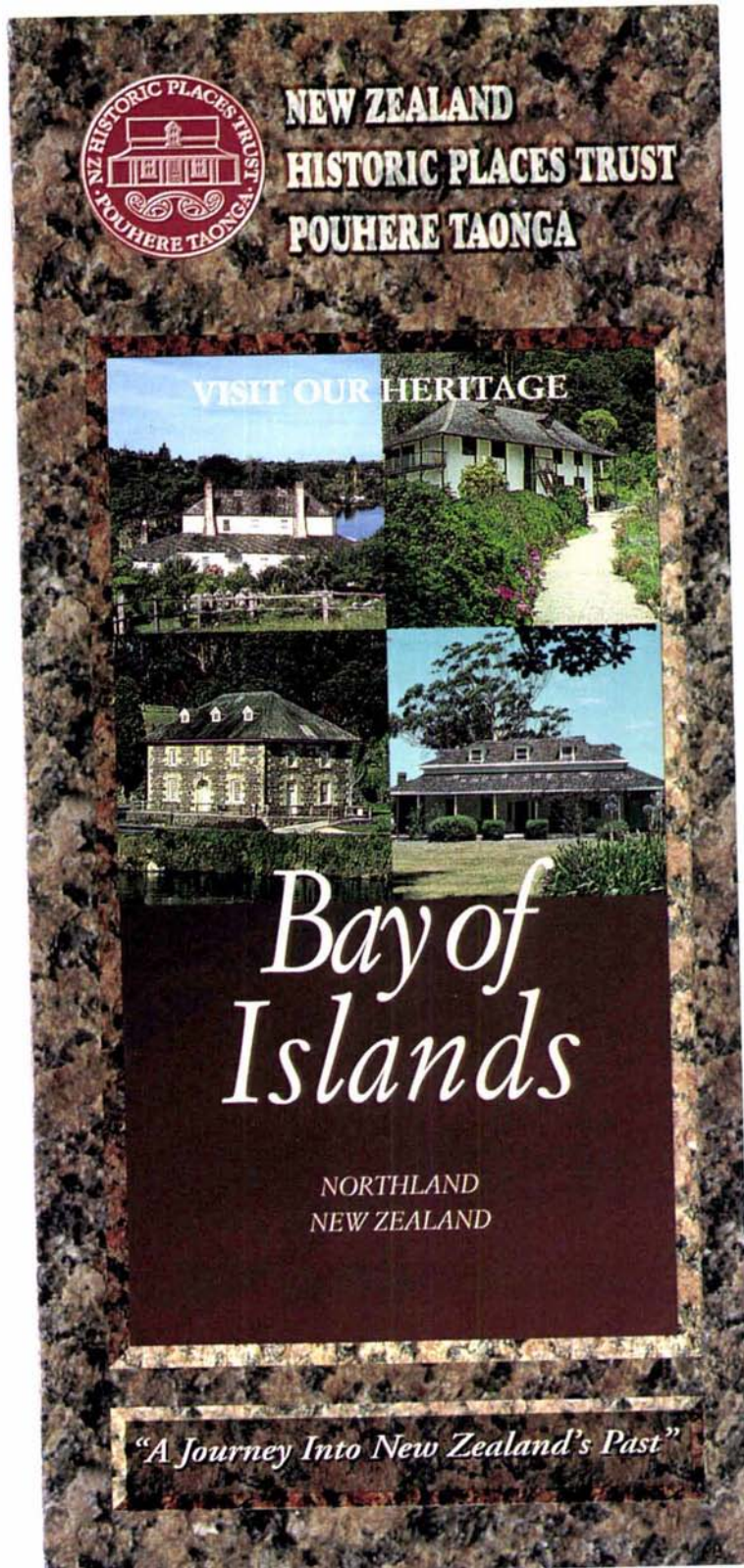
I hope the above comments are helpful. Thank you again for providing the chance for the Trust to be part of your research which we have really appreciated and will continue to provide a valuable benchmark for planning and future market research.

Yours sincerely

*per*   
Sherry Reynolds  
Manager Trust Properties

## A The Bay of Islands Region Trust Properties

The Trust properties surveyed in Bay of Islands region were the Kemp House at Kerikeri, the Pompallier House at Russell and the Te Waimate Mission House at Waimate.



## **A.1 Kemp House**

Kemp House is New Zealand's oldest surviving European building and is situated at Kerikeri Basin in the Bay of Islands. The Kerikeri Basin is unique in having attractive and authentic representation of both Maori and early European history [Pickmere, 1995]. The house relates to the first European history dating from 1814, when Samuel Marsden came to Kerikeri to meet the Maori chief Hongi Hika. In 1819 the Church Missionary Society sent a small group of Anglican missionaries to Kerikeri; it was the second Anglican mission in New Zealand [NZHPT, 1995].

In 1819, Rev. John Gare Butler arrived in New Zealand to take charge of the new station. No house had been built and the Butlers were one of four families who crammed themselves into the new mission storehouse. Between 1824 and 1831 it was the home of George and Martha Clarke, before they moved inland to the new mission station at Te Waimate. James Kemp, who arrived at Kerikeri with his wife in December moved into the house in 1832. This was the beginning of an association between the house and the Kemp family that was to last for more than 140 years. In 1974 Ernest Kemp presented the house and its contents, including many early pieces, to the New Zealand Historic Places Trust [NZHPT, 1995].

Kemp House, as it now stands, was designed by Butler and extended by Kemp, and also by those who occupied it between them. The two largest downstairs rooms, the staircase, and the upper rooms were built for the Butlers. The lean-to at the back of the house was added later. The house has had a verandah since the 1820s, but the feature has been altered and rebuilt more than any other part of the house [NZHPT, 1992]. The house had a beautiful, well-developed garden with hop vines, fruit, vegetables and flowers; the design being based on what was there in early missionary days.

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## A.2 Pompallier House

Pompallier House in Russell is New Zealand's oldest surviving Roman Catholic building. It was built in 1841-42 under the direction of architect Louis Perret as the printery, tannery and storehouse for the French Roman Catholic Marist missionaries station at Kororareka (today's Russell) in the Bay of Islands. The construction was based on the traditional construction of their native Lyons in the south of France. *Pise de terre* (rammed earth) was used on the ground floor and *pan de bois* (rammed earth panels in a kauri framework) was used on the upper floor. The resulting impressive and elegant two storey construction, completed in 1842, has been a key feature of Russell [NZHPT, 1995].

Marist printery was a working factory. Through the 1840s, this building stored mission supplies, tanned leather and printed and bound religious texts in Maori, ranging from pamphlets to a 6,000 copy edition of a 648 page, leather bound book.

In 1856 the French mission sold the property to James Callaghan. Callaghan worked the old Marist printery and storehouse, as a tannery and leatherworks. During the 1860s he progressively converted the printery into a dwelling. Callaghan died in 1869, and his widow followed in 1873. Hamlyn Greenway, a clerk to the resident magistrate's court took possession of the house in 1877. The Greenway family planted the extensive garden and orchard in the form which survives today.

The building was brought by the State and opened to the public as Pompallier House in 1943. In 1968 the property passed to the New Zealand Historic Places Trust. Between 1990 and 1993, the building underwent extensive conservation work to re-open as a working museum demonstrating the printing, bookbinding and leather working trades that dominated its early years.

### **A.3 Te Waimate Mission House**

Built in 1832, Te Waimate Mission House is one of the three surviving mission houses. It was built by Maori workers under the supervision of Mr George Clarke, an English Anglican missionary who designed the house [NZHPT, 1989].

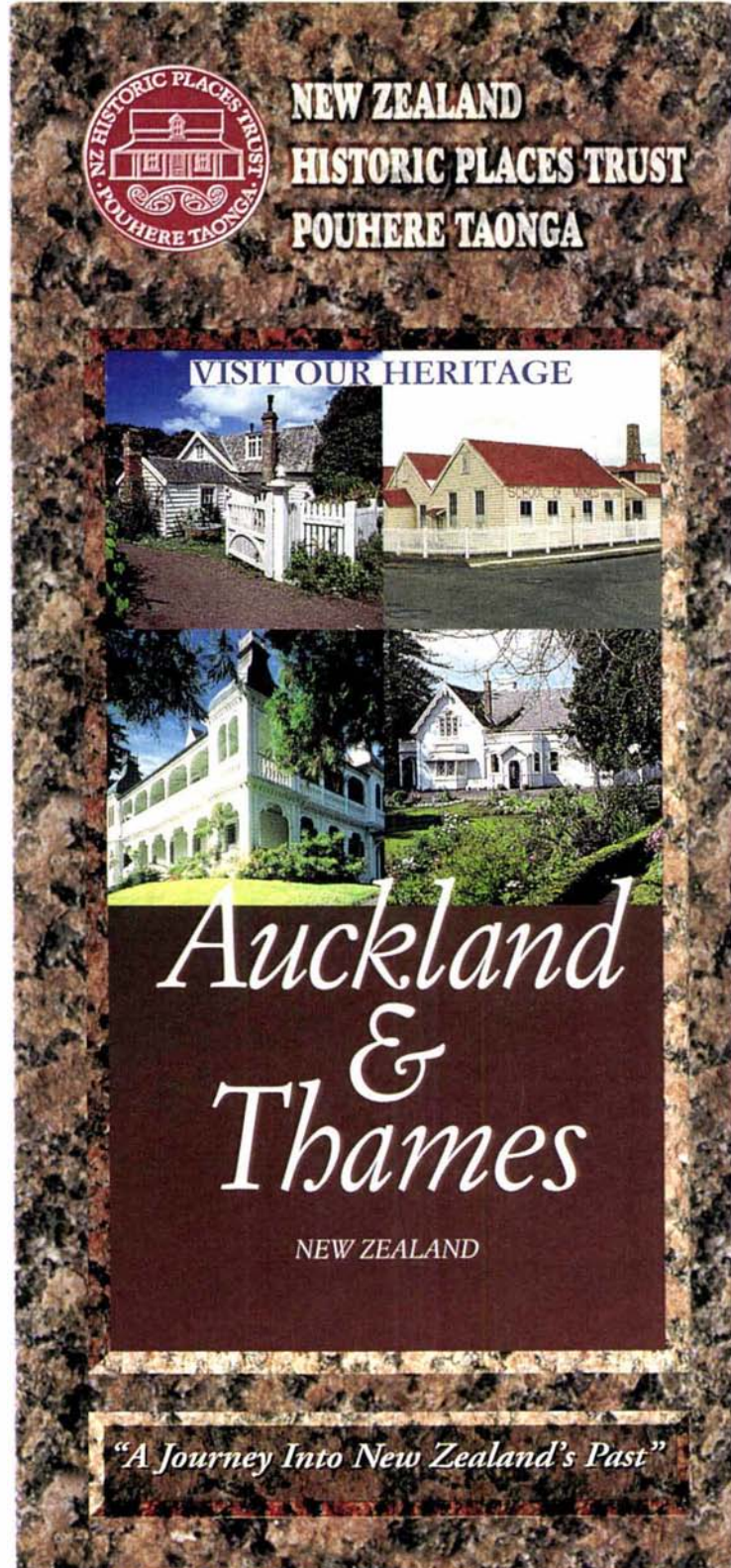
In 1830 Rev Samuel Marsden, founder of Anglican mission in New Zealand, paid his sixth visit to the Bay of Islands. He founded Church Missionary Society stations on the coast at Rangihoua (1815), Kerikeri (1819) and Paihia (1823), and by 1830 he was determined that his missionaries should establish the inland station. Waimate was the centre of a large Maori population, which the missionaries had been visiting throughout the 1820s, and it was the place where the great Ngapuhi chief, Hongi Hika, who had died in 1828, had his principal cultivation [Stacpoole, 1971].

The Mission House was the home of the missionary George Clarke and his family and flourished during the 1830s. Agricultural implements were made in the blacksmiths and wheelwright's shops and by late 1834, New Zealand's first flour mill was operating. By the end of 1830s, the mission station was declining as it faced the difficulties of land clearance and soil fertility. It was also cheaper to import flour from New South Wales than to grow and grind wheat in New Zealand [NZHPT, 1993].

Bishop Selwyn, New Zealand's first Anglican Bishop, arrived from England in 1842. He leased the run-down property from George Clarke where he founded St John's Theological College and the church became his cathedral. After Selwyn's departure, the Christian missionary re-established a teaching mission at Waimate and Rev Robert Burrows occupied the house until 1854. In 1873 the house was then occupied by Mr William and Mrs Susan King. The property remained in King family ownership for over 100 years. In 1986 it was purchased by the New Zealand Historic Places Trust to preserve its archaeological significance and to protect the historic landscape setting [NZHPT, 1993].

**B The Auckland and Thames Region Trust Properties**

The properties surveyed in the Auckland and Thames region were Alberton and Highwic in Auckland and the Thames School of Mines at Thames.



**B.1 Alberton House**

Alberton House is one of Auckland's finest mansions in 1863. It was built by Allan Taylor who was the fourth son of a Scottish-born general. The Taylor brothers came to New Zealand between 1843-1851 and purchased land in Auckland, namely Glen Orchard, Glen Innes and Glendowie estates. In 1849, 16-year-old Allan brought land at Mt Albert, naming his property Alberton [NZHPT, 1989]

In 1860, Allan Taylor made a trip to England and married Martha (Patty) Meredith two years later. They came back to New Zealand and the building of their new home at Alberton had begun. Patty died in 1864 shortly after the birth of their second child. Allan married Sophia Loisa Davis in 1865.

Alberton was a family home and a self-sufficient estate in Allan Taylor's time. It grew substantially from a simple gabled farmhouse as the Taylor family increased. The ballroom, towers and balconies were added by architect Matthew Henderson. Further minor additions were made later [NZHPT, 1995].

Today, Alberton stands on only 0.4 hectares of the original 220 hectares. The house presents a picture of how a prosperous land-owning family lived in nineteenth-century Auckland. Alberton was bequeathed to the New Zealand Historic Places Trust by Muriel Hyacinth Kerr-Taylor who died in 1972. She was the last survivor of Allan and Sophia Taylor's ten children.

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## B.2 Highwic House

Highwic House, is situated in the suburb of Epsom in Auckland and is one of New Zealand's finest timber Gothic houses. The design was originated in the United States, between 1836 and 1850, as a result of collaboration between that country's two most eminent and influential practitioners of domestic architecture - Davis and Dowing [Neale, 1991].

The house was built in 1862 for Alfred Buckland and his wife Eliza Wallen who married in England and emigrated to New Zealand in 1850 [NZHPT, 1995]. They named it Highwic after the Devonshire village of Highweek.

The eastern part of Highwic was completed in 1862 when the Bucklands moved in. It was designed in the early English manner with vertical boarding, steep slate roofs, dormers, latticed casement windows and decorated bargeboards. The house had extensions added to provide living and working space for the growing family and the servants. During the 1870s, a ballroom, a sitting room and a dining room were added. The large kitchen, scullery, wash-house, meat store room, water cistern, dairy and store across the courtyard may have also been built around this time [NZHPT, 1989].

Highwic was home for Alfred's 21 children, and it remained in the family until it was sold to the Auckland City Council and New Zealand Historic Places Trust in 1978 [Harris, 1992; NZHPT, 1995].

### **B.3 The Thames School of Mines**

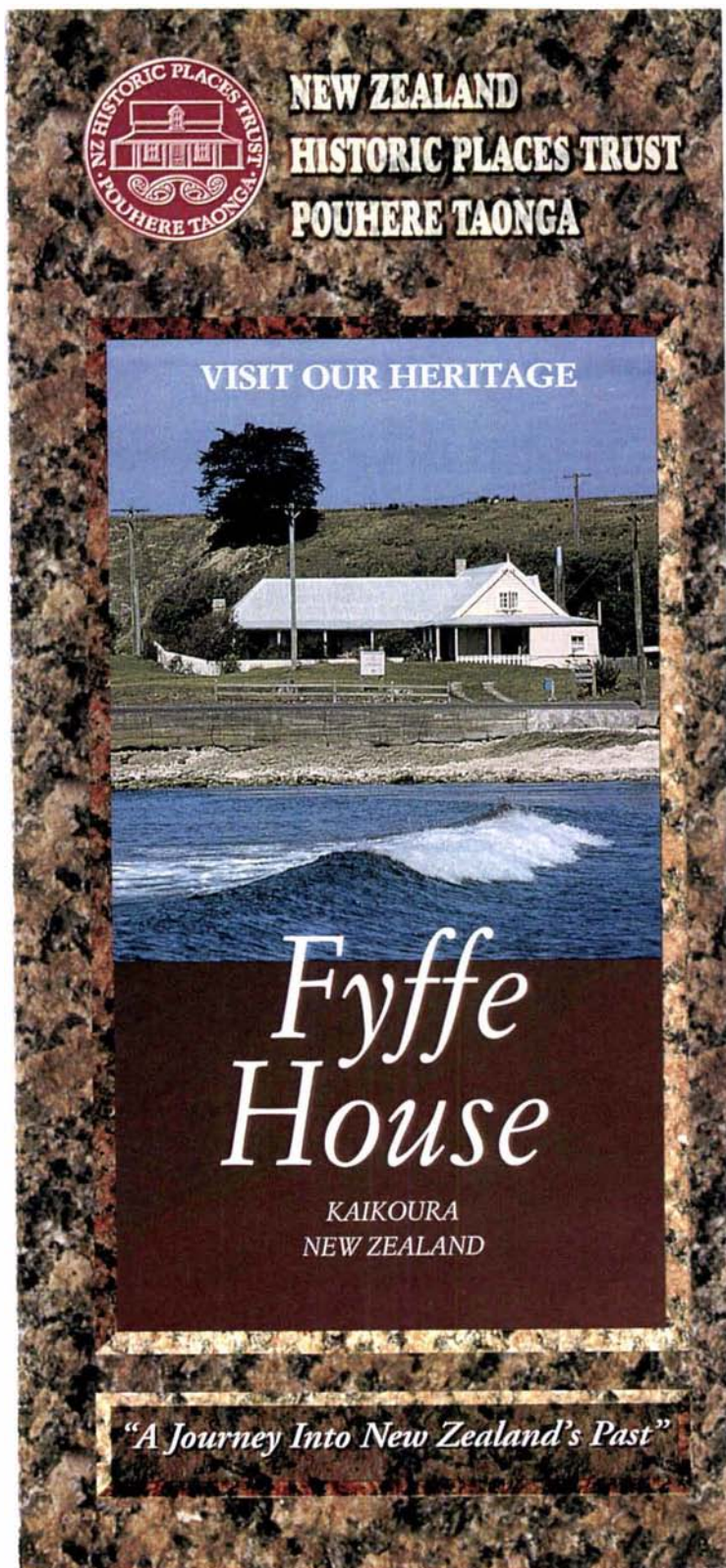
The Thames gold field which opened in 1867 and peaked in 1871 was crucial to the development of Thames. The Thames School of Mines was formed in late 1885 [McLean, 1993]. It was the largest and one of the longest-surviving mines. The school was opened in 1886, converting the 1869 Wesleyan Sunday School into its first classrooms. New buildings were added later; these included the 1888 experimental works and the mineralogical museum in 1900.

In 1885/86, assisted by Minister of Mines W.J.M. Larnach, the goldfields school of mines formed to provide practical instruction to gold miners working the colony's quartz fields. The Thames School of Mines Association was formed in 1885. Professor of Chemistry J.G. Black from Otago University initiated the forming of the school. He ran the school until 1954 [McLean, 1993] and was supported by the Mines Department.

The school taught mining subjects and trained men for their mining managers certificate. The near exhaustion of Thames gold field early this century required it to add electricity, engineering, pharmacy and agriculture, amongst other subjects, to the curriculum. The Thames School of Mines closed in 1954 when long-serving director Hugh Crawford retired. The mineralogical museum remained open to the public and private mining companies leased the building for another two decades. The New Zealand Historic Places Trust acquired the complex from the local authority in 1979 [NZHPT, 1995].

**C Fyffe House**

Fyffe House is the only Trust's property selected as a survey site in the South Island.



## **C.1 Fyffe House**

Fyffe House is a link to Kaikoura's whaling past. Whalers first came to New Zealand in 1792 to hunt sperm whales [Harris, 1994]. Whaling ships from Britain, America, France and Australia cruised in the Pacific in the winter, hunting near the New Zealand coast from October to May during the early to mid 1800s.

Fyffe House was established before the Kaikoura township became a whaling station. Robert Fyffe was a whaler who came to New Zealand in 1836 from Scotland. He and his partner John Murray established a shore-based whaling station at Kaikoura in 1842, the first in that area. The building was later extended by Robert's cousin George until it was completed in the early 1860's. The house was later home to two other families - the Goodalls and the Lows. In 1980, George Low left the house to the Trust [Harris, 1994].

There are two unique features of Fyffe House which identify the house with Kaikoura's whaling days. One wing of the house has been built on large whale vertebra, used as piles. Secondly, the house was first painted with a mixture of whale oil with red and white lead, giving it the pink hue which has remained ever since [NZHPT, 1992].

The house is an important part of Kaikoura's whaling history. It is the town's oldest surviving building which has been preserved and restored by the New Zealand Historic Places Trust as part of the New Zealand national cultural heritage. People are attracted to this old building because they are interested in the culture of the region, the whaling history and old houses. It throws light on a significant aspect of the lives of people in Kaikoura in the mid-to-late 19th century. It is a piece of vital evidence about the past society that created Kaikoura.

## National Gap Analysis

**Table 1. Management and Staff's View of Importance and Their Visitors' Expectation of Service Quality**

| Service Quality       | No | Service Quality Variables                                 | Management view on Importance |      |       |         |
|-----------------------|----|---|-------------------------------|------|-------|---------|
|                       |    | Features, Displays and Services                           | North                         | Auck | Fyffe | Average |
| <b>Tangible</b>       | 1  | The physical appearance of the place                      | 4.33                          | 4.25 | 3.50  | 4.03    |
|                       | 2  | The authentic nature of the place                         | 4.67                          | 4.58 | 4.00  | 4.42    |
|                       | 3  | The contents are interesting                              | 4.11                          | 4.33 | 4.00  | 4.15    |
|                       | 4  | The building and contents are well cared for              | 4.89                          | 4.75 | 4.00  | 4.55    |
|                       | 5  | The grounds/gardens are well cared for                    | 4.22                          | 4.67 | 4.00  | 4.30    |
|                       | 6  | The information provided about the place is informative   | 4.22                          | 4.67 | 4.00  | 4.30    |
|                       | 7  | Historical atmosphere is captured                         | 4.89                          | 4.67 | 4.00  | 4.52    |
| <b>Empathy</b>        | 8  | Finding your way around in the building is easy           | 3.44                          | 3.83 | 1.50  | 2.93    |
| <b>Tangible</b>       | 9  | Toilets are provided                                      | 1.44                          | 3.17 | 3.00  | 2.54    |
|                       | 10 | Toilets are clean   | 1.56                          | 4.75 | 4.00  | 3.44    |
|                       | 11 | Refreshments are provided                                 | 1.33                          | 1.75 | 1.00  | 1.36    |
|                       | 12 | Seating is provided                                       | 2.67                          | 3.00 | 2.00  | 2.56    |
|                       | 13 | Staff are presentable                                     | 4.11                          | 4.33 | 4.00  | 4.15    |
| <b>Responsiveness</b> | 14 | Staff are willing to help visitors                        | 4.89                          | 4.83 | 5.00  | 4.91    |
| <b>Reliability</b>    | 15 | Staff inspire confidence in visitors                      | 4.44                          | 4.67 | 4.00  | 4.37    |
|                       | 16 | The information provided by staff is consistent           | 4.89                          | 4.67 | 4.00  | 4.52    |
| <b>Assurance</b>      | 17 | Staff are friendly, courteous and polite to visitors      | 4.89                          | 4.92 | 4.50  | 4.77    |
|                       | 18 | Staff have the knowledge to respond to visitors' requests | 4.78                          | 4.39 | 4.00  | 4.39    |
| <b>Empathy</b>        | 19 | Opening hours are convenient                              | 3.67                          | 4.61 | 3.50  | 3.93    |
|                       | 20 | Wheelchair access is available                            | 1.17                          | 3.75 | 0.50  | 1.81    |
|                       | 21 | Adequate road signs make it easy to find the place        | 4.78                          | 4.58 | 3.50  | 4.29    |
|                       | 22 | There is adequate car parking for visitors                | 4.44                          | 4.42 | 3.50  | 4.12    |

**Table 2. Management and Staff's View of Their Visitors' Expectation of Service Quality**

| Service Quality       | Service Quality Variables |   | Management view of Visitors' Expectation |      |       |         |
|-----------------------|---------------------------|---|--|------|-------|---------|
|                       | No                        | Features, Displays and Services                           | North                                    | Auk  | Fyffe | Average |
| <b>Tangible</b>       | 1                         | The physical appearance of the place                      | 4.33                                     | 3.50 | 4.50  | 4.11    |
|                       | 2                         | The authentic nature of the place                         | 4.39                                     | 4.33 | 4.00  | 4.24    |
|                       | 3                         | The contents are interesting                              | 4.33                                     | 4.25 | 4.50  | 4.36    |
|                       | 4                         | The building and contents are well cared for              | 4.67                                     | 3.42 | 4.50  | 4.19    |
|                       | 5                         | The grounds/gardens are well cared for                    | 4.67                                     | 4.00 | 4.50  | 4.39    |
|                       | 6                         | The information provided about the place is informative   | 4.00                                     | 3.50 | 4.50  | 4.00    |
|                       | 7                         | Historical atmosphere is captured                         | 4.67                                     | 4.25 | 4.00  | 4.31    |
| <b>Empathy</b>        | 8                         | Finding your way around in the building is easy           | 3.33                                     | 3.67 | 3.50  | 3.50    |
| <b>Tangible</b>       | 9                         | Toilets are provided                                      | 2.56                                     | 2.42 | 4.00  | 2.99    |
|                       | 10                        | Toilets are clean   | 2.67                                     | 2.67 | 4.50  | 3.28    |
|                       | 11                        | Refreshments are provided                                 | 2.56                                     | 1.75 | 3.00  | 2.44    |
|                       | 12                        | Seating is provided                                       | 2.56                                     | 3.00 | 3.00  | 2.85    |
|                       | 13                        | Staff are presentable                                     | 4.22                                     | 3.92 | 4.50  | 4.21    |
| <b>Responsiveness</b> | 14                        | Staff are willing to help visitors                        | 4.89                                     | 4.75 | 4.50  | 4.71    |
| <b>Reliability</b>    | 15                        | Staff inspire confidence in visitors                      | 4.67                                     | 4.67 | 4.50  | 4.61    |
| <b>Assurance</b>      | 16                        | The information provided by staff is consistent           | 4.56                                     | 4.67 | 4.50  | 4.57    |
|                       | 17                        | Staff are friendly, courteous and polite to visitors      | 4.67                                     | 4.92 | 5.00  | 4.86    |
|                       | 18                        | Staff have the knowledge to respond to visitors' requests | 4.89                                     | 4.56 | 4.50  | 4.65    |
| <b>Empathy</b>        | 19                        | Opening hours are convenient                              | 4.00                                     | 3.75 | 4.50  | 4.08    |
|                       | 20                        | Wheelchair access is available                            | 1.33                                     | 2.42 | 3.00  | 2.25    |
|                       | 21                        | Adequate road signs make it easy to find the place        | 4.39                                     | 4.08 | 4.00  | 4.16    |
|                       | 22                        | There is adequate car parking for visitors                | 4.67                                     | 4.33 | 4.00  | 4.33    |

**Table 3. Visitors' Expectation of Service Quality**

| Service Quality       | No | Service Quality Variables                                 | Visitors' Expectation of Service Quality |      |       |         |
|-----------------------|----|---|--|------|-------|---------|
|                       |    | Features, Displays and Services                           | North                                    | Auck | Fyffe | Average |
| <b>Tangible</b>       | 1  | The physical appearance of the place                      | 4.01                                     | 3.9  | 3.68  | 3.86    |
|                       | 2  | The authentic nature of the place                         | 4.21                                     | 4.26 | 4.20  | 4.22    |
|                       | 3  | The contents are interesting                              | 4.00                                     | 4.19 | 4.00  | 4.06    |
|                       | 4  | The building and contents are well cared for              | 4.25                                     | 4.18 | 4.25  | 4.22    |
|                       | 5  | The grounds/gardens are well cared for                    | 4.20                                     | 4.15 | 3.87  | 4.07    |
|                       | 6  | The information provided about the place is informative   | 3.92                                     | 3.83 | 4.01  | 3.92    |
|                       | 7  | Historical atmosphere is captured                         | 4.07                                     | 4.19 | 4.19  | 4.15    |
| <b>Empathy</b>        | 8  | Finding your way around in the building is easy           | 3.96                                     | 3.94 | 3.83  | 3.91    |
| <b>Tangible</b>       | 9  | Toilets are provided                                      | 3.70                                     | 3.88 | 3.52  | 3.70    |
|                       | 10 | Toilets are clean   | 4.08                                     | 4.13 | 4.23  | 4.15    |
|                       | 11 | Refreshments are provided                                 | 2.52                                     | 2.71 | 2.18  | 2.47    |
|                       | 12 | Seating is provided                                       | 3.33                                     | 3.22 | 2.98  | 3.18    |
|                       | 13 | Staff are presentable                                     | 4.02                                     | 4.07 | 4.14  | 4.08    |
| <b>Responsiveness</b> | 14 | Staff are willing to help visitors                        | 4.28                                     | 4.37 | 4.43  | 4.36    |
| <b>Reliability</b>    | 15 | Staff inspire confidence in visitors                      | 4.13                                     | 4.18 | 4.3   | 4.20    |
| <b>Assurance</b>      | 16 | The information provided by staff is consistent           | 4.04                                     | 4.11 | 4.23  | 4.13    |
|                       | 17 | Staff are friendly, courteous and polite to visitors      | 4.28                                     | 4.33 | 4.41  | 4.34    |
|                       | 18 | Staff have the knowledge to respond to visitors' requests | 4.20                                     | 4.29 | 4.4   | 4.30    |
| <b>Empathy</b>        | 19 | Opening hours are convenient                              | 3.90                                     | 3.86 | 4.09  | 3.95    |
|                       | 20 | Wheelchair access is available                            | 3.30                                     | 3.44 | 3.16  | 3.30    |
|                       | 21 | Adequate road signs make it easy to find the place        | 3.82                                     | 3.76 | 4.02  | 3.87    |
|                       | 22 | There is adequate car parking for visitors                | 3.78                                     | 3.75 | 4.09  | 3.87    |

**Table 4. Gap Analysis of Expectation of Service Quality**

| Service Quality       | Service Quality Variables |   | Expectation Gap<br>(Management - Visitors Exp) |       |       |         |
|-----------------------|---------------------------|---|--|-------|-------|---------|
|                       | No                        | Features, Displays and Services                           | North  | Auck  | Fyffe | Average |
| <b>Tangible</b>       | 1                         | The physical appearance of the place                      | 0.33   | -0.40 | 0.82  | 0.25    |
|                       | 2                         | The authentic nature of the place                         | 0.18   | 0.08  | -0.20 | 0.02    |
|                       | 3                         | The contents are interesting                              | 0.34   | 0.06  | 0.50  | 0.30    |
|                       | 4                         | The building and contents are well cared for              | 0.42   | -0.76 | 0.25  | -0.03   |
|                       | 5                         | The grounds/gardens are well cared for                    | 0.46   | -0.15 | 0.63  | 0.32    |
|                       | 6                         | The information provided about the place is informative   | 0.08   | -0.33 | 0.49  | 0.08    |
|                       | 7                         | Historical atmosphere is captured                         | 0.60   | 0.06  | -0.19 | 0.16    |
| <b>Empathy</b>        | 8                         | Finding your way around in the building is easy           | -0.63  | -0.28 | -0.33 | -0.41   |
| <b>Tangible</b>       | 9                         | Toilets are provided                                      | -1.14  | -1.46 | 0.48  | -0.71   |
|                       | 10                        | Toilets are clean   | -1.42  | -1.46 | 0.27  | -0.87   |
|                       | 11                        | Refreshments are provided                                 | 0.04   | -0.96 | 0.82  | -0.04   |
|                       | 12                        | Seating is provided                                       | -0.78  | -0.22 | 0.02  | -0.33   |
|                       | 13                        | Staff are presentable                                     | 0.20   | -0.15 | 0.36  | 0.14    |
| <b>Responsiveness</b> | 14                        | Staff are willing to help visitors                        | 0.60   | 0.38  | 0.07  | 0.35    |
| <b>Reliability</b>    | 15                        | Staff inspire confidence in visitors                      | 0.54   | 0.49  | 0.20  | 0.41    |
| <b>Assurance</b>      | 16                        | The information provided by staff is consistent           | 0.51   | 0.56  | 0.27  | 0.44    |
|                       | 17                        | Staff are friendly, courteous and polite to visitors      | 0.39   | 0.59  | 0.59  | 0.52    |
|                       | 18                        | Staff have the knowledge to respond to visitors' requests | 0.69   | 0.27  | 0.10  | 0.35    |
| <b>Empathy</b>        | 19                        | Opening hours are convenient                              | 0.10   | -0.11 | 0.41  | 0.13    |
|                       | 20                        | Wheelchair access is available                            | -1.97  | -1.03 | -0.16 | -1.05   |
|                       | 21                        | Adequate road signs make it easy to find the place        | 0.57   | 0.32  | -0.02 | 0.29    |
|                       | 22                        | There is adequate car parking for visitors                | 0.88   | 0.58  | -0.09 | 0.46    |

**Table 5. Visitors' Perception of Service Quality**

| Service Quality       | Service Quality Variables |   | Visitors' Perception of Service Quality |      |       |         |
|-----------------------|---------------------------|---|---|------|-------|---------|
|                       | No                        | Features, Displays and Services                           | North                                   | Auck | Fyffe | Average |
| <b>Tangible</b>       | 1                         | The physical appearance of the place                      | 4.55                                    | 4.15 | 4.13  | 4.28    |
|                       | 2                         | The authentic nature of the place                         | 4.53                                    | 4.54 | 4.29  | 4.45    |
|                       | 3                         | The contents are interesting                              | 4.48                                    | 4.41 | 4.32  | 4.41    |
|                       | 4                         | The building and contents are well cared for              | 4.47                                    | 4.19 | 4.41  | 4.36    |
|                       | 5                         | The grounds/gardens are well cared for                    | 4.47                                    | 4.24 | 4.16  | 4.29    |
|                       | 6                         | The information provided about the place is informative   | 4.16                                    | 3.92 | 4.55  | 4.21    |
|                       | 7                         | Historical atmosphere is captured                         | 4.41                                    | 4.47 | 4.44  | 4.44    |
| <b>Empathy</b>        | 8                         | Finding your way around in the building is easy           | 3.96                                    | 4.22 | 4.48  | 4.22    |
| <b>Tangible</b>       | 9                         | Toilets are provided                                      | 3.19                                    | 3.73 | 3.83  | 3.59    |
|                       | 10                        | Toilets are clean   | 3.24                                    | 3.90 | 4.14  | 3.76    |
|                       | 11                        | Refreshments are provided                                 | 2.88                                    | 2.75 | 3.25  | 2.96    |
|                       | 12                        | Seating is provided                                       | 3.92                                    | 3.28 | 3.81  | 3.67    |
|                       | 13                        | Staff are presentable                                     | 4.55                                    | 4.33 | 4.82  | 4.57    |
| <b>Responsiveness</b> | 14                        | Staff are willing to help visitors                        | 4.65                                    | 4.57 | 4.92  | 4.71    |
| <b>Reliability</b>    | 15                        | Staff inspire confidence in visitors                      | 4.53                                    | 4.42 | 4.91  | 4.62    |
| <b>Assurance</b>      | 16                        | The information provided by staff is consistent           | 4.51                                    | 4.31 | 4.78  | 4.53    |
|                       | 17                        | Staff are friendly, courteous and polite to visitors      | 4.69                                    | 4.63 | 4.92  | 4.75    |
|                       | 18                        | Staff have the knowledge to respond to visitors' requests | 4.42                                    | 4.52 | 4.85  | 4.60    |
| <b>Empathy</b>        | 19                        | Opening hours are convenient                              | 3.41                                    | 3.87 | 4.53  | 3.94    |
|                       | 20                        | Wheelchair access is available                            | 2.63                                    | 2.44 | 1.82  | 2.29    |
|                       | 21                        | Adequate road signs make it easy to find the place        | 3.27                                    | 3.36 | 3.86  | 3.50    |
|                       | 22                        | There is adequate car parking for visitors                | 4.06                                    | 3.43 | 4.25  | 3.91    |

**Table 6. Gap Analysis of Service Quality**

| Service Quality       | No | Service Quality Variables                                 | Service Quality Gap |       |       |         |
|-----------------------|----|---|---------------------|-------|-------|---------|
|                       |    | Features, Displays and Services                           | North               | Auck  | Fyffe | Average |
| <b>Tangible</b>       | 1  | The physical appearance of the place ie. visual appeal    | 0.54                | 0.25  | 0.45  | 0.41    |
|                       | 2  | The authentic nature of the place                         | 0.32                | 0.28  | 0.09  | 0.23    |
|                       | 3  | The contents are interesting                              | 0.48                | 0.23  | 0.32  | 0.34    |
|                       | 4  | The building and contents are well cared for              | 0.23                | 0.01  | 0.16  | 0.13    |
|                       | 5  | The grounds/gardens are well cared for                    | 0.27                | 0.09  | 0.30  | 0.22    |
|                       | 6  | The information provided about the place is informative   | 0.24                | 0.09  | 0.54  | 0.29    |
|                       | 7  | Historical atmosphere is captured                         | 0.34                | 0.28  | 0.25  | 0.29    |
| <b>Empathy</b>        | 8  | Finding your way around in the building is easy           | 0.00                | 0.28  | 0.66  | 0.31    |
| <b>Tangible</b>       | 9  | Toilets are provided                                      | -0.50               | -0.15 | 0.31  | -0.11   |
|                       | 10 | Toilets are clean   | -0.85               | -0.23 | -0.10 | -0.39   |
|                       | 11 | Refreshments are provided                                 | 0.37                | 0.03  | 1.07  | 0.49    |
|                       | 12 | Seating is provided                                       | 0.59                | 0.06  | 0.83  | 0.49    |
|                       | 13 | Staff are presentable                                     | 0.53                | 0.26  | 0.68  | 0.49    |
| <b>Responsiveness</b> | 14 | Staff are willing to help visitors                        | 0.37                | 0.20  | 0.49  | 0.35    |
| <b>Reliability</b>    | 15 | Staff inspire confidence in visitors                      | 0.40                | 0.24  | 0.61  | 0.42    |
| <b>Assurance</b>      | 16 | The information provided by staff is consistent           | 0.47                | 0.20  | 0.55  | 0.40    |
|                       | 17 | Staff are friendly, courteous and polite to visitors      | 0.42                | 0.30  | 0.51  | 0.41    |
|                       | 18 | Staff have the knowledge to respond to visitors' requests | 0.22                | 0.23  | 0.45  | 0.30    |
| <b>Empathy</b>        | 19 | Opening hours are convenient                              | -0.49               | 0.01  | 0.43  | -0.02   |
|                       | 20 | Wheelchair access is available                            | -0.68               | -1.01 | -1.34 | -1.01   |
|                       | 21 | Adequate road signs make it easy to find the place        | -0.55               | -0.40 | -0.16 | -0.37   |
|                       | 22 | There is adequate car parking for visitors                | 0.27                | -0.32 | 0.16  | 0.04    |

**Table 7. Gap Analysis of Service Quality Using Expectation Weighting  
(Sorted by Descending Gap Order)**

| No | Service Quality Variables<br>Features, Displays and Services | Weighted Service Quality Gap |       |       |         |
|----|--|------------------------------|-------|-------|---------|
|    |  | North                        | Auck  | Fyffe | Average |
| 20 | Wheelchair access is available                               | -2.14                        | -3.47 | -4.23 | -3.28   |
| 10 | Toilets are clean  | -3.47                        | -0.95 | -0.40 | -1.61   |
| 21 | Adequate road signs make it easy to find the place           | -2.09                        | -1.50 | -0.65 | -1.41   |
| 9  | Toilets are provided   | -1.81                        | -0.57 | 1.09  | -0.43   |
| 19 | Opening hours are convenient                                 | -1.96                        | 0.05  | 1.77  | -0.05   |
| 22 | There is adequate car parking for visitors                   | 0.94                         | -1.18 | 0.66  | 0.14    |
| 4  | The building and contents are well cared for                 | 0.95                         | 0.09  | 0.70  | 0.58    |
| 5  | The grounds/gardens are well cared for                       | 1.11                         | 0.41  | 1.15  | 0.89    |
| 2  | The authentic nature of the place                            | 1.35                         | 1.21  | 0.37  | 0.98    |
| 11 | Refreshments are provided                                    | 0.99                         | 0.08  | 2.33  | 1.13    |
| 6  | The information provided about the place is informative      | 0.94                         | 0.36  | 2.17  | 1.16    |
| 7  | Historical atmosphere is captured                            | 1.38                         | 1.19  | 1.05  | 1.20    |
| 8  | Finding your way around in the building is easy              | 0.08                         | 1.10  | 2.51  | 1.23    |
| 18 | Staff have the knowledge to respond to visitors' requests    | 0.91                         | 1.00  | 2.00  | 1.30    |
| 3  | The contents are interesting                                 | 1.92                         | 0.95  | 1.29  | 1.39    |
| 14 | Staff are willing to help visitors                           | 1.57                         | 0.88  | 2.15  | 1.54    |
| 12 | Seating is provided  | 1.98                         | 0.19  | 2.48  | 1.55    |
| 1  | The physical appearance of the place ie. visual appeal       | 2.17                         | 0.97  | 1.67  | 1.60    |
| 16 | The information provided by staff is consistent              | 1.89                         | 0.83  | 2.31  | 1.67    |
| 15 | Staff inspire confidence in visitors                         | 1.65                         | 1.02  | 2.61  | 1.76    |
| 17 | Staff are friendly, courteous and polite to visitors         | 1.77                         | 1.31  | 2.26  | 1.78    |
| 13 | Staff are presentable  | 2.14                         | 1.06  | 2.83  | 2.01    |

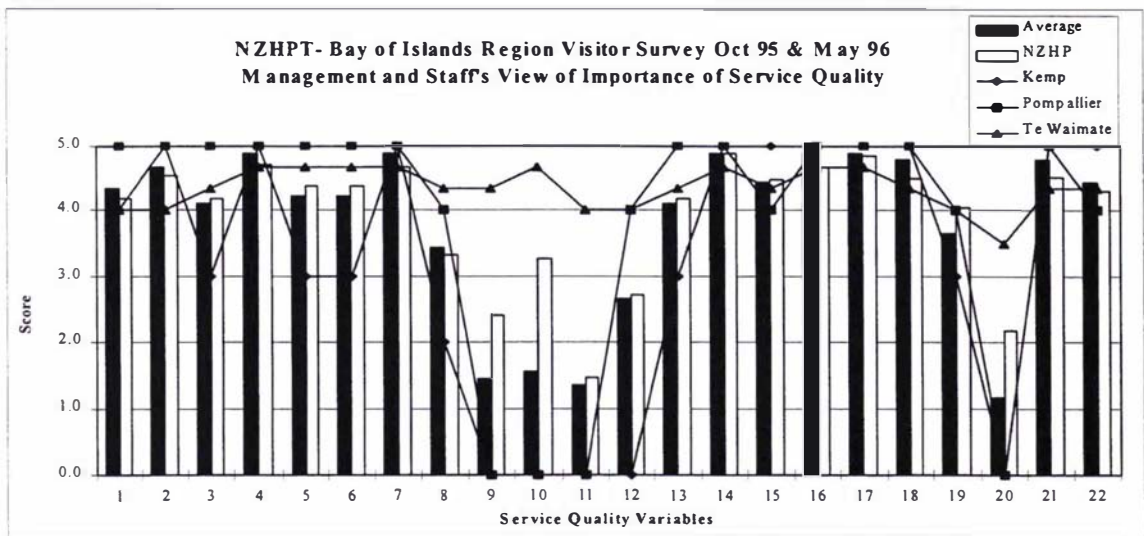
## A Regional Gap Analysis - Bay of Islands Region

The Trust properties surveyed in the Bay of Islands region were Kemp House at Kerikeri, Te Waimate Mission House at Waimate and Pompallier at Russel.

**Table A-1. Bay of Islands region Management View of Importance of Service Quality**

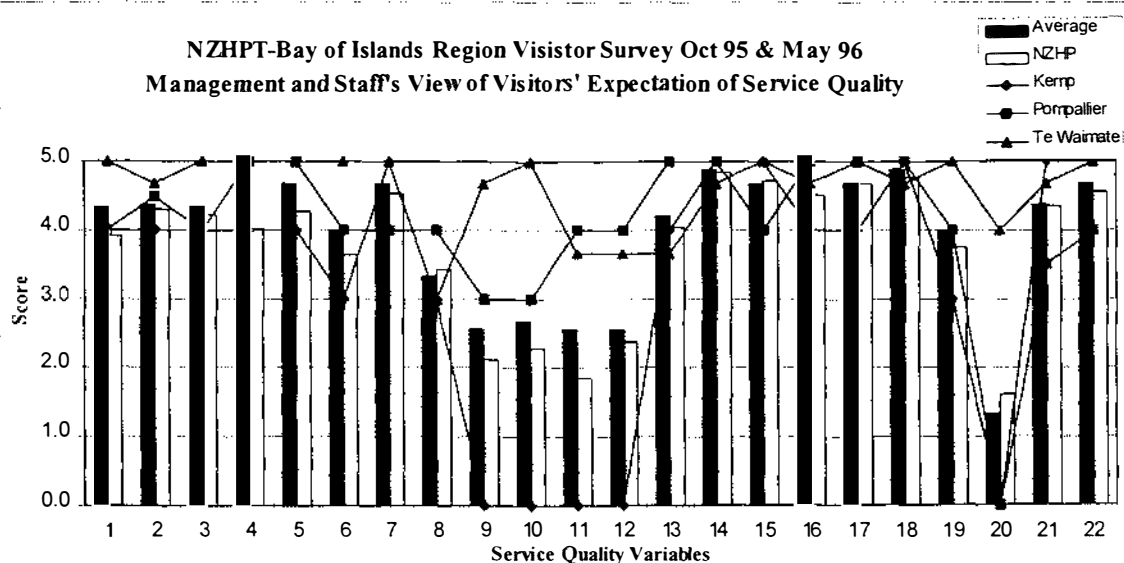
| No | Service Quality Dimensions<br>Features, Displays and Services | Management view on Importance |            |            |         |
|----|---|-------------------------------|------------|------------|---------|
|    |   | Kemp                          | Pompallier | Te Waimate | Average |
| 1  | The physical appearance of the place                          | 4.00                          | 5.00       | 4.00       | 4.33    |
| 2  | The authentic nature of the place                             | 5.00                          | 5.00       | 4.00       | 4.67    |
| 3  | The contents are interesting                                  | 3.00                          | 5.00       | 4.33       | 4.11    |
| 4  | The building and contents are well cared for                  | 5.00                          | 5.00       | 4.67       | 4.89    |
| 5  | The grounds/gardens are well cared for                        | 3.00                          | 5.00       | 4.67       | 4.22    |
| 6  | The information provided about the place is informative       | 3.00                          | 5.00       | 4.67       | 4.22    |
| 7  | Historical atmosphere is captured                             | 5.00                          | 5.00       | 4.67       | 4.89    |
| 8  | Finding your way around in the building is easy               | 2.00                          | 4.00       | 4.33       | 3.44    |
| 9  | Toilets are provided  | 0.00                          | 0.00       | 4.33       | 1.44    |
| 10 | Toilets are clean   | 0.00                          | 0.00       | 4.67       | 1.56    |
| 11 | Refreshments are provided                                     | 0.00                          | 0.00       | 4.00       | 1.33    |
| 12 | Seating is provided   | 0.00                          | 4.00       | 4.00       | 2.67    |
| 13 | Staff are presentable   | 3.00                          | 5.00       | 4.33       | 4.11    |
| 14 | Staff are willing to help visitors                            | 5.00                          | 5.00       | 4.67       | 4.89    |
| 15 | Staff inspire confidence in visitors                          | 5.00                          | 4.00       | 4.33       | 4.44    |
| 16 | The information provided by staff is consistent               | 5.00                          | 5.00       | 4.67       | 4.89    |
| 17 | Staff are friendly, courteous and polite to visitors          | 5.00                          | 5.00       | 4.67       | 4.89    |
| 18 | Staff have the knowledge to respond to visitors' requests     | 5.00                          | 5.00       | 4.33       | 4.78    |
| 19 | Opening hours are convenient                                  | 3.00                          | 4.00       | 4.00       | 3.67    |
| 20 | Wheelchair access is available                                | 0.00                          | 0.00       | 3.50       | 1.17    |
| 21 | Adequate road signs make it easy to find the place            | 5.00                          | 5.00       | 4.33       | 4.78    |
| 22 | There is adequate car parking for visitors                    | 5.00                          | 4.00       | 4.33       | 4.44    |

**Figure A-1. Management and Staff's View of the Importance of Service Quality**



**Table A-2. Bay of Islands region Management and Staff's View of Their Visitors' Expectation of Service Quality**

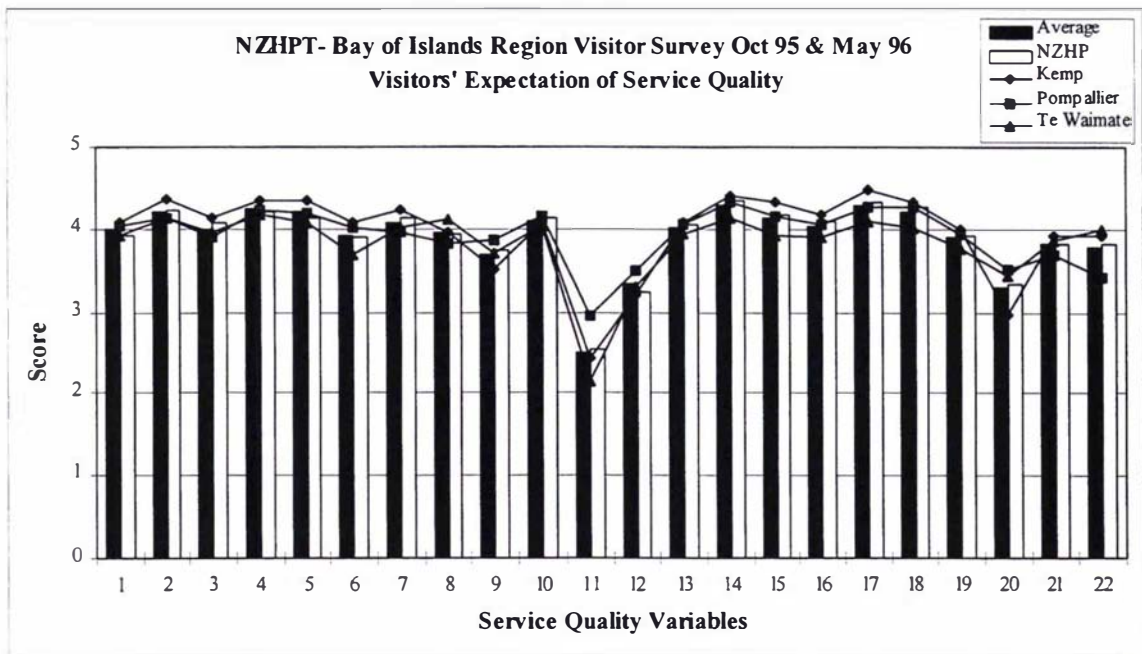
| No | Service Quality Dimensions<br>Features, Displays and Services | Management view of Visitors' Expectation |            |            |         |
|----|---|--|------------|------------|---------|
|    |   | Kemp                                     | Pompallier | Te Waimate | Average |
| 1  | The physical appearance of the place                          | 4.00                                     | 4.00       | 5.00       | 4.33    |
| 2  | The authentic nature of the place                             | 4.00                                     | 4.50       | 4.67       | 4.39    |
| 3  | The contents are interesting                                  | 4.00                                     | 4.00       | 5.00       | 4.33    |
| 4  | The building and contents are well cared for                  | 4.00                                     | 5.00       | 5.00       | 4.67    |
| 5  | The grounds/gardens are well cared for                        | 4.00                                     | 5.00       | 5.00       | 4.67    |
| 6  | The information provided about the place is informative       | 3.00                                     | 4.00       | 5.00       | 4.00    |
| 7  | Historical atmosphere is captured                             | 5.00                                     | 4.00       | 5.00       | 4.67    |
| 8  | Finding your way around in the building is easy               | 3.00                                     | 4.00       | 3.00       | 3.33    |
| 9  | Toilets are provided  | 0.00                                     | 3.00       | 4.67       | 2.56    |
| 10 | Toilets are clean   | 0.00                                     | 3.00       | 5.00       | 2.67    |
| 11 | Refreshments are provided                                     | 0.00                                     | 4.00       | 3.67       | 2.56    |
| 12 | Seating is provided   | 0.00                                     | 4.00       | 3.67       | 2.56    |
| 13 | Staff are presentable   | 4.00                                     | 5.00       | 3.67       | 4.22    |
| 14 | Staff are willing to help visitors                            | 5.00                                     | 5.00       | 4.67       | 4.89    |
| 15 | Staff inspire confidence in visitors                          | 5.00                                     | 4.00       | 5.00       | 4.67    |
| 16 | The information provided by staff is consistent               | 4.00                                     | 5.00       | 4.67       | 4.56    |
| 17 | Staff are friendly, courteous and polite to visitors          | 4.00                                     | 5.00       | 5.00       | 4.67    |
| 18 | Staff have the knowledge to respond to visitors' requests     | 5.00                                     | 5.00       | 4.67       | 4.89    |
| 19 | Opening hours are convenient                                  | 3.00                                     | 4.00       | 5.00       | 4.00    |
| 20 | Wheelchair access is available                                | 0.00                                     | 0.00       | 4.00       | 1.33    |
| 21 | Adequate road signs make it easy to find the place            | 5.00                                     | 3.50       | 4.67       | 4.39    |
| 22 | There is adequate car parking for visitors                    | 5.00                                     | 4.00       | 5.00       | 4.67    |

**Figure A-2. Management and Staff's View of Visitors' Expectation of Service Quality**

**Table A-3. Bay of Islands region - Visitors' Expectation of Service Quality**

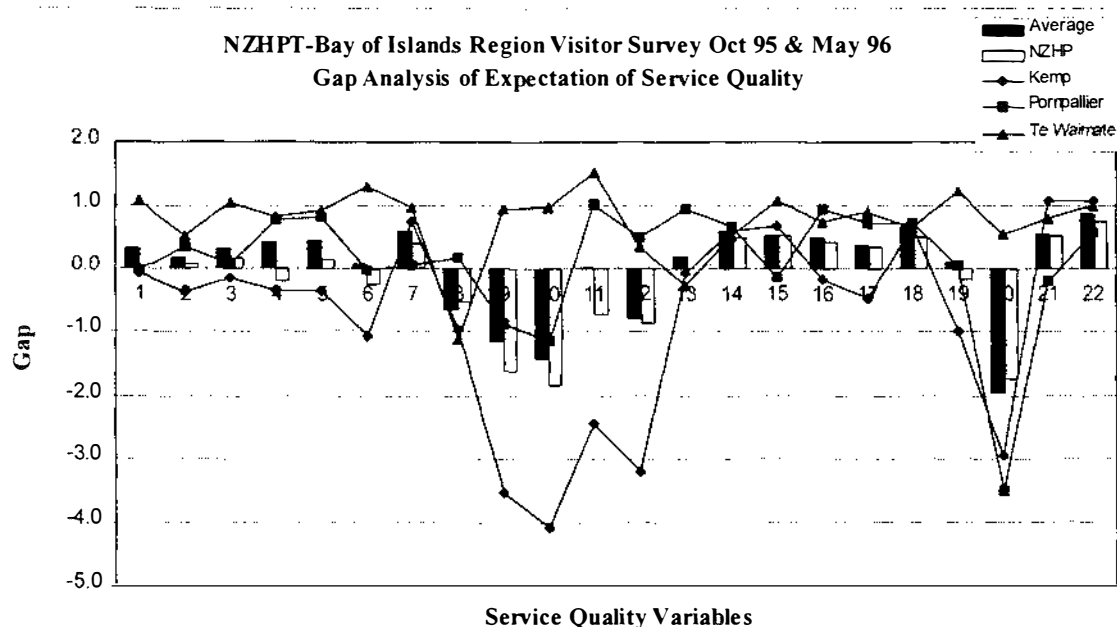
| No | Service Quality Dimensions                                | Visitors' Expectation of Service Quality |            |            |         |
|----|---|--|------------|------------|---------|
|    |   | Kemp                                     | Pompallier | Te Waimate | Average |
| 1  | The physical appearance of the place                      | 4.07                                     | 4.03       | 3.92       | 4.01    |
| 2  | The authentic nature of the place                         | 4.36                                     | 4.13       | 4.14       | 4.21    |
| 3  | The contents are interesting                              | 4.13                                     | 3.91       | 3.96       | 4.00    |
| 4  | The building and contents are well cared for              | 4.35                                     | 4.23       | 4.16       | 4.25    |
| 5  | The grounds/gardens are well cared for                    | 4.35                                     | 4.18       | 4.08       | 4.20    |
| 6  | The information provided about the place is informative   | 4.06                                     | 4.01       | 3.69       | 3.92    |
| 7  | Historical atmosphere is captured                         | 4.24                                     | 3.95       | 4.02       | 4.07    |
| 8  | Finding your way around in the building is easy           | 3.96                                     | 3.82       | 4.11       | 3.96    |
| 9  | Toilets are provided                                      | 3.52                                     | 3.86       | 3.71       | 3.70    |
| 10 | Toilets are clean   | 4.08                                     | 4.14       | 4.03       | 4.08    |
| 11 | Refreshments are provided                                 | 2.44                                     | 2.96       | 2.15       | 2.52    |
| 12 | Seating is provided                                       | 3.20                                     | 3.50       | 3.31       | 3.33    |
| 13 | Staff are presentable                                     | 4.08                                     | 4.05       | 3.94       | 4.02    |
| 14 | Staff are willing to help visitors                        | 4.40                                     | 4.32       | 4.13       | 4.28    |
| 15 | Staff inspire confidence in visitors                      | 4.32                                     | 4.15       | 3.91       | 4.13    |
| 16 | The information provided by staff is consistent           | 4.17                                     | 4.05       | 3.91       | 4.04    |
| 17 | Staff are friendly, courteous and polite to visitors      | 4.47                                     | 4.27       | 4.09       | 4.28    |
| 18 | Staff have the knowledge to respond to visitors' requests | 4.33                                     | 4.26       | 4.02       | 4.20    |
| 19 | Opening hours are convenient                              | 4.00                                     | 3.95       | 3.76       | 3.90    |
| 20 | Wheelchair access is available                            | 2.97                                     | 3.51       | 3.43       | 3.30    |
| 21 | Adequate road signs make it easy to find the place        | 3.91                                     | 3.69       | 3.86       | 3.82    |
| 22 | There is adequate car parking for visitors                | 3.93                                     | 3.42       | 4.00       | 3.78    |

**Figure A-3. Visitors' Expectation of Service Quality**



**Table A-4. Bay of Islands region - Gap Analysis of Expectation of Service Quality**

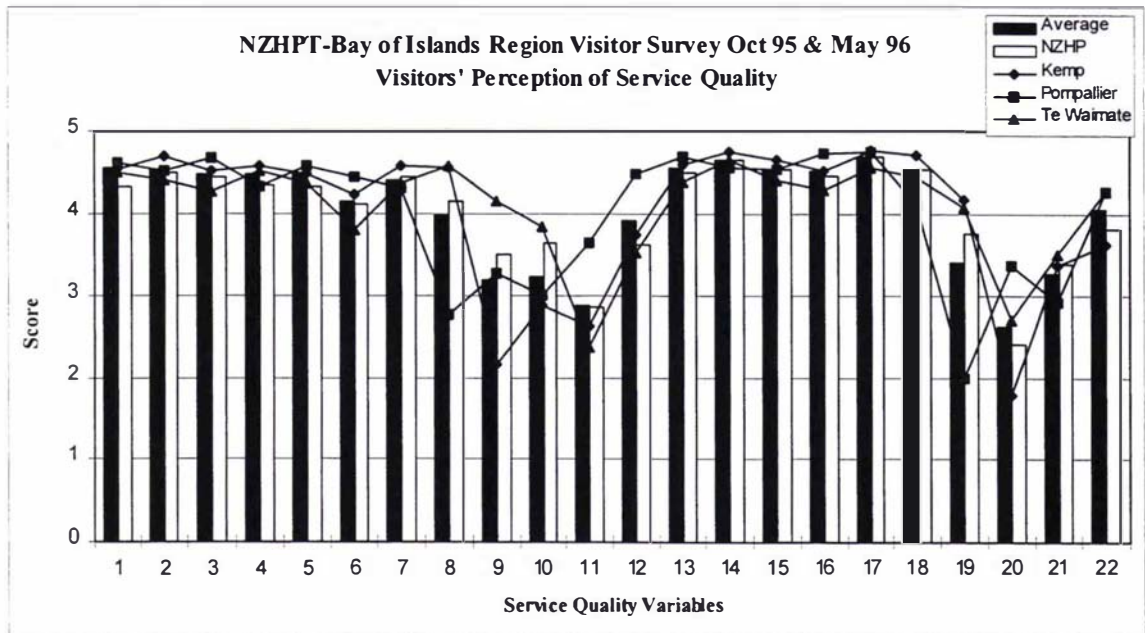
| No | Service Quality Dimensions<br>Features, Displays and Services  | Expectation Gap |            |            |         |
|----|--|-----------------|------------|------------|---------|
|    |  | Kemp            | Pompallier | Te Waimate | Average |
| 1  | The physical appearance of the place ie. visual appeal   | -0.1            | -0.03      | 1.08       | 0.33    |
| 2  | The authentic nature of the place  | -0.4            | 0.37       | 0.53       | 0.18    |
| 3  | The contents are interesting   | -0.1            | 0.09       | 1.04       | 0.34    |
| 4  | The building and contents are well cared for   | -0.3            | 0.77       | 0.84       | 0.42    |
| 5  | The grounds/gardens are well cared for   | -0.3            | 0.82       | 0.92       | 0.46    |
| 6  | The information provided about the place is informative ie. promotional brochures and advertisements | -1.1            | -0.01      | 1.31       | 0.08    |
| 7  | Historical atmosphere is captured  | 0.76            | 0.05       | 0.98       | 0.60    |
| 8  | Finding your way around in the building is easy  | -1.0            | 0.18       | -1.11      | -0.63   |
| 9  | Toilets are provided   | -3.5            | -0.86      | 0.96       | -1.14   |
| 10 | Toilets are clean  | -4.1            | -1.14      | 0.97       | -1.42   |
| 11 | Refreshments are provided  | -2.4            | 1.04       | 1.52       | 0.04    |
| 12 | Seating is provided  | -3.2            | 0.50       | 0.36       | -0.78   |
| 13 | Staff are presentable  | -0.1            | 0.95       | -0.27      | 0.20    |
| 14 | Staff are willing to help visitors   | 0.6             | 0.68       | 0.54       | 0.60    |
| 15 | Staff inspire confidence in visitors   | 0.68            | -0.15      | 1.09       | 0.54    |
| 16 | The information provided by staff is consistent  | -0.2            | 0.95       | 0.76       | 0.51    |
| 17 | Staff are friendly, courteous and polite to visitors   | -0.5            | 0.73       | 0.91       | 0.39    |
| 18 | Staff have the knowledge to respond to visitors' requests  | 0.67            | 0.74       | 0.64       | 0.69    |
| 19 | Opening hours are convenient   | -1.0            | 0.05       | 1.24       | 0.10    |
| 20 | Wheelchair access is available   | -3.0            | -3.51      | 0.57       | -1.97   |
| 21 | Adequate road signs make it easy to find the place   | 1.09            | -0.19      | 0.80       | 0.57    |
| 22 | There is adequate car parking for visitors   | 1.07            | 0.58       | 1.00       | 0.88    |

**Figure A-4. Gap Analysis of Expectation of Service Quality**

**Table A-5. Bay of Islands region - Visitors' Perception of Service Quality**

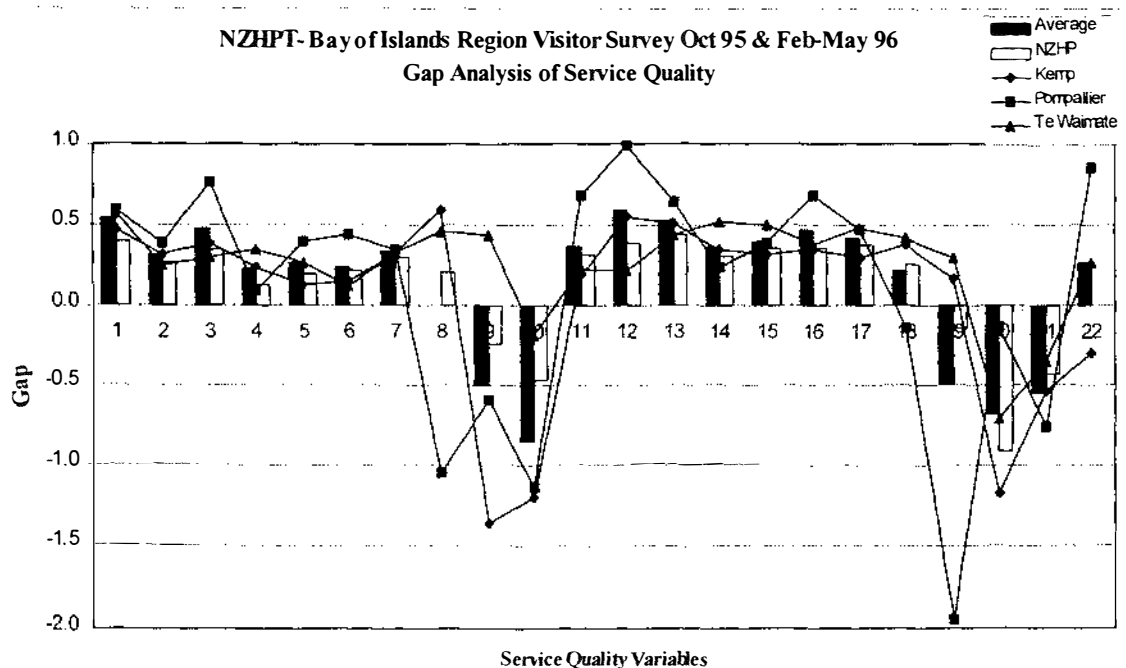
| No | Service Quality Dimensions                                | Visitors' Perception of Service Quality |            |            |         |
|----|---|---|------------|------------|---------|
|    |   | Kemp                                    | Pompallier | Te Waimate | Average |
| 1  | The physical appearance of the place                      | 4.54                                    | 4.62       | 4.49       | 4.55    |
| 2  | The authentic nature of the place                         | 4.68                                    | 4.52       | 4.39       | 4.53    |
| 3  | The contents are interesting                              | 4.52                                    | 4.67       | 4.25       | 4.48    |
| 4  | The building and contents are well cared for              | 4.58                                    | 4.32       | 4.51       | 4.47    |
| 5  | The grounds/gardens are well cared for                    | 4.47                                    | 4.58       | 4.35       | 4.47    |
| 6  | The information provided about the place is informative   | 4.22                                    | 4.45       | 3.80       | 4.16    |
| 7  | Historical atmosphere is captured                         | 4.57                                    | 4.30       | 4.35       | 4.41    |
| 8  | Finding your way around in the building is easy           | 4.55                                    | 2.77       | 4.57       | 3.96    |
| 9  | Toilets are provided                                      | 2.16                                    | 3.27       | 4.15       | 3.19    |
| 10 | Toilets are clean   | 2.88                                    | 3.00       | 3.83       | 3.24    |
| 11 | Refreshments are provided                                 | 2.63                                    | 3.64       | 2.38       | 2.88    |
| 12 | Seating is provided                                       | 3.75                                    | 4.49       | 3.53       | 3.92    |
| 13 | Staff are presentable                                     | 4.59                                    | 4.69       | 4.38       | 4.55    |
| 14 | Staff are willing to help visitors                        | 4.75                                    | 4.56       | 4.65       | 4.65    |
| 15 | Staff inspire confidence in visitors                      | 4.65                                    | 4.54       | 4.41       | 4.53    |
| 16 | The information provided by staff is consistent           | 4.52                                    | 4.73       | 4.29       | 4.51    |
| 17 | Staff are friendly, courteous and polite to visitors      | 4.77                                    | 4.75       | 4.56       | 4.69    |
| 18 | Staff have the knowledge to respond to visitors' requests | 4.71                                    | 4.12       | 4.44       | 4.42    |
| 19 | Opening hours are convenient                              | 4.17                                    | 2.00       | 4.06       | 3.41    |
| 20 | Wheelchair access is available                            | 1.78                                    | 3.37       | 2.72       | 2.63    |
| 21 | Adequate road signs make it easy to find the place        | 3.38                                    | 2.93       | 3.51       | 3.27    |
| 22 | There is adequate car parking for visitors                | 3.63                                    | 4.27       | 4.27       | 4.06    |

