

The Relationship between Motivation,
Place Attachment, Attitude-Behaviour, and
Satisfaction of Outdoor Recreation Participants:
Integrating Psychological Theories to Improve
Recreation Management

Doctor of Philosophy (PhD)

Department of Geography and Environmental Science

School of Archaeology, Geography and Environmental Science

NOOR JALILAH BINTI JUMAAT

November 2018

Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Acknowledgement

First and foremost, praises and thanks to God, the Almighty, for His showers of blessings throughout my PhD journey to complete the research successfully.

I want to express my deep and sincere gratitude to my research supervisors, Dr Geoffrey Griffiths and Professor Hilary Geoghegan, for the continuous support of my PhD study, for their patience, motivation, immense knowledge, and also for supporting me during my ups and downs.

I want to thank my sponsor, Government of Malaysia, for supporting me financially. My employer, Universiti Putra Malaysia, for allowing me to have extra time and helping us with financial during my study leave extension period.

My sincere thanks go to Forestry England, especially to the management of Alice Holt Forest and Haldon Forest Park who gave access to the forests and using the facilities to conduct my data collection. Without their precious support, it would not be possible to do this research.

Special thanks are due to my husband, Mohd Hairi Adris, for his continuous support, love, and understanding. My special thanks go to my family members for their support and encouragement for me to finish my PhD. Finally, my thanks go to all the people who have supported me to complete this thesis directly and indirectly. This is for you.

Noor Jalilah Jumaat

November 2018

This thesis is dedicated to:

Beloved husband,

Mohd Hairi Adris

Precious daughters,

Arisa Sofia and Nadeen Sofea

My lovely families,

Mak, Bapak, Kaklin, Kakwa, Amash, Imah, all my BILs,

and also, my family in laws

Abstract

The Relationship between Motivation, Place Attachment, Attitude-Behaviour, and Satisfaction of Outdoor Recreation Participants: Integrating Psychological Theories to Improve Recreation Management

Outdoor recreation is a voluntary activity that involves interaction between people and the natural environment. The potential benefits of this type of activity have led to increasing numbers of visitors to the countryside. Therefore, understanding the recreational users' perspectives (motivation, place attachment, attitude-behaviour, and satisfaction) during outdoor recreation participation could be useful for the forest management plan. Furthermore, a key motivation for this research is the relative lack of empirical studies and published research articles in the field of outdoor recreation in the United Kingdom. This study aims to evaluate four important aspects of the outdoor recreational experience (motivation, place attachment, attitude-behaviour, and satisfaction) of the visitor during their participation in outdoor recreation activities. An Outdoor Recreation Experience Model was proposed to examine the relationship between the main recreational users' perspectives. It integrates two theories that have been adapted from psychology studies; these are the Theory of Planned Behaviour (TPB) and the General Theory of Motivation. Furthermore, this study also attempts to evaluate the efficacy of the model in recreation management. The research was conducted at Haldon Forest Park (Exeter) and Alice Holt Forest (Surrey). It employed an explanatory sequential mixed methods design. A survey-based questionnaire was distributed in the data collection period, which was between September and March 2017, followed by a Participatory Research Day, which involved a focus group and photo-elicitation activity at Alice Holt Forest in April 2017 at the second stage of the period. Descriptive analysis, Analysis of Variance (ANOVA), Confirmatory Factor Analysis (CFA), and Structural Equation Modelling (SEM) have been used to analyse quantitative data, while content analysis was mainly employed to explore the qualitative data.

The quantitative findings show that there were significant differences between the user groups concerning a few items in recreation motivation, place attachment, and visitor satisfaction. Family togetherness and enjoying nature were found to be the most important

motivations for the visitors, while there was a generally neutral attachment between the visitors and the forest park. However, there was no significant difference between the user groups for the recreational behaviour. The qualitative study provided additional data about the visitors' experience and opinions on environmental and social issues that are useful to support the findings from the quantitative study. However, some of the findings from the focus group were not in line with the quantitative findings, such as the attachment of some of the participants was very strong, especially for those who grew up within walking distance of the Alice Holt Forest. These findings are beneficial in providing information on understanding the visitors to the forest park according to their primary activity. Furthermore, the recreation experience variables in the survey were used to develop The Outdoor Recreation Experience Model. Using Structural Equation Modelling (SEM), the proposed model was tested to examine the relationship between them. The fitness indices results show that the structural model can be accepted, but some of the values indicated the potential for improvement. From the assessment of the structural model, 15 hypotheses were accepted, two were partially accepted, and three were rejected. Thus, it is suggested that the proposed model can be used to test different samples to evaluate their outdoor recreation experience of other places. The implication of this research is to generate original empirical data that provides a better understanding of outdoor recreational experience and people's relationship with natural environments, which benefits the park managers and the academics who study human-place topics.

Table of Contents

Chapter 1	1
INTRODUCTION	1
1.1 Research Background	1
1.2 Research Objectives	2
1.3 Research Questions	2
1.4 Hypotheses of the study	3
1.5 The contribution of this study	5
1.6 Thesis structure	6
Chapter 2	7
LITERATURE REVIEW	7
2.1 Background on outdoor recreation	7
2.2 Outdoor Recreation and Resource Management	10
2.3 Important Aspects of Outdoor Recreation Experience	14
2.4 Theoretical Framework	23
2.5 Summary	26
Chapter 3	27
METHODOLOGY	27
3.1 Methodological Framework	27
3.2 Forest Parks	29
3.3 Research Design	31
3.4 Data Analysis	45
3.5 Researcher Positionality	49
3.6 Research Challenges	50
3.7 Ethical Considerations	51
Chapter 4	52
RESULTS: DESCRIPTIVE ANALYSIS	52
4.1 Respondent's profile	52
4.2 Visit Description	54
4.3 Recreational Motivation	61

4.4 Place Attachment _____	67
4.5 Recreation Behaviour _____	73
4.6 Environmental Concern _____	77
4.7 The importance of attributes provided in forest parks _____	81
4.8 Visitor’s Satisfaction _____	86
4.9 Summary _____	91
Chapter 5 _____	93
RESULT: _____	93
EXPLORING THE OUTDOOR RECREATION EXPERIENCES OF USER GROUPS AT THE FOREST	
PARKS _____	93
5.1 Introduction _____	93
5.2 Motivation to participate in outdoor recreation activities _____	94
5.3 Place Attachment _____	105
5.4 Recreation Experience _____	118
5.5 Visitor Satisfaction _____	129
5.6 Support and Commitment _____	134
5.7 Summary _____	136
Chapter 6 _____	137
RESULTS: _____	137
STRUCTURAL EQUATION MODELLING (SEM) _____	137
Chapter 6 _____	137
6.1 Theoretical Framework of Outdoor Recreational Experience _____	137
6.2 Confirmatory Factor Analysis (CFA) _____	139
6.3 Structural Equation Modelling _____	169
6.4 Summary _____	182
Chapter 7 _____	186
DISCUSSION AND CONCLUSION _____	186
7.1 Summary of research findings _____	186
7.2 The efficacy of integrating The General Model of Motivation and Theory of Planned Behaviour in understanding outdoor recreational experience in the forest parks _____	193

7.3 Conclusion	194
7.4 Research Implications	197
7.5 Research limitations	197
References	199
APPENDICES	218

List of Figures

Figure 2.1: Theory of planned behaviour _____	18
Figure 2.2.2: The General Theory of Motivation (Manell & Kleiber, 1997) _____	24
Figure 2.3: Theoretical Framework - Outdoor Recreation Experience Model _____	25
Figure 3.1: Study areas _____	30
Figure 3.2: Data collection framework _____	32
Figure 3.3: A flowchart of the focus group session _____	43
Figure 3.4: Activity pack for the Participatory Research Day _____	45
Figure 4.1: Adult party size of (A) Alice Holt Forest and (B) Haldon Forest Park. _____	54
Figure 4.2 Children party size for (A) Alice Holt Forest and (B) Haldon Forest Park _____	55
Figure 4.3: Trip member of the respondents for both forest parks _____	56
Figure 4.4: Frequency of visit to Alice Holt Forest and Haldon Forest Park _____	60
Figure 4.5: Pre-information of the forest parks _____	61
Figure 4.6: The importance of recreation experience preference of respondents from Alice Holt Forest and Haldon Forest Park (Question 7: How important are the reasons below to your visit to this park today? Please circle one relevant number to your answer) _____	66
Figure 4.7: Place identity (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer) _____	69
Figure 4.8: Place dependence (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer) _____	70
Figure 4.9: Affective attachment (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer) _____	71
Figure 4.10: Social bonding (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer) _____	72
Figure 4.11: Recreation Behaviour (Question 10: The following questions are designed to understand your specific behaviour when using the park. Please circle on a scale of 1-7 on how do you feel about the following behaviour _____	76
Figure 4.12: Eco-centric (Question 11: Please answer each of the following questions by circling the number that best describes your opinion about the environmental concern. Please read each question carefully) _____	78

Figure 4.13: Dual-centric (Question 11: Please answer each of the following questions by circling the number that best describes your opinion about the environmental concern. Please read each question carefully)	79
Figure 4.14: Techno-centric (Question 11: Please answer each of the following questions by circling the number that best describes your opinion about the environmental concern. Please read each question carefully)	81
Figure 4.15: Importance of resource settings (Question 12: For each statement below, please circle one number on how important each aspect is to you as a visitor)	85
Figure 4.16: Importance of social condition (Question 12: For each statement below, please circle one number on how important each aspect is to you as a visitor)	86
Figure 4.17: Visitor’s satisfaction frequencies for resource settings (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle the ‘NE’ in the right	89
Figure 4.18: Visitor’s satisfaction frequencies for social condition (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle the ‘NE’ in the right column)	90
Figure 5.1: Recreation motivation of the user groups (Question 7: How important are the reasons below to your visit to this park today? Please circle one relevant number to your answer)	96
Figure 5.2: “Mars likes leafy areas” (Participant 1)	97
Figure 5.3: (a) A kid hugging the Baby Gruffalo (Participant 5), (b) “Good fun building dens with the kids” (Participant 7)	100
Figure 5.4: “Cup of tea and social” (Participant 7)	101
Figure 5.5: “One of my favourite seats as it is not too low to sit on after I have finished my walk, including the easy access trail. Also, surrounded by wooded area “(Participant 3)	102
Figure 5.6: Temporary cafe has been set nearby the visitor centre and playground (Participant 7)	104
Figure 5.7: “Playground – Every time we come to Alice Holt, we end with a visit to the play areas and toilets” (Participant 8)	105
Figure 5.8: Affective attachment of the user groups (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)	106
Figure 5.9: Pond nearby picnic areas at Alice Holt Forest (Participant 2)	108
Figure 5.10: Place identity of the user groups (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)	109

Figure 5.11: Social bonding of the user groups (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)	111
Figure 5.12: People enjoying their lunch at the café (Participant 1)	112
Figure 5.13: People enjoying the Easy Access Trail on cycles (Participant 4)	113
Figure 5.14: Timberline trail house. Parents chatting trying to figure out how to get their children out of the playhouse (Participant 7)	113
Figure 5.15: Place dependence of the user groups (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)	115
Figure 5.16: “Baby Gruffalo – he also loves big one and sticks man” (Participant 8)	117
Figure 5.17: A mixture of user groups at play areas (Participant 1)	117
Figure 5.18: Recreation behaviour of the user groups (Question 10: The following questions are designed to understand your specific behaviour when using the park. Please circle on a scale of 1-7 on how you feel about the following behaviour)	121
Figure 5.19: Pictures of multiple user’s issues in forest park	125
Figure 5.20: Pictures of user's attitude in the forest park	127
Figure 5.21: Pictures of environmental issues in the forest	129
Figure 5.22: Visitor's satisfaction on resource setting (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle ‘NE’ in the right column).	132
Figure 5.23: Visitor's satisfaction on social condition (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle ‘NE’ in the right column).	133
Figure 5.24: “Fairy Throne and Ring where I used to bring Beaver and Cub Scouts to tell them about the forest.” (Participant 3)	135
Figure 5.25: (a) “Millennium oak planted by the Friends of Alice Holt in March 2000. 4 feet tall” (b) “Grown into a nice shaped tree” (Participant 3)	135
Figure 6.1: Outdoor recreational experience model	138
Figure 6.2: One-factor model	140
Figure 6.3: Second-order model of recreation motivation	140
Figure 6.4: Standardized coefficient for a one-factor model of recreation motivation	141
Figure 6.5: New one-factor measurement model of recreation motivation	142
Figure 6.6: Correlation between three factors in recreation motivation	144
Figure 6.7: Second-order measurement model	145

Figure 6.8: New second-order factor model of recreation motivation _____	146
Figure 6.9: One-factor model of place attachment _____	148
Figure 6.10: Second-order factor model of place attachment _____	149
Figure 6.11: Standardized coefficient for a one-factor model of place attachment _____	151
Figure 6.12: New model for a one-factor model of place attachment _____	152
Figure 6.13: Correlation between the first-order factors for place attachment _____	153
Figure 6.14: Second-order factor model of place attachment (A) _____	155
Figure 6.15: Second-order factor model of place attachment (B) _____	156
Figure 6.16: A new second-order factor model of place attachment _____	157
Figure 6.17: One-factor model of environmental concern _____	160
Figure 6.18: Second-order measurement model of environmental concern _____	160
Figure 6.19: Standardised coefficient for a one-factor model of environmental concern _____	161
Figure 6.20: New one-factor measurement model of environmental concern _____	162
Figure 6.21: The correlation between three constructs in environmental concern _____	163
Figure 6.22: Second-order factor model of environmental concern (A) _____	164
Figure 6.23: Second-order factor model of environmental concern (B) _____	165
Figure 6.24: Second-order factor model of environmental concern (C) _____	166
Figure 6.25: Second-order factor model of environmental concern (D) _____	167
Figure 6.26: Structural Model of Recreation Experience _____	170

