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A Comparison of Tourism Crowding Management between Tourism Sites in Cairns  
and Xi'an – Based on Tourism Carrying Capacity Assessment

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Tourism  
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September 2009

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I declare that this thesis is my own work but I acknowledge that the production of this thesis has benefited significantly from the contribution of several others. Specifically I acknowledge the tremendous assistance of Professor Philip Pearce and Dr. Laurie Murphy in the supervision of the thesis and the assistance of Professor Philip Pearce in the editing process.

I also acknowledge School of Business, James Cook University for their financial support in the surveys of this thesis.

**Qian Jin**

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## **Declaration on Ethics**

The research presented and reported in this thesis was conducted within the guidelines for research ethics outlined in the *National Statement on Ethics Conduct in Research Involving Human* (1999), the *Joint NHMRC/AVCC Statement and Guidelines on Research Practice* (1997), the *James Cook University Policy on Experimentation Ethics. Standard Practices and Guidelines* (2001), and the *James Cook University Statement and Guidelines on Research Practice* (2001). The proposed research methodology received clearance from the James Cook University Experimentation Ethics Review Committee (Approval number H2582 and Approval number H2732).

**Qian Jin**

**29 September 2009**

## **Acknowledgements**

The writing of this thesis has lasted for three and a half years and many friendly individuals supported me throughout the whole writing process. The thesis represents a joint effort and care from many generous parties and could not have been completed without their help.

First of all my thanks go to my principle supervisor at James Cook University, Prof. Philip Pearce, who has been so patient and supportive in the whole course of my studies. Second my thanks go to my co-supervisor at James Cook University, Dr. Laurie Murphy, who provided me with a lot of help in my questionnaire design and data analysis. Their constructive comments have guided me through this difficult yet rewarding process and have made this piece of work more valuable. Being a non-native English speaker, the writing of a thesis in English of academic quality is something close to impossible without their continuous guidance.

Secondly, I would like to thank the staff of the School of Business, who provided me with a lot of help and a friendly atmosphere at James Cook University. I would also like to convey my gratitude to my colleagues, friends and especially my parents who provided me with much support for my writing of thesis. Their encouragement was very important in overcoming difficulties during the process of thesis completion.

Last but definitely not least, my gratitude goes to all those who have helped me in the data collection process – the respondents who filled out my questionnaire, and the site managers who generously provided information in the interviews.

**Qian Jin**

**29 September 2009**



## Abstract

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Tourism crowding management is an important part of sustainable tourism development. Tourism managers are responsible for preserving the natural and cultural resources which form the bases for attractions. In addition, tourist site managers are responsible for making sure tourists can experience the sites relatively free from excessive crowds. The importance of crowding issues in tourism is reinforced by considerable previous research attention. Several researchers have investigated tourists' crowding-related norms as a way of providing suggestions to site management personnel. Previous research has identified many factors which can influence tourists' perceptions of crowding. Most researchers have tried to establish crowding specific concepts to support the sound conservation as well as the use of the resources, while at the same time supporting successful businesses and quality visitor experiences. Building on the previous literature, the central aim of this thesis is to compare crowding-related issues between different kinds of sites in order to develop a crowding management model specifically relevant to tourist attractions. In developing the crowding management model, three comparative studies were conducted; the first explored tourists' actual use levels and tourists' perceived use levels, the second studied factors influencing tourists' perceptions of crowding and the third investigated crowding managerial strategies. These comparative studies were conducted at five sites in Cairns, Australia and five sites in Xi'an, China. The sites employed in the two destinations involve very different environments. The sites in Cairns are located in a developed country and are environmentally based settings, while the cultural sites in Xi'an are located in a rapidly developing country. These differences provide important points of contrast but facilitate the construction of a broadly based understanding of crowding management at tourist attractions.