**Figure A-5. Visitors' Perception of Service Quality**



**Table A-6. Bay of Islands Region Service Quality Gap**

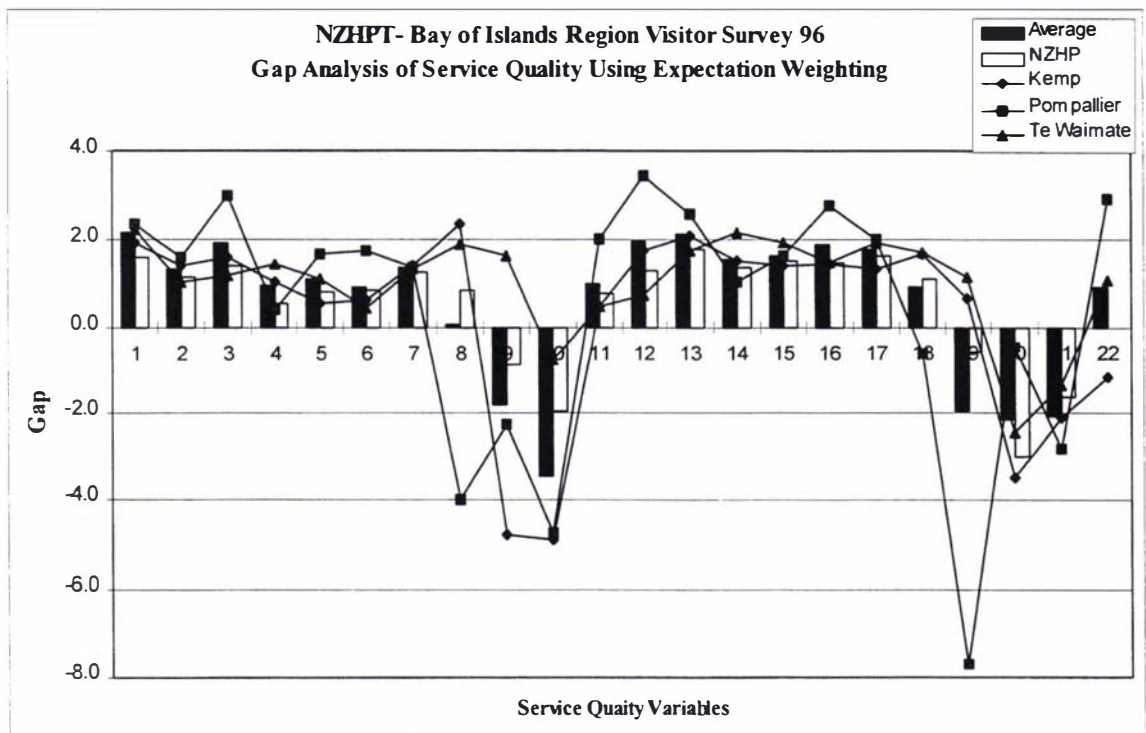
| No | Service Quality Dimensions<br>Features, Displays and Services | Service Quality Gap |            |            |         |
|----|---|---------------------|------------|------------|---------|
|    |   | Kemp                | Pompallier | Te Waimate | Average |
| 1  | The physical appearance of the place                          | 0.47                | 0.59       | 0.57       | 0.54    |
| 2  | The authentic nature of the place                             | 0.32                | 0.39       | 0.25       | 0.32    |
| 3  | The contents are interesting                                  | 0.39                | 0.76       | 0.30       | 0.48    |
| 4  | The building and contents are well cared for                  | 0.24                | 0.09       | 0.35       | 0.23    |
| 5  | The grounds/gardens are well cared for                        | 0.13                | 0.40       | 0.27       | 0.27    |
| 6  | The information provided about the place is informative       | 0.15                | 0.44       | 0.12       | 0.24    |
| 7  | Historical atmosphere is captured                             | 0.33                | 0.35       | 0.33       | 0.34    |
| 8  | Finding your way around in the building is easy               | 0.59                | -1.05      | 0.46       | 0.00    |
| 9  | Toilets are provided  | -1.36               | -0.59      | 0.44       | -0.50   |
| 10 | Toilets are clean   | -1.20               | -1.14      | -0.19      | -0.85   |
| 11 | Refreshments are provided                                     | 0.19                | 0.68       | 0.23       | 0.37    |
| 12 | Seating is provided   | 0.55                | 0.99       | 0.22       | 0.59    |
| 13 | Staff are presentable   | 0.51                | 0.64       | 0.44       | 0.53    |
| 14 | Staff are willing to help visitors                            | 0.35                | 0.24       | 0.52       | 0.37    |
| 15 | Staff inspire confidence in visitors                          | 0.32                | 0.39       | 0.50       | 0.40    |
| 16 | The information provided by staff is consistent               | 0.35                | 0.68       | 0.38       | 0.47    |
| 17 | Staff are friendly, courteous and polite to visitors          | 0.30                | 0.47       | 0.48       | 0.42    |
| 18 | Staff have the knowledge to respond to visitors' requests     | 0.38                | -0.14      | 0.42       | 0.22    |
| 19 | Opening hours are convenient                                  | 0.17                | -1.95      | 0.30       | -0.49   |
| 20 | Wheelchair access is available                                | -1.18               | -0.13      | -0.71      | -0.68   |
| 21 | Adequate road signs make it easy to find the place            | -0.54               | -0.76      | -0.35      | -0.55   |
| 22 | There is adequate car parking for visitors                    | -0.30               | 0.85       | 0.27       | 0.27    |

**Figure A-6. Gap Analysis of Service Quality**

**Table A-7. Gap Analysis of Service Quality Using Expectation Weighting**

| No | Service Quality Dimensions                                | Weighted Service Quality Gap |            |            |         |
|----|---|------------------------------|------------|------------|---------|
|    |   | Kemp                         | Pompallier | Te Waimate | Average |
| 1  | The physical appearance of the place                      | 1.9                          | 2.4        | 2.2        | 2.2     |
| 2  | The authentic nature of the place                         | 1.4                          | 1.6        | 1.0        | 1.4     |
| 3  | The contents are interesting                              | 1.6                          | 3.0        | 1.2        | 1.9     |
| 4  | The building and contents are well cared for              | 1.0                          | 0.4        | 1.4        | 1.0     |
| 5  | The grounds/gardens are well cared for                    | 0.5                          | 1.7        | 1.1        | 1.1     |
| 6  | The information provided about the place is informative   | 0.6                          | 1.8        | 0.4        | 0.9     |
| 7  | Historical atmosphere is captured                         | 1.4                          | 1.4        | 1.3        | 1.4     |
| 8  | Finding your way around in the building is easy           | 2.3                          | -4.0       | 1.9        | 0.1     |
| 9  | Toilets are provided                                      | -4.8                         | -2.3       | 1.6        | -1.8    |
| 10 | Toilets are clean   | -4.9                         | -4.7       | -0.8       | -3.5    |
| 11 | Refreshments are provided                                 | 0.5                          | 2.0        | 0.5        | 1.0     |
| 12 | Seating is provided                                       | 1.7                          | 3.5        | 0.7        | 2.0     |
| 13 | Staff are presentable                                     | 2.1                          | 2.6        | 1.7        | 2.1     |
| 14 | Staff are willing to help visitors                        | 1.5                          | 1.0        | 2.2        | 1.6     |
| 15 | Staff inspire confidence in visitors                      | 1.4                          | 1.6        | 1.9        | 1.7     |
| 16 | The information provided by staff is consistent           | 1.4                          | 2.7        | 1.5        | 1.9     |
| 17 | Staff are friendly, courteous and polite to visitors      | 1.4                          | 2.0        | 1.9        | 1.8     |
| 18 | Staff have the knowledge to respond to visitors' requests | 1.7                          | -0.6       | 1.7        | 0.9     |
| 19 | Opening hours are convenient                              | 0.7                          | -7.7       | 1.1        | -2.0    |
| 20 | Wheelchair access is available                            | -3.5                         | -0.5       | -2.4       | -2.1    |
| 21 | Adequate road signs make it easy to find the place        | -2.1                         | -2.8       | -1.4       | -2.1    |
| 22 | There is adequate car parking for visitors                | -1.2                         | 2.9        | 1.1        | 0.9     |

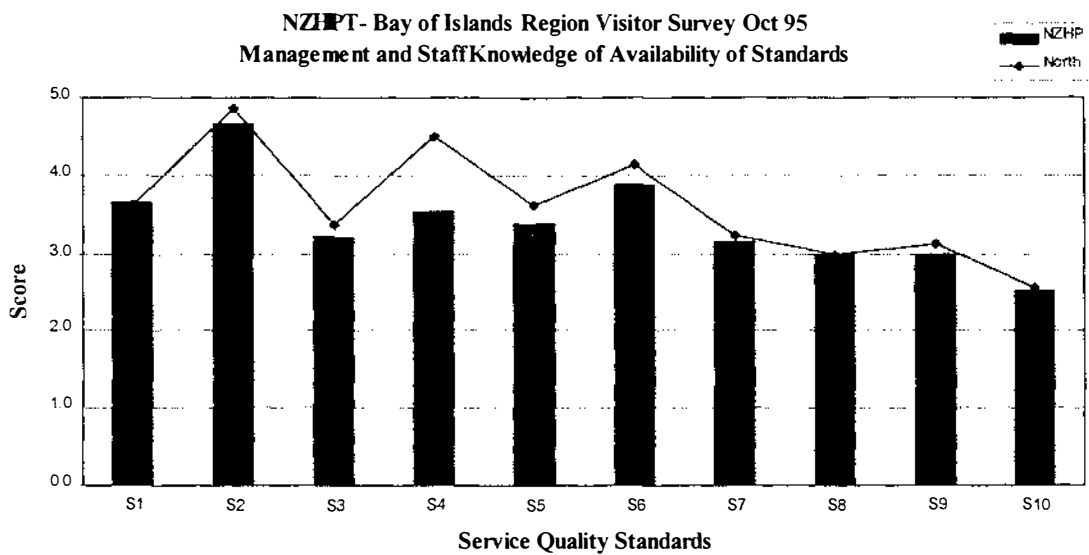
**Figure A-7. Gap Analysis of Service Quality Using the Expectation Weighting**



**Table A-8. Service Quality Standards and Procedures**

| S  | Service Quality Standards  |
|----|--|
| 1  | The appearance of the physical facilities  |
| 2  | - Conservation   |
| 3  | - Personnel  |
| 4  | - Information materials  |
| 5  | The ability to perform the job and service reliably and accurately                 |
| 6  | - Administration   |
| 7  | - Visitor Assistance   |
| 8  | The willingness of staff to help visitors and provide service to visitors          |
| 9  | The ability to convey confidence to visitors                                       |
| 10 | The ability of New Zealand Historic Places Trust to individually care for visitors |

**Figure A-8. Management and Staff Knowledge of the Availability of Service Quality Standards**



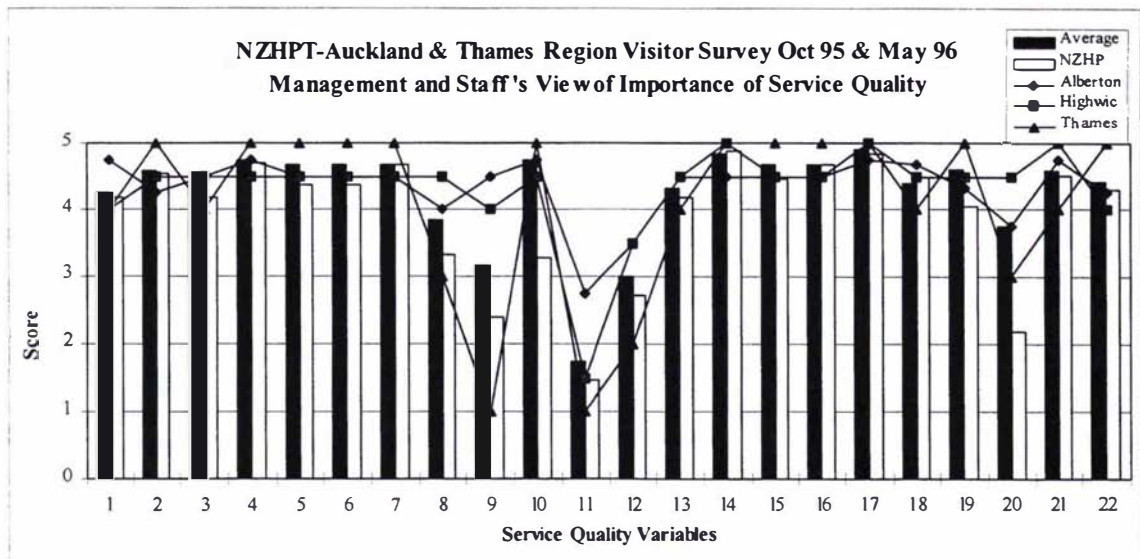
## B Regional Gap Analysis -Auckland and Thames Region

The properties surveyed in Auckland and Thames region were Alberton and Highwic in Auckland and Thames School of Mines at Thames.

**Table B-1. Auckland and Thames Region Management and Staff's View of Importance Service Quality**

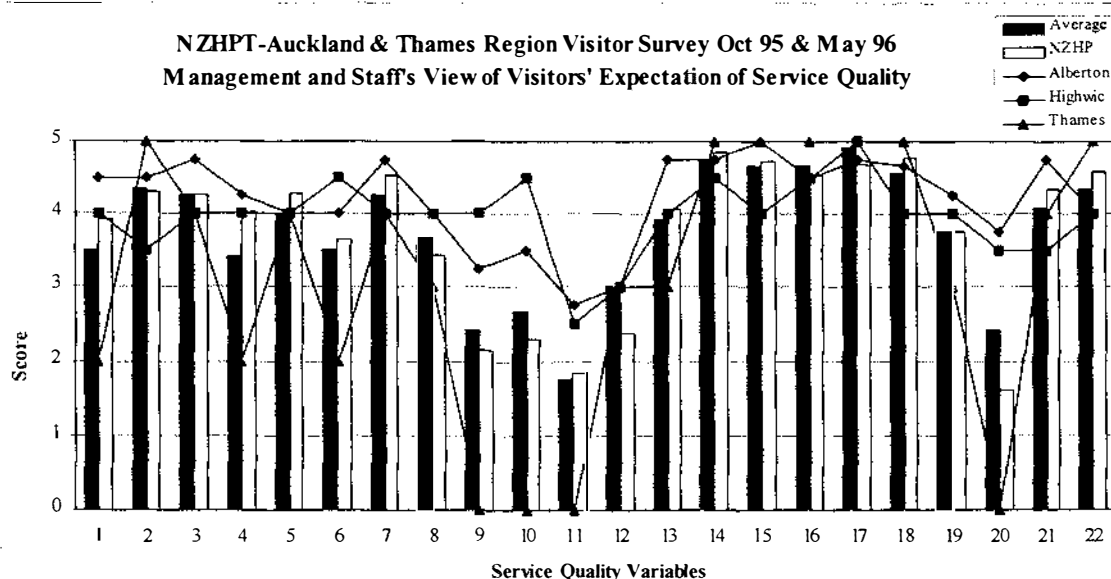
| No | Service Quality Dimensions<br>Features, Displays and Services | Management view on Importance |         |        |         |
|----|---|-------------------------------|---------|--------|---------|
|    |   | Alberton                      | Highwic | Thames | Average |
| 1  | The physical appearance of the place                          | 4.75                          | 4.00    | 4.00   | 4.25    |
| 2  | The authentic nature of the place                             | 4.25                          | 4.50    | 5.00   | 4.58    |
| 3  | The contents are interesting                                  | 4.50                          | 4.50    | 4.00   | 4.33    |
| 4  | The building and contents are well cared for                  | 4.75                          | 4.50    | 5.00   | 4.75    |
| 5  | The grounds/gardens are well cared for                        | 4.50                          | 4.50    | 5.00   | 4.67    |
| 6  | The information provided about the place is informative       | 4.50                          | 4.50    | 5.00   | 4.67    |
| 7  | Historical atmosphere is captured                             | 4.50                          | 4.50    | 5.00   | 4.67    |
| 8  | Finding your way around in the building is easy               | 4.00                          | 4.50    | 3.00   | 3.83    |
| 9  | Toilets are provided  | 4.50                          | 4.00    | 1.00   | 3.17    |
| 10 | Toilets are clean   | 4.75                          | 4.50    | 5.00   | 4.75    |
| 11 | Refreshments are provided                                     | 2.75                          | 1.50    | 1.00   | 1.75    |
| 12 | Seating is provided   | 3.50                          | 3.50    | 2.00   | 3.00    |
| 13 | Staff are presentable   | 4.50                          | 4.50    | 4.00   | 4.33    |
| 14 | Staff are willing to help visitors                            | 4.50                          | 5.00    | 5.00   | 4.83    |
| 15 | Staff inspire confidence in visitors                          | 4.50                          | 4.50    | 5.00   | 4.67    |
| 16 | The information provided by staff is consistent               | 4.50                          | 4.50    | 5.00   | 4.67    |
| 17 | Staff are friendly, courteous and polite to visitors          | 4.75                          | 5.00    | 5.00   | 4.92    |
| 18 | Staff have the knowledge to respond to visitors' requests     | 4.67                          | 4.50    | 4.00   | 4.39    |
| 19 | Opening hours are convenient                                  | 4.33                          | 4.50    | 5.00   | 4.61    |
| 20 | Wheelchair access is available                                | 3.75                          | 4.50    | 3.00   | 3.75    |
| 21 | Adequate road signs make it easy to find the place            | 4.75                          | 5.00    | 4.00   | 4.58    |
| 22 | There is adequate car parking for visitors                    | 4.25                          | 4.00    | 5.00   | 4.42    |

**Figure B-1. Gap Analysis of Management and Staff's View of Importance of Service Quality**



**Table B-2. Auckland and Thames Region Management and Staff's View of Visitors' Expectation of Service Quality**

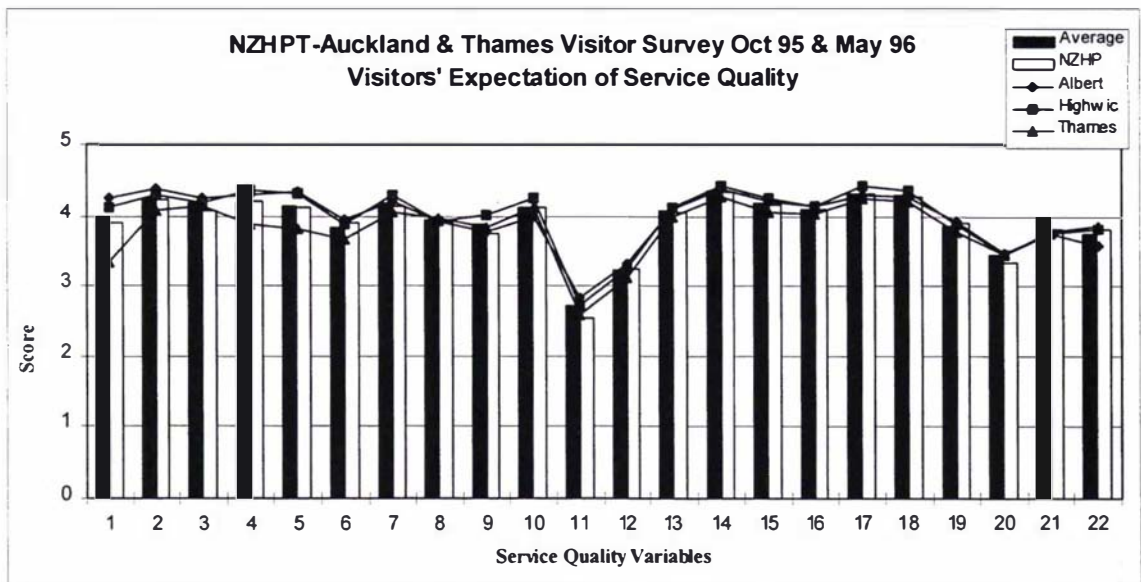
| No | Service Quality Dimensions                                | Management view of Visitors' Expectation |         |        |         |
|----|---|--|---------|--------|---------|
|    |   | Alberton                                 | Highwic | Thames | Average |
| 1  | The physical appearance of the place                      | 4.50                                     | 4.00    | 2.00   | 3.50    |
| 2  | The authentic nature of the place                         | 4.50                                     | 3.50    | 5.00   | 4.33    |
| 3  | The contents are interesting                              | 4.75                                     | 4.00    | 4.00   | 4.25    |
| 4  | The building and contents are well cared for              | 4.25                                     | 4.00    | 2.00   | 3.42    |
| 5  | The grounds/gardens are well cared for                    | 4.00                                     | 4.00    | 4.00   | 4.00    |
| 6  | The information provided about the place is informative   | 4.00                                     | 4.50    | 2.00   | 3.50    |
| 7  | Historical atmosphere is captured                         | 4.75                                     | 4.00    | 4.00   | 4.25    |
| 8  | Finding your way around in the building is easy           | 4.00                                     | 4.00    | 3.00   | 3.67    |
| 9  | Toilets are provided                                      | 3.25                                     | 4.00    | 0.00   | 2.42    |
| 10 | Toilets are clean   | 3.50                                     | 4.50    | 0.00   | 2.67    |
| 11 | Refreshments are provided                                 | 2.75                                     | 2.50    | 0.00   | 1.75    |
| 12 | Seating is provided                                       | 3.00                                     | 3.00    | 3.00   | 3.00    |
| 13 | Staff are presentable                                     | 4.75                                     | 4.00    | 3.00   | 3.92    |
| 14 | Staff are willing to help visitors                        | 4.75                                     | 4.50    | 5.00   | 4.75    |
| 15 | Staff inspire confidence in visitors                      | 5.00                                     | 4.00    | 5.00   | 4.67    |
| 16 | The information provided by staff is consistent           | 4.50                                     | 4.50    | 5.00   | 4.67    |
| 17 | Staff are friendly, courteous and polite to visitors      | 4.75                                     | 5.00    | 5.00   | 4.92    |
| 18 | Staff have the knowledge to respond to visitors' requests | 4.67                                     | 4.00    | 5.00   | 4.56    |
| 19 | Opening hours are convenient                              | 4.25                                     | 4.00    | 3.00   | 3.75    |
| 20 | Wheelchair access is available                            | 3.75                                     | 3.50    | 0.00   | 2.42    |
| 21 | Adequate road signs make it easy to find the place        | 4.75                                     | 3.50    | 4.00   | 4.08    |
| 22 | There is adequate car parking for visitors                | 4.00                                     | 4.00    | 5.00   | 4.33    |

**Figure B-2. Management and Staff's View of Visitors' Expectation of Service Quality**

**Table B-3. Auckland and Thames Region - Visitors' Expectation of Service Quality**

| No | Service Quality Dimensions                                | Visitors' Expectation of Service Quality |         |        |         |
|----|---|--|---------|--------|---------|
|    |   | Alberton                                 | Highwic | Thames | Average |
| 1  | The physical appearance of the place                      | 4.26                                     | 4.12    | 3.33   | 3.90    |
| 2  | The authentic nature of the place                         | 4.38                                     | 4.31    | 4.08   | 4.26    |
| 3  | The contents are interesting                              | 4.25                                     | 4.18    | 4.14   | 4.19    |
| 4  | The building and contents are well cared for              | 4.30                                     | 4.36    | 3.88   | 4.18    |
| 5  | The grounds/gardens are well cared for                    | 4.34                                     | 4.31    | 3.80   | 4.15    |
| 6  | The information provided about the place is informative   | 3.94                                     | 3.88    | 3.67   | 3.83    |
| 7  | Historical atmosphere is captured                         | 4.20                                     | 4.30    | 4.05   | 4.19    |
| 8  | Finding your way around in the building is easy           | 3.93                                     | 3.93    | 3.96   | 3.94    |
| 9  | Toilets are provided                                      | 3.78                                     | 4.02    | 3.84   | 3.88    |
| 10 | Toilets are clean   | 4.00                                     | 4.26    | 4.13   | 4.13    |
| 11 | Refreshments are provided                                 | 2.84                                     | 2.71    | 2.59   | 2.71    |
| 12 | Seating is provided                                       | 3.30                                     | 3.25    | 3.11   | 3.22    |
| 13 | Staff are presentable                                     | 4.10                                     | 4.12    | 4.00   | 4.07    |
| 14 | Staff are willing to help visitors                        | 4.39                                     | 4.44    | 4.28   | 4.37    |
| 15 | Staff inspire confidence in visitors                      | 4.22                                     | 4.26    | 4.07   | 4.18    |
| 16 | The information provided by staff is consistent           | 4.15                                     | 4.14    | 4.03   | 4.11    |
| 17 | Staff are friendly, courteous and polite to visitors      | 4.29                                     | 4.44    | 4.25   | 4.33    |
| 18 | Staff have the knowledge to respond to visitors' requests | 4.28                                     | 4.37    | 4.22   | 4.29    |
| 19 | Opening hours are convenient                              | 3.93                                     | 3.88    | 3.77   | 3.86    |
| 20 | Wheelchair access is available                            | 3.46                                     | 3.44    | 3.43   | 3.44    |
| 21 | Adequate road signs make it easy to find the place        | 3.75                                     | 3.75    | 3.78   | 3.76    |
| 22 | There is adequate car parking for visitors                | 3.57                                     | 3.82    | 3.86   | 3.75    |

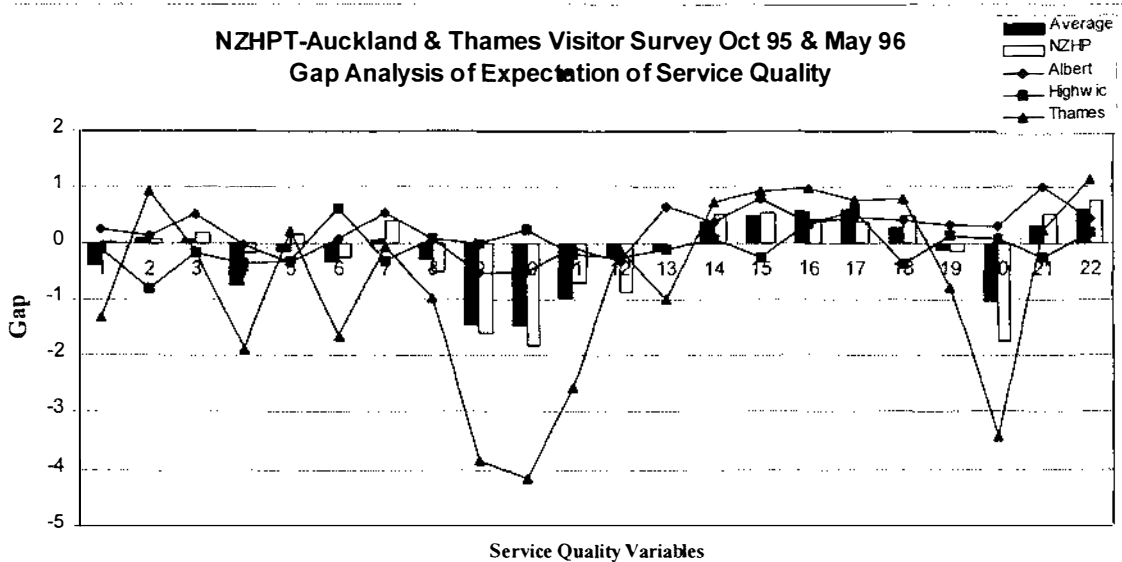
**Figure B-3. Visitors' Expectation of Service Quality**



**Table B-4. Auckland and Thames Region - Gap Analysis of Expectation of Service Quality**

| No | Service Quality Dimensions                                | Expectation Gap (Management - Visitors Exp) |         |        |         |
|----|---|---|---------|--------|---------|
|    |   | Albert                                      | Highwic | Thames | Average |
| 1  | The physical appearance of the place                      | 0.24  | -0.12   | -1.33  | -0.40   |
| 2  | The authentic nature of the place                         | 0.12  | -0.81   | 0.92   | 0.08    |
| 3  | The contents are interesting                              | 0.50  | -0.18   | -0.14  | 0.06    |
| 4  | The building and contents are well cared for              | 0.00  | -0.36   | -1.88  | -0.76   |
| 5  | The grounds/gardens are well cared for                    | -0.3  | -0.31   | 0.20   | -0.15   |
| 6  | The information provided about the place is informative   | 0.06  | 0.62    | -1.67  | -0.33   |
| 7  | Historical atmosphere is captured                         | 0.55  | -0.30   | -0.05  | 0.06    |
| 8  | Finding your way around in the building is easy           | 0.07  | 0.07    | -0.96  | -0.28   |
| 9  | Toilets are provided                                      | -0.50                                       | -0.02   | -3.84  | -1.46   |
| 10 | Toilets are clean   | -0.50                                       | 0.24    | -4.13  | -1.46   |
| 11 | Refreshments are provided                                 | -0.10                                       | -0.21   | -2.59  | -0.96   |
| 12 | Seating is provided                                       | -0.30                                       | -0.25   | -0.11  | -0.22   |
| 13 | Staff are presentable                                     | 0.65  | -0.12   | -1.00  | -0.15   |
| 14 | Staff are willing to help visitors                        | 0.36  | 0.06    | 0.72   | 0.38    |
| 15 | Staff inspire confidence in visitors                      | 0.78  | -0.26   | 0.93   | 0.49    |
| 16 | The information provided by staff is consistent           | 0.35  | 0.36    | 0.97   | 0.56    |
| 17 | Staff are friendly, courteous and polite to visitors      | 0.46  | 0.56    | 0.75   | 0.59    |
| 18 | Staff have the knowledge to respond to visitors' requests | 0.39  | -0.37   | 0.78   | 0.27    |
| 19 | Opening hours are convenient                              | 0.32  | 0.12    | -0.77  | -0.11   |
| 20 | Wheelchair access is available                            | 0.29  | 0.06    | -3.43  | -1.03   |
| 21 | Adequate road signs make it easy to find the place        | 1.00  | -0.25   | 0.22   | 0.32    |
| 22 | There is adequate car parking for visitors                | 0.43  | 0.18    | 1.14   | 0.58    |

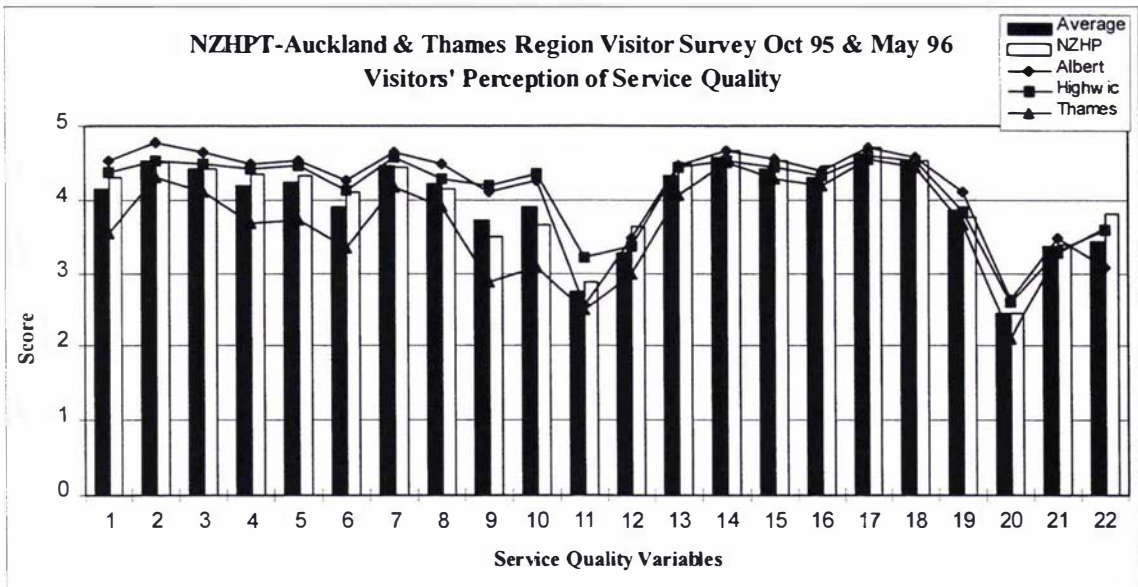
**Figure B-4. Gap Analysis of Expectation of Service Quality**



**Table B-5. Auckland and Thames Region - Visitors' Perception of Service Quality**

| No | Service Quality Dimensions<br>Features, Displays and Services | Visitors' Perception of Service Quality |         |        |         |
|----|---|---|---------|--------|---------|
|    |   | Albert                                  | Highwic | Thames | Average |
| 1  | The physical appearance of the place                          | 4.52                                    | 4.37    | 3.55   | 4.15    |
| 2  | The authentic nature of the place                             | 4.77                                    | 4.53    | 4.32   | 4.54    |
| 3  | The contents are interesting                                  | 4.64                                    | 4.48    | 4.12   | 4.41    |
| 4  | The building and contents are well cared for                  | 4.48                                    | 4.41    | 3.69   | 4.19    |
| 5  | The grounds/gardens are well cared for                        | 4.53                                    | 4.46    | 3.73   | 4.24    |
| 6  | The information provided about the place is informative       | 4.25                                    | 4.13    | 3.36   | 3.92    |
| 7  | Historical atmosphere is captured                             | 4.65                                    | 4.58    | 4.17   | 4.47    |
| 8  | Finding your way around in the building is easy               | 4.48                                    | 4.29    | 3.90   | 4.22    |
| 9  | Toilets are provided  | 4.12                                    | 4.20    | 2.88   | 3.73    |
| 10 | Toilets are clean   | 4.27                                    | 4.35    | 3.08   | 3.90    |
| 11 | Refreshments are provided                                     | 2.55                                    | 3.22    | 2.47   | 2.75    |
| 12 | Seating is provided   | 3.49                                    | 3.36    | 2.99   | 3.28    |
| 13 | Staff are presentable   | 4.47                                    | 4.45    | 4.07   | 4.33    |
| 14 | Staff are willing to help visitors                            | 4.67                                    | 4.53    | 4.51   | 4.57    |
| 15 | Staff inspire confidence in visitors                          | 4.55                                    | 4.44    | 4.28   | 4.42    |
| 16 | The information provided by staff is consistent               | 4.40                                    | 4.33    | 4.20   | 4.31    |
| 17 | Staff are friendly, courteous and polite to visitors          | 4.72                                    | 4.61    | 4.56   | 4.63    |
| 18 | Staff have the knowledge to respond to visitors' requests     | 4.58                                    | 4.53    | 4.45   | 4.52    |
| 19 | Opening hours are convenient                                  | 4.11                                    | 3.84    | 3.67   | 3.87    |
| 20 | Wheelchair access is available                                | 2.63                                    | 2.58    | 2.10   | 2.44    |
| 21 | Adequate road signs make it easy to find the place            | 3.48                                    | 3.31    | 3.29   | 3.36    |
| 22 | There is adequate car parking for visitors                    | 3.09                                    | 3.60    | 3.61   | 3.43    |

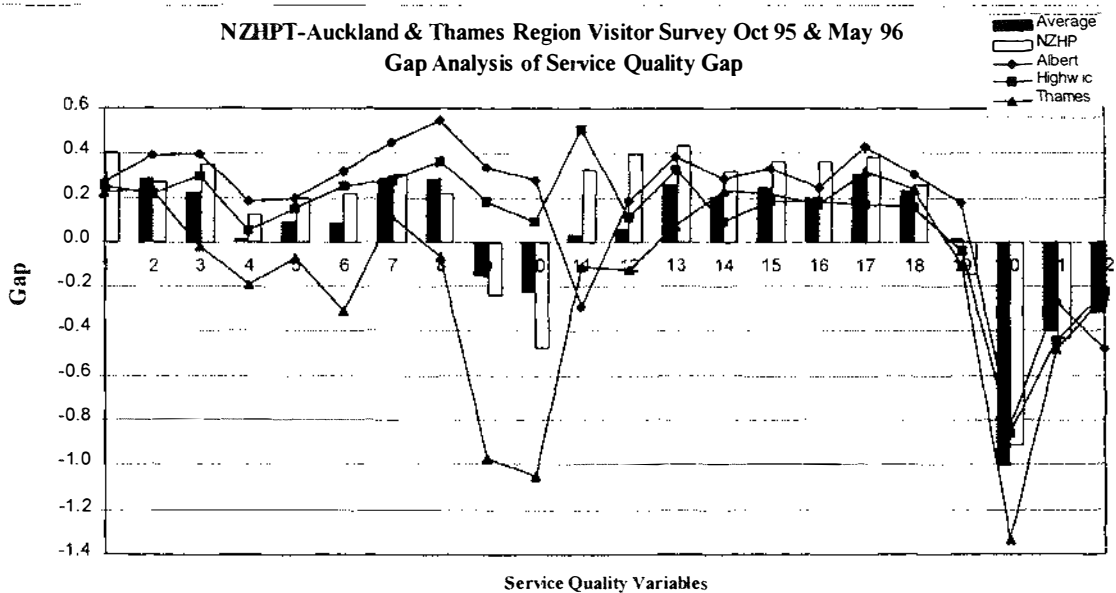
**Figure B-5. Auckland and Thames Region - Visitors' Perception of Service Quality**



**Table B-6. Auckland and Thames Region Service Quality Gap**

| No | Service Quality Dimensions                                | Service Quality Gap |         |        |         |
|----|---|---------------------|---------|--------|---------|
|    |   | Albert              | Highwic | Thames | Average |
| 1  | The physical appearance of the place                      | 0.27                | 0.25    | 0.22   | 0.25    |
| 2  | The authentic nature of the place                         | 0.39                | 0.22    | 0.24   | 0.28    |
| 3  | The contents are interesting                              | 0.40                | 0.30    | -0.02  | 0.23    |
| 4  | The building and contents are well cared for              | 0.18                | 0.05    | -0.19  | 0.01    |
| 5  | The grounds/gardens are well cared for                    | 0.20                | 0.15    | -0.08  | 0.09    |
| 6  | The information provided about the place is informative   | 0.32                | 0.25    | -0.31  | 0.09    |
| 7  | Historical atmosphere is captured                         | 0.45                | 0.28    | 0.12   | 0.28    |
| 8  | Finding your way around in the building is easy           | 0.55                | 0.36    | -0.07  | 0.28    |
| 9  | Toilets are provided                                      | 0.34                | 0.18    | -0.97  | -0.15   |
| 10 | Toilets are clean   | 0.27                | 0.09    | -1.05  | -0.23   |
| 11 | Refreshments are provided                                 | -0.29               | 0.51    | -0.12  | 0.03    |
| 12 | Seating is provided                                       | 0.18                | 0.11    | -0.13  | 0.06    |
| 13 | Staff are presentable                                     | 0.38                | 0.33    | 0.07   | 0.26    |
| 14 | Staff are willing to help visitors                        | 0.28                | 0.09    | 0.23   | 0.20    |
| 15 | Staff inspire confidence in visitors                      | 0.33                | 0.19    | 0.22   | 0.24    |
| 16 | The information provided by staff is consistent           | 0.25                | 0.19    | 0.17   | 0.20    |
| 17 | Staff are friendly, courteous and polite to visitors      | 0.43                | 0.17    | 0.31   | 0.30    |
| 18 | Staff have the knowledge to respond to visitors' requests | 0.31                | 0.16    | 0.23   | 0.23    |
| 19 | Opening hours are convenient                              | 0.18                | -0.04   | -0.11  | 0.01    |
| 20 | Wheelchair access is available                            | -0.82               | -0.86   | -1.34  | -1.01   |
| 21 | Adequate road signs make it easy to find the place        | -0.27               | -0.44   | -0.48  | -0.40   |
| 22 | There is adequate car parking for visitors                | -0.48               | -0.23   | -0.25  | -0.32   |

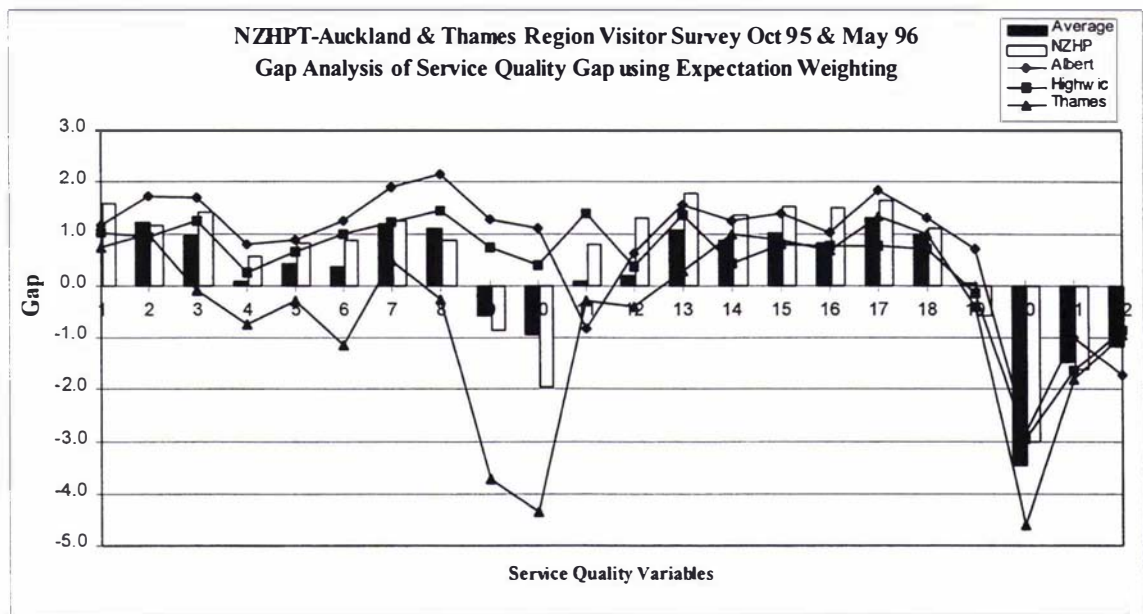
**Figure B-6. Gap Analysis of Service Quality**



**Table B-7. Auckland and Thames Region Gap Analysis of Service Quality Using Expectation Score**

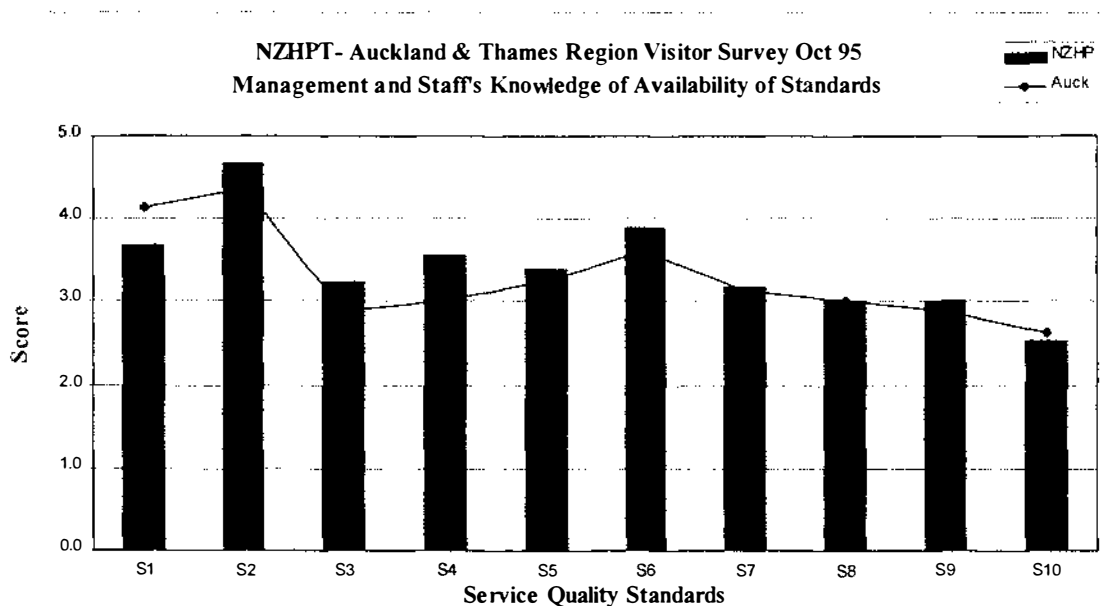
| No | Service Quality Dimensions                                | Service Quality Gap Expectation Weighting |         |        |
|----|---|---|---------|--------|
|    |   | Albert                                    | Highwic | Thames |
| 1  | The physical appearance of the place                      | 1.14                                      | 1.02    | 0.74   |
| 2  | The authentic nature of the place                         | 1.71                                      | 0.94    | 0.98   |
| 3  | The contents are interesting                              | 1.68                                      | 1.25    | -0.08  |
| 4  | The building and contents are well cared for              | 0.79                                      | 0.24    | -0.76  |
| 5  | The grounds/gardens are well cared for                    | 0.86                                      | 0.64    | -0.29  |
| 6  | The information provided about the place is informative   | 1.25                                      | 0.98    | -1.14  |
| 7  | Historical atmosphere is captured                         | 1.88                                      | 1.20    | 0.49   |
| 8  | Finding your way around in the building is easy           | 2.15                                      | 1.43    | -0.27  |
| 9  | Toilets are provided                                      | 1.27                                      | 0.74    | -3.72  |
| 10 | Toilets are clean   | 1.10                                      | 0.40    | -4.33  |
| 11 | Refreshments are provided                                 | -0.83                                     | 1.38    | -0.30  |
| 12 | Seating is provided                                       | 0.60                                      | 0.37    | -0.39  |
| 13 | Staff are presentable                                     | 1.55                                      | 1.34    | 0.28   |
| 14 | Staff are willing to help visitors                        | 1.24                                      | 0.42    | 0.99   |
| 15 | Staff inspire confidence in visitors                      | 1.38                                      | 0.80    | 0.88   |
| 16 | The information provided by staff is consistent           | 1.02                                      | 0.77    | 0.69   |
| 17 | Staff are friendly, courteous and polite to visitors      | 1.83                                      | 0.75    | 1.33   |
| 18 | Staff have the knowledge to respond to visitors' requests | 1.31                                      | 0.70    | 0.99   |
| 19 | Opening hours are convenient                              | 0.70                                      | -0.15   | -0.40  |
| 20 | Wheelchair access is available                            | -2.85                                     | -2.96   | -4.59  |
| 21 | Adequate road signs make it easy to find the place        | -1.00                                     | -1.65   | -1.83  |
| 22 | There is adequate car parking for visitors                | -1.73                                     | -0.86   | -0.96  |

**Figure B-7. Gap Analysis of Service Quality Using the Expectation Score**



**Table B-8. Auckland and Thames Region Service Quality Standards and Procedures**

| S  | Service Quality Standards  |
|----|--|
| 1  | The appearance of the physical facilities  |
| 2  | - Conservation   |
| 3  | - Personnel  |
| 4  | - Information materials  |
| 5  | The ability to perform the job and service reliably and accurately                 |
| 6  | - Administration   |
| 7  | - Visitor Assistance   |
| 8  | The willingness of staff to help visitors and provide service to visitors          |
| 9  | The ability to convey confidence to visitors                                       |
| 10 | The ability of New Zealand Historic Places Trust to individually care for visitors |

**Figure B-8. Management and Staff's Knowledge of the Availability of Service Quality Standards**

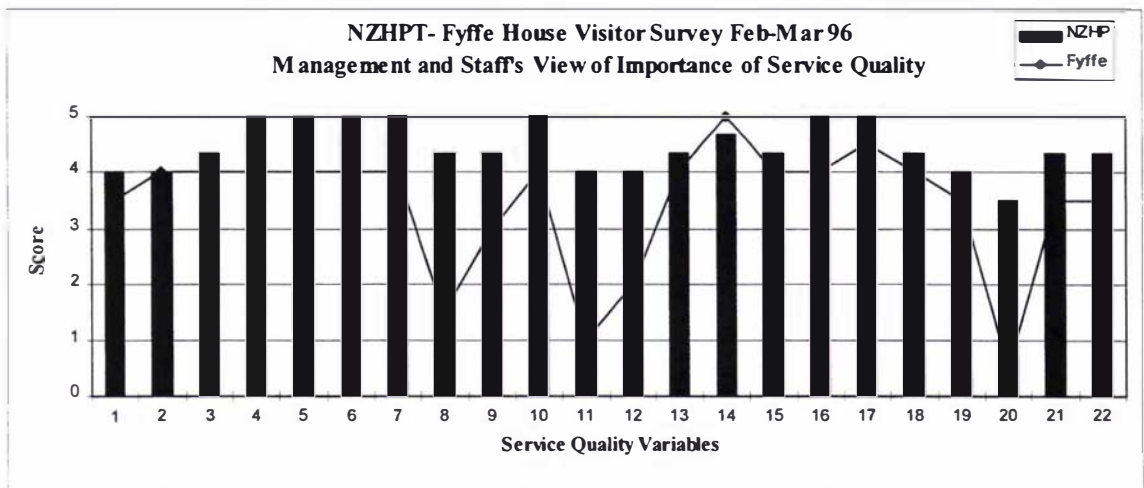
## C Regional Gap Analysis - Fyffe House

Fyffe House at Kaikoura was the only property selected in the South Island.

**Table C-1. Fyffe House Management and Staff's View of the Importance of Service Quality**

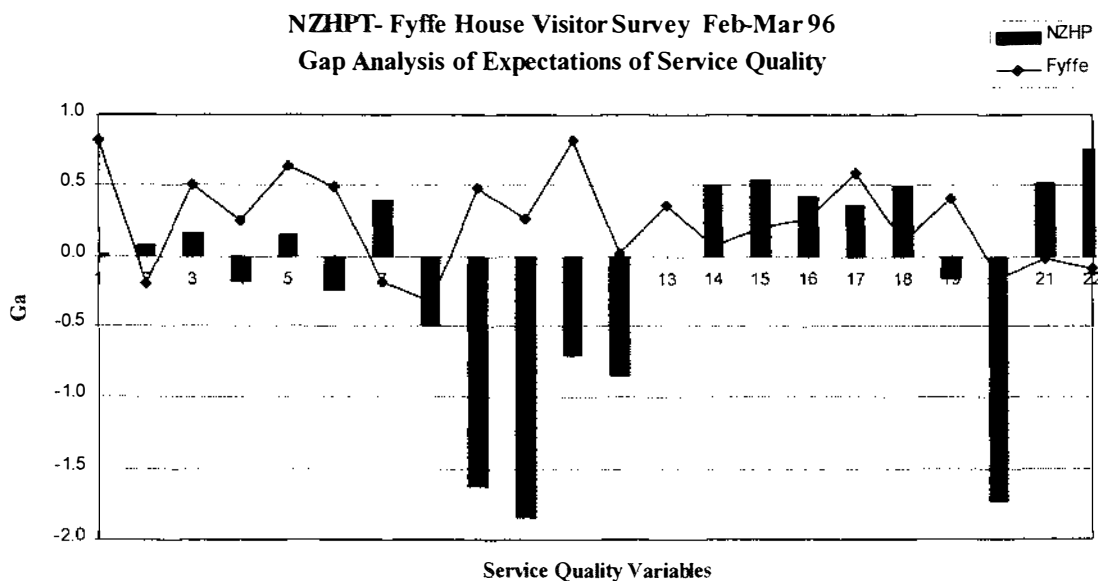
|    | Service Quality Dimensions                                | Management view on Importance |
|----|---|-------------------------------|
| No | Features, Displays and Services                           | Importance                    |
| 1  | The physical appearance of the place                      | 3.50                          |
| 2  | The authentic nature of the place                         | 4.00                          |
| 3  | The contents are interesting                              | 4.00                          |
| 4  | The building and contents are well cared for              | 4.00                          |
| 5  | The grounds/gardens are well cared for                    | 4.00                          |
| 6  | The information provided about the place is informative   | 4.00                          |
| 7  | Historical atmosphere is captured                         | 4.00                          |
| 8  | Finding your way around in the building is easy           | 1.50                          |
| 9  | Toilets are provided                                      | 3.00                          |
| 10 | Toilets are clean   | 4.00                          |
| 11 | Refreshments are provided                                 | 1.00                          |
| 12 | Seating is provided                                       | 2.00                          |
| 13 | Staff are presentable                                     | 4.00                          |
| 14 | Staff are willing to help visitors                        | 5.00                          |
| 15 | Staff inspire confidence in visitors                      | 4.00                          |
| 16 | The information provided by staff is consistent           | 4.00                          |
| 17 | Staff are friendly, courteous and polite to visitors      | 4.50                          |
| 18 | Staff have the knowledge to respond to visitors' requests | 4.00                          |
| 19 | Opening hours are convenient                              | 3.50                          |
| 20 | Wheelchair access is available                            | 0.50                          |
| 21 | Adequate road signs make it easy to find the place        | 3.50                          |
| 22 | There is adequate car parking for visitors                | 3.50                          |

**Figure C-1. Management and Staff's View of the Importance of Service Quality**



**Table C-2. Fyffe House Gap Analysis of Expectation of Service Quality**

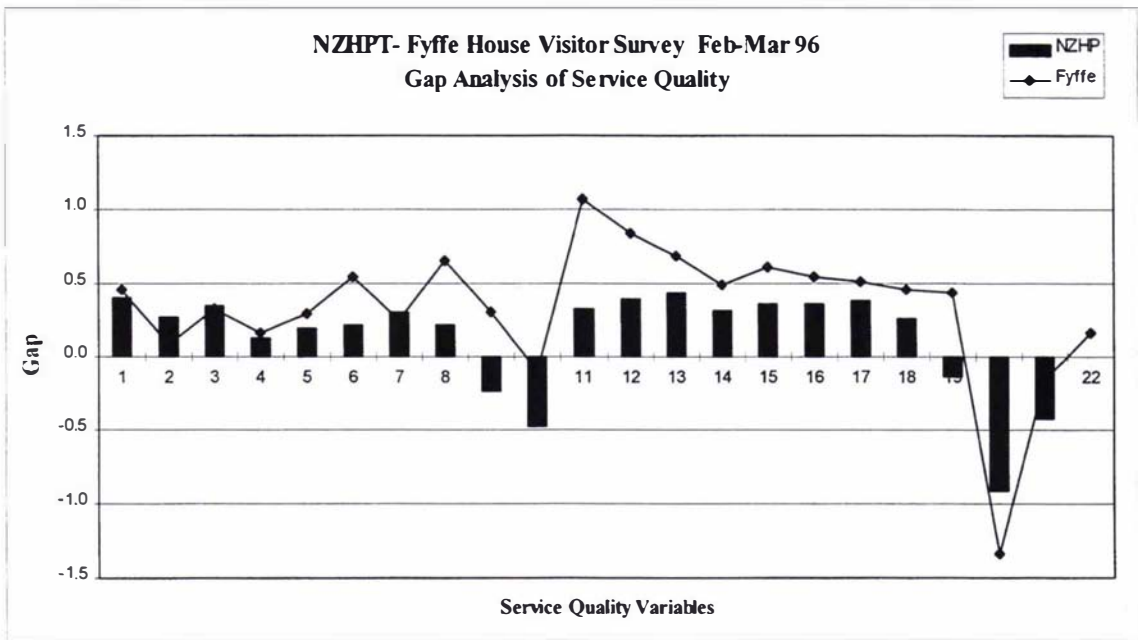
| No | Service Quality Dimensions<br>Features, Displays and Services | Expectation Gap |         |       |
|----|---|-----------------|---------|-------|
|    |   | Mgt             | Visitor | Gap   |
| 1  | The physical appearance of the place                          | 4.50            | 3.68    | 0.82  |
| 2  | The authentic nature of the place                             | 4.00            | 4.20    | -0.20 |
| 3  | The contents are interesting                                  | 4.50            | 4.00    | 0.50  |
| 4  | The building and contents are well cared for                  | 4.50            | 4.25    | 0.25  |
| 5  | The grounds/gardens are well cared for                        | 4.50            | 3.87    | 0.63  |
| 6  | The information provided about the place is informative       | 4.50            | 4.01    | 0.49  |
| 7  | Historical atmosphere is captured                             | 4.00            | 4.19    | -0.19 |
| 8  | Finding your way around in the building is easy               | 3.50            | 3.83    | -0.33 |
| 9  | Toilets are provided  | 4.00            | 3.52    | 0.48  |
| 10 | Toilets are clean   | 4.50            | 4.23    | 0.27  |
| 11 | Refreshments are provided                                     | 3.00            | 2.18    | 0.82  |
| 12 | Seating is provided   | 3.00            | 2.98    | 0.02  |
| 13 | Staff are presentable   | 4.50            | 4.14    | 0.36  |
| 14 | Staff are willing to help visitors                            | 4.50            | 4.43    | 0.07  |
| 15 | Staff inspire confidence in visitors                          | 4.50            | 4.30    | 0.20  |
| 16 | The information provided by staff is consistent               | 4.50            | 4.23    | 0.27  |
| 17 | Staff are friendly, courteous and polite to visitors          | 5.00            | 4.41    | 0.59  |
| 18 | Staff have the knowledge to respond to visitors' requests     | 4.50            | 4.40    | 0.10  |
| 19 | Opening hours are convenient                                  | 4.50            | 4.09    | 0.41  |
| 20 | Wheelchair access is available                                | 3.00            | 3.16    | -0.16 |
| 21 | Adequate road signs make it easy to find the place            | 4.00            | 4.02    | -0.02 |
| 22 | There is adequate car parking for visitors                    | 4.00            | 4.09    | -0.09 |

**Figure C-2. Gap Analysis of the Expectation of Service Quality**

**Table C-3. Fyffe House Visitors' Expectations and Perception of Service Quality**

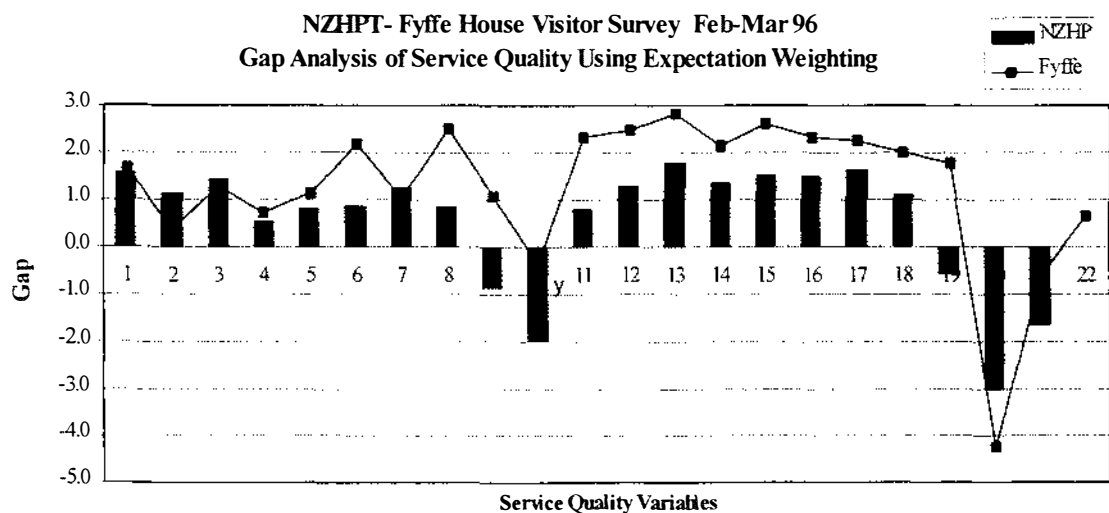
| No | Service Quality Dimensions                                | Visitor     |            |        |
|----|---|-------------|------------|--------|
|    |   | Expectation | Perception | SQ Gap |
| 1  | The physical appearance of the place                      | 3.68        | 4.13       | 0.45   |
| 2  | The authentic nature of the place                         | 4.20        | 4.29       | 0.09   |
| 3  | The contents are interesting                              | 4.00        | 4.32       | 0.32   |
| 4  | The building and contents are well cared for              | 4.25        | 4.41       | 0.16   |
| 5  | The grounds/gardens are well cared for                    | 3.87        | 4.16       | 0.30   |
| 6  | The information provided about the place is informative   | 4.01        | 4.55       | 0.54   |
| 7  | Historical atmosphere is captured                         | 4.19        | 4.44       | 0.25   |
| 8  | Finding your way around in the building is easy           | 3.83        | 4.48       | 0.66   |
| 9  | Toilets are provided                                      | 3.52        | 3.83       | 0.31   |
| 10 | Toilets are clean   | 4.23        | 4.14       | -0.10  |
| 11 | Refreshments are provided                                 | 2.18        | 3.25       | 1.07   |
| 12 | Seating is provided                                       | 2.98        | 3.81       | 0.83   |
| 13 | Staff are presentable                                     | 4.14        | 4.82       | 0.68   |
| 14 | Staff are willing to help visitors                        | 4.43        | 4.92       | 0.49   |
| 15 | Staff inspire confidence in visitors                      | 4.30        | 4.91       | 0.61   |
| 16 | The information provided by staff is consistent           | 4.23        | 4.78       | 0.55   |
| 17 | Staff are friendly, courteous and polite to visitors      | 4.41        | 4.92       | 0.51   |
| 18 | Staff have the knowledge to respond to visitors' requests | 4.40        | 4.85       | 0.45   |
| 19 | Opening hours are convenient                              | 4.09        | 4.53       | 0.43   |
| 20 | Wheelchair access is available                            | 3.16        | 1.82       | -1.34  |
| 21 | Adequate road signs make it easy to find the place        | 4.02        | 3.86       | -0.16  |
| 22 | There is adequate car parking for visitors                | 4.09        | 4.25       | 0.16   |

**Figure C-3. Gap Analysis of Service Quality**



**Table C-4. Fyffe House Gap Analysis of Service Quality Using the Expectation Weighting**

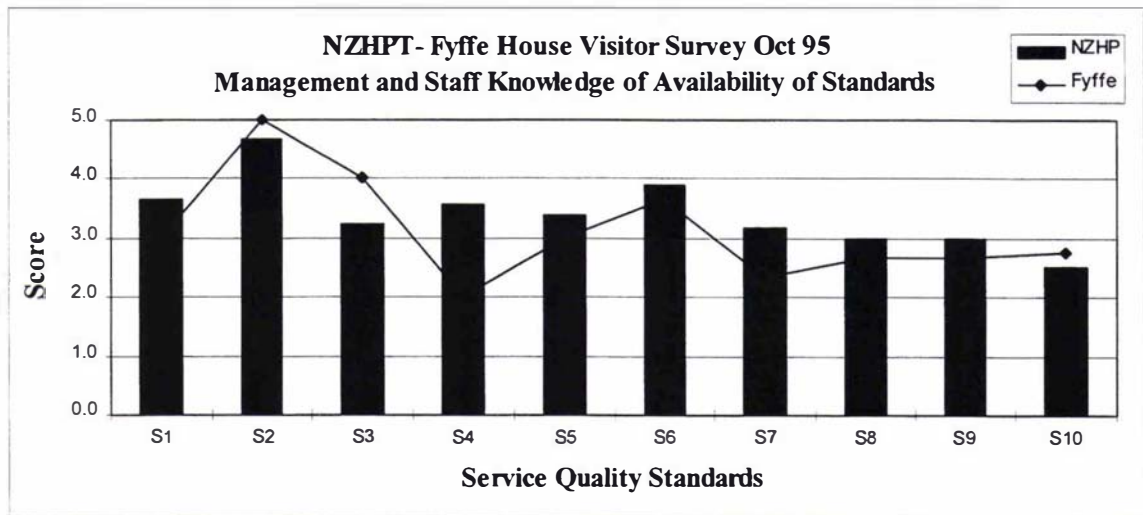
| No | Service Quality Dimensions<br>Features, Displays and Services | Weighted Service Quality Gap |                 |               |
|----|---|------------------------------|-----------------|---------------|
|    |   | SQ Gap                       | Weighted SQ Gap | NZHPT WSQ Gap |
| 1  | The physical appearance of the place                          | 0.45                         | 1.7             | 1.6           |
| 2  | The authentic nature of the place                             | 0.09                         | 0.4             | 1.0           |
| 3  | The contents are interesting                                  | 0.32                         | 1.3             | 1.4           |
| 4  | The building and contents are well cared for                  | 0.16                         | 0.7             | 0.6           |
| 5  | The grounds/gardens are well cared for                        | 0.30                         | 1.1             | 0.9           |
| 6  | The information provided about the place is informative       | 0.54                         | 2.2             | 1.2           |
| 7  | Historical atmosphere is captured                             | 0.25                         | 1.0             | 1.2           |
| 8  | Finding your way around in the building is easy               | 0.66                         | 2.5             | 1.2           |
| 9  | Toilets are provided  | 0.31                         | 1.1             | -0.4          |
| 10 | Toilets are clean   | -0.10                        | -0.4            | -1.6          |
| 11 | Refreshments are provided                                     | 1.07                         | 2.3             | 1.1           |
| 12 | Seating is provided   | 0.83                         | 2.5             | 1.5           |
| 13 | Staff are presentable   | 0.68                         | 2.8             | 2.0           |
| 14 | Staff are willing to help visitors                            | 0.49                         | 2.2             | 1.5           |
| 15 | Staff inspire confidence in visitors                          | 0.61                         | 2.6             | 1.8           |
| 16 | The information provided by staff is consistent               | 0.55                         | 2.3             | 1.7           |
| 17 | Staff are friendly, courteous and polite to visitors          | 0.51                         | 2.3             | 1.8           |
| 18 | Staff have the knowledge to respond to visitors' requests     | 0.45                         | 2.0             | 1.3           |
| 19 | Opening hours are convenient                                  | 0.43                         | 1.8             | 0.0           |
| 20 | Wheelchair access is available                                | -1.34                        | -4.2            | -3.3          |
| 21 | Adequate road signs make it easy to find the place            | -0.16                        | -0.6            | -1.4          |
| 22 | There is adequate car parking for visitors                    | 0.16                         | 0.7             | 0.1           |

**Figure C-4. Gap Analysis of Service Quality Using Expectation Weighting**

**Table C-5. Fyffe House Management and Staff's Knowledge of the Availability of Service Quality Standards and Procedures**

| S  | Service Quality Standards and Procedures   | Knowledge of the Availability of Service Quality Standards and Procedures |             |                   |                   |                    |
|----|--|---|-------------|-------------------|-------------------|--------------------|
|    |  | Don't Know<br>1   | No Std<br>2 | Have Inf.Std<br>3 | Have For.Std<br>4 | Have Writ.Std<br>5 |
| 1  | The appearance of the physical facilities  | 0%  | 0%          | 100%              | 0%                | 0%                 |
| 2  | - Conservation   | 0%  | 0%          | 0%                | 0%                | 100%               |
| 3  | - Personnel  | 0%  | 0%          | 50%               | 0%                | 50%                |
| 4  | - Information materials  | 50%   | 0%          | 50%               | 0%                | 0%                 |
| 5  | The ability to perform the job and service reliably and accurately                 | 0%  | 0%          | 100%              | 0%                | 0%                 |
| 6  | - Administration   | 0%  | 0%          | 67%               | 0%                | 33%                |
| 7  | - Visitor Assistance   | 33%   | 0%          | 67%               | 0%                | 0%                 |
| 8  | The willingness of staff to help visitors and provide service to visitors          | 0%  | 33%         | 67%               | 0%                | 0%                 |
| 9  | The ability to convey confidence to visitors                                       | 0%  | 33%         | 67%               | 0%                | 0%                 |
| 10 | The ability of New Zealand Historic Places Trust to individually care for visitors | 25%   | 0%          | 50%               | 25%               | 0%                 |

**Figure C-5. Management and Staff Knowledge of the Availability of Service Quality Standards and Procedures**



## A Visitors' Overall Impression - The Bay of Islands Region

This section covers the results obtained from the visitors' overall impression for the two surveys carried out over two periods at the Bay of Islands region: October 95 (50 samples) and February - March 96 (100 samples). The properties surveyed were Kemp House and Pompallier and Te Waimate. The average of the two periods and the average for the region is used for interpreting the visitors' overall impression of the Trust property.