List of Tables

Table 2.1: Classification of outdoor recreation activities _____	9
Table 2.2: New Ecological Paradigm Scale _____	20
Table 3.1: Attitudinal data _____	34
Table 3.2: Place Attachment Items used in the Survey Instrument _____	37
Table 3.3: Categorisation of photographs _____	44
Table 4.1: Respondent's profile _____	53
Table 4.2 Summary of party size for both study areas _____	55
Table 4.3: Distribution of respondents based on gender and activity _____	59
Table 4.4: Distribution of respondents based on the trip member and activity _____	59
Table 4.5: Descriptive data of recreation motivation for Alice Holt Forest and Haldon Forest Park _	62
Table 4.6: Descriptive data of place attachment for Alice Holt Forest and Haldon Forest Park ____	68
Table 4.7: Descriptive data of recreation behaviour for Alice Holt Forest and Haldon Forest Park _	73
Table 4.8: Descriptive data of environmental concern for Alice Holt Forest and Haldon Forest Park	77
Table 4.9: Descriptive data of importance of management, resource, and social settings of Alice Holt Forest and Haldon Forest Park _____	82
Table 4.10: Importance of management settings (Question 12: For each statement below, please circle one number on how important each aspect is to you as a visitor) _____	84
Table 4.11: Descriptive data of visitor's satisfaction of Alice Holt Forest and Haldon Forest Park __	87
Table 4.12: Visitor's satisfaction frequencies for management settings (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle the 'NE' in the right column) _____	88
Table 5.1: User group (survey questionnaire) _____	94
Table 5.2: Participant's profiles of the qualitative study _____	94
Table 5.3: Mean and Standard Deviation for recreation motivation of the user groups _____	98
Table 5.4: Mean and Standard Deviation for affective attachment of the user groups _____	107
Table 5.5: Mean and Standard Deviation for Place Identity _____	109
Table 5.6: Mean and Standard Deviation for Social Bonding _____	112
Table 5.7: Mean and Standard Deviation for Place Dependence _____	115
Table 5.8: Mean and Standard Deviation for Recreation Behaviour _____	118
Table 5.9: Mean and Standard Deviation for Visitor Satisfaction (Management Setting) _____	130
Table 5.10: Mean and Standard Deviation for Visitor Satisfaction (Resource Setting) _____	131

Table 5.11: Mean and Standard Deviation for Visitor Satisfaction (Social Condition) _____	133
Table 6.1: The values of Composite Reliability (CR) and Average Variance Extracted (AVE) of Recreation Motivation _____	143
Table 6.2: The values of CR and AVE of second-order measurement model of recreation motivation _____	147
Table 6.3: Statement of place attachment items _____	149
Table 6.4: The values of CR and AVE of a one-factor model of place attachment _____	152
Table 6.5: The values of CR and AVE of second-order measurement model of place attachment _	157
Table 6.6: Environmental concern items _____	159
Table 6.7: The values of CR and AVE of Environmental Concern _____	163
Table 6.8: The values of CR and AVE of Environmental Concern _____	165
Table 6.9: The values of CR and AVE of Environmental Concern (B) _____	168
Table 6.10: Factor loadings of other latent variables _____	168
Table 6.11: Summary of variables in the SEM _____	171
Table 6.12: Summary of assessment on the structural model _____	175
Table 6.13: Summary of results of hypotheses testing _____	179

Chapter 1

INTRODUCTION

1.1 Research Background

This thesis evaluates visitor experiences through participation in outdoor recreational activities in forest parks. England consists of forty forest parks managed by the Forestry Commission (recently renamed Forestry England) that offer a variety of activities, such as mountain biking, hiking, walking (including dog walking), picnicking among others. Previous studies on the impacts of outdoor recreation reveal the increasing number of visitors using the forest to perform their leisure activities, some of which contribute to the disturbance of flora and fauna. Visitor attitudes and behaviour play an important role in influencing the level of disturbance to the natural resources. Elands and Marwijk (2008) stated that park management strategies rarely prioritise the use of information in visitor experiences. Instead, they focus on visitor numbers, profiles and behaviour to manage the area. In addition, Eagles (2001, p.2) also mentioned that success in the provision of nature-based tourism is ultimately dependent upon both the 'level of environmental quality and suitable levels of consumer service'. Therefore, understanding the recreational experience of visitors, including the motivation, attachment to the forest, attitude-behaviour and satisfaction of the visitors, can provide information for the park manager to implement suitable management actions that complement their dual responsibilities of providing satisfying recreational experiences to their visitors and conserving the natural resources of the forest.

A key motivation for this study is the relative lack of empirical studies and published research articles in the field of outdoor recreation in the United Kingdom, particularly in the context of forest parks and natural areas. Most of the literature reviews on this topic are derived from the United States and Canada, while some further evidence has been produced by Scandinavian countries, such as Finland and Norway. Marzano and Dandy (2012, p.32) argue that "there is an urgent need for integrated interdisciplinary studies that link ecological

impact studies on flora and fauna with social data on recreationists' perceptions, attitudes, and behaviours and support for actions in managing recreational disturbance in the UK forest". Therefore, this research aims to seek an understanding of the social aspects which incorporates visitor's motivation, place attachment, attitude-behaviour and satisfaction for participating in outdoor recreational activities. Researching this topic will generate empirical data for the UK forest, particularly.

1.2 Research Objectives

The primary objective of this thesis is to evaluate four important recreational users' perspectives regarding the visitor experience in participating in outdoor recreational activities in the forest parks. These four elements are motivation, place attachment, attitude-behaviour, and satisfaction. The elements were chosen based on theories that have been adapted from psychological studies; these are The Theory of Planned Behaviour (Ajzen & Fishbein, 1985) and The General Theory of Motivation (Mannell & Kleiber, 1997). This research also attempts to evaluate the efficacy of the Outdoor Recreation Experience Model (OREM) in outdoor recreation management. The specific objectives are as follows:

- i. to examine the visitors' motivation for participating in outdoor recreational activities in the forest parks;
- ii. to explore the visitor's attachment to the forest park;
- iii. to identify visitors' attitude and behaviour regarding environmental disturbance and social issues in outdoor recreational settings; and
- iv. to investigate the relationship between socio-demographics, motivation, place attachment, environmental concern, recreational behaviour and visitor satisfaction in an outdoor recreational context using structural equation modelling (SEM).

1.3 Research Questions

The research questions listed according to the four specific objectives of the study.

Objective 1: To examine the visitors' motivation for participating in outdoor recreational activities in the forest parks

- a. What types of activities are offered in the forest parks, and who participates in these activities?
- b. What factors have influenced the visitors' decision to participate in their chosen outdoor recreational activities?

Objective 2: To explore visitor attachment to the forest park

- a. What type of place attachment relates to the visitors of the forest parks?
- b. What intensity of place attachment is expressed by the visitors of the forest parks?

Objective 3: To identify visitor attitude and behaviour on environmental disturbances and social issues in outdoor recreation settings

- a. What are the common environmental disturbance and social issues that have been occurring in the forest parks?
- b. How can visitors perform and respond to the environmental and social disturbance during their participation in recreational activities?

Objective 4: To investigate the relationship between socio-demographic characteristics, motivation, place attachment, environmental concern, and recreation behaviour and visitor satisfaction in the outdoor recreation context using structural equation modelling

- a. What is the relationship between socio-demographic characteristics, motivation, place attachment, behaviour, environmental concern and visitor satisfaction?

1.4 Hypotheses of the study

The fourth objective of this study is to assess the relationship between socio-demographic, motivations, place attachment, environmental concern, recreation behaviour, and visitor satisfaction in an outdoor recreation context using structural equation modelling (SEM). Hypotheses of the study are listed as follows:

- i. Influence of socio-demographic on recreational motivation and development of place attachment.

- H₁: Recreational motivation is significantly influenced by visitor socio-demographics.**
- H₂: Attachment to the forest park is significantly influenced by visitor socio-demographics.**
- ii. The relationship between recreational motivation and place attachment.
- H₃: Recreational motivation has a direct effect on place attachment.**
- iii. The relationship between environmental concern and recreational motivation and place attachment.
- H₄: Recreational motivation has a direct effect on environmental concern.**
- H₅: Place attachment has a direct effect on environmental concern.**
- iv. The influence of recreational motivation on attitudes toward behaviour, subjective norms and perceived behavioural control.
- H₆: Visitor attitude is significantly influenced by recreational motivation.**
- H₇: Subjective norms are significantly influenced by recreational motivation.**
- H₈: Perceived behavioural control is significantly influenced by recreational motivation.**
- v. The influence of place attachment on attitude toward behaviour, subjective norms and perceived behavioural control.
- H₉: Visitor attitude is significantly influenced by place attachment.**
- H₁₀: Subjective norms are significantly influenced by place attachment.**
- H₁₁: Perceived behavioural control is significantly influenced by place attachment**
- vi. The influence of environmental concern on attitude toward behaviour, subjective norms and perceived behavioural control.
- H₁₂: Visitor attitude is significantly influenced by the visitor's environmental concern.**
- H₁₃: Subjective norms are significantly influenced by the visitor's environmental concern.**
- H₁₄: Perceived behavioural control is significantly influenced by the visitor's environmental concern.**

vii. The relationship between satisfaction and attitude toward behaviour, subjective norms and perceived behavioural control.

H₁₅: Visitor attitude toward a behaviour has a direct effect on satisfaction.

H₁₆: Subjective norms have a direct effect on satisfaction.

H₁₇: Perceived behavioural control has a direct effect on satisfaction.

viii. The relationship between satisfaction and behavioural intention and future behaviour.

H₁₈: Satisfaction has a direct effect on behavioural intention.

H₁₉: Satisfaction has a direct effect on future behaviour.

ix. The relationship between future behaviour and place attachment.

H₂₀: Future behaviour directly affects the development of place attachment of the visitor.

1.5 The contribution of this study

Several researchers have identified the importance of understanding the visitor's experience in order to improve recreation management. Some recommendations made by previous studies have been to research the identification of place meaning and attachment between different user groups in settings other than national parks (Halpenny, 2006). Geisler et al. (1977) also suggested conducting a study on the development of a visitor's environmental concern using their demographic characteristics rather than the type of outdoor recreational participation. An additional motivation for this study is the lack of existing research in this area within UK forests. Moreover, recently, the Environment, Food and Rural Affairs (EFRA) Committee launched an inquiry into the role of tourism in supporting rural growth in England, with outdoor recreational activities as one of the branches in the tourism sector that could potentially help economic growth in rural areas¹.

¹ Link: <http://www.parliament.uk/business/committees/committees-a-z/commonsselect/environment-food-and-rural-affairs-committee/news-parliament-2015/rural-tourism-inquiry-launch-16-17/>)

This research will generate original empirical data that can be used by park managers to enable them to fulfil the recreational needs of their visitors, minimise conflict between user groups, maximise recreation satisfaction of the visitors, improve facilities and services, and protect natural resources from massive degradation. Specifically, this research provides information to help park managers and authorities to understand better the attitude-behaviour relationship, and how behaviour can be shaped to be more ecologically accommodating and assist policymakers and environmental managers in developing more sustainable and eco-friendly recreational resource management plans. From there, marketing strategies can be improved to capture more visitors from a variety of backgrounds. Lastly, the theoretical contribution will be in evaluating the extent to which the Theory of Planned Behaviour and The General Theory of Motivation can be combined into an adequate theory for outdoor recreational management, especially to understand the overall experience of the visitors who have visited the forest parks.

1.6 Thesis structure

The following chapter outlines the literature on outdoor recreational experiences and theoretical framework for this study. The methodology is elaborated in Chapter 3. Chapter 4 follows, documenting the results of the descriptive analysis which distinguished the data from both forest parks – Alice Holt Forest and Haldon Forest Park. The results from exploring the outdoor recreational experience of user groups are presented in Chapter 5. Chapter 6 presents an analysis of the relationship between variables in the Outdoor Recreation Experience Model (OREM), using structural equation modelling. The final chapter (Chapter 7) includes a summary of the research findings, including a section on the efficacy of the Outdoor Recreation Experience Model (OREM). A conclusion, research implications, and limitations are elaborated upon in the same chapter.

Chapter 2

LITERATURE REVIEW

This chapter covers the literature on outdoor recreation and related topics such as recreation experience and theoretical frameworks that have been applied in outdoor recreation studies. The first part of this chapter introduces the background of outdoor recreation, including its definition, an explanation of the importance of the subject, and a general description of its key concepts., follows by the literature review on outdoor and resource management topic. A brief review of relevant literature on the aspects of outdoor recreation experience is covered in the third part of the chapter. The theoretical framework combining ideas from various disciplines adopted in outdoor recreation studies is discussed in the fourth section. A summary is also presented at the end of this chapter.

2.1 Background on outdoor recreation

Nature always has several extraordinary experiences to offer nature lovers. Among them are the exciting adventure, beautiful scenery, peaceful and relaxing surroundings and even new knowledge about nature. Hence, natural places have attracted much attention from people from all walks of life, where they seek countryside, retreats, and natural environment for recreation and leisure purposes. This voluntary participation in a free-time activity that occurs in the outdoors and embraces the interaction of people with the natural environment is referred to as 'outdoor recreation'. Researchers in leisure studies have used several different definitions of outdoor recreation. Plummer (2009, p. 20-23) in his book, "Outdoor Recreation: An Introduction" lists a series of outdoor recreation definitions established by few sources, based on seven main characteristics of outdoor recreation: 'enjoyable', 'occurring outdoors', 'appreciation of natural environment', 'involving activities', 'knowledge', 'use of natural environment', 'occur during leisure', 'occurring in man-modified environment', and 'interaction with the natural environment'. He then summarises outdoor recreation as "voluntary participation in a free-time activity that occurs in the outdoors and embraces the interaction of people with the natural environment" (Plummer, 2009, p.18).

