Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.
Development of Quality Management Assessment and Improvement Tools and Techniques Appropriate to the Tourism Industry

A dissertation submitted in partial fulfilment of the requirements for the degree of

Doctor of Philosophy

in Tourism Management

Massey University
New Zealand

Claire Liu
2006
ACKNOWLEDGEMENTS

This thesis could not have been completed if it were not for the help and support of the following people. Firstly, I would like to thank my supervisors, Dr Robin Smith and Dr Don Barnes for their valuable advice, support and encouragement through every step of the research. I wish to express my gratitude to Professor Tony Vitalis and Emeritus Professor Nan Kinross for their guidance, feedback, and special help in the final completion of the thesis.

Secondly, I wish to thank all the participants in the visitor surveys, without whose cooperation and support this research could not have been finished. Special thanks must be given to Tamaki Tours, Paradise Valley Wildlife Park, and the Buried Village in Rotorua for their sponsorship and active participation in the research project as case studies. I have benefited a lot from the constructive discussions with the managers and the staff team.

Thirdly, I would like to thank the Department of Management for the financial support in data gathering. Many thanks to Brian Old, the independent interviewer, for his hard work in the two months data collection in Tamaki Tours. I am also thankful for Dr Alasdair Noble from the Statistics Research and Consulting Centre of Massey University for his advice and assistance with statistical analysis; Professor Ken Milne and Jacqueline Koenders from the Postgraduate Research School for their support and help; Mike Gibbins for his assistance with the selection of case study companies.

Many thanks are extended to Dr Tammi Tan for her kind suggestions and comments on the research project; I am also grateful for my employer and colleagues for their support and encouragement in my research. Bill McCallum, Raewyn Hope, Brendan Dolye, Catherine Beaton, Lilian Clare, and Mary Burkitt, I thank you all for having shared my experiences.

Lastly, I would like to thank my family for their love and patience, particularly my husband and daughter for their understanding, encouragement and support throughout the years in my PhD study. Their company to the Rotorua field trips means a great deal to me!
ABSTRACT

The thesis researched the development and implementation of a quality measurement and improvement strategy based on a specified combination of two TQM tools - SERVQUAL and QFD. The strategy was successively trialled and refined in three Rotorua based tourist attractions and centred on the appropriateness or otherwise of applying such quality improvement techniques to the small business sector of the New Zealand tourism industry. The significance of the research is outlined in the introductory chapter and related theoretical perspectives are developed in the literature review.

The study researched the following question: How to discover a tool for the measurement and therefore the improvement of the service quality for small to medium sized tour operators? Three case studies were selected to provide the location and data base for the research – one each in the cultural, heritage and environmental segments of the tourism industry. All are well established businesses with good industry and market profiles. The investigations through two complementary case studies have helped to refine the research instrument and supported the implementation of the research methodology in the extensive principal case study. Statistical analyses were employed to compare the reliability of the data from the different surveys and to explain variances in the results.

Research findings indicate that with further refinement and modification through ongoing usage, the combination of the two tools would provide the small business operator with a means of linking customer service satisfaction measurement to the underlying operational components of their business. The visitor profiles of the tourist attractions obtained from the surveys can help to explain the reasons for any significant differences in customer expectations in relation to quality service standards. The findings suggest that the combined SERVQUAL and QFD quality management technique should be regularly used by small tourist attractions both as a quality improvement tool to meet customer satisfaction and to assist in the attainment of external quality service recognition.
# TABLE OF CONTENTS

ACKNOWLEDGEMENTS........................................................................................................... i
ABSTRACT ................................................................................................................................. ii
TABLE OF CONTENTS............................................................................................................... iii
LIST OF TABLES ...................................................................................................................... viii
LIST OF FIGURES ................................................................................................................... ix

CHAPTER 1 ............................................................................................................................... 1
1.1 Background of the Study ................................................................................................. 1
1.2 The Nature and Significance of the Study ................................................................... 4
1.3 Benefits of the Research Project ................................................................................ 8
1.4 Aims of the Study ......................................................................................................... 8
1.5 Structure of the Thesis ................................................................................................ 9
1.6 Chapter Summary ....................................................................................................... 10
1.7 Chapter References ..................................................................................................... 10