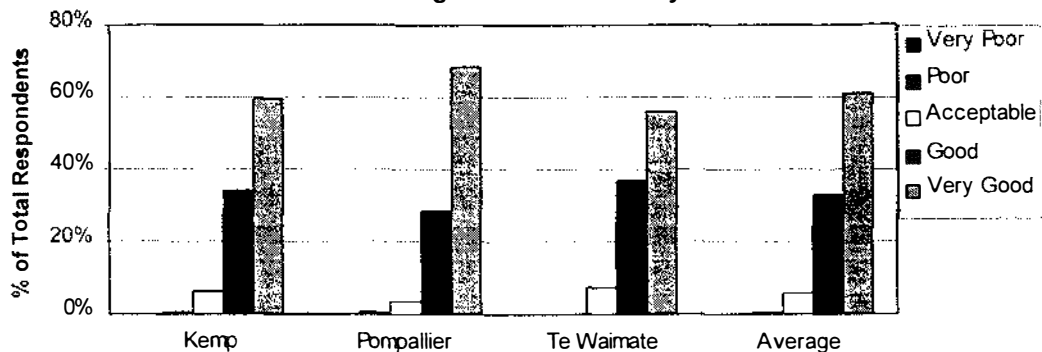
### 1. What is your overall rating of the quality of services provided by this New Zealand Historic Places Trust Property ?

The visitors to the Bay of Islands region rated the quality of services provided as "Very Good" (61%) and "Good" (33%). 6% rated the quality of service as "Acceptable" and 0.4% rated the quality of service as "Poor".

In average, 94.1% of visitors to the Bay of Islands Region Trust properties rated the services received as good to very good. The overall rating of the quality of services was very evenly spread for the three Trust properties.

| Rating     | Kemp | Pompallier | Te Waimate | Average |
|------------|------|------------|------------|---------|
| Very Poor  | 0%   | 0%         | 0%         | 0.0%    |
| Poor       | 1%   | 1%         | 0%         | 0.4%    |
| Acceptable | 6%   | 3%         | 7%         | 5.6%    |
| Good       | 34%  | 28%        | 37%        | 32.9%   |
| Very Good  | 59%  | 68%        | 56%        | 61.2%   |
|            | 100% | 100%       | 100%       | 100.0%  |

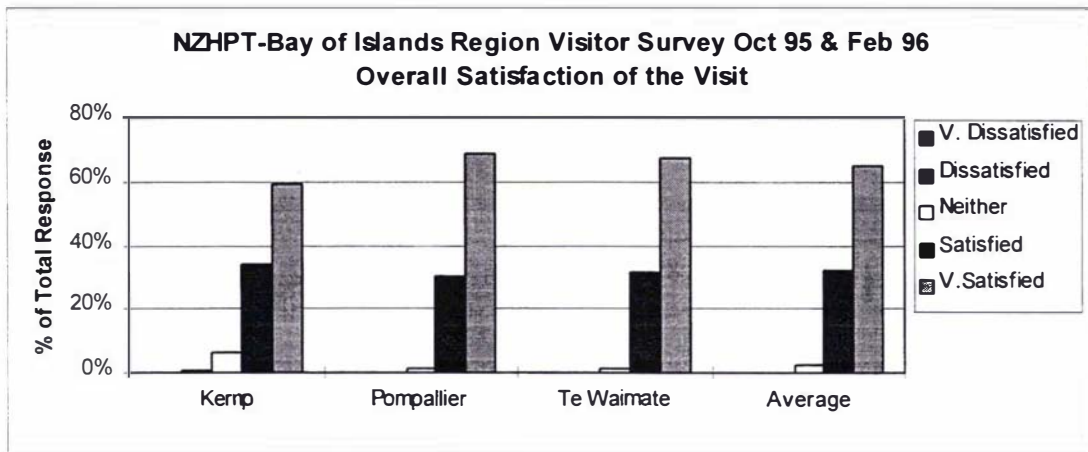
NZHPT-Bay of Islands Visitor Survey Oct 95 & Feb 96 Overall  
Rating of Service Quality



## 2. Overall, how satisfied were you with your visit today ?

The overall satisfaction ratings of the Bay of Islands region service given by the visitors were “Satisfied” (32%) and “Very Satisfied” (65%). We can conclude that 97% of visitors were satisfied with the quality of service provided during their visit and 2.8% had no opinion.

| Satisfaction Level | Kemp | Pompallier | Te Waimate | Average |
|--------------------|------|------------|------------|---------|
| V. Dissatisfied    | 0%   | 0%         | 0%         | 0.0%    |
| Dissatisfied       | 1%   | 0%         | 0%         | 0.2%    |
| Neither            | 6%   | 1%         | 1%         | 2.8%    |
| Satisfied          | 34%  | 30%        | 32%        | 31.9%   |
| Very Satisfied     | 59%  | 68%        | 67%        | 65.1%   |
|                    | 100% | 100%       | 100%       | 100.0%  |



### 3. Have you ever visited any other similar place before ?

68% of visitors stated that they had visited other similar places before.

Visitors to Pompallier had visited other similar places, for example, the Fyffe House at Kaikoura, Kemp House, Stone Store, Te Waimate, the Gables, Hurworth Cottage, Richmond Cottage, Waitangi, Pompallier, Deans Cottage, Kauri Museum, Akaroa, Olverston, Waimate, Horeke, Arrowtown, historic places in Auckland, Kerikeri, New Plymouth and Wellington, Christchurch and Banks Peninsula.

The overseas historic places visited by the visitors to Bay of Islands region Trust properties were in Australia, Tasmania, United Kingdom, Europe and Asia, Grey-Kawau Island, Canada and USA.

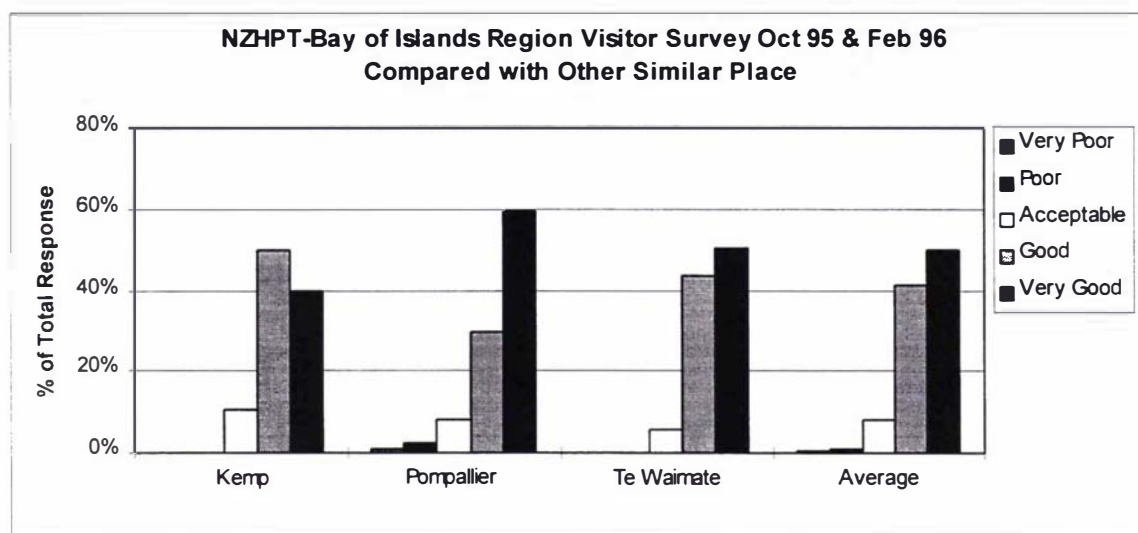
From this information, we can conclude that 68% of visitors who came to the Bay of Islands region Trust properties had previous experience of visiting historic houses.

|     | Kemp | Pompallier | Te Waimate | Average |
|-----|------|------------|------------|---------|
| Yes | 76%  | 50%        | 79%        | 68%     |
| No  | 24%  | 50%        | 21%        | 32%     |
|     | 100% | 100%       | 100%       | 100%    |

#### 4. How do you compare this place with others that you have visited ?

For those who had visited other similar places, 91% of them rated the Bay of Islands region Trust properties as "Good" to "Very Good", 8% rated it as acceptable and 1% rated it as "Very Poor" to "Poor".

| Rating     | Kemp | Pompallier | Te Waimate | Average |
|------------|------|------------|------------|---------|
| Very Poor  | 0%   | 1%         | 0%         | 0.3%    |
| Poor       | 0%   | 2%         | 0%         | 0.7%    |
| Acceptable | 11%  | 8%         | 6%         | 8.1%    |
| Good       | 50%  | 30%        | 44%        | 41.0%   |
| Very Good  | 40%  | 59%        | 50%        | 49.8%   |
|            | 100% | 100%       | 100%       | 100.0%  |



#### 5. Did you pay an admission charge ?

The majority of visitors to the Bay of Islands region Trust properties paid an admission charge (75%). Only 25% did not pay an admission charge. This group could possibly be members of the New Zealand Historic Places Trust or an overseas affiliation.

The distribution of paid and non-paid visitors was similar for all three properties. This indicates that there is potential market for the Trust to market their membership to visitors.

| Admission Charge | Kemp | Pompallier | Te Waimate | Average |
|------------------|------|------------|------------|---------|
| Yes              | 73%  | 83%        | 70%        | 75%     |
| No               | 27%  | 17%        | 30%        | 25%     |
|                  | 100% | 100%       | 100%       | 100%    |

## 6. Do you think this visit is value for money ?

For those who paid an admission charge, 72% thought that the visit was value for money. 28% said it was not value for money. Again the distribution was consistent with the Kemp House and Te Waimate of the Bay of Islands region. Pompallier had 80% of visitors who thought this visit was value for money.

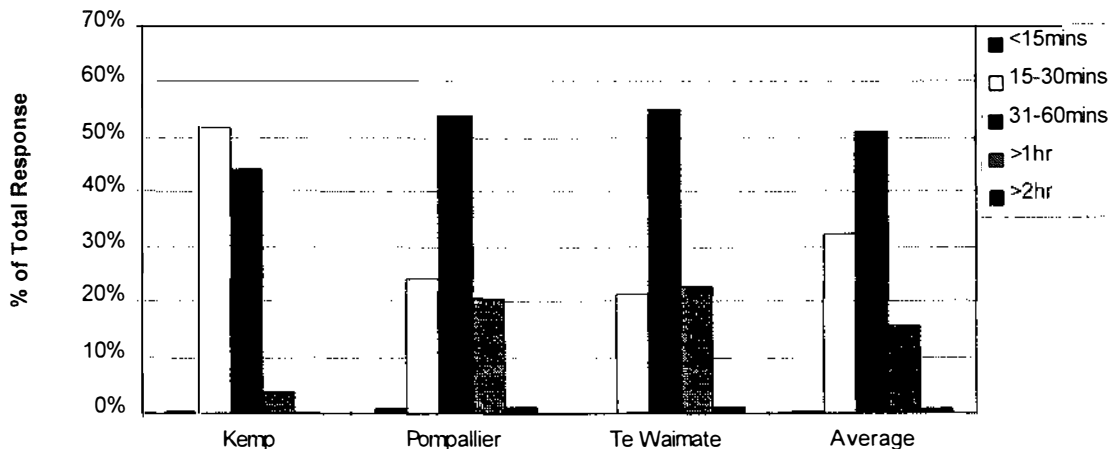
| Value for Money | Kemp | Pompallier | Te Waimate | Average |
|-----------------|------|------------|------------|---------|
| Yes             | 69%  | 80%        | 66%        | 72%     |
| No              | 31%  | 20%        | 34%        | 28%     |
|                 | 100% | 100%       | 100%       | 100%    |

## 7. How long was your visit today ?

51% of visitors spent between 31-60 minutes, 32% spent over 15-30 minutes and 16% spent over 60 minutes in Bay of Islands region. 1% spent more than 120 minutes.

| Length of Visit | Kemp | Pompallier | Te Waimate | Average |
|-----------------|------|------------|------------|---------|
| <15mins         | 1%   | 1%         | 0%         | 0%      |
| 15-30mins       | 52%  | 24%        | 21%        | 32%     |
| 31-60mins       | 44%  | 54%        | 55%        | 51%     |
| >1hr            | 4%   | 20%        | 23%        | 16%     |
| >2hr            | 0%   | 1%         | 1%         | 1%      |
|                 | 100% | 100%       | 100%       | 100%    |

NZHPT-Bay of Islands Region Visitor Survey Oct 95 & Feb 96  
Length of Time Visitor Spent



## 8. Would you stay longer if you could ?

When visitors were asked whether they would stay longer if they could, only 34% said they would, 66% said "No".

| Stay Longer | Kemp | Pompallier | Te Waimate | Average |
|-------------|------|------------|------------|---------|
| Yes         | 31%  | 33%        | 39%        | 34%     |
| No          | 70%  | 67%        | 61%        | 66%     |
|             | 100% | 100%       | 100%       | 100%    |

## 9. Would you recommend this place to your friends ?

The majority of visitors responded "Yes" that they would recommend this property to their friends. 5% said "No".

| Recommend to Friends | Kemp | Pompallier | Te Waimate | Average |
|----------------------|------|------------|------------|---------|
| Yes                  | 96%  | 96%        | 92%        | 95%     |
| No                   | 4%   | 4%         | 8%         | 5%      |
|                      | 100% | 100%       | 100%       | 100%    |

## 10. Are you likely to visit this place again ?

52% of visitors stated that they were likely to visit this place again. The other 48% said that they were not likely to visit the property again. Most of those who said "No" were overseas visitors.

| Visit Again | Kemp | Pompallier | Te Waimate | Average |
|-------------|------|------------|------------|---------|
| Yes         | 50%  | 47%        | 59%        | 52%     |
| No          | 50%  | 53%        | 41%        | 48%     |
|             | 100% | 100%       | 100%       | 100%    |

## 11. What did you enjoy most ?

Visitors to Kemp House enjoyed the authenticity of the building, the setting, the garden, overall presentation, collection of furniture and accessories, the artefacts, the wall coverings through the ages, the information and history of the house and people in the 1820s. In addition, they also liked the personal touch of *“lively feel of rooms and flowers”*, *“the feeling that the house is lived in, fresh flowers, silver china and freshly laundered linen give it a personal touch, hard to capture”*.

Visitors to Pompallier enjoyed the architecture, garden, atmosphere and history of building; authentic displays, the working aspects of museum - using original tools and techniques, bookbinding, tanning, old printing press; the New Zealand history, information of printing and book making process and talking to curator and staff.

Visitors to the Te Waimate Mission House enjoyed the authenticity of the building, the architecture, the displays, authentic atmosphere and the presentation of the historical atmosphere, peaceful setting and the garden, the written and photographic information provided about the house, the willingness and helpfulness of staff to divulge historical information.

The personal services provided by the staff and curator which affected visitors' perception of service quality were highlighted in this survey. They enjoyed the friendly staff, information given by the curator, guided tour and the helpfulness of the staff.

The results of the survey showed that the majority of visitors who came to visit the Bay of Islands region were interested in old houses, wanted to learn something or had an interest in New Zealand history. Therefore, the information provided and displays were some of the attractions of the Bay of Islands region.

## 12. How could your visit be made more enjoyable ?

Visitors to Kemp House expressed that the visit could be made more enjoyable if there were: guided tours at no extra cost, a guide who could give an explanation of the items in the house and enlarge on my small knowledge of the history, a tape recorded guide, the guide could be in olden day costume.

98.9% of visitors were satisfied with the service quality provided by Pompallier. Visitors expressed that the visit could be made more enjoyable if there were: leather maker at work, audio cassette to listen to as you progress through the home, labels on garden, refreshments, video on how things are done, more information on book binding and the construction of a rammed earth building, a guided tour, provision of toilets, hands-on experience and more working displays.

99% of visitors were satisfied with the service quality provided by the Te Waimate Mission House. However, there were other expectations which they put forward. Visitors expressed that the visit could be made more enjoyable if there was: better signposting, refreshments, better lighting, information of missionary and Maori history of surrounding area, small brochure and more historical photos.

## 13. Are you looking for something special to buy ?

24% of visitors stated they were looking for something special to buy. 76% of visitors said that they were not interested in buying things. The products that they were looking for included: pins, a tile of Kemp House, seeds from the lovely garden, T-shirt, diary, postcards, cross-stitch tapestry, original picture of the house (1821-22), cards, prints, needlework, and tea towels, illustration of collection of Te Waimate, guidebook.

Visitors to Pompallier House stated that they were looking for: a hand made book, a reasonably priced artefact, authentic souvenirs, barrels, leather books, paintings, nice grounds, postcards, bible made on site, photo album, cards, brochures to explain the history and parts of the building, cards, homemade books, seeds from the garden, garden plants, books, mat, Possum skin, print of Pompallier, small book.

| Something Special to Buy | Kemp | Pompallier | Te Waimate | Average |
|--------------------------|------|------------|------------|---------|
| Yes                      | 19%  | 34%        | 19%        | 24%     |
| No                       | 81%  | 66%        | 81%        | 76%     |
|                          | 100% | 100%       | 100%       | 100%    |

## B Visitors' Overall Impression - Auckland and Thames Region

This section covers the results obtained from the visitors' overall impression for the two surveys carried out over two periods at the Auckland and Thames region: October 95 (50 samples) and February - March 96 (100 samples). The properties surveyed were Alberton and Highwic and the Thames School of Mines. The average of the two periods and average for the region are used for interpreting the visitors' overall impression of the Trust property.

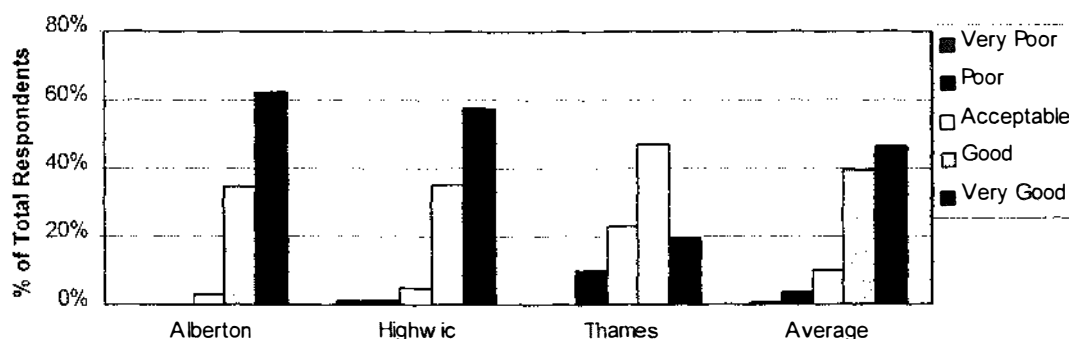
### 1. What is your overall rating of the quality of services provided by this New Zealand Historic Places Trust property ?

The visitors to the Auckland and Thames region Trust properties rated the quality of services provided as "Good" (39.2) to "Very Good" (46.5%). 10.2% rated the quality of service as "Acceptable" and 3.8% rated the quality of service as "Poor".

In average, 95% of visitors to the Auckland Trust properties rated the services received as "Good" to "Very Good". However, the rating for the Thames School of Mines was lower than the Auckland Trust property, only 67% rated the service as "Good" to "Very Good" and 23% rated it as "Acceptable".

| Rating     | Alberton | Highwic | Thames | Average |
|------------|----------|---------|--------|---------|
| Very Poor  | 0%       | 1%      | 0%     | 0.4%    |
| Poor       | 0%       | 1%      | 10%    | 3.8%    |
| Acceptable | 3%       | 5%      | 23%    | 10.2%   |
| Good       | 35%      | 35%     | 47%    | 39.2%   |
| Very Good  | 62%      | 58%     | 20%    | 46.5%   |
|            | 100%     | 100%    | 100%   | 100%    |

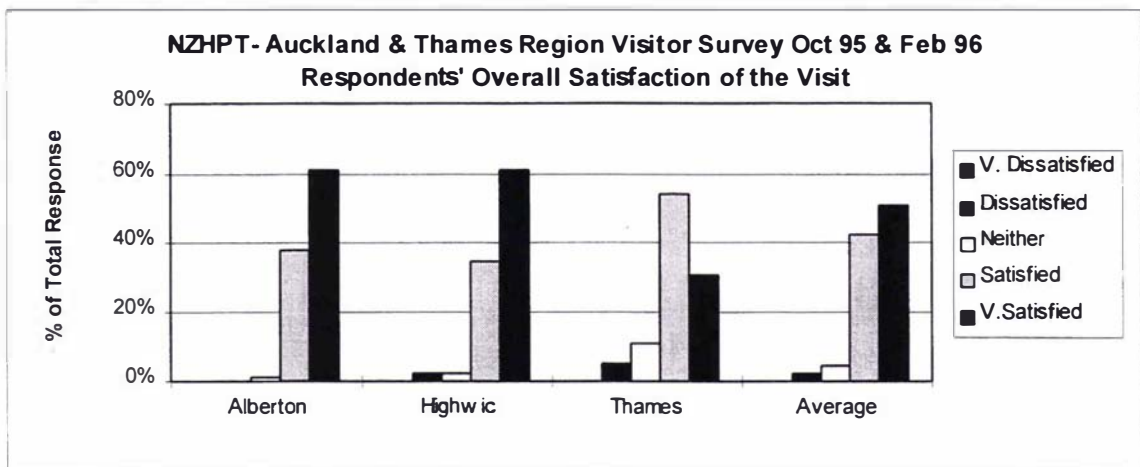
NZHPT-Auckland & Thames Visitor Survey Oct 95 & Feb 96 Overall  
Rating of Service Quality



## 2. Overall, how satisfied were you with your visit today ?

The overall satisfaction rating of the Auckland and Thames region service was “Satisfied” (42%) and “Very Satisfied” (51%). We can conclude that 93% of visitors were satisfied with the quality of service provided during their visit. The 2% of dissatisfied respondents were from Highwic and the Thames School of Mines. Comments made from dissatisfied respondents from the Thames School of Mines were related to information provided and the display.

| Satisfaction Level | Alberton | Highwic | Thames | Average |
|--------------------|----------|---------|--------|---------|
| V. Dissatisfied    | 0%       | 0%      | 0%     | 0.0%    |
| Dissatisfied       | 0%       | 2%      | 5%     | 2.4%    |
| Neither            | 1%       | 2%      | 11%    | 4.7%    |
| Satisfied          | 38%      | 34%     | 54%    | 42.1%   |
| Very Satisfied     | 61%      | 61%     | 30%    | 50.8%   |
|                    | 100%     | 100%    | 100%   | 100.0%  |



### 3. Have you ever visited any other similar place before ?

65% of visitors stated that they had visited other similar places before.

Visitors to Alberton visited the following historic places in New Zealand: Highwic, Katherine Mansfield House, Olveston, Laranch Castle, Ewelme Cottage, Waimate North Mission House, Old Stone Store, Kemp House, Taranga Historic village, Howick Village, Huka Village, Pompallier, Waitangi House, Kinder House, Kawau Island National House, Mansion House in Kawau and Bushy Park in Wanganui.

Some of the places visited in New Zealand by the visitors to Highwic were: Alberton, Ewelme Cottage, Kemp House, Olveston, Nairn Cottage. Others historic houses at Kawau Island, Auckland, Parnell, Kerikeri, Auckland and Thames, Hokianga, Rawere, Russell and Kaikoura.

Visitors to the Thames School of Mines had visited Northland, Waihi Martha Hill Mine, Goldfields Mine Tour in Thames, Wagner Museum, Kauri museum, Alberton, Trick Tower at Watamata, Waitangi Treaty House and Cromwell Gorge.

The overseas historic places visited by the visitors to Auckland and Thames region's Trust properties were in Australia, Tasmania, United Kingdom, Europe and Asia, Canada and USA.

From this information, we can conclude that 65% of visitors who came to the Auckland and Thames region Trust properties, had previous experience of visiting historic houses. The percentage of experienced visitors to the Auckland Trust properties was higher than that of the Thames School of Mines.

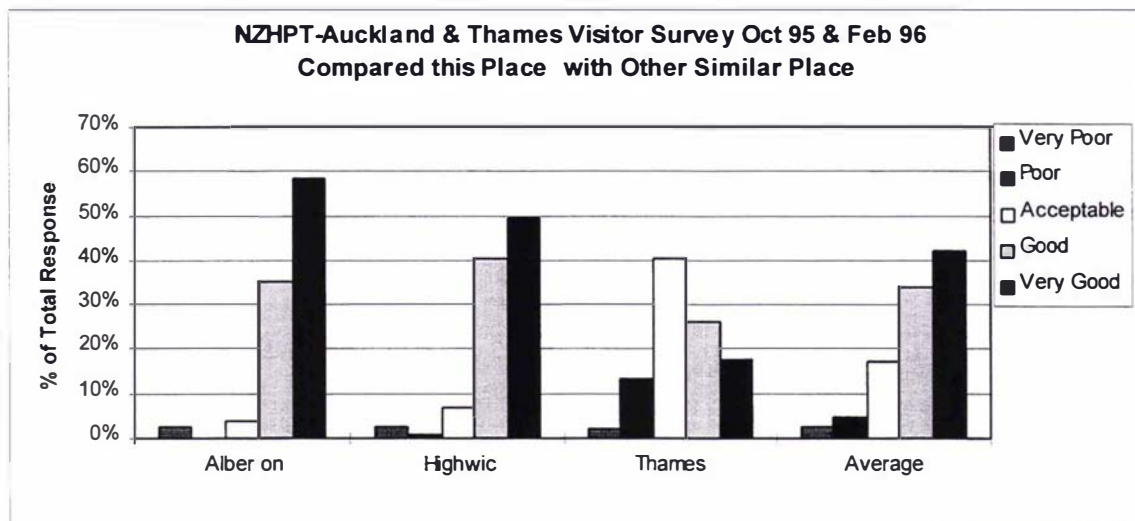
|     | Alberton | Highwic | Thames | Average |
|-----|----------|---------|--------|---------|
| Yes | 75%      | 79%     | 41%    | 65%     |
| No  | 25%      | 21%     | 59%    | 35%     |
|     | 100%     | 100%    | 100%   | 100%    |

#### 4. How do you compare this place with others that you have visited ?

For those who had visited other similar places, 76% of them rated the Auckland and Thames region Trust properties as “Good” to “Very Good” and 10.6% rated it as “Acceptable”.

The average rating of “Good” to “Very Good” of the Auckland Trust properties in comparison to others visited by the respondents was higher than the Thames School of Mines. This could be caused by different displays and themes between the Auckland Trust properties and the Thames School of Mines.

| Rating     | Alberton | Highwic | Thames | Average |
|------------|----------|---------|--------|---------|
| Very Poor  | 3%       | 3%      | 2%     | 2.6%    |
| Poor       | 0%       | 1%      | 13%    | 4.6%    |
| Acceptable | 4%       | 7%      | 40%    | 17.0%   |
| Good       | 35%      | 40%     | 26%    | 33.9%   |
| Very Good  | 59%      | 50%     | 18%    | 41.9%   |
|            | 100%     | 100%    | 100%   | 100.0%  |



## 5. Did you pay an admission charge ?

The majority of visitors to the Auckland and Thames region Trust properties paid an admission charge (75%). Only 25% did not pay an admission charge. This group could possibly be members of the New Zealand Historic Places Trust or an overseas affiliation.

The distribution of paid and non-paid visitors was similar for all three properties. This indicates that there is potential market for the Trust to market their membership to visitors.

| Admission Charge | Alberton | Highwic | Thames | Average |
|------------------|----------|---------|--------|---------|
| Yes              | 77%      | 72%     | 77%    | 75%     |
| No               | 23%      | 28%     | 23%    | 25%     |
|                  | 100%     | 100%    | 100%   | 100%    |

## 6. Do you think this visit is value for money ?

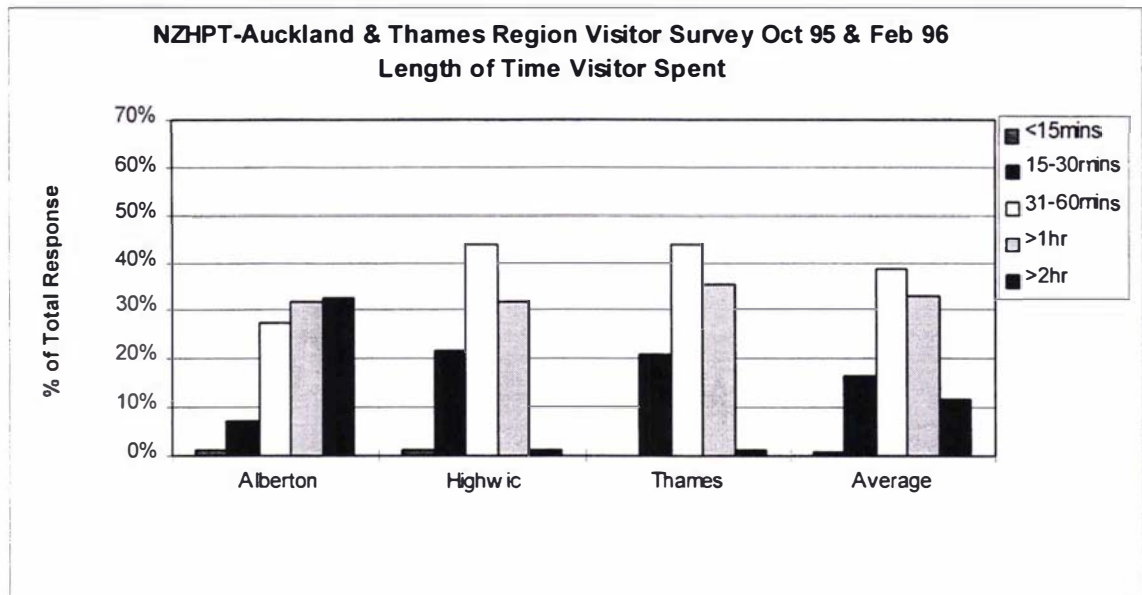
For those who paid an admission charge, 75% thought that the visit was value for money. 25% said it was not value for money. Again the distribution was consistent across the three properties of the Auckland and Thames region.

| Value for Money | Alberton | Highwic | Thames | Average |
|-----------------|----------|---------|--------|---------|
| Yes             | 75%      | 77%     | 73%    | 75%     |
| No              | 25%      | 23%     | 27%    | 25%     |
|                 | 100%     | 100%    | 100%   | 100%    |

### 7. How long was your visit today ?

38% of visitors spent between 31-60 minutes, 33% spent over 60 minutes and 12% spent over 120 minutes in the Auckland and Thames region. 1% spent less than 15 minutes.

| Length of Visit | Alberton | Highwic | Thames | Average |
|-----------------|----------|---------|--------|---------|
| <15mins         | 1%       | 1%      | 0%     | 1%      |
| 15-30mins       | 7%       | 22%     | 21%    | 17%     |
| 31-60mins       | 28%      | 44%     | 44%    | 38%     |
| >1hr            | 32%      | 32%     | 35%    | 33%     |
| >2hr            | 33%      | 1%      | 1%     | 12%     |
|                 | 100%     | 100%    | 101%   | 100%    |



## 8. Would you stay longer if you could ?

When visitors were asked whether they would stay longer if they could, only 40% said they would and 60% said "No".

| Stay Longer | Alberton | Highwic | Thames | Average |
|-------------|----------|---------|--------|---------|
| Yes         | 43%      | 48%     | 29%    | 40%     |
| No          | 57%      | 52%     | 71%    | 60%     |
|             | 100%     | 100%    | 100%   | 100%    |

## 9. Would you recommend this place to your friends ?

The majority of visitors responded "Yes" that they would recommend this property to their friends. 11% said "No".

More than 90% of visitors to the Auckland Trust properties stated that they would recommend these properties to their friends. 80% of visitors to the Thames School of Mines said that they would recommend the property to their friends.

| Recommend to Friends | Alberton | Highwic | Thames | Average |
|----------------------|----------|---------|--------|---------|
| Yes                  | 94%      | 93%     | 80%    | 89%     |
| No                   | 6%       | 7%      | 20%    | 11%     |
|                      | 100%     | 100%    | 100%   | 100%    |

## 10. Are you likely to visit this place again ?

55% of visitors stated that they were likely to visit this place again. The other 45% said that they were not likely to visit the property again. Most of those who said "No" were overseas visitors.

Responses from visitors to the Thames School of Mines were different from the responses from visitors to the Auckland Trust properties. 67% of the Thames School of Mines said they were not likely to visit again. However, 66% of visitors to the Auckland Trust properties said they would.

| Visit Again | Alberton | Highwic | Thames | Average |
|-------------|----------|---------|--------|---------|
| Yes         | 66%      | 66%     | 33%    | 55%     |
| No          | 34%      | 34%     | 67%    | 45%     |
|             | 100%     | 100%    | 100%   | 100%    |

## **11. What did you enjoy most ?**

Visitors to Alberton enjoyed the authenticity and architecture of the building, historical atmosphere and the surrounding gardens, old fashioned romantic rooms, collection of furniture and accessories, the information, history of the house and the old life style. They were attracted to the master bedroom, blue bedroom, ballroom, kitchen, furnishings, veranda and the well. The visitors enjoyed being able to look around at their pace, the originality and level of conservation of original heritage and all the detailed furnishing around the house.

Visitors to Highwic enjoyed the authenticity of the house, structural aspect and design of the building, the setting, garden, overall presentation, information, history of each room in the house and people in the 1900s, the accessibility, the lived-in atmosphere and talking to the gardener's widow living in the wash house.

Visitors to the Thames School of Mines enjoyed seeing the old school, the guided tour of school, rocks and Mineral Museum, authenticity of the museum, display of mining equipment, information and history of gold mining.

The personal services provided by the staff and curator which affected visitors' perception of service quality were the highlighted in this survey. They enjoyed the friendly staff, information given by the curator, guided tour and the helpfulness of the staff.

The results of this survey showed that the majority of visitors who came to visit the Auckland and Thames region Trust properties were interested in old houses, wanted to learn something, or had an interest in New Zealand history. Therefore, the information provided, and displays, were some of the attraction of the Auckland and Thames region.

The majority of visitors who came to visit the Thames School of Mines were interested in mining, wanted to learn something or had an interest in New Zealand History. Therefore, the information provided and guided tour were main attractions of the Thames School of Mines.

## **12. How could your visit be made more enjoyable ?**

There were constructive and useful comments given by respondents to the Auckland and Thames region Trust properties on how could their visit be made more enjoyable. They were related to the provision of refreshments, information, access and the service provided by the staff.

However, there were other expectations which they put forward. Visitors expressed that the visit could be made more enjoyable if there were guided tours, refreshments, more information about the family and the house, video of family, house map, road signs, more advertisement, and improvement of information display.

The Thames School of Mines is a historic building and a mineralogical museum. The visitors had other expectations which were slightly different from Auckland Trust

properties. They expected more staff, information on mining and history related to the areas, clearer signs at display, more technical information on exhibits, especially useful explanation of processes and examples of work, better presentation of museum and exhibits, better presentation, better relevance to school pupils, more room so displays were not crowded, better explanations in mineral display, provision of refreshments.

### 13. Are you looking for something special to buy ?

82% of visitors said that they were not looking for something to buy and 18% said they were. Visitors to Auckland Trust properties were looking for products which included: pins, spoons, books, hat pins, tea towels, postcards, history leaflets, pens, letter openers, cards, badges, documentation, pictures, photos, flower seeds, books about the property, T-shirts, videos, china plates, boxes - cardboard, colour guidebook, note cards, note-pads, paper, paper house, key-ring, mug.

Visitors to Thames School of Mines were looking for the following products to buy: pins, wooden patterns, memorabilia, crystals, local mineral samples, pamphlets or momentos, bornite, something which represents the historical significance - information books, collection of minerals, Kauri gum, a part of a rock, and rock samples.

| Something Special to Buy | Alberton | Highwic | Thames | Average |
|--------------------------|----------|---------|--------|---------|
| Yes                      | 15%      | 18%     | 21%    | 18%     |
| No                       | 85%      | 82%     | 79%    | 82%     |
|                          | 100%     | 100%    | 100%   | 100%    |

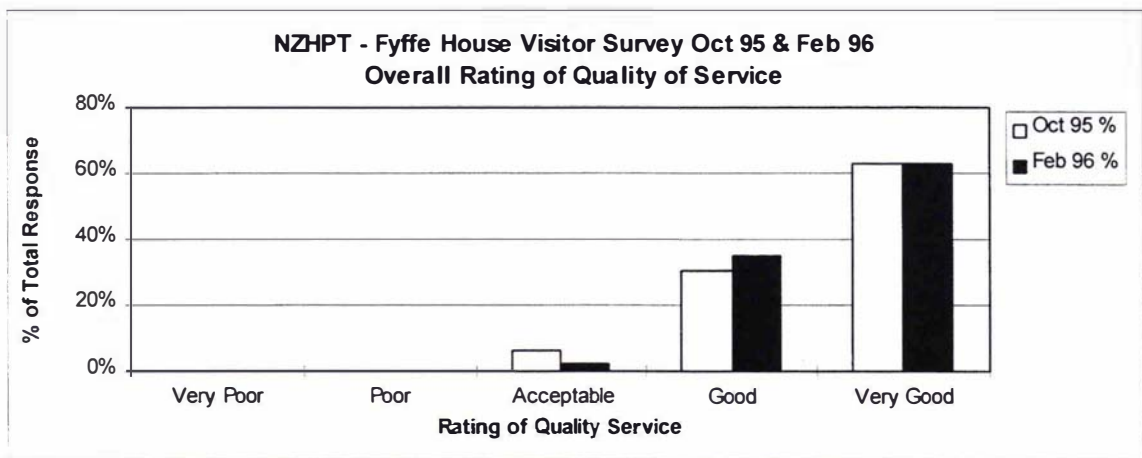
## C Visitors' Overall Impression - Fyffe House

This section presents the visitors' overall impression obtained from the two surveys carried out over two periods at Fyffe House: October-November 95 (50 samples) and February-May 96 (100 samples). The results are aggregated and the average of the two periods is used for interpreting visitors' overall impression of the Fyffe House.

### 1. What is your overall rating of the quality of services provided by this New Zealand Historic Places Trust Property ?

The ratings of the quality of services provided to visitors to Fyffe House were "Good" (32.7%) and "Very Good" (63%). 4.3% rated the quality of service as "Acceptable".

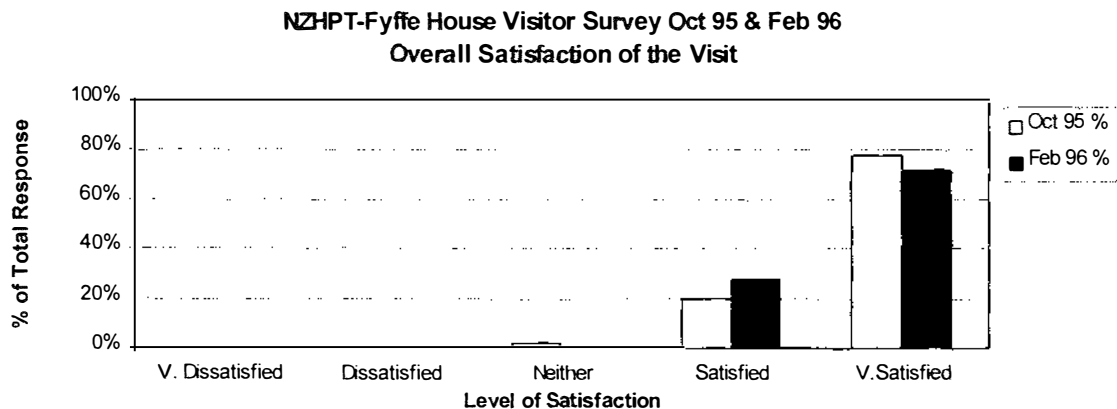
| Rating     | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|------------|--------|----------|--------|----------|---------|
| Very Poor  | 0      | 0%       | 0      | 0%       | 0.0%    |
| Poor       | 0      | 0%       | 0      | 0%       | 0.0%    |
| Acceptable | 3      | 7%       | 2      | 2%       | 4.3%    |
| Good       | 14     | 30%      | 34     | 35%      | 32.7%   |
| Very Good  | 29     | 63%      | 61     | 63%      | 63.0%   |
|            | 46     | 100%     | 97     | 100%     | 100.0%  |



## 2. Overall, how satisfied were you with your visit today ?

The overall satisfaction ratings of Fyffe House service were: “*Satisfied*” (23.8%) and “*Very Satisfied*” (74.6%). We can conclude that 98.4% of visitors were satisfied with the quality of service provided during their visit.

| Satisfaction Level | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|--------------------|--------|----------|--------|----------|---------|
| V. Dissatisfied    | 0      | 0%       | 0      | 0%       | 0.0%    |
| Dissatisfied       | 0      | 0%       | 0      | 0%       | 0.0%    |
| Neither            | 1      | 2%       | 1      | 1%       | 1.6%    |
| Satisfied          | 9      | 20%      | 27     | 28%      | 23.8%   |
| Very Satisfied     | 35     | 78%      | 70     | 71%      | 74.6%   |
|                    | 45     | 100%     | 98     | 100%     | 100.0%  |



## 3. Have you ever visited any other similar place before ?

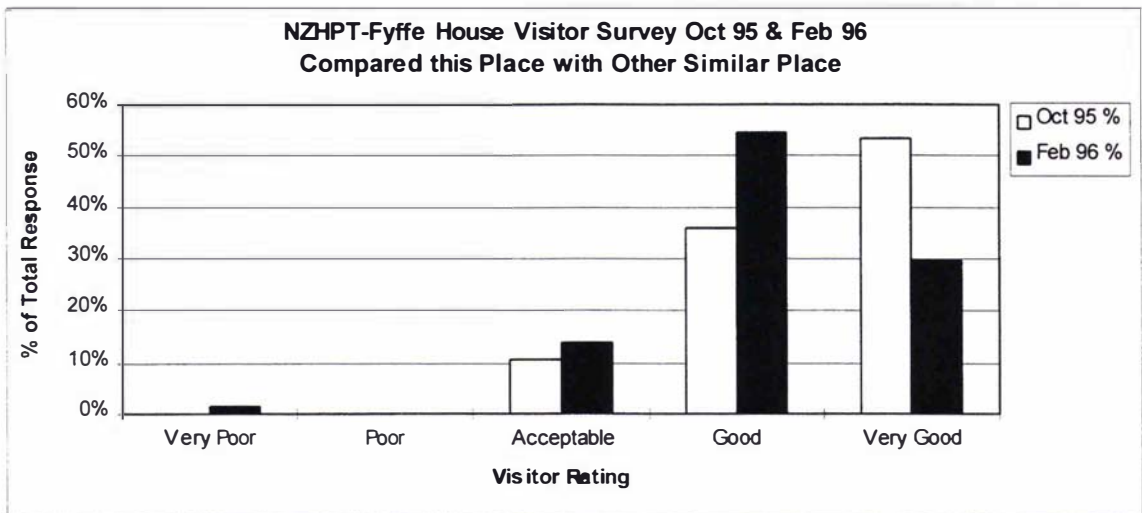
58.5% of visitors stated that they had visited other similar places before. Some of the places visited in New Zealand were: Olveston, Larnach Castle, Oak Tree Cottage, Elms, Pompallier, Stone Store, Ewelme, Waimate Mission House and Broadgren House. The other places overseas were in Austria, Scotland, USA, UK, Australia and Tasmania.

|       | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-------|--------|----------|--------|----------|---------|
| Yes   | 25     | 52%      | 65     | 65%      | 58.5%   |
| No    | 23     | 48%      | 35     | 35%      | 41.5%   |
| Total | 48     | 100%     | 100    | 100%     | 100.0%  |

**4. How do you compare this place with others that you have visited?**

For those who had visited other similar places, 87% of them rated Fyffe House as “Good” to “Very Good” and 12.4% rated it as “Acceptable”. Only 0.8% rated it as “Poor”.

| Rating     | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|------------|--------|----------|--------|----------|---------|
| Very Poor  | 0      | 0%       | 1      | 2%       | 0.8%    |
| Poor       | 0      | 0%       | 0      | 0%       | 0.0%    |
| Acceptable | 3      | 11%      | 9      | 14%      | 12.4%   |
| Good       | 10     | 36%      | 35     | 55%      | 45.2%   |
| Very Good  | 15     | 54%      | 19     | 30%      | 41.6%   |
| Total      | 28     | 100%     | 64     | 100%     | 100.0%  |



**5. Did you pay an admission charge ?**

The majority of visitors to Fyffe House paid an admission charge (80.5%). Only 19.5% did not pay an admission charge. This group could possibly be members of New Zealand Historic Places Trust or an overseas affiliation.

| Admission Charge | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|------------------|--------|----------|--------|----------|---------|
| Yes              | 38     | 79%      | 81     | 82%      | 80.5%   |
| No               | 10     | 21%      | 18     | 18%      | 19.5%   |
| Total            | 48     | 100%     | 99     | 100%     | 100.0%  |

## 6. Do you think this visit is value for money ?

For those who paid an admission charge, 82.5% thought that the visit was value for money and made comments on the guided tour such as: *“Guide tour was excellent”*, *“the visit was quite interesting”*. 17.5% said it was not value for money.

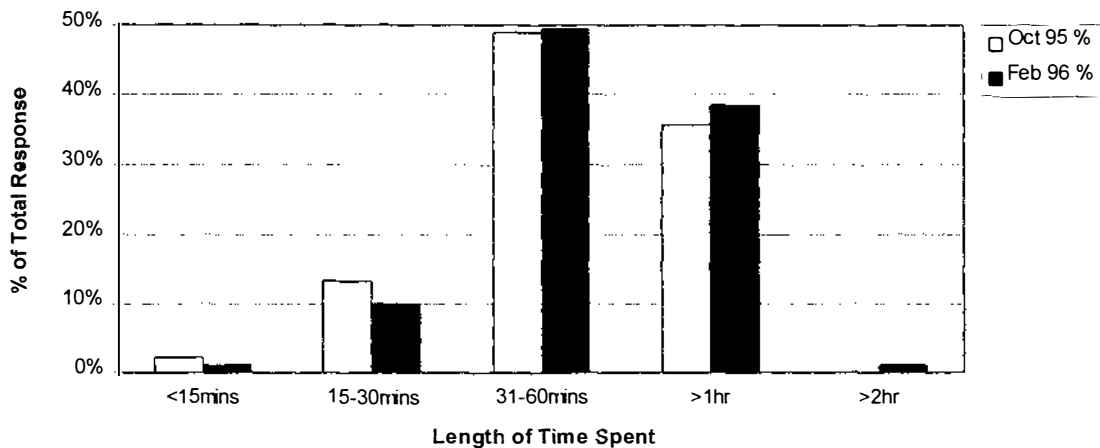
| Value for Money | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-----------------|--------|----------|--------|----------|---------|
| Yes             | 39     | 83%      | 82     | 82%      | 82.5%   |
| No              | 8      | 17%      | 18     | 18%      | 17.5%   |
| Total           | 47     | 100%     | 100    | 100%     | 100.0%  |

## 7. How long was your visit today ?

49% of visitors spent between 30-60 minutes. 37% spent more than 60 minutes in Fyffe House. 13.3% spent less than 30 minutes. 1.6% spent less than 15 minutes.

| Length of Visit | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-----------------|--------|----------|--------|----------|---------|
| <15mins         | 1      | 2%       | 1      | 1%       | 1.6%    |
| 15-30mins       | 6      | 13%      | 10     | 10%      | 11.7%   |
| 31-60mins       | 22     | 49%      | 49     | 49%      | 49.2%   |
| >1hr            | 16     | 36%      | 38     | 38%      | 37.0%   |
| >2hr            | 0      | 0%       | 1      | 1%       | 0.5%    |
| Total           | 45     | 100%     | 99     | 100%     | 100.0%  |

NZHPT-Fyffe House Visitor Survey Oct 95 & Feb 96  
Length of Time Visitor Spent



## 8. Would you stay longer if you could ?

When visitors were asked whether they would stay longer if they could, only 25% said they would. 75% said no. Those who said no could be the 48% of the respondents who were overseas visitors who may not come back to this part of the world.

| Stay Longer | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-------------|--------|----------|--------|----------|---------|
| Yes         | 15     | 31%      | 19     | 19%      | 25.1%   |
| No          | 33     | 69%      | 81     | 81%      | 74.9%   |
| Total       | 48     | 100%     | 100    | 100%     | 100.0%  |

## 9. Would you recommend this place to your friends ?

The majority of visitors said "Yes" that they would recommend this property to their friends. Only 5% said "No".

| Recommend to Friends | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|----------------------|--------|----------|--------|----------|---------|
| Yes                  | 46     | 96%      | 94     | 94%      | 94.9%   |
| No                   | 2      | 4%       | 6      | 6%       | 5.1%    |
| Total                | 48     | 100%     | 100    | 100%     | 100.0%  |

## 10. Are you likely to visit this place again ?

64% of visitors stated that they were not likely to visit this place again. In the February data, 42 out of 78 (54%) visitors said that they were unlikely to visit Fyffe House as they were overseas visitors; 14 out of 78 (18%) were from North Island. The other 36% who said that they were likely to visit the property again were New Zealanders.

| Visit Again | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-------------|--------|----------|--------|----------|---------|
| Yes         | 24     | 50%      | 22     | 22%      | 36.0%   |
| No          | 24     | 50%      | 78     | 78%      | 64.0%   |
| Total       | 48     | 100%     | 100    | 100%     | 100.0%  |

## 11. What did you enjoy most ?

Visitors enjoyed the personal attention given to them by the curators during the visit. They commented favourably on:

- *The guided tour provided by the curator*
- *The interesting information on the house and its features*
- *The family and the early settlement*
- *The information provided in the property such as newspaper, articles on the structure of the house*
- *The "live-in" atmosphere, the whalebones; the garden and the historic atmosphere*

Some of the important factors which makes the Fyffe House more attractive to visitors include: the personal contact with visitors, creating a friendly, welcoming atmosphere by giving visitor a guided tour, presenting the history of the house in a humorous, friendly and knowledgeable manner. Visitors to the property appreciated the guided tour

and the enthusiasm with which the curator made the presentation. These are reflected in the comments made by visitors about their impression of their visit (refer the comments)

The comments made on what they most enjoyed were:

- *The deputy curator's stories about the history of Fyffe House*
- *The history of the place given by excellent curator*
- *The pleasant and friendly curator who made me feel relaxed and able to really enjoy and understand the whole experience/visit*
- *Enjoyed the guided tour and having it place the history context of pre-European habitation*
- *The information given by curator on the house features, history of places and people*
- *The information given by the curator and reading the old newspaper*
- *The personal attention*
- *Learning not only about the site but also its role in the community*
- *Information available and freedom to wander*
- *Unexpected finding of such an historical treasure*
- *The whale bones*
- *The enthusiastic and enjoyable presentation*
- *Interesting history described by assistant curator*
- *A touch of authentic history showing early New Zealand life and the living conditions*
- *Whale information, about the family that have stayed here*
- *Whale construction of foundation*
- *Authentic appearance of older style of 1840's but not too modernised*
- *General atmosphere of the place*
- *Appearance, garden in keeping, imagine real lives of inhabitants, enthusiasm of deputy curator Judy*
- *The tour, excellent information delivered with humour*
- *Finding out the history and the social history*
- *The sense of humour with which the information was given*
- *The historical told and information*
- *A new type of historic place with an excellent verbal introduction*
- *The atmosphere of an old house in a beautiful setting*

## **12. How could your visit be made more enjoyable?**

The majority of visitors were happy about what was provided to them and some commented that it couldn't be improved or it is fine as it is. However, there were some comments made on how their visit could be made more enjoyable. Suggestions made by respondents included:

- *To have more historic photos of the whaling area*
- *Make the oldest rooms available for inspection*
- *A cup of coffee and toilet facilities*
- *More furnishing of the appropriate period*
- *More notes on the use and purpose of implements found around the site*
- *More seating*

### 13. Are you looking for something special to buy ?

81% of visitors said that they were not looking for something to buy, 19% said they were. The products that they were looking for included: garden seeds, books, postcards, photographs, kitchen utensils, printed history, water colour print and items related to the property.

| Special Things to Buy | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-----------------------|--------|----------|--------|----------|---------|
| Yes                   | 3      | 6%       | 31     | 32%      | 19.0%   |
| No                    | 44     | 94%      | 67     | 68%      | 81.0%   |
| Total                 | 47     | 100%     | 98     | 100%     | 100.0%  |

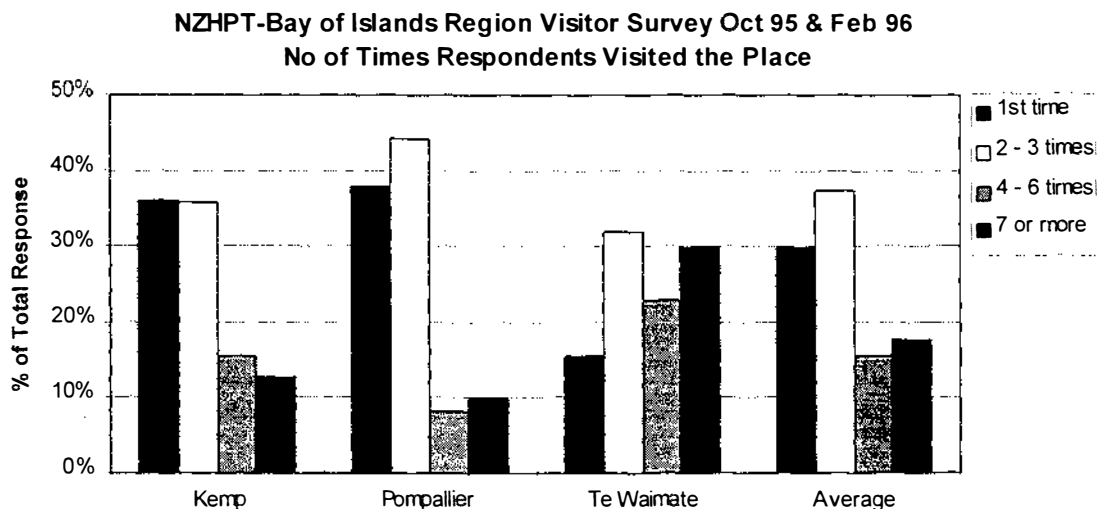
## A Visitor Profile - Bay of Islands Region

This section covers the results obtained from the visitor profile for the two surveys carried out over two periods at the Bay of Islands region Trust properties: October 95 (50 samples) and February-March 96 (100 samples). The properties surveyed were Kemp House, Pompallier and the Te Waimate Mission House. The average of the two periods and the average for the region were used for interpreting the visitor demographics.

### 1. How often have you visited New Zealand Historic Places Trust Properties in the last 12 months ?

Over the survey period, the survey response from the Bay of Islands region Trust properties showed that 30% of visitors visited the property for the first time, 37% visited 2-3 times and 15% more than 4 times. The 17% who visited more than 4 times could be called frequent visitors. The distribution for Kemp House and Pompallier were consistent except Te Waimate which had lower percentage of first time visitors.

| No of Times | Kemp | Pompallier | Te Waimate | Average |
|-------------|------|------------|------------|---------|
| 1st time    | 36%  | 38%        | 15%        | 30%     |
| 2 - 3 times | 36%  | 44%        | 32%        | 37%     |
| 4 - 6 times | 15%  | 8%         | 23%        | 15%     |
| 7 or more   | 13%  | 10%        | 30%        | 17%     |
|             | 100% | 100%       | 100%       | 100%    |



**2. Are you a member of the societies of The New Zealand Historic Places Trust or affiliated overseas trust ?**

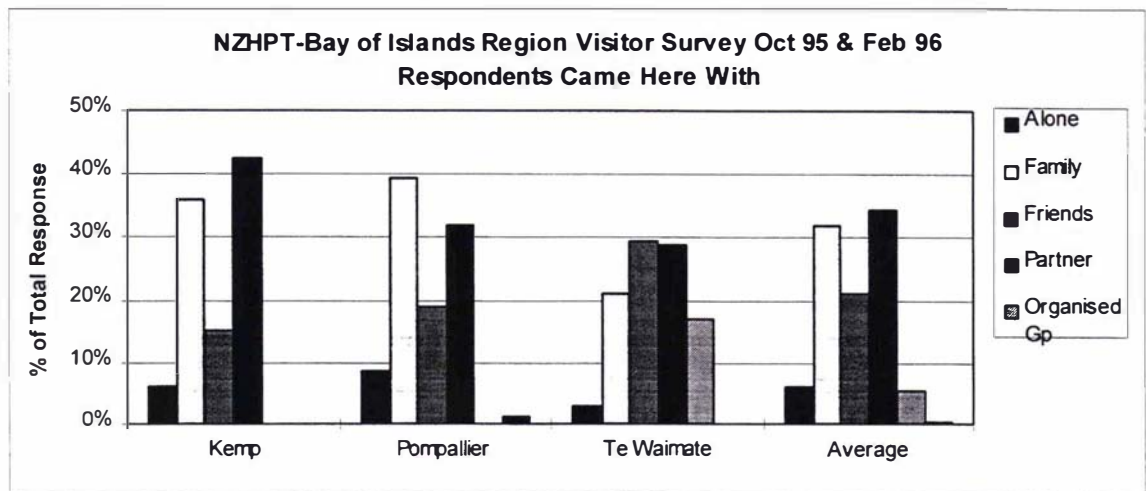
The majority of visitors were not members of the Trust (75%), 25% of visitors were members of the Trust in New Zealand or overseas. There were little differences between sites.

| Trust Member | Kemp | Pompallier | Te Waimate | Average |
|--------------|------|------------|------------|---------|
| Yes          | 26%  | 21%        | 26%        | 25%     |
| No           | 74%  | 79%        | 74%        | 75%     |
|              | 100% | 100%       | 100%       | 100%    |

**3. Who did you come here with today ?**

Most of visitors came with family (32%), with partners (35%) or friends (21%) and 6% came alone. 6% of respondents to Te Waimate Mission House came with organised groups.

| Accompany By    | Kemp | Pompallier | Te Waimate | Average |
|-----------------|------|------------|------------|---------|
| Alone           | 6%   | 9%         | 3%         | 6%      |
| Family          | 36%  | 39%        | 21%        | 32%     |
| Friends         | 15%  | 19%        | 29%        | 21%     |
| Partner         | 43%  | 32%        | 29%        | 35%     |
| Organised Group | 0%   | 0%         | 17%        | 6%      |
| School          | 0%   | 1%         | 0%         | 0%      |
|                 | 100% | 100%       | 100%       | 100%    |

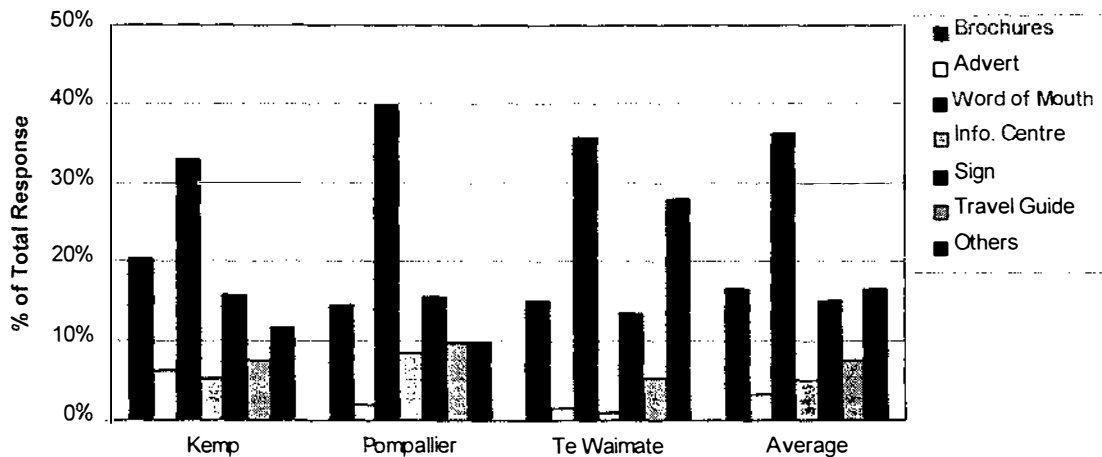


#### 4. Where did you find out about this place ?

It has been found by other surveys that word-of-mouth was the most popular method of obtaining information on tourist attractions such as the Bay of Islands region Trust properties. Our survey figures confirmed this. There were 36% of visitors who found out about the Bay of Islands region Trust properties by word-of-mouth, 17% from brochures, 15% from signs, 7% from travel guide and 5% from Information Centres. 17% of respondents found out about these places through others sources such as: they had been here before, knew it from childhood days, historian, or from Historic Places Magazine, journal, walking around and passing by the place.

| Information        | Kemp | Pompallier | Te Waimate | Average |
|--------------------|------|------------|------------|---------|
| Brochures          | 20%  | 15%        | 15%        | 17%     |
| Advert             | 6%   | 2%         | 2%         | 3%      |
| Word of Mouth      | 33%  | 40%        | 36%        | 36%     |
| Information Centre | 5%   | 9%         | 1%         | 5%      |
| Sign               | 16%  | 16%        | 14%        | 15%     |
| Travel Guide       | 7%   | 10%        | 5%         | 7%      |
| Others             | 12%  | 10%        | 28%        | 17%     |
|                    | 100% | 100%       | 100%       | 100%    |

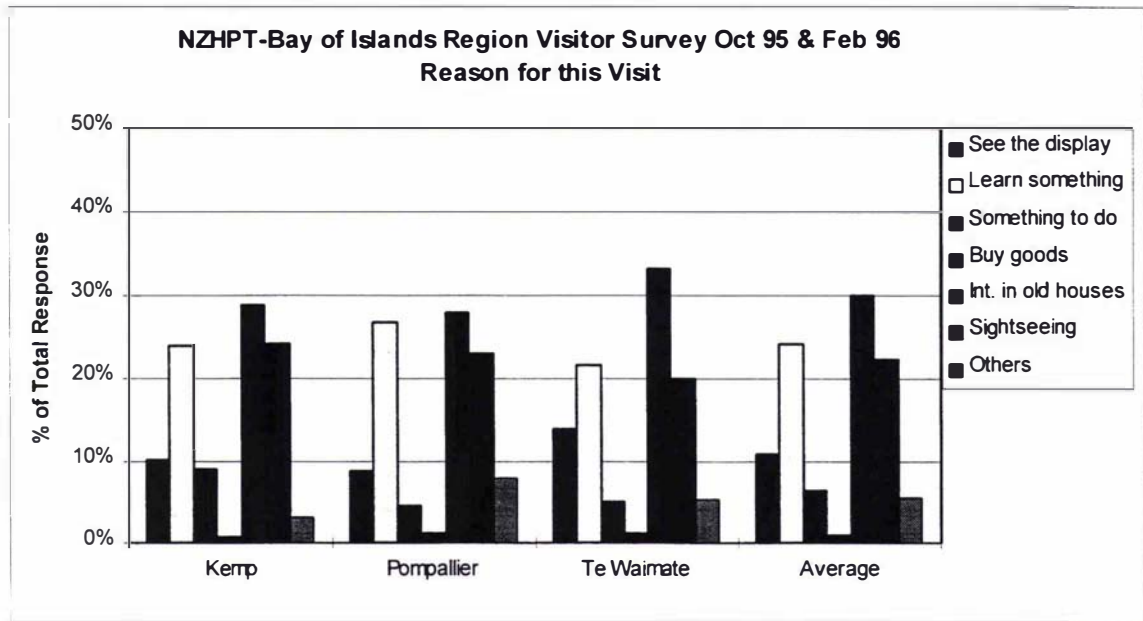
NZHPT-Bay of Islands Region Visitor Survey Oct 95 & Feb 96  
Method of Getting Information on the Place



### 5. What is the main reason for this visit ?

Being interested in old houses (30%) was one of the main reasons that visitors came to Bay of Islands Trust properties. The other main reasons were: “to learn something” (24%), “sightseeing” (22%), “to see the display” (11%) and “something to do” (6%). The other reasons given for the visit were: interest in the New Zealand history, to educate children, tracing CHS mission history and to show a relative from overseas, visited as a child, related to what I study, to see operation working, to see printing, read TV article about restoration. For those visitors to Te Waimate, the other reasons for coming were: family connection, to be where a part of our gospel began and to see the house.

| Reason for Visit       | Kemp | Pompallie | Te Waimate | Average |
|------------------------|------|-----------|------------|---------|
| See the display        | 10%  | 9%        | 14%        | 11%     |
| Learn something        | 24%  | 27%       | 22%        | 24%     |
| Something to do        | 9%   | 4%        | 5%         | 6%      |
| Buy goods              | 1%   | 1%        | 1%         | 1%      |
| Interest in old houses | 29%  | 28%       | 33%        | 30%     |
| Sightseeing            | 24%  | 23%       | 20%        | 22%     |
| Others                 | 3%   | 8%        | 5%         | 5%      |
|                        | 100% | 100%      | 100%       | 100%    |



## 6. What age group are you in ?

The demographics of visitors was very similar to other visitor surveys carried out in the UK and USA. The age group of the respondents was mainly the middle to retired age group. 36% of visitors were more than 50 years of age, 23% were in the 40-49 years group, and 11% from the 30-34 years group. The others were from the 15-29 age group (18%).

| Age Group | Kemp | Pompallier | Te Waimate | Average |
|-----------|------|------------|------------|---------|
| 15 - 19   | 2%   | 5%         | 3%         | 3%      |
| 20 - 24   | 6%   | 8%         | 4%         | 6%      |
| 25 - 29   | 8%   | 10%        | 8%         | 9%      |
| 30 - 34   | 11%  | 11%        | 11%        | 11%     |
| 35 - 39   | 9%   | 18%        | 12%        | 13%     |
| 40 - 44   | 13%  | 12%        | 11%        | 12%     |
| 45 - 49   | 12%  | 11%        | 12%        | 11%     |
| 50 - 54   | 8%   | 8%         | 11%        | 9%      |
| 55 - 59   | 11%  | 5%         | 4%         | 7%      |
| > 60      | 21%  | 14%        | 25%        | 20%     |
|           | 100% | 100%       | 100%       | 100%    |