In addition to the definitions, Jensen (1995) developed five purposes and benefits of outdoor recreation. First, outdoor recreation appears to be a good driver to develop a sense of appreciation of nature. This particularly enhances knowledge through direct experience, which leads to an awareness of the natural environment. 'Direct contact' with nature through participation experience was proved to be effective in changing peoples' behaviour toward the environment, rather than using indirect experiences (Rajecki, 1982). Outdoor recreation also acts as a medium for people to derive their personal pleasure and get active for physiological benefits. A study has found that viewing outdoor scenes produced positive feelings and reduced symptoms related to stress, including blood pressure, skin conductance, and muscle tension (Mace et al., 2004). The fourth objective of outdoor recreation is to build positive behavioural patterns of the participant. A study on adolescents participating in an adventure trip revealed that the participants received positive impacts on their self-perception, which lead to the alteration of their behaviour (Garst et al., 2001). This finding has shown outdoor recreation helped in developing peoples' attitude of respect, sincerity, and consideration not only to themselves but also toward other people especially park managers, and participants sharing the same area of activity (Jensen, 1995). The last of Jensen's purposes of outdoor recreation is to create environmental stewardship among participants, who are responsible for protecting natural resources through protection and sustainable use. However, to encourage people to have a sense of stewardship immediately after their first involvement in outdoor recreation activities seems impossible. They would need to feel 'belonging to' something that gives meaning to their lives before becoming pro-environmental. Bricker and Kerstetter (2000) carried out a study to evaluate the sense of place attachment among white water boaters at South Fork of the American River. The respondents were found to have feelings of meaning and belonging to the natural settings: to them, the place created a cognitive calming effect and had a positive effect not only on their health but also to their attitudes and behaviour to the environment.

Table 2.1: Classification of outdoor recreation activities

Classification of activities and Author	Definition	Activities
Appreciative Hendee (1969)	Enjoy the natural environment without altering it through self-propelled, non-mechanised activities	Hiking, camping, visiting state parks and scenic areas, photography, canoeing, cross-country skiing, bird watching, scenic tours, visits to the beach, sightseeing, walking for pleasure
Consumptive Hendee (1969)	Take something from the environment for own purposes	Fishing and hunting
Abusive Geisler, Martinson, & Wilkening (1977)	Results in environmental degradation, especially in semi-remote areas	Snowmobiling, dune bugging, motorcycling, trail biking, all-terrain vehicle (ATV)
Mechanised Jackson (1986)	Similar to the definition of abusive activities, but utilised a different term and specified different activities	Motor boating, snowmobiling, trail biking
Appreciative to slight resource-utilisation Theodori, Luloff, & Willits (1998)	Enjoy the natural environment without altering it through self-propelled, non-mechanised activities	Hiking/backpacking, camping, skiing (cross-country or downhill), mountain biking, picnicking, bird watching
Moderate-to-intensive resource-utilisation Theodori, Luloff, & Willits (1998)	Take something from the environment for own purposes	Hunting, fishing, riding an off-road vehicle

Adapted from Berns, and Simpson (2009).

Outdoor recreation offers various ranges of activities, from passive (e.g. bird watching) to active activities (e.g. mountaineering). Previous researchers classified the activities, with quite specific descriptions of each (Table 2.1). The most commonly used in outdoor recreation studies are ‘appreciative’ and ‘consumptive’ – developed by Hendee (1969), and ‘motorised’, proposed by Jackson (1986). Later, Theodori et al. (1998) renamed ‘appreciative’ and ‘consumptive’ to ‘appreciative to slight resource utilisation’, and ‘moderate-to-intensive resource utilisation’ respectively as they argued that all outdoor activities contribute to

environmental impacts, without discriminating against activities with higher user impact. However, recent publications are seen to prefer to use the old classification (Thapa, 2010; Tarrant & Green, 1999). The classification of outdoor recreation activities has been widely used in environmental studies. Researchers define people who prefer appreciative activities usually hold a pro-environmental attitude rather than those who prefer consumptive and motorised activities. However, several studies found that there was no relationship between environmental attitude or behaviour and classification of outdoor recreation activities (Theodori et al., 1998; Tarrant & Green, 1999; Thapa & Graefe, 2003). These researchers suggest that future research could account for each activity as analysing participants in each may offer a comprehensive outlook toward that specific activity rather than an activity cluster group. On the other hand, appreciative outdoor recreation activities were found as a mediator between the environmental attitude-behaviour relationships which helps in improving the prediction of responsible environmental behaviour (Tarrant & Green, 1999).

2.2 Outdoor Recreation and Resource Management

A sustainable management of forest and natural places is essential to protect the irreplaceable natural resources that have been used to provide recreation opportunities, protecting natural and cultural resources, and providing economic benefits to local people by offering jobs and tourism (Manning & Anderson, 2012; Fefer et al, 2018). Nowadays, places like forests used for recreational purposes are facing degradation to its resources. The impacts of outdoor recreation on the forest and environment are getting more serious and anticipated to get worse with increasing numbers of recreational tourists (Hammitt et al, 2015). Big questions regarding the outdoor recreation impacts are that on “How much change can occur before it becomes too much?” or, “What is the level of unacceptable change?” (Stankey et al, 1985). This issue has challenged the park managers to direct balanced management to natural resources, accommodating demands by the visitors, and maintain the quality of visitor experiences. Hence, it is demanding to implement effective recreation resource management for the forests. Recreation resource management, particularly in the forest area, is primarily focusing on the strategies to conserve the natural resources of the forest such as soil, vegetation, water and wildlife, implementing effective management plans in producing forest

products and also providing recreation opportunities for people to experience nature. There are two fields of study closely related to the outdoor recreation and resource management, which are recreation ecology, and visitor management.

Recreation ecology is a field of study that examines, assesses, and monitors the impacts of visitors, typically on the protected natural areas (Hammit et al, 2015; Leung & Marion, 2000; Liddle, 1997). It is also described as a study of ecological interrelationship between humans and the environment in the contexts of recreation and ecotourism. The information obtained through recreation ecology will help management of recreational forests to identify and evaluate the impacts on resources. It will enable park managers to handle problematic areas with regard to the prevention and mitigation of impacted sites. Besides, the information also helps management in solving practical problems such as soil erosion, multiple and braided trails, and excessive muddiness (Marion, 2016; Leung & Marion, 1996). Recreation impact management is an important part of recreation ecology, which offers an effective management approach in order to protect natural resources from harmful effects, resulting from the provision of recreation to visitors. The studies conducted in relation to recreation ecology have shown that perceived impacts on natural resources can reduce the quality of experiences of visitors (Marion et al, 2016; Roggenbuck et al., 1993). Besides, visitors are sensitive to impacts caused by inappropriate behaviours such as littering in the natural areas; these impacts can also cause damage to trees, particularly resulting in unsightly physical appearance such as badly exposed tree roots. In addition, the visitors of a wildland rated two impacts on the ground conditions as important determinants of their satisfaction while pursuing recreational activities: vegetation loss and barrenness of the ground on campsites (Hollenhorst & Gardner, 1994). The proliferation and high densities of trails and campsites in popular locations give the appearance of the forest like “soiled/muddy” and highly “used”. Visitors would perceive the natural conditions to be out of alignment with the main objective of natural areas, which is a provision of recreational use in harmony with nature. The impacts of recreation such as trail rutting, and excessive muddiness can cause visitor dissatisfaction and unpleasant experiences because of increased difficulties in hiking and trekking. Such impacts may also jeopardise the lives of visitors while they are carrying out recreational activities (Marion et al, 2016; Leung & Marion, 2000). The trail and campsite problems may

raise issues of carrying capacity and preventive or corrective actions that need to be implemented (Diamantis, 2004).

Visitor management in a context of parks and recreation management covered on the management plan to control the visitor's attitude and behaviour to the resources, with the aim to maintain the positive quality of experience of the visitors. Apart from the ecological impacts to the natural resources, social impacts from outdoor recreation were apparently important to be addressed in outdoor recreation and resource management. Outdoor recreation involves people, and the social environment in which recreation takes place has a good deal to do with the level of satisfaction experienced (Ramkissoon et al, 2014; Pigram & Jenkins, 1999). Hall and Page (1999) and Liddle, (1997) argued the social impact of recreation and tourism as the way those activities affect changes in collective and individual value systems, behaviour patterns, community structure, lifestyle and the quality of life. There are three important aspects related to the development of social impacts: crowding issues, conflict, and visitor use. Manning (1999) identified crowding as one of the most widely investigated issues. Crowding is distinct from the level of use at a site. Use level is a physical concept relating to the number of people per unit of space. It is strictly neutral and suggests no psychological or experiential evaluation or interpretation. Crowding, on the other hand, has a psychological meaning; it is a negative and subjective evaluation of a use level. Thus, use level may increase to a point where it is perceived to interfere with one's activities or intentions, but only at this point does crowding occur (Nickerson, 2016; Manning, 1999). Crowding is a concern for managers because it has been shown to directly relate to decreased satisfaction in wilderness settings (Schultz & Svajda, 2017; Manning, 1999; Pigram & Jenkins, 1999). The inverse relationship between crowding and satisfaction is different from many other recreational activities in which crowding or large numbers of people are actually desirable in events such as festivals and musical concerts. On the other hand, conflict is defined as a condition that exists when a person, or a group of people, experience or perceive an interference of goals or the likelihood of incompatible goals, as a result of another person's or group's actions, threat of action, or personal/group attributes (Ewert et al., 1999). Management is often involved in recreation conflict, both as an intermediary between individuals and sometimes even as a causal agent. Ewert et al., (1999) identify that managers

require additional information and solutions to address conflicts. Hammitt and Schneider (2000), have proposed a model of the conflict resolution process for managers, involving the three steps of analysis, confrontation, and resolution. Besides, using a participatory mapping could help in managing the conflict of environmental and natural resources, particularly in forest areas (Brown et al, 2017). Apart from crowding and conflict, visitor use is another kind of social impact derived from outdoor recreation. Visitor use is comprised of six main aspects: use distribution, types of user groups, party size, user behaviour, social group and place attachment, and mode of travel. It is vital to take these aspects into consideration in managing the potential social impact on visitor impact management.

Implementing effective management strategies are warranted in order to accomplish the dual mandate for the park managers. Identifying the carrying capacity of a place, performing adaptive co-management, and conducting “management-by-objectives” are some of the strategies that can help in achieving the objective of outdoor recreation and resource management. The concept of carrying capacity mainly focus on the relationship between visitor use and the environmental condition (Marion, 2016). It is a measure based on three categories: biophysical capacity, social capacity, and managerial capacity. According to Fefer et al., (2018, p.1562), “Biophysical capacity refers to the ultimate limits to growth as constrained by environmental factors” (Hayden, 1975). Social capacity refers to the notion that increasing recreation would cause detrimental impacts on visitor experience (Manning & Lime, 1996). Managerial capacity refers to the ultimate limits to growth as constrained by managerial capabilities and actions (Wagar, 1964)”. The number of users, types of activities, and the kind of resources are among the information that need to be addressed in measuring a carrying capacity of a particular place. It is related to the idea of Limit of Acceptable Change (LAC) framework. The LAC framework emphasis degree of change or impacts that can be tolerated for the resources in consequence of recreational activities performed towards the resources. Once the degree of acceptable has been reached, the resources will not survive. Hence, it is very important to understand the process of outdoor recreation in order to recognise the negative impacts of human activities on the natural resources. The immediate action can help to avoid the massive degradation that can cause harm to people and the environment in the future. The “management-by-objectives” is another type of strategy that

implement based on the problem or issues arise in outdoor recreation and resource management (Manning & Anderson, 2012). Few of them are the Recreation Opportunity Spectrum (ROS) and Visitor Experience and Resource Protection (VERP). The ROS is an evaluative tool that helps in identifying best practices in managing recreational resources (Nilsen & Tayler, 1997). Offering a diversity of recreation opportunities in different type of settings (ranging from primitive to urban settings) is the main function of the ROS (Clark & Stankey, 1979; Driver, 1989). This wide range of settings is important to provide visitors with choices for constructing their own quality experience (Driver et al., 1991; McCool et al., 2007; Manning, 2011). On the other hand, assessment using the VERP is undertaken in four phases - build the foundation, define existing resources and visitor use conditions, prescribe a range of visitor experience and resource conditions, and lastly, conduct a monitoring and management programme (McCool et al., 2007). Using the VERP is a practical framework that requires park managers to be more proactive especially in defining the range of conditions to evaluate the limit of acceptable change of the resources. Besides, identifying the range of visitor experience is also challenging. Hence, the process of outdoor recreation experience of the visitors needs to be explored in assisting the park managers to enhance their knowledge about the visitor experience.

2.3 Important Aspects of Outdoor Recreation Experience

2.3.1 Visitor's Motivation in Outdoor Recreation

Motivation is defined as “a state of need, a condition that exerts a push on the individual towards certain types of action that are seen as likely to bring satisfaction” (Moutinho, 1987, p.16). In the context of outdoor recreation, motivation can be referred to the reason why people visited natural environments for recreation (Knopf, 1987). Motivation can be explained by several theories such as Maslow's hierarchy of needs model (1970), the leisure motivation model (Iso- Ahola, 1982) and the push and pull theory (Dann, 1977). According to the push and pull theory, two main concepts play a significant role in persuading an individual to perform the activity. The concept of ‘pull’ refers to the fact the recreational sites are designed such a way that their attributes will attract visitors (e.g. beautiful landscape, special features), while the concept of ‘push’ relates to internal and emotional aspects of an

individual (e.g. desire to escape from busy environment and seek for a peaceful and relaxing environment) (Dann, 1977; Uysal & Jurowski, 1994). Most of the researchers in leisure studies use a master list of items to identify the motivation behind the recreation called Recreation Experience Preferences (REP) (Budruk & Stanis, 2013). This scale was developed by Driver (1983) within the context of motivation that consists of 21 benefit dimensions such as 'escape physical pressure', 'enjoying nature', 'learning', and many more. The REP scale has been systematically utilised to understand nature-based and outdoor recreation motivations (Kil et al., 2012; Kyle et al., 2014). This scale also can be used to segment users into groups based on their motive for visiting the forest park. The reliability and validity of the REP scale demonstrated by Manfredo et al., (1996) indicates that the REP scale is useful for understanding the psychological outcomes on human interaction with the environment within the outdoor recreation context. Past studies reported that recreation motivation has a direct relationship with the environmentally responsible behaviour (Kil et al., 2014) and place attachment (Kyle et al., 2004; Halpenny, 2006; Anderson & Fulton, 2008; Budruk & Stanis, 2013). The information allows managers to understand more about the user's demand and experience that will help them to provide excellent facilities and services to meet the needs of the visitors.