CHAPTER 2 ............................................................................................................................. 11
2.1 Introduction .................................................................................................................. 11
2.2 Quality Management Frameworks for the Service Industry ....................................... 12
   2.2.1 Concepts of quality ................................................................................................. 12
   2.2.2 Importance of the service quality system ............................................................. 13
   2.2.3 Service quality measurement tools ....................................................................... 15
   2.2.4 Characteristics of tourism quality ....................................................................... 19
   2.2.5 Quality management initiatives in tourism .......................................................... 21
   2.2.6 The Five-Gap Model of service quality ............................................................... 24
   2.2.7 The application of SERVQUAL in the service and tourism industry ................ 28
   2.2.8 Issues with the application of SERVQUAL ........................................................ 30
2.3 Quality Management Approaches ............................................................................. 35
   2.3.1 Total Quality Management (TQM) ...................................................................... 36
   2.3.2 ISO 9000 Quality Systems .................................................................................. 39
   2.3.3 Difference between ISO 9000 and SERVQUAL .................................................... 40
   2.3.4 Malcolm Baldrige National Quality Award .......................................................... 42
   2.3.5 New Zealand Business Excellence Awards ........................................................... 44
2.4 The Measurement of Service Quality and Customer Satisfaction ............................. 45
   2.4.1 The relationship between service quality and customer satisfaction ................ 45
   2.4.2 The issues of service quality measurements and customer satisfaction .............. 46
CHAPTER 2 .................................................................................................................. 49
 2.1 Introduction ........................................................................................................... 49
 2.2 Quality Function Deployment (QFD) and Its Application ...................................... 53
    2.2.1 QFD concepts ................................................................................................. 53
    2.2.2 Historical development of QFD ...................................................................... 54
    2.2.3 The House of Quality ...................................................................................... 55
    2.2.4 The application of QFD in the service industry ............................................... 56
 2.3 The Issues with Quality Management in SMEs ...................................................... 60
    2.3.1 Characteristics of SMEs ................................................................................. 60
    2.3.2 The issues of quality management practice with SMEs .................................... 61
    2.3.3 ISO 9000 and small tourism enterprise ......................................................... 62
 2.4 The New Zealand Tourism Environment and Quality Practices ............................ 64
    2.4.1 The New Zealand tourism industry ................................................................. 64
    2.4.2 Quality management strategies applied in the New Zealand tourism industry .... 65
    2.4.3 Quality management potentials in the New Zealand tourism industry ............ 69
 2.5 The Main Themes of the Research ........................................................................ 71
 2.6 Concluding Remarks .............................................................................................. 72
 2.7 Chapter References ............................................................................................... 74