## 7. What is your occupation ?

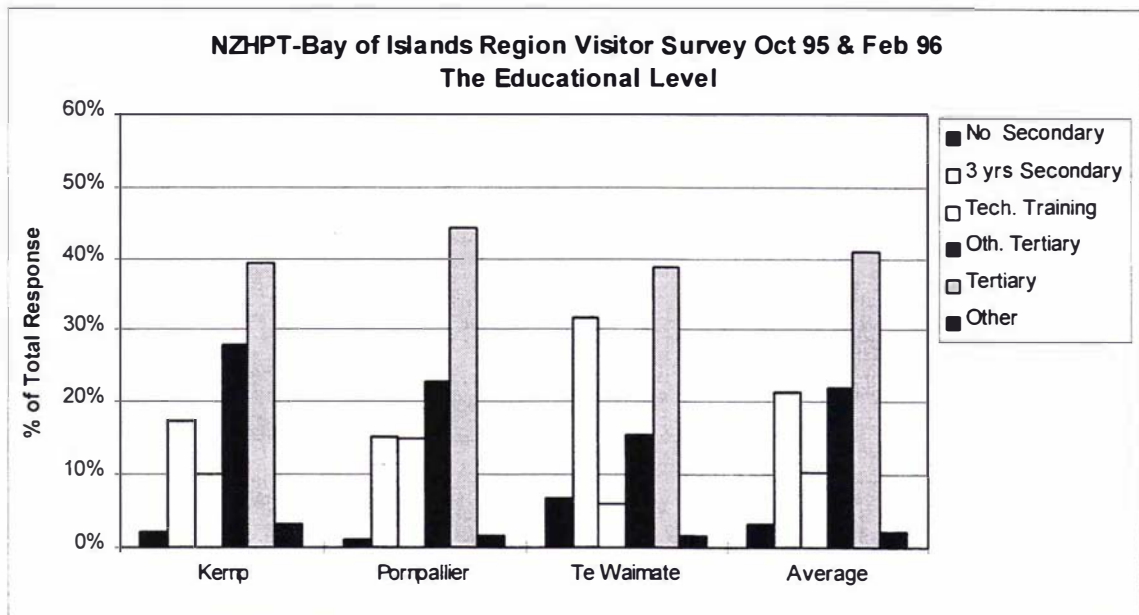
The majority of visitors were professionals (26%), managers (18%) or retired persons (18%). The remaining were distributed across agriculture and fishery to unemployed. The other occupations not listed were: teacher, travel agents, evangelist, travel and tourism student, registered nurse, camera operator, typist, member of RNZN, public servant, kindergarten teacher, receptionist, bio-technologist, chef, company director, insurance broker, landscaper, master mariner, mother, secretary, store person, museum curator and writer.

| Occupation            | Kemp | Pompallier | Te Waimate | Average |
|-----------------------|------|------------|------------|---------|
| Agriculture & Fishery | 2%   | 4%         | 7%         | 4%      |
| Domestic Worker       | 1%   | 0%         | 1%         | 1%      |
| House Person          | 5%   | 5%         | 3%         | 4%      |
| Mgr/ Administrator    | 16%  | 18%        | 19%        | 18%     |
| Operator/ Assembler   | 1%   | 0%         | 0%         | 0%      |
| Clerk                 | 4%   | 4%         | 6%         | 5%      |
| Professionals         | 33%  | 30%        | 17%        | 26%     |
| Retired               | 14%  | 13%        | 27%        | 18%     |
| Sales/ Services       | 7%   | 7%         | 1%         | 5%      |
| Student               | 4%   | 9%         | 5%         | 6%      |
| Technician            | 3%   | 1%         | 1%         | 2%      |
| Trade                 | 4%   | 2%         | 1%         | 2%      |
| Unemployed            | 1%   | 1%         | 4%         | 2%      |
| Other                 | 6%   | 7%         | 8%         | 7%      |
|                       | 100% | 100%       | 100%       | 100%    |

### 8. What is your education level ?

The education level of Bay of Islands region visitors was very similar to the findings obtained from the UK and USA. The majority of visitors had university degrees (41%). 22% had other tertiary education, 21% of visitors had only 3 years secondary education and 10% had obtained technical training. Only 3% of visitors had no secondary education. The distribution of the respondents' education level was quite similar for the three sites in this region.

| Education Level    | Kemp | Pompallier | Te Waimate | Average |
|--------------------|------|------------|------------|---------|
| No Secondary       | 2%   | 1%         | 7%         | 3%      |
| 3 yrs Secondary    | 17%  | 15%        | 32%        | 21%     |
| Technical Training | 10%  | 15%        | 6%         | 10%     |
| Other Tertiary     | 28%  | 23%        | 15%        | 22%     |
| University Degree  | 39%  | 44%        | 39%        | 41%     |
| Other              | 3%   | 2%         | 2%         | 2%      |
|                    | 100% | 100%       | 100%       | 100%    |



## 9. Into which group does your household income fit ?

The household income of visitors varied from less than \$10,000 to more than \$95,000. Three bigger groups of visitors were: earning above \$90,000 (19%), \$65,000-80,000 (17%), \$40,000-50,000 (16%). The household income for visitors to the Bay of Islands Region Trust properties was quite evenly spread from \$10,000 - \$65,000 groups.

| Income (In thousand) | Kemp | Pompallier | Te Waimate | Average |
|----------------------|------|------------|------------|---------|
| <10                  | 2%   | 1%         | 4%         | 2%      |
| 10 - 20              | 4%   | 3%         | 20%        | 9%      |
| 20 - 30              | 8%   | 13%        | 11%        | 11%     |
| 30 - 40              | 15%  | 11%        | 7%         | 11%     |
| 40 - 50              | 21%  | 13%        | 13%        | 16%     |
| 50 - 65              | 18%  | 18%        | 17%        | 17%     |
| 65 - 80              | 9%   | 13%        | 9%         | 10%     |
| 80 - 95              | 2%   | 11%        | 3%         | 5%      |
| > 95                 | 22%  | 18%        | 17%        | 19%     |
|                      | 100% | 100%       | 100%       | 100%    |

## 10. Where do you live ?

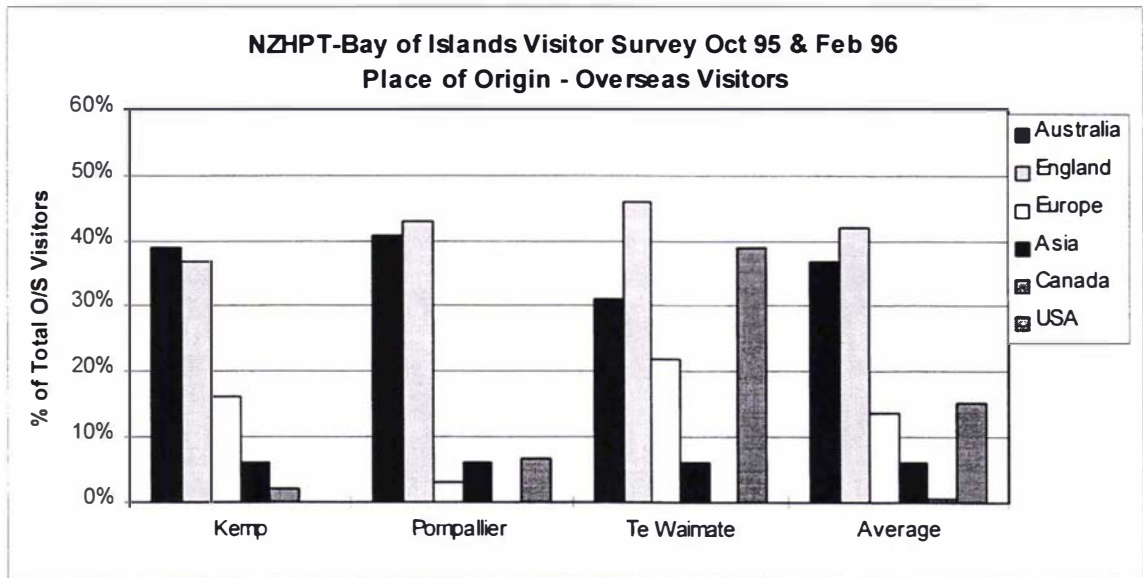
More than seventy percent of the visitors who visited the Bay of Islands region's Trust properties were from New Zealand (70%). Of these 88.7% were from the North Island, spreading from Northland to Wellington. 44% from Auckland, 16% from Waikato, 8% were locals and 13% from Wellington. Only 11.3.% of respondents were from the South Island: Christchurch, Otago, West Coast and Chatham Island.

| Region/city  | Kemp | Pompallier | Te Waimate | Average |
|--------------|------|------------|------------|---------|
| Northland    | 12%  | 3%         | 10%        | 8%      |
| Auckland     | 38%  | 40%        | 46%        | 41%     |
| Waikato      | 18%  | 15%        | 14%        | 16%     |
| Taranaki     | 7%   | 0%         | 0%         | 2%      |
| Rotorua      | 0%   | 2%         | 1%         | 1%      |
| Tauranga     | 0%   | 5%         | 0%         | 2%      |
| Taupo        | 0%   | 3%         | 3%         | 2%      |
| Hawkes Bay   | 0%   | 6%         | 3%         | 3%      |
| Wanganui     | 0%   | 0%         | 3%         | 1%      |
| Wellington   | 18%  | 14%        | 6%         | 13%     |
| West Coast   | 0%   | 0%         | 3%         | 1%      |
| Blenheim     | 2%   | 2%         | 0%         | 1%      |
| Christchurch | 2%   | 9%         | 3%         | 5%      |
| Otago        | 2%   | 1%         | 8%         | 4%      |
| Chatham Is   | 1%   | 0%         | 0%         | 0.3%    |
| Total        | 100% | 100%       | 100%       | 100%    |

### 11. Overseas Visitors to Bay of Islands region

26% of visitors who visited the Trust properties in Bay of Islands region were from overseas. They were comprised of nationalities from England (42%), Australia (37%), Europe (14%), USA (15%), Canada (1%) and Asia (6%).

| Country   | Kemp | Pompallier | Te Waimate | Average |
|-----------|------|------------|------------|---------|
| Australia | 39%  | 41%        | 31%        | 37%     |
| England   | 37%  | 43%        | 46%        | 42%     |
| Europe    | 16%  | 3%         | 22%        | 14%     |
| Asia      | 6%   | 6%         | 6%         | 6%      |
| Canada    | 2%   | 0%         | 0%         | 1%      |
| USA       | 0%   | 7%         | 39%        | 15%     |
| Total     | 100% | 100%       | 100%       | 100%    |

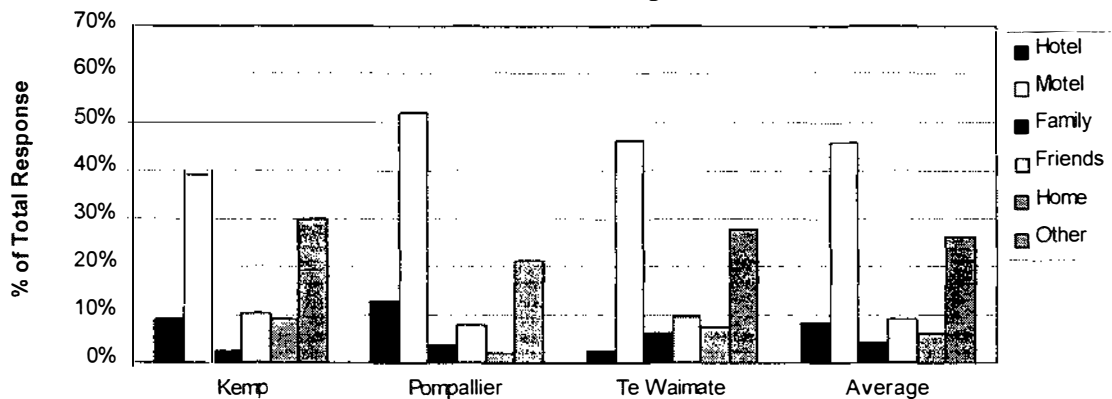


## 12. Where are you staying ?

The main accommodation used by respondents who visited Bay of Islands region was motels (46%), with friends (9%), in hotels (8%), 6% stayed at home and 4% stayed with family. 26% stayed at backpacker accommodation, motor camps, camping van, police holiday home, farm stay, caravan, bed and breakfast, homestay, rented cottage, timeshare, holiday park and farm stay.

| Staying | Kemp | Pompallier | Te Waimate | Average |
|---------|------|------------|------------|---------|
| Hotel   | 9%   | 13%        | 3%         | 8%      |
| Motel   | 39%  | 52%        | 46%        | 46%     |
| Family  | 3%   | 4%         | 6%         | 4%      |
| Friends | 10%  | 8%         | 10%        | 9%      |
| Home    | 9%   | 2%         | 7%         | 6%      |
| Other   | 30%  | 22%        | 28%        | 26%     |
|         | 100% | 100%       | 100%       | 100%    |

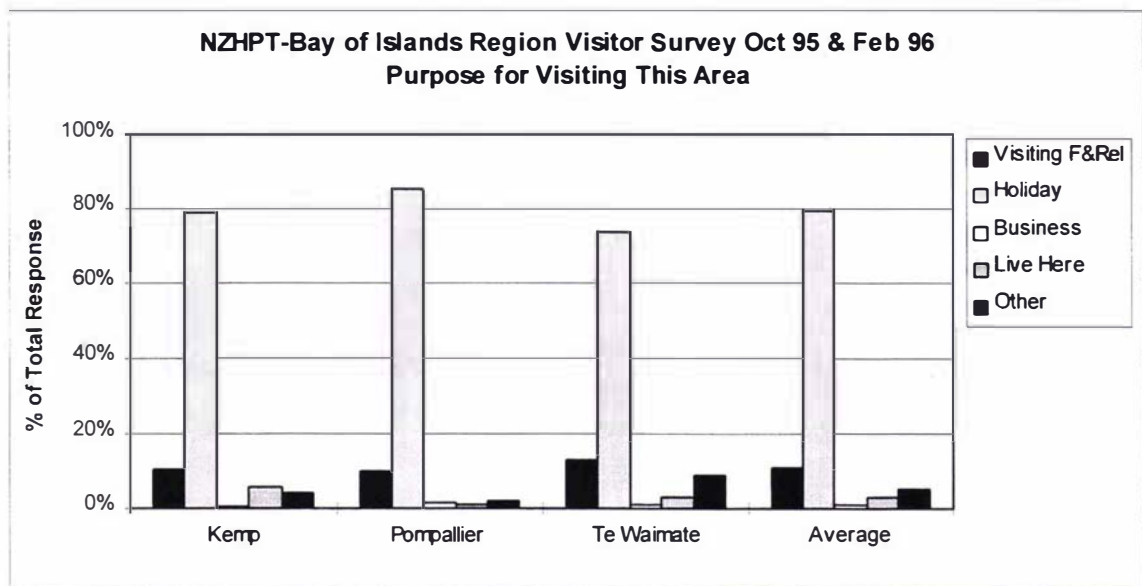
NZHPT-Bay of Islands Region Visitor Survey Oct 95 & Feb 96  
Accommodation Arrangement



### 13. What is the purpose of your visit to this area ?

The majority of visitors to the Bay of Islands region were tourists who came to the area for a holiday (79%), 3% were local residents, 11% of respondents came to visit friends and relatives and 5% came for other reasons such as: family history, touring with friends, history, to get to know the place and touring, related to study, show a tourist some New Zealand history, show their children the heritage, to re-acquaint with the past, to see operation working and to see printing, *“to be where a part of our gospel began”*(Refer to Te Waimate) and *“to see the house”*.

| Reason For Visit             | Kemp | Pompallier | Te Waimate | Average |
|------------------------------|------|------------|------------|---------|
| Visiting Friends & Relatives | 10%  | 10%        | 13%        | 11%     |
| Holiday                      | 79%  | 85%        | 74%        | 79%     |
| Business                     | 1%   | 2%         | 1%         | 1%      |
| Live Here                    | 6%   | 1%         | 3%         | 3%      |
| Other                        | 4%   | 2%         | 9%         | 5%      |
|                              | 100% | 100%       | 100%       | 100%    |

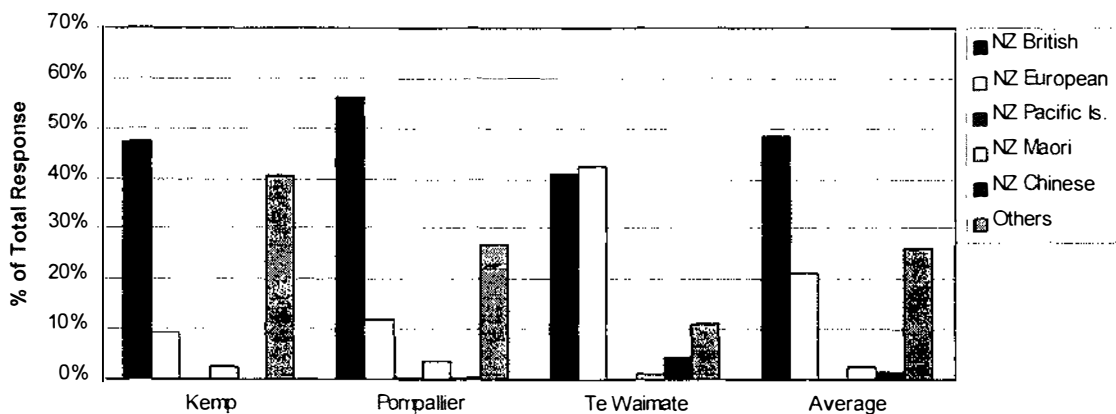


## 14. What is your ethnic origin ?

48% of visitors responded that they were New Zealanders of British descent and 21% stated that they were of New Zealanders of European descent. The 26% of others included Australian, British, American, Canadian, European and Chinese. The results of the survey showed that there is a lack of knowledge or interest from the New Zealand Chinese and Pacific Islanders in historic places. There were only 2% of New Zealand Chinese and no Pacific Islanders who visited the Trust properties during the survey periods.

| Ethnic Origin  | Kemp | Pompallier | Te Waimate | Average |
|----------------|------|------------|------------|---------|
| NZ British     | 47%  | 56%        | 41%        | 48%     |
| NZ European    | 9%   | 12%        | 42%        | 21%     |
| NZ Pacific Is. | 0%   | 1%         | 0%         | 0%      |
| NZ Maori       | 3%   | 4%         | 1%         | 3%      |
| NZ Chinese     | 0%   | 1%         | 4%         | 2%      |
| Others         | 41%  | 27%        | 11%        | 26%     |
|                | 100% | 100%       | 100%       | 100%    |

NZHPT-Bay of Islands Region Visitor Survey Oct 95 & Feb 96  
Ethnic Origin



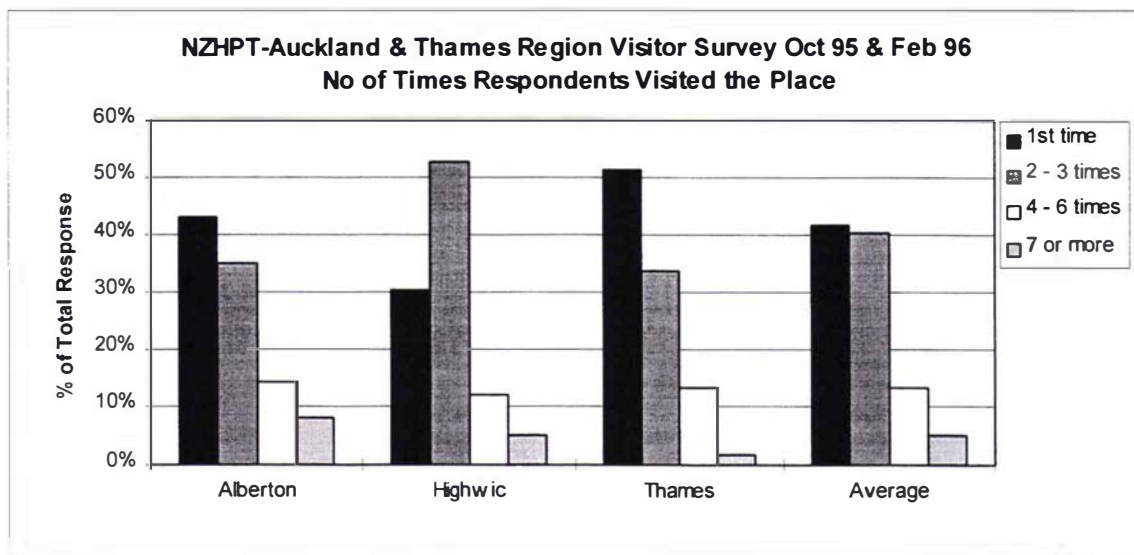
## B Visitor Profile - Auckland and Thames Region

This section covers the results obtained from the visitor profile for the two surveys carried out over two periods at the Auckland and Thames region Trust properties: October 95 (50 samples) and February-March 96 (100 samples). The properties surveyed were Alberton and Highwic and the Thames School of Mines. The average of the two periods and average for the region are used for interpreting the visitor demographics.

### 1. How often have you visited New Zealand Historic Places Trust properties in the last 12 months ?

Over the survey period, the survey response from Auckland and Thames region showed that 42% of visitors visited the property for the first time, 40% had visited 2-3 times and 13% more than 4 times. The 18% who visited more than 4 times could be called frequent visitors. The distribution for the three sites was consistent except Highwic which had lower 1st time visit but higher in 2-3 times visits.

| No of Times | Alberton | Highwic | Thames | Average |
|-------------|----------|---------|--------|---------|
| 1st time    | 43%      | 30%     | 51%    | 42%     |
| 2 - 3 times | 35%      | 53%     | 34%    | 40%     |
| 4 - 6 times | 14%      | 12%     | 13%    | 13%     |
| 7 or more   | 8%       | 5%      | 2%     | 5%      |
|             | 100%     | 100%    | 100%   | 100%    |



## 2. Are you a member of the societies of The New Zealand Historic Places Trust or affiliated overseas trust ?

The majority of visitors were not members of the Trust (85%), 15% of visitors were members of the Trust in New Zealand or overseas. There were differences between sites. 95% of Thames School of Mines' visitors were not members of the Trust.

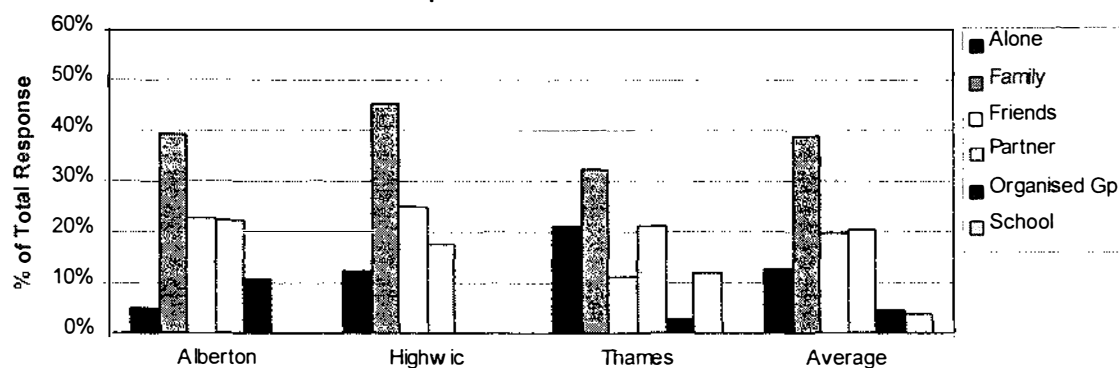
| Trust Member | Alberton | Highwic | Thames | Average |
|--------------|----------|---------|--------|---------|
| Yes          | 15%      | 26%     | 5%     | 15%     |
| No           | 85%      | 74%     | 95%    | 85%     |
|              | 100%     | 100%    | 100%   | 100%    |

## 3. Who did you come here with today ?

Most of visitors came with family (39%), with partners (20%) or friends (19%). 13% came alone. 5% of respondents came with organised groups and 4% came with school.

| Accompany By    | Alberton | Highwic | Thames | Average |
|-----------------|----------|---------|--------|---------|
| Alone           | 5%       | 12%     | 21%    | 13%     |
| Family          | 39%      | 45%     | 32%    | 39%     |
| Friends         | 23%      | 25%     | 11%    | 19%     |
| Partner         | 22%      | 18%     | 21%    | 20%     |
| Organised Group | 11%      | 0%      | 3%     | 5%      |
| School          | 0%       | 0%      | 12%    | 4%      |
|                 | 100%     | 100%    | 100%   | 100%    |

NZHPT-Auckland & Thames Region Visitor Survey Oct 95 & Feb 96  
Respondents Came Here With

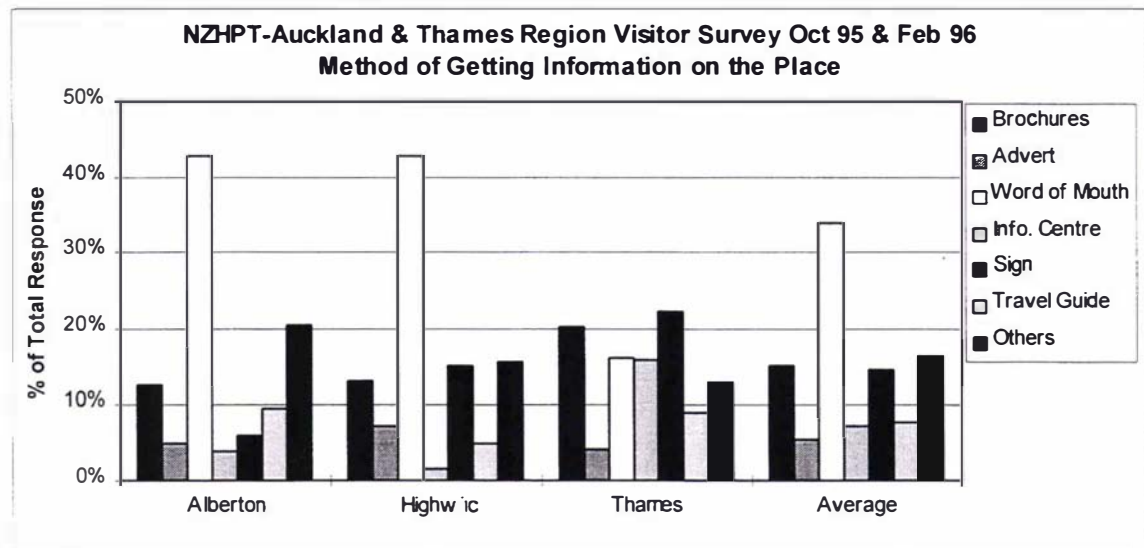


#### 4. Where did you find out about this place ?

This survey confirmed that word-of-mouth is the most common method for finding out about the Trust properties. There were 34% of visitors who found out about the Auckland and Thames region by word-of-mouth, 15% from brochures, 14% from information and 15.9% from signs. 16% of others found out about this place through: Auckland travel guide, books, came here with parents when young, school trips, family home, film for advertisement on the property, friends, Historic Places book, Historic Places Magazine, passing by, personal knowledge, and from school.

Some visitors to Alberton had been to a wedding before and some found out about the house by concession ticket from Highwic.

| Information        | Alberton | Highwic | Thames | Average |
|--------------------|----------|---------|--------|---------|
| Brochures          | 13%      | 13%     | 20%    | 15%     |
| Advert             | 5%       | 7%      | 4%     | 5%      |
| Word-of-Mouth      | 43%      | 43%     | 16%    | 34%     |
| Information Centre | 4%       | 2%      | 16%    | 7%      |
| Sign               | 6%       | 15%     | 22%    | 14%     |
| Travel Guide       | 9%       | 5%      | 9%     | 8%      |
| Others             | 21%      | 16%     | 13%    | 16%     |
|                    | 100%     | 100%    | 100%   | 100%    |



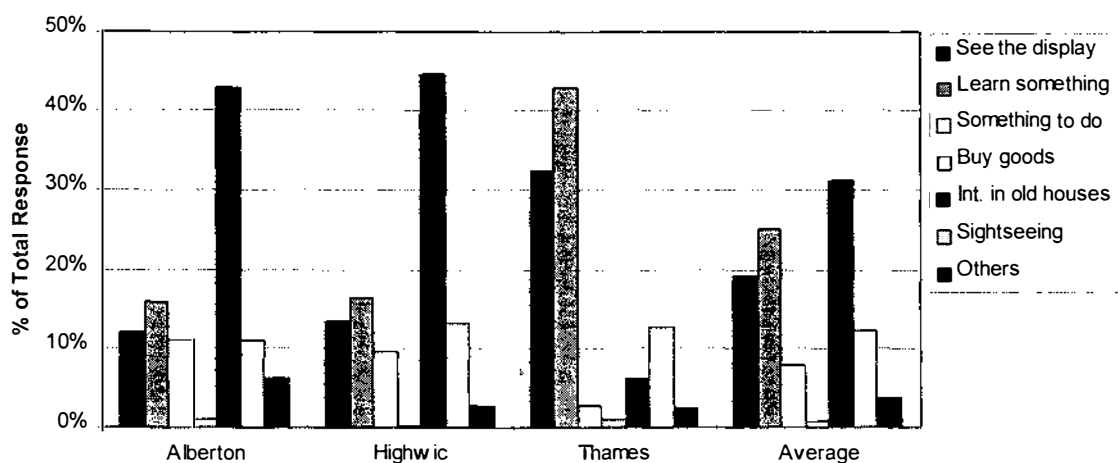
## 5. What is the main reason for this visit ?

Being interested in old houses (31%) was one of the main reasons that visitors came to the Auckland Trust properties. The other main reasons were: “to learn something” (25%), “see the display” (19%) and “sightseeing” (12%). Other reasons given for the visit were: “bring relative from England to see Auckland”, “exchange program”, “interested in historic places, history”, “showing visitor around the city and looking for wedding location”, “to see the garden and the house”, “seeking information of historical significance”, “outing with children”, “7th form photography assignment for child and helping daughter on school project”.

Visitors to the Thames School of Mines had different reasons for visiting the property. The majority of visitors came to learn something (43%), see the display (32%) and sightseeing (13%).

| Reason for Visit       | Alberton | Highwic | Thames | Averag |
|------------------------|----------|---------|--------|--------|
| See the display        | 12%      | 13%     | 32%    | 19%    |
| Learn something        | 16%      | 16%     | 43%    | 25%    |
| Something to do        | 11%      | 9%      | 3%     | 8%     |
| Buy goods              | 1%       | 0%      | 1%     | 1%     |
| Interest in old houses | 43%      | 45%     | 6%     | 31%    |
| Sightseeing            | 11%      | 13%     | 13%    | 12%    |
| Others                 | 6%       | 3%      | 2%     | 4%     |
|                        | 100%     | 100%    | 100%   | 100%   |

NZHPT-Auckland & Thames Region Visitor Survey Oct 95 & Feb 96  
Reason for this Visit



## 6. What age group are you in ?

The demographics of visitors was very similar to other visitor surveys carried out in the UK and USA (Prentice, 1993; Yale, 1991). The age group of the respondents was mainly the middle to retired age group. 41% of visitors were more than 50 years of age, 20% were in the 40-49 years group, and 18% from the 30-34 years group. The others were from the 15-29 age group (15.4%).

| Age Group | Alberton | Highwic | Thames | Average |
|-----------|----------|---------|--------|---------|
| 15 - 19   | 1%       | 8%      | 5%     | 5%      |
| 20 - 24   | 7%       | 11%     | 8%     | 9%      |
| 25 - 29   | 10%      | 3%      | 9%     | 7%      |
| 30 - 34   | 8%       | 13%     | 6%     | 9%      |
| 35 - 39   | 8%       | 11%     | 9%     | 9%      |
| 40 - 44   | 12%      | 5%      | 18%    | 12%     |
| 45 - 49   | 7%       | 11%     | 7%     | 8%      |
| 50 - 54   | 14%      | 18%     | 10%    | 14%     |
| 55 - 59   | 5%       | 5%      | 8%     | 6%      |
| > 60      | 28%      | 16%     | 20%    | 21%     |
|           | 100%     | 100%    | 100%   | 100%    |

## 7. What is your occupation ?

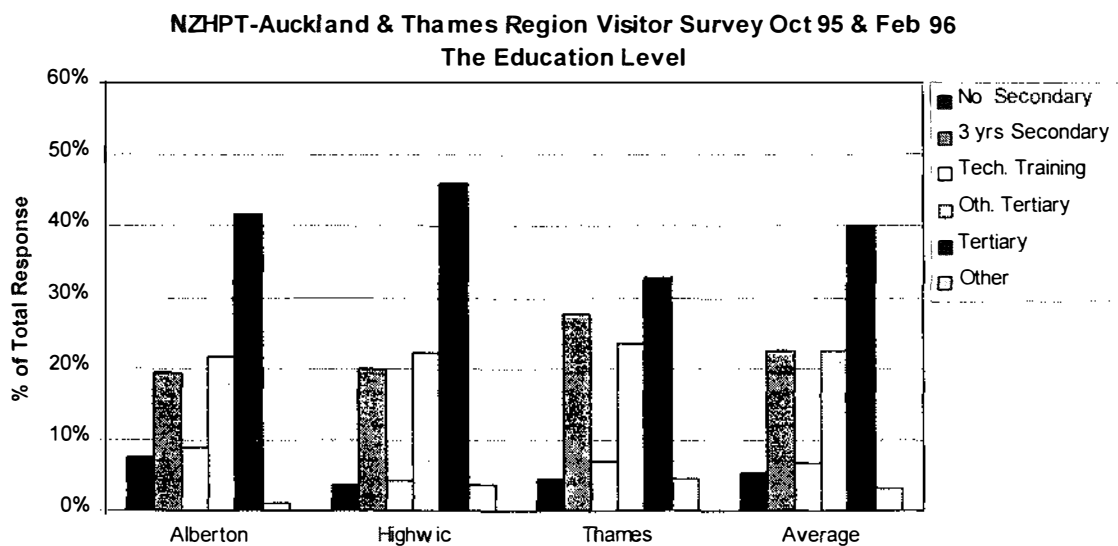
The majority of visitors were professionals (24%), managers (10%) or retired persons (20%). The remaining were distributed across agriculture and fishery to unemployed. The other occupations not listed were: nurse, teacher, teacher's aid, tour guides, kindergarten teacher, mother, medical doctor, entertainer, forest soils consultant, actor, advertising writer, designer, artist, conference marketing person; advertising writer, artist, civil servant, home-maker, mother, register nurse, town planner and travel agent. geologist, nurse, journalist/sub-editor, engineer, school teacher, iron moulder, company director, mechanical engineer and mineral dealer.

| Occupation          | Alberton | Highwic | Thames | Average |
|---------------------|----------|---------|--------|---------|
| Agr. and Fishery    | 4%       | 0%      | 3%     | 2%      |
| Domestic Worker     | 3%       | 3%      | 2%     | 2%      |
| House Person        | 5%       | 9%      | 7%     | 7%      |
| Mgr/ Administrator  | 12%      | 9%      | 9%     | 10%     |
| Operator/ Assembler | 1%       | 0%      | 1%     | 1%      |
| Clerk               | 3%       | 4%      | 4%     | 4%      |
| Professionals       | 21%      | 22%     | 24%    | 23%     |
| Retired             | 21%      | 17%     | 23%    | 20%     |
| Sales/ Services     | 3%       | 7%      | 2%     | 4%      |
| Student             | 3%       | 10%     | 5%     | 6%      |
| Technician          | 2%       | 2%      | 3%     | 2%      |
| Trade               | 3%       | 1%      | 7%     | 4%      |
| Unemployed          | 0%       | 1%      | 1%     | 0%      |
| Other               | 18%      | 17%     | 10%    | 15%     |
|                     | 100%     | 100%    | 100%   | 100%    |

## 8. What is your education level ?

The education level of the Auckland and Thames region visitors was very similar to the findings obtained from the UK and USA. The majority of visitors had university degrees (40%). 22% had other tertiary education, 22% of visitors had 3 years secondary education and 7% had technical training. Only 5% of visitors had no secondary education. The distribution of the respondents' education level was quite similar for the three sites in this region.

| Education Level    | Alberton | Highwic | Thames | Average |
|--------------------|----------|---------|--------|---------|
| No Secondary       | 8%       | 4%      | 5%     | 5%      |
| 3 yrs Secondary    | 19%      | 20%     | 28%    | 22%     |
| Technical Training | 9%       | 4%      | 7%     | 7%      |
| Other Tertiary     | 22%      | 22%     | 24%    | 22%     |
| University Degree  | 42%      | 46%     | 33%    | 40%     |
| Other              | 1%       | 4%      | 4%     | 3%      |
|                    | 100%     | 100%    | 100%   | 100%    |



## 9. Into which group does your household income fit ?

The household income of visitors varied from less than \$10,000 to more than \$95,000. The three bigger groups of visitors were: \$30,000-40,000 (15%), \$40,000-50,000 (15%), \$65,000-80,000 (13%).

| Income (In thousand) | Alberton | Highwic | Thames | Average |
|----------------------|----------|---------|--------|---------|
| <10                  | 8%       | 8%      | 3%     | 6%      |
| 10 - 20              | 18%      | 10%     | 9%     | 12%     |
| 20 - 30              | 12%      | 10%     | 12%    | 11%     |
| 30 - 40              | 14%      | 11%     | 20%    | 15%     |
| 40 - 50              | 13%      | 20%     | 11%    | 15%     |
| 50 - 65              | 10%      | 14%     | 12%    | 12%     |
| 65 - 80              | 7%       | 13%     | 18%    | 13%     |
| 80 - 95              | 7%       | 3%      | 9%     | 7%      |
| > 95                 | 10%      | 13%     | 6%     | 10%     |
|                      | 100%     | 100%    | 100%   | 100%    |

## 10. Where do you live ?

More than seventy percent of the visitors who visited Auckland and Thames region's Trust properties were from New Zealand (73.7%). Of these 94.5% were from the North Island, spreading from Northland to Wellington. 71% from Auckland, 9% from Waikato and 4% from Wellington. Only 5.5% of respondents were from the South Island: Christchurch, Otago and Invercargill.

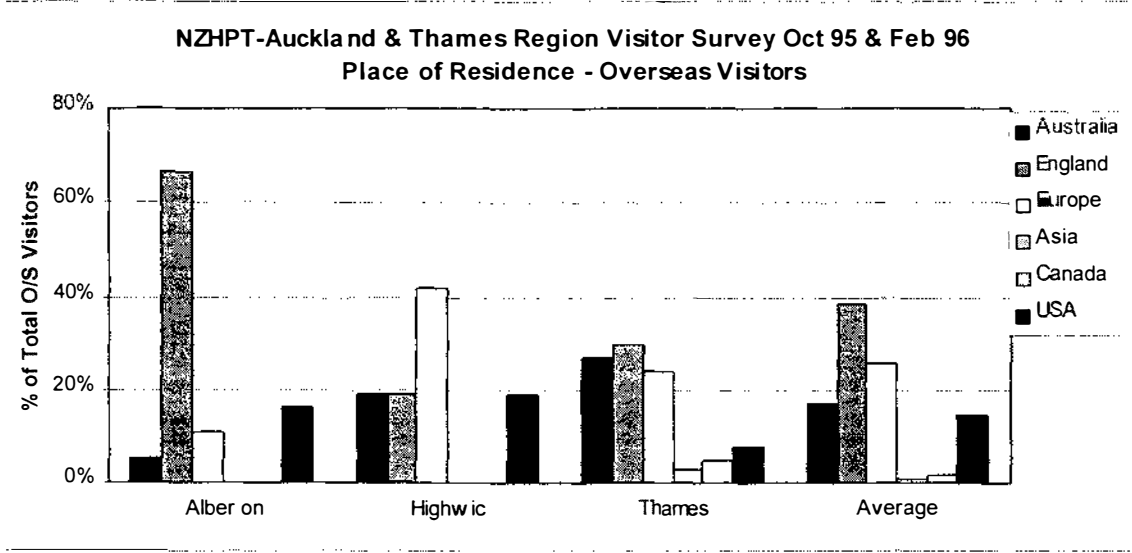
From the data, we could conclude that the Auckland and Thames Region Trust properties have attracted mainly the local visitors. There is a great market potential for the Trust to promote the properties to attract visitors from overseas and other regions.

| Region/city   | Alberton | Highwic | Thames | Average |
|---------------|----------|---------|--------|---------|
| Northland     | 1%       | 3%      | 0%     | 1%      |
| Auckland      | 89%      | 84%     | 40%    | 71%     |
| Waikato       | 0%       | 2%      | 25%    | 9%      |
| Rotorua       | 0%       | 1%      | 0%     | 0%      |
| Bay of Plenty | 1%       | 0%      | 9%     | 3%      |
| Napier        | 0%       | 2%      | 4%     | 2%      |
| Wellington    | 1%       | 4%      | 6%     | 4%      |
| Bulls         | 0%       | 0%      | 9%     | 3%      |
| Christchurch  | 6%       | 2%      | 3%     | 4%      |
| Otago         | 2%       | 0%      | 2%     | 1%      |
| Invercargill  | 0%       | 1%      | 3%     | 1%      |
| Total         | 100%     | 100%    | 100%   | 100%    |

### 11. Overseas Visitors to Auckland and Thames region

26% of visitors who visited the Trust properties in Auckland and Thames region were from overseas. They comprised nationalities from Australia (17%), England (39%), Europe (26%), USA (15%), Canada (2%) Asia (1%) and South Africa (1%).

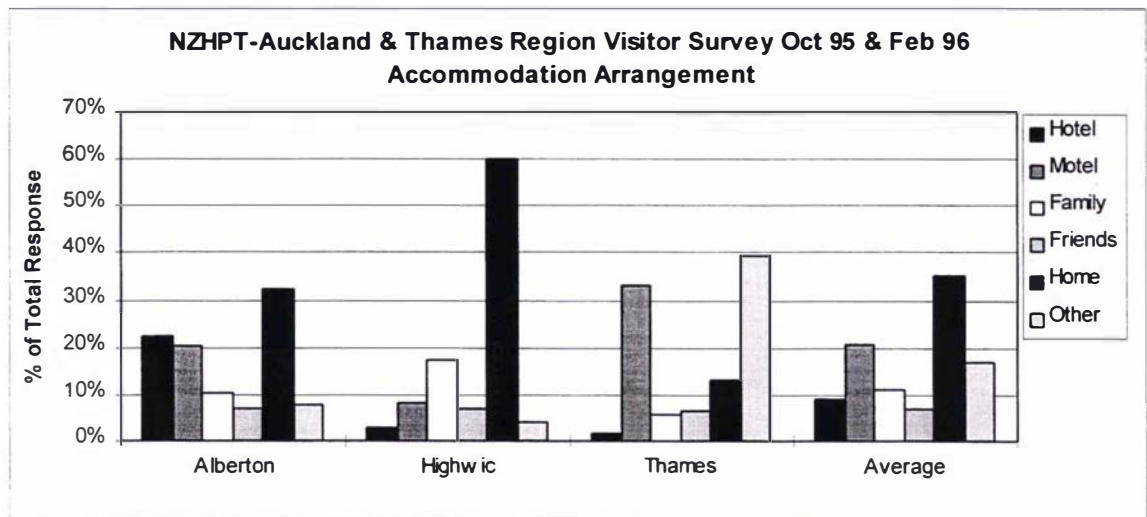
| Country      | Alber ton | Highwic | Thames | Average |
|--------------|-----------|---------|--------|---------|
| Australia    | 6%        | 19%     | 27%    | 17%     |
| England      | 67%       | 19%     | 30%    | 39%     |
| Europe       | 11%       | 42%     | 24%    | 26%     |
| Asia         | 0%        | 0%      | 3%     | 1%      |
| Canada       | 0%        | 0%      | 5%     | 2%      |
| USA          | 17%       | 19%     | 8%     | 15%     |
| South Africa | 0%        | 0%      | 3%     | 1%      |
| Total        | 100%      | 100%    | 100%   | 100%    |



## 12. Where are you staying ?

The main accommodation used by respondents who visited the Auckland and Thames region Trust properties was home (35%). Others stayed at motels (21%), with family (11%), in hotels (9%) and 7% stayed with friends. 17% stayed at backpacker accommodation, motor camps, camping vans, police holiday homes, farm stays, timeshare and holiday parks.

| Staying | Alberton | Highwic | Thames | Average |
|---------|----------|---------|--------|---------|
| Hotel   | 22%      | 3%      | 2%     | 9%      |
| Motel   | 20%      | 8%      | 33%    | 21%     |
| Family  | 10%      | 17%     | 6%     | 11%     |
| Friends | 7%       | 7%      | 7%     | 7%      |
| Home    | 32%      | 60%     | 13%    | 35%     |
| Other   | 8%       | 4%      | 39%    | 17%     |
|         | 100%     | 100%    | 100%   | 100%    |

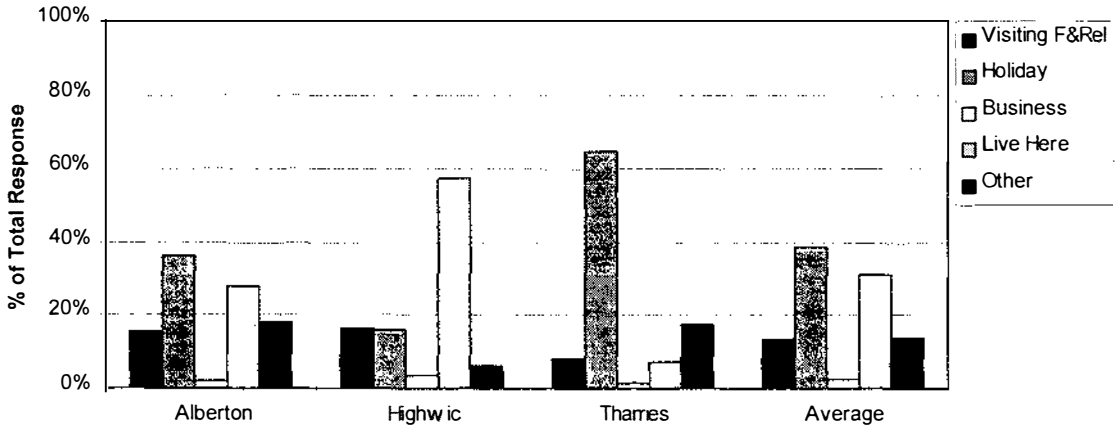


### 13. What is the purpose of your visit to this area ?

The majority of visitors to the Auckland and Thames region were tourists who came to the area for a holiday (39%), 31% were local residents, 13% of respondents came to visit friends and relatives and 14% came for other reasons such as: family history, touring with friends, history, to get to know the place and touring, to bring a relative from England to see Auckland, showing a visitor around the city, re-visiting old houses, history, to get to know the place, touring and helping their children doing school project and school educational trip.

| Reason For Visit             | Alberton | Highwic | Thames | Average |
|------------------------------|----------|---------|--------|---------|
| Visiting Friends & Relatives | 16%      | 16%     | 8%     | 13%     |
| Holiday                      | 36%      | 16%     | 65%    | 39%     |
| Business                     | 2%       | 4%      | 2%     | 2%      |
| Live Here                    | 28%      | 58%     | 8%     | 31%     |
| Other                        | 18%      | 6%      | 18%    | 14%     |
|                              | 100%     | 100%    | 100%   | 100%    |

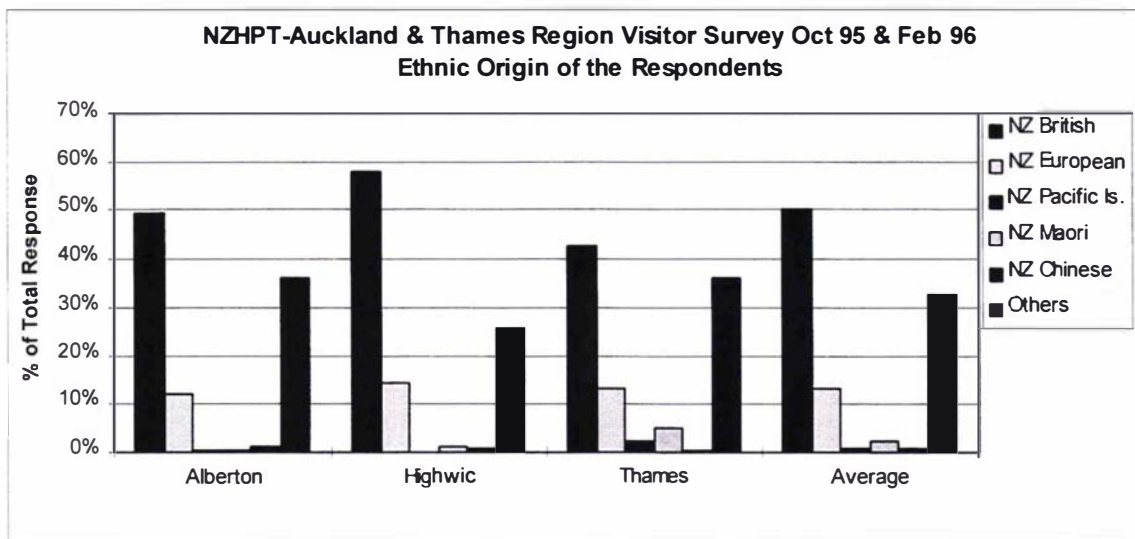
NZHPT-Auckland & Thames Region Visitor Survey Oct 95 & Feb 96  
Purpose for Visiting this Area



### 14. What is your ethnic origin ?

50% of visitors responded that they were New Zealanders of British descent and 13% stated that they were New Zealanders of European descent. The 33% of others included Australian, British, American, Canadian, European and Hong Kong Chinese. The results of the survey showed that there is a lack of knowledge or interest from the New Zealand Chinese and Pacific Islanders in historic places. There were only 2% of New Zealand Pacific Island and Chinese who visited the Trust properties during the survey periods.

| Ethnic Origin  | Alberton | Highwic | Thames | Average |
|----------------|----------|---------|--------|---------|
| NZ British     | 49%      | 58%     | 43%    | 50%     |
| NZ European    | 12%      | 14%     | 13%    | 13%     |
| NZ Pacific Is. | 1%       | 0%      | 2%     | 1%      |
| NZ Maori       | 1%       | 1%      | 5%     | 2%      |
| NZ Chinese     | 1%       | 1%      | 1%     | 1%      |
| Others         | 36%      | 26%     | 36%    | 33%     |
|                | 100%     | 100%    | 100%   | 100%    |



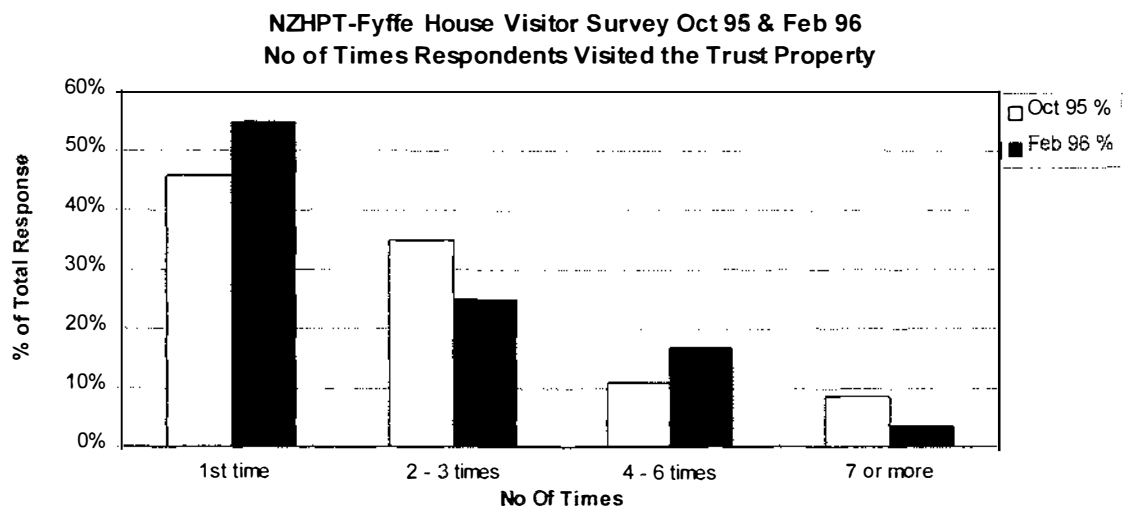
## C Visitor Profile - Fyffe House

This section presents the results obtained from the visitor profile for the two surveys at Fyffe House: October-November 95 (50 samples) and February-May 96 (100 samples). The results are aggregated and the average of the two periods is used for interpreting visitor demographics of Fyffe House.

### 1. How often have you visited New Zealand Historic Places Trust properties in the last 12 months ?

Over the survey period, the survey response from Fyffe House showed that 50% of visitors visited the property for the first time, 30% had visited 2-3 times and 20% more than 4 times. The 20% who visited more than 4 times could be called frequent visitors.

| No of Times | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-------------|--------|----------|--------|----------|---------|
| 1st time    | 21     | 46%      | 46     | 55%      | 50.2%   |
| 2 - 3 times | 16     | 35%      | 21     | 25%      | 29.9%   |
| 4 - 6 times | 5      | 11%      | 14     | 17%      | 13.8%   |
| 7 or more   | 4      | 9%       | 3      | 4%       | 6.1%    |
| Total       | 46     | 100%     | 84     | 100%     | 100.0%  |



**2. Are you a member of the societies of The New Zealand Historic Places Trust or affiliated overseas Trust ?**

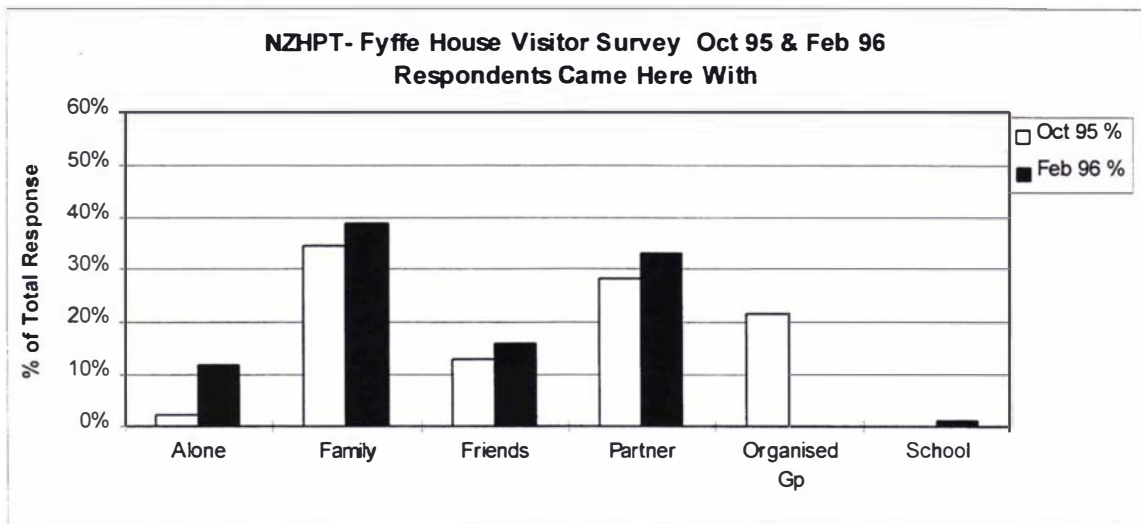
The majority of visitors were not members of the Trust (82%), 18% of the respondents were members of the Trust in New Zealand or overseas.

| Trust Member | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|--------------|--------|----------|--------|----------|---------|
| Yes          | 5      | 10%      | 26     | 26%      | 18.3%   |
| No           | 43     | 90%      | 73     | 74%      | 81.7%   |
| Total        | 48     | 100%     | 99     | 100%     | 100.0%  |

**3. Who did you come here with today ?**

Most of the respondents came with family (36.7%), with partners (30.8%) or friends (14.6%). 10.9% came alone and 10.9% came with organised groups.

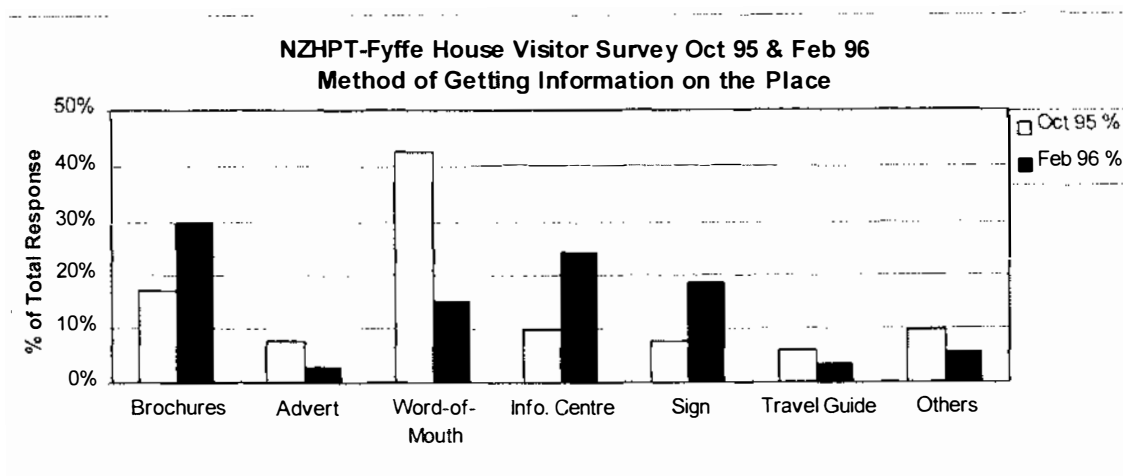
| Accompany       | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-----------------|--------|----------|--------|----------|---------|
| Alone           | 1      | 2%       | 11     | 12%      | 7.0%    |
| Family          | 16     | 35%      | 36     | 39%      | 36.7%   |
| Friends         | 6      | 13%      | 15     | 16%      | 14.6%   |
| Partner         | 13     | 28%      | 31     | 33%      | 30.8%   |
| Organised Group | 10     | 22%      | 0      | 0%       | 10.9%   |
| School          | 0      | 0%       | 1      | 1%       | 0.5%    |
| Total           | 46     | 100%     | 93     | 100%     | 100.0%  |



#### 4. Where did you find out about this place ?

This survey confirmed word-of-mouth is the most common method of obtaining information on tourist attractions. 28.8% of visitors found out about Fyffe House by word-of-mouth, 23.5% from brochures, 17% from Information Centres and 13.3% from signs.

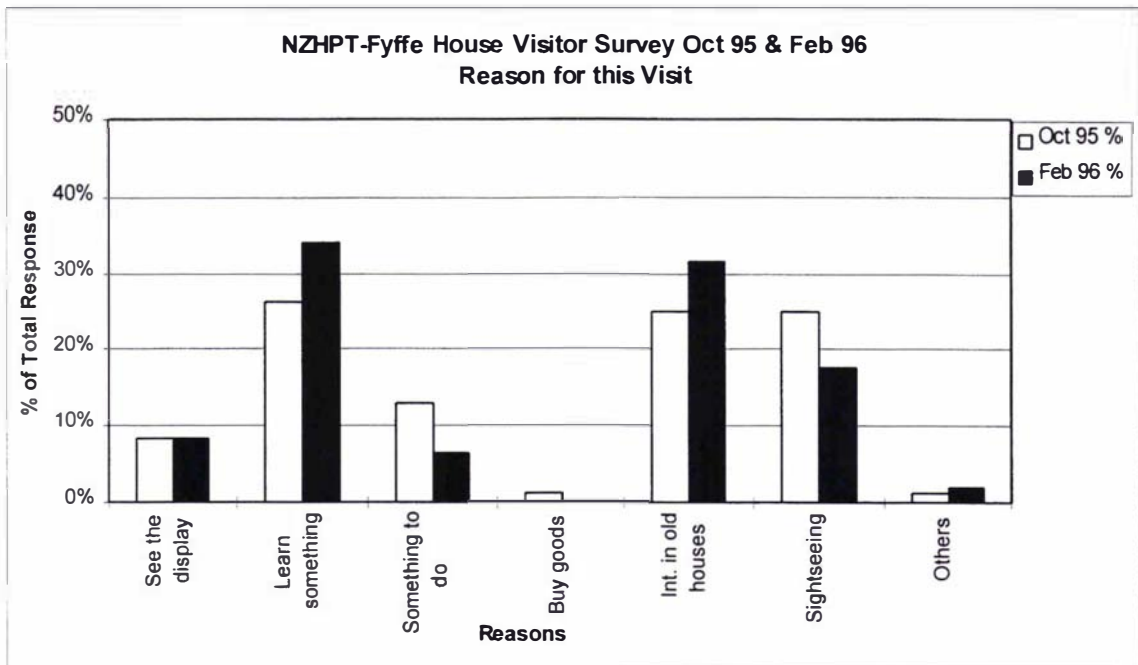
| Information        | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|--------------------|--------|----------|--------|----------|---------|
| Brochures          | 9      | 17%      | 33     | 30%      | 23.5%   |
| Advert             | 4      | 8%       | 3      | 3%       | 5.2%    |
| Word of Mouth      | 22     | 42%      | 17     | 15%      | 28.8%   |
| Information Centre | 5      | 10%      | 27     | 24%      | 17.0%   |
| Sign               | 4      | 8%       | 21     | 19%      | 13.3%   |
| Travel Guide       | 3      | 6%       | 4      | 4%       | 4.7%    |
| Others             | 5      | 10%      | 6      | 5%       | 7.5%    |
| Total              | 52     | 100%     | 111    | 100%     | 100.0%  |



### 5. What is the main reason for this visit ?

To learn something was one of the main reasons that visitors came to Fyffe House (30.2%). The other main reasons were they were interested in old houses (28.3%) and 21.4% came for sightseeing.

| Reason for Visit       | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|------------------------|--------|----------|--------|----------|---------|
| See the display        | 7      | 8%       | 13     | 8%       | 8.3%    |
| Learn something        | 22     | 26%      | 54     | 34%      | 30.2%   |
| Something to do        | 11     | 13%      | 10     | 6%       | 9.7%    |
| Buy goods              | 1      | 1%       | 0      | 0%       | 0.6%    |
| Interest in old houses | 21     | 25%      | 50     | 32%      | 28.3%   |
| Sightseeing            | 21     | 25%      | 28     | 18%      | 21.4%   |
| Others                 | 1      | 1%       | 3      | 2%       | 1.5%    |
| Total                  | 84     | 100%     | 158    | 100%     | 100.0%  |

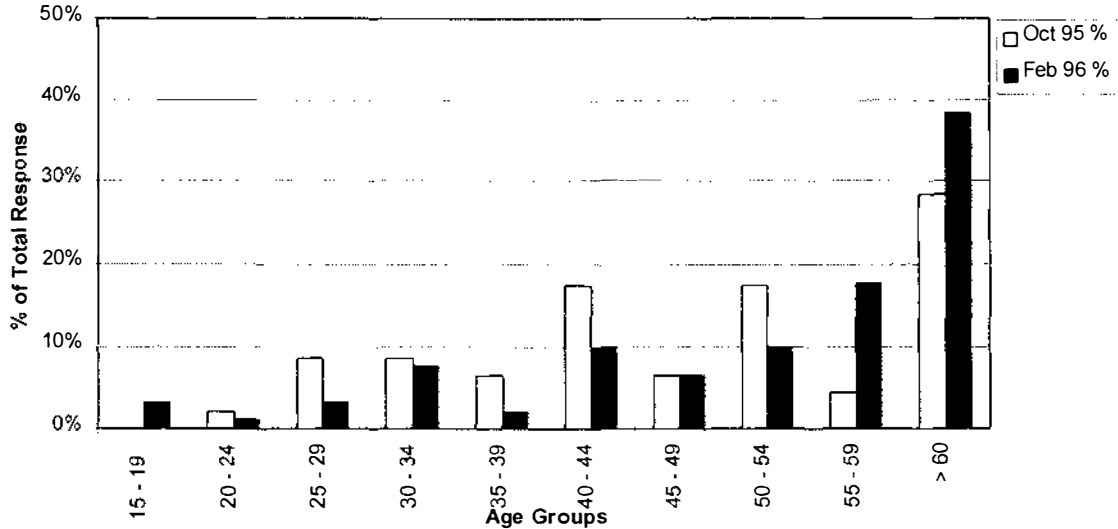


### 6. What age group are you in?

The demographics of visitors was very similar to other visitor surveys carried out in the UK and USA. The age group of the respondents was mainly the middle to retired age group. 58% of the respondents were more than 50 years of age and 13.6% were 40-44 years group. The others were from the 15-39 age group.

| Age Group | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-----------|--------|----------|--------|----------|---------|
| 15 - 19   | 0      | 0%       | 3      | 3%       | 1.6%    |
| 20 - 24   | 1      | 2%       | 1      | 1%       | 1.6%    |
| 25 - 29   | 4      | 9%       | 3      | 3%       | 6.0%    |
| 30 - 34   | 4      | 9%       | 7      | 8%       | 8.2%    |
| 35 - 39   | 3      | 7%       | 2      | 2%       | 4.4%    |
| 40 - 44   | 8      | 17%      | 9      | 10%      | 13.6%   |
| 45 - 49   | 3      | 7%       | 6      | 7%       | 6.6%    |
| 50 - 54   | 8      | 17%      | 9      | 10%      | 13.6%   |
| 55 - 59   | 2      | 4%       | 16     | 18%      | 11.0%   |
| > 60      | 13     | 28%      | 35     | 38%      | 33.4%   |
| Total     | 46     | 100%     | 91     | 100%     | 100.0%  |

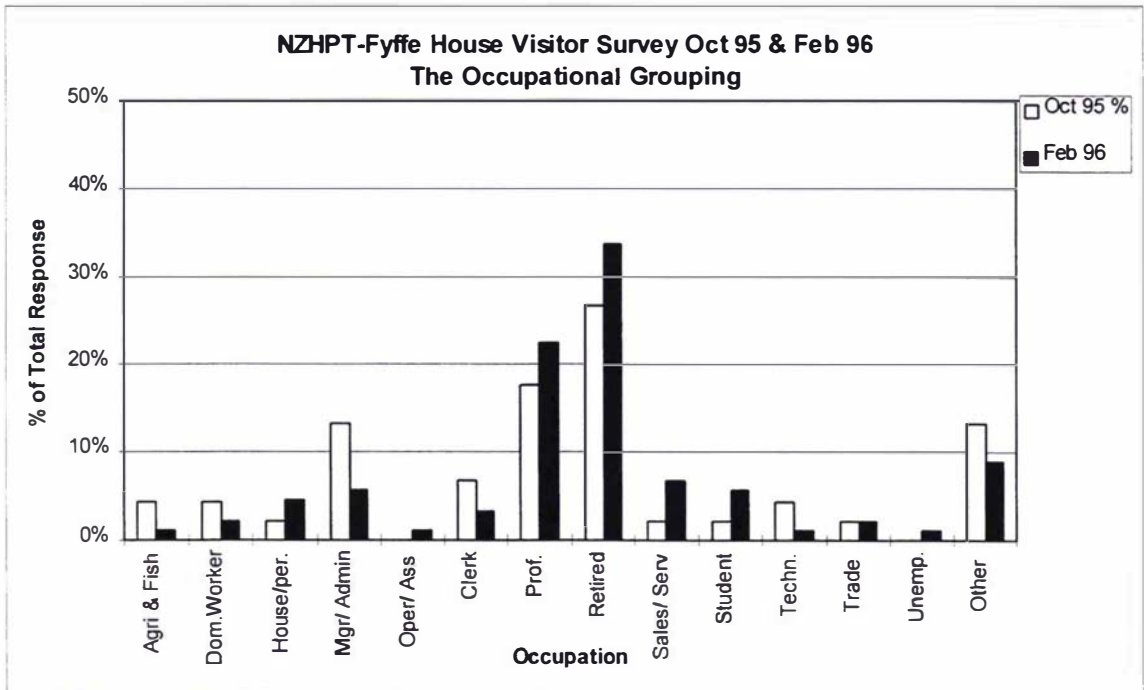
NZHPT-Fyffe House Visitor Survey Oct 95 & Feb 96  
Respondents Age Group



### 7. What is your occupation ?

The majority of the respondents were retired persons (30%), professionals (20%) or managers (9.5%).

| Occupation              | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-------------------------|--------|----------|--------|----------|---------|
| Agriculture and Fishery | 2      | 4%       | 1      | 1%       | 2.8%    |
| Domestic Worker         | 2      | 4%       | 2      | 2%       | 3.3%    |
| House person            | 1      | 2%       | 4      | 4%       | 3.4%    |
| Manager/Administrator   | 6      | 13%      | 5      | 6%       | 9.5%    |
| Operator/Assembler      | 0      | 0%       | 1      | 1%       | 0.6%    |
| Clerk                   | 3      | 7%       | 3      | 3%       | 5.0%    |
| Professional            | 8      | 18%      | 20     | 22%      | 20.1%   |
| Retired                 | 12     | 27%      | 30     | 34%      | 30.2%   |
| Sales/ Services         | 1      | 2%       | 6      | 7%       | 4.5%    |
| Student                 | 1      | 2%       | 5      | 6%       | 3.9%    |
| Technician              | 2      | 4%       | 1      | 1%       | 2.8%    |
| Trade                   | 1      | 2%       | 2      | 2%       | 2.2%    |
| Unemployed              | 0      | 0%       | 1      | 1%       | 0.6%    |
| Other                   | 6      | 13%      | 8      | 9%       | 11.2%   |
| Total                   | 45     | 100%     | 89     | 100%     | 100.0%  |