2.3.2 Visitor's Attachment in Natural Environment and Outdoor Settings

Place attachment can be defined as a positive emotional bonding between people and a particular place (Shumaker & Taylor, 1983; Hummon, 1992; Low, 1992; Hidalgo & Hernandez, 2001; Stedman et al., 2004; Mazumdar, 2005; Smaldone et al., 2008). This concept has contributed useful insights especially in understanding an individual's attitude and behaviour. Previous studies have found that individuals are more concerned about their favourite places and willing to contribute their energy and money to avoid changes to these places (Gunderson & Watson, 2007; Williams, 2008). In addition, they are more likely to act in protective ways about places that they are attached to (Vaske & Kobrin, 2001). Recently, many researchers in leisure studies have applied the place attachment theory to identify the relationship between visitors and recreational or tourism settings (Hidalgo & Hernández, 2001; Dorwart et al., 2007; Gross & Brown, 2008; Budruk & Stanis, 2013; Ramkissoon et al.,

2014). As mentioned by Manzo (2008), investigating the relationship between visitor and place may provide a good understanding of types of experiences that make people value certain places and what made the particular places special for certain people but not to the others. This information will benefit natural resource management to be administered effectively while at the same time providing an enjoyable condition for the visitors to experience.

Four types of attachment were used to examine the association between visitors and forest parks in this study: place identity, place dependence, affective attachment, and social bonding (Williams & Roggenbuck, 1989). Each of these elements carried different meanings of the relationship. Place identity is a symbolic connection an individual share with a place (Stedman, 2002) reflecting their own identity (Ramkissoon et al., 2014). A strong identity usually develops when the place provides its uniqueness or facility's distinctiveness from other places (Twigger-Ross & Uzzell, 1996). Place dependence refers to an individual bond with the physical characteristics of a place. It is a functional attachment to a specific place reflecting the importance of the setting in providing facilities to meet their visitation goals (Kyle et al., 2004; Williams et al., 1992). According to Kaplan and Kaplan (1989), a visitor may develop an attachment to a place because it satiates specific needs and serves a functional purpose. Meanwhile, affective attachment involves the emotional bond people share with a place largely influenced by the affective component (Tuan, 1977; Ramkissoon et al., 2012). The fourth type of place attachment is social bonding. It represents the development of communal bonds between people in the same place (Scanell & Gifford, 2010; Ramkissoon et al., 2014). Hidalgo and Hernandez (2001) found that positive bonds between people can be stronger than the attachment between people and the physical attributes of a place.

There are quite extensive researches investigate relationship between place attachment and other variables such as recreation experience preferences (Warzecha & Lime, 2001; Kyle et al., 2004; Halpenny, 2006; Budruk & Stanis, 2013), activity involvement (Kyle et al., 2003), satisfaction (Ramkissoon et al., 2014), and visitor behaviour (Ramkissoon et al. 2013) and many more. Quantitative research in leisure studies mainly use the place attachment scales developed by Williams and Roggenbuck (1989), while qualitative studies

use an interview or photo-based methods such as photo elicitation (Loeffler, 2004), and visitor employed photography (Stedman et al., 2014) as the methods to examine place attachment. Overall, the primary characteristic of place attachment is the desire to maintain closeness to the object of attachment (Ainsworth & Bell, 1970; Bowlby, 1980; Hidalgo and Hernández, 2001). Besides place attachment, there are several more terms to consider with a similar meaning such as community attachment (Kasarda & Janowitz, 1974), sense of community (Sarason, 1974), and sense of place (Hummon, 1992).

2.3.3 Participant's Behaviour on Environmental and Social Issues within Outdoor Recreation Context

Attitude-behaviour studies are relevant to this research as they can help to investigate how people act in certain circumstances. "Attitudes can be described as a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object" (Ajzen & Fishbein, 1975, p.6). "The best predictors of a person's planned, deliberate behaviours are the person's attitudes toward specific behaviours, subjective norms, and perceive behavioural controls" (Aronson et al., 2001, p.244). Many theoretical frameworks and models have been developed to increase understanding of attitude-behaviour relationships, especially in social psychology and environmental studies. The most influential theories are the theory of reasoned action (Fishbein & Ajzen, 1975) and its extended theory, theory of planned behaviour (Ajzen, 1985). This is because these theories provide mathematical equations to measure the relationships between attitude-behaviour, which helps researchers to produce empirical evidence of the research findings (Kollmuss & Agyeman, 2002). Also, the new ecological paradigm (NEP) provides a measuring scale in predicting pro-environmental behaviour on the individual (Dunlap et al., 2000).

One of the earliest theories used in recreation management was the theory of reasoned action (TRA), developed by Fishbein and Ajzen in 1975. As stated in TRA, "A person's intention is a function of two basic determinants, one personal in nature and the other reflecting social influence" (Ajzen & Fishbein, 1980, p.6). Personal factors refer to attitudes toward the behaviour, which means a personal evaluation, either positive or negative, on the expected outcome of the behaviour (Ajzen & Fishbein, 1980). On the other hand, normative

beliefs represent an individual's perception toward what surrounding people think about his or her actions and whether he or she should perform such behaviour (Ajzen & Fishbein, 1980; Ong & Musa, 2010). This factor is also referred to as 'subjective norms'. Thus, TRA proposed a person will be likely to undertake certain behaviours when he or she has a positive evaluation of it, and other surrounding people think the individual should perform the behaviour (Ajzen & Fishbein, 1980). However, this theory did not include the importance of social factors- which can also be a determinant for individual behaviour (Ajzen, 1991; Werner, 2004). Later, Ajzen (1985) developed the theory of planned behaviour (TPB), which is an extension of TRA (Figure 2.1). TPB includes perceived behavioural control (PBC) as one of the other determinants in the structure of the previous theory. PBC can be defined as an individual perception of whether it is easy or difficult to perform a specific behaviour. This factor can influence behaviour directly and indirectly through intention (Ajzen, 1991). According to TPB, human action is guided by three kinds of considerations: beliefs, about the likely consequences of the behaviour (behavioural beliefs), beliefs about the normative expectations of others (normative beliefs), and beliefs about the presence of factors that may further or hinder the performance of the behaviour (control beliefs). In brief, the more favourable the attitude and subjective norm, and the greater the perceived control, the stronger a person's intention to perform the specific behaviour (Hrubes et al., 2001).

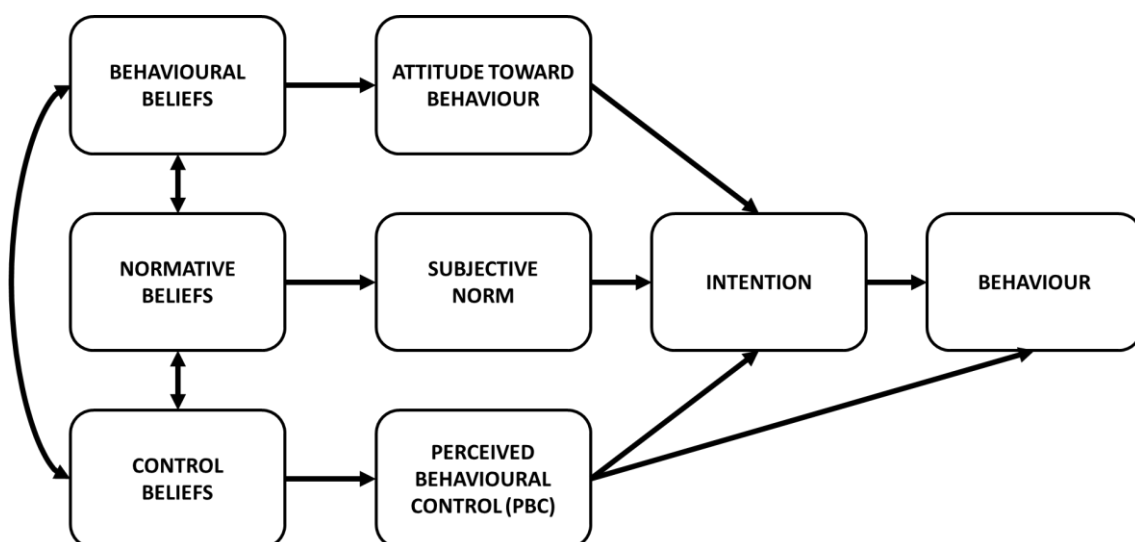


Figure 2.1: Theory of planned behaviour

Source: Ajzen, 1991

Armitage and Conner (2001) conducted a meta-analysis study to determine the predictive validity of TPB, and the results show that TPB explains 39% of the variance of behavioural intention and 27% of the actual behaviour. The result indicates the efficiency of TPB to explain human behaviour, which has resulted in numerous researchers using TPB in predicting pro-environmental behaviour. For example, research on water saving (Harland, et al., 1999; Trumbo & O'keefe, 2001; Lam, 2006), recycling (Boldero, 1995; Chan, 1998; Cheung & Chan, 1999; Chu & Chiu, 2003), green consumer behaviour (Chan & Lau, 2002), and using unbleached papers, energy-saving light bulbs, and reducing meat consumption (Harland et al., 1999). Hrubes et al. (2001) conducted a study to predict hunting intention and behaviour on 727 individuals in Vermont. The result showed that attitudes toward hunting, subjective norms and perceptions of behavioural control were significant determinants of intentions, and the intentions were correlated strongly with self-reported behaviour. Their finding also provides evidence to support a value-attitude-behaviour cognitive hierarchy model, where "values are viewed as indirectly related to behaviour, while the association between attitudes and behaviour is more direct" (Bjerke et al., 2006. p.116). Wildlife-related value orientations and fundamental life values were modestly correlated with behaviour, but these relations were primarily mediated by beliefs, attitudes, and intentions explicitly dealing with the behaviour of hunting. These findings were found to be consistent with the results of the previous study, where attitude acts as a mediator that influence the wildlife-related value orientations of intentions (Fulton et al., 1996).

Besides using mediator and mediation effect in TPB to explain human behaviour, there were attempts to integrate a few models in searching for a complete understanding of the topic. In one example, Ong and Musa (2010) tested the applicability of two behavioural theories, TPB and NAT (norm activation theory) on both domestic and international scuba divers at four islands in Malaysia. The researchers included personal norms, which is derived from NAT to act as a mediator between subjective norms and underwater behaviour. The findings supported the hypotheses where subjective norms have a positive relationship with personal norms, and partial mediation is proven because subjective norms influence responsible underwater behaviour even when the effect of PNs is accounted for. Even though TPB has been widely used to study human behaviour, there is a limitation noticed in theory.

Werner (2004) pointed that there may be a substantial gap of time between assessment of the behavioural intention and the actual behaviour being assessed and that in that particular time, the individual’s intention might change. However, none of the literature has overcome this paucity.

The new environmental paradigm was developed by Dunlap and Van Liere in the 1970s. It was widely used as a measuring scale to evaluate a set of human beliefs and attitudes toward the natural environment (Kil et al., 2014). NEP consists of 12 Likert items, measuring three main facets of environmental attitudes: the fragility of natural balance, the reality of limits to growth, and anti-anthropocentrism. Later in 2000, Dunlap redesigned the first NEP scale into the NEP-revised scale, which is also known as the new ecological paradigm. The new NEP consisted of 15 items, covering five main topics; the three facets from the original NEP, rejection of exemptionalism, and the possibility of an ecocrisis (Dunlap et al., 2000). These items are measured using five Likert-scales: totally agree, partly agree, neutral, partly disagree, and totally disagree. The researchers conducted a mail survey in 1990 to indicate the pattern of pro-environmental behaviour among Washington State residents for the past 14 years (where the original NEP used) and to test the applicability and validity of the revised NEP. They found that there is modest growth in pro-NEP response from the respondents. They also measure the predictive validity of the new NEP in the same research and conclude that it is appropriate to use the new set of 15 items designed to measure endorsement of an ecological worldview and use it as a stand-alone scale. The new scale has been utilised in varied disciplines such as psychology, sociology, and geography with various scale dimensions (e.g. Dunlap et al., 2000; Ewert et al., 2005; Kil et al., 2014).

Table 2.2: New Ecological Paradigm Scale

Five main facets in NEP	Questions
The reality of limits to growth	We are approaching the limit of the number of people the earth can support The earth has plenty of natural resources if we just learn how to develop them The earth is like a spaceship with very limited room and resources
Antianthropocentrism	Humans have the right to modify the natural environment to suit their needs

	Plants and animal have as much right as a human to exist Humans were meant to rule over the rest of nature
The fragility of nature's balance	When humans interfere with nature, it often produces disastrous consequences The balance of nature is strong enough to cope with the impacts of modern industrial nations The balance of nature is very delicate and easily upset
Rejection of exemptionalism	Human ingenuity will ensure that we do not make the earth unlivable Despite our special abilities, humans are still subject to the laws of nature Humans will eventually learn enough about how nature works to be able to control it
The possibility of an ecocrisis	Humans are severely abusing the environment The so-called "ecological crisis" facing humankind has been greatly exaggerated If things continue on their present course, we will soon experience a major ecological catastrophe

Source: Dunlap et al. (2000)

Bjerke et al. (2006) conducted research using NEP to ascertain the association between environmental attitudes and interest in 15 outdoor recreation activities in Norway. They received an 84% response rate (n = 2900) using the telephone and postal questionnaires. The results showed that respondents agree that the balance of nature is delicate, that humans severely abuse the environment and that plant and animals have as much right as humans to exist. Another significant finding was that the post-secondary education level was not related to higher NEP scores (Johnson et al., 2004). This finding supported a review where increases in knowledge and awareness did not lead to pro-environmental behaviour (Kollmuss & Agyeman, 2002). The NEP revised has demonstrated an improvement of the original scale in several aspects; (1) It taps a broader range of facets of an ecological worldview, (2) it offers a balanced set of pro- and anti-NEP items, and (3) It removed outmoded terminology in some of the original scale's items (Dunlap et al., 2000). However, future research is needed to compare the degree to address the issue of the revised NEP scale's dimensionality, including which resulting belief systems influence a range of environmental attitudes, beliefs, and behaviour.