In Study One, observations were conducted to find out the visitors' actual use levels of the settings. In order to compare the actual visitor use levels and the perceived use levels, a questionnaire based survey of on-site visitors (N = 585) was used to reveal tourists' crowding-related norms. The questionnaire study was then linked to detailed observation studies conducted earlier at the sites. Several evaluative dimensions reported by previous researchers were followed to measure use levels, including

“preference”, “desirability”, and “tolerance”. The tolerance and preference data were used to undertake a comparison with the actual visitor use levels. The key findings of this study using single sample t test comparisons were that several aspects of crowding management were a problem at sites in Xi’an but not in Cairns. Moreover, the actual visitor use levels exceeded visitors’ preference at some popular sites in Xi’an in the peak season. These findings were not replicated in Cairns.

The purpose of Study Two was to investigate the relationships between tourists’ site evaluations and tourists’ use levels. Additionally, the study sought to explain the tourists’ perceptions. Data collected from the same questionnaire survey were also used in this study. The relationships among tourists’ crowding-related perceptions, including the evaluative dimensions of environment concern, crowd concern, tolerance, preference, desire and satisfaction, were tested using the independent t-tests, one-way ANOVAs, correlations and multiple regressions. A key finding was that there were relationships between the three evaluative dimensions. There were further links to visitors’ desire to stay in the settings and their satisfaction with the settings. The findings varied for the two destinations since tourists had different perceptions at sites in Cairns and Xi’an. Age, nationality and type of travel influenced the perception of crowding and other crowding relationships but gender did not.

The final study investigated the ideas, opinions and strategies to control crowding, as revealed by interviews with a number of key site managers. The semi-structured interviews were conducted by sampling CEOs and senior managers of six natural sites in Cairns and ten cultural sites in Xi’an. Data collected in this Study Three were analyzed by coding the dominant themes in the interviews in a version of the grounded theory approach. The responses of managers provided considerable information about crowding management strategies. First, several factors were identified which lead to crowding in Xi’an, but not in Cairns. These factors included seasonality, the homogeneous types of tourists, unevenly distributed numbers of tourists within the sites, facility deficiencies and poor service delivery on the busiest days. Second, managers in both destinations provided suggestions for better crowding management. These included ticketing and pricing controls, cooperation with other sectors, monitoring of problems and contingency plans for crises. The sites in Xi’an faced more difficulties in controlling tourists’ activities in the peak season, especially

in the Golden Weeks. The managers at the Chinese sites paid more attention to crowding management issues.

As a result of these three linked studies, a crowding management model for tourist sites was developed. This model provided a structured approach defining the factors to consider in the crowd management process. Finally, this thesis noted some study limitations and suggested several future study areas which could contribute to consolidating the work conducted in the present research. It can be suggested that researchers and managers need to continue to work together to deal with the increasingly troubling problem of too many people in the same tourist space.

## Contents

<b>STATEMENT OF ACCESS</b> .....	I
<b>STATEMENT OF SOURCES</b> .....	II
<b>ELECTRONIC COPY STATEMENT</b> .....	III
<b>STATEMENT OF THE CONTRIBUTIONS OF OTHERS</b> .....	IV
<b>DECLARATION ON ETHICS</b> .....	V
<b>ACKNOWLEDGEMENTS</b> .....	VI
<b>ABSTRACT</b> .....	VII
<b>TABLE OF CONTENTS</b> .....	X
<b>LIST OF TABLES</b> .....	XV
<b>LIST OF FIGURES</b> .....	XVIII

<b>CHAPTER 1 LITERATURE ABOUT TOURISM CARRYING CAPACITY AND CROWDING</b> .....	1
Chapter Outline .....	1
1. 1 Why Tourism Carrying Capacity? .....	2
1. 2 A Theoretical Overview of Tourism Carrying Capacity .....	3
1.2.1 Conceptual Foundation of Tourism Carrying Capacity .....	3
1.2.2 Limitations of Tourism Carrying Capacity .....	6
1.2.3 Other Approaches to Capacity for Tourism Assessment.....	9
1. 3 Tools for Implementing Tourism Carrying Capacity .....	11
1.4 A Theoretical Overview of Crowding .....	20
1.4.1 Defining Crowding .....	20
1.4.2 Explaining Encounters, Crowding, and Norms .....	21
1.4.3 Norm-Measurement Approaches .....	23
1.4.4 Crowding Norms Applying in Management Actions .....	27