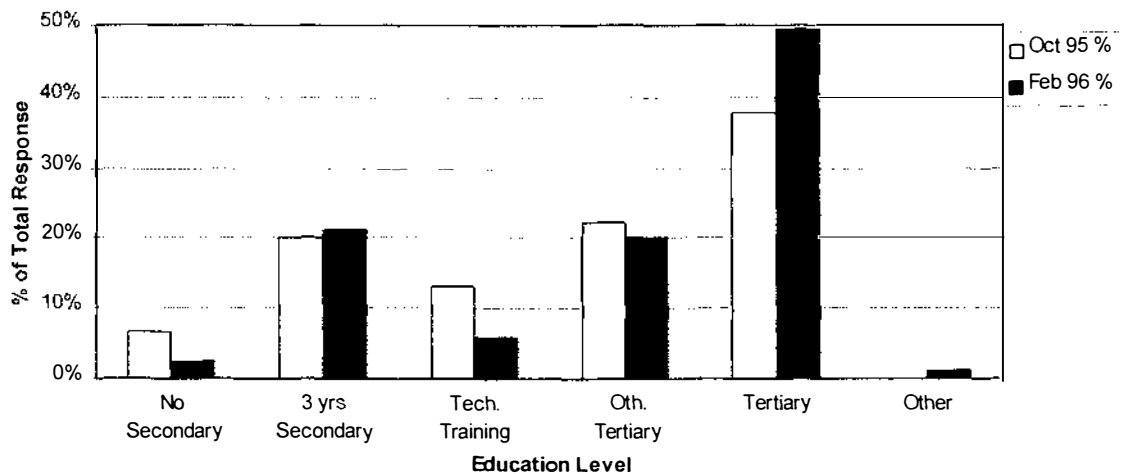


## 8. What is your education level ?

The majority of visitors had university degrees (43.6%). 21% had other tertiary education and 20.6% of the respondents had only 3 years secondary education. Only 4.5% of the respondents had no secondary education.

| Educational Level | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-------------------|--------|----------|--------|----------|---------|
| No Secondary      | 3      | 7%       | 2      | 2%       | 4.5%    |
| 3 yrs Secondary   | 9      | 20%      | 18     | 21%      | 20.6%   |
| Tech. Training    | 6      | 13%      | 5      | 6%       | 9.6%    |
| Other Tertiary    | 10     | 22%      | 17     | 20%      | 21.1%   |
| University Degree | 17     | 38%      | 42     | 49%      | 43.6%   |
| Other             | 0      | 0%       | 1      | 1%       | 0.6%    |
| Total             | 45     | 100%     | 85     | 100%     | 100.0%  |

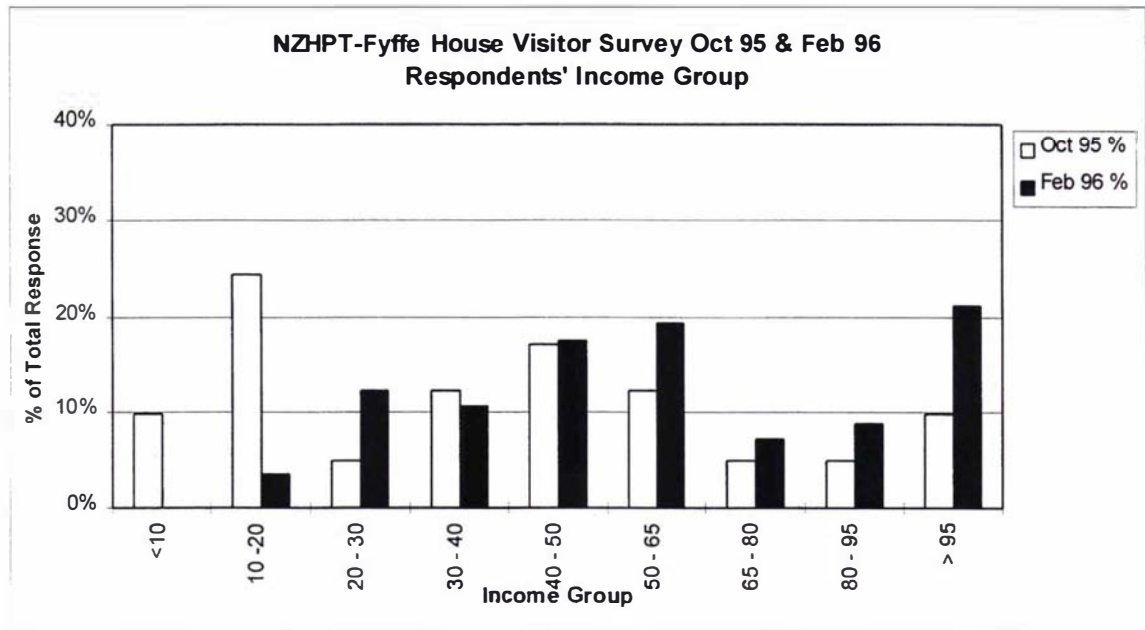
NZHPT-Fyffe House Visitor Survey Oct 95 & Feb 96  
The Education Level



**9. Into which group does your household income fit ?**

The household income of visitors varied from less than \$10,000 to more than \$95,000. Three bigger groups of visitors were: \$50,000-65,000 (17.3%), more than \$95,000 (15.4%) and \$10,000-20,000 group (13.9%).

| Income (In thousands) | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-----------------------|--------|----------|--------|----------|---------|
| <10                   | 4      | 10%      | 0      | 0%       | 4.9%    |
| 10 - 20               | 10     | 24%      | 2      | 4%       | 13.9%   |
| 20 - 30               | 2      | 5%       | 7      | 12%      | 8.6%    |
| 30 - 40               | 5      | 12%      | 6      | 11%      | 11.4%   |
| 40 - 50               | 7      | 17%      | 10     | 18%      | 17.3%   |
| 50 - 65               | 5      | 12%      | 11     | 19%      | 15.7%   |
| 65 - 80               | 2      | 5%       | 4      | 7%       | 5.9%    |
| 80 - 95               | 2      | 5%       | 5      | 9%       | 6.8%    |
| > 95                  | 4      | 10%      | 12     | 21%      | 15.4%   |
| Total                 | 41     | 100%     | 57     | 100%     | 100.0%  |

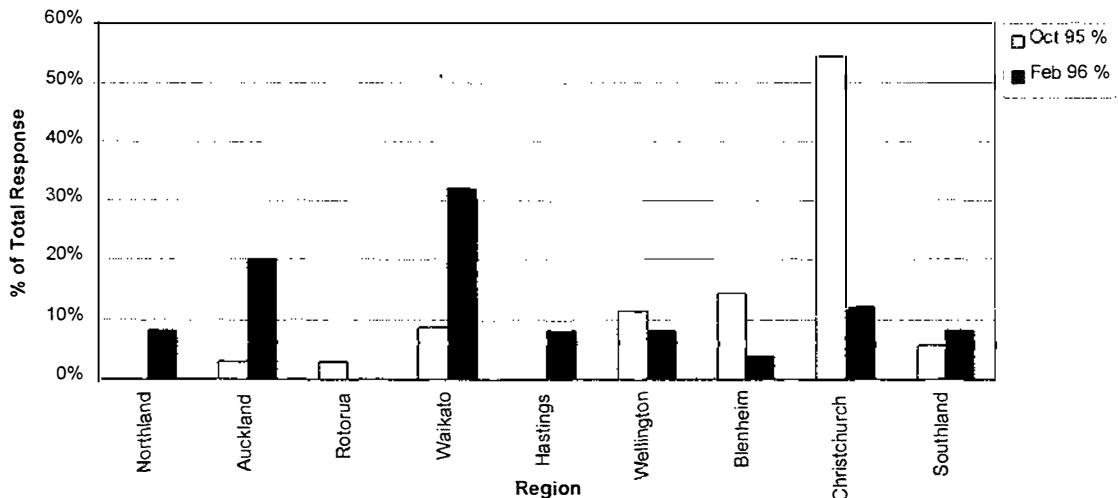


## 10. Where do you live ?

More than half of the respondents to Fyffe House who responded were from New Zealand (52%). Of these 50.8% were from the North Island, spreading from Northland to Wellington; 33.1% were from Christchurch, 9.1% from Blenheim and 6.9% from Southland.

| Region       | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|--------------|--------|----------|--------|----------|---------|
| Northland    | 0      | 0%       | 2      | 8%       | 4.0%    |
| Auckland     | 1      | 3%       | 5      | 20%      | 11.4%   |
| Rotorua      | 1      | 3%       | 0      | 0%       | 1.4%    |
| Waikato      | 3      | 9%       | 8      | 32%      | 20.3%   |
| Hastings     | 0      | 0%       | 2      | 8%       | 4.0%    |
| Wellington   | 4      | 11%      | 2      | 8%       | 9.7%    |
| Blenheim     | 5      | 14%      | 1      | 4%       | 9.1%    |
| Christchurch | 19     | 54%      | 3      | 12%      | 33.1%   |
| Southland    | 2      | 6%       | 2      | 8%       | 6.9%    |
| Total        | 35     | 100%     | 25     | 100%     | 100.0%  |

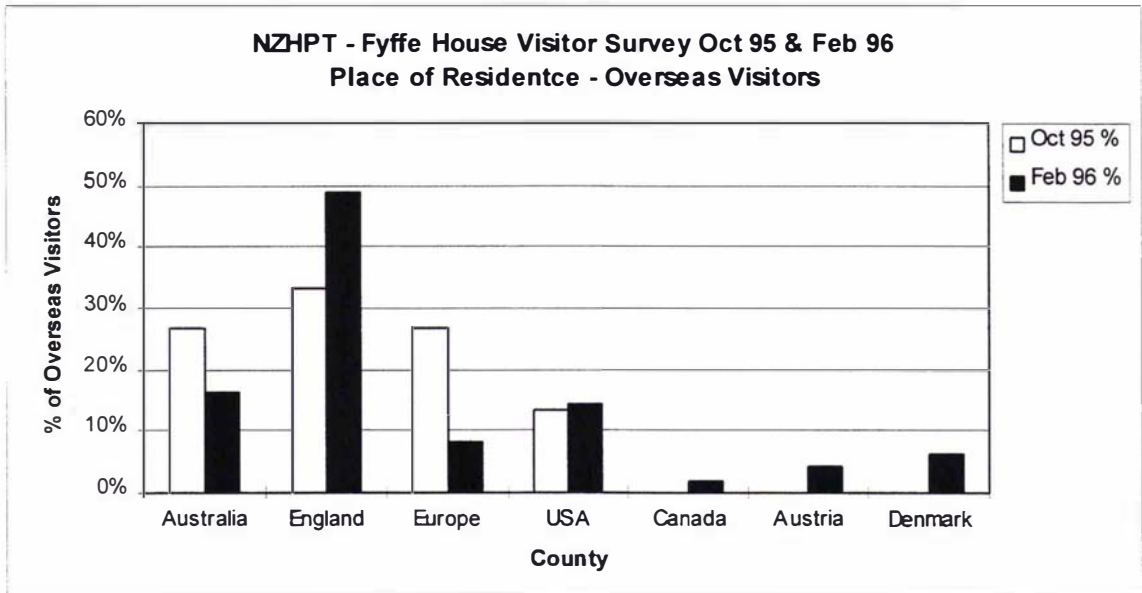
NZHPT-Fyffe House Visitor Survey Oct 95 & Feb 96  
Place of Residence - New Zealand Visitors



### 11. Overseas Visitors to Fyffe House

Of the respondents who were from overseas, 41.2% were from England, 21.5% from Australia, 23.5% from Europe, 13.8% from USA and 1% from Canada.

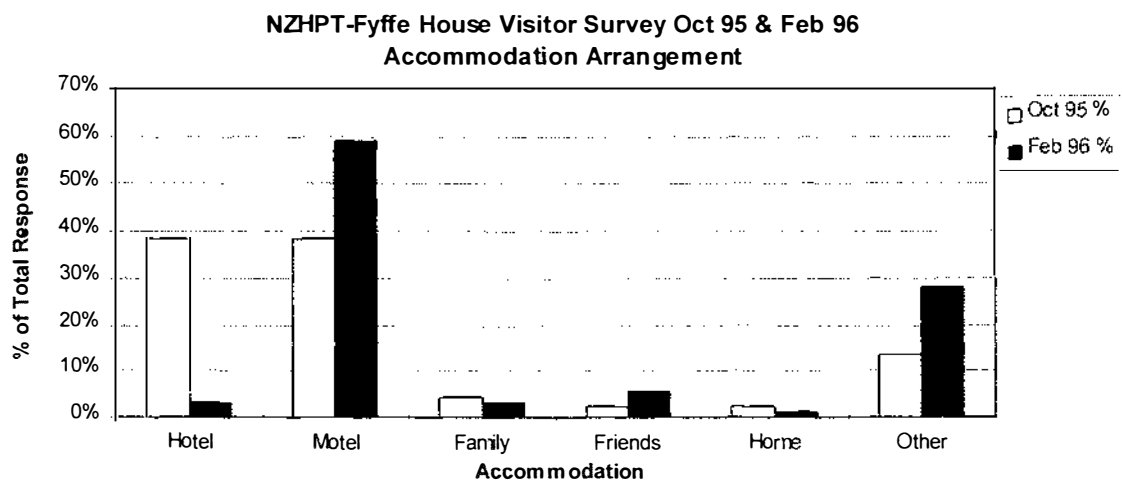
| Country   | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-----------|--------|----------|--------|----------|---------|
| Australia | 4      | 27%      | 8      | 16%      | 21.5%   |
| England   | 5      | 33%      | 24     | 49%      | 41.2%   |
| Europe    | 4      | 27%      | 4      | 8%       | 17.4%   |
| USA       | 2      | 13%      | 7      | 14%      | 13.8%   |
| Canada    | 0      | 0%       | 1      | 2%       | 1.0%    |
| Austria   | 0      | 0%       | 2      | 4%       | 2.0%    |
| Denmark   | 0      | 0%       | 3      | 6%       | 3.1%    |
| Total     | 15     | 100%     | 49     | 100%     | 100.0%  |



## 12. Where are you staying ?

The main accommodation for the respondents who visited Fyffe House was motels(49%). Others stayed in hotels (21%), backpacker accommodation (20.7%) and motor camps.

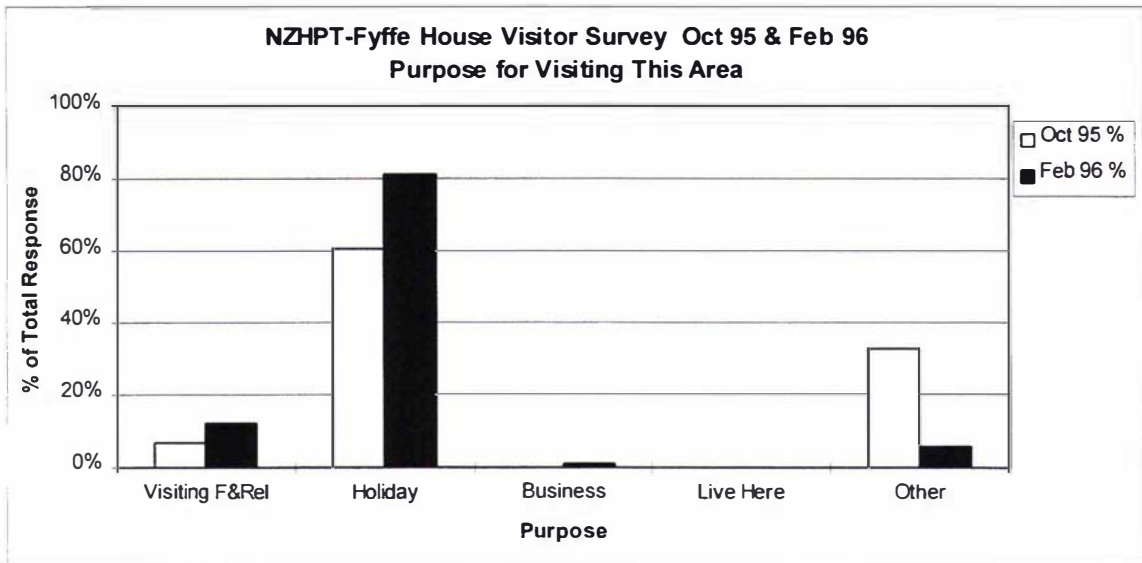
| Staying | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|---------|--------|----------|--------|----------|---------|
| Hotel   | 17     | 39%      | 3      | 3%       | 21.0%   |
| Motel   | 17     | 39%      | 53     | 59%      | 48.8%   |
| Family  | 2      | 5%       | 3      | 3%       | 3.9%    |
| Friends | 1      | 2%       | 5      | 6%       | 3.9%    |
| Home    | 1      | 2%       | 1      | 1%       | 1.7%    |
| Other   | 6      | 14%      | 25     | 28%      | 20.7%   |
| Total   | 44     | 100%     | 90     | 100%     | 100.0%  |



### 13. What is the purpose of your visit to this area ?

Majority of the respondents to Fyffe House were tourists who came to the area for a holiday (70.7%). There were no local residents. 9.7% of the respondents came to visit friends and relatives and 19% came to learn the history of whaling in this area.

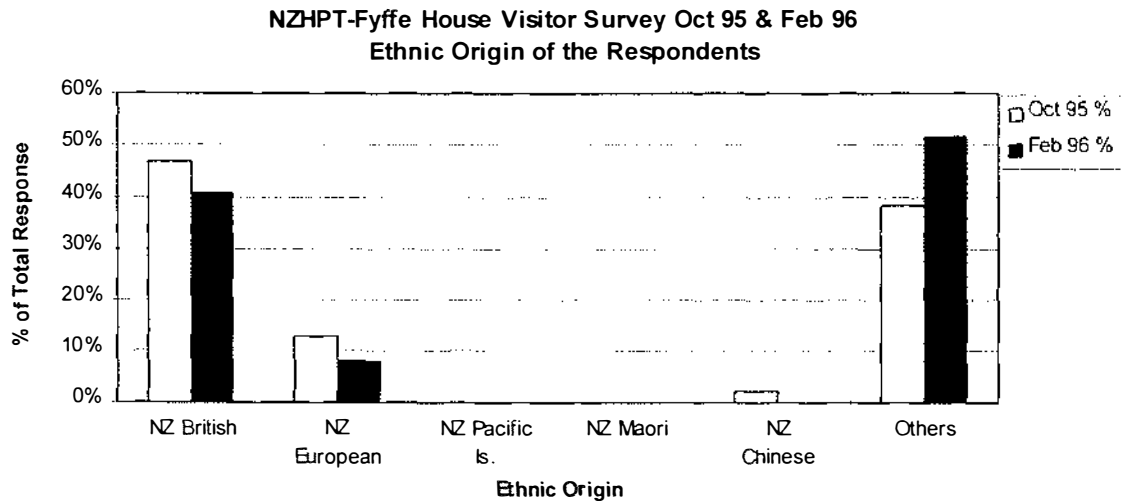
| Reason For Visit             | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|------------------------------|--------|----------|--------|----------|---------|
| Visiting Friends & Relatives | 3      | 7%       | 11     | 12%      | 9.7%    |
| Holiday                      | 26     | 60%      | 72     | 81%      | 70.7%   |
| Business                     | 0      | 0%       | 1      | 1%       | 0.6%    |
| Live Here                    | 0      | 0%       | 0      | 0%       | 0.0%    |
| Other                        | 14     | 33%      | 5      | 6%       | 19.1%   |
|                              | 43     | 100%     | 89     | 100%     | 100.0%  |



## 14. What is your ethnic origin ?

43.6% of visitors responded that they were New Zealanders of British descent. 10.3% stated that they were New Zealanders of European descent. There were only 1.1% of New Zealand Chinese. British (23.5%) was the main nationality of the overseas visitors, followed by Australian (4.4%), American (6.7%), Scottish, Dutch, Canadian, Austrian and European.

| Ethnic Group      | Oct-95 | Oct 95 % | Feb-96 | Feb 96 % | Average |
|-------------------|--------|----------|--------|----------|---------|
| NZ British        | 22     | 47%      | 36     | 40%      | 43.6%   |
| NZ European       | 6      | 13%      | 7      | 8%       | 10.3%   |
| NZ Pacific Island | 0      | 0%       | 0      | 0%       | 0.0%    |
| NZ Maori          | 0      | 0%       | 0      | 0%       | 0.0%    |
| NZ Chinese        | 1      | 2%       | 0      | 0%       | 1.1%    |
| Others            | 18     | 38%      | 46     | 52%      | 45.0%   |
| Total             | 47     | 100%     | 89     | 100%     | 100.0%  |





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# **Appendix D.**

## **Queen Elizabeth II Army Memorial Museum Visitor Survey**

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- D.1 Information Sheet for Visitors**
- D.2 Survey Questionnaire**
- D.3 Gap Analysis of Service Quality**
- D.4 Visitors' Overall Impression**
- D.5 Visitor Profile**





Queen Elizabeth II Army Memorial Museum • PO Box 45, Waiouru, New Zealand  
Phone: 64-6-387 6911 • Fax: 64-6-387 6319

### Visitor Survey

### Queen Elizabeth II Army Memorial Museum

### Waiouru

23 September 1996 - 30 November 1996

My name is Shirley George, and I am conducting a Visitor Survey on behalf of the Queen Elizabeth II Army Memorial Museum (Army Museum). The survey is part of a Massey University PhD research project on "The Application of Total Quality Management in the Tourism Industry".

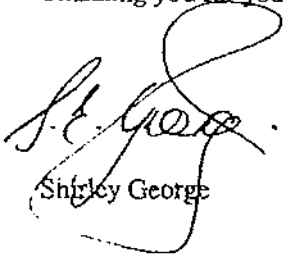
The Visitor Survey will run from 23 September 1996 through to the end of November 1996. The purpose of the questionnaire is to measure the expectations and satisfaction's of visitors to the Queen Elizabeth II Army Memorial Museum (Army Museum). The information will help the Museum identify customers needs and improvements required to meet those needs.

The information provided will be treated in confidence and those taking part will do so anonymously. Should you decide to take part in the Survey, you will have to fill in Part One prior to entering the Museum. On leaving the Museum, you need to fill out the rest of the questionnaire.

Each part should take about 10-15 minutes to complete. You have the right to refuse to answer any question and to clarify any issues regarding the questionnaire.

Participating in the Survey is voluntary and filling in the questionnaire implies consent to take part in the Survey. The results of the Survey maybe published in scientific or management journals or in the newspaper. This will be done after consultation with the Museum. It will not be possible to identify any respondent from the published results.

Thanking you for your time and assistance.



Shirley George



Tammi Tan  
Dept of Production Technology  
Massey University



Mark O'Connor  
Marketing Manager  
Queen Elizabeth II Army  
Memorial Museum



## Visitor Survey

### Queen Elizabeth II Army Memorial Museum

#### Part One: Level of Importance and Expectations - Management Perception of Visitor's Expectations & Importance

We would like you to think about the kind of exhibits and services that you would like to see at Queen Elizabeth II Army Memorial Museum.

For each of the items listed below please indicate how important you think each one is. Then for each of the items listed below please indicate what do you think of visitors' expectation are in terms of exhibits and services provided by Queen Elizabeth II Army Memorial Museum.

Make your choice by circling the number which best represents how you feel about the exhibits and services provided by Queen Elizabeth II Army Memorial Museum.

| No | Features, Exhibits and Services   | How Important Are They to Visitors ? |                      |                     |                          |                          | What Do You Think the Visitor Expect? |               |          |              |           |                |     |
|----|---|--------------------------------------|----------------------|---------------------|--------------------------|--------------------------|---------------------------------------|---------------|----------|--------------|-----------|----------------|-----|
|    |   | Not Important<br>1                   | Some Importance<br>2 | Very Important<br>3 | Extremely Important<br>4 | Extremely Important<br>5 | N/A                                   | Very Low<br>1 | Low<br>2 | Neither<br>3 | High<br>4 | Very High<br>5 | N/A |
| 1  | The physical appearance of the facility eg. cleanliness, layout etc.                      | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 2  | The layout and information level of the exhibitions                                       | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 3  | The exhibition themes and content   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 4  | The appearance of the staff   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 5  | The information provided about the facility eg. brochures, adverts, programme information | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 6  | The provision of toilets and parenting facilities   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 7  | The usefulness of floor plan (map)  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 8  | The range of products provided by cafe  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 9  | The pricing of food in cafe   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 10 | The services provided by cafe   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 11 | The range of products provided by shop  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 12 | The pricing of products in shop   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 13 | The services provided by shop   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 14 | Staff can be relied on to provide the promised service. eg. public programmes             | 1                                    | 2                    | 3                   | 4                        | 5                        |                                       | 1             | 2        | 3            | 4         | 5              | N/A |
| 15 | The information provided by staff is accurate   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |

|  |
|--|
| <b>Part One: Level of Importance and Expectations - Management</b> |
|--|

| No | Features, Exhibits and Services   | How Important Are They to Visitors ? |                      |                     |                          |                          | What Do You Think the Visitor Expect? |               |          |              |           |                |     |
|----|---|--------------------------------------|----------------------|---------------------|--------------------------|--------------------------|---------------------------------------|---------------|----------|--------------|-----------|----------------|-----|
|    |   | Not Important<br>1                   | Some Importance<br>2 | Very Important<br>3 | Extremely Important<br>4 | Extremely Important<br>5 | N/A                                   | Very Low<br>1 | Low<br>2 | Neither<br>3 | High<br>4 | Very High<br>5 | N/A |
| 16 | Visitors are informed about when the services will be performed. eg. public programmes, exhibitions | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 17 | The staff are willing to help visitors  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 18 | Staff respond to visitor needs as quickly as possible   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 19 | Staff inspire trust and confidence in visitors  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 20 | Visitors feel comfortable during the visit eg. enough seats, heating, lighting                      | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 21 | Staff are friendly, courteous and polite to visitors  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 22 | Staff have the knowledge to respond to visitor requests   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 23 | Opening hours are convenient.   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 24 | The organisation has the visitor's best interests at heart  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 25 | Staff understand the needs of visitors  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 26 | There is easy access for visitors with wheelchair, prams and young children                         | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 27 | Signs in the building makes it easy to find your way around   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 28 | Outdoor signs makes it easy to locate the building.   | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |
| 29 | There is adequate car parking for visitors  | 1                                    | 2                    | 3                   | 4                        | 5                        | N/A                                   | 1             | 2        | 3            | 4         | 5              | N/A |

File Name: QEII.m

|   |
|---|
| <b>Part Two. Importance Weighting for Queen Elizabeth II Army Memorial Museum</b> |
|---|

We would like to know how important each of these features is to visitors when they evaluate Queen Elizabeth II Army Memorial Museum. Please circle the number which best represents the importance that you place on the five features of service according to how important you think each feature is to visitors.

| No | Quality Service Features  | How Important Is The Service To Visitor ? |                         |                        |                        |                             |     |
|----|---|---|-------------------------|------------------------|------------------------|-----------------------------|-----|
|    |   | Not<br>Important<br>1                     | Some<br>Importance<br>2 | Very<br>Important<br>3 | Very<br>Important<br>4 | Extremely<br>Important<br>5 | N/A |
| 1  | The appearance of the physical facilities,  | 1   | 2                       | 3                      | 4                      | 5                           | N/A |
| 2  | The appearance of the exhibitions   | 1   | 2                       | 3                      | 4                      | 5                           | N/A |
| 3  | The appearance of staff   | 1   | 2                       | 3                      | 4                      | 5                           | N/A |
| 4  | The ability of the facility to perform the promised service dependably and accurately | 1   | 2                       | 3                      | 4                      | 5                           | N/A |
| 5  | The willingness of the staff to help visitors and provide prompt service              | 1   | 2                       | 3                      | 4                      | 5                           | N/A |
| 6  | The knowledge and courtesy of staff   | 1   | 2                       | 3                      | 4                      | 5                           | N/A |
| 7  | The ability of staff to convey trust and confidence                                   | 1   | 2                       | 3                      | 4                      | 5                           | N/A |
| 8  | The caring, individualised attention the facility provides its visitors               | 1   | 2                       | 3                      | 4                      | 5                           | N/A |

File Name: QEIIIm

**Part Three. To Identify The Current Status of Queen Elizabeth II Army Memorial Museum on Performance Standards and Procedures**

**Availability of Standards and Procedures**

Performance standards in Queen Elizabeth II Army Memorial Museum can be formal - written, explicit and communicated to staff. They can also be informal - verbal, implicit, and assumed to be understood by staff. For each of the following features, Please place a tick (✓) to the appropriate boxes.

| No | Standards  | No Standards Exist<br>1 | Have Informal Standards<br>2 | Have Formal Standards not Documented<br>3 | Have Documented Standards<br>4 | Do not Know<br>0 |
|----|--|-------------------------|------------------------------|---|--------------------------------|------------------|
| 1  | The appearance of the physical facilities  |                         |                              |   |                                |                  |
| 2  | The appearance of the exhibitions  |                         |                              |   |                                |                  |
| 3  | The appearance of staff  |                         |                              |   |                                |                  |
| 4  | The ability to perform the promised service reliably and accurately                                |                         |                              |   |                                |                  |
| 5  | The willingness of the staff to help visitors and provide prompt service                           |                         |                              |   |                                |                  |
| 6  | The knowledge and courtesy of the staff  |                         |                              |   |                                |                  |
| 7  | The ability of staff to convey trust and confidence  |                         |                              |   |                                |                  |
| 8  | The caring, individualised attention Queen Elizabeth II Army Memorial Museum provides its visitors |                         |                              |   |                                |                  |

*Thank you for completing this questionnaire.*

**Comments\ Suggestions:**

We welcome any other comments or suggestions you feel would help us to improve the quality of our services.

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## Visitor Survey

### Queen Elizabeth II Army Memorial Museum

#### Part One: What Are Your Expectations Before Your Visit and How Do You Feel After Your Visit To Queen Elizabeth II Army Memorial Museum?

We would like to know before your visit, what your expectations are with the facilities, exhibits and services, and how do you feel about this after your visit to Queen Elizabeth II Army Memorial Museum.

Make your choice by circling the number which best represents how you feel about the facilities, exhibits and services provided by Queen Elizabeth II Army Memorial Museum. Circle "N/A" if you have no expectations or you feel that it is not relevant.

| No | Features, Exhibits and Services   | Before Your Visit<br>What Do You Expect? |          |              |           |                   |     | After Your Visit<br>How do you feel? |           |              |                   |                |     |
|----|---|--|----------|--------------|-----------|-------------------|-----|--------------------------------------|-----------|--------------|-------------------|----------------|-----|
|    |   | Very<br>Low<br>1                         | Low<br>2 | Neither<br>3 | High<br>4 | Very<br>High<br>5 | N/A | Very<br>Poor<br>1                    | Poor<br>2 | Average<br>3 | Very<br>Good<br>4 | Excellent<br>5 | N/A |
| 1  | The physical appearance of the facility eg. cleanliness, layout etc.                      | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 2  | The layout and information level of the exhibitions                                       | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 3  | The exhibition themes and content   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 4  | The appearance of the staff   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 5  | The information provided about the facility eg. brochures, adverts, programme information | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 6  | The provision of toilets and parenting facilities   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 7  | The usefulness of floor plan (map)  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 8  | The range of products provided by cafe  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 9  | The pricing of food in cafe   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 10 | The services provided by cafe   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 11 | The range of products provided by shop  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 12 | The pricing of products in shop   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 13 | The services provided by shop   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 14 | Staff can be relied on to provide the promised service. eg. public programmes             | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 15 | The information provided by staff is accurate   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |

**Part One: What Are Your Expectations Before Your Visit and How Do You Feel After Your Visit To Queen Elizabeth II Army Memorial Museum?**

| No | Features, Exhibits and Services   | Before Your Visit<br>What Do You Expect? |          |              |           |                   |     | After Your Visit<br>How do you feel? |           |              |                   |                |     |
|----|---|--|----------|--------------|-----------|-------------------|-----|--------------------------------------|-----------|--------------|-------------------|----------------|-----|
|    |   | Very<br>Low<br>1                         | Low<br>2 | Neither<br>3 | High<br>4 | Very<br>High<br>5 | N/A | Very<br>Poor<br>1                    | Poor<br>2 | Average<br>3 | Very<br>Good<br>4 | Excellent<br>5 | N/A |
| 16 | Visitors are informed about when the services will be performed. eg. public programmes, exhibitions | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 17 | The staff are willing to help visitors  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 18 | Staff respond to visitor needs as quickly as possible   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 19 | Staff inspire trust and confidence in visitors  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 20 | Visitors feel comfortable during the visit eg. enough seats, heating, lighting                      | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 21 | Staff are friendly, courteous and polite to visitors  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 22 | Staff have the knowledge to respond to visitor requests   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 23 | Opening hours are convenient.   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 24 | The organisation has the visitor's best interests at heart  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 25 | Staff understand the needs of visitors  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 26 | There is easy access for visitors with wheelchair, prams and young children                         | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 27 | Signs in the building makes it easy to find your way around   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 28 | Outdoor signs makes it easy to locate the building.   | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |
| 29 | There is adequate car parking for visitors  | 1  | 2        | 3            | 4         | 5                 | N/A | 1                                    | 2         | 3            | 4                 | 5              | N/A |

|   |
|---|
| <b>Part Two. How Important Are These Services To You?</b> |
|---|

We would like to know how important each of these features is to visitors when they evaluate Queen Elizabeth II Army Memorial Museum. Please circle the number which best represents the importance that you place on the five service quality features.

| No | Service Quality Features  | How Important Are These Services To You? |                      |                |                     |                          | N/A |
|----|---|--|----------------------|----------------|---------------------|--------------------------|-----|
|    |   | Not Important<br>1                       | Some Importance<br>2 | Important<br>3 | Very Important<br>4 | Extremely Important<br>5 |     |
| 1  | The appearance of the physical facilities   | 1  | 2                    | 3              | 4                   | 5                        | N/A |
| 2  | The appearance of the exhibitions   | 1  | 2                    | 3              | 4                   | 5                        | N/A |
| 3  | The appearance of staff   | 1  | 2                    | 3              | 4                   | 5                        | N/A |
| 4  | The ability of the facility to perform the promised service dependably and accurately | 1  | 2                    | 3              | 4                   | 5                        | N/A |
| 5  | The willingness of the staff to help visitors and provide prompt service              | 1  | 2                    | 3              | 4                   | 5                        | N/A |
| 6  | The knowledge and courtesy of staff   | 1  | 2                    | 3              | 4                   | 5                        | N/A |
| 7  | The ability of staff to convey trust and confidence                                   | 1  | 2                    | 3              | 4                   | 5                        | N/A |
| 8  | The caring, individualised attention the facility provides its visitors               | 1  | 2                    | 3              | 4                   | 5                        | N/A |

**Part Three : Overall Impression of the Facility**

1. What is your overall rating of the quality of the services provided by Queen Elizabeth II Army Memorial Museum ?

Very Poor  Poor  Acceptable  Good  Very Good

2. Overall, how satisfied were you with your visit today ?

Very dissatisfied  Dissatisfied  Neither dissatisfied nor Satisfied  Satisfied  Very Satisfied

3. Have you visited other similar facility before ?

Yes  Go to Q4 No  Go to Q5

4. How do you compare this facility with others that you have visited ?

Very Poor  Poor  Acceptable  Good  Very Good

5. Did you pay an admission charge ?

Yes  Go to Q6 No  Go to Q7

6. Do you think this visit is value for money ?

Yes  No  please comment: \_\_\_\_\_

7. How long was your visit today ?

Less than one hour  1 - 2 hours  2 - 3 hours  Over 3 hours

8. Would you recommend this facility to your friends ?

Yes  No

9. Are you likely to visit this facility again in the next year ?

Yes  No

10. What did you enjoy most during this visit?

\_\_\_\_\_  
\_\_\_\_\_

11. What would you enjoy more?

\_\_\_\_\_

12. Did you use the Kippenberger Military Archive and Library ?

Yes  No

If yes, for what purpose \_\_\_\_\_

13. Are you looking for something to buy?

\_\_\_\_\_

|                                   |
|-----------------------------------|
| <b>Part Four. Visitor Profile</b> |
|-----------------------------------|

**We would like to know more about our visitors. All information will be treated as confidential. Please make your choice by (✓) ticking the appropriate box and writing the other information in the spaces provided.**

1. How often have you visited Queen Elizabeth II Army Memorial Museum in the last 12 months?

First time       2 - 3 times       4 - 6 times       7 or more times

2. Are you a member of the Friends of Queen Elizabeth II Army Memorial Museum?

Yes       No

3. Who did you come here with today ?

Alone       Family       Family & friends       Organised Group

4. Where did you find out about this place ?

Brochures       Advertisement       Word of Mouth       Information Centre

Road Signage       Radio       Others, please specify: \_\_\_\_\_

5. What is the main reason for this visit ? (you could tick more than one)

To see a particular exhibition       To learn something   
 Something to do       Sightseeing   
 To visit the cafe       Others, please specify : \_\_\_\_\_  
 To visit the shop

6. What age group are you in:

15 - 19       25 - 29       35 - 39       45 - 49       55 - 59   
 20 - 24       30 - 34       40 - 44       50 - 55       60 & above

7. What is your occupation?

|   |  |   |
|---|--|---|
| Agriculture & Fishing <input type="checkbox"/>  | Clerk <input type="checkbox"/>               | Student <input type="checkbox"/>        |
| Domestic Worker <input type="checkbox"/>        | Professional <input type="checkbox"/>        | Technician <input type="checkbox"/>     |
| House person <input type="checkbox"/>           | Retired <input type="checkbox"/>             | Trade Worker <input type="checkbox"/>   |
| Manager/ Administrator <input type="checkbox"/> | Unemployed <input type="checkbox"/>          | Sales/ Service <input type="checkbox"/> |
| Defence Employee <input type="checkbox"/>       | Operator/ Assembler <input type="checkbox"/> |   |

Other (please specify): \_\_\_\_\_

8. Do you have a military affiliation ?

Yes  Go to Q9      No  Goto Q10

9. Please specified your military affiliation

Serving Soldier       Veteran       Defence Civilian   
 Others, please specify \_\_\_\_\_

10. What is your education level ?

Primary       Intermediate       Secondary   
 Technical Training       Tertiary Qualification       Others (please specify): \_\_\_\_\_

11. Where do you live (town/ country) ?

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12. Where did you come from today ?

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13. What is the purpose of your visit to this area ?

Visiting friends & relatives  Holiday  Skiing Holiday  Passing Through

Others (please specify): \_\_\_\_\_

14. What is your ethnic origin ?

NZ European  Maori  (Tribal affiliations): \_\_\_\_\_

NZ Chinese  Pacific Islands  (Island) : \_\_\_\_\_

NZ Indian  Other (please specify): \_\_\_\_\_

15. Gender Male  Female

***Thank you for completing this questionnaire.***

**Comments\ Suggestions:**

We welcome any other comments or suggestions you feel would help us to improve the quality of our services.

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**Table 1. Management View of Importance and Visitors' Expectation of Service Quality**

| Service Quality       | No | Service Quality Variables<br>Features, Displays and Services                   | Management view on Importance & Visitors Expectations |                     |                              |
|-----------------------|----|--|---|---------------------|------------------------------|
|                       |    |  | Importance  | Visitor Expectation | Difference in Mgt View (I-E) |
| <b>Tangible</b>       | 1  | The physical appearance of the facility  | 4.14  | 4.64                | -0.50                        |
|                       | 2  | The layout and information level of the exhibitions                            | 4.10  | 4.46                | -0.36                        |
|                       | 3  | The exhibition themes and content  | 4.07  | 4.55                | -0.47                        |
|                       | 4  | The appearance of the staff  | 4.01  | 4.28                | -0.27                        |
|                       | 5  | The information provided about the facility                                    | 3.81  | 3.95                | -0.13                        |
|                       | 6  | The provision of toilets and parenting facilities                              | 4.07  | 4.42                | -0.35                        |
| <b>Empathy</b>        | 7  | The usefulness of floor plan (map)   | 3.81  | 3.86                | -0.05                        |
|                       | 8  | The range of products provided by cafe   | 3.64  | 3.91                | -0.27                        |
|                       | 9  | The pricing of food in cafe  | 3.60  | 3.60                | 0.00                         |
|                       | 10 | The services provided by cafe  | 3.71  | 3.85                | -0.14                        |
|                       | 11 | The range of products provided by shop   | 3.63  | 3.88                | -0.25                        |
|                       | 12 | The pricing of products in shop  | 3.69  | 3.62                | 0.07                         |
| <b>Reliability</b>    | 13 | The services provided by shop  | 3.70  | 3.91                | -0.21                        |
|                       | 14 | Staff can be relied on to provide the promised service                         | 3.92  | 4.04                | -0.12                        |
|                       | 15 | The information provided by staff is accurate                                  | 4.10  | 4.25                | -0.15                        |
| <b>Responsiveness</b> | 16 | Visitors are informed about when the services will be performed                | 3.74  | 3.97                | -0.23                        |
|                       | 17 | The staff are willing to help visitors   | 4.06  | 4.33                | -0.27                        |
| <b>Assurance</b>      | 18 | Staff respond to visitor needs as quickly as possible                          | 3.94  | 4.28                | -0.34                        |
|                       | 19 | Staff inspire trust and confidence in visitors                                 | 3.94  | 4.25                | -0.32                        |
|                       | 20 | Visitors feel comfortable during the visit eg. enough seats, heating, lighting | 4.02  | 4.26                | -0.24                        |
|                       | 21 | Staff are friendly, courteous and polite to visitors                           | 4.13  | 4.41                | -0.28                        |
| <b>Empathy</b>        | 22 | Staff have the knowledge to respond to visitor requests                        | 4.04  | 4.32                | -0.28                        |
|                       | 23 | Opening hours are convenient   | 3.93  | 4.23                | -0.30                        |
|                       | 24 | The organisation has the visitor's best interests at heart                     | 4.01  | 4.34                | -0.33                        |
|                       | 25 | Staff understand the needs of visitors   | 3.93  | 4.23                | -0.30                        |
|                       | 26 | There is easy access for visitors with wheelchair, prams and young children    | 4.07  | 4.36                | -0.29                        |
|                       | 27 | Signs in the building makes it easy to find your way around                    | 3.96  | 4.02                | -0.06                        |
| <b>Empathy</b>        | 28 | Outdoor signs makes it easy to locate the building                             | 4.06  | 4.15                | -0.09                        |
|                       | 29 | There is adequate car parking for visitors                                     | 4.14  | 4.41                | -0.27                        |

**Table 2. Gap Analysis of Expectation of Service Quality**

| Service Quality       | No | Service Quality Variables   | Expectation of Service Quality |         | Expectation Gap |
|-----------------------|----|---|--------------------------------|---------|-----------------|
|                       |    | Features, Displays and Services   | Management                     | Visitor | Diff (M-V)      |
| <b>Tangible</b>       | 1  | The physical appearance of the facility                                     | 4.64                           | 4.14    | 0.50            |
|                       | 2  | The layout and information level of the exhibitions                         | 4.46                           | 4.10    | 0.36            |
|                       | 3  | The exhibition themes and content   | 4.55                           | 4.07    | 0.47            |
|                       | 4  | The appearance of the staff   | 4.28                           | 4.01    | 0.27            |
|                       | 5  | The information provided about the facility                                 | 3.95                           | 3.81    | 0.13            |
|                       | 6  | The provision of toilets and parenting facilities                           | 4.42                           | 4.07    | 0.35            |
| <b>Empathy</b>        | 7  | The usefulness of floor plan (map)  | 3.86                           | 3.81    | 0.05            |
|                       | 8  | The range of products provided by cafe                                      | 3.91                           | 3.64    | 0.27            |
|                       | 9  | The pricing of food in cafe   | 3.60                           | 3.60    | 0.00            |
|                       | 10 | The services provided by cafe   | 3.85                           | 3.71    | 0.14            |
|                       | 11 | The range of products provided by shop                                      | 3.88                           | 3.63    | 0.25            |
|                       | 12 | The pricing of products in shop   | 3.62                           | 3.69    | -0.07           |
| <b>Reliability</b>    | 13 | The services provided by shop   | 3.91                           | 3.70    | 0.21            |
|                       | 14 | Staff can be relied on to provide the promised service                      | 4.04                           | 3.92    | 0.12            |
|                       | 15 | The information provided by staff is accurate                               | 4.25                           | 4.10    | 0.15            |
| <b>Responsiveness</b> | 16 | Visitors are informed about when the services will be performed             | 3.97                           | 3.74    | 0.23            |
|                       | 17 | The staff are willing to help visitors                                      | 4.33                           | 4.06    | 0.27            |
| <b>Assurance</b>      | 18 | Staff respond to visitor needs as quickly as possible                       | 4.28                           | 3.94    | 0.34            |
|                       | 19 | Staff inspire trust and confidence in visitors                              | 4.25                           | 3.94    | 0.32            |
|                       | 20 | Visitors feel comfortable during the visit                                  | 4.26                           | 4.02    | 0.24            |
|                       | 21 | Staff are friendly, courteous and polite to visitors                        | 4.41                           | 4.13    | 0.28            |
| <b>Empathy</b>        | 22 | Staff have the knowledge to respond to visitor requests                     | 4.32                           | 4.04    | 0.28            |
|                       | 23 | Opening hours are convenient  | 4.23                           | 3.93    | 0.30            |
|                       | 24 | The organisation has the visitor's best interests at heart                  | 4.34                           | 4.01    | 0.33            |
|                       | 25 | Staff understand the needs of visitors                                      | 4.23                           | 3.93    | 0.30            |
|                       | 26 | There is easy access for visitors with wheelchair, prams and young children | 4.36                           | 4.07    | 0.29            |
|                       | 27 | Signs in the building makes it easy to find your way around                 | 4.02                           | 3.96    | 0.06            |
|                       | 28 | Outdoor signs makes it easy to locate the building                          | 4.15                           | 4.06    | 0.09            |
|                       | 29 | There is adequate car parking for visitors                                  | 4.41                           | 4.14    | 0.27            |

**Table 3. Gap Analysis of Service Quality**

| Service Quality       | Service Quality Variables |   | Service Quality Gap |            |            |
|-----------------------|---------------------------|---|---------------------|------------|------------|
|                       | No                        | Features, Displays and Services   | Expectation         | Perception | Diff (P-E) |
| <b>Tangible</b>       | 1                         | The physical appearance of the facility                                     | 4.14                | 4.64       | 0.50       |
|                       | 2                         | The layout and information level of the exhibitions                         | 4.10                | 4.46       | 0.36       |
|                       | 3                         | The exhibition themes and content   | 4.07                | 4.55       | 0.47       |
|                       | 4                         | The appearance of the staff   | 4.01                | 4.28       | 0.27       |
|                       | 5                         | The information provided about the facility                                 | 3.81                | 3.95       | 0.13       |
|                       | 6                         | The provision of toilets and parenting facilities                           | 4.07                | 4.42       | 0.35       |
| <b>Empathy</b>        | 7                         | The usefulness of floor plan (map)  | 3.81                | 3.86       | 0.05       |
|                       | 8                         | The range of products provided by cafe                                      | 3.64                | 3.91       | 0.27       |
|                       | 9                         | The pricing of food in cafe   | 3.60                | 3.60       | 0.00       |
|                       | 10                        | The services provided by cafe   | 3.71                | 3.85       | 0.14       |
|                       | 11                        | The range of products provided by shop                                      | 3.63                | 3.88       | 0.25       |
|                       | 12                        | The pricing of products in shop   | 3.69                | 3.62       | -0.07      |
| <b>Reliability</b>    | 13                        | The services provided by shop   | 3.70                | 3.91       | 0.21       |
|                       | 14                        | Staff can be relied on to provide the promised service                      | 3.92                | 4.04       | 0.12       |
|                       | 15                        | The information provided by staff is accurate                               | 4.10                | 4.25       | 0.15       |
| <b>Responsiveness</b> | 16                        | Visitors are informed about when the services will be performed             | 3.74                | 3.97       | 0.23       |
|                       | 17                        | The staff are willing to help visitors                                      | 4.06                | 4.33       | 0.27       |
| <b>Assurance</b>      | 18                        | Staff respond to visitor needs as quickly as possible                       | 3.94                | 4.28       | 0.34       |
|                       | 19                        | Staff inspire trust and confidence in visitors                              | 3.94                | 4.25       | 0.32       |
|                       | 20                        | Visitors feel comfortable during the visit                                  | 4.02                | 4.26       | 0.24       |
|                       | 21                        | Staff are friendly, courteous and polite to visitors                        | 4.13                | 4.41       | 0.28       |
| <b>Empathy</b>        | 22                        | Staff have the knowledge to respond to visitor requests                     | 4.04                | 4.32       | 0.28       |
|                       | 23                        | Opening hours are convenient  | 3.93                | 4.23       | 0.30       |
|                       | 24                        | The organisation has the visitor's best interests at heart                  | 4.01                | 4.34       | 0.33       |
|                       | 25                        | Staff understand the needs of visitors                                      | 3.93                | 4.23       | 0.30       |
|                       | 26                        | There is easy access for visitors with wheelchair, prams and young children | 4.07                | 4.36       | 0.29       |
|                       | 27                        | Signs in the building makes it easy to find your way around                 | 3.96                | 4.02       | 0.06       |
|                       | 28                        | Outdoor signs makes it easy to locate the building                          | 4.06                | 4.15       | 0.09       |
|                       | 29                        | There is adequate car parking for visitors                                  | 4.14                | 4.41       | 0.27       |

**Table 4. Gap Analysis of Service Quality Using Expectation Weighting**

| Service Quality       | No | Service Quality Variables   | Service Quality Gap Using Expectation Weighting |                 |
|-----------------------|----|---|---|-----------------|
|                       |    | Features, Displays and Services   | SQ Gap  | Weighted SQ Gap |
| <b>Tangible</b>       | 1  | The physical appearance of the facility                                     | 0.50  | 2.06            |
|                       | 2  | The layout and information level of the exhibitions                         | 0.36  | 1.47            |
|                       | 3  | The exhibition themes and content   | 0.47  | 1.93            |
|                       | 4  | The appearance of the staff   | 0.27  | 1.08            |
|                       | 5  | The information provided about the facility                                 | 0.13  | 0.51            |
|                       | 6  | The provision of toilets and parenting facilities                           | 0.35  | 1.42            |
| <b>Empathy</b>        | 7  | The usefulness of floor plan (map)  | 0.05  | 0.21            |
|                       | 8  | The range of products provided by cafe                                      | 0.27  | 0.98            |
|                       | 9  | The pricing of food in cafe   | -0.005  | -0.02           |
|                       | 10 | The services provided by cafe   | 0.14  | 0.53            |
|                       | 11 | The range of products provided by shop                                      | 0.25  | 0.90            |
|                       | 12 | The pricing of products in shop   | -0.07   | -0.25           |
| <b>Reliability</b>    | 13 | The services provided by shop   | 0.21  | 0.78            |
|                       | 14 | Staff can be relied on to provide the promised service                      | 0.12  | 0.47            |
|                       | 15 | The information provided by staff is accurate                               | 0.15  | 0.63            |
| <b>Responsiveness</b> | 16 | Visitors are informed about when the services will be performed             | 0.23  | 0.85            |
|                       | 17 | The staff are willing to help visitors                                      | 0.27  | 1.12            |
| <b>Assurance</b>      | 18 | Staff respond to visitor needs as quickly as possible                       | 0.34  | 1.33            |
|                       | 19 | Staff inspire trust and confidence in visitors                              | 0.32  | 1.25            |
|                       | 20 | Visitors feel comfortable during the visit                                  | 0.24  | 0.97            |
|                       | 21 | Staff are friendly, courteous and polite to visitors                        | 0.28  | 1.14            |
| <b>Empathy</b>        | 22 | Staff have the knowledge to respond to visitor requests                     | 0.28  | 1.12            |
|                       | 23 | Opening hours are convenient  | 0.30  | 1.18            |
|                       | 24 | The organisation has the visitor's best interests at heart                  | 0.33  | 1.33            |
|                       | 25 | Staff understand the needs of visitors                                      | 0.30  | 1.18            |
|                       | 26 | There is easy access for visitors with wheelchair, prams and young children | 0.29  | 1.19            |
|                       | 27 | Signs in the building makes it easy to find your way around                 | 0.06  | 0.26            |
|                       | 28 | Outdoor signs makes it easy to locate the building                          | 0.09  | 0.35            |
|                       | 29 | There is adequate car parking for visitors                                  | 0.27  | 1.11            |

## Visitors' Overall Impression - Queen Elizabeth II Army Memorial Museum

The 1996 survey results of visitors' overall impression of the QEII Museum are summarised as follow:

### 1. What is your overall rating of the quality of the services provided by the Queen Elizabeth II Army Memorial Museum ?

A significant majority of the respondents, 94% rated the service quality as "Good" to "Very Good". 6% rated the service quality as "Acceptable".

| Rating     | No. of Response | %      | Cumsum |
|------------|-----------------|--------|--------|
| Very Poor  | 0               | 0.0%   | 0.0%   |
| Poor       | 0               | 0.0%   | 0.0%   |
| Acceptable | 23              | 6.1%   | 6.1%   |
| Good       | 98              | 26.1%  | 32.2%  |
| Very Good  | 255             | 67.8%  | 100.0% |
|            | 376             | 100.0% |        |

QEII Museum Visitor Survey Sept -Dec 96  
Overall Rating of Quality of Service



**2. Overall, how satisfied were you with your visit today ?**

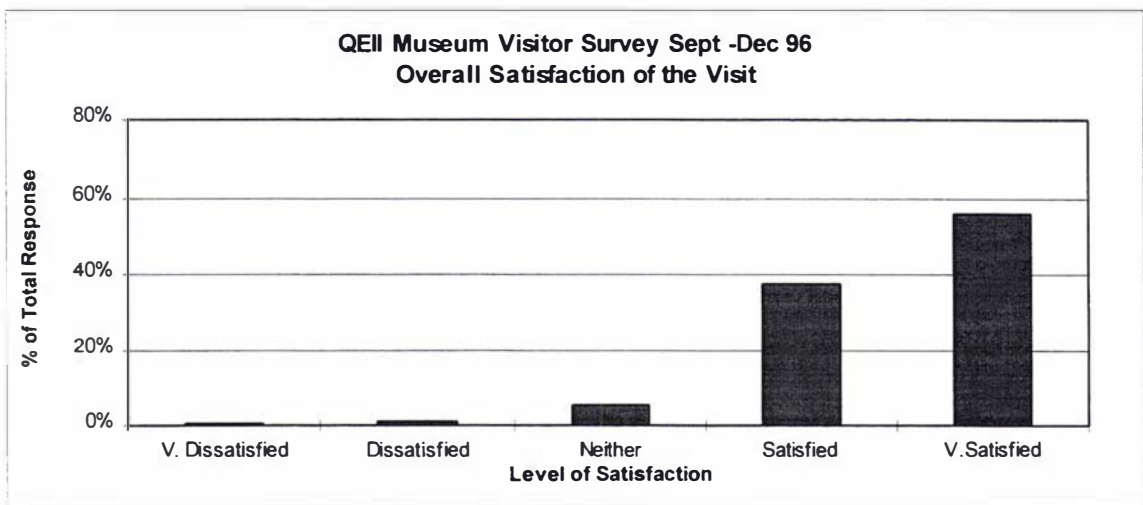
The response to the question on satisfaction was closely related to question one. 37.4% of respondents expressed that they were “Satisfied” and 55.8% “Very satisfied” with the service quality provided. 5.3% responded as “Neither”, 1.1% stated that they were “Dissatisfied” and 0.5% of respondent stated that they were “Very Dissatisfied”.

Two “Very Dissatisfied” respondents had “Very Good” overall impression of the quality services provided by the Museum, however, no comments as to why they were very dissatisfied.

On the other hand, the analysis of the “Dissatisfied” respondents, one was not interested in coming to the Museum, but “had to” come because the family came. The other expressed dissatisfaction because they came to see the “Wall on Tears”, but it was not appropriately serviced on that day.

Overall, 93.2% of the respondents to the Queen Elizabeth II Army Memorial Museum were satisfied with their visit.

| Satisfaction Level | No. of Response | %      | Cumsum |
|--------------------|-----------------|--------|--------|
| Very Dissatisfied  | 2               | 0.5%   | 0.5%   |
| Dissatisfied       | 4               | 1.1%   | 1.6%   |
| Neither            | 20              | 5.3%   | 6.8%   |
| Satisfied          | 142             | 37.4%  | 44.2%  |
| Very Satisfied     | 212             | 55.8%  | 100.0% |
|                    | 380             | 100.0% |        |



### 3. Have you ever visited any other similar facilities before ?

45.8% of respondents had visited other similar facilities before. We could conclude that 46% of the visitors to the QEII Museum were experienced visitors.

|     | No. of Response | %      | Cumsum |
|-----|-----------------|--------|--------|
| Yes | 206             | 45.8%  | 45.8%  |
| No  | 244             | 54.2%  | 100.0% |
|     | 450             | 100.0% |        |

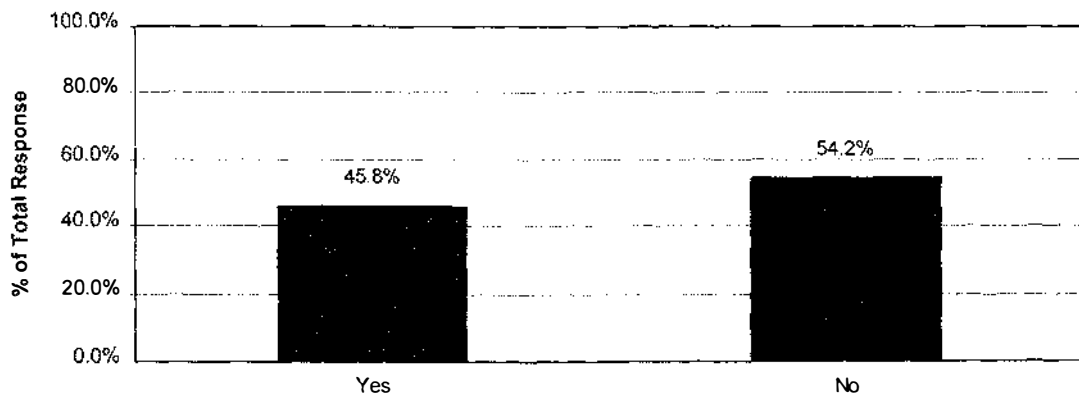
### 4. How do you compare this place with others that you have visited ?

Of those who had visited other similar facilities before, 48% of respondents rated the QEII Museum as "Very Good" compared with other similar facilities and 40% rated it as "Good". 10% rated it as "Acceptable" and 2% gave a rating of "Very Poor" to "Poor".

In total, 88% of the experienced visitors rated the museum as "Good" to "Very Good" compared to other similar places that they have visited.

| Rating     | No. of Response | %      | Cumsum |
|------------|-----------------|--------|--------|
| Very Poor  | 2               | 0.9%   | 0.9%   |
| Poor       | 2               | 0.9%   | 1.8%   |
| Acceptable | 22              | 10.1%  | 12.0%  |
| Good       | 87              | 40.1%  | 52.1%  |
| Very Good  | 104             | 47.9%  | 100.0% |
|            | 217             | 100.0% |        |

QEII Museum Visitor Survey Sept -Dec 96  
Respondents' Visited Other Similar Place Before



**5. Did you pay an admission charge ?**

In the 1996 survey, 64% of the respondents paid an admission charge.

|     | No. of Response | %      | Cumsum |
|-----|-----------------|--------|--------|
| Yes | 288             | 64.0%  | 64.0%  |
| No  | 162             | 36.0%  | 100.0% |
|     | 450             | 100.0% |        |

**6. Do you think this visit is value for money ?**

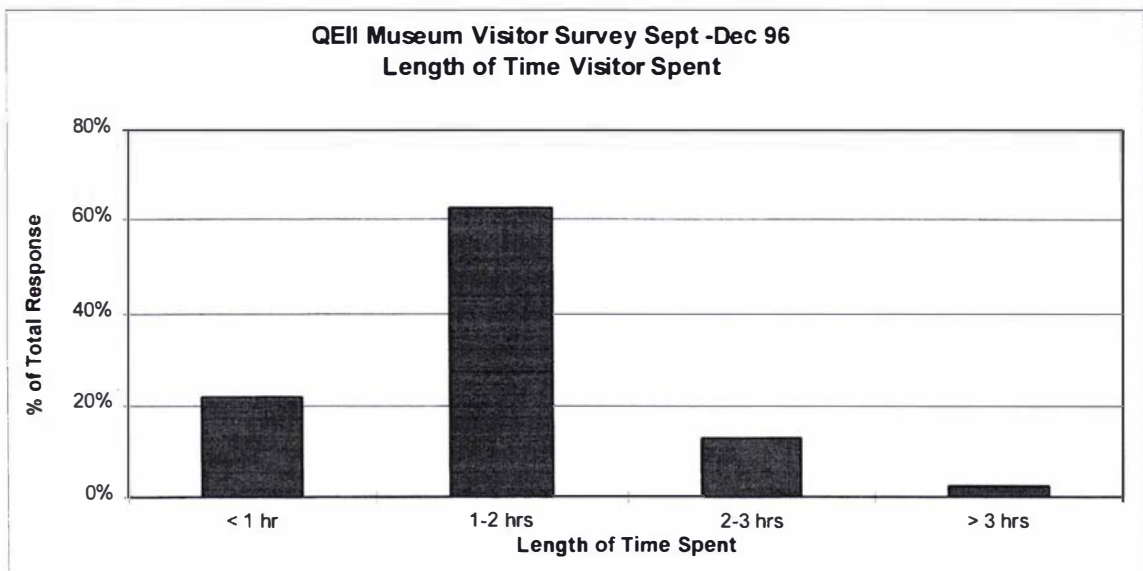
For those who paid an admission charge, 60.8% of respondents considered that the visit was value for money. 39.2% said that it was not value for money. Those who answered “No” to the question commented that the admission fee was too expensive.

|     | No. of Response | %      | Cumsum |
|-----|-----------------|--------|--------|
| Yes | 274             | 60.8%  | 60.8%  |
| No  | 177             | 39.2%  | 100.0% |
|     | 451             | 100.0% |        |

**7. How long was your visit today ?**

62.7% of respondents spent 1-2 hours in the QEII Museum. 22% of respondents spent less than an hour, 13% spent from 2-3 hours and 2.4% spent more than 3 hours.

| Length of Visit | No. of Response | %      | Cumsum |
|-----------------|-----------------|--------|--------|
| < 1 hr          | 82              | 22.0%  | 22.0%  |
| 1-2 hrs         | 234             | 62.7%  | 84.7%  |
| 2-3 hrs         | 48              | 12.9%  | 97.6%  |
| > 3 hrs         | 9               | 2.4%   | 100.0% |
|                 | 373             | 100.0% |        |



**8. Would you recommend this place to your friends ?**

79.7% of respondents said they would recommend the facility to their friends.

|     | No. of Response | %      | Cumsum |
|-----|-----------------|--------|--------|
| Yes | 361             | 79.7%  | 79.7%  |
| No  | 92              | 20.3%  | 100.0% |
|     | 453             | 100.0% |        |

**9. Are you likely to visit this place again ?**

Only 28.4% of respondents surveyed said that they were likely to visit the facility again in the next year and 71.6% said "No".

| Visit Again | No. of Response | %      | Cumsum |
|-------------|-----------------|--------|--------|
| Yes         | 129             | 28.4%  | 28.4%  |
| No          | 325             | 71.6%  | 100.0% |
|             | 454             | 100.0% |        |

**10. Are you looking for something special to buy ?**

The majority of the respondents were not looking for something to buy, only 6.2% said they were.

|     | No. of Response | %      | Cumsum |
|-----|-----------------|--------|--------|
| Yes | 28              | 6.2%   | 6.2%   |
| No  | 423             | 93.8%  | 100.0% |
|     | 451             | 100.0% |        |



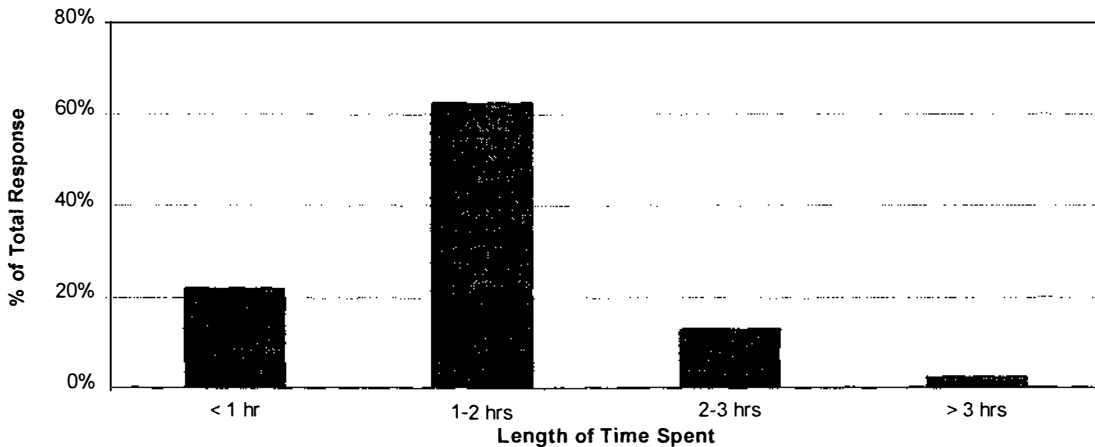
## Visitor Profile - Queen Elizabeth II Army Memorial Museum

### 1. How often have you visited The Queen Elizabeth II Army Memorial Museum in the last 12 months ?

The majority of respondents (73.3%) surveyed were visiting the QEII Museum for the first time. 23% had visited 2-3 times, 3.5% of respondents had visited more than 4 times in the past 12 months and one respondent had visited this place for 7 or more times in the last 12 months.

| No of Times | No. of Response | %      | Cumsum |
|-------------|-----------------|--------|--------|
| 1st time    | 272             | 73.3%  | 73.3%  |
| 2 - 3 times | 85              | 22.9%  | 96.2%  |
| 4 - 6 times | 13              | 3.5%   | 99.7%  |
| 7 or more   | 1               | 0.3%   | 100.0% |
|             | 371             | 100.0% |        |

QEII Museum Visitor Survey Sept -Dec 96  
Length of Time Visitor Spent



### 2. Are you a member of the Friends of The Queen Elizabeth II Army Memorial Museum ?

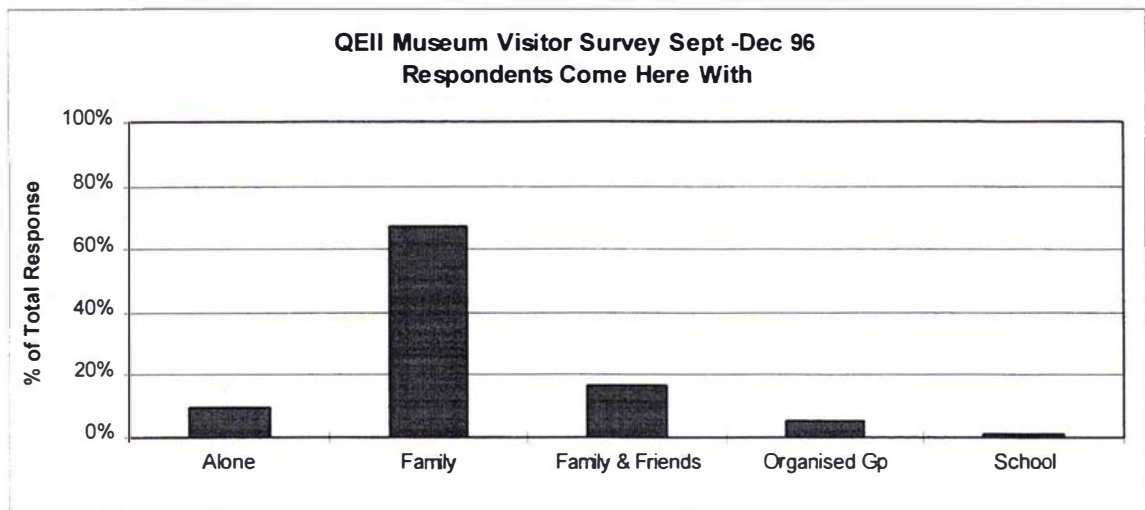
Only 1.3% of respondents surveyed belonged to the Friends of the QEII Museum. The remaining of 98.7% were not members. This indicates that there is a great opportunity for the institution to target the non-members who visited the facilities.

| Member | No. of Response | %      | Cumsum |
|--------|-----------------|--------|--------|
| Yes    | 6               | 1.3%   | 1.3%   |
| No     | 448             | 98.7%  | 100.0% |
|        | 454             | 100.0% |        |

### 3. Who did you come here with today ?

The majority of respondents came to visit the QEII Museum with family (67.5%). 16.9% came with family and friends and 9.4% came alone. Only 5.1% came with organised groups and 1.1% came with schools. The length of the survey questionnaire is not suitable for organised group visitors. Organised groups had limited time to spend in the facility and were reluctant to participate in the survey.

| Accompanied By   | No. of Response | %      | Cumsum |
|------------------|-----------------|--------|--------|
| Alone            | 35              | 9.4%   | 9.4%   |
| Family           | 251             | 67.5%  | 76.9%  |
| Family & Friends | 63              | 16.9%  | 93.8%  |
| Organised Group  | 19              | 5.1%   | 98.9%  |
| School           | 4               | 1.1%   | 100.0% |
|                  | 372             | 100.0% |        |

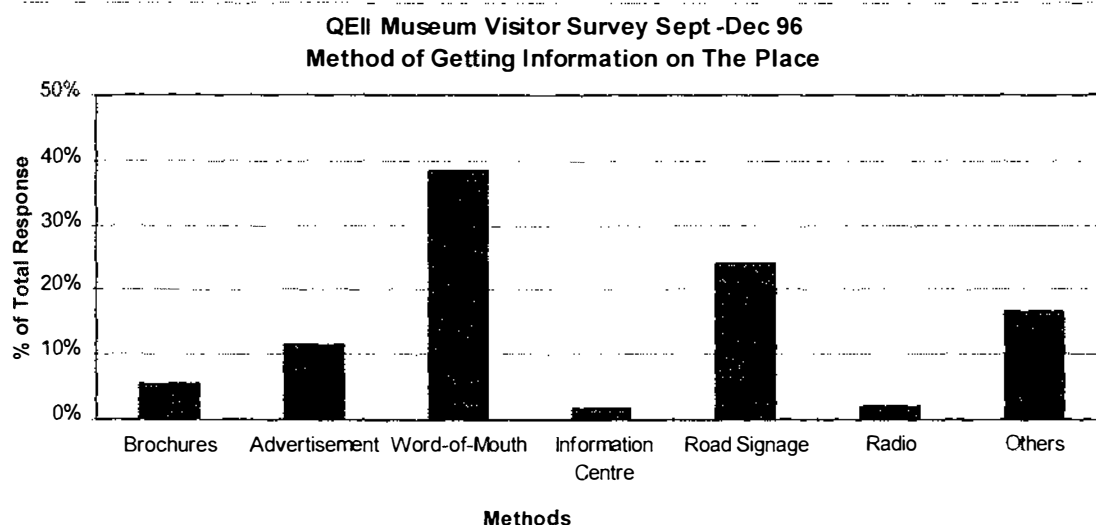


#### 4. Where did you find out about this place ?

Word-of-mouth was found to be the most effective advertising tool for this facility with approximately 38.5% of respondents finding out about the museum by word of mouth. 24.1% found it through road signs, 11.6% from advertising and 1.7% from Information Centres.