2.3.4 Visitor's satisfaction

Visitor satisfaction is another important concept in outdoor recreation studies. It is commonly used as a measurement of recreation quality, that provides essential information to the park and forest manager on how well a recreational site is currently meeting visitors' needs and preferences. Manning (1999) defined satisfaction as the congruence between expectations and outcomes. Since tourism is to some extent, overlapping with outdoor recreation context, previous literature adopts a definition of tourist satisfaction in the outdoor recreation studies. "Tourist satisfaction is a function of tourist product performance, specific expectations, and expectancy confirmation or disconfirmation" (Moutinho, 1987, p.34). Mazursky (1989) studied past experiences and how these experiences contribute to future tourism decisions. He states, "That this analysis implies that the traditional expectations-disconfirmation satisfaction process could not be studied as a closed independent system. The interaction and effects of prior experiences and norms on these factors have to be taken into account to improve the understanding and predictions of choice decisions" (Mazursky, 1989, p.336). Three significant challenges need to be tackled by the park managers in providing a high quality of recreation opportunities (McCool, 2002). They are mapping and measuring the visitor experience and their expectations, linking those expectations to the attributes that are needed to provide them, and the need to balance the relationship between the natural environment and supporting recreational infrastructure. (O'Neill et al., 2010). Park facilities are among the most important aspects that influence visitor's satisfaction. Some of them are park cleanliness especially the washrooms, park maintenance, behaviour of park personnel, and range of activities (Hammit et al., 1996; Novatorov et al., 1998; Fletcher & Fletcher, 2003). Managers of natural parks should take visitor satisfaction as their primary goal in managing recreation resource including providing adequate facilities to satiate the visitors (Lee et al., 2004). Visitor satisfaction was found to have a strong relationship with place attachment (Stedman, 2002; Halpenny, 2006; Ramkissoon et al., 2013). This supports the argument that when the visitor satisfied with their visit to a place, they are more likely to revisit the place in the future which further develop an attachment to the place. This also denoted that visitor satisfaction effectively predicts future behaviour (Lee, 2009). Lee et al. (2012) conducted a study on festival satisfaction and found

that visitor satisfaction had a positive effect on festival attendee's place dependence. In brief, any activities, facilities of environment that increase visitor satisfaction will lead to the attachment (Sivalioğlu & Berköz, 2012). Visitor satisfaction can be a medium to increase the number of visitors and level of visitation to natural settings through word-of-mouth endorsements (Okello & Yerian, 2009) and visitor loyalty programme (Chen & Tsai, 2007). In brief, ongoing research focusing on the visitor expectations, the outcomes they seek and ultimately visitor satisfaction with the environment, service and support facilities offered is paramount (O'Neill et al., 2010).

2.4 Theoretical Framework

Outdoor recreation is developed as one of the areas in leisure studies, apart from leisure, sport and tourism. Outdoor recreation research has been frequently criticised for lacking a theoretical framework and conceptualisation scheme (Hendrick & Burdge, 1972; Smith, 1975; Manning, 2000). Researchers adopted relevant theory and concept from other disciplines such as social science, geography, psychology, sociology, environmental science and also economic — for example, outdoor recreation research uses theories from social-psychological study to explain individual attitude and behaviour: the theory of reasoned action (Ajzen & Fishbein, 1975), theory of planned behaviour (Ajzen, 1985), model of responsible environmental behaviour (Hines et al., 1986), altruism theory (Schwartz, 1977), and ecotourism behavioural model (Lee, 2007). In brief, most common outdoor recreation studies use social-psychological studies to explain social context (visitors), while adapting concepts from environmental research to discuss the ecological aspects. This research developed a theoretical framework by integrating two bodies of theory: The General Theory of Motivation, and the Theory of Planned Behaviour. According to the General Theory of Motivation, visitors' motivation to perform an activity will shape their behaviour during their participation in recreational activities. For example, visitors with a motivation to appreciate nature, usually will perform pro-environmental behaviour during the visit. If their experience meets their expectation in appreciating nature during the visit, satisfaction will be achieved. Hence, behaviour is an important element to predict satisfaction. In the event of unsatisfactory experience, individual will probably go through the 'feedback' process by

repeating the similar or different motivation and alteration in behaviour sometimes needed to produce satisfaction.

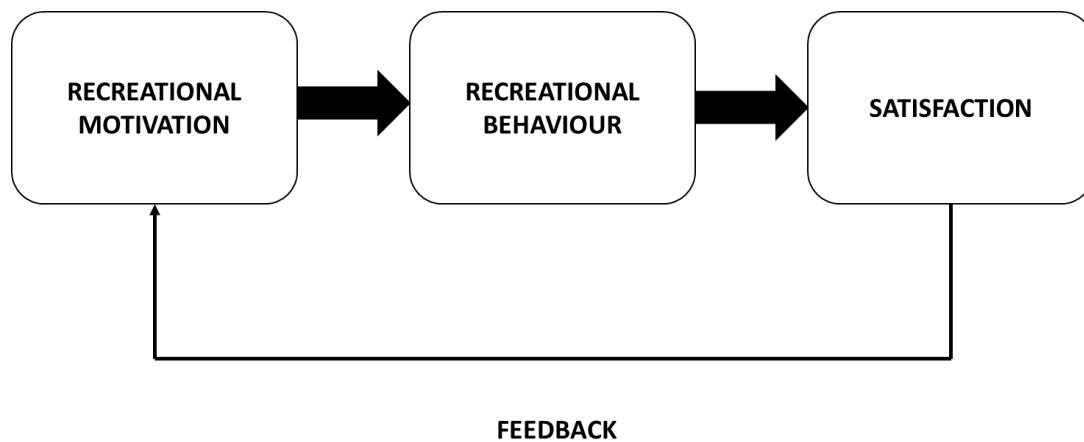


Figure 2.2.2: The General Theory of Motivation (Mannell & Kleiber, 1997)

This research uses the General Theory of Motivation as the main body of the framework, that embeds the Theory of Planned Behaviour and few other concepts into it. The Theory of Planned Behaviour (Ajzen, 1985), which has been widely used by researchers in many disciplines is used mainly to explain individual attitude and behaviour. Other concepts related to outdoor recreation experience were also used to develop a comprehensive model, such as place attachment and environmental concern. Figure 2.3 presents a theoretical framework in this research. This framework is mainly presenting the overall outdoor recreation experience of a visitor. It represents the overall experience process starting from 'pre-experience' (blue boxes), 'on-site experience' (yellow boxes), and 'post-experience' (pink boxes). Socio-demographic plays important role during the participation in outdoor activities. It denotes by the individual background such as gender, age, ethnic, income, and level of education. Socio-demographic is located in the first part of the framework that links recreation motivation and place attachment. These three aspects are included in the 'pre-experience' stage. Motivation is set to be in the first stage of the process of the overall experience. There are five motivation items derived from Recreation Experience Preference (REP), developed by Driver (1983): 'escape from physical pressure', 'learning', 'enjoying nature', 'family togetherness', and 'health' used in this research. Based on previous studies, these items to some extent relate to the types of place attachment such as 'place identity', 'place dependence', 'social bonding',

and 'affective attachment' (Warzecha & Lime, 2001; Kyle et al., 2004; Halpenny, 2006; Anderson & Fulton, 2008; Budruk & Stanis, 2013).

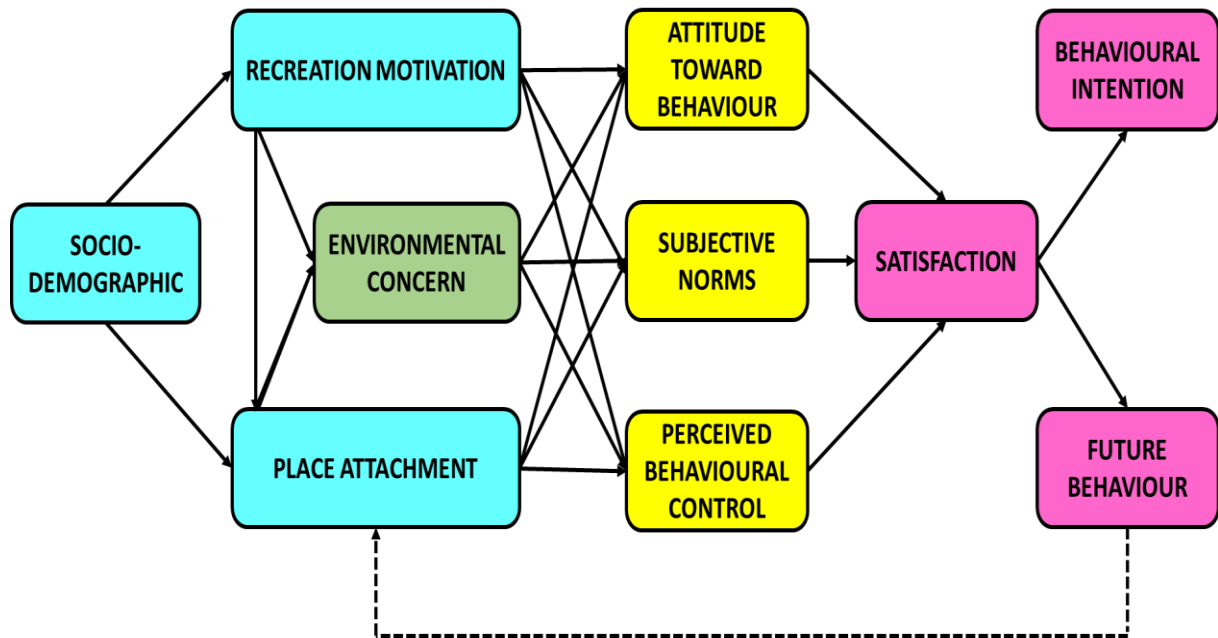


Figure 2.3: Theoretical Framework - Outdoor Recreation Experience Model

The second phase, 'on-site' experience, represents by three kinds of considerations: attitude (behavioural belief), subjective norm (normative belief), and perceived behavioural control (control belief). This 'on-site experience' will then lead to satisfaction. The satisfaction is a component of 'post-experience' along with future behaviour and behavioural intention which are the outcome of the overall process. Recreation satisfaction can be achieved if the experience meets their expectation (Manning, 1999). It has also been found to have a direct effect on future behaviour. The outcome will determine their future behaviour whether they will revisit the place in the future or not, and are they creating awareness and sense of belonging to the place that will contribute to the environmental stewardship and place bonding (O'Neill et al., 2010; Ramkissoon & Mavondo, 2015). In addition, to understanding the overall recreation experience, environmental concern's construct is incorporated in the theoretical framework. This study intends to seek the relationship between an individual's

concern to the environment and behaviour while performing his/her activity during the visit to the forest park.

2.5 Summary

This chapter discussed literature reviews related to the outdoor recreation topics. Outdoor recreation is an interesting subject in leisure studies, which integrates several disciplines in one research, such as combining social-psychological and environmental studies. Managing park that offering outdoor recreation opportunities is a big responsibility to the park managers. Dual mandate is essential to be accomplished including protection of natural resources, while accommodating the demands by the people to perform recreation activities in the forest. Both aspects in outdoor recreation management have been elaborated in this chapter. Previous studies and significant findings of the important aspects of outdoor recreation experience (motivation, place attachment, attitude-behaviour, and satisfaction) proved that these aspects have interrelationship that explained the process of outdoor recreation experience. Theories from other discipline were found useful in explaining ecological, social, and managerial aspects, which help to provide understanding concepts in outdoor recreation. Even though outdoor recreation is lacking its theoretical framework and concept, this subject gained much attention and had attracted many researchers from another field of study to adopt their theories into this study area. It has constituted a significant area of focus in applied study areas such as ecology, tourism, forestry, natural resource management, planning, and also environmental studies.

Chapter 3

METHODOLOGY

This chapter covers a discussion on the methodology used to answer the research questions. The first part of this section explains the methodological frameworks (sub-topic 3.1), followed by a brief description of the study areas (sub-topic 3.2). The research design (sub-topic 3.3), including methods, sampling and survey distribution, is elaborated upon in the third part of this chapter. Finally, a data analysis (sub-topic 3.4) is presented, followed by the research positionality (sub-topic 3.5), ethical considerations and the research challenges (sub-topic 3.6).

3.1 Methodological Framework

This research employs descriptive and explanatory research based on a post-positivist philosophy to examine the differences in recreational patterns, motivation, place attachment, attitude-behaviour, and visitor satisfaction between user groups of two forest parks. Post-positivism as a broad epistemology that brings together theory and practice, and which recognises that many different techniques can be used to collect and analyse data (Ryan, 2006). This approach claims that reality is somewhat subjective, depending on an individual's thinking, context, and experiences. The post-positivistic philosophy acknowledges the complex relationship between viewpoints, actions, environments and socio-cultural issues. This approach also searches for the evidence and offers an interpretation of the current trends, which are then developed as a representation of the lived experience and social context (Crossan, 2003). Crossan (2003, p.46), also states that "positivism adopts a clear quantitative approach to investigating phenomena, as opposed to post-positivist approaches, which aim to describe and explore in-depth phenomena from a qualitative perspective". However, Henderson (2011, p. 342), argues that using post-positivism in leisure studies, including outdoor recreation, can "enable researchers to expand their options for data collection and will also underline a pragmatic need to conduct research and examine findings

that work". Therefore, using a post-positivistic philosophy and methods can play a valuable role in facilitating researchers in leisure and recreation studies to continue to try to understand and interpret the complexities of the lived experience sought by the participants in outdoor recreational activities (Stewart & Floyd, 2004). Hence, the post-positivistic approach is the most suitable philosophy to be used in this research, whereby a mixture of quantitative and qualitative methods have been employed to answer the research questions in this study.

As mentioned earlier, this study was embedded in two types of research: descriptive and explanatory. Veal (2011) explains that descriptive research usually involves analytical procedures using frequencies (which present counts and percentages of responses for single variables) and means (refers to the averages for numerical variables) that are used to represent data of age, gender, income, individual background and others. The descriptive research aims to answer 'what' questions, while explanatory research focuses on the 'why' questions. The explanatory research is used to explain the patterns in observed or reported data. It answers the 'why' questions involved in developing causality – how one phenomenon can be caused by another, whether in a simple or complex relationship. Moreover, the explanatory research can be used to test the applicability of an existing theory. This type of research applies to this study since it is a cross-sectional study adopting the theoretical proposition that has little empirical or published evidence in the United Kingdom. Some of the existing theories related to this research are the Theory of Planned Behaviour, Expectancy Theory, and Place Attachment Theory. This research has employed an embedded case study as a research strategy. The case study involves a study of the phenomenon being researched, where the primary aims are to have an in-depth understanding of it. The selection is made in order to do a comparative analysis of outdoor recreational patterns and trends between the study areas. Unlike other types of research strategies, a case study is not representative of the entire population (Jensen & Rodgers, 2001). Even though the results of this study cannot be generalised to a larger population, the empirical data produced in this research are valuable for post-positivistic philosophy in leisure and recreation research. The data can aid the park managers and researchers to get new information and a better understanding of the

particular group of people in the study (Stewart & Floyd, 2004; Gale & Beeftink, 2005; Henderson, 2011).