CHAPTER 3 .................................................................................................................. 87
 3.1 Introduction ........................................................................................................... 87
 3.2 Objectives of the Research .................................................................................... 87
 3.3 Research Methodology ......................................................................................... 88
    3.3.1 Case study ........................................................................................................ 89
    3.3.2 The selection of case study participants .......................................................... 90
    3.3.3 SERVQUAL questionnaire surveys .............................................................. 93
    3.3.4 Pilot testing and amendment to questionnaires .............................................. 94
    3.3.5 Population and sampling strategy .................................................................... 95
    3.3.6 Research ethics clearance ............................................................................... 97
    3.3.7 The pilot survey process and implementations ............................................ 98
    3.3.8 The survey in the principal case study .......................................................... 99
 3.4 Data Analysis of the Principal and Complementary Studies .................................. 100
    3.4.1 The gap analysis ............................................................................................ 101
    3.4.2 Comparison of weighted gap analysis ........................................................... 102
    3.4.3 Comparison of respondent demographics .................................................... 102
 3.5 Statistical Testing ................................................................................................ 103
    3.5.1 Reliability of SERVQUAL survey results ....................................................... 103
    3.5.2 Comparison of gap analysis by demographic groups ..................................... 103
    3.5.3 Chi-square test for the differences among proportions in groups .................. 104
 3.6 The Linkage of SERVQUAL Results to the Simplified House of Quality ............. 105
    3.6.1 The identification of customer requirements .................................................. 107
5.3 SERVQUAL Surveys Conducted in the Paradise Valley Park ........................................... 167
5.4 The Results of SERVQUAL Surveys – Paradise Valley Park ........................................... 169
5.4.1 Gap analysis of visitor expectations and perceptions ................................................... 169
5.4.2 Gap analysis of staff view of importance of quality and visitors’ expectations .................. 170
5.4.3 Gap analysis of expectation of service quality ............................................................... 171
5.4.4 Staff knowledge of the availability of service quality standards ....................................... 172
5.4.5 Comparison of customer importance ranking of quality importance .................................. 172
5.4.6 Demographic distribution of respondents ........................................................................ 173
5.5 Data Analysis of SERVQUAL Results – Paradise Valley Park ........................................ 175
5.5.1 Weighted customer gap split sample analysis ................................................................. 175
5.5.2 Average visitor importance rating split sample analysis ................................................. 177
5.5.3 Customer expectation and perception gap analysis by ethnicity ...................................... 178
5.6 SERVQUAL Surveys Conducted in the Buried Village ...................................................... 179
5.7 The Results of SERVQUAL Surveys – Buried Village ....................................................... 181
5.7.1 Gap analysis of visitor expectation and perception ........................................................ 181
5.7.2 Gap analysis of staff views on importance of quality and visitors’ expectations ............... 182
5.7.3 Gap analysis of expectation of service quality ............................................................... 184
5.7.4 Staff knowledge of the availability of service quality standards ....................................... 185
5.7.5 Comparison of customer importance ranking of service importance ............................... 186
5.7.6 Demographic distribution of respondents ........................................................................ 187
5.8 Data Analysis of SERVQUAL Results – Buried Village .................................................... 189
5.8.1 Weighted customer gap split sample analysis ................................................................. 189
5.8.2 Average visitor importance rating split sample analysis ................................................. 191
5.8.3 Customer expectation and perception gap analysis by ethnicity ...................................... 193
5.9 The Application of QFD in Paradise Valley Park ................................................................. 194
5.9.1 The process of building a House of Quality ................................................................. 194
5.9.2 The results of the House of Quality ............................................................................. 203
5.10 The Pilot Application of QFD in the Buried Village ............................................................ 205
5.10.1 The process of constructing the House of Quality ......................................................... 205
5.10.2 The results of the House of Quality ........................................................................... 215
5.11 Chapter Summary ............................................................................................................. 215
5.12 Chapter References ........................................................................................................... 217

CHAPTER 6 ................................................................................................................................. 219
6.1 Introduction ......................................................................................................................... 219
6.2 The SERVQUAL Results .................................................................................................... 219
6.2.1 Survey respondents’ demographics ............................................................................... 219
6.2.2 Customer expectations and perceptions ........................................................................... 221
6.2.3 Staff view of importance of service quality and visitor expectations ............................... 222
6.2.4 Visitor ranking of the relative importance of features and service .................................. 224
6.2.5 Staff knowledge of service quality standards .................................................. 225
6.3 QFD RESULTS ........................................................................................................... 226
6.3.1 Customer requirements ....................................................................................... 226
6.3.2 Operational requirements ................................................................................... 228
6.3.3 The House of Quality ......................................................................................... 230
6.4 The General Findings .............................................................................................. 231
6.4.1 The principal case study in the cultural tourist attraction ....................................... 232
6.4.2 The complementary case study in the nature-based tourist attraction ..................... 233
6.4.3 The complementary case study in the heritage tourist attraction ............................ 233
6.5 Common issues with the application of SERVQUAL and QFD ................................. 234
6.6 Chapter Summary ..................................................................................................... 236
6.7 Chapter References .................................................................................................. 236

CHAPTER 7 ..................................................................................................................... 239
7.1 Introduction .............................................................................................................. 239
7.2 Similarities and Differences of Research Findings .................................................... 240
7.3 Contributions of the Study ...................................................................................... 242
7.4 Implications of the Findings .................................................................................... 244
7.5 Limitations of the Study ......................................................................................... 246
7.6 Recommendations for Future Research .................................................................... 246
7.7 Concluding Remarks ............................................................................................... 248
7.8 Chapter References .................................................................................................. 251