16.8% found the place through: personal knowledge, associated with Army, they have been here before, from family and relatives, from friends, general interest, travelling past, gym, map, media coverage when it first opened, television, visited the museum as a child, helped paint the museum, family/relative or friends in Army, and member of NZDF.

| Information        | No. of Response | %      | Cumsum |
|--------------------|-----------------|--------|--------|
| Brochures          | 25              | 5.4%   | 5.4%   |
| Advertisement      | 54              | 11.6%  | 17.0%  |
| Word-of-Mouth      | 179             | 38.5%  | 55.5%  |
| Information Centre | 8               | 1.7%   | 57.2%  |
| Road Signage       | 112             | 24.1%  | 81.3%  |
| Radio              | 9               | 1.9%   | 83.2%  |
| Others             | 78              | 16.8%  | 100.0% |
|                    | 465             | 100.0% |        |

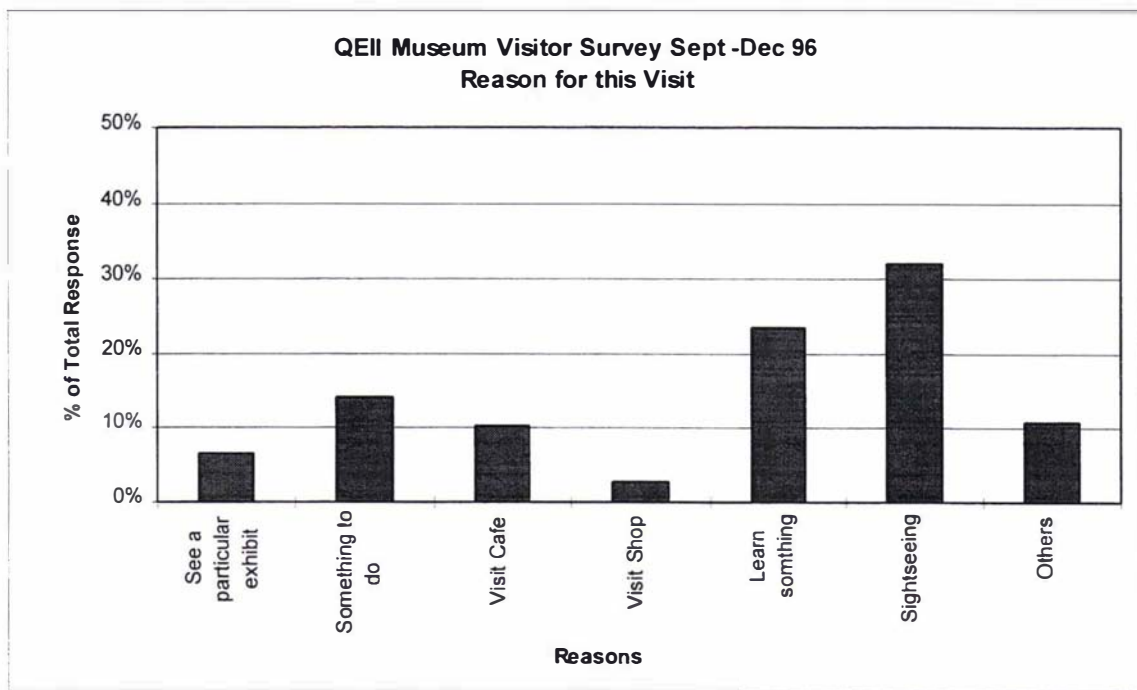


### 5. What is the main reason for this visit ?

The main reasons for this particular visit were spread from “Sightseeing” (32%), “Learning something” (23.5%), “Something to do” (14.1%), “Visit Cafe” (10.4%) and “To see a particular exhibition” (6.5%).

The other reasons for the visit were: showed family and friends, memories and wanted to see the change and improvement, interested in Army, came to Waiouru for reunion, Army passing out parade, felt proud of the New Zealand heritage, wanted to see the museum, interested in family record, a convenient lunch break, and school tour.

| Reason for Visit         | No. of Response | %      | Cumsum |
|--------------------------|-----------------|--------|--------|
| See a particular exhibit | 35              | 6.5%   | 6.5%   |
| Something to do          | 76              | 14.1%  | 20.6%  |
| Visit Cafe               | 56              | 10.4%  | 30.9%  |
| Visit Shop               | 15              | 2.8%   | 33.7%  |
| Learn something          | 127             | 23.5%  | 57.2%  |
| Sightseeing              | 173             | 32.0%  | 89.3%  |
| Others                   | 58              | 10.7%  | 100.0% |
|                          | 540             | 100.0% |        |



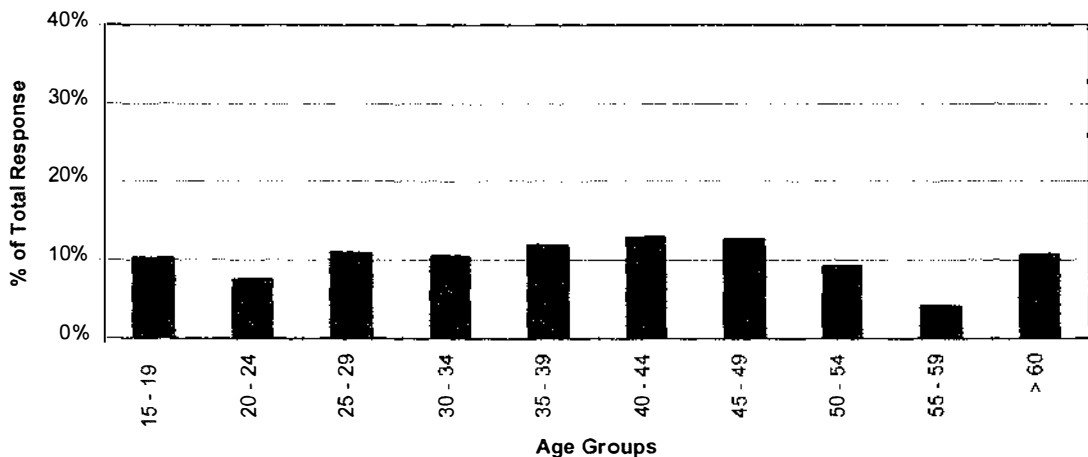
## 6. What age group are you in ?

The age groups of the respondents who visited the museum were distributed evenly for all groups, from the age of 15 to over 60 years age group. 27% of respondents were in the 15 to 29 years age group, 22% were in the 30-39 years age group, 25% were in the 40-49 years age group and 23.8% were above 50 years of age group.

This finding is different from the 1993 MVS survey where the 35% of respondents were in 21-30 years age group and 18% were in the 10-15 years age group. This survey did not include under 15 years old age group.

| Age Group | No. of Response | %      | Cumsum |
|-----------|-----------------|--------|--------|
| 15 - 19   | 37              | 10.1%  | 10.1%  |
| 20 - 24   | 27              | 7.4%   | 17.5%  |
| 25 - 29   | 40              | 11.0%  | 28.5%  |
| 30 - 34   | 38              | 10.4%  | 38.9%  |
| 35 - 39   | 43              | 11.8%  | 50.7%  |
| 40 - 44   | 47              | 12.9%  | 63.6%  |
| 45 - 49   | 46              | 12.6%  | 76.2%  |
| 50 - 54   | 33              | 9.0%   | 85.2%  |
| 55 - 59   | 15              | 4.1%   | 89.3%  |
| > 60      | 39              | 10.7%  | 100.0% |
|           | 365             | 100.0% |        |

QEII Museum Visitor Survey Sept -Dec 96  
Age Groups



## 7. What is your occupation ?

Managers and professionals were 29.5% of total respondents. 9.3% were retired, 7.9% were students and 5.2% were defence employees. 6.1% were in sales, 5% were in agriculture and fishery, 5% were house persons, 4.7% were trade workers, 4.4% were clerks and 3.7 were technicians. 1.5% were operators and 1.2% were unemployed or domestic workers.

16% of the others had a wide spread of occupations such as: age-care worker, Canadian Air Force, childcare worker, commercial cleaner, company dealer, conservation officer, court officer, diplomat, educator, teacher, engineer, factory worker, farmer, fireman, government employee, horticulture, hotel porter, labourer, legal worker, local body officer, mother, medical researcher, midwife, nurse, officer clerk, police officer, secretary, self-employed, shop assistant, social worker, soldier, trustee and writer.

In the 1993 MVS research [Molloy et al, 1993], 58% of the respondents were students (30.6%) and professional (27.2%). This survey did not target the under 15 years age group, therefore the percentage of students was not very high.

| Occupation            | No. of Response | %      | Cumsum |
|-----------------------|-----------------|--------|--------|
| Agriculture & Fishery | 17              | 5.0%   | 5.0%   |
| Domestic Worker       | 4               | 1.2%   | 6.1%   |
| House/person          | 17              | 5.0%   | 11.1%  |
| Mgr/ Admin            | 41              | 12.0%  | 23.0%  |
| Defence Employee      | 18              | 5.2%   | 28.3%  |
| Clerk                 | 15              | 4.4%   | 32.7%  |
| Professional          | 60              | 17.5%  | 50.1%  |
| Retired               | 32              | 9.3%   | 59.5%  |
| Unemployed            | 4               | 1.2%   | 60.6%  |
| Operator/Assembler    | 5               | 1.5%   | 62.1%  |
| Student               | 27              | 7.9%   | 70.0%  |
| Technician            | 11              | 3.2%   | 73.2%  |
| Trade Worker          | 16              | 4.7%   | 77.8%  |
| Sales/Service         | 21              | 6.1%   | 84.0%  |
| Other                 | 55              | 16.0%  | 100.0% |
|                       | 343             | 100.0% |        |

## 8. Do you have a military affiliation ?

74% of the respondents who visited the museum did not have a military affiliation.

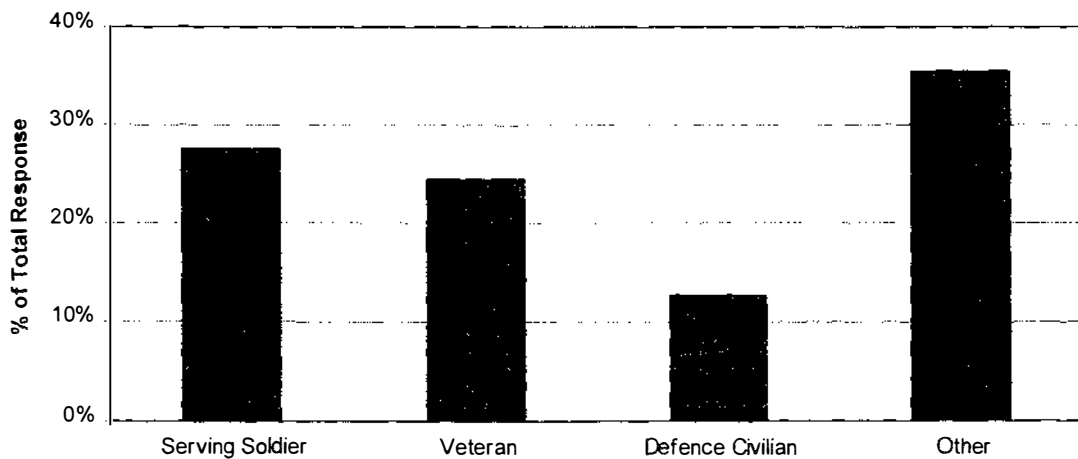
| Military Affiliation | No. of Response | %      | Cumsum |
|----------------------|-----------------|--------|--------|
| Yes                  | 118             | 26.1%  | 26.1%  |
| No                   | 334             | 73.9%  | 100.0% |
|                      | 452             | 100.0% |        |

## 9. Respondent's military affiliation

Of those respondents who had a military affiliation, 27.6% were serving soldiers, 24.4% were veterans and 12.6% were defence civilians. 35.4% of the respondents were affiliated to Air Training Corp, Compulsory Military Training, RAA, National Services and US Marine Corp.

| Military Affiliation | No. of Response | %      | Cumsum |
|----------------------|-----------------|--------|--------|
| Serving Soldier      | 35              | 27.6%  | 27.6%  |
| Veteran              | 31              | 24.4%  | 52.0%  |
| Defence Civilian     | 16              | 12.6%  | 64.6%  |
| Other                | 45              | 35.4%  | 100.0% |
|                      | 127             | 100.0% |        |

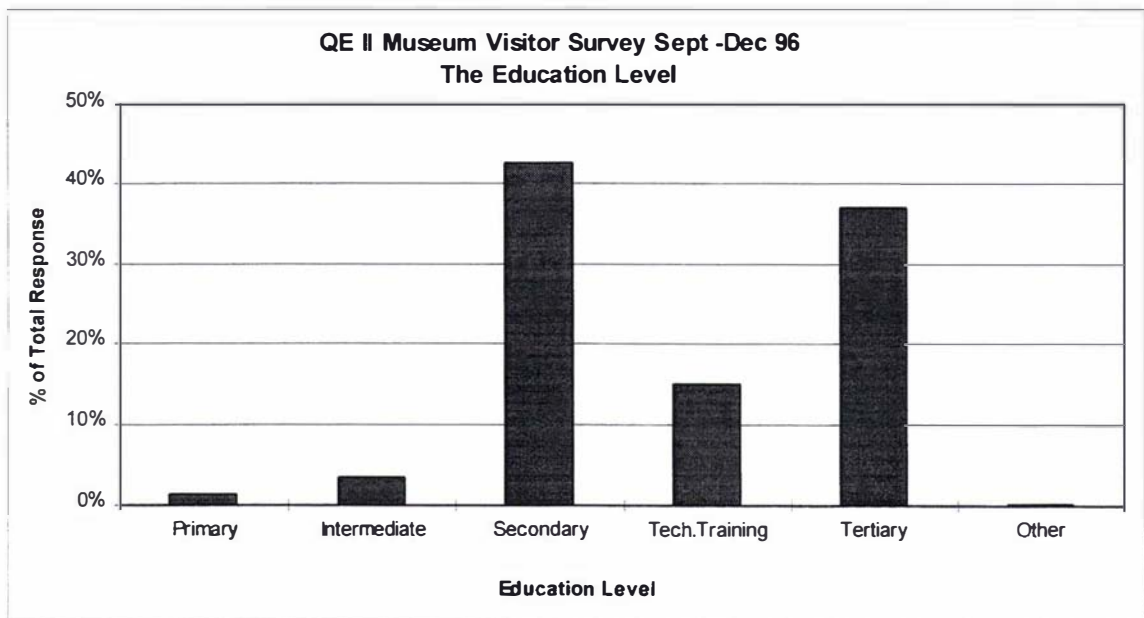
QEII Museum Visitory Survey Sept-Dec 96  
Military Affiliation



## 10. What is your education level ?

42.7% of respondents to the museum had received secondary education and 37.1% had received tertiary education qualification. 15% had technical training, 3.5% had intermediate education and 1.5% had primary education.

| Educational Level  | No. of Response | %      | Cumsum |
|--------------------|-----------------|--------|--------|
| Primary            | 5               | 1.5%   | 1.5%   |
| Intermediate       | 12              | 3.5%   | 5.0%   |
| Secondary          | 146             | 42.7%  | 47.7%  |
| Technical Training | 51              | 14.9%  | 62.6%  |
| Tertiary           | 127             | 37.1%  | 99.7%  |
| Other              | 1               | 0.3%   | 100.0% |
|                    | 342             | 100.0% |        |



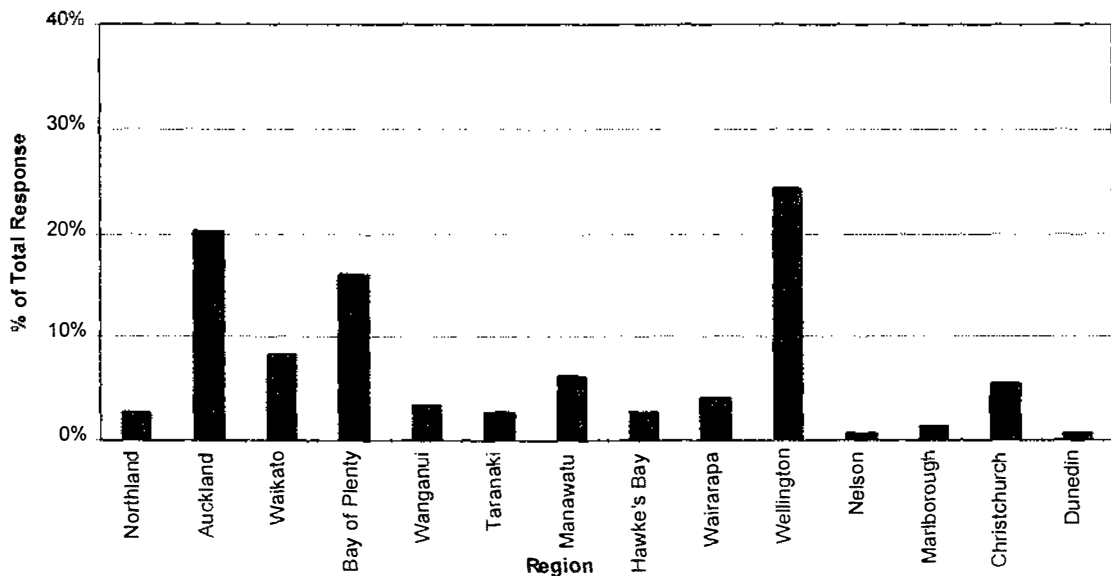
## 11. Where do you live ?

91.6% of respondents were from the North Island with 45% of this figure from two main cities - Auckland (20.3%) and Wellington (24.5%). 16.1% of respondents were from the Bay of Plenty region, 8.4% from the Waikato region, 6.3% from the Manawatu and 4.2% from the Wairarapa region. 2.8% each from Northland, Taranaki and Hawke's Bay region.

Only 8.4% of respondents were from the South Island - Christchurch (5.6%), Marlborough (1.4%), Nelson (0.7%) and Dunedin (0.7%).

| Region        | No. of Response | %     | Cumsum |
|---------------|-----------------|-------|--------|
| Northland     | 4               | 2.8%  | 2.8%   |
| Auckland      | 29              | 20.3% | 23.1%  |
| Waikato       | 12              | 8.4%  | 31.5%  |
| Bay of Plenty | 23              | 16.1% | 47.6%  |
| Wanganui      | 5               | 3.5%  | 51.0%  |
| Taranaki      | 4               | 2.8%  | 53.8%  |
| Manawatu      | 9               | 6.3%  | 60.1%  |
| Hawke's Bay   | 4               | 2.8%  | 62.9%  |
| Wairarapa     | 6               | 4.2%  | 67.1%  |
| Wellington    | 35              | 24.5% | 91.6%  |
| Nelson        | 1               | 0.7%  | 92.3%  |
| Marlborough   | 2               | 1.4%  | 93.7%  |
| Christchurch  | 8               | 5.6%  | 99.3%  |
| Dunedin       | 1               | 0.7%  | 100.0% |
|               | 143             | 100%  |        |

QEII Museum Visitor Survey Sept -Dec 96  
Place of Resident - New Zealand Visitors

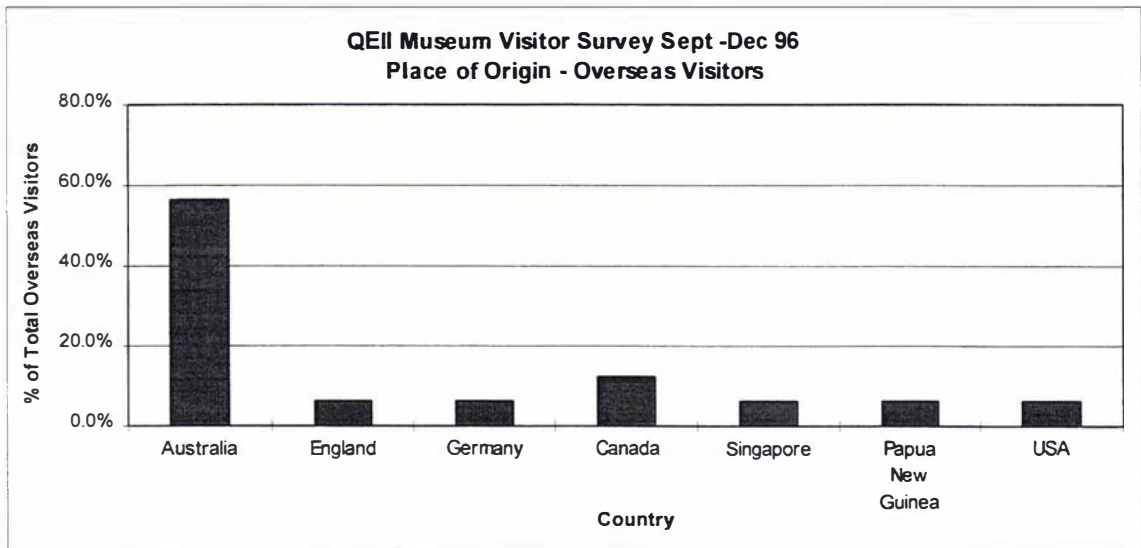


## 12. Overseas Visitors

Only 10% of the respondents were from overseas. 56.3% of the overseas visitors were from Australia, 12.5% were from Canada, 6.3% each were from England, Germany, Singapore, Papua New Guinea and USA.

This is similar to the findings of the International Visitor Survey carried out by New Zealand Tourist Board in 1995. 10% of the total museums' visitors were overseas visitors [NZTB, 1996].

| Country          | No. of Response | %     | Cumsum |
|------------------|-----------------|-------|--------|
| Australia        | 9               | 56.3% | 56.3%  |
| England          | 1               | 6.3%  | 62.5%  |
| Germany          | 1               | 6.3%  | 68.8%  |
| Canada           | 2               | 12.5% | 81.3%  |
| Singapore        | 1               | 6.3%  | 87.5%  |
| Papua New Guinea | 1               | 6.3%  | 93.8%  |
| USA              | 1               | 6.3%  | 100.0% |
| Total            | 16              | 100%  |        |



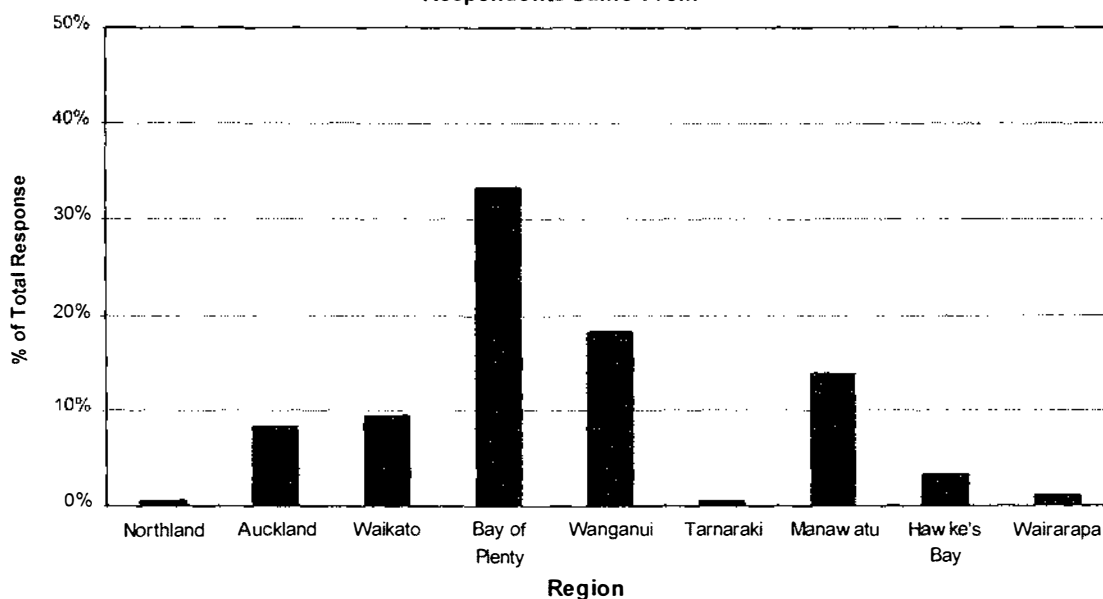
### 13. Where did you come from today ?

The majority of respondents came from the central North Island on the day of the visit to the Museum. 33.4% came from the Bay of Plenty region, 18.3% came the Wanganui region, 13.9% from the Manawatu region, 9.5% came from the Waikato region 8.3% came from the Auckland region and 3.3% came from the Hawke's Bay region. 10.9% came from Wellington and 1.2% came from the Wairarapa region.

7% of the respondents who came from the Wanganui region were staying at Waiouru. The respondents from the Bay of Plenty region came from three main towns. They were Taupo (14.2%) and Turangi (8.5%) and Rotorua (6.2%). 10.7% of respondents from the Manawatu region came from Palmerston North.

| Came From     | No. of Response | %      | Cumsum |
|---------------|-----------------|--------|--------|
| Northland     | 2               | 0.6%   | 0.6%   |
| Auckland      | 28              | 8.3%   | 8.9%   |
| Waikato       | 32              | 9.5%   | 18.3%  |
| Bay of Plenty | 113             | 33.4%  | 51.8%  |
| Wanganui      | 62              | 18.3%  | 70.1%  |
| Taranaki      | 2               | 0.6%   | 70.7%  |
| Manawatu      | 47              | 13.9%  | 84.6%  |
| Hawke's Bay   | 11              | 3.3%   | 87.9%  |
| Wairarapa     | 4               | 1.2%   | 89.1%  |
| Wellington    | 37              | 10.9%  | 100.0% |
| Total         | 338             | 100.0% |        |

QEII Museum Visitor Survey Sept -Dec 96  
Respondents Came From

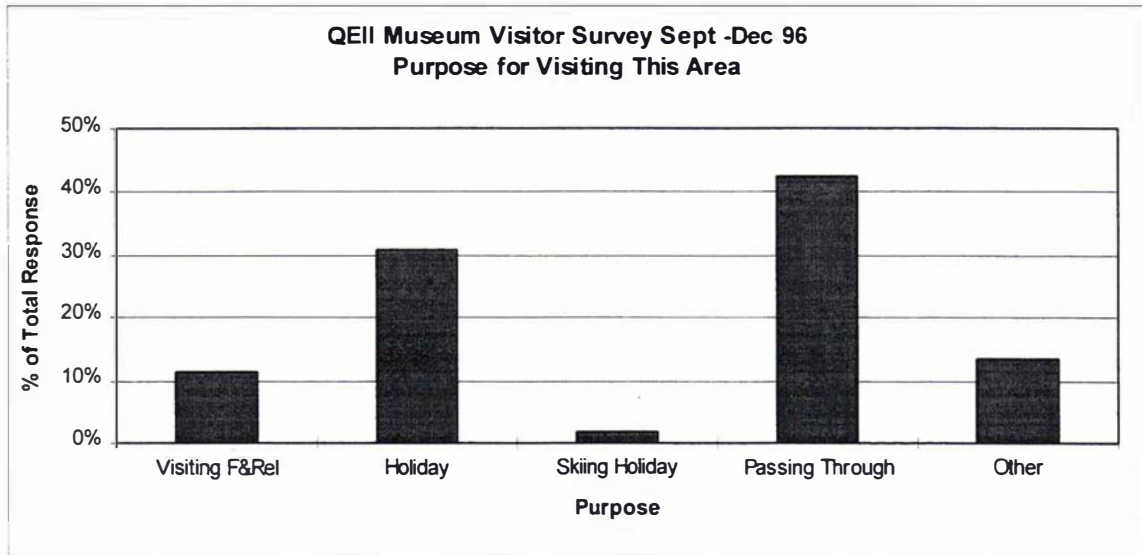


**14. What is the purpose of your visit to this area ?**

The majority of respondents were passing through the town (42.4%) and 30.9% were on holiday. 11.5% of respondents were visiting friends and family and 1.7% were here for a skiing holiday.

13.5% of respondents came here for other reasons, they were: military exchange, Army passing-out parade, business, re-union, field exercise, on a course, air training, visiting museum, school tour, day trip and birthday party. Some said they worked and lived here.

| Reason For Visit             | No. of Response | %      | Cumsum |
|------------------------------|-----------------|--------|--------|
| Visiting Friends & Relatives | 40              | 11.5%  | 11.5%  |
| Holiday                      | 108             | 30.9%  | 42.4%  |
| Skiing Holiday               | 6               | 1.7%   | 44.1%  |
| Passing Through              | 148             | 42.4%  | 86.5%  |
| Other                        | 47              | 13.5%  | 100.0% |
|                              | 349             | 100.0% |        |



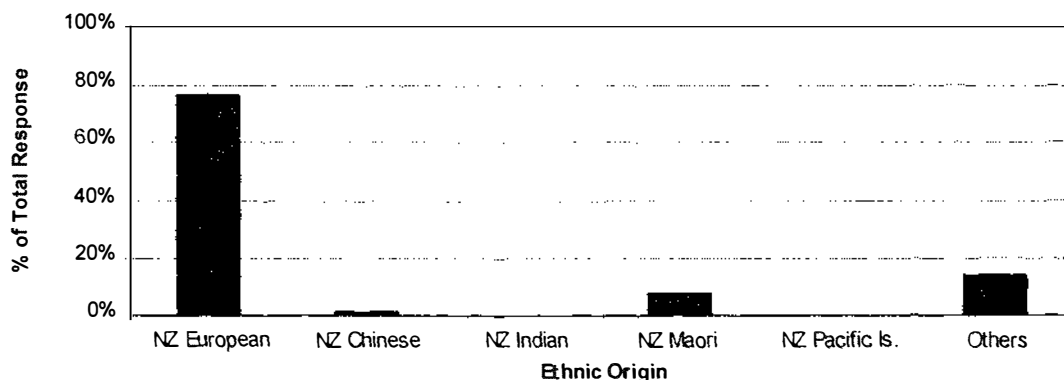
## 15. What is your ethnic origin ?

77% of respondents were New Zealand Europeans and 7.5% were Maori, 1.1% were New Zealand Chinese and 0.3% were New Zealand Indian and New Zealand Pacific Islanders.

14% of others were New Zealanders (2.9%), British (4%), Australian (4%), Canadian (1.1%), Filipino, New Zealand Korean, Chinese, European, North American, German, Singaporean, South American and South African (2%).

|                | No. of Response | %      | Cumsum |
|----------------|-----------------|--------|--------|
| NZ European    | 286             | 76.9%  | 76.9%  |
| NZ Chinese     | 4               | 1.1%   | 78.0%  |
| NZ Indian      | 1               | 0.3%   | 78.2%  |
| NZ Maori       | 28              | 7.5%   | 85.8%  |
| NZ Pacific Is. | 1               | 0.3%   | 86.0%  |
| Others         | 52              | 14.0%  | 100.0% |
|                | 372             | 100.0% |        |

QEII Museum Visitor Survey Sept -Dec 96  
Ethnic Origin of the Respondents



## 16. Gender

There were 63.2% of male respondents and 37% female respondents in this survey.

| Gender | No. of Response | %      | Cumsum |
|--------|-----------------|--------|--------|
| Male   | 204             | 63.2%  | 63.2%  |
| Female | 119             | 36.8%  | 100.0% |
|        | 323             | 100.0% |        |



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# **Appendix E.**

## **Analysis of Variance of the Measured Service Quality**

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- E.1 ANOVA of the Science Centre & Manawatu Museum**
- E.2 ANOVA of the New Zealand Historic Places Trust**
- E.3 ANOVA of the Queen Elizabeth II Army Memorial Museum**



# The Science Centre Average Service Quality ANOVA Analysis

## One-Way Analysis of Variance For Average Service Quality

Tukey's pairwise comparisons

Family error rate = 0.0500

Individual error rate = 0.000278, Critical value = 5.14. Intervals for (column level mean) - (row level mean)

|    | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     |  |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| 2  | 0.466  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 3  | 0.753  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 4  | -0.397 | -0.541 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 5  | 0.823  | 0.679  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 6  | -0.253 | -0.397 | -0.466 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 7  | 0.966  | 0.823  | 0.753  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 8  | -0.105 | -0.249 | -0.318 | -0.461 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 9  | 1.115  | 0.971  | 0.902  | 0.758  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 10 | -0.085 | -0.229 | -0.298 | -0.442 | -0.590 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 11 | 1.135  | 0.991  | 0.922  | 0.778  | 0.630  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 12 | -0.115 | -0.258 | -0.328 | -0.471 | -0.620 | -0.640 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 13 | 1.105  | 0.961  | 0.892  | 0.749  | 0.600  | 0.580  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 14 | 0.350  | 0.207  | 0.138  | -0.006 | -0.154 | -0.174 | -0.145 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 15 | 1.570  | 1.427  | 1.357  | 1.214  | 1.065  | 1.046  | 1.075  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 16 | 0.603  | 0.459  | 0.390  | 0.247  | 0.098  | 0.078  | 0.108  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 17 | 1.823  | 1.679  | 1.610  | 1.466  | 1.318  | 1.298  | 1.328  | 0.862  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 18 | 0.296  | 0.152  | 0.083  | -0.060 | -0.209 | -0.229 | -0.199 | -0.664 | -0.917 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 19 | 1.516  | 1.372  | 1.303  | 1.159  | 1.011  | 0.991  | 1.021  | 0.555  | 0.303  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 20 | 0.103  | -0.041 | -0.110 | -0.253 | -0.402 | -0.422 | -0.392 | -0.857 | -1.110 | -0.803 |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 21 | 1.323  | 1.179  | 1.110  | 0.966  | 0.818  | 0.798  | 0.828  | 0.362  | 0.110  | 0.417  |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 22 | 0.266  | 0.123  | 0.053  | -0.090 | -0.239 | -0.258 | -0.229 | -0.694 | -0.947 | -0.640 | -0.447 |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 23 | 1.486  | 1.343  | 1.273  | 1.130  | 0.981  | 0.961  | 0.991  | 0.526  | 0.273  | 0.580  | 0.773  |        |        |        |        |        |        |        |        |        |        |        |        |  |
| 24 | 0.276  | 0.133  | 0.063  | -0.080 | -0.229 | -0.249 | -0.219 | -0.684 | -0.937 | -0.630 | -0.437 | -0.600 |        |        |        |        |        |        |        |        |        |        |        |  |
| 25 | 1.496  | 1.352  | 1.283  | 1.140  | 0.991  | 0.971  | 1.001  | 0.536  | 0.283  | 0.590  | 0.783  | 0.620  |        |        |        |        |        |        |        |        |        |        |        |  |
| 26 | -0.536 | -0.679 | -0.749 | -0.892 | -1.041 | -1.060 | -1.031 | -1.496 | -1.749 | -1.442 | -1.249 | -1.412 | -1.422 |        |        |        |        |        |        |        |        |        |        |  |
| 27 | 0.684  | 0.541  | 0.471  | 0.328  | 0.179  | 0.159  | 0.189  | -0.276 | -0.529 | -0.222 | -0.029 | -0.192 | -0.202 |        |        |        |        |        |        |        |        |        |        |  |
| 28 | -0.273 | -0.417 | -0.486 | -0.630 | -0.778 | -0.798 | -0.768 | -1.234 | -1.486 | -1.179 | -0.986 | -1.150 | -1.159 | -0.348 |        |        |        |        |        |        |        |        |        |  |
| 29 | 0.947  | 0.803  | 0.734  | 0.590  | 0.442  | 0.422  | 0.452  | -0.014 | -0.266 | 0.041  | 0.234  | 0.070  | 0.060  | 0.872  |        |        |        |        |        |        |        |        |        |  |
| 30 | 0.544  | 0.400  | 0.331  | 0.187  | 0.039  | 0.019  | 0.048  | -0.417 | -0.669 | -0.362 | -0.169 | -0.333 | -0.343 | 0.469  | 0.207  |        |        |        |        |        |        |        |        |  |
| 31 | 1.763  | 1.620  | 1.551  | 1.407  | 1.258  | 1.239  | 1.268  | 0.803  | 0.551  | 0.857  | 1.051  | 0.887  | 0.877  | 1.689  | 1.427  |        |        |        |        |        |        |        |        |  |
| 32 | -0.338 | -0.481 | -0.551 | -0.694 | -0.843 | -0.863 | -0.833 | -1.298 | -1.551 | -1.244 | -1.051 | -1.214 | -1.214 | -0.412 | -0.674 | -1.491 |        |        |        |        |        |        |        |  |
| 33 | 0.882  | 0.739  | 0.669  | 0.526  | 0.377  | 0.357  | 0.387  | -0.078 | -0.331 | -0.024 | 0.169  | 0.006  | -0.004 | 0.808  | 0.546  | -0.271 |        |        |        |        |        |        |        |  |
| 34 | -0.387 | -0.531 | -0.600 | -0.744 | -0.892 | -0.912 | -0.882 | -1.348 | -1.600 | -1.293 | -1.100 | -1.263 | -1.273 | -0.461 | -0.724 | -1.541 | -0.659 |        |        |        |        |        |        |  |
| 35 | 0.833  | 0.689  | 0.620  | 0.476  | 0.328  | 0.308  | 0.338  | -0.128 | -0.380 | -0.073 | 0.120  | -0.044 | -0.053 | 0.758  | 0.496  | -0.321 | 0.560  |        |        |        |        |        |        |  |
| 36 | 0.093  | -0.051 | -0.120 | -0.263 | -0.412 | -0.432 | -0.402 | -0.867 | -1.120 | -0.813 | -0.620 | -0.783 | -0.793 | 0.019  | -0.244 | -1.060 | -0.179 | -0.130 |        |        |        |        |        |  |
| 37 | 1.313  | 1.169  | 1.100  | 0.956  | 0.808  | 0.788  | 0.818  | 0.352  | 0.100  | 0.407  | 0.600  | 0.437  | 0.427  | 1.239  | 0.976  | 1.041  | 1.090  |        |        |        |        |        |        |  |
| 38 | -0.031 | -0.174 | -0.244 | -0.387 | -0.536 | -0.555 | -0.526 | -0.991 | -1.244 | -0.937 | -0.744 | -0.907 | -0.917 | -0.105 | -0.367 | -1.184 | -0.303 | -0.253 | -0.734 |        |        |        |        |  |
| 39 | 1.189  | 1.046  | 0.976  | 0.833  | 0.684  | 0.664  | 0.694  | 0.229  | -0.024 | 0.283  | 0.476  | 0.313  | 0.303  | 1.115  | 0.852  | 0.036  | 0.917  | 0.966  | 0.486  |        |        |        |        |  |
| 40 | -0.140 | -0.283 | -0.352 | -0.496 | -0.645 | -0.664 | -0.635 | -1.100 | -1.352 | -1.046 | -0.852 | -1.016 | -1.026 | -0.214 | -0.476 | -1.293 | -0.412 | -0.362 | -0.843 | -0.719 |        |        |        |  |
| 41 | 1.080  | 0.937  | 0.867  | 0.724  | 0.575  | 0.555  | 0.585  | 0.120  | -0.133 | 0.174  | 0.367  | 0.204  | 0.194  | 1.006  | 0.744  | -0.073 | 0.808  | 0.857  | 0.377  | 0.501  |        |        |        |  |
| 42 | -0.239 | -0.382 | -0.452 | -0.595 | -0.744 | -0.763 | -0.734 | -1.199 | -1.452 | -1.145 | -0.952 | -1.115 | -1.125 | -0.313 | -0.573 | -1.392 | -0.511 | -0.461 | -0.942 | -0.818 | -0.709 |        |        |  |
| 43 | 0.981  | 0.838  | 0.768  | 0.625  | 0.476  | 0.456  | 0.486  | 0.021  | -0.232 | 0.075  | 0.268  | 0.105  | 0.095  | 0.907  | 0.645  | -0.172 | 0.709  | 0.758  | 0.278  | 0.402  | 0.511  |        |        |  |
| 44 | -0.115 | -0.258 | -0.328 | -0.471 | -0.620 | -0.640 | -0.610 | -1.075 | -1.328 | -1.021 | -0.828 | -0.991 | -1.001 | -0.189 | -0.452 | -1.268 | -0.387 | -0.338 | -0.818 | -0.694 | -0.585 | -0.486 |        |  |
| 45 | 1.105  | 0.961  | 0.892  | 0.749  | 0.600  | 0.580  | 0.610  | 0.145  | -0.108 | 0.199  | 0.392  | 0.229  | 0.219  | 1.031  | 0.768  | -0.048 | 0.833  | 0.882  | 0.402  | 0.526  | 0.635  | 0.734  |        |  |
| 46 | -0.068 | -0.211 | -0.281 | -0.424 | -0.573 | -0.592 | -0.563 | -1.028 | -1.281 | -0.974 | -0.781 | -0.944 | -0.954 | -0.142 | -0.404 | -1.221 | -0.340 | -0.291 | -0.771 | -0.647 | -0.538 | -0.439 | -0.563 |  |
| 47 | 1.152  | 1.009  | 0.939  | 0.796  | 0.647  | 0.627  | 0.657  | 0.192  | -0.061 | 0.246  | 0.439  | 0.276  | 0.266  | 1.078  | 0.815  | -0.001 | 0.880  | 0.929  | 0.449  | 0.573  | 0.682  | 0.781  | 0.657  |  |

## The Science Centre AVERAGE SQ ANOVA ANALYSIS

### Weighted SQ

Tukey's pairwise comparisons

Family error rate = 0.0500

Individual error rate = 0.000278, Critical value = 5.14

Intervals for (column level mean) - (row level mean)

|    | 1            | 2            | 3            | 4            | 5            | 6            | 7            | 8             | 9             | 10            | 11            | 12            | 13            | 14           | 15           | 16            | 17           | 18           | 19           | 20           | 21           | 22           | 23           |  |
|----|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
| 2  | -1.794       |              |              |              |              |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>2.784</u> |              |              |              |              |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 3  | -1.536       | -2.031       |              |              |              |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>3.041</u> | <u>2.546</u> |              |              |              |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 4  | -0.531       | -1.026       | -1.284       |              |              |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>4.046</u> | <u>3.551</u> | <u>3.294</u> |              |              |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 5  | -0.289       | -0.784       | -1.041       | -2.046       |              |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>4.289</u> | <u>3.794</u> | <u>3.536</u> | <u>2.531</u> |              |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 6  | 0.063        | -0.432       | -0.690       | -1.695       | -1.937       |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>4.640</u> | <u>4.145</u> | <u>3.888</u> | <u>2.883</u> | <u>2.640</u> |              |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 7  | -0.314       | -0.809       | -1.066       | -2.071       | -2.314       | -2.665       |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>4.264</u> | <u>3.769</u> | <u>3.512</u> | <u>2.507</u> | <u>2.264</u> | <u>1.913</u> |              |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 8  | 1.528        | 1.033        | 0.776        | -0.229       | -0.472       | -0.823       | -0.447       |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>6.106</u> | <u>5.611</u> | <u>5.353</u> | <u>4.348</u> | <u>4.106</u> | <u>3.754</u> | <u>4.130</u> |               |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 9  | 3.023        | 2.528        | 2.271        | 1.266        | 1.023        | 0.672        | 1.048        | -0.794        |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>7.601</u> | <u>7.106</u> | <u>6.848</u> | <u>5.843</u> | <u>5.601</u> | <u>5.249</u> | <u>5.625</u> | <u>3.784</u>  |               |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 10 | 1.835        | 1.340        | 1.083        | 0.078        | -0.165       | -0.517       | -0.140       | -1.982        | -3.477        |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>6.413</u> | <u>5.917</u> | <u>5.660</u> | <u>4.655</u> | <u>4.413</u> | <u>4.061</u> | <u>4.437</u> | <u>2.596</u>  | <u>1.101</u>  |               |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 11 | 1.083        | 0.587        | 0.330        | -0.675       | -0.917       | -1.269       | -0.893       | -2.734        | -4.229        | -3.041        |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>5.660</u> | <u>5.165</u> | <u>4.908</u> | <u>3.903</u> | <u>3.660</u> | <u>3.309</u> | <u>3.685</u> | <u>1.843</u>  | <u>0.348</u>  | <u>1.536</u>  |               |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 12 | 1.479        | 0.983        | 0.726        | -0.279       | -0.521       | -0.873       | -0.497       | -2.338        | -3.833        | -2.645        | -1.893        |               |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>6.056</u> | <u>5.561</u> | <u>5.304</u> | <u>4.299</u> | <u>4.056</u> | <u>3.705</u> | <u>4.081</u> | <u>2.239</u>  | <u>0.744</u>  | <u>1.932</u>  | <u>2.685</u>  |               |               |              |              |               |              |              |              |              |              |              |              |  |
| 13 | 1.310        | 0.815        | 0.558        | -0.447       | -0.690       | -1.041       | -0.665       | -2.507        | -4.002        | -2.814        | -2.061        | -2.457        |               |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>5.888</u> | <u>5.393</u> | <u>5.135</u> | <u>4.130</u> | <u>3.888</u> | <u>3.536</u> | <u>3.913</u> | <u>2.071</u>  | <u>0.576</u>  | <u>1.764</u>  | <u>2.517</u>  | <u>2.120</u>  |               |              |              |               |              |              |              |              |              |              |              |  |
| 14 | -1.616       | -2.111       | -2.368       | -3.373       | -3.616       | -3.967       | -3.591       | -5.432        | -6.927        | -5.739        | -4.987        | -5.383        | -5.215        |              |              |               |              |              |              |              |              |              |              |  |
|    | <u>2.962</u> | <u>2.467</u> | <u>2.210</u> | <u>1.205</u> | <u>0.962</u> | <u>0.611</u> | <u>0.987</u> | <u>-0.855</u> | <u>-2.350</u> | <u>-1.162</u> | <u>-0.409</u> | <u>-0.805</u> | <u>-0.637</u> |              |              |               |              |              |              |              |              |              |              |  |
| 15 | -0.556       | -1.051       | -1.309       | -2.314       | -2.556       | -2.908       | -2.531       | -4.373        | -5.868        | -4.680        | -3.927        | -4.323        | -4.155        | -1.229       |              |               |              |              |              |              |              |              |              |  |
|    | <u>4.021</u> | <u>3.526</u> | <u>3.269</u> | <u>2.264</u> | <u>2.021</u> | <u>1.670</u> | <u>2.046</u> | <u>0.205</u>  | <u>-1.290</u> | <u>-0.102</u> | <u>0.650</u>  | <u>0.254</u>  | <u>0.422</u>  | <u>3.348</u> |              |               |              |              |              |              |              |              |              |  |
| 16 | 2.454        | 1.959        | 1.701        | 0.696        | 0.454        | 0.102        | 0.479        | -1.363        | -2.858        | -1.670        | -0.917        | -1.314        | -1.145        | 1.781        | 0.721        |               |              |              |              |              |              |              |              |  |
|    | <u>7.031</u> | <u>6.536</u> | <u>6.279</u> | <u>5.274</u> | <u>5.031</u> | <u>4.680</u> | <u>5.056</u> | <u>3.215</u>  | <u>1.719</u>  | <u>2.908</u>  | <u>3.660</u>  | <u>3.264</u>  | <u>3.432</u>  | <u>6.358</u> | <u>5.299</u> |               |              |              |              |              |              |              |              |  |
| 17 | -1.086       | -1.581       | -1.838       | -2.843       | -3.086       | -3.437       | -3.061       | -4.903        | -6.398        | -5.210        | -4.457        | -4.853        | -4.685        | -1.759       | -2.818       | -5.828        |              |              |              |              |              |              |              |  |
|    | <u>3.492</u> | <u>2.997</u> | <u>2.739</u> | <u>1.734</u> | <u>1.492</u> | <u>1.140</u> | <u>1.517</u> | <u>-0.325</u> | <u>-1.820</u> | <u>-0.632</u> | <u>0.120</u>  | <u>-0.276</u> | <u>-0.107</u> | <u>2.818</u> | <u>1.759</u> | <u>-1.251</u> |              |              |              |              |              |              |              |  |
| 18 | -1.234       | -1.729       | -1.987       | -2.992       | -3.234       | -3.586       | -3.210       | -5.051        | -6.546        | -5.358        | -4.606        | -5.002        | -4.833        | -1.908       | -2.967       | -5.977        | -2.437       |              |              |              |              |              |              |  |
|    | <u>3.343</u> | <u>2.848</u> | <u>2.591</u> | <u>1.586</u> | <u>1.343</u> | <u>0.992</u> | <u>1.368</u> | <u>-0.474</u> | <u>-1.969</u> | <u>-0.781</u> | <u>-0.028</u> | <u>-0.424</u> | <u>-0.256</u> | <u>2.670</u> | <u>1.611</u> | <u>-1.399</u> | <u>2.140</u> |              |              |              |              |              |              |  |
| 19 | 0.627        | 0.132        | -0.125       | -1.130       | -1.373       | -1.724       | -1.348       | -3.190        | -4.685        | -3.497        | -2.744        | -3.140        | -2.972        | -0.046       | -1.106       | -4.116        | -0.576       | -0.427       |              |              |              |              |              |  |
|    | <u>5.205</u> | <u>4.710</u> | <u>4.452</u> | <u>3.447</u> | <u>3.205</u> | <u>2.853</u> | <u>3.229</u> | <u>1.388</u>  | <u>-0.107</u> | <u>1.081</u>  | <u>1.833</u>  | <u>1.437</u>  | <u>1.606</u>  | <u>4.531</u> | <u>3.472</u> | <u>0.462</u>  | <u>4.002</u> | <u>4.150</u> |              |              |              |              |              |  |
| 20 | 0.152        | -0.343       | -0.601       | -1.606       | -1.848       | -2.200       | -1.823       | -3.665        | -5.160        | -3.972        | -3.219        | -3.616        | -3.447        | -0.521       | -1.581       | -4.591        | -1.051       | -0.903       | -2.764       |              |              |              |              |  |
|    | <u>4.729</u> | <u>4.234</u> | <u>3.977</u> | <u>2.972</u> | <u>2.729</u> | <u>2.378</u> | <u>2.754</u> | <u>0.913</u>  | <u>-0.583</u> | <u>0.606</u>  | <u>1.358</u>  | <u>0.962</u>  | <u>1.130</u>  | <u>4.056</u> | <u>2.997</u> | <u>-0.013</u> | <u>3.526</u> | <u>3.675</u> | <u>1.814</u> |              |              |              |              |  |
| 21 | -0.175       | -0.670       | -0.927       | -1.932       | -2.175       | -2.526       | -2.150       | -3.992        | -5.487        | -4.299        | -3.546        | -3.942        | -3.774        | -0.848       | -1.908       | -4.917        | -1.378       | -1.229       | -3.091       | -2.616       |              |              |              |  |
|    | <u>4.403</u> | <u>3.908</u> | <u>3.650</u> | <u>2.645</u> | <u>2.403</u> | <u>2.051</u> | <u>2.427</u> | <u>0.586</u>  | <u>-0.909</u> | <u>0.279</u>  | <u>1.031</u>  | <u>0.635</u>  | <u>0.804</u>  | <u>3.729</u> | <u>2.670</u> | <u>-0.340</u> | <u>3.200</u> | <u>3.348</u> | <u>1.487</u> | <u>1.962</u> |              |              |              |  |
| 22 | -0.348       | -0.843       | -1.101       | -2.106       | -2.348       | -2.700       | -2.323       | -4.165        | -5.660        | -4.472        | -3.719        | -4.116        | -3.947        | -1.021       | -2.081       | -5.091        | -1.551       | -1.403       | -3.264       | -2.789       | -2.462       |              |              |  |
|    | <u>4.229</u> | <u>3.734</u> | <u>3.477</u> | <u>2.472</u> | <u>2.229</u> | <u>1.878</u> | <u>2.254</u> | <u>0.413</u>  | <u>-1.083</u> | <u>0.106</u>  | <u>0.858</u>  | <u>0.462</u>  | <u>0.630</u>  | <u>3.556</u> | <u>2.497</u> | <u>-0.513</u> | <u>3.026</u> | <u>3.175</u> | <u>1.314</u> | <u>1.789</u> | <u>2.116</u> |              |              |  |
| 23 | 0.132        | -0.363       | -0.620       | -1.625       | -1.868       | -2.219       | -1.843       | -3.685        | -5.180        | -3.992        | -3.239        | -3.635        | -3.467        | -0.541       | -1.601       | -4.611        | -1.071       | -0.922       | -2.784       | -2.309       | -1.982       | -1.809       |              |  |
|    | <u>4.710</u> | <u>4.215</u> | <u>3.957</u> | <u>2.952</u> | <u>2.710</u> | <u>2.358</u> | <u>2.734</u> | <u>0.893</u>  | <u>-0.602</u> | <u>0.586</u>  | <u>1.338</u>  | <u>0.942</u>  | <u>1.111</u>  | <u>4.036</u> | <u>2.977</u> | <u>-0.033</u> | <u>3.507</u> | <u>3.655</u> | <u>1.794</u> | <u>2.269</u> | <u>2.596</u> | <u>2.769</u> |              |  |
| 24 | 0.083        | -0.412       | -0.669       | -1.674       | -1.917       | -2.268       | -1.892       | -3.733        | -5.229        | -4.040        | -3.288        | -3.684        | -3.516        | -0.590       | -1.649       | -4.659        | -1.120       | -0.971       | -2.832       | -2.357       | -2.030       | -1.857       | -2.337       |  |
|    | <u>4.661</u> | <u>4.166</u> | <u>3.908</u> | <u>2.903</u> | <u>2.661</u> | <u>2.309</u> | <u>2.686</u> | <u>0.844</u>  | <u>-0.651</u> | <u>0.537</u>  | <u>1.290</u>  | <u>0.894</u>  | <u>1.062</u>  | <u>3.988</u> | <u>2.928</u> | <u>-0.082</u> | <u>3.458</u> | <u>3.606</u> | <u>1.745</u> | <u>2.220</u> | <u>2.547</u> | <u>2.720</u> | <u>2.240</u> |  |

# New Zealand Historic Places Trust Average Gap Analysis

MTB > Oneway 'AGAP' 'AGAPD';

Tukey's pairwise comparisons

Family error rate = 0.0500

Individual error rate = 0.000300, Critical value = 5.11

Intervals for (column level mean) - (row level mean)

|    | 1            | 2            | 3            | 4             | 5             | 6             | 7            | 8            | 9             | 10            | 11            | 12            | 13           | 14           | 15           | 16            | 17           | 18           | 19           | 20            | 21            | 22            |  |
|----|--------------|--------------|--------------|---------------|---------------|---------------|--------------|--------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|---------------|---------------|--|
| 2  | -0.200       |              |              |               |               |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.323</u> |              |              |               |               |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 3  | -0.256       | -0.317       |              |               |               |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.267</u> | <u>0.205</u> |              |               |               |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 4  | -0.039       | -0.100       | -0.044       |               |               |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.484</u> | <u>0.423</u> | <u>0.478</u> |               |               |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 5  | 0.013        | -0.048       |              |               |               |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.536</u> | <u>0.475</u> | <u>0.530</u> | <u>0.313</u>  |               |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 6  | -0.098       | -0.160       | -0.104       | -0.321        | -0.373        |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.424</u> | <u>0.363</u> | <u>0.419</u> | <u>0.202</u>  | <u>0.150</u>  |               |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 7  | -0.210       | -0.272       | -0.216       | -0.433        | -0.485        | -0.373        |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.313</u> | <u>0.251</u> | <u>0.307</u> | <u>0.090</u>  | <u>0.038</u>  | <u>0.150</u>  |              |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 8  | -0.363       | -0.424       | -0.368       | -0.586        | -0.638        | -0.526        | -0.414       |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.160</u> | <u>0.098</u> | <u>0.154</u> | <u>-0.063</u> | <u>-0.115</u> | <u>-0.003</u> | <u>0.109</u> |              |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 9  | 1.232        | 1.170        | 1.226        | 1.009         | 0.957         | 1.068         | 1.180        | 1.333        |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>1.754</u> | <u>1.693</u> | <u>1.749</u> | <u>1.532</u>  | <u>1.480</u>  | <u>1.591</u>  | <u>1.703</u> | <u>1.856</u> |               |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 10 | 1.681        | 1.619        | 1.675        | 1.458         | 1.406         | 1.518         | 1.630        | 1.782        | 0.188         |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>2.204</u> | <u>2.142</u> | <u>2.198</u> | <u>1.981</u>  | <u>1.929</u>  | <u>2.041</u>  | <u>2.152</u> | <u>2.305</u> | <u>0.711</u>  |               |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 11 | 1.255        | 1.194        | 1.250        | 1.032         | 0.980         | 1.092         | 1.204        | 1.357        | -0.238        | -0.687        |               |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>1.778</u> | <u>1.716</u> | <u>1.772</u> | <u>1.555</u>  | <u>1.503</u>  | <u>1.615</u>  | <u>1.727</u> | <u>1.879</u> | <u>0.285</u>  | <u>-0.164</u> |               |               |              |              |              |               |              |              |              |               |               |               |  |
| 12 | 0.335        | 0.273        | 0.329        | 0.112         | 0.060         | 0.172         | 0.284        | 0.436        | -1.158        | -1.607        | -1.182        |               |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.858</u> | <u>0.796</u> | <u>0.852</u> | <u>0.635</u>  | <u>0.583</u>  | <u>0.695</u>  | <u>0.806</u> | <u>0.959</u> | <u>-0.635</u> | <u>-1.085</u> | <u>-0.659</u> |               |              |              |              |               |              |              |              |               |               |               |  |
| 13 | -0.362       | -0.423       | -0.368       | -0.585        | -0.637        | -0.525        | -0.413       | -0.260       | -1.855        | -2.304        | -1.878        | -0.958        |              |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.161</u> | <u>0.099</u> | <u>0.155</u> | <u>-0.062</u> | <u>-0.114</u> | <u>-0.002</u> | <u>0.110</u> | <u>0.262</u> | <u>-1.332</u> | <u>-1.781</u> | <u>-1.356</u> | <u>-0.435</u> |              |              |              |               |              |              |              |               |               |               |  |
| 14 | -0.314       | -0.376       | -0.320       | -0.537        | -0.589        | -0.478        | -0.366       | -0.213       | -1.807        | -2.257        | -1.831        | -0.911        | -0.214       |              |              |               |              |              |              |               |               |               |  |
|    | <u>0.208</u> | <u>0.147</u> | <u>0.203</u> | <u>-0.014</u> | <u>-0.066</u> | <u>0.045</u>  | <u>0.157</u> | <u>0.310</u> | <u>-1.285</u> | <u>-1.734</u> | <u>-1.308</u> | <u>-0.388</u> | <u>0.309</u> |              |              |               |              |              |              |               |               |               |  |
| 15 | -0.294       | -0.355       | -0.299       | -0.516        | -0.568        | -0.457        | -0.345       | -0.192       | -1.787        | -2.236        | -1.810        | -0.890        | -0.193       | -0.241       |              |               |              |              |              |               |               |               |  |
|    | <u>0.229</u> | <u>0.168</u> | <u>0.223</u> | <u>0.006</u>  | <u>-0.046</u> | <u>0.066</u>  | <u>0.178</u> | <u>0.331</u> | <u>-1.264</u> | <u>-1.713</u> | <u>-1.287</u> | <u>-0.367</u> | <u>0.330</u> | <u>0.282</u> |              |               |              |              |              |               |               |               |  |
| 16 | -0.041       | -0.433       | -0.485       | -0.263        | -0.315        | -0.204        | -0.092       | 0.061        | -1.533        | -1.983        | -1.557        | -0.637        | 0.060        | 0.013        | -0.008       |               |              |              |              |               |               |               |  |
|    | <u>0.482</u> | <u>0.090</u> | <u>0.038</u> | <u>0.259</u>  | <u>0.208</u>  | <u>0.319</u>  | <u>0.431</u> | <u>0.584</u> | <u>-1.011</u> | <u>-1.460</u> | <u>-1.034</u> | <u>-0.114</u> | <u>0.583</u> | <u>0.535</u> | <u>0.514</u> |               |              |              |              |               |               |               |  |
| 17 | -0.379       | -0.441       | -0.385       | -0.602        | -0.654        | -0.542        | -0.430       | -0.278       | -1.872        | -2.321        | -1.896        | -0.975        | -0.278       | -0.326       | -0.347       | -0.600        |              |              |              |               |               |               |  |
|    | <u>0.144</u> | <u>0.082</u> | <u>0.138</u> | <u>-0.079</u> | <u>-0.131</u> | <u>-0.019</u> | <u>0.093</u> | <u>0.245</u> | <u>-1.349</u> | <u>-1.798</u> | <u>-1.373</u> | <u>-0.452</u> | <u>0.244</u> | <u>0.197</u> | <u>0.176</u> | <u>-0.077</u> |              |              |              |               |               |               |  |
| 18 | -0.177       | -0.239       | -0.183       | -0.400        | -0.452        | -0.340        | -0.228       | -0.076       | -1.670        | -2.119        | -1.694        | -0.773        | -0.077       | -0.124       | -0.145       | -0.398        | -0.059       |              |              |               |               |               |  |
|    | <u>0.346</u> | <u>0.284</u> | <u>0.340</u> | <u>0.123</u>  | <u>0.071</u>  | <u>0.183</u>  | <u>0.295</u> | <u>0.447</u> | <u>-1.147</u> | <u>-1.596</u> | <u>-1.171</u> | <u>-0.250</u> | <u>0.446</u> | <u>0.399</u> | <u>0.378</u> | <u>0.125</u>  | <u>0.463</u> |              |              |               |               |               |  |
| 19 | 0.078        | 0.016        | 0.072        | -0.145        | -0.197        | -0.085        | 0.027        | 0.179        | -1.415        | -1.864        | -1.439        | -0.518        | 0.178        | 0.131        | 0.110        | -0.143        | 0.195        | -0.006       |              |               |               |               |  |
|    | <u>0.601</u> | <u>0.539</u> | <u>0.595</u> | <u>0.378</u>  | <u>0.326</u>  | <u>0.438</u>  | <u>0.550</u> | <u>0.702</u> | <u>-0.892</u> | <u>-1.341</u> | <u>-0.916</u> | <u>0.005</u>  | <u>0.701</u> | <u>0.654</u> | <u>0.633</u> | <u>0.380</u>  | <u>0.718</u> | <u>0.516</u> |              |               |               |               |  |
| 20 | 1.320        | 1.258        | 1.314        | 1.097         | 1.045         | 1.157         | 1.268        | 1.421        | -0.173        | -0.623        | -0.197        | 0.723         | 1.420        | 1.373        | 1.352        | 1.099         | 1.437        | 1.235        | 0.980        |               |               |               |  |
|    | <u>1.842</u> | <u>1.781</u> | <u>1.837</u> | <u>1.620</u>  | <u>1.568</u>  | <u>1.679</u>  | <u>1.791</u> | <u>1.944</u> | <u>0.350</u>  | <u>-0.100</u> | <u>0.326</u>  | <u>1.246</u>  | <u>1.943</u> | <u>1.896</u> | <u>1.875</u> | <u>1.622</u>  | <u>1.960</u> | <u>1.758</u> | <u>1.503</u> |               |               |               |  |
| 21 | 0.635        | 0.574        | 0.630        | 0.413         | 0.361         | 0.472         | 0.584        | 0.737        | -0.858        | -1.307        | -0.881        | 0.039         | 0.736        | 0.688        | 0.668        | 0.414         | 0.753        | 0.551        | 0.296        | -0.946        |               |               |  |
|    | <u>1.158</u> | <u>1.096</u> | <u>1.152</u> | <u>0.935</u>  | <u>0.883</u>  | <u>0.995</u>  | <u>1.107</u> | <u>1.259</u> | <u>-0.335</u> | <u>-0.784</u> | <u>-0.359</u> | <u>0.562</u>  | <u>1.259</u> | <u>1.211</u> | <u>1.190</u> | <u>0.937</u>  | <u>1.276</u> | <u>1.074</u> | <u>0.819</u> | <u>-0.423</u> |               |               |  |
| 22 | 0.522        | 0.461        | 0.517        | 0.300         | 0.248         | 0.359         | 0.471        | 0.624        | -0.970        | -1.420        | -0.994        | -0.074        | 0.623        | 0.576        | 0.555        | 0.302         | 0.640        | 0.438        | 0.183        | -1.059        | -0.374        |               |  |
|    | <u>1.045</u> | <u>0.984</u> | <u>1.040</u> | <u>0.823</u>  | <u>0.771</u>  | <u>0.882</u>  | <u>0.994</u> | <u>1.147</u> | <u>-0.448</u> | <u>-0.897</u> | <u>-0.471</u> | <u>0.449</u>  | <u>1.146</u> | <u>1.098</u> | <u>1.078</u> | <u>0.824</u>  | <u>1.163</u> | <u>0.961</u> | <u>0.706</u> | <u>-0.536</u> | <u>0.149</u>  |               |  |
| 23 | 0.185        | 0.124        | 0.180        | -0.037        | -0.089        | 0.022         | 0.134        | 0.287        | -1.307        | -1.757        | -1.331        | -0.411        | 0.286        | 0.238        | 0.218        | -0.035        | 0.303        | 0.101        | -0.154       | -1.396        | -0.711        | -0.598        |  |
|    | <u>0.708</u> | <u>0.647</u> | <u>0.702</u> | <u>0.485</u>  | <u>0.434</u>  | <u>0.545</u>  | <u>0.657</u> | <u>0.810</u> | <u>-0.785</u> | <u>-1.234</u> | <u>-0.808</u> | <u>0.112</u>  | <u>0.809</u> | <u>0.761</u> | <u>0.740</u> | <u>0.487</u>  | <u>0.826</u> | <u>0.624</u> | <u>0.369</u> | <u>-0.873</u> | <u>-0.189</u> | <u>-0.076</u> |  |

## New Zealand Historic Places Trust Weighted SQ Gap Analysis

MTB > Oneway 'wgap' 'wgapd';

Tukey's pairwise comparisons

Family error rate = 0.0500,

Individual error rate = 0.000300, Critical value = 5.11

Intervals for (column level mean) - (row level mean)

|    | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17    | 18     | 19     | 20     | 21     | 22     |  |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--|
| 2  | -0.795 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 0.917  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 3  | -0.781 | -0.842 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 0.931  | 0.870  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 4  | -0.132 | -0.193 | -0.207 |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 1.580  | 1.520  | 1.505  |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 5  | 0.305  | 0.244  | 0.230  | -0.419 |        |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 2.018  | 1.957  | 1.943  | 1.294  |        |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 6  | 0.107  | 0.046  | 0.032  | -0.617 | -1.055 |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 1.819  | 1.759  | 1.744  | 1.095  | 0.658  |        |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 7  | -0.715 | -0.776 | -0.790 | -1.439 | -1.877 | -1.678 |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 0.997  | 0.937  | 0.923  | 0.273  | -0.164 | 0.034  |        |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 8  | -0.556 | -0.616 | -0.631 | -1.280 | -1.717 | -1.519 | -0.697 |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 1.157  | 1.096  | 1.082  | 0.432  | -0.005 | 0.194  | 1.015  |        |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 9  | 5.126  | 5.065  | 5.051  | 4.402  | 3.964  | 4.163  | 4.985  | 4.825  |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 6.838  | 6.777  | 6.763  | 6.114  | 5.677  | 5.875  | 6.697  | 6.538  |        |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 10 | 7.419  | 7.358  | 7.344  | 6.695  | 6.257  | 6.456  | 7.277  | 7.118  | 1.437  |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 9.131  | 9.070  | 9.056  | 8.407  | 7.970  | 8.168  | 8.990  | 8.831  | 3.149  |        |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 11 | 3.595  | 3.534  | 3.520  | 2.871  | 2.433  | 2.632  | 3.454  | 3.295  | -2.387 | -4.680 |        |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 5.307  | 5.247  | 5.232  | 4.583  | 4.146  | 4.344  | 5.166  | 5.007  | -0.675 | -2.968 |        |        |        |        |        |        |       |        |        |        |        |        |  |
| 12 | 1.783  | 1.722  | 1.708  | 1.059  | 0.621  | 0.820  | 1.641  | 1.482  | -4.199 | -6.492 | -2.668 |        |        |        |        |        |       |        |        |        |        |        |  |
|    | 3.495  | 3.434  | 3.420  | 2.771  | 2.334  | 2.532  | 3.354  | 3.195  | -2.487 | -4.780 | -0.956 |        |        |        |        |        |       |        |        |        |        |        |  |
| 13 | -0.568 | -0.629 | -0.643 | -1.292 | -1.730 | -1.531 | -0.709 | -0.868 | -6.550 | -8.843 | -5.019 | -3.207 |        |        |        |        |       |        |        |        |        |        |  |
|    | 1.144  | 1.084  | 1.069  | 0.420  | -0.017 | 0.181  | 1.003  | 0.844  | -4.838 | -7.131 | -3.307 | -1.495 |        |        |        |        |       |        |        |        |        |        |  |
| 14 | -0.607 | -0.668 | -0.682 | -1.331 | -1.769 | -1.570 | -0.748 | -0.907 | -6.589 | -8.882 | -5.058 | -3.246 | -0.895 |        |        |        |       |        |        |        |        |        |  |
|    | 1.105  | 1.045  | 1.031  | 0.381  | -0.056 | 0.142  | 0.964  | 0.805  | -4.877 | -7.169 | -3.346 | -1.533 | 0.817  |        |        |        |       |        |        |        |        |        |  |
| 15 | -0.394 | -0.454 | -0.468 | -1.118 | -1.555 | -1.357 | -0.535 | -0.694 | -6.376 | -8.668 | -4.845 | -3.032 | -0.682 | -0.643 |        |        |       |        |        |        |        |        |  |
|    | 1.319  | 1.258  | 1.244  | 0.595  | 0.157  | 0.356  | 1.177  | 1.018  | -4.663 | -6.956 | -3.132 | -1.320 | 1.031  | 1.069  |        |        |       |        |        |        |        |        |  |
| 16 | 0.641  | 0.581  | 0.567  | -0.083 | -0.520 | -0.322 | 0.500  | 0.341  | -3.341 | -7.633 | -3.810 | -1.997 | 0.353  | 0.392  | 0.179  |        |       |        |        |        |        |        |  |
|    | 2.354  | 2.293  | 2.279  | 1.630  | 1.192  | 1.391  | 2.213  | 2.053  | -3.628 | -5.921 | -2.097 | -0.285 | 2.066  | 2.104  | 1.891  |        |       |        |        |        |        |        |  |
| 17 | -0.743 | -0.804 | -0.818 | -1.468 | -1.905 | -1.706 | -0.885 | -1.044 | -6.725 | -9.018 | -5.195 | -3.382 | -1.032 | -0.993 | -1.206 | -2.241 |       |        |        |        |        |        |  |
|    | 0.969  | 0.908  | 0.894  | 0.245  | -0.192 | 0.006  | 0.828  | 0.668  | -5.013 | -7.306 | -3.482 | -1.670 | 0.681  | 0.720  | 0.506  | -0.529 |       |        |        |        |        |        |  |
| 18 | 0.300  | 0.240  | 0.225  | -0.424 | -0.861 | -0.663 | 0.159  | -0.000 | -5.682 | -7.975 | -4.151 | -2.339 | 0.012  | 0.051  | -0.162 | -1.197 | 0.187 |        |        |        |        |        |  |
|    | 2.013  | 1.952  | 1.938  | 1.288  | 0.851  | 1.050  | 1.871  | 1.712  | -3.969 | -6.262 | -2.439 | -0.626 | 1.724  | 1.763  | 1.550  | 0.515  | 1.900 |        |        |        |        |        |  |
| 19 | 0.812  | 0.751  | 0.737  | 0.088  | -0.350 | -0.151 | 0.671  | 0.512  | -5.170 | -7.463 | -3.639 | -1.827 | 0.524  | 0.563  | 0.350  | -0.686 | 0.699 | -0.344 |        |        |        |        |  |
|    | 2.524  | 2.464  | 2.450  | 1.800  | 1.363  | 1.561  | 2.383  | 2.224  | -3.458 | -5.750 | -1.927 | -0.114 | 2.236  | 2.275  | 2.062  | 1.027  | 2.412 | 1.368  |        |        |        |        |  |
| 20 | 4.837  | 4.776  | 4.762  | 4.113  | 3.675  | 3.874  | 4.696  | 4.536  | -1.145 | -3.438 | 0.386  | 2.198  | 4.549  | 4.587  | 4.374  | 3.339  | 4.724 | 3.680  | 3.168  |        |        |        |  |
|    | 6.549  | 6.488  | 6.474  | 5.825  | 5.388  | 5.586  | 6.408  | 6.249  | 0.567  | -1.726 | 2.098  | 3.910  | 6.261  | 6.300  | 6.086  | 5.051  | 6.436 | 5.393  | 4.881  |        |        |        |  |
| 21 | 2.795  | 2.734  | 2.720  | 2.071  | 1.633  | 1.832  | 2.654  | 2.495  | -3.187 | -5.480 | -1.656 | 0.156  | 2.507  | 2.546  | 2.332  | 1.297  | 2.682 | 1.639  | 1.127  | -2.898 |        |        |  |
|    | 4.507  | 4.447  | 4.432  | 3.783  | 3.346  | 3.544  | 4.366  | 4.207  | -1.475 | -3.768 | 0.056  | 1.868  | 4.219  | 4.258  | 4.045  | 3.010  | 4.395 | 3.351  | 2.839  | -1.186 |        |        |  |
| 22 | 2.334  | 2.274  | 2.259  | 1.610  | 1.173  | 1.371  | 2.193  | 2.034  | -3.648 | -5.941 | -2.117 | -0.304 | 2.046  | 2.085  | 1.872  | 0.837  | 2.222 | 1.178  | 0.666  | -3.359 | -1.317 |        |  |
|    | 4.047  | 3.986  | 3.972  | 3.323  | 2.885  | 3.084  | 3.905  | 3.746  | -1.935 | -4.228 | -0.405 | 1.408  | 3.759  | 3.797  | 3.584  | 2.549  | 3.934 | 2.890  | 2.378  | -1.646 | 0.395  |        |  |
| 23 | 1.087  | 1.026  | 1.012  | 0.363  | -0.075 | 0.124  | 0.946  | 0.786  | -4.895 | -7.188 | -3.364 | -1.552 | 0.799  | 0.838  | 0.624  | -0.411 | 0.974 | -0.070 | -0.581 | -4.606 | -2.564 | -2.104 |  |
|    | 2.799  | 2.738  | 2.724  | 2.075  | 1.638  | 1.836  | 2.658  | 2.499  | -3.183 | -5.476 | -1.652 | 0.160  | 2.511  | 2.550  | 2.337  | 1.301  | 2.686 | 1.643  | 1.131  | -2.894 | -0.852 | -0.391 |  |

# QEII Museum Average Service Quality ANOVA Analysis

MTB > Oneway 'gap' 'gap1';

SUBC> Tukey 5.