One of the advantages of using the case study approach is that there is flexibility in the data collection strategy, which is in line with the post-positivist philosophy. As Robert Yin states, “the case study method is not just a form of ‘qualitative research’, even though it may be recognised among the array of qualitative choices Some case study research goes beyond being a type of qualitative research by using a mix of quantitative and qualitative evidence. Also, case studies need not always include the direct and detailed observational evidence marked by other forms of ‘qualitative research’ “(Yin, 2009, p.19). This research intends to apply explanatory sequential mixed methods (a quantitative method and then a qualitative method) to produce more robust evidence, and thus strengthen the overall findings. The advantages of using mixed methods are that each method can be used for different purposes. The approach also helps researchers to explain quantitative results with subsequent qualitative data. Finally, using both approaches can facilitate a comparison of quantitative and qualitative data sets to produce well-validated conclusions (Cresswell et al., 2008). A replication technique has been used in this study by applying similar data collection procedures to both study areas (Alice Holt Forest and Haldon Forest Park).

3.2 Forest Parks

This research aims to develop an understanding of visitor motivation, attachment to place and behaviour expressed by different kinds of user groups, based on different types of recreational activities. Therefore, it was necessary to choose suitable forest parks that could accommodate such requirements. A discussion took place with Bridgette Hall, the recreation manager of Forestry Commission England. She suggested two forest parks that offered a variety of recreational activities in one place. They were Haldon Forest Park and Alice Holt Forest (Figure 3.1).

3.2.1 Haldon Forest Park

Haldon Forest Park is located just outside of Exeter. It is a designated conservation area, 3500 hectares in size, and is predominantly comprised of conifer forest. Overall, this

forest park has 40kms of surfaced trails for cyclists, walkers and horse riders. Besides the trails, Haldon Forest Park provides other facilities, such as play areas for small children, a high-wire adventure course called 'Go Ape', and a Segway experience. Even though this park has a broad appeal to different users and age groups, the cyclist is the predominant user and cycling places a higher demand on the forest compared to other activities. This can be noticed by a selection of cycling trails of different levels of difficulty provided in the area, ranging from easy to difficult. Haldon Forest Park is an excellent place for horse riders. It offers ten miles of Harcombe Riding Trails with a designated car park for the horse riders. Moreover, no permit is needed to perform this activity within the Haldon Forest Park. Another common activity is walking, including dog walking, where visitors can experience the forest environment through a range of easy (the Discovery Trail and Mamhead Trial) to hard trails (the Tree Trail). Among all the trails, only the Discovery Trail is shared with cyclists and visitors who like to go for a walk.



Figure 3.1: Study areas

Source: Forestry Commission Website

3.2.2 Alice Holt Forest

Alice Holt Forest (AHF) is located at Farnham, Surrey. It is comprised of 850 hectares of open access and classified as ancient woodland. The forest is managed by Forest Research, with a vision for Alice Holt Forest “to lie at the heart of a community where people understand, appreciate, enjoy and want to be involved with their local woodlands and the wider countryside” (Notes about Forestry Commission, p.3). It is estimated that this forest receives over 290 000 visitors each year. Like Haldon Forest Park, Alice Holt Forest offers a variety of recreational activities, including cycling, walking, dog walking, horse riding, and other general outdoor activities, such as holding picnics and barbeques. One of the aims set by the management team of this forest is to provide an attractive and interesting natural environment for families to spend their leisure time together. Therefore, facilities and trail designs are more likely to be family-oriented to give a convenient experience for families with young children. For example, in Alice Holt Forest, they provide many play areas for small children as compared to Haldon Forest Park. However, the choice for cycling trails in this forest is limited to just one easy trail (Beginner Cycle Trail) and one moderate one (Family Cycle Trail). Furthermore, for horse riders, they need to have a valid permit to access the riding trail. Overall, besides offering recreational activities, educational and learning programmes also take place in these forests. These programmes aim to educate people, including children and adults from schools, colleges, and other groups, about how to love their woodland through hands-on experiences in the natural environment. Moreover, a health-oriented event, such as a Park Run, is also organised in the forest parks. Overall, both forest parks have been chosen as the study areas because they provide different types of user groups from diverse visitor backgrounds as subjects in this research.

3.3 Research Design

The research employs an explanatory sequential mixed-methods design to achieve the research objectives, mainly in exploring the motivation, place attachment, attitude-behaviour, and satisfaction of the visitors exploring outdoor recreation. This is in line with the current debates on the advantages and disadvantages of using both quantitative and qualitative methods, where current researchers now widely accept that the two approaches

complement one another. In addition, Guba and Lincoln (1998) assert that from their perspectives, both qualitative and quantitative methods may be appropriate for any research paradigm. Creswell (2014) has also stated that it is helpful to consider using a full range of methods, as long as the methods used are appropriate to answer the research questions. Moreover, the selected research design is appropriate for an individual with a strong quantitative background but who is relatively new to qualitative approaches, which suits well the researcher of this study. However, Creswell (2014) warned that one challenge of using this design involves planning adequately what quantitative results to follow up on and what participants to gather qualitative data from in the second phase. The key idea is that the qualitative data collection builds directly on the quantitative results. Another challenge is whether the qualitative sample should include participants that are in the initial quantitative sample. They should be the same participants as the intent of the design is to follow up the quantitative results and explore them in more depth. The idea of explaining the combination of the variables in more depth through the qualitative methods is a key strength of this design.

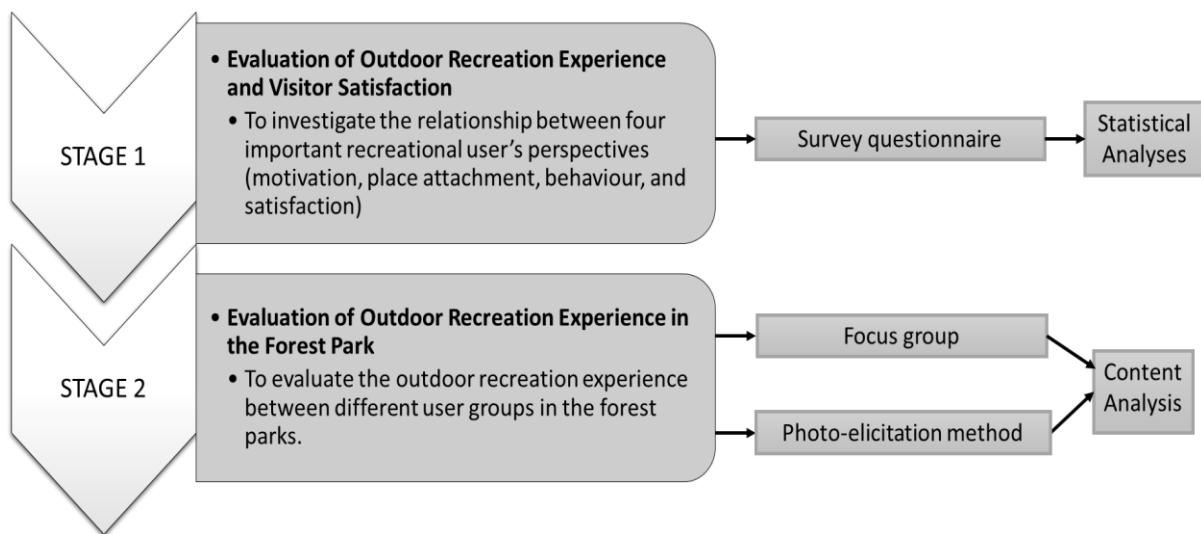


Figure 3.2: Data collection framework

Before the data collection period, a few interview sessions were conducted with the Forestry Commission staff to discuss the site selection and gain insights into what types of methods should be used to achieve the research objectives. Based on the research design, a data collection framework was developed where each of the stages attempted to answer the

research questions in this study (Figure 3.2). Overall, this research is comprised of two stages during the data collection period. The first part, the quantitative phase of data collection, focused on exploring what factors motivated people to participate in outdoor activities, what type of attachment the visitors had with the forest park, how the visitors behaved and responded during their visit to the forest, and whether they were satisfied with their experience during their participation in outdoor recreation. The relationship between these outdoor recreational aspects were also evaluated later in this phase using statistical analysis. The data gave the overall background, describing what the visitors' experiences were and providing a correlation between the recreational aspects. Some findings from the quantitative phase were used in designing the qualitative study. In the second phase of study, a Participatory Research Day was organised with the aims of gathering visitors to participate in a focus group study and photo-elicitation activity. The focus group discussion investigated the visitors' experience in outdoor recreation, including their motivation, engagement with the forest they went to, their attitude and behaviour during their visits, the satisfaction they felt, and also their support for the forest park. Meanwhile, the photo-elicitation activity addressed several points or places in the forest park that were special to the visitors. An elaboration of each method used during the data collection period is discussed in the next sub-sections.

3.3.1 Interviews

Informal interview sessions with recreation managers of the Alice Holt Forest and Haldon Forest Park were conducted prior to the actual data collection on the sites. At this stage, assessment of the background of the study areas was vital in order to obtain general information, mainly about the study sites, including types of management strategy, resources available and types of activities offered to the visitors. Besides, information, such as the number of visitors annually, visitor profiles, in general, and even entrance and parking fees, was required to be noted. According to Kahn and Cannel (1987) in Marshall and Rossman (1999, p.108), interviews are a conversation with a purpose; they allow the researcher to uncover a participant's views and perceptions of a topic, allowing in-depth analysis and exploration. One of the advantages of employing this method was that it would enable researchers to repeat or follow-up interviews with the subjects, if needed (Veal, 2011). As

compared to a questionnaire-based interview, the in-depth interview seeks to probe as deeply as possible. Therefore, the researcher must encourage the subjects or respondents to talk, ask supplementary questions, and ask them to explain their answers, which is more than they are able to do in a structured interview.

3.3.2 Questionnaire Surveys

The first stage of the data collection was to investigate the relationship between four important aspects of recreational user experience – motivation, place attachment, attitude-behaviour, and satisfaction. A set of questionnaires was used to obtain visitor feedback on their outdoor recreational experience and their satisfaction during the visit to the forest park (Appendix 1C). The survey questionnaire focussed on situational and attitudinal data. Situational data include (socio-demographic) information about the respondents’ characteristics, such as gender, age, household income, education or qualifications, ethnic group, group size or type, and is gathered by using pre-coded questions. Attitudinal data were measured using specific theories and scales, such as the following:

Table 3.1: Attitudinal data

ATTITUDINAL DATA	
<i>Recreation Motivation</i>	Recreation Experience Preference (REP) (Driver, 1983)
<i>Place Attachment</i>	Place Attachment Scale (William & Roggenbuck, 1989)
<i>Recreation Behaviour</i>	Theory of Planned Behaviour (Ajzen, 1985)
<i>Visitor’s Satisfaction</i>	Measure the overall experience of using three attributes: Resource setting, Social condition, and Management settings
<i>Environmental Awareness</i>	New Ecological Paradigm Scale (NEP) (Dunlap et al., 2000)

Overall, there were 21 main questions with sub-questions spread over seven sections. The survey took about 15-20 minutes to complete. There were two forms of survey conducted in this research: an on-site survey and an online survey. Stratified random sampling was used as the sampling strategy for the on-site survey. A number of specific points in the forests were allocated as the points to recruit the respondents: for instance, the visitor centre (entrance), play areas, surrounding cafés, as well as some significant points inside the forests, such as the

location of the Gruffalo sculpture and viewing points. Respondents who participated in the on-site survey were given a coupon for a free cup of coffee or tea to be redeemed at the forest park café. The second option was to answer the questionnaire through an online survey. For this option, visitors were given a flyer at the sample points that included information regarding the study and a link to access the online survey. This online survey was created using Google Forms in order to offer an opportunity to visitors who had not had a chance to fill in the survey during their visit to the forest park. Using this method helped to increase the number of respondents for the survey. However, the online survey was only used with the visitors to Haldon Forest Park. Respondents who participated in the online survey had a chance to win a lucky draw that was set up by the researcher and the Haldon Forest Park staff. The researcher did not manage to implement the online survey with Alice Holt Forest visitors due to managerial issues. In brief, there was only the on-site survey for Alice Holt Forest, while both on-site and online surveys were carried out for Haldon Forest Park. The survey was conducted between September 2016 and January 2017 for both forest parks, while there were extra days in March 2017 for the on-site survey conducted at Alice Holt Forest to increase the number of respondents. From the survey, 207 usable questionnaires were collected from both forest parks: 71 questionnaires from Alice Holt Forest and 136 questionnaires from Haldon Forest Park.

3.3.2.1 Constructing a survey questionnaire

The survey questionnaire was designed to collect two types of data: situational and attitudinal data. The situational data were represented by (socio-demographic) information about the respondents' characteristics. The socio-demographic questions were asked in the final section of the questionnaire (Section G: Background Information). Besides this, there was additional respondent information about their trip description, which was covered in the first section of the survey (Section A: Trip Description). The following is an elaboration of the attitudinal data collected in the questionnaire:

a. Measuring Recreation Motivation

Recreation Experience Preference (REP), developed by Driver (1983), was used to identify recreational motivation in the research. The scale measures the importance of selected motivations for recreational experiences along different dimensions (Manfredo et al., 1996; Davenport et al., 2002). This scale has been widely used in many different recreational settings, with river anglers to cross-country skiers to backcountry hikers (McCool & Reilly, 1994; Manning, 1999; Davenport et al., 2002; Kil et al., 2014). Within the eleven dimensions of the REP scale, three of the benefit groups that appear to have been frequently used by previous scholars are: enjoying nature (e.g. viewing the scenery); learning (e.g. experiencing new and different things); and escaping physical pressure (e.g. experiencing solitude). These dimensions have been found significantly related to recreational motivation to participate in nature-based activities (Anderson et al., 2008; Luo & Deng, 2008; Kil et al., 2012; Kil et al., 2012; Kil et al., 2014). Also, Manfredo et al. suggest that choosing REP dimensions and items that are relevant to the specific study sites and the population is practical (White, 2008). Therefore, this research included five benefit dimensions of the REP scale: escaping physical pressure (e.g. experiencing solitude), learning (e.g., experiencing new and different things), enjoying nature (e.g., viewing the scenery), family togetherness (e.g., bringing your family closer together), and health (e.g., helping to release or reduce tensions). Respondents were asked about their reasons for choosing the forest park for their outdoor recreational activities. Two items for each dimension were coded on five-point scales ranging from (1), not at all important to (5), very important.

b. Measuring Place Attachment

Place attachment was measured using Williams and Roggenbuck's scale (1989). Four dimensions were included in this study (Table 3.3): place identity (three items), place dependence (four items), affective attachment (four items) and social bonding (three items). These items were borrowed from Kyle et al. (2005), Budruk & Stanis (2013), and Ramkissoon et al. (2014). The respondents needed to rate the items on a five-point scale where 1= "strongly disagree", and 5 = "strongly agree".