1.4.5 Explaining Perceived Crowding in the Social Psychological Perspective .....	28
1.5 Assessing Crowding Based on Tourism Carrying Capacity .....	37
1.6 Preliminary Research Questions .....	40
1.7 Chapter Summary .....	41
CHAPTER 2 THE CONTEXT AND THESIS FRAMEWORK.....	43
Chapter Outline.....	43
2.1 Destination Context .....	44
2.1.1 Introduction to Cairns .....	45
2.1.2 Introduction to Xi'an.....	46
2.2 Introduction to the 10 Studied Sites in Cairns and Xi'an .....	48
2.3 Aims.....	63
2.4 Thesis Framework.....	65
2.5 Chapter Summary .....	66
CHAPTER 3 VISITOR USE AND PERCEPTIONS OF CROWDING AT 10 TOURIST SITES IN CAIRNS AND XI'AN .....	68
Chapter outline.....	68
3.1 Introduction.....	69
3.2 Aims of the Study .....	69
3.3 Samples .....	69
3.3.1 The First Sample .....	69
3.3.2 The Second Sample.....	70
3.4 Instrumentation for the Study .....	72
3.4.1 Observations .....	72
3.4.2 The Questionnaire.....	74
3.5 Results – Compare Tourists’ Actual Use Levels and Tourists’ Perceived Use Levels.....	81
3.6 Discussion.....	117

3.7 Chapter Summary .....	121
CHAPTER 4 EXPLAINING TOURISTS' PERCEPTIONS .....	123
Chapter Outline.....	123
4.1 Introduction.....	124
4.2 Aims of the Study .....	124
4.3 Instrumentation and Sample .....	126
4.3.1 Instrumentation .....	126
4.3.2 Sample.....	132
4.4 Research Hypotheses and Variables .....	132
4.5 Results – Assessing the Hypotheses .....	136
4.5.1 The Relationships between the Crowding-related Norms .....	136
4.5.2 The Influence of the Characteristic of Sites.....	140
4.5.3 The Influence of the Demographic Factors and the Travelling Factors.....	142
4.6 Discussion.....	156
4.7 Chapter Summary .....	163
CHAPTER 5 MANAGERS' VIEWS OF CROWDING.....	164
Chapter outline.....	164
5.1 Introduction.....	165
2. Aims of the Study .....	165
5.3 Sample.....	166
5.4 Instrumentation for the Study .....	168
5.5 Data Analysis based on the Thematic Approach .....	169
5.5.1 Thematic Analysis .....	169
5.5.2 Recognition of Crowding.....	170
5.5.3 Proposed Crowding Problems at the Sites in Cairns and Xi'an	178
5.5.4 The Current Crowding Management Issues for the Sites in Cairns and Xi'an.....	188

5.5.5 Perceptions of Tourists of Different Nationalities .....	198
5.5.6 Suggestions for Tourism Crowding Management in the Future .....	200
5.6 The Models of Tourism Crowding Management in Cairns and Xi'an ....	203
5.7 Chapter Summary .....	207
<b>CHAPTER 6 SUMMARY AND INTEGRATION .....</b>	<b>209</b>
Chapter Outline .....	209
6.1 Highlights of Findings of the Research .....	210
6.2 A Crowding Management Model for Tourism Sites .....	214
6.2.1 Monitoring Crowds When Crowding Has Not Occurred by Using this Crowding Management Model – Cairns .....	217
6.2.2 Controlling Crowding When Crowding Has Occurred by Using this Crowding Management Model – Xi'an .....	221
6.3 Contributions to the Academic Tourism Literature .....	224
6.3.1 Tolerance and Preference was the Evaluative Dimension related to Use Levels.....	224
6.3.2 The Measurement linked Actual Use Levels to Crowding Normative Use Levels.....	224
6.3.3 Explaining Social-Psychological Influences on Crowding Perceptions.....	225
6.3.4 Comparing Crowding Perceptions in Contrasting Cities.....	226
6.3.5 Integrated managers' views into an overall model of crowding management .....	226
6.4 Future Directions .....	227
6.4.1 Project Related .....	227
6.4.2 Topic Related .....	229
6.5 Final Comments .....	230
<b>REFERENCE .....</b>	<b>232</b>
<b>APPENDICES .....</b>	<b>247</b>
I. Maps of the destinations: Cairns and Xi'an; and maps of the sites: the Kuranda Rainforest, the Green Island, the Tjapukai Aboriginal Cultural	