Tukey's pairwise comparisons, Family error rate = 0.0500, Individual error rate = 0.000178, Critical value = 5.30

Intervals for (column level mean) - (row level mean)

|    | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 9      | 8      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28 | 29 |  |  |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|----|--|--|
| 2  | -0.206 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.577  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 3  | -0.311 | -0.496 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.472  | 0.287  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 4  | -0.096 | -0.281 | -0.177 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.687  | 0.502  | 0.606  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 5  | 0.164  | -0.021 | 0.083  | -0.132 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.947  | 0.762  | 0.866  | 0.651  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 6  | 0.123  | -0.062 | 0.042  | -0.172 | -0.432 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.906  | 0.721  | 0.826  | 0.611  | 0.351  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 7  | 0.253  | 0.068  | 0.172  | -0.043 | -0.302 | -0.262 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.036  | 0.851  | 0.955  | 0.741  | 0.481  | 0.521  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 8  | 0.306  | 0.121  | 0.225  | 0.011  | -0.249 | -0.209 | -0.338 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.089  | 0.904  | 1.009  | 0.794  | 0.534  | 0.575  | 0.445  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 9  | 0.451  | 0.266  | 0.370  | 0.155  | -0.104 | -0.064 | -0.194 | -0.247 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.234  | 1.049  | 1.153  | 0.938  | 0.679  | 0.719  | 0.589  | 0.536  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 10 | 0.364  | 0.179  | 0.283  | 0.068  | -0.192 | -0.151 | -0.281 | -0.334 | -0.479 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.147  | 0.962  | 1.066  | 0.851  | 0.592  | 0.632  | 0.502  | 0.449  | 0.304  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 11 | 0.206  | 0.021  | 0.125  | -0.089 | -0.349 | -0.309 | -0.438 | -0.492 | -0.636 | -0.549 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.989  | 0.804  | 0.909  | 0.694  | 0.434  | 0.475  | 0.345  | 0.292  | 0.147  | 0.234  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 12 | 0.502  | 0.317  | 0.421  | 0.206  | -0.053 | -0.013 | -0.143 | -0.196 | -0.341 | -0.253 | -0.096 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.285  | 1.100  | 1.204  | 0.989  | 0.730  | 0.770  | 0.641  | 0.587  | 0.443  | 0.530  | 0.687  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 13 | 0.447  | 0.262  | 0.366  | 0.151  | -0.109 | -0.068 | -0.198 | -0.251 | -0.396 | -0.151 | -0.447 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.230  | 1.045  | 1.149  | 0.934  | 0.675  | 0.715  | 0.585  | 0.532  | 0.387  | 0.475  | 0.632  | 0.336  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 14 | 0.534  | 0.349  | 0.453  | 0.238  | -0.021 | 0.019  | -0.111 | -0.164 | -0.309 | -0.221 | -0.064 | -0.360 | -0.304 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.317  | 1.132  | 1.236  | 1.021  | 0.762  | 0.802  | 0.672  | 0.619  | 0.475  | 0.562  | 0.719  | 0.424  | 0.479  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 15 | 0.694  | 0.508  | 0.613  | 0.398  | 0.138  | 0.179  | 0.049  | -0.004 | -0.149 | -0.062 | 0.096  | -0.200 | -0.145 | -0.232 |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.477  | 1.292  | 1.396  | 1.181  | 0.921  | 0.962  | 0.832  | 0.779  | 0.634  | 0.721  | 0.879  | 0.583  | 0.638  | 0.551  |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 16 | 0.206  | 0.021  | 0.125  | -0.089 | -0.349 | -0.309 | -0.438 | -0.492 | -0.636 | -0.549 | -0.392 | -0.687 | -0.632 | -0.719 | -0.879 |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.989  | 0.804  | 0.909  | 0.694  | 0.434  | 0.475  | 0.345  | 0.292  | 0.147  | 0.234  | 0.392  | 0.096  | 0.151  | 0.064  | -0.096 |        |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 17 | 0.234  | 0.049  | 0.153  | -0.062 | -0.321 | -0.281 | -0.411 | -0.464 | -0.609 | -0.521 | -0.364 | -0.660 | -0.604 | -0.692 | -0.851 | -0.364 |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.017  | 0.832  | 0.936  | 0.721  | 0.462  | 0.502  | 0.372  | 0.319  | 0.175  | 0.262  | 0.419  | 0.124  | 0.179  | 0.092  | -0.068 | 0.419  |        |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 18 | 0.368  | 0.183  | 0.287  | 0.072  | -0.187 | -0.147 | -0.277 | -0.330 | -0.475 | -0.387 | -0.230 | -0.526 | -0.470 | -0.558 | -0.717 | -0.230 | -0.258 |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.151  | 0.966  | 1.070  | 0.855  | 0.596  | 0.636  | 0.506  | 0.453  | 0.309  | 0.396  | 0.553  | 0.258  | 0.313  | 0.226  | 0.066  | 0.553  | 0.526  |        |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 19 | 0.308  | 0.123  | 0.228  | 0.013  | -0.247 | -0.206 | -0.336 | -0.389 | -0.534 | -0.447 | -0.289 | -0.585 | -0.530 | -0.617 | -0.777 | -0.289 | -0.317 | -0.451 |        |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 1.092  | 0.906  | 1.011  | 0.796  | 0.536  | 0.577  | 0.447  | 0.394  | 0.249  | 0.336  | 0.494  | 0.198  | 0.253  | 0.166  | 0.006  | 0.494  | 0.466  | 0.332  |        |        |        |        |        |        |        |        |        |    |    |  |  |
| 20 | -0.130 | -0.315 | -0.211 | -0.426 | -0.685 | -0.645 | -0.775 | -0.828 | -0.972 | -0.885 | -0.728 | -1.024 | -0.968 | -1.055 | -1.215 | -0.728 | -0.755 | -0.889 | -0.830 |        |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.653  | 0.468  | 0.572  | 0.358  | 0.098  | 0.138  | 0.009  | -0.045 | -0.189 | -0.102 | 0.055  | -0.240 | -0.185 | -0.272 | -0.432 | 0.055  | 0.028  | -0.106 | -0.047 |        |        |        |        |        |        |        |        |    |    |  |  |
| 21 | 0.092  | -0.183 | -0.079 | -0.294 | -0.553 | -0.513 | -0.643 | -0.696 | -0.841 | -0.753 | -0.596 | -0.892 | -0.836 | -0.924 | -1.083 | -0.596 | -0.624 | -0.758 | -0.698 | -0.260 |        |        |        |        |        |        |        |    |    |  |  |
|    | 0.785  | 0.600  | 0.704  | 0.489  | 0.230  | 0.270  | 0.141  | 0.087  | -0.057 | 0.030  | 0.187  | -0.108 | -0.053 | -0.140 | -0.300 | 0.187  | 0.160  | 0.026  | 0.085  | 0.524  |        |        |        |        |        |        |        |    |    |  |  |
| 22 | 0.608  | 0.423  | 0.528  | 0.313  | 0.053  | 0.094  | -0.036 | -0.089 | -0.234 | -0.147 | 0.011  | -0.285 | -0.230 | -0.317 | -0.477 | 0.011  | -0.017 | -0.151 | -0.092 | 0.347  | 0.215  |        |        |        |        |        |        |    |    |  |  |
|    | 1.392  | 1.206  | 1.311  | 1.096  | 0.836  | 0.877  | 0.747  | 0.694  | 0.549  | 0.636  | 0.794  | 0.498  | 0.553  | 0.466  | 0.306  | 0.794  | 0.766  | 0.632  | 0.692  | 1.130  | 0.998  |        |        |        |        |        |        |    |    |  |  |
| 23 | -0.038 | -0.224 | -0.119 | -0.334 | -0.594 | -0.553 | -0.683 | -0.736 | -0.881 | -0.794 | -0.636 | -0.932 | -0.877 | -0.964 | -1.124 | -0.636 | -0.664 | -0.798 | -0.738 | 0.475  | 0.343  | -1.038 |        |        |        |        |        |    |    |  |  |
|    | 0.745  | 0.560  | 0.664  | 0.449  | 0.189  | 0.230  | 0.100  | 0.047  | -0.098 | -0.011 | 0.147  | -0.149 | -0.094 | -0.181 | -0.340 | 0.147  | 0.119  | -0.015 | 0.045  | 0.483  | 0.351  | -0.255 |        |        |        |        |        |    |    |  |  |
| 24 | -0.047 | -0.232 | -0.128 | -0.343 | -0.602 | -0.562 | -0.692 | -0.745 | -0.889 | -0.802 | -0.645 | -0.941 | -0.885 | -0.972 | -1.132 | -0.645 | -0.672 | -0.806 | -0.747 | -0.309 | -0.441 | -1.047 | -0.400 |        |        |        |        |    |    |  |  |
|    | 0.736  | 0.551  | 0.655  | 0.441  | 0.181  | 0.221  | 0.092  | 0.038  | -0.106 | -0.019 | 0.138  | -0.157 | -0.102 | -0.189 | -0.349 | 0.138  | 0.111  | -0.023 | 0.036  | 0.475  | 0.343  | -0.264 | 0.383  |        |        |        |        |    |    |  |  |
| 25 | 0.274  | 0.089  | 0.194  | -0.021 | -0.281 | -0.241 | -0.370 | -0.424 | -0.568 | -0.481 | -0.324 | -0.619 | -0.564 | -0.651 | -0.811 | -0.324 | -0.351 | -0.485 | -0.426 | 0.013  | -0.119 | -0.726 | -0.079 | -0.070 |        |        |        |    |    |  |  |
|    | 1.058  | 0.872  | 0.977  | 0.762  | 0.502  | 0.543  | 0.413  | 0.360  | 0.215  | 0.302  | 0.460  | 0.164  | 0.219  | 0.132  | -0.028 | 0.460  | 0.432  | 0.298  | 0.358  | 0.796  | 0.664  | 0.058  | 0.704  | 0.713  |        |        |        |    |    |  |  |
| 26 | 0.104  | -0.081 | 0.023  | -0.192 | -0.451 | -0.411 | -0.541 | -0.594 | -0.738 | -0.651 | -0.494 | -0.789 | -0.734 | -0.821 | -0.981 | -0.494 | -0.521 | -0.655 | -0.596 | -0.158 | -0.289 | -0.896 | -0.249 | -0.241 | -0.562 |        |        |    |    |  |  |
|    | 0.887  | 0.702  | 0.806  | 0.592  | 0.332  | 0.372  | 0.243  | 0.189  | 0.045  | 0.132  | 0.289  | -0.006 | 0.049  | -0.038 | -0.198 | 0.289  | 0.262  | 0.128  | 0.187  | 0.626  | 0.494  | -0.113 | 0.534  | 0.543  | 0.221  |        |        |    |    |  |  |
| 27 | 0.062  | -0.124 | -0.019 | -0.234 | -0.494 | -0.453 | -0.583 | -0.636 | -0.781 | -0.694 | -0.536 | -0.832 | -0.777 | -0.864 | -1.024 | -0.536 | -0.564 | -0.698 | -0.638 | -0.200 | -0.332 | -0.938 | -0.292 | -0.283 | -0.604 | -0.434 |        |    |    |  |  |
|    | 0.845  | 0.660  | 0.764  | 0.549  | 0.289  | 0.330  | 0.200  | 0.147  | 0.002  | 0.089  | 0.247  | -0.049 | 0.006  | -0.081 | -0.240 | 0.247  | 0.219  | 0.085  | 0.145  | 0.583  | 0.451  | -0.155 | 0.492  | 0.500  | 0.179  | 0.349  |        |    |    |  |  |
| 28 | -0.006 | -0.192 | -0.087 | -0.302 | -0.562 | -0.521 | -0.651 | -0.704 | -0.849 | -0.762 | -0.604 | -0.900 | -0.845 | -0.932 | -1.092 | -0.604 | -0.632 | -0.766 | -0.706 | -0.268 | -0.400 | -1.006 | -0.360 | -0.351 | -0.672 | -0.502 | -0.460 |    |    |  |  |
|    | 0.777  | 0.592  | 0.696  | 0.481  | 0.221  | 0.262  | 0.132  | 0.079  | -0.066 | 0.021  | 0.179  | -0.117 | -0.062 | -0.149 | -0.308 | 0.179  | 0.151  | 0.017  | 0.077  | 0.515  | 0.383  | -0.223 | 0.424  | 0.432  | 0.111  | 0.281  | 0.324  |    |    |  |  |
| 29 | -0.198 | -0.383 | -0.279 | -0.494 | -0.753 | -0.713 | -0.843 | -0.896 | -1.041 | -0.953 | -0.796 | -1.092 | -1.036 | -1.124 | -1.283 | -0.796 | -0.824 | -0.958 | -0.898 | -0.460 | -0.592 | -1.198 | -0.551 | -0.543 | -0.864 |        |        |    |    |  |  |

# QEII Museum Weighted Service Quality ANOVA Analysis

MTB > Oneway 'sggap' 'sggapd';

Tukey's pairwise comparisons, Family error rate = 0.0500, Individual error rate = 0.000190, Critical value = 5.28

Intervals for (column level mean) - (row level mean)

|    | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 9      | 8      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28 |  |  |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|--|--|
| 2  | -0.870 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 1.743  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 3  | -1.134 | -1.570 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 1.479  | 1.043  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 4  | 0.649  | 0.213  | 0.476  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.262  | 2.826  | 3.090  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 5  | 0.398  | -0.039 | 0.225  | -1.558 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.011  | 2.575  | 2.839  | 1.056  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 6  | 1.283  | 0.847  | 1.110  | -0.673 | -0.421 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.896  | 3.460  | 3.724  | 1.941  | 2.192  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 7  | 1.176  | 0.740  | 1.004  | -0.779 | -0.528 | -1.413 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.790  | 3.353  | 3.617  | 1.834  | 2.085  | 1.200  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 8  | 1.753  | 1.317  | 1.581  | -0.202 | 0.049  | -0.836 | -0.730 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 4.366  | 3.930  | 4.194  | 2.411  | 2.662  | 1.777  | 1.883  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 9  | 1.427  | 0.991  | 1.255  | -0.528 | -0.277 | -1.162 | -1.056 | -1.632 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 4.041  | 3.604  | 3.868  | 2.085  | 2.336  | 1.451  | 1.558  | 0.981  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 10 | 1.121  | 0.685  | 0.949  | -0.834 | -0.583 | -1.468 | -1.362 | -1.939 | -1.613 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.734  | 3.298  | 3.562  | 1.779  | 2.030  | 1.145  | 1.251  | 0.675  | 1.000  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 11 | 2.136  | 1.700  | 1.964  | 0.181  | 0.432  | -0.453 | -0.347 | -0.924 | -0.598 | -0.292 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 4.749  | 4.313  | 4.577  | 2.794  | 3.045  | 2.160  | 2.266  | 1.690  | 2.015  | 2.321  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 12 | 1.891  | 1.455  | 1.719  | -0.064 | 0.187  | -0.698 | -0.592 | -1.168 | -0.843 | -0.536 | -1.551 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 4.504  | 4.068  | 4.332  | 2.549  | 2.800  | 1.915  | 2.021  | 1.445  | 1.770  | 2.077  | 1.062  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 13 | 2.061  | 1.625  | 1.889  | 0.106  | 0.357  | -0.528 | -0.421 | -0.998 | -0.673 | -0.366 | -1.381 | -1.136 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 4.675  | 4.239  | 4.502  | 2.719  | 2.970  | 2.085  | 2.192  | 1.615  | 1.941  | 2.247  | 1.232  | 1.477  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 14 | 2.802  | 2.366  | 2.630  | 0.847  | 1.098  | 0.213  | 0.319  | -0.258 | 0.068  | 0.374  | -0.641 | -0.396 | -0.566 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 5.415  | 4.979  | 5.243  | 3.460  | 3.711  | 2.826  | 2.932  | 2.356  | 2.681  | 2.987  | 1.973  | 2.217  | 2.047  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 15 | 1.083  | 0.647  | 0.910  | -0.873 | -0.621 | -1.507 | -1.400 | -1.977 | -1.651 | -1.345 | -2.360 | -2.115 | -2.285 | -3.026 |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.696  | 3.260  | 3.524  | 1.741  | 1.992  | 1.107  | 1.213  | 0.636  | 0.962  | 1.268  | 0.253  | 0.498  | 0.328  | -0.413 |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 16 | 0.704  | 0.268  | 0.532  | -1.251 | -1.000 | -1.885 | -1.779 | -2.356 | -2.030 | -1.724 | -2.739 | -2.494 | -2.664 | -3.404 | -1.685 |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.317  | 2.881  | 3.145  | 1.362  | 1.613  | 0.728  | 0.834  | 0.258  | 0.583  | 0.890  | -0.125 | 0.119  | -0.051 | -0.791 | 0.928  |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 17 | 1.319  | 0.883  | 1.147  | -0.636 | -0.385 | -1.270 | -1.164 | -1.741 | -1.415 | -1.109 | -2.124 | -1.879 | -2.049 | -2.790 | -1.070 | -0.692 |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.932  | 3.496  | 3.760  | 1.977  | 2.228  | 1.343  | 1.449  | 0.873  | 1.198  | 1.504  | 0.490  | 0.734  | 0.564  | -0.176 | 1.543  | 1.921  |        |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 18 | 1.174  | 0.738  | 1.002  | -0.781 | -0.530 | -1.415 | -1.309 | -1.885 | -1.560 | -1.253 | -2.268 | -2.024 | -2.194 | -2.934 | -1.215 | -0.836 | -1.451 |        |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 3.787  | 3.351  | 3.615  | 1.832  | 2.083  | 1.198  | 1.304  | 0.728  | 1.053  | 1.360  | 0.345  | 0.590  | 0.419  | -0.321 | 1.398  | 1.777  | 1.162  |        |        |        |        |        |        |        |        |        |        |    |  |  |
| 19 | -0.479 | -0.915 | -0.651 | -2.434 | -2.183 | -3.068 | -2.962 | -3.539 | -3.213 | -2.907 | -3.921 | -3.677 | -3.847 | -4.587 | -2.868 | -2.490 | -3.104 | -2.960 |        |        |        |        |        |        |        |        |        |    |  |  |
|    | 2.134  | 1.698  | 1.962  | 0.179  | 0.430  | -0.455 | -0.349 | -0.925 | -0.600 | -0.293 | -1.308 | -1.064 | -1.234 | -1.974 | -0.255 | 0.124  | -0.491 | -0.347 |        |        |        |        |        |        |        |        |        |    |  |  |
| 20 | -0.170 | -0.607 | -0.343 | -2.126 | -1.875 | -2.760 | -2.653 | -3.230 | -2.904 | -2.598 | -3.613 | -3.368 | -3.539 | -4.279 | -2.560 | -2.181 | -2.796 | -2.651 | -0.998 |        |        |        |        |        |        |        |        |    |  |  |
|    | 2.443  | 2.007  | 2.270  | 0.487  | 0.739  | -0.147 | -0.040 | -0.617 | -0.291 | 0.015  | -1.000 | -0.755 | -0.925 | -1.666 | 0.053  | 0.432  | -0.183 | -0.038 | 1.615  |        |        |        |        |        |        |        |        |    |  |  |
| 21 | 2.306  | 1.870  | 2.134  | 0.351  | 0.602  | -0.283 | -0.177 | -0.753 | -0.428 | -0.121 | -1.136 | -0.892 | -1.062 | -1.802 | -0.083 | 0.296  | -0.319 | -0.175 | 1.479  | 1.170  |        |        |        |        |        |        |        |    |  |  |
|    | 4.919  | 4.483  | 4.747  | 2.964  | 3.215  | 2.330  | 2.436  | 1.860  | 2.185  | 2.492  | 1.477  | 1.721  | 1.551  | 0.811  | 2.530  | 2.909  | 2.294  | 2.439  | 4.092  | 3.783  |        |        |        |        |        |        |        |    |  |  |
| 22 | -0.239 | -0.675 | -0.411 | -2.194 | -1.943 | -2.828 | -2.721 | -3.298 | -2.973 | -2.666 | -3.681 | -3.436 | -3.607 | -4.347 | -2.628 | -2.249 | -2.864 | -2.719 | -1.066 | -1.375 |        |        |        |        |        |        |        |    |  |  |
|    | 2.375  | 1.939  | 2.202  | 0.419  | 0.670  | -0.215 | -0.108 | -0.685 | -0.359 | -0.053 | -1.068 | -0.823 | -0.993 | -1.734 | -0.015 | 0.364  | -0.251 | -0.106 | 1.547  | 1.239  |        |        |        |        |        |        |        |    |  |  |
| 23 | -0.249 | -0.685 | -0.421 | -2.204 | -1.953 | -2.839 | -2.732 | -3.309 | -2.983 | -2.677 | -3.692 | -3.447 | -3.617 | -4.358 | -2.639 | -2.260 | -2.875 | -2.730 | -1.077 | -1.385 | -3.851 |        |        |        |        |        |        |    |  |  |
|    | 2.364  | 1.928  | 2.192  | 0.409  | 0.660  | -0.225 | -0.119 | -0.696 | -0.370 | -0.064 | -1.079 | -0.834 | -1.004 | -1.744 | -0.025 | 0.353  | -0.261 | -0.117 | 1.536  | 1.228  | -1.238 |        |        |        |        |        |        |    |  |  |
| 24 | 0.993  | 0.557  | 0.821  | -0.962 | -0.711 | -1.596 | -1.490 | -2.066 | -1.741 | -1.434 | -2.449 | -2.204 | -2.375 | -3.115 | -1.396 | -1.017 | -1.632 | -1.487 | 0.166  | -0.143 | -3.862 | -1.317 |        |        |        |        |        |    |  |  |
|    | 3.607  | 3.170  | 3.434  | 1.651  | 1.902  | 1.017  | 1.124  | 0.547  | 0.873  | 1.179  | 0.164  | 0.409  | 0.239  | -0.502 | 1.217  | 1.596  | 0.981  | 1.126  | 2.779  | 2.470  | -1.249 | 1.296  |        |        |        |        |        |    |  |  |
| 25 | 0.491  | 0.055  | 0.319  | -1.464 | -1.213 | -2.098 | -1.992 | -2.568 | -2.243 | -1.936 | -2.951 | -2.707 | -2.877 | -3.617 | -1.898 | -1.519 | -2.134 | -1.990 | -0.336 | -0.645 | -2.619 | -0.075 | -0.064 |        |        |        |        |    |  |  |
|    | 3.104  | 2.668  | 2.932  | 1.149  | 1.400  | 0.515  | 0.621  | 0.045  | 0.370  | 0.677  | -0.338 | -0.093 | -0.264 | -1.004 | 0.715  | 1.094  | 0.479  | 0.624  | 2.277  | 1.968  | -0.006 | 2.539  | 2.549  |        |        |        |        |    |  |  |
| 26 | 0.164  | -0.273 | -0.009 | -1.792 | -1.541 | -2.426 | -2.319 | -2.896 | -2.570 | -2.264 | -3.279 | -3.034 | -3.204 | -3.945 | -2.226 | -1.847 | -2.462 | -2.317 | -0.664 | -0.973 | -3.121 | -0.577 | -0.566 | -1.809 |        |        |        |    |  |  |
|    | 2.777  | 2.341  | 2.604  | 0.821  | 1.073  | 0.187  | 0.294  | -0.283 | 0.043  | 0.349  | -0.666 | -0.421 | -0.591 | -1.332 | 0.387  | 0.766  | 0.151  | 0.296  | 1.949  | 1.641  | -0.508 | 2.036  | 2.047  | 0.804  |        |        |        |    |  |  |
| 27 | -0.143 | -0.579 | -0.315 | -2.098 | -1.847 | -2.732 | -2.626 | -3.202 | -2.877 | -2.570 | -3.585 | -3.341 | -3.511 | -4.251 | -2.532 | -2.153 | -2.768 | -2.624 | -0.970 | -1.279 | -3.449 | -0.904 | -0.894 | -2.136 | -1.634 |        |        |    |  |  |
|    | 2.470  | 2.034  | 2.298  | 0.515  | 0.766  | -0.119 | -0.013 | -0.589 | -0.264 | 0.043  | -0.972 | -0.727 | -0.898 | -1.638 | 0.081  | 0.460  | -0.155 | -0.010 | 1.643  | 1.334  | -0.836 | 1.709  | 1.719  | 0.477  | 0.979  |        |        |    |  |  |
| 28 | -0.866 | -1.302 | -1.039 | -2.821 | -2.570 | -3.456 | -3.349 | -3.926 | -3.600 | -3.294 | -4.309 | -4.064 | -4.234 | -4.975 | -3.256 | -2.877 | -3.492 | -3.347 | -1.694 | -2.002 | -3.756 | -1.211 | -1.200 | -2.443 | -1.941 | -1.613 |        |    |  |  |
|    | 1.747  | 1.311  | 1.575  | -0.208 | 0.043  | -0.842 | -0.736 | -1.313 | -0.987 | -0.681 | -1.696 | -1.451 | -1.621 | -2.361 | -0.642 | -0.264 | -0.879 | -0.734 | 0.919  | 0.611  | -1.142 | 1.402  | 1.413  | 0.170  | 0.673  | 1.000  |        |    |  |  |
| 29 | 0.696  | 0.259  | 0.523  | -1.260 | -1.009 | -1.894 | -1.787 | -2.364 | -2.039 | -1.732 | -2.747 | -2.502 | -2.673 | -3.413 | -1.694 | -1.315 | -1.930 | -1.785 | -0.132 | -0.441 | -4.479 | -1.934 | -1.924 | -3.166 | -2.664 | -2.336 | -2.030 |    |  |  |
|    | 3.309  | 2.873  | 3.136  | 1.353  | 1.604  | 0.719  | 0.826  | 0.249  | 0.575  | 0.881  | -0.134 | 0.111  | -0.059 | -0.800 | 0.919  | 1.298  | 0.683  | 0.828  | 2.481  | 2.173  | -1.866 | 0.679  | 0.690  | -0.553 | -0.051 | 0.277  | 0.583  |    |  |  |
| 30 | 0.16   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |

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# **Appendix F.**

## **Correspondence Analysis of Visitors' Perception of Service Quality**

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- F.1      Correspondence Analysis of The Science Centre &  
            Manawatu Museum**
  
- F.2      Correspondence Analysis of the New Zealand Historic Places  
            Trust**
  
- F.3      Correspondence Analysis of the Queen Elizabeth II Army  
            Memorial Museum**



## A Correspondence Analysis - The Science Centre

### 1. Simple Correspondence Analysis of Perception of Tangible Dimension Vs Experience

#### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0142  | 0.9481     | 0.9481     | *****     |
| 2     | 0.0008  | 0.0519     | 1.0000     | *         |
| Total | 0.0150  |            |            |           |

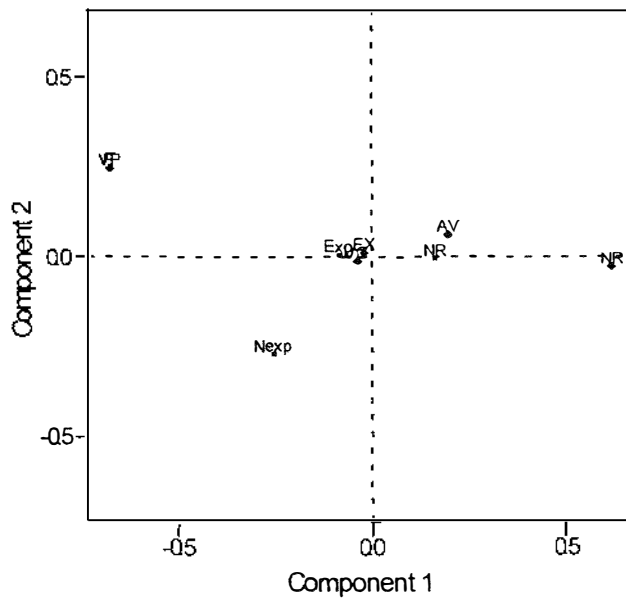
#### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.020 | 0.514 | 0.623               | 0.997 | 0.541 | -0.032              | 0.003 | 0.026 |
| 2 VP    | 1.000 | 0.002 | 0.086 | -0.677              | 0.881 | 0.080 | 0.249               | 0.119 | 0.197 |
| 3 P     | 1.000 | 0.002 | 0.086 | -0.677              | 0.881 | 0.080 | 0.249               | 0.119 | 0.197 |
| 4 AV    | 1.000 | 0.082 | 0.248 | 0.205               | 0.925 | 0.242 | 0.058               | 0.075 | 0.356 |
| 5 VG    | 1.000 | 0.618 | 0.058 | -0.035              | 0.853 | 0.052 | -0.014              | 0.147 | 0.165 |
| 6 EX    | 1.000 | 0.275 | 0.008 | -0.016              | 0.599 | 0.005 | 0.013               | 0.401 | 0.058 |

#### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.333 | 0.621 | 0.167               | 0.999 | 0.654 | -0.006              | 0.001 | 0.013 |
| 2 Exp   | 1.000 | 0.658 | 0.288 | -0.081              | 0.993 | 0.302 | 0.007               | 0.007 | 0.041 |
| 3 Nexp  | 1.000 | 0.010 | 0.091 | -0.251              | 0.460 | 0.044 | -0.272              | 0.540 | 0.946 |

Symmetric Plot



## 2. Simple Correspondence Analysis of Perception of Peripheral Services Dimension Vs Experience

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0109  | 0.7910     | 0.7910     | *****     |
| 2     | 0.0029  | 0.2090     | 1.0000     | *****     |
| Total | 0.0138  |            |            |           |

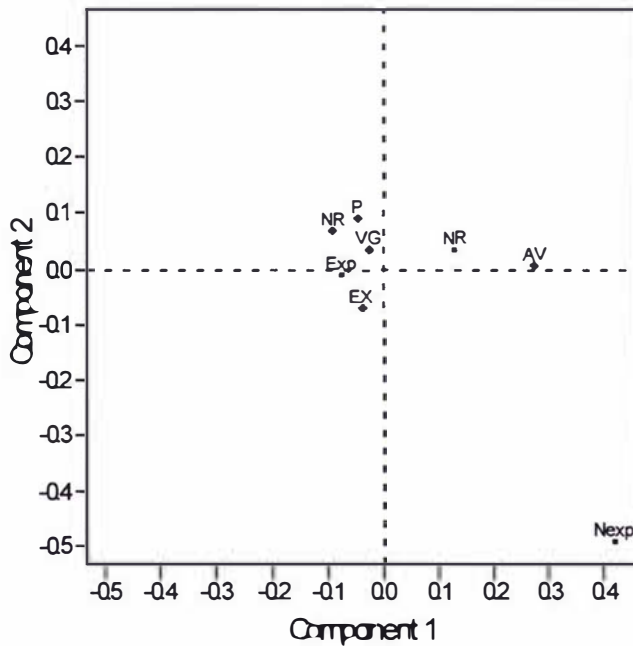
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.112 | 0.103 | -0.088              | 0.611 | 0.080 | 0.071               | 0.389 | 0.193 |
| 2 P     | 1.000 | 0.007 | 0.005 | -0.045              | 0.202 | 0.001 | 0.090               | 0.798 | 0.021 |
| 3 AV    | 1.000 | 0.122 | 0.673 | 0.276               | 1.000 | 0.850 | 0.006               | 0.000 | 0.001 |
| 4 VG    | 1.000 | 0.429 | 0.057 | -0.025              | 0.351 | 0.025 | 0.035               | 0.649 | 0.177 |
| 5 EX    | 1.000 | 0.330 | 0.161 | -0.038              | 0.212 | 0.043 | -0.073              | 0.788 | 0.608 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.333 | 0.444 | 0.131               | 0.932 | 0.523 | 0.035               | 0.068 | 0.145 |
| 2 Exp   | 1.000 | 0.658 | 0.256 | -0.073              | 0.980 | 0.317 | -0.010              | 0.020 | 0.025 |
| 3 Nexp  | 1.000 | 0.010 | 0.300 | 0.419               | 0.421 | 0.160 | -0.491              | 0.579 | 0.830 |

Symmetric Plot



### 3. Simple Correspondence Analysis of Perception of Peripheral Services Dimension Vs Experience

#### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0054  | 0.8502     | 0.8502     | *****     |
| 2     | 0.0010  | 0.1498     | 1.0000     | *****     |
| Total | 0.0063  |            |            |           |

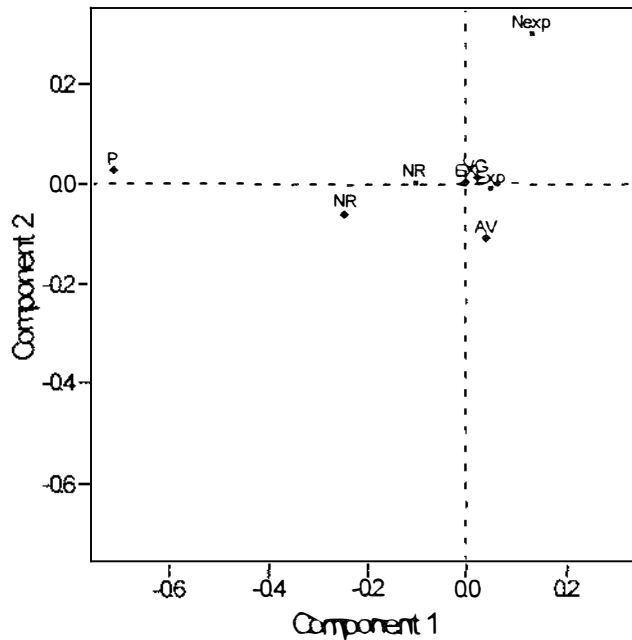
#### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.022 | 0.223 | -0.245              | 0.949 | 0.249 | -0.057              | 0.051 | 0.075 |
| 2 P     | 1.000 | 0.007 | 0.593 | -0.710              | 0.998 | 0.697 | 0.029               | 0.002 | 0.007 |
| 3 AV    | 1.000 | 0.065 | 0.138 | 0.041               | 0.122 | 0.020 | -0.109              | 0.878 | 0.811 |
| 4 VG    | 1.000 | 0.422 | 0.044 | 0.021               | 0.658 | 0.034 | 0.015               | 0.342 | 0.100 |
| 5 EX    | 1.000 | 0.484 | 0.001 | -0.001              | 0.122 | 0.000 | 0.004               | 0.878 | 0.007 |

#### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.333 | 0.562 | -0.103              | 0.998 | 0.659 | 0.005               | 0.002 | 0.008 |
| 2 Exp   | 1.000 | 0.658 | 0.267 | 0.050               | 0.981 | 0.308 | -0.007              | 0.019 | 0.034 |
| 3 Nexp  | 1.000 | 0.010 | 0.171 | 0.133               | 0.161 | 0.032 | 0.303               | 0.839 | 0.958 |

Symmetric Plot



### 4. Simple Correspondence Analysis of Perception of Access Dimension Vs Experience

#### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0184  | 0.9185     | 0.9185     | *****     |
| 2     | 0.0016  | 0.0815     | 1.0000     | **        |
| Total | 0.0200  |            |            |           |

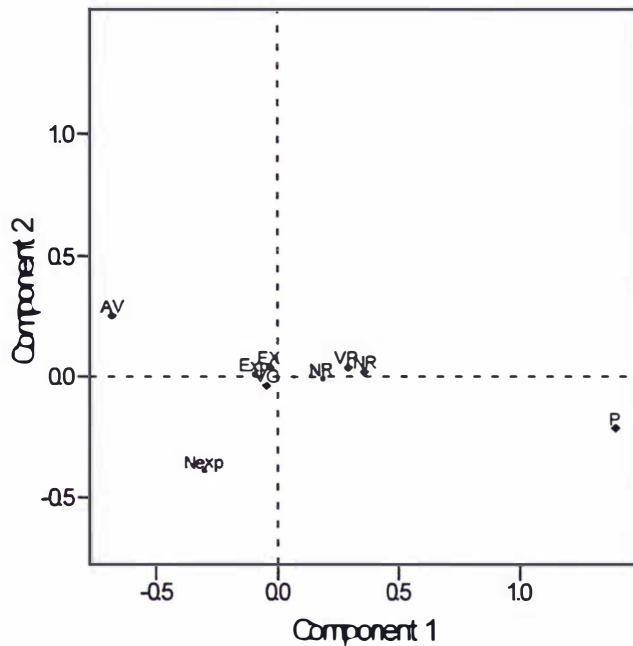
#### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.060 | 0.392 | 0.363               | 0.997 | 0.426 | 0.020               | 0.003 | 0.015 |
| 2 VP    | 1.000 | 0.037 | 0.163 | 0.294               | 0.985 | 0.174 | 0.036               | 0.015 | 0.029 |
| 3 P     | 1.000 | 0.002 | 0.249 | 1.400               | 0.977 | 0.264 | -0.216              | 0.023 | 0.071 |
| 4 AV    | 1.000 | 0.002 | 0.064 | -0.675              | 0.874 | 0.061 | 0.256               | 0.126 | 0.100 |
| 5 VG    | 1.000 | 0.521 | 0.083 | -0.045              | 0.618 | 0.056 | -0.035              | 0.382 | 0.391 |
| 6 EX    | 1.000 | 0.377 | 0.049 | -0.030              | 0.338 | 0.018 | 0.041               | 0.662 | 0.395 |

#### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.333 | 0.600 | 0.190               | 0.998 | 0.652 | -0.009              | 0.002 | 0.015 |
| 2 Exp   | 1.000 | 0.658 | 0.278 | -0.092              | 0.987 | 0.299 | 0.010               | 0.013 | 0.043 |
| 3 Nexp  | 1.000 | 0.010 | 0.121 | -0.301              | 0.368 | 0.049 | -0.394              | 0.632 | 0.941 |

Symmetric Plot



## 5. Simple Correspondence Analysis of Perception of Tangible Dimension Vs Gender

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0279  | 0.7576     | 0.7576     | *****     |
| 2     | 0.0074  | 0.1996     | 0.9572     | *****     |
| 3     | 0.0016  | 0.0428     | 1.0000     | *         |
| Total | 0.0369  |            |            |           |

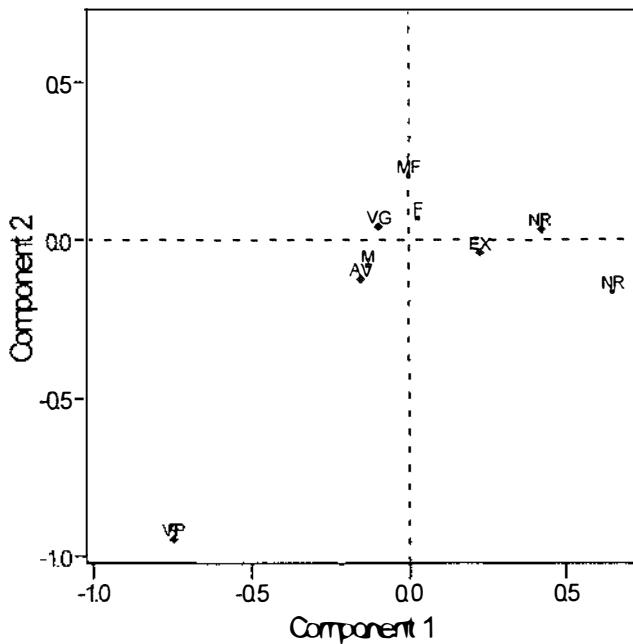
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.885 | 0.020 | 0.111 | 0.426               | 0.879 | 0.129 | 0.035               | 0.006 | 0.003 |
| 2 VP    | 0.978 | 0.002 | 0.100 | -0.745              | 0.373 | 0.049 | -0.949              | 0.605 | 0.303 |
| 3 P     | 0.978 | 0.002 | 0.100 | -0.745              | 0.373 | 0.049 | -0.949              | 0.605 | 0.303 |
| 4 AV    | 0.786 | 0.082 | 0.102 | -0.147              | 0.469 | 0.063 | -0.121              | 0.317 | 0.162 |
| 5 VG    | 0.994 | 0.618 | 0.171 | -0.091              | 0.816 | 0.184 | 0.043               | 0.178 | 0.152 |
| 6 EX    | 0.993 | 0.275 | 0.416 | 0.231               | 0.957 | 0.526 | -0.045              | 0.036 | 0.076 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.999 | 0.050 | 0.610 | 0.652               | 0.939 | 0.756 | -0.165              | 0.060 | 0.183 |
| 2 M     | 0.998 | 0.402 | 0.242 | -0.125              | 0.699 | 0.223 | -0.081              | 0.298 | 0.362 |
| 3 F     | 0.957 | 0.531 | 0.091 | 0.033               | 0.174 | 0.021 | 0.070               | 0.783 | 0.357 |
| 4 MF    | 0.342 | 0.017 | 0.058 | 0.005               | 0.000 | 0.000 | 0.204               | 0.342 | 0.099 |

Symmetric Plot



## 6. Simple Correspondence Analysis of Perception of Peripheral Services Dimension Vs Gender

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0346  | 0.7981     | 0.7981     | *****     |
| 2     | 0.0086  | 0.1976     | 0.9956     | *****     |
| 3     | 0.0002  | 0.0044     | 1.0000     |           |
| Total | 0.0434  |            |            |           |

### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.112 | 0.304 | -0.269              | 0.610 | 0.233 | -0.215              | 0.390 | 0.600 |
| 2 P     | 0.930 | 0.007 | 0.054 | 0.532               | 0.897 | 0.061 | -0.101              | 0.032 | 0.009 |
| 3 AV    | 0.999 | 0.122 | 0.442 | 0.395               | 0.987 | 0.547 | -0.044              | 0.012 | 0.027 |
| 4 VG    | 0.998 | 0.429 | 0.017 | 0.041               | 0.986 | 0.021 | -0.005              | 0.012 | 0.001 |
| 5 EX    | 1.000 | 0.330 | 0.182 | -0.120              | 0.606 | 0.138 | 0.097               | 0.394 | 0.363 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.996 | 0.050 | 0.258 | -0.360              | 0.574 | 0.186 | -0.309              | 0.423 | 0.552 |
| 2 M     | 1.000 | 0.402 | 0.440 | 0.215               | 0.972 | 0.536 | -0.036              | 0.028 | 0.062 |
| 3 F     | 0.999 | 0.531 | 0.241 | -0.133              | 0.898 | 0.271 | 0.045               | 0.101 | 0.123 |
| 4 MF    | 0.949 | 0.017 | 0.061 | 0.121               | 0.096 | 0.007 | 0.360               | 0.853 | 0.263 |

## 7. Simple Correspondence Analysis of Perception of Staff Dimension Vs Gender

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0151  | 0.7525     | 0.7525     | *****     |
| 2     | 0.0033  | 0.1638     | 0.9163     | *****     |
| 3     | 0.0017  | 0.0837     | 1.0000     | ***       |
| Total | 0.0201  |            |            |           |

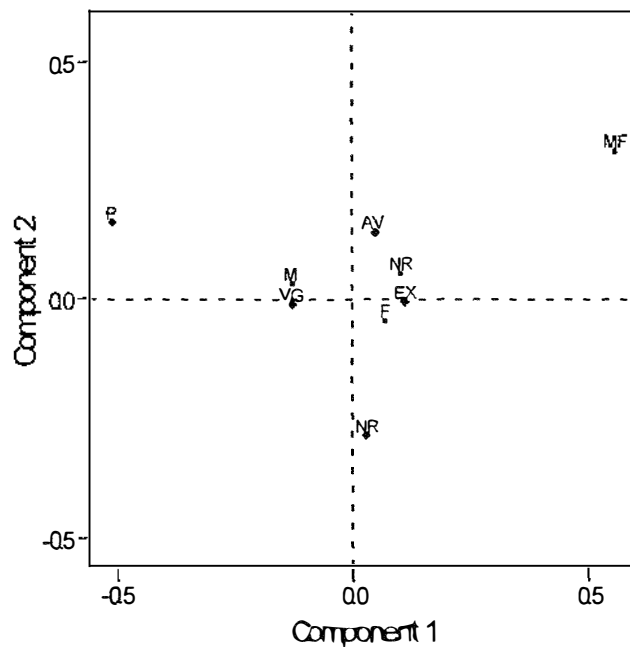
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.719 | 0.022 | 0.126 | 0.028               | 0.007 | 0.001 | -0.284              | 0.712 | 0.548 |
| 2 P     | 0.904 | 0.007 | 0.117 | -0.509              | 0.822 | 0.127 | 0.160               | 0.082 | 0.058 |
| 3 AV    | 0.704 | 0.065 | 0.100 | 0.047               | 0.070 | 0.009 | 0.140               | 0.634 | 0.386 |
| 4 VG    | 0.986 | 0.422 | 0.352 | -0.128              | 0.982 | 0.459 | -0.008              | 0.004 | 0.008 |
| 5 EX    | 0.991 | 0.484 | 0.306 | 0.112               | 0.991 | 0.403 | -0.001              | 0.000 | 0.000 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.320 | 0.050 | 0.107 | 0.103               | 0.247 | 0.035 | 0.056               | 0.072 | 0.047 |
| 2 M     | 0.997 | 0.402 | 0.356 | -0.129              | 0.930 | 0.439 | 0.035               | 0.068 | 0.147 |
| 3 F     | 0.992 | 0.531 | 0.175 | 0.069               | 0.728 | 0.169 | -0.042              | 0.264 | 0.282 |
| 4 MF    | 0.976 | 0.017 | 0.362 | 0.557               | 0.739 | 0.356 | 0.315               | 0.237 | 0.524 |

### Symmetric Plot



## 8. Simple Correspondence Analysis of Perception of Access Dimension Vs Gender

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0203  | 0.7686     | 0.7686     | *****     |
| 2     | 0.0033  | 0.1257     | 0.8944     | ****      |
| 3     | 0.0028  | 0.1056     | 1.0000     | ****      |
| Total | 0.0264  |            |            |           |

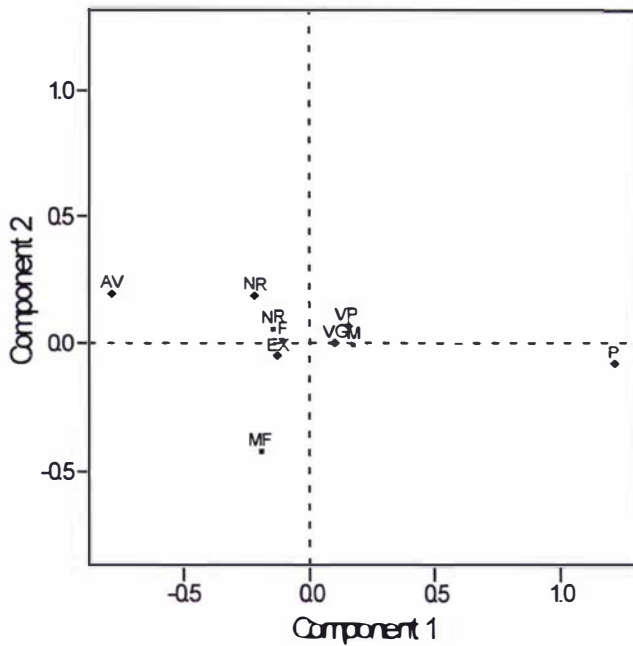
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.954 | 0.060 | 0.197 | -0.218              | 0.545 | 0.139 | 0.189               | 0.409 | 0.640 |
| 2 VP    | 0.357 | 0.037 | 0.109 | 0.151               | 0.293 | 0.042 | 0.070               | 0.064 | 0.055 |
| 3 P     | 0.996 | 0.002 | 0.140 | 1.215               | 0.992 | 0.181 | -0.076              | 0.004 | 0.004 |
| 4 AV    | 0.735 | 0.002 | 0.083 | -0.781              | 0.690 | 0.075 | 0.198               | 0.045 | 0.029 |
| 5 VG    | 0.983 | 0.521 | 0.213 | 0.103               | 0.978 | 0.272 | 0.008               | 0.005 | 0.009 |
| 6 EX    | 0.999 | 0.377 | 0.258 | -0.125              | 0.872 | 0.292 | -0.048              | 0.128 | 0.262 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.339 | 0.050 | 0.135 | -0.144              | 0.289 | 0.051 | 0.060               | 0.050 | 0.054 |
| 2 M     | 0.999 | 0.402 | 0.457 | 0.173               | 0.999 | 0.593 | -0.004              | 0.001 | 0.002 |
| 3 F     | 0.950 | 0.531 | 0.265 | -0.111              | 0.940 | 0.324 | 0.011               | 0.010 | 0.021 |
| 4 MF    | 0.979 | 0.017 | 0.144 | -0.194              | 0.172 | 0.032 | -0.420              | 0.808 | 0.922 |

Symmetric Plot



## 9. Simple Correspondence Analysis of Perception of Tangible Dimension Vs Ethnic

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0391  | 0.5090     | 0.5090     | *****     |
| 2     | 0.0160  | 0.2082     | 0.7172     | *****     |
| 3     | 0.0142  | 0.1842     | 0.9014     | *****     |
| 4     | 0.0067  | 0.0874     | 0.9888     | *****     |
| 5     | 0.0009  | 0.0112     | 1.0000     |           |
| Total | 0.0768  |            |            |           |

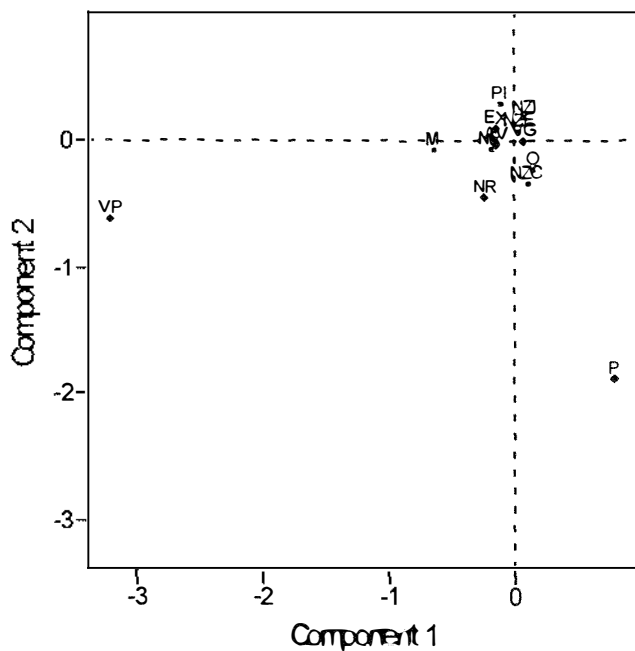
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.356 | 0.020 | 0.185 | -0.218              | 0.067 | 0.024 | -0.455              | 0.289 | 0.257 |
| 2 VP    | 0.941 | 0.002 | 0.362 | -3.190              | 0.908 | 0.646 | -0.614              | 0.034 | 0.059 |
| 3 P     | 0.684 | 0.002 | 0.200 | 0.812               | 0.106 | 0.042 | -1.893              | 0.578 | 0.556 |
| 4 AV    | 0.507 | 0.082 | 0.042 | -0.136              | 0.478 | 0.039 | -0.034              | 0.030 | 0.006 |
| 5 VG    | 0.840 | 0.618 | 0.081 | 0.092               | 0.834 | 0.133 | -0.008              | 0.006 | 0.002 |
| 6 EX    | 0.647 | 0.275 | 0.130 | -0.128              | 0.455 | 0.116 | 0.083               | 0.193 | 0.120 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |        |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|--------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr   | Contr |
| 1 NR    | 0.140 | 0.032 | 0.106 | -0.173              | 0.119 | 0.025 | -0.073              | 0.021  | 0.011 |
| 2 NZE   | 0.934 | 0.702 | 0.064 | 0.046               | 0.296 | 0.037 | 0.067               | 0.637  | 0.196 |
| 3 NZC   | 0.316 | 0.027 | 0.143 | 0.116               | 0.033 | 0.009 | -0.338              | 0.283  | 0.195 |
| 4 NZI   | 0.329 | 0.007 | 0.012 | 0.093               | 0.071 | 0.002 | 0.178               | 0.258  | 0.015 |
| 5 M     | 0.985 | 0.082 | 0.437 | -0.631              | 0.970 | 0.833 | -0.078              | 0.015  | 0.031 |
| 6 PI    | 0.312 | 0.010 | 0.040 | -0.092              | 0.027 | 0.002 | 0.298               | 0.285  | 0.055 |
| 7 O     | 0.762 | 0.139 | 0.197 | 0.161               | 0.236 | 0.092 | -0.239              | 0.5250 | 0.498 |

Symmetric Plot



### 10. Simple Correspondence Analysis of Perception of Peripheral Services Dimension Vs Ethnic

#### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0462  | 0.6449     | 0.6449     | *****     |
| 2     | 0.0163  | 0.2275     | 0.8724     | *****     |
| 3     | 0.0064  | 0.0897     | 0.9620     | ****      |
| 4     | 0.0027  | 0.0380     | 1.0000     | *         |
| Total | 0.0717  |            |            |           |

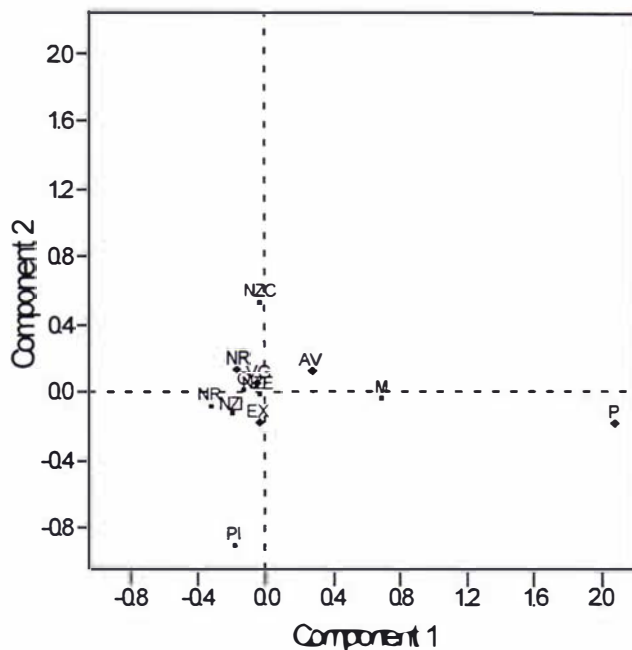
#### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.564 | 0.112 | 0.131 | -0.167              | 0.333 | 0.068 | 0.140               | 0.231 | 0.133 |
| 2 P     | 0.959 | 0.007 | 0.476 | 2.089               | 0.952 | 0.703 | -0.181              | 0.007 | 0.015 |
| 3 AV    | 0.846 | 0.122 | 0.190 | 0.278               | 0.690 | 0.203 | 0.132               | 0.157 | 0.131 |
| 4 VG    | 0.636 | 0.429 | 0.055 | -0.043              | 0.200 | 0.017 | 0.063               | 0.437 | 0.106 |
| 5 EX    | 0.988 | 0.330 | 0.148 | -0.037              | 0.042 | 0.010 | -0.174              | 0.946 | 0.615 |

#### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.411 | 0.032 | 0.121 | -0.323              | 0.386 | 0.073 | -0.082              | 0.025 | 0.013 |
| 2 NZE   | 0.530 | 0.702 | 0.022 | -0.034              | 0.526 | 0.018 | -0.003              | 0.005 | 0.000 |
| 3 NZC   | 1.000 | 0.027 | 0.109 | -0.031              | 0.003 | 0.001 | 0.534               | 0.996 | 0.477 |
| 4 NZI   | 0.139 | 0.007 | 0.039 | -0.190              | 0.097 | 0.006 | -0.124              | 0.041 | 0.007 |
| 5 M     | 0.991 | 0.082 | 0.551 | 0.691               | 0.989 | 0.846 | -0.033              | 0.002 | 0.005 |
| 6 PI    | 0.990 | 0.010 | 0.118 | -0.179              | 0.038 | 0.007 | -0.900              | 0.953 | 0.493 |
| 7 O     | 0.836 | 0.139 | 0.040 | -0.130              | 0.816 | 0.051 | 0.021               | 0.021 | 0.004 |

Symmetric Plot



## 11. Simple Correspondence Analysis of Perception of Staff Dimension Vs Ethnic

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0304  | 0.7096     | 0.7096     | *****     |
| 2     | 0.0077  | 0.1795     | 0.8891     | *****     |
| 3     | 0.0037  | 0.0860     | 0.9751     | ***       |
| 4     | 0.0011  | 0.0249     | 1.0000     | *         |
| Total | 0.0429  |            |            |           |

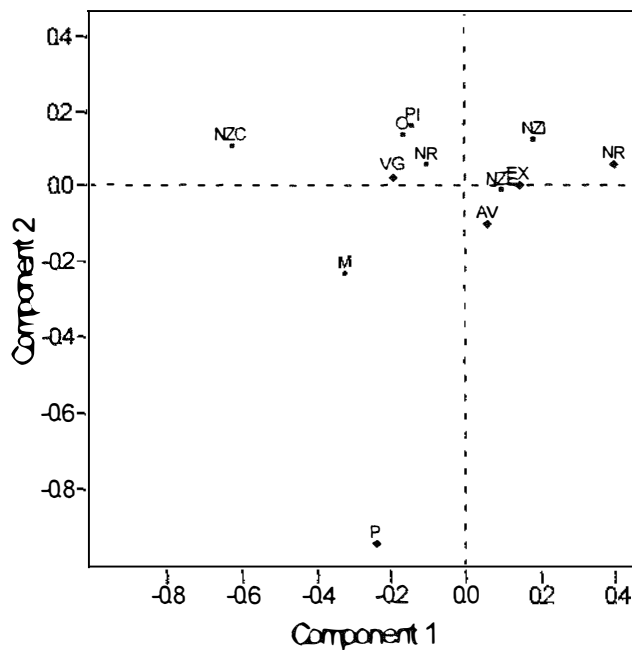
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.758 | 0.022 | 0.111 | 0.399               | 0.742 | 0.117 | 0.059               | 0.016 | 0.010 |
| 2 P     | 0.962 | 0.007 | 0.172 | -0.238              | 0.057 | 0.014 | -0.946              | 0.904 | 0.866 |
| 3 AV    | 0.249 | 0.065 | 0.087 | 0.061               | 0.066 | 0.008 | -0.103              | 0.184 | 0.089 |
| 4 VG    | 0.999 | 0.422 | 0.377 | -0.194              | 0.982 | 0.522 | 0.025               | 0.016 | 0.035 |
| 5 EX    | 0.953 | 0.484 | 0.253 | 0.146               | 0.952 | 0.340 | 0.004               | 0.001 | 0.001 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.369 | 0.032 | 0.028 | -0.099              | 0.267 | 0.010 | 0.061               | 0.101 | 0.016 |
| 2 NZE   | 0.976 | 0.702 | 0.165 | 0.099               | 0.963 | 0.224 | -0.011              | 0.012 | 0.011 |
| 3 NZC   | 0.892 | 0.027 | 0.287 | -0.624              | 0.866 | 0.350 | 0.109               | 0.026 | 0.042 |
| 4 NZI   | 0.278 | 0.007 | 0.032 | 0.188               | 0.194 | 0.009 | 0.123               | 0.083 | 0.015 |
| 5 M     | 0.975 | 0.082 | 0.303 | -0.322              | 0.652 | 0.279 | -0.227              | 0.323 | 0.546 |
| 6 PI    | 0.417 | 0.010 | 0.025 | -0.137              | 0.172 | 0.006 | 0.164               | 0.246 | 0.035 |
| 7 O     | 0.916 | 0.139 | 0.160 | -0.163              | 0.540 | 0.122 | 0.136               | 0.376 | 0.335 |