BIBLIOGRAPHY ............................................................................................................. 253
APPENDICES .................................................................................................................. 291
Appendix A: Tamaki Tours Survey Questionnaires .................................................... 291
Appendix B: Paradise Valley Wildlife Park ................................................................... 302
Appendix C: The Buried Village .................................................................................... 329
Appendix D: The Principal Case Study ........................................................................ 252
Appendix E: Letters ....................................................................................................... 365
LIST OF TABLES........................................................................................................viii
Table 4.1 Some awards granted to Tamaki Tours......................................................... 124
Table 4.2 Visitor survey questions relating to Tamaki Tours........................................ 125
Table 4.3 Average expectation scores by gender.......................................................... 141
Table 4.4 Average visitor expectation by education....................................................... 143
Table 4.5 Average visitor perception by bus drivers..................................................... 145
Table 4.6 Customer requirements ............................................................................... 148
Table 4.7 Operational requirements ........................................................................... 148
Table 5.1 Visitor survey questions relating to Paradise Valley Wildlife Park............... 168
Table 5.2 Visitor survey questions relating to the Buried Village ................................. 179
Table 5.3 Customer requirements (WHATs) and importance rating............................ 195
Table 5.4 Operational requirements (HOWs)............................................................ 198
Table 5.5 Customer requirements (WHATs) and importance rating............................ 205
Table 5.6 Operational requirements (HOWs)............................................................ 208
LIST OF FIGURES ........................................................................................................... ix

Figure 2.1  The Gap Model of Service Quality ................................................................. 26
Figure 2.2  A framework of quality management tools .................................................. 37
Figure 2.3  The House of Quality .................................................................................... 55
Figure 2.4  The process of quality improvement .............................................................. 72
Figure 3.1  A flowchart showing the original research process ....................................... 90
Figure 3.2  The revised research process ....................................................................... 93
Figure 3.3  The Four Houses of Quality ........................................................................ 107
Figure 3.4  The linkage between modified SERVQUAL and QFD ................................. 109
Figure 3.5  Elements in the modified House of Quality ................................................ 111
Figure 4.1  Time visited ................................................................................................. 128
Figure 4.2  Travel with .................................................................................................. 129
Figure 4.3  Reasons for the visit ................................................................................... 130
Figure 4.4  Occupational categories ............................................................................ 130
Figure 4.5  Educational levels ....................................................................................... 131
Figure 4.6  Source of information ................................................................................ 132
Figure 4.7  Comparison of customer expectation and perception .................................... 133
Figure 4.8  Visitor importance rating of service quality ................................................ 135
Figure 4.9  Staff view of visitor expectation and measured visitor expectation .............. 136
Figure 4.10 Staff importance of service and their view of visitor expectation ................. 137
Figure 4.11 Staff understanding of quality standards ..................................................... 138
Figure 4.12 House of Quality for Tamaki Tours ............................................................ 152
Figure 5.1  Differences between visitor expectation and perception .............................. 169
Figure 5.2  Staff importance - expectation gap ............................................................... 170
Figure 5.3  Gap between staff expectation and measured visitor expectation ............... 171
Figure 5.4  Staff knowledge of the availability of quality standards ............................... 172
Figure 5.5  Comparison of customer ranking of service importance ............................. 173
Figure 5.6  Weighted gap comparison - August 2002 .................................................. 176
Figure 5.7  Weighted gap comparison - October 2002 ................................................ 176
Figure 5.8  Average visitor importance rating - August 2002 ........................................ 177
Figure 5.9  Average visitor importance rating - October 2002 ..................................... 178
Figure 5.10 Average visitor expectations ....................................................................... 181
Figure 5.11 Average visitor perceptions ....................................................................... 182
Figure 5.12 Staff view of service importance ................................................................. 183
Figure 5.13  Comparison of staff importance and visitor expectations
Figure 5.14  Comparison of staff and visitor expectation gaps
Figure 5.15  Staff knowledge of the availability for service quality standards
Figure 5.16  Comparison of visitor importance rating of service features
Figure 5.17  Average customer’s rating of service importance
Figure 5.18  Weighted gap comparisons – September 2002
Figure 5.19  Weighted gap comparison – December 2002
Figure 5.20  Importance rating – September 2002
Figure 5.21  Importance rating – December 2002
Figure 5.22  Relationships between WHATs and HOWs
Figure 5.23  Interrelationships between HOWs
Figure 5.24  House of Quality for Paradise Valley Park
Figure 5.25  Relationships between WHATs and HOWs
Figure 5.26  The interrelationships between operational requirements
Figure 5.27  The House of Quality for the Buried Village