Park, the Cairns Tropical Zoo, the Lagoon, the Terracotta Army Museum, the Shaanxi History Museum, the Huaqing Hot Spring, the Forest of Stone Steles Museum, and the Famen Temple Museum.....	247
II. Visitor numbers in different periods in Cairns and Xi'an provided by the site managers. The numbers were summarized in Table 5.3. ....	259
III. A sample questionnaire targeting tourists for Study 1 and Study 2...	260
IV. Invitation Letter for Study 3 .....	270
V. Public presentations of this research.....	272



## List of Tables

<b>Table1. 1</b> An integrated approach to congestion management .....	12
<b>Table3. 1</b> The sample list of tourist sites in the study .....	70
<b>Table3. 2</b> The demographic details of the sample.....	72
<b>Table3. 3</b> The coding scheme to record data.....	73
<b>Table3. 4</b> A summary of the questionnaire construction .....	75
<b>Table3. 5</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Kuranda Rainforestation.....	84
<b>Table3. 6</b> The actual visitor numbers and the perceived visitor numbers over different time and locations on the Green Island.....	87
<b>Table3. 7</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Tjapukai Aboriginal Cultural Park .....	91
<b>Table3. 8</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Cairns Tropical Zoo.....	94
<b>Table3. 9</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Lagoon.....	98
<b>Table3. 10</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Terracotta Army Museum.....	101
<b>Table3. 11</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Shaanxi History Museum.....	104
<b>Table3. 12</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Huaqing Hot Spring .....	108
<b>Table3. 13</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Forest of Stone Steles Museum .....	112

<b>Table3. 14</b> The actual visitor numbers and the perceived visitor numbers over different time and locations in the Famen Temple Museum .....	116
<b>Table4. 1</b> Correlation for environment concern with crowd concern; tolerance with preference; and desire with satisfaction .....	136
<b>Table4. 2</b> Multiple regression for environment concern and crowd concern with tolerance, preference, desire and satisfaction; and tolerance and preference with desire and satisfaction .....	138
<b>Table4. 3</b> T-tests for tourists' perceptions of sites in Cairns and Xi'an.....	141
<b>Table4. 4</b> Tourists' perceptions of crowding according to gender in Cairns .....	142
<b>Table4. 5</b> Tourists' perceptions of crowding according to gender in Xi'an .....	143
<b>Table4. 6</b> Tourists' perceptions of crowding according to age in Cairns .....	144
<b>Table4. 7</b> Tourists' perceptions of crowding according to age in Xi'an.....	145
<b>Table4. 8</b> Tourists' perceptions of crowding according to nationality in Cairns.....	147
<b>Table4. 9</b> Tourists' perceptions of crowding according to nationality in Xi'an .....	148
<b>Table4. 10</b> Tourists' perceptions of crowding according to group travel party composition in Cairns .....	149
<b>Table4. 11</b> Tourists' perceptions of crowding according to group travel party composition in Xi'an.....	150
<b>Table4. 12</b> Tourists' perceptions of crowding according to trip type in Cairns.....	152
<b>Table4. 13</b> Tourists' perceptions of crowding according to trip type in Xi'an.....	152
<b>Table4. 14</b> Tourists' perceptions of crowding according to travel experiences in Cairns .....	154
<b>Table4. 15</b> Tourists' perceptions of crowding according to travel experiences in Xi'an .....	155

<b>Table4. 16</b> A summary of significant results – the Hypotheses which were demonstrated .....	157
<b>Table5. 1</b> Tourist sites participating in the study .....	167
<b>Table5. 2</b> Interview Questions used to assess site managers’ views of crowding ....	169
<b>Table5. 3</b> Visitor numbers in different periods, 2007 .....	259