Symmetric Plot



## 12. Simple Correspondence Analysis of Perception of Staff Dimension Vs Ethnic

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0389  | 0.7245     | 0.7245     | *****     |
| 2     | 0.0101  | 0.1892     | 0.9136     | *****     |
| 3     | 0.0036  | 0.0679     | 0.9815     | **        |
| 4     | 0.0010  | 0.0185     | 1.0000     |           |
| Total | 0.0536  |            |            |           |

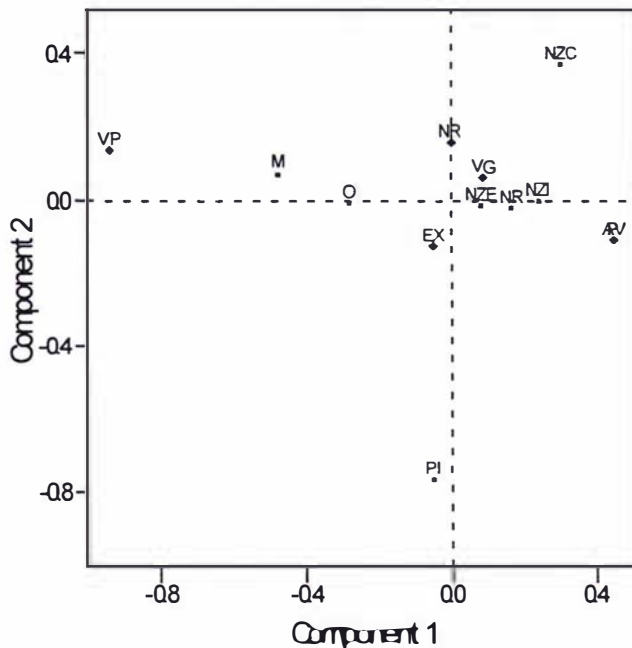
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.347 | 0.060 | 0.081 | 0.002               | 0.000 | 0.000 | 0.159               | 0.347 | 0.148 |
| 2 VP    | 0.997 | 0.037 | 0.622 | -0.934              | 0.975 | 0.836 | 0.141               | 0.022 | 0.073 |
| 3 P     | 0.507 | 0.002 | 0.020 | 0.451               | 0.480 | 0.013 | -0.107              | 0.027 | 0.003 |
| 4 AV    | 0.507 | 0.002 | 0.020 | 0.451               | 0.480 | 0.013 | -0.107              | 0.027 | 0.003 |
| 5 VG    | 0.920 | 0.521 | 0.135 | 0.094               | 0.638 | 0.119 | 0.063               | 0.282 | 0.201 |
| 6 EX    | 0.987 | 0.377 | 0.124 | -0.044              | 0.111 | 0.019 | -0.124              | 0.876 | 0.572 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.623 | 0.032 | 0.029 | 0.172               | 0.616 | 0.025 | -0.018              | 0.007 | 0.001 |
| 2 NZE   | 0.968 | 0.702 | 0.109 | 0.089               | 0.954 | 0.143 | -0.011              | 0.014 | 0.008 |
| 3 NZC   | 0.962 | 0.027 | 0.123 | 0.308               | 0.392 | 0.066 | 0.371               | 0.570 | 0.370 |
| 4 NZI   | 0.403 | 0.007 | 0.020 | 0.244               | 0.403 | 0.011 | 0.004               | 0.000 | 0.000 |
| 5 M     | 0.946 | 0.082 | 0.371 | -0.474              | 0.924 | 0.473 | 0.073               | 0.022 | 0.043 |
| 6 PI    | 0.970 | 0.010 | 0.113 | -0.049              | 0.004 | 0.001 | -0.768              | 0.966 | 0.578 |
| 7 O     | 0.866 | 0.139 | 0.235 | -0.281              | 0.866 | 0.281 | -0.003              | 0.000 | 0.000 |

Symmetric Plot



## B Correspondence Analysis - The Trust

### 1. Correspondence Analysis of Visitor Perception of Peripheral Services Dimensions Vs Gender

#### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0240  | 0.8893     | 0.8893     | *****     |
| 2     | 0.0030  | 0.1107     | 1.0000     | ***       |
| Total | 0.0270  |            |            |           |

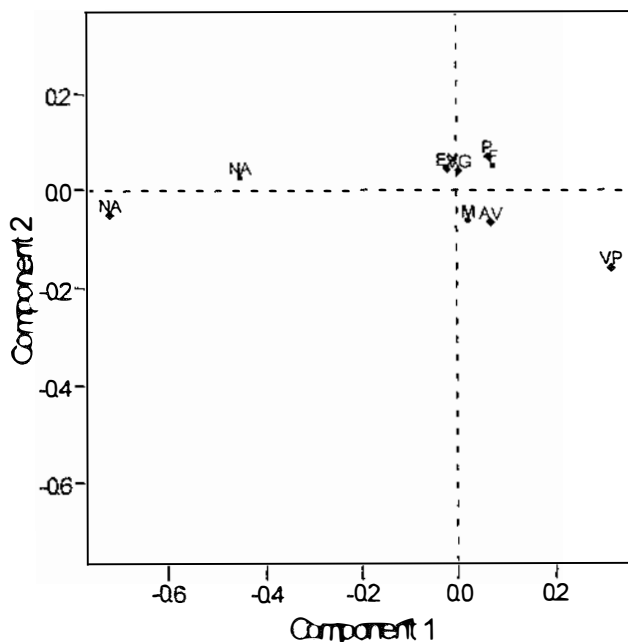
#### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 1.000 | 0.042 | 0.800 | -0.718              | 0.995 | 0.894 | -0.053              | 0.005 | 0.039 |
| 2 VP    | 1.000 | 0.004 | 0.018 | 0.320               | 0.804 | 0.016 | -0.158              | 0.196 | 0.032 |
| 3 P     | 1.000 | 0.076 | 0.025 | 0.067               | 0.494 | 0.014 | 0.067               | 0.506 | 0.115 |
| 4 AV    | 1.000 | 0.346 | 0.124 | 0.071               | 0.524 | 0.073 | -0.068              | 0.476 | 0.532 |
| 5 VG    | 1.000 | 0.398 | 0.021 | 0.005               | 0.014 | 0.000 | 0.038               | 0.986 | 0.189 |
| 6 EX    | 1.000 | 0.135 | 0.013 | -0.020              | 0.166 | 0.002 | 0.046               | 0.834 | 0.094 |

#### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 1.000 | 0.104 | 0.778 | -0.448              | 0.997 | 0.872 | 0.026               | 0.003 | 0.023 |
| 2 M     | 1.000 | 0.404 | 0.073 | 0.023               | 0.109 | 0.009 | -0.066              | 0.891 | 0.587 |
| 3 F     | 1.000 | 0.492 | 0.149 | 0.076               | 0.710 | 0.119 | 0.049               | 0.290 | 0.389 |

Symmetric Plot



## 2. Correspondence Analysis of Visitor Perception of Tangible Dimensions Vs Gender

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0160  | 0.8974     | 0.8974     | *****     |
| 2     | 0.0018  | 0.1026     | 1.0000     | ***       |
| Total | 0.0178  |            |            |           |

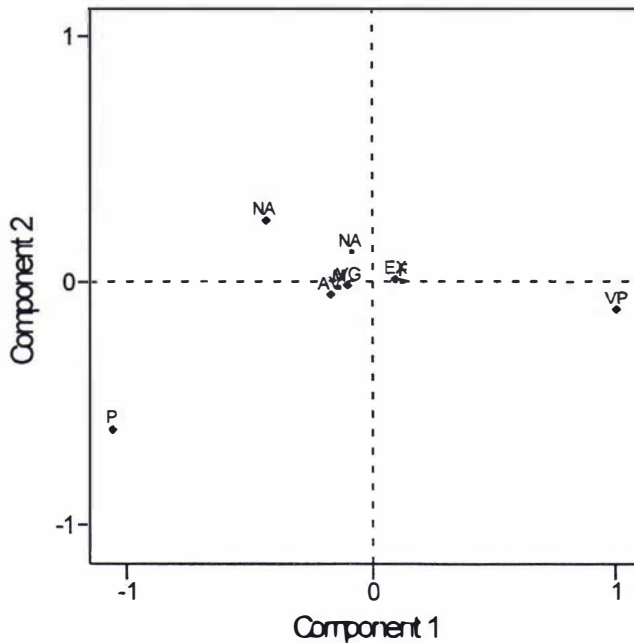
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 1.000 | 0.018 | 0.255 | -0.432              | 0.740 | 0.211 | 0.256               | 0.260 | 0.645 |
| 2 VP    | 1.000 | 0.001 | 0.055 | 1.010               | 0.988 | 0.061 | -0.113              | 0.012 | 0.007 |
| 3 P     | 1.000 | 0.001 | 0.079 | -1.057              | 0.757 | 0.066 | -0.599              | 0.243 | 0.186 |
| 4 AV    | 1.000 | 0.048 | 0.087 | -0.168              | 0.886 | 0.086 | -0.060              | 0.114 | 0.097 |
| 5 VG    | 1.000 | 0.381 | 0.221 | -0.101              | 0.979 | 0.242 | -0.015              | 0.021 | 0.044 |
| 6 EX    | 1.000 | 0.551 | 0.303 | 0.099               | 0.993 | 0.335 | 0.008               | 0.007 | 0.021 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 1.000 | 0.104 | 0.129 | -0.085              | 0.326 | 0.047 | 0.122               | 0.674 | 0.849 |
| 2 M     | 1.000 | 0.404 | 0.420 | -0.134              | 0.965 | 0.451 | -0.026              | 0.035 | 0.145 |
| 3 F     | 1.000 | 0.492 | 0.451 | 0.128               | 0.999 | 0.502 | -0.005              | 0.001 | 0.006 |

Symmetric Plot



### 3. Correspondence Analysis of Visitor Perception of Staff Dimensions Vs Gender

#### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0176  | 0.9104     | 0.9104     | *****     |
| 2     | 0.0017  | 0.0896     | 1.0000     | **        |
| Total | 0.0193  |            |            |           |

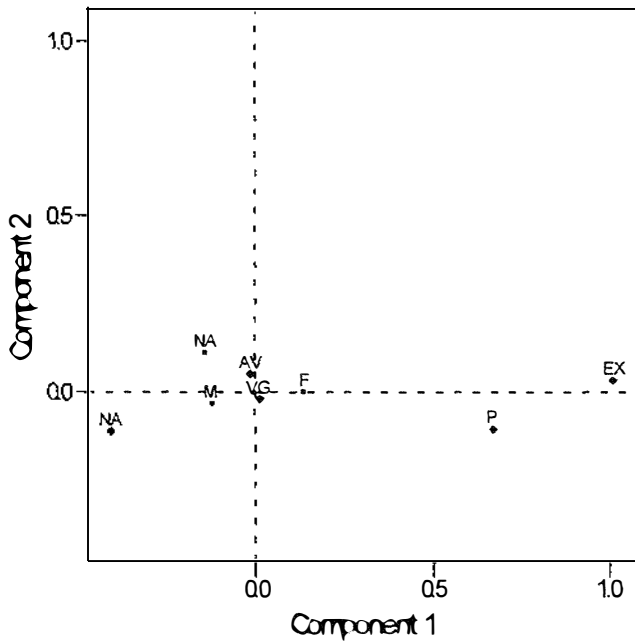
#### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 1.000 | 0.040 | 0.369 | -0.409              | 0.934 | 0.379 | -0.109              | 0.066 | 0.273 |
| 2 P     | 1.000 | 0.022 | 0.521 | 0.672               | 0.977 | 0.560 | -0.102              | 0.023 | 0.132 |
| 3 AV    | 1.000 | 0.297 | 0.049 | -0.014              | 0.065 | 0.004 | 0.055               | 0.935 | 0.511 |
| 4 VG    | 1.000 | 0.641 | 0.010 | 0.008               | 0.208 | 0.002 | -0.015              | 0.792 | 0.084 |
| 5 EX    | 1.000 | 0.001 | 0.051 | 1.016               | 0.999 | 0.056 | 0.033               | 0.001 | 0.001 |

#### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 1.000 | 0.104 | 0.179 | -0.142              | 0.611 | 0.120 | 0.114               | 0.389 | 0.776 |
| 2 M     | 1.000 | 0.404 | 0.359 | -0.127              | 0.944 | 0.372 | -0.031              | 0.056 | 0.224 |
| 3 F     | 1.000 | 0.492 | 0.462 | 0.135               | 1.000 | 0.508 | 0.001               | 0.000 | 0.001 |

Symmetric Plot



### 4. Correspondence Analysis of Visitor Perception of Access Dimensions Vs Gender

**Analysis of Contingency Table**

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0240  | 0.8893     | 0.8893     | *****     |
| 2     | 0.0030  | 0.1107     | 1.0000     | ***       |
| Total | 0.0270  |            |            |           |

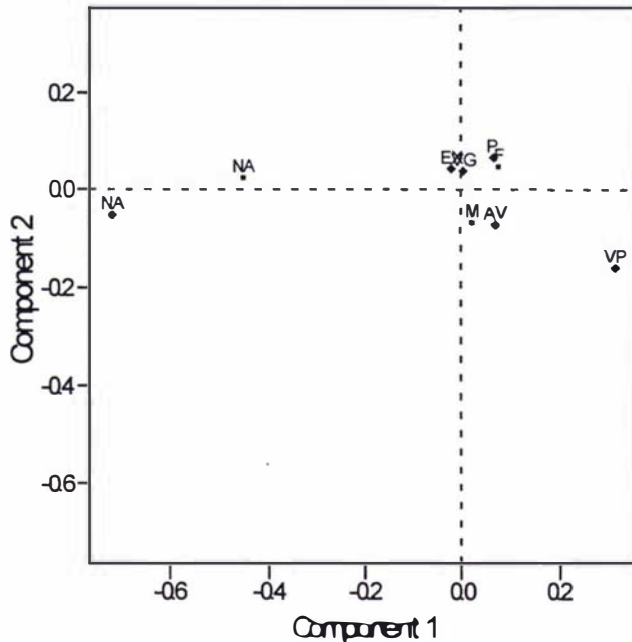
**Row Contributions**

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 1.000 | 0.042 | 0.800 | -0.718              | 0.995 | 0.894 | -0.053              | 0.005 | 0.039 |
| 2 VP    | 1.000 | 0.004 | 0.018 | 0.320               | 0.804 | 0.016 | -0.158              | 0.196 | 0.032 |
| 3 P     | 1.000 | 0.076 | 0.025 | 0.067               | 0.494 | 0.014 | 0.067               | 0.506 | 0.115 |
| 4 AV    | 1.000 | 0.346 | 0.124 | 0.071               | 0.524 | 0.073 | -0.068              | 0.476 | 0.532 |
| 5 VG    | 1.000 | 0.398 | 0.021 | 0.005               | 0.014 | 0.000 | 0.038               | 0.986 | 0.189 |
| 6 EX    | 1.000 | 0.135 | 0.013 | -0.020              | 0.166 | 0.002 | 0.046               | 0.834 | 0.094 |

**Column Contributions**

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 1.000 | 0.104 | 0.778 | -0.448              | 0.997 | 0.872 | 0.026               | 0.003 | 0.023 |
| 2 M     | 1.000 | 0.404 | 0.073 | 0.023               | 0.109 | 0.009 | -0.066              | 0.891 | 0.587 |
| 3 F     | 1.000 | 0.492 | 0.149 | 0.076               | 0.710 | 0.119 | 0.049               | 0.290 | 0.389 |

**Symmetric Plot**



## 5. Correspondence Analysis of Visitor Perception of Tangible Dimensions Vs Ethnic

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0189  | 0.6530     | 0.6530     | *****     |
| 2     | 0.0056  | 0.1944     | 0.8474     | *****     |
| 3     | 0.0030  | 0.1049     | 0.9523     | ****      |
| 4     | 0.0010  | 0.0346     | 0.9868     | *         |
| 5     | 0.0004  | 0.0132     | 1.0000     |           |
| Total | 0.0290  |            |            |           |

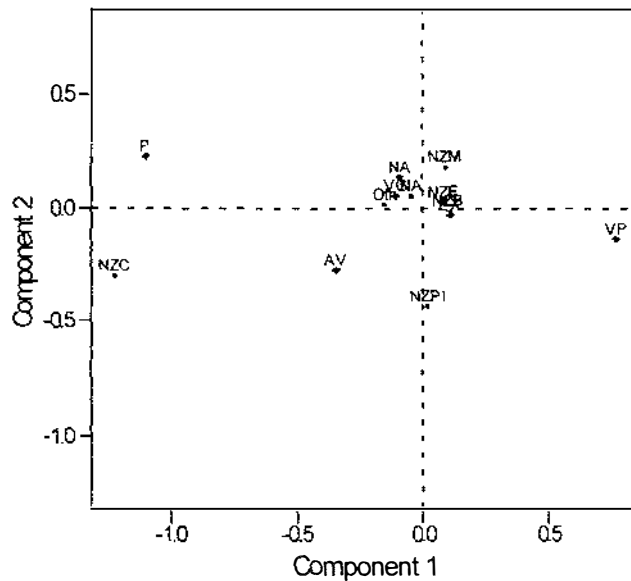
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 0.164 | 0.018 | 0.108 | -0.092              | 0.049 | 0.008 | 0.142               | 0.116 | 0.064 |
| 2 VP    | 0.500 | 0.001 | 0.040 | 0.772               | 0.487 | 0.030 | -0.129              | 0.014 | 0.003 |
| 3 P     | 0.580 | 0.001 | 0.071 | -1.099              | 0.555 | 0.060 | 0.235               | 0.025 | 0.009 |
| 4 AV    | 0.994 | 0.048 | 0.321 | -0.344              | 0.615 | 0.302 | -0.271              | 0.380 | 0.627 |
| 5 VG    | 0.958 | 0.381 | 0.217 | -0.111              | 0.738 | 0.246 | 0.060               | 0.220 | 0.246 |
| 6 EX    | 0.994 | 0.551 | 0.242 | 0.110               | 0.953 | 0.354 | -0.023              | 0.041 | 0.051 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 0.474 | 0.102 | 0.039 | -0.046              | 0.194 | 0.012 | 0.055               | 0.280 | 0.056 |
| 2 NZB   | 0.937 | 0.449 | 0.188 | 0.106               | 0.929 | 0.268 | -0.010              | 0.008 | 0.007 |
| 3 NZE   | 0.258 | 0.098 | 0.099 | 0.082               | 0.228 | 0.035 | 0.030               | 0.031 | 0.016 |
| 4 NZM   | 0.548 | 0.009 | 0.023 | 0.088               | 0.098 | 0.003 | 0.188               | 0.449 | 0.054 |
| 5 NZPI  | 0.978 | 0.024 | 0.157 | 0.020               | 0.002 | 0.000 | -0.434              | 0.976 | 0.791 |
| 6 NZC   | 0.902 | 0.004 | 0.231 | -1.228              | 0.852 | 0.302 | -0.298              | 0.050 | 0.060 |
| 7 Oth   | 0.962 | 0.315 | 0.262 | -0.151              | 0.949 | 0.380 | 0.018               | 0.013 | 0.017 |

Symmetric Plot



## 6. Correspondence Analysis of Visitor Perception of Peripheral Services Dimensions Vs Ethnic

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0281  | 0.5643     | 0.5643     | *****     |
| 2     | 0.0117  | 0.2338     | 0.7981     | *****     |
| 3     | 0.0079  | 0.1592     | 0.9574     | *****     |
| 4     | 0.0019  | 0.0378     | 0.9952     | **        |
| 5     | 0.0002  | 0.0048     | 1.0000     |           |
| Total | 0.0499  |            |            |           |

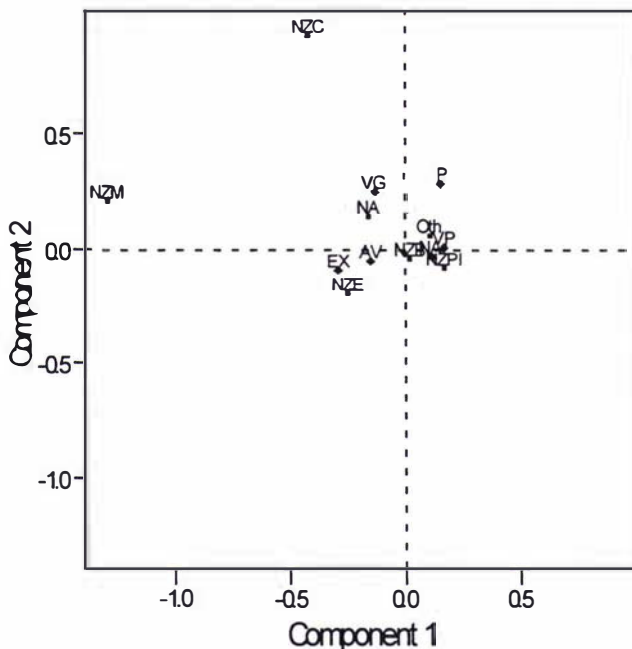
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 0.989 | 0.555 | 0.180 | 0.122               | 0.918 | 0.293 | -0.034              | 0.071 | 0.055 |
| 2 VP    | 0.706 | 0.036 | 0.032 | 0.175               | 0.704 | 0.039 | 0.009               | 0.002 | 0.000 |
| 3 P     | 0.540 | 0.025 | 0.094 | 0.171               | 0.154 | 0.026 | 0.271               | 0.386 | 0.155 |
| 4 AV    | 0.224 | 0.070 | 0.145 | -0.144              | 0.202 | 0.052 | -0.048              | 0.022 | 0.014 |
| 5 VG    | 0.966 | 0.133 | 0.202 | -0.128              | 0.217 | 0.077 | 0.239               | 0.750 | 0.647 |
| 6 EX    | 0.920 | 0.181 | 0.347 | -0.282              | 0.832 | 0.512 | -0.091              | 0.087 | 0.129 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 0.823 | 0.102 | 0.110 | -0.153              | 0.437 | 0.085 | 0.144               | 0.386 | 0.182 |
| 2 NZB   | 0.351 | 0.449 | 0.067 | 0.028               | 0.107 | 0.013 | -0.042              | 0.243 | 0.069 |
| 3 NZE   | 0.988 | 0.098 | 0.196 | -0.246              | 0.606 | 0.210 | -0.196              | 0.382 | 0.320 |
| 4 NZM   | 0.989 | 0.009 | 0.294 | -1.285              | 0.961 | 0.500 | 0.218               | 0.028 | 0.035 |
| 5 NZPI  | 0.292 | 0.024 | 0.060 | 0.175               | 0.242 | 0.026 | -0.080              | 0.050 | 0.013 |
| 6 NZC   | 0.536 | 0.004 | 0.143 | -0.416              | 0.092 | 0.023 | 0.916               | 0.444 | 0.273 |
| 7 Oth   | 0.814 | 0.315 | 0.130 | 0.113               | 0.618 | 0.142 | 0.063               | 0.196 | 0.109 |

Symmetric Plot



## 7. Correspondence Analysis of Visitor Perception of Staff Dimensions Vs Ethnic

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0105  | 0.8326     | 0.8326     | *****     |
| 2     | 0.0013  | 0.0995     | 0.9321     | ***       |
| 3     | 0.0007  | 0.0528     | 0.9849     | *         |
| 4     | 0.0002  | 0.0151     | 1.0000     |           |
| Total | 0.0126  |            |            |           |

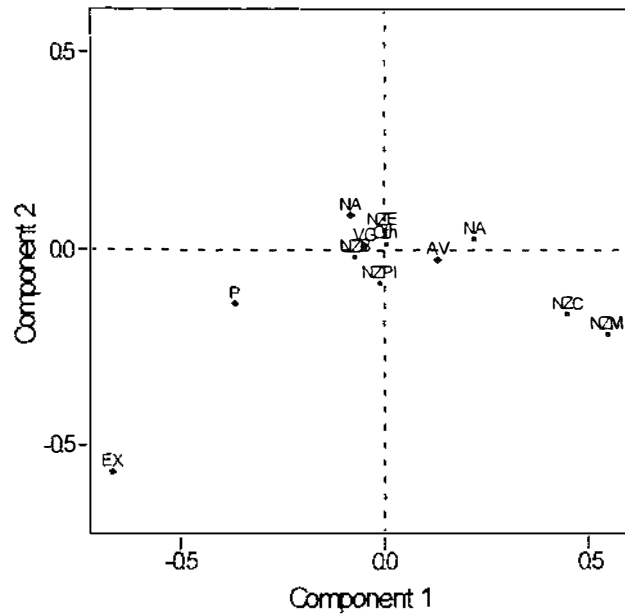
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 0.813 | 0.040 | 0.055 | -0.080              | 0.363 | 0.024 | 0.089               | 0.449 | 0.251 |
| 2 P     | 0.937 | 0.022 | 0.280 | -0.364              | 0.815 | 0.274 | -0.141              | 0.122 | 0.345 |
| 3 AV    | 0.997 | 0.297 | 0.458 | 0.138               | 0.973 | 0.535 | -0.022              | 0.024 | 0.113 |
| 4 VG    | 0.967 | 0.641 | 0.114 | -0.045              | 0.921 | 0.126 | 0.010               | 0.047 | 0.053 |
| 5 EX    | 0.621 | 0.001 | 0.092 | -0.667              | 0.363 | 0.040 | -0.563              | 0.259 | 0.239 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 0.980 | 0.102 | 0.415 | 0.223               | 0.966 | 0.482 | 0.027               | 0.014 | 0.060 |
| 2 NZB   | 0.944 | 0.449 | 0.191 | -0.068              | 0.870 | 0.200 | -0.020              | 0.074 | 0.142 |
| 3 NZE   | 0.769 | 0.098 | 0.025 | 0.001               | 0.000 | 0.000 | 0.050               | 0.769 | 0.192 |
| 4 NZM   | 0.997 | 0.009 | 0.235 | 0.549               | 0.866 | 0.245 | -0.214              | 0.132 | 0.311 |
| 5 NZPI  | 0.339 | 0.024 | 0.039 | -0.009              | 0.004 | 0.000 | -0.083              | 0.335 | 0.130 |
| 6 NZC   | 0.986 | 0.004 | 0.070 | 0.450               | 0.870 | 0.073 | -0.164              | 0.116 | 0.081 |
| 7 Oth   | 0.360 | 0.315 | 0.025 | 0.006               | 0.030 | 0.001 | 0.018               | 0.330 | 0.084 |

Symmetric Plot



## 8. Correspondence Analysis of Visitor Perception of Access Dimensions Vs Ethnic

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0205  | 0.6641     | 0.6641     | *****     |
| 2     | 0.0059  | 0.1904     | 0.8545     | *****     |
| 3     | 0.0030  | 0.0965     | 0.9509     | ****      |
| 4     | 0.0015  | 0.0473     | 0.9982     | **        |
| 5     | 0.0001  | 0.0018     | 1.0000     |           |
| Total | 0.0309  |            |            |           |

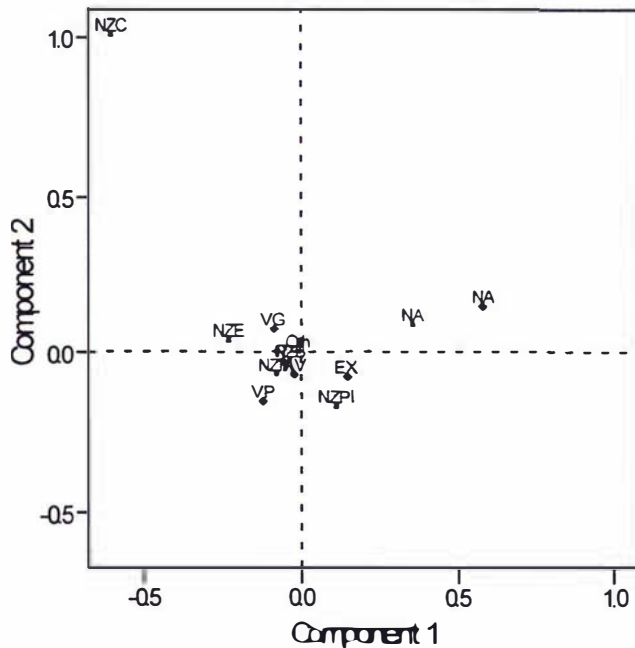
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 0.985 | 0.042 | 0.499 | 0.585               | 0.926 | 0.695 | 0.148               | 0.060 | 0.156 |
| 2 VP    | 0.108 | 0.004 | 0.043 | -0.117              | 0.039 | 0.003 | -0.156              | 0.070 | 0.016 |
| 3 P     | 0.163 | 0.076 | 0.056 | -0.053              | 0.123 | 0.010 | -0.030              | 0.040 | 0.012 |
| 4 AV    | 0.844 | 0.346 | 0.066 | -0.016              | 0.043 | 0.004 | -0.069              | 0.801 | 0.276 |
| 5 VG    | 0.971 | 0.398 | 0.178 | -0.086              | 0.539 | 0.144 | 0.077               | 0.433 | 0.404 |
| 6 EX    | 0.762 | 0.135 | 0.159 | 0.148               | 0.600 | 0.144 | -0.077              | 0.163 | 0.136 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NA    | 0.988 | 0.102 | 0.460 | 0.360               | 0.934 | 0.648 | 0.086               | 0.053 | 0.129 |
| 2 NZB   | 0.938 | 0.449 | 0.027 | -0.030              | 0.478 | 0.019 | -0.029              | 0.460 | 0.064 |
| 3 NZE   | 0.832 | 0.098 | 0.203 | -0.228              | 0.811 | 0.248 | 0.037               | 0.021 | 0.022 |
| 4 NZM   | 0.060 | 0.009 | 0.051 | -0.075              | 0.031 | 0.002 | -0.073              | 0.029 | 0.008 |
| 5 NZPI  | 0.579 | 0.024 | 0.058 | 0.118               | 0.182 | 0.016 | -0.174              | 0.397 | 0.122 |
| 6 NZC   | 0.912 | 0.004 | 0.185 | -0.602              | 0.240 | 0.067 | 1.008               | 0.672 | 0.654 |
| 7 Oth   | 0.026 | 0.315 | 0.016 | -0.004              | 0.010 | 0.000 | 0.005               | 0.016 | 0.001 |

Symmetric Plot



# C Correspondence Analysis - QEII Museum

## 1. Simple Correspondence Analysis of Perception of Peripheral Service Dimension Vs Gender

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0328  | 0.7403     | 0.7403     | *****     |
| 2     | 0.0109  | 0.2457     | 0.9860     | *****     |
| 3     | 0.0006  | 0.0140     | 1.0000     |           |
| Total | 0.0443  |            |            |           |

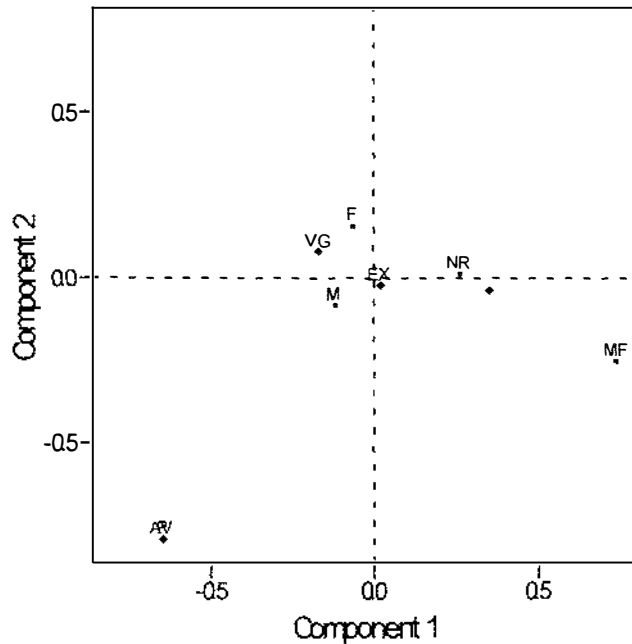
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 P     | 0.998 | 0.005 | 0.126 | -0.644              | 0.400 | 0.068 | -0.788              | 0.598 | 0.306 |
| 2 AV    | 0.998 | 0.008 | 0.189 | -0.644              | 0.400 | 0.102 | -0.788              | 0.598 | 0.459 |
| 3 VG    | 0.988 | 0.324 | 0.252 | -0.166              | 0.800 | 0.273 | 0.081               | 0.189 | 0.194 |
| 4 EX    | 0.605 | 0.520 | 0.016 | 0.023               | 0.378 | 0.008 | -0.018              | 0.228 | 0.015 |
| 5       | 0.990 | 0.142 | 0.417 | 0.356               | 0.975 | 0.549 | -0.045              | 0.015 | 0.026 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.990 | 0.231 | 0.373 | 0.266               | 0.987 | 0.498 | 0.014               | 0.003 | 0.004 |
| 2 M     | 1.000 | 0.491 | 0.226 | -0.117              | 0.668 | 0.204 | -0.082              | 0.332 | 0.305 |
| 3 F     | 0.991 | 0.263 | 0.170 | -0.061              | 0.130 | 0.030 | 0.157               | 0.861 | 0.594 |
| 4 MF    | 0.962 | 0.016 | 0.231 | 0.740               | 0.859 | 0.269 | -0.256              | 0.103 | 0.097 |

Symmetric Plot



## 2. Simple Correspondence Analysis of Perception of Tangible Dimensions Vs Gender

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0093  | 0.6975     | 0.6975     | *****     |
| 2     | 0.0027  | 0.2024     | 0.8999     | *****     |
| 3     | 0.0013  | 0.1001     | 1.0000     | ****      |
| Total | 0.0133  |            |            |           |

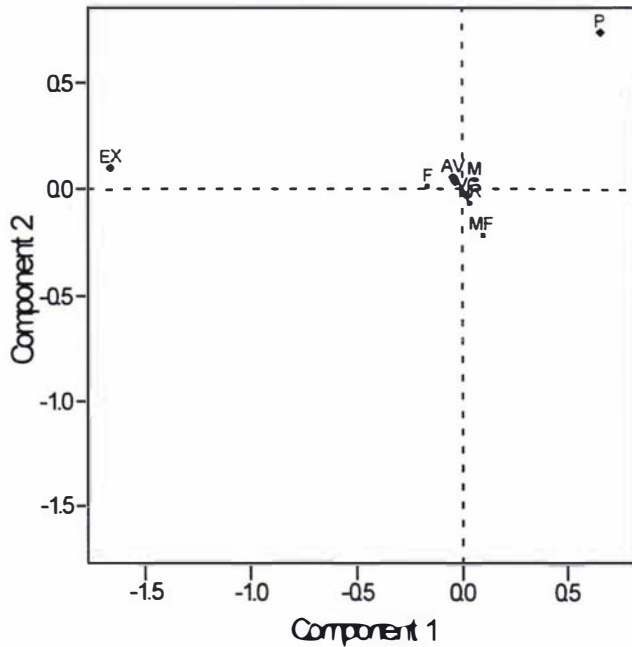
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 P     | 0.952 | 0.003 | 0.210 | 0.669               | 0.432 | 0.130 | 0.735               | 0.520 | 0.539 |
| 2 AV    | 0.232 | 0.078 | 0.102 | -0.040              | 0.090 | 0.013 | 0.050               | 0.141 | 0.071 |
| 3 VG    | 0.962 | 0.544 | 0.076 | 0.025               | 0.346 | 0.037 | -0.034              | 0.616 | 0.230 |
| 4 EX    | 0.988 | 0.003 | 0.567 | -1.663              | 0.985 | 0.801 | 0.099               | 0.003 | 0.010 |
| 5       | 0.951 | 0.373 | 0.046 | -0.021              | 0.284 | 0.019 | 0.033               | 0.667 | 0.150 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.794 | 0.231 | 0.143 | 0.038               | 0.177 | 0.036 | -0.071              | 0.617 | 0.437 |
| 2 M     | 0.988 | 0.491 | 0.209 | 0.064               | 0.732 | 0.220 | 0.038               | 0.256 | 0.265 |
| 3 F     | 0.998 | 0.263 | 0.508 | -0.160              | 0.997 | 0.726 | 0.005               | 0.001 | 0.003 |
| 4 MF    | 0.518 | 0.016 | 0.139 | 0.101               | 0.088 | 0.018 | -0.222              | 0.430 | 0.295 |

Symmetric Plot



### 3. Correspondence Analysis of Perception of Access Dimension Vs Gender

#### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0197  | 0.8863     | 0.8863     | *****     |
| 2     | 0.0025  | 0.1137     | 1.0000     | ***       |
| Total | 0.0222  |            |            |           |

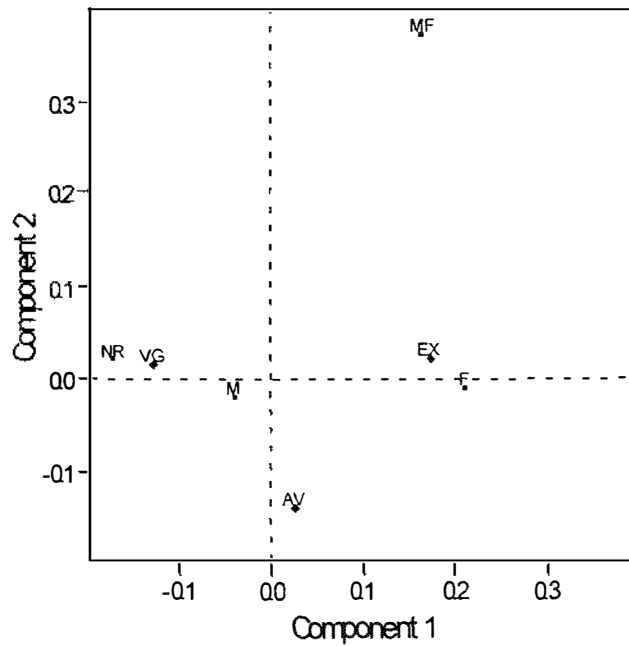
#### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 AV    | 1.000 | 0.115 | 0.104 | 0.026               | 0.033 | 0.004 | -0.139              | 0.967 | 0.881 |
| 2 VG    | 1.000 | 0.520 | 0.389 | -0.128              | 0.986 | 0.433 | 0.015               | 0.014 | 0.047 |
| 3 EX    | 1.000 | 0.365 | 0.507 | 0.174               | 0.984 | 0.563 | 0.022               | 0.016 | 0.072 |

#### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.231 | 0.309 | -0.171              | 0.984 | 0.342 | 0.022               | 0.016 | 0.044 |
| 2 M     | 1.000 | 0.491 | 0.040 | -0.038              | 0.819 | 0.037 | -0.018              | 0.181 | 0.063 |
| 3 F     | 1.000 | 0.263 | 0.531 | 0.212               | 0.998 | 0.598 | -0.008              | 0.002 | 0.007 |
| 4 MF    | 1.000 | 0.016 | 0.121 | 0.165               | 0.164 | 0.022 | 0.373               | 0.836 | 0.885 |

Symmetric Plot



### 4. Simple Correspondence Analysis of Perception of Staff Dimension Vs Gender

**Analysis of Contingency Table**

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0172  | 0.7557     | 0.7557     | *****     |
| 2     | 0.0052  | 0.2296     | 0.9853     | *****     |
| 3     | 0.0003  | 0.0147     | 1.0000     |           |
| Total | 0.0227  |            |            |           |

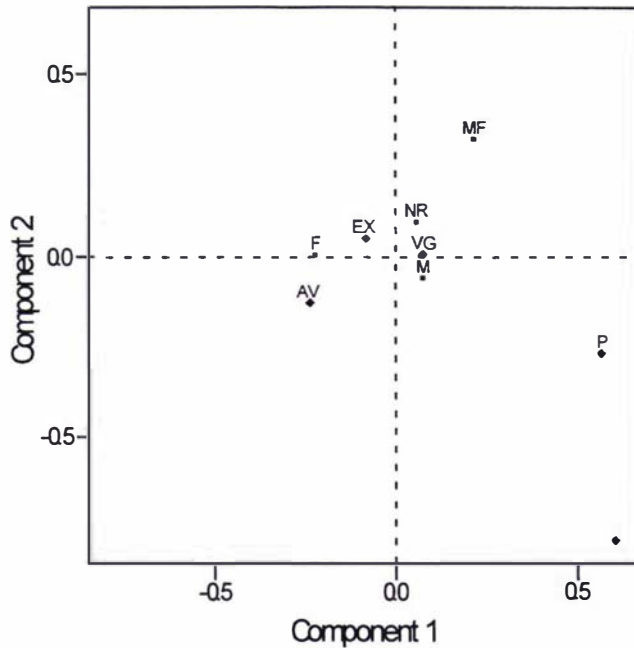
**Row Contributions**

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 P     | 0.962 | 0.011 | 0.197 | 0.576               | 0.795 | 0.207 | -0.265              | 0.168 | 0.144 |
| 2 AV    | 0.999 | 0.126 | 0.390 | -0.233              | 0.773 | 0.399 | -0.126              | 0.226 | 0.383 |
| 3 VG    | 0.999 | 0.555 | 0.170 | 0.083               | 0.985 | 0.222 | 0.010               | 0.014 | 0.010 |
| 4 EX    | 1.000 | 0.306 | 0.120 | -0.080              | 0.715 | 0.114 | 0.050               | 0.285 | 0.149 |
| 5       | 0.946 | 0.003 | 0.123 | 0.611               | 0.359 | 0.058 | -0.780              | 0.587 | 0.313 |

**Column Contributions**

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.962 | 0.231 | 0.131 | 0.062               | 0.296 | 0.051 | 0.093               | 0.666 | 0.379 |
| 2 M     | 0.998 | 0.491 | 0.207 | 0.080               | 0.667 | 0.183 | -0.056              | 0.331 | 0.299 |
| 3 F     | 1.000 | 0.263 | 0.545 | -0.217              | 0.999 | 0.721 | 0.004               | 0.000 | 0.001 |
| 4 MF    | 0.922 | 0.016 | 0.117 | 0.218               | 0.290 | 0.045 | 0.322               | 0.633 | 0.321 |

Symmetric Plot



## 5. Simple Correspondence Analysis of Perception of Tangible Dimension Vs Experience

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0102  | 0.9362     | 0.9362     | *****     |
| 2     | 0.0007  | 0.0638     | 1.0000     | **        |
| Total | 0.0109  |            |            |           |

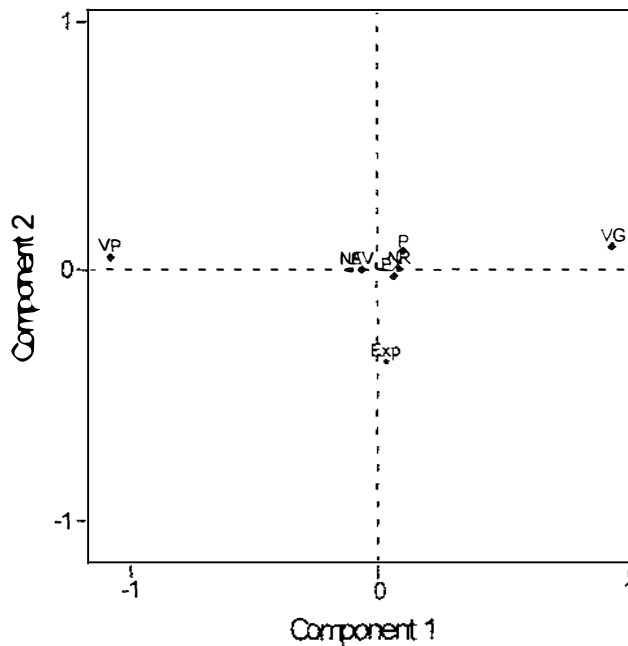
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 VP    | 1.000 | 0.003 | 0.281 | -1.068              | 0.998 | 0.299 | 0.048               | 0.002 | 0.009 |
| 2 P     | 1.000 | 0.078 | 0.126 | 0.109               | 0.673 | 0.091 | 0.076               | 0.327 | 0.646 |
| 3 AV    | 1.000 | 0.544 | 0.193 | -0.062              | 0.995 | 0.205 | 0.004               | 0.005 | 0.016 |
| 4 VG    | 1.000 | 0.003 | 0.219 | 0.940               | 0.990 | 0.232 | 0.096               | 0.010 | 0.036 |
| 5 EX    | 1.000 | 0.373 | 0.181 | 0.069               | 0.896 | 0.173 | -0.023              | 0.104 | 0.294 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.528 | 0.437 | 0.095               | 0.999 | 0.467 | 0.003               | 0.001 | 0.005 |
| 2 NE    | 1.000 | 0.466 | 0.499 | -0.108              | 1.000 | 0.532 | 0.001               | 0.000 | 0.001 |
| 3 Exp   | 1.000 | 0.005 | 0.064 | 0.033               | 0.009 | 0.001 | -0.359              | 0.991 | 0.994 |

### Symmetric Plot



## 6. Simple Correspondence Analysis of Perception of Staff Dimensions Vs Experience

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0103  | 0.6002     | 0.6002     | *****     |
| 2     | 0.0068  | 0.3998     | 1.0000     | *****     |
| Total | 0.0171  |            |            |           |

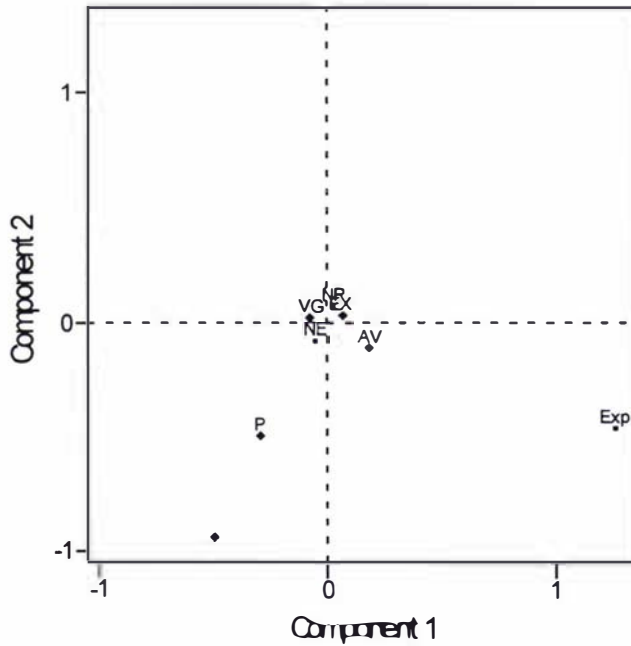
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 P     | 1.000 | 0.011 | 0.203 | -0.296              | 0.270 | 0.091 | -0.486              | 0.730 | 0.371 |
| 2 AV    | 1.000 | 0.126 | 0.352 | 0.192               | 0.770 | 0.451 | -0.105              | 0.230 | 0.203 |
| 3 VG    | 1.000 | 0.555 | 0.177 | -0.071              | 0.915 | 0.270 | 0.022               | 0.085 | 0.038 |
| 4 EX    | 1.000 | 0.306 | 0.089 | 0.064               | 0.826 | 0.122 | 0.029               | 0.174 | 0.039 |
| 5       | 1.000 | 0.003 | 0.179 | -0.499              | 0.218 | 0.065 | -0.946              | 0.782 | 0.350 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.528 | 0.199 | 0.032               | 0.158 | 0.052 | 0.074               | 0.842 | 0.420 |
| 2 NE    | 1.000 | 0.466 | 0.237 | -0.051              | 0.295 | 0.116 | -0.078              | 0.705 | 0.417 |
| 3 Exp   | 1.000 | 0.005 | 0.564 | 1.262               | 0.884 | 0.831 | -0.456              | 0.116 | 0.163 |

Symmetric Plot



## 7. Simple Correspondence Analysis of Perception of Peripheral Services Dimension Vs Experience

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0396  | 0.9784     | 0.9784     | *****     |
| 2     | 0.0009  | 0.0216     | 1.0000     |           |
| Total | 0.0405  |            |            |           |

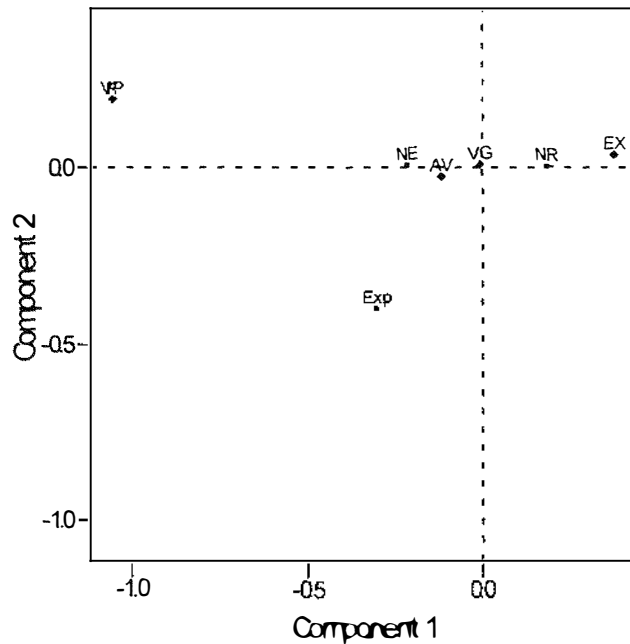
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 VP    | 1.000 | 0.005 | 0.151 | -1.052              | 0.968 | 0.150 | 0.192               | 0.032 | 0.224 |
| 2 P     | 1.000 | 0.008 | 0.227 | -1.052              | 0.968 | 0.225 | 0.192               | 0.032 | 0.337 |
| 3 AV    | 1.000 | 0.324 | 0.112 | -0.115              | 0.948 | 0.109 | -0.027              | 0.052 | 0.272 |
| 4 VG    | 1.000 | 0.520 | 0.000 | -0.005              | 0.655 | 0.000 | 0.003               | 0.345 | 0.007 |
| 5 EX    | 1.000 | 0.142 | 0.509 | 0.380               | 0.993 | 0.516 | 0.031               | 0.007 | 0.160 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.528 | 0.461 | 0.188               | 1.000 | 0.471 | -0.001              | 0.000 | 0.001 |
| 2 NE    | 1.000 | 0.466 | 0.506 | -0.209              | 0.999 | 0.516 | 0.006               | 0.001 | 0.017 |
| 3 Exp   | 1.000 | 0.005 | 0.033 | -0.301              | 0.361 | 0.012 | -0.401              | 0.639 | 0.982 |

Symmetric Plot



## 8. Simple Correspondence Analysis of Perception of Access Dimension Vs Experience

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0029  | 0.8853     | 0.8853     | *****     |
| 2     | 0.0004  | 0.1147     | 1.0000     | ***       |
| Total | 0.0032  |            |            |           |

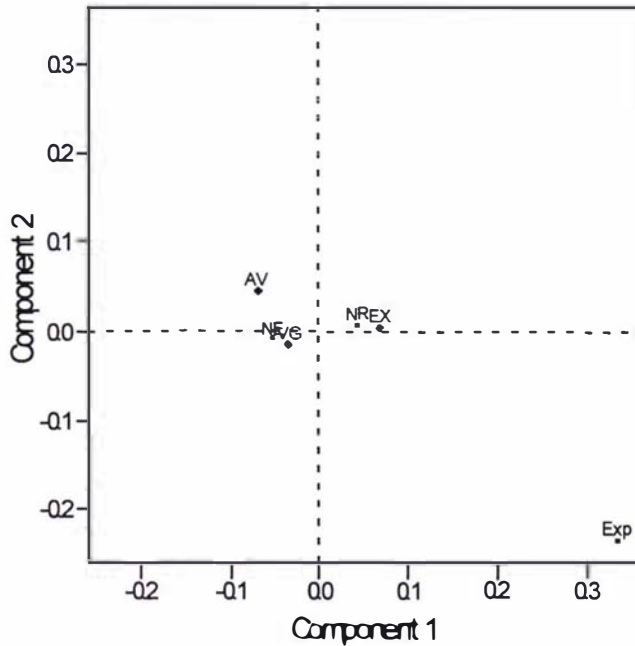
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 AV    | 1.000 | 0.115 | 0.246 | -0.068              | 0.676 | 0.188 | 0.047               | 0.324 | 0.697 |
| 2 VG    | 1.000 | 0.520 | 0.211 | -0.033              | 0.849 | 0.202 | -0.014              | 0.151 | 0.278 |
| 3 EX    | 1.000 | 0.365 | 0.543 | 0.069               | 0.995 | 0.610 | 0.005               | 0.005 | 0.026 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.528 | 0.317 | 0.043               | 0.952 | 0.341 | 0.010               | 0.048 | 0.131 |
| 2 NE    | 1.000 | 0.466 | 0.407 | -0.052              | 0.976 | 0.449 | -0.008              | 0.024 | 0.084 |
| 3 Exp   | 1.000 | 0.005 | 0.276 | 0.335               | 0.674 | 0.210 | -0.233              | 0.326 | 0.784 |

Symmetric Plot



## 9. Simple Correspondence Analysis of Perception of Tangible Dimension Vs Ethnic

Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0324  | 0.5393     | 0.5393     | *****     |
| 2     | 0.0211  | 0.3514     | 0.8907     | *****     |
| 3     | 0.0057  | 0.0944     | 0.9850     | *****     |
| 4     | 0.0009  | 0.0150     | 1.0000     |           |
| Total | 0.0601  |            |            |           |

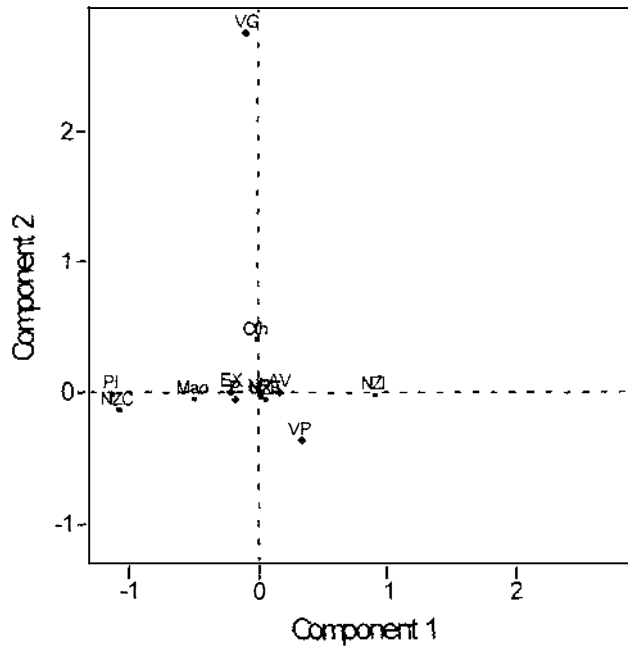
Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 VP    | 0.426 | 0.003 | 0.027 | 0.335               | 0.189 | 0.009 | -0.375              | 0.237 | 0.018 |
| 2 P     | 0.364 | 0.078 | 0.123 | -0.178              | 0.332 | 0.076 | -0.055              | 0.032 | 0.011 |
| 3 AV    | 0.999 | 0.544 | 0.240 | 0.163               | 0.999 | 0.444 | -0.001              | 0.000 | 0.000 |
| 4 VG    | 0.996 | 0.003 | 0.343 | -0.075              | 0.001 | 0.000 | 2.764               | 0.996 | 0.971 |
| 5 EX    | 0.946 | 0.373 | 0.268 | -0.202              | 0.946 | 0.471 | -0.003              | 0.000 | 0.000 |

Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.359 | 0.182 | 0.018 | 0.019               | 0.060 | 0.002 | -0.043              | 0.299 | 0.016 |
| 2 NZE   | 0.943 | 0.627 | 0.073 | 0.060               | 0.520 | 0.071 | -0.054              | 0.423 | 0.088 |
| 3 NZC   | 0.729 | 0.008 | 0.217 | -1.078              | 0.717 | 0.289 | -0.143              | 0.013 | 0.008 |
| 4 NZI   | 0.974 | 0.003 | 0.037 | 0.903               | 0.974 | 0.068 | -0.010              | 0.000 | 0.000 |
| 5 Mao   | 0.946 | 0.062 | 0.269 | -0.495              | 0.936 | 0.466 | -0.051              | 0.010 | 0.008 |
| 6 PI    | 0.750 | 0.003 | 0.075 | -1.124              | 0.750 | 0.105 | -0.024              | 0.000 | 0.000 |
| 7 Oth   | 0.999 | 0.115 | 0.310 | -0.014              | 0.001 | 0.001 | 0.402               | 0.998 | 0.881 |

Symmetric Plot



# 10. Simple Correspondence Analysis of Perception of Peripheral Services Dimension Vs Ethnic

## Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0476  | 0.6162     | 0.6162     | *****     |
| 2     | 0.0175  | 0.2269     | 0.8431     | *****     |
| 3     | 0.0111  | 0.1431     | 0.9862     | *****     |
| 4     | 0.0011  | 0.0138     | 1.0000     |           |
| Total | 0.0773  |            |            |           |

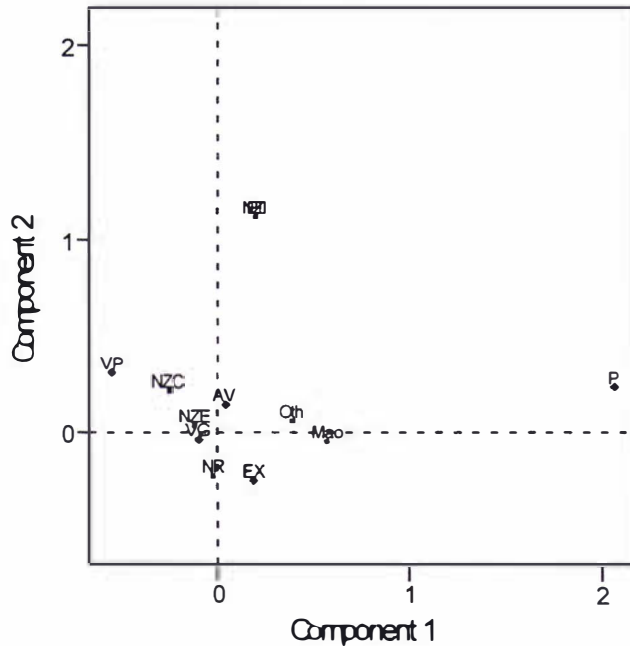
## Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 VP    | 0.679 | 0.005 | 0.041 | -0.549              | 0.508 | 0.034 | 0.319               | 0.171 | 0.031 |
| 2 P     | 0.931 | 0.008 | 0.485 | 2.068               | 0.919 | 0.723 | 0.238               | 0.012 | 0.026 |
| 3 AV    | 0.744 | 0.324 | 0.135 | 0.042               | 0.055 | 0.012 | 0.149               | 0.688 | 0.410 |
| 4 VG    | 0.643 | 0.520 | 0.126 | -0.105              | 0.589 | 0.121 | -0.032              | 0.054 | 0.030 |
| 5 EX    | 0.857 | 0.142 | 0.212 | 0.192               | 0.320 | 0.110 | -0.249              | 0.537 | 0.503 |

## Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.893 | 0.182 | 0.126 | -0.023              | 0.010 | 0.002 | -0.217              | 0.883 | 0.489 |
| 2 NZE   | 0.984 | 0.627 | 0.133 | -0.120              | 0.875 | 0.189 | 0.042               | 0.109 | 0.064 |
| 3 NZC   | 0.569 | 0.008 | 0.021 | -0.257              | 0.335 | 0.011 | 0.215               | 0.234 | 0.021 |
| 4 NZI   | 0.625 | 0.003 | 0.072 | 0.193               | 0.018 | 0.002 | 1.124               | 0.607 | 0.193 |
| 5 Mao   | 0.901 | 0.062 | 0.291 | 0.571               | 0.895 | 0.422 | -0.046              | 0.006 | 0.007 |
| 6 PI    | 0.625 | 0.003 | 0.072 | 0.193               | 0.018 | 0.002 | 1.124               | 0.607 | 0.193 |
| 7 Oth   | 0.827 | 0.115 | 0.286 | 0.391               | 0.801 | 0.371 | 0.070               | 0.026 | 0.032 |

Symmetric Plot



# 11. Simple Correspondence Analysis of Perception of Staff Dimension Vs Ethnic

## Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0490  | 0.8452     | 0.8452     | *****     |
| 2     | 0.0048  | 0.0831     | 0.9283     | **        |
| 3     | 0.0031  | 0.0528     | 0.9811     | *         |
| 4     | 0.0011  | 0.0189     | 1.0000     |           |
| Total | 0.0580  |            |            |           |

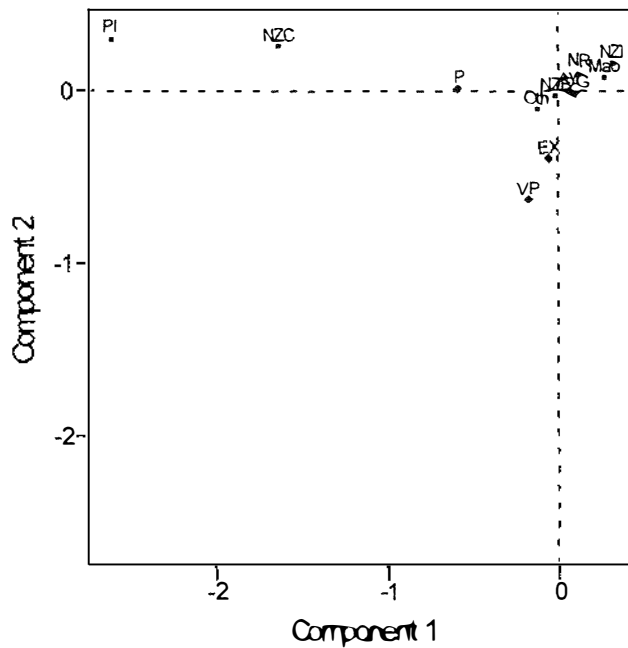
## Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 VP    | 0.978 | 0.011 | 0.081 | -0.173              | 0.068 | 0.007 | -0.632              | 0.910 | 0.889 |
| 2 P     | 0.999 | 0.126 | 0.723 | -0.576              | 0.998 | 0.853 | 0.021               | 0.001 | 0.012 |
| 3 AV    | 0.728 | 0.555 | 0.068 | 0.071               | 0.709 | 0.057 | 0.011               | 0.019 | 0.015 |
| 4 VG    | 0.697 | 0.306 | 0.101 | 0.115               | 0.696 | 0.083 | -0.004              | 0.001 | 0.001 |
| 5 EX    | 0.255 | 0.003 | 0.027 | -0.049              | 0.004 | 0.000 | -0.386              | 0.251 | 0.083 |

## Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 0.984 | 0.182 | 0.087 | 0.127               | 0.583 | 0.060 | 0.106               | 0.401 | 0.422 |
| 2 NZE   | 0.547 | 0.627 | 0.017 | -0.011              | 0.078 | 0.002 | -0.027              | 0.469 | 0.094 |
| 3 NZC   | 0.997 | 0.008 | 0.378 | -1.628              | 0.972 | 0.435 | 0.258               | 0.024 | 0.111 |
| 4 NZI   | 0.162 | 0.003 | 0.037 | 0.320               | 0.128 | 0.006 | 0.166               | 0.034 | 0.015 |
| 5 Mao   | 0.883 | 0.062 | 0.097 | 0.272               | 0.806 | 0.093 | 0.084               | 0.077 | 0.091 |
| 6 PI    | 0.990 | 0.003 | 0.321 | -2.602              | 0.976 | 0.370 | 0.304               | 0.013 | 0.052 |
| 7 Oth   | 0.748 | 0.115 | 0.063 | -0.121              | 0.461 | 0.034 | -0.095              | 0.286 | 0.216 |

Symmetric Plot



## 12. Simple Correspondence Analysis of Perception of Access Dimension Vs Ethnic

### Analysis of Contingency Table

| Axis  | Inertia | Proportion | Cumulative | Histogram |
|-------|---------|------------|------------|-----------|
| 1     | 0.0503  | 0.7988     | 0.7988     | *****     |
| 2     | 0.0127  | 0.2012     | 1.0000     | *****     |
| Total | 0.0629  |            |            |           |

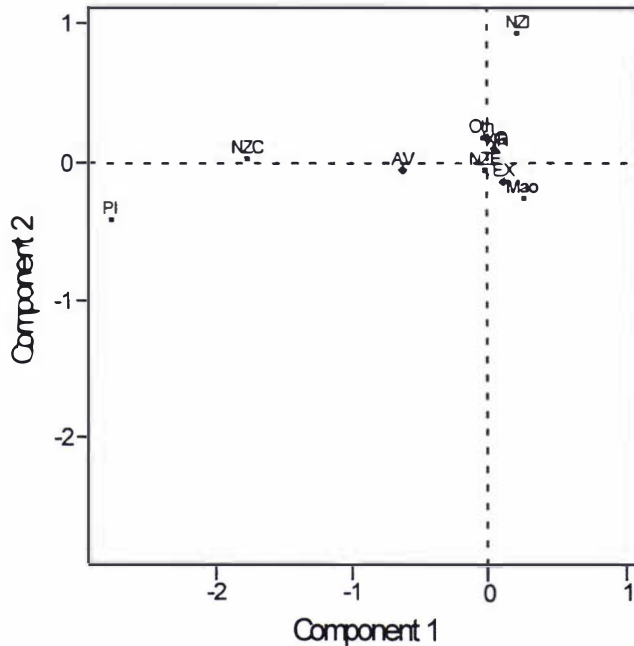
### Row Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 AV    | 1.000 | 0.115 | 0.695 | -0.614              | 0.994 | 0.865 | -0.047              | 0.006 | 0.020 |
| 2 VG    | 1.000 | 0.520 | 0.112 | 0.050               | 0.185 | 0.026 | 0.105               | 0.815 | 0.454 |
| 3 EX    | 1.000 | 0.365 | 0.193 | 0.123               | 0.451 | 0.109 | -0.135              | 0.549 | 0.526 |

### Column Contributions

| ID Name | Qual  | Mass  | Inert | ----Component 1---- |       |       | ----Component 2---- |       |       |
|---------|-------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
|         |       |       |       | Coord               | Corr  | Contr | Coord               | Corr  | Contr |
| 1 NR    | 1.000 | 0.182 | 0.040 | 0.072               | 0.373 | 0.019 | 0.093               | 0.627 | 0.124 |
| 2 NZE   | 1.000 | 0.627 | 0.016 | -0.008              | 0.038 | 0.001 | -0.039              | 0.962 | 0.077 |
| 3 NZC   | 1.000 | 0.008 | 0.392 | -1.751              | 1.000 | 0.491 | 0.035               | 0.000 | 0.001 |
| 4 NZI   | 1.000 | 0.003 | 0.039 | 0.224               | 0.054 | 0.003 | 0.934               | 0.946 | 0.185 |
| 5 Mao   | 1.000 | 0.062 | 0.124 | 0.264               | 0.549 | 0.085 | -0.239              | 0.451 | 0.277 |
| 6 PI    | 1.000 | 0.003 | 0.327 | -2.739              | 0.978 | 0.400 | -0.415              | 0.022 | 0.036 |
| 7 Oth   | 1.000 | 0.115 | 0.062 | -0.031              | 0.028 | 0.002 | 0.181               | 0.972 | 0.299 |

Symmetric Plot



*∞ The End ∞*

*This is not the end of the journey it is the beginning of the journey  
to Continuous Improvement.*

*Tammi S.W. Tan*