Table 3.2: Place Attachment Items used in the Survey Instrument

Place Attachment	Statement
<i>Place Identity</i>	<ul style="list-style-type: none"> • I feel this forest park is a part of me • I identify strongly with this forest park • Visiting this forest park says a lot about who I am
<i>Place Dependence</i>	<ul style="list-style-type: none"> • I prefer this forest park over other settings/facilities for the recreational activities that I enjoy most • For what I like to do, I could not imagine anything better than the setting and facilities provided by this forest park • I enjoy visiting this forest park more than any other sites • For the recreation activities that I enjoy most, the settings and facilities provided by this forest park are the best
<i>Affective Attachment</i>	<ul style="list-style-type: none"> • This forest park means a lot to me • I am very attached to this forest park • I feel a strong sense of belonging to this forest park and its settings/facilities • I have little, if any, emotional attachment to this forest park and its settings/facilities
<i>Social Bonding</i>	<ul style="list-style-type: none"> • My friends/family would be disappointed if I were to start visiting other settings and facilities • If I were to stop visiting this forest park's sites, I would lose contact with a number of friends • Many of my friends/family prefer this forest park over other sites

c. Measuring Behaviour

Theory of Planned Behaviour (TPB) was used to examine an individual's intention to perform the desired behaviour. In order to set a specific behaviour to be measured in this study, content analyses of Forest Research articles, reports and literature reviews were carried out. A discussion was also conducted with Bridgette Hall, who is the recreation manager of the Forestry Commission England, in November 2015, to identify the types of environmental and social impacts that usually occurred in the UK forests. From the discussion, the researcher found out that protecting ground-nesting birds and minimising conflict between users were important aspects to look for. This was based on the observations of the Forestry staff and a small number of complaints made by the visitors. As a result, a specific

desirable behaviour was developed in which “staying on the designated path during your visit to this forest park” was the main theme used to construct questions about recreational behaviour. The development of the statement of the desired behaviour was referenced by Ajzen (2002) using Target, Action, Context, and Time (TACT) elements. The following are descriptions of the items used to assess each construct in the TPB. A semantic differential scale was used to measure each of the constructs in this section.

i. Intention

Two seven-point scales were used to assess respondents’ intention to engage in the behaviour of interest. The first scale required the respondent to indicate whether they intended to perform the behaviour. The question was: “In order to minimise disturbance to wildlife, I intend to stick to the designated paths today” (scale ranging from (7) ‘likely’ to (1) ‘unlikely’). The second scale asked the respondents whether they were planning to engage in the behaviour: “I will not stray off the designated path in order to protect the ground-nesting birds”, which offered answers using a scale ranging from (7) ‘strongly agree’ to (1) ‘strongly disagree’.

ii. Attitude

Attitudes toward behaviour were assessed directly by asking respondents to evaluate the behaviour of interest on two seven-point scales: for example: “Staying on the designated paths to me makes my activity feel...”. The answer scales ranged from ‘worthless’ to ‘valuable’, and ‘unpleasant’ to ‘enjoyable’.

iii. Subjective Norm

Subjective norms were measured using two seven-point scales. The first scale required respondents to rate the truth of the statement that the most important people to them thought that they should perform the desired behaviour (scale ranging from ‘disagree’ to ‘agree’). The second scale asked the respondents to indicate whether other people using the place, or the owner of the area, would approve or disapprove if they performed the behaviour of interest. An example of this question was: “Forestry Commission staffs would be happy if I

use the designated paths to minimise disturbance to ground-nesting birds and other wildlife”. The answer scale ranged from (1) ‘unlikely’ to (7) ‘likely’.

iv. Perceived Behavioural Control

Two seven-point scales were used to measure perceived behavioural control by asking respondents to rate the difficulty of performing the desired behaviour. For example: “In terms of my ability to stay on the designated path, I feel it is... (1) ‘Impossible’ to (7) ‘possible’”. Another question was, “I feel I have control of myself to stay on the designated paths during my visit today”, which used the answer scale of (1) ‘no control’ to (7) ‘complete control’.

d. Measuring Satisfaction

Visitor satisfaction was measured by considering their overall experience of using three attributes: resource setting (e.g. natural sceneries, types of activities); social conditions (e.g. crowding issue and conflict between users); and management settings (e.g. park facilities, park personnel, park information). The list of questions was adopted from “Designing and Testing a Park-based Visitor Survey” developed by Moore et al. (2008). A five-point scale ranging from (1) ‘very dissatisfied’ to (5) ‘very satisfied’ was used to measure this variable.

e. Measuring Environmental Concern

Environmental concern was measured using the revised New Ecological Paradigm (NEP) scale (Dunlap et al., 2000) which captures respondents’ general beliefs and attitudes towards the environment. This study followed a study conducted by Thapa (2010) on exploring the mediation effect on the correspondence between outdoor recreational participation and environmental attitude-behaviour. The author has included items representing three pre-specified dimensions: eco-centric (e.g., “when humans interfere with nature it often produces disastrous consequences”); dual-centric (e.g., “plants and animals have as much right as humans to exist”);, and techno-centric (e.g., “the earth has plenty of natural resources if we just learn how to develop them”). Ten items were rated on a five-point scale ranging from (1) ‘strongly disagree’ to (5) ‘strongly agree’.

3.3.3 Participatory Research Day

The second stage of data collection was carried out by organising a Participatory Research Day. One reason behind the organisation of this one-day workshop was because of limited time and the cost of collecting qualitative data. This research initially proposed conducting a photo-elicitation activity earlier, before the survey period, in order to capture visitors so that they might participate in the other two stages – the survey questionnaire and the focus group. Unfortunately, there were no visitors interested in participating in the photo-elicitation activity, mostly due to their time constraints. Therefore, a new strategy was built around the idea of combining the two qualitative methods to be conducted as a Participatory Research Day. This strategy allowed the researcher to secure participants to be involved in the photo-elicitation activity because they were well-informed of what type of activities they needed to complete during the participation in the workshop. The primary objective of this workshop was to explore recreational users' experiences, which included visitor motivation, place attachment, behaviour and satisfaction, during their participation in outdoor recreational activities. Three specific objectives for this workshop were established, as follows: i) to evaluate the outdoor recreational experiences of different user groups in the forest parks; ii) to identify visitor attachment to the particular forest park; and iii) to evaluate visitor attitude-behaviour concerning the environment and social impact on the forest setting. The rationale of this workshop was to increase the understanding of visitor recreational experiences and behaviour. This information would generate original empirical data that could provide a better understanding of human relationships with the natural environment. In addition, the information could be useful for the forest management plan. The Participatory Research Day comprised of a focus group session and a photo-elicitation activity. The workshop took about 2 ½ hours, with a target of 10 people maximum in a session. The recruitment of participants was made through using poster advertisements at the two forest parks and via the Facebook Pages of both. Visitors who were interested in taking part in the workshop needed to sign-up online via a Google Form managed by the researcher. Repeat visitors who had visited the park for at least the second time were selected as participants in this workshop because attachment to a place usually starts to develop after the first visit (Gunderson & Watson, 2007). Having enlisted the participants, the researcher

contacted them to confirm the date and time of the workshop, and also to provide them with information sheets to explain the objectives of the activity. Participants who managed to complete the workshop received an enumeration of £20 each.

Several dates were proposed to conduct the Participatory Research Day at both forest parks during the recruitment period (March-May 2017). However, the researcher only managed to recruit eight people to conduct the one-day workshop in April 2017 for Alice Holt Forest. None of the visitors at Haldon Forest Park were interested in participating in the workshop. The recruitment period was extended for a further month (August 2017), but there were still not enough people interested in participating. Therefore, a decision was made by the research committee to proceed with the available data to avoid overrunning costs and time.

3.3.3.1 Focus Groups

The first activity in the Participatory Research Day was a focus group. A focus group is “a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research” (Powell et al., 1996, p.499). This method is also referred to as group interviewing, which is based on either structured, semi-structured or unstructured interviews. In addition, “focus groups are most advantageous when time in the field is relatively short” (Burgess, 1996, p. 130). The focus group activity aimed to evaluate the outdoor recreational experience between different user groups in the forest parks. Initially, the researcher planned to conduct homogeneous focus groups, where at least four groups (or sessions) would be held representing each user groups – walkers, dog walkers, cyclists, and horse riders. However, the plan was not successful due to the small number of visitors who registered as participants. Therefore, the eight people who did register for the session were gathered as a single group. They were asked to be transparent as much as they could to avoid bias during the data collection process. The primary themes covered in the group discussions were as follows:

1. motivation to participate in outdoor activity
2. engagement with the forest parks
3. experience of outdoor recreation

4. perceptions of the environment and social issues in outdoor recreational studies
5. visitor support and/or commitment to protect recreational resources (activities, facilities, etc.) that are important to their visit to the forest parks.

This approach was useful in providing in-depth understanding of the topics. The focus group lasted about one hour. The researcher acted as a moderator to ensure that each participant kept to the tasks given and to get an opportunity to talk and to respond to questions. The discussion was recorded using audio equipment and transcribed for analysis. The aim of this focus group was to provide answers to the research questions and support the evidence collected from the quantitative approach. In support of this, Richard Krueger (1988, p.47) stated that “the benefit of using a focus group is that it has high face validity, where the face-to-face session with the participant gives the moderator a direct contact during the interview session”. The following figure is a flowchart of the focus group discussion (Figure 3.3). A comprehensive focus group topic guide is displayed in Appendix 2B. As part of discussion themes, this research intended to explore the participants’ perception of environmental and social issues related to outdoor recreation. Seven pictures, including a news item about multiple users in the forest, user attitudes while performing outdoor activities, and forest conditions were selected. The selection of these pictures was based on the interview with the Forestry Commission staff before the data collection period. The issues portrayed in the pictures were related to crowding problems, conflicts between user groups, visitor attitudes and environmental impacts. The reason for using these pictures during the discussion was to employ them as probes to get more information about the participants’ recreational experiences in the forest park, and how they would have reacted if they found themselves in the situations presented in the pictures.

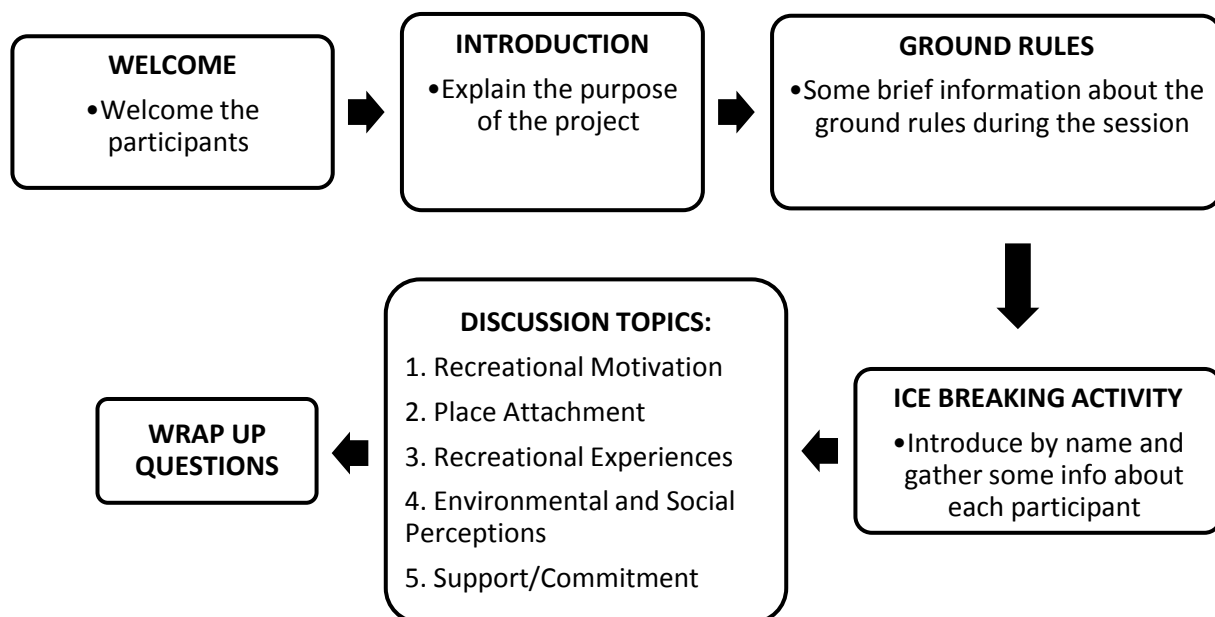


Figure 3.3: A flowchart of the focus group session

3.3.3.2 Photo-elicitation Method

Photo-elicitation has developed into being one of the more powerful research tools, and it has been used by researchers in many fields of study (Loeffler, 2004; Stedman et al., 2004; Dorwart et al., 2006; Auken et al., 2010; Balomenou & Garrod, 2014). Ewert (2000) suggested that researchers should explore new ways of capturing experiences other than through the traditional pen and paper tests. It has been recommended that photo-elicitation receives further use in the investigations of outdoor experiences (Loeffler, 2004). Photo elicitation provides a model for collaborative research because the participants interpret their photograph as images and meanings for the researcher. The researcher is able to access some of the profound meanings of the participants' experiences since they use the photographs to capture moments of intense emotion, connection and celebration (Loeffler, 2004). The objective of this photo activity was to identify visitor attachment to the forest parks. At the beginning of the session, the participants were briefed about what their main tasks for the photo-elicitation activity were. Each participant was given an activity pack containing a coded disposable camera, a coded photograph log booklet, and a pencil (Figure 3.4). The participants

were asked to use the disposable camera to take photographs of any points or sites in the forest park based on three different themes: *My Place*, *Disturbed*, and *People* (Table 3.3). They needed to capture up to three photos for each theme. In Section B, a map of the forest park was attached. The participants had to mark the points they photographed. It was important for the researcher to identify at which point or site the participants had taken their photographs. Unlike most previous studies that have used photographs in a subsequent interview session (Jacobsen, 2007; Kin, et al., 2003; Lynn, 2000; Patton, 1990), this research employed the photo-essay method to replace the interview in order to get the participants' views or comments on the pictures they had taken earlier. They needed to explain in the 'photo essay' section the reasons why they had chosen to photograph the points they had. The participants were given one hour to complete the task, and they needed to hand the activity pack back to the researcher once they had finished all the tasks. Upon completion, the participants received an enumeration of £20 for their contribution to this study.