## List of Figures

<b>Figure1. 1</b> Hypothetical social norm curve.....	23
<b>Figure1. 2</b> The application of individual and environmental influences in perceived crowding .....	37
<b>Figure2. 1</b> Chapter flow chart .....	66
<b>Figure3. 1</b> Daily visitor use levels – Kuranda, Nov. 2006.....	83
<b>Figure3. 2</b> Daily visitor use levels – Kuranda, Christmas Holiday period 2006 .....	83
<b>Figure3. 3</b> Daily perceived visitor use levels – Kuranda .....	84
<b>Figure3. 4</b> Daily visitor use levels – Green Island, Nov. 2006.....	86
<b>Figure3. 5</b> Daily visitor use levels – Green Island, Christmas Holiday period 2006..	86
<b>Figure3. 6</b> Daily visitor use levels – Green Island.....	87
<b>Figure3. 7</b> Daily visitor use levels – Tjapukai, Nov. 2006 .....	90
<b>Figure3. 8</b> Daily visitor use levels – Tjapukai, Christmas Holiday period 2006.....	90
<b>Figure3. 9</b> Daily perceived visitor use levels – Tjapukai.....	90
<b>Figure3. 10</b> Daily visitor use levels – Tropical Zoo, Nov. 2006.....	93
<b>Figure3. 11</b> Daily visitor use levels – Tropical Zoo, Christmas Holiday period 2006	93
<b>Figure3. 12</b> Daily perceived visitor use levels – Tropical Zoo.....	94
<b>Figure3. 13</b> Daily visitor use levels – Lagoon, Nov. 2006 .....	97
<b>Figure3. 14</b> Daily visitor use levels – Lagoon, Christmas Holiday period 2006.....	97
<b>Figure3. 15</b> Daily perceived visitor use levels – Lagoon.....	97
<b>Figure3. 16</b> Daily visitor use levels – Terracotta Army, Sep. 2007.....	100
<b>Figure3. 17</b> Daily visitor use levels – Terracotta Army, 3 Oct. 2007.....	100
<b>Figure3. 18</b> Daily perceived visitor use levels – Terracotta Army .....	101

<b>Figure3. 19</b> Daily visitor use levels – Shaanxi History Museum, Sep. 2007.....	103
<b>Figure3. 20</b> Daily visitor use levels – Shaanxi History Museum, Sep. 2007.....	103
<b>Figure3. 21</b> Daily perceived visitor use levels – Shaanxi History Museum.....	104
<b>Figure3. 22</b> Daily visitor use levels – Huaqing Hot Spring, Sep. 2007 .....	107
<b>Figure3. 23</b> Daily visitor use levels – Huaqing Hot Spring, 5 Oct. 2007 .....	107
<b>Figure3. 24</b> Daily perceived visitor use levels – Huaqing Hot Spring .....	107
<b>Figure3. 25</b> Daily visitor use levels – Forest of Stone Steles, Sep. 2007 .....	111
<b>Figure3. 26</b> Daily visitor use levels – Forest of Stone Steles, Sep. 2007 .....	111
<b>Figure3. 27</b> Daily perceived visitor use levels – Forest of Stone Steles.....	112
<b>Figure3. 28</b> Daily visitor use levels – Famen Temple, Sep. 2007 .....	115
<b>Figure3. 29</b> Daily visitor use levels – Famen Temple, 6 Oct. 2007.....	115
<b>Figure3. 30</b> Daily perceived visitor use levels – Famen Temple.....	115
<b>Figure4. 1</b> The hierarchical structure of the hypotheses .....	135
<b>Figure5. 1</b> A Model of Forces Shaping Managing Tourism Crowding in Cairns ....	205
<b>Figure5. 2</b> A Model of Forces Shaping Managing Tourism Crowding in Xi’an.....	206
<b>Figure6. 1</b> A Crowding Management Model for Tourist Sites .....	216