Table 3.3: Categorisation of photographs

Photograph Theme	Description
<i>My Place</i>	Places you are most attached to
<i>Disturbed</i>	Places where you see environmental disturbance
<i>People</i>	Places where you see interaction between park users

This visual method can offer useful information about to what extent relationships between people and places exist (Beckley et al., 2007). Understanding the relationships between the visitors and the forest can provide useful information to the park managers wishing to offer excellent recreational experiences while conserving the natural environment. To add to this, the visitors' perceptions of environmental disturbance and social interaction while visiting the forest parks will give a better insight to the managers to identify the most critical areas in the park, and to prioritise trail and resource management to mitigate further degradation. This information will help the manager with devising more appropriate recreation management plans.



Figure 3.4: Activity pack for the Participatory Research Day

3.4 Data Analysis

The database was stored securely in the researcher's office during and after data analysis. To protect the anonymity of the respondents, each survey and photo-logged book used an identification number. Quantitative data was analysed separately from the qualitative data, but the data were then used together in the discussion chapter.

3.4.1 Quantitative data analysis

Data analysis was initiated with a screening of the raw data. All 207 questionnaires were useable, there were no major problems regarding missing values. In this study, several statistical tests were employed in order to evaluate visitors' outdoor recreational experiences at two forest parks. The data were recorded for computer analysis. First, the descriptive statistics were run to get a general picture of the main characteristics and patterns in the data related to variable frequencies, means and standard deviation using the IBM SPSS Statistics (version 21). In addition, to assess if the data was normally distributed, the skewness of each construct was examined. The internal consistency of each variable in the model was assessed using Cronbach's alpha test. In this study, all factors with a reliability coefficient above .70

would be considered acceptable, leading to a refined scale based on reliable variables. T-tests were used to calculate the differences between the two forest parks, while Factorial Analysis of Variance (ANOVA) was used to differentiate the user groups for each item in the Outdoor Recreation Experience Model. Tukey post-hoc tests were used to analyse the differences between the user groups further. The significance was assessed using a two-tailed test at the .05 and .001 levels.

Later, AMOS software was used to run the confirmatory factor analysis (CFA) and structural equation modelling (SEM). The CFA was used to test whether the data fitted the hypothesized model. It was comprised of three types of assessments; assessing unidimensionality, validity and reliability. For unidimensionality, items in a measurement model with low factor loadings should be deleted, with all the factor loadings required to be positive or in one direction. Regarding validity, three types can be used in the CFA. These are convergent validity, construct validity, and discriminant validity. Convergent validity is achieved when all the items in a measurement model are statistically significant. It can be verified by computing the Average Extracted Variance (AVE) for each construct. The value of AVE should be at least 0.5. Construct validity can be achieved when the Fitness Index for a construct achieves the required level. Several categories of fitness indices used in the literature, with their level of acceptance, are presented in Table 3.4. The final type of validity is discriminant validity. This indicates that the measurement model of a construct is free from redundant items. This research used AMOS software to run the CFA for all the data. Using AMOS software, the researcher could identify the level of redundancy of items in the model through a discrepancy measure called the Modification Index (MI). A high value of MI indicates the respective items are redundant. There are two options to improve the model fit. The first option is to delete one of the identified items and run the measurement model; the second is to constrain the redundant pair as a “free parameter estimate”. Another requirement of discriminant validity is that the correlation between exogenous constructs should not exceed 0.85. A correlation value exceeding 0.85 indicates the two exogenous constructs are redundant or have serious multicollinearity problems.

Table 3.4: Categories of model fit and their level of acceptance

Name of category	Name of index	Level of acceptance
1. <i>Absolute fit</i>	Chi-square	P-value > 0.05
		Not applicable for large sample size (more than 200)
	RMSEA	RMSEA < 0.08
	GFI	GFI > 0.90
2. <i>Incremental fit</i>	AGFI	AGFI > 0.90
	CFI	CFI > 0.90
	TLI	TLI > 0.90
	NFI	NFI > 0.90
3. <i>Parsimonious fit</i>	Chisq/df	Chisq/df < 3.0

Source: Adapted from Awang (2015)

The final assessment in CFA is reliability. Reliability is assessed to determine how reliable the measurement model is in measuring the intended latent construct. The assessment can be made using two criteria: composite reliability (CR) and average variance extracted (AVE). The first criterion indicates the reliability and internal consistency when the value of CR is equal to or greater than 0.6, while the latter shows the average percentage of variation explained by measuring items for a latent construct. The AVE value needs to be at least 0.5. The CR and AVE values are calculated using the formula in Table 3.5. Once the model has passed the assessments in CFA, it will be combined with other measurement models to form a structural model. The structural model will be assessed for model fit. The evaluation of the model fits is based on similar procedures as in the CFA.

Table 3.5: Average Variance Extracted (AVE) and Composite Reliability (CR) formulas

$$\text{AVE} = \frac{\sum K^2}{n} \quad \text{CR} = \frac{(\sum K)^2}{[(\sum K)^2 + (\sum 1 - K^2)]}$$

K = factor loading of every item
n = number of items in a model

3.4.2 Qualitative data analysis

Content analysis was used to analyse the photos from the photo-elicitation activity and transcripts from the focus group session. The focus group recording was transcribed by an appointed company. Content analysis refers to the study of recorded human communication (Babbie, 2011) while Krippendorff (2004, p.18) defined content analysis as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use”. This analysis is increasingly being applied to focus group data because it maintains much of the rigour of traditional content analysis, while greatly reducing the time and cost required to complete such analyses. Such programmes also provide a means for examining the contents of verbal interaction in ways that are impossible for a human observer. Focus groups usually generate a large amount of information which needs to be carefully interpreted by the researchers. This research employed latent content because it takes the underlying meaning of the communication rather than concentrating on concrete terms contained in the communication. For that reason, the coding process took place within each paragraph of the transcript, and the overall meaning of the communication in the paragraphs was coded. The coding was developed using the five themes that were pre-set prior to the focus group activity. A summary of findings from the focus group was compiled in a thematic table (Appendix 3B). Statements from the transcript were match into the five themes and emerging topics were then noted in the same table.

There were 66 photos taken during the photo-elicitation activity. The photographs were coded to describe their content, based on the three elements (*My Place*, *Disturbed*, and *Social*) and the description from the photo-essay section. For the first element, the photos were categorised into four types of place attachment based on Williams and Roggenbuck’s scale (1989). The latter two elements were about the visitors’ perceptions of environmental disturbance and social interaction between users in the forest parks. For these elements, the photos and their descriptions were classified into positive or negative first, before being sorted using the themes such as “user conflict” or “dog waste” (Henderson, 1991). Some of the pictures were used to support the discussion made when presenting the results. Besides the discussion transcript and photographs, content analysis was useful in evaluating the

brochures or pamphlets available in the forest parks. They usually provide information on the background of the area, details of park management and offers of activities in the recreational sites. They usually include pictures of the area. Together with this, the researcher has a variety of data sources to analyse using this method.

3.5 Researcher Positionality

The researcher has worked as a tutor at the Department of Recreation and Ecotourism in Universiti Putra Malaysia (UPM) since the year 2009. Her current PhD study is a part of the Academic Training Scheme for Young Lecturers, where she will be promoted to a lecturer position on completion of her PhD programme. Her PhD study is sponsored by the Ministry of Higher Education of Malaysia and the Universiti Putra Malaysia. She holds a Bachelor's degree in Forestry Science and a Master of Science degree (Recreation Resource Management) from the same university. She has experience conducting quantitative research during her undergraduate and master's studies. The topics of her projects at that time were mainly focussed on identifying the factors that influence soil degradation and vegetation in recreational parks. Her experience of study on recreation resource management sparked her interest in research on the social aspects of outdoor recreation. As a forestry student, the researcher cannot escape from thinking of the importance of protecting our natural resources from degradation. Everybody knows the forest is vital for the generations that will follow us, hence proper management should be implemented now to achieve sustainable forest management. However, demands from the community to use the forest as their place to conduct exercise and leisure activities in natural settings with family and friends cannot be ignored. Outdoor activities in the forest give them different experiences compared to any other open-spaces or indoor facility. Thus, two critical tasks asked of park managers are the need to offer people the experience of outdoor recreation in natural settings, and to minimise the negative impacts on the environment and conserve the natural resources in sustainable ways.

Therefore, in her PhD study, the researcher has proposed to work on a social aspect topic, specifically to understand the outdoor recreation experience of people who use forests as recreational sites. In order to enrich her knowledge and skills in her field of study, she has

integrated two psychological theories: The Theory of Planned Behaviour and The General Theory of Motivation. These are used mainly to explore the relationships of several important variables related to the outdoor recreational experience of visitors in forest settings. In addition, the choice of conducting a mixed-methods study is one of her plans to broaden her experience through her PhD study. Conducting this approach has greatly benefited her. She has been able to apply her knowledge and expertise in the quantitative method and, at the same time, learn from her experiences using the qualitative method. The researcher has been trained and attended courses related to the skills needed to conduct the designed study. She gathered her experience in using a quantitative study when she was a part of the academic research team that conducted a survey in Malaysia in recent years. Regarding the skills to conduct the qualitative study, she prepared by attending courses about focus groups and qualitative data analysis organised by the university. She has also discussed any problems that she encountered during the data collection phase with her supervisors. The researcher is certain that investigating the relationship between the variables in the model proposed in this study will help in understanding the whole process of outdoor recreational experiences sought by the visitors. This information will be useful and should benefit the park managers in developing a realistic recreational management plan for the particular forest parks.

3.6 Research Challenges

The researcher has encountered several challenges throughout this study. Delay in getting the approval of the research ethics application was one of them. This interrupted the overall plan for the data collection stage. Hence, the researcher had to postpone her collection of data by about two months. Secondly, the researcher had difficulty in obtaining the targeted number of respondents for the survey and participants to join the participatory research day. Most of the visitors were reluctant to spend about 20 minutes to answer the survey. However, this problem was solved by implementing an alternative way to increase the number of respondents using an online survey. It was effective but, unfortunately, this option was not supported by the Alice Holt Forest management due to some managerial issues. The recruitment process for the Participatory Research Day was also challenging. The limited time available to advertise this programme was one reason why such a small number

of people were willing to participate in this. The researcher also experienced a health problem during the data collection. This somehow affected the progress along the way.

3.7 Ethical Considerations

The researcher ensured ethics remained a top priority throughout the study. Following the methods as outlined in this chapter was paramount in ensuring the validity and reliability of the study. An informed consent form was given to each participant prior to the survey (Appendix 1A) and the focus group (Appendix 2A). These documents were reviewed by the University of Reading Research Ethics Committee prior to the data collection period. Participation in this study was entirely voluntary, and participants had the right to withdraw from the project at any time they wished. The risk to the human subjects associated with this study were minimal. All the participants were over 16 years of age and were chosen from visitors of the particular forest parks. These criteria were essential to the selection of participants in this study. A sampling strategy was developed to avoid any conflicts between the researcher and the visitors during the data collection period. Survey respondents were approached only if they were in a relaxed mood and happy to be involved in the research. The strategy was to avoid any interruptions or uncomfortable feelings while they were performing their outdoor activity (walking, cycling, riding a horse, playing with their kids). For the focus group discussion, the researcher prepared a guideline document to ensure that the procedures and topics to be discussed during the session were followed. No sensitive questions were included in the session. To protect the anonymity of the respondents, each survey and photo-logged book was assigned an identification number. These numbers were used during the data analysis stage. It should be noted, all recorded materials will be stored for up to five years from the data collection period to minimise any future risks related to confidentiality.

Chapter 4

RESULTS: DESCRIPTIVE ANALYSIS

This chapter describes the results of the descriptive data from the survey questionnaires. The first two sections contain the respondents' profiles, showing the visitors' demographic characteristics and their visit descriptions. Then, the variables used to measure the outdoor recreational experiences of the visitors are presented, starting from recreation motivation (sub-topic 4.3) and moving through place attachment (sub-topic 4.4), recreational behaviour (sub-topic 4.5), environmental concern (sub-topic 4.6), important features in outdoor participation (sub-topic 4.7) and, finally, visitor satisfaction (sub-topic 4.8). The data presented is a combination of data from both forest parks. From the survey, 207 usable questionnaires were collected from both forest parks: 71 questionnaires from Alice Holt Forest and 136 questionnaires from Haldon Forest Park.

4.1 Respondent's profile

Table 4.1 shows a demographic profile of respondents in this research. Females dominate the number of respondents for both forest parks: 64.8% for Alice Holt Forest and 63.2% for Haldon Forest Park. The overall percentage of female respondents is 63.8% (n=132), compared to males at 35.7% (n=74). Most of the respondents lived in the United Kingdom (UK) (n=205, 99%), with only one respondent from each forest park not a UK resident. There was a diverse range of age groups among the respondents in this research. For Alice Holt Forest, 56.3% (n= 40) of the respondents were between 35 to 44 years old, 19.7% between 26-34 years old and about 14% of respondents were between 45 to 54 years old. The largest age group for Haldon Forest Park was respondents aged between 35 to 44 years old (39.7%), followed by 26 to 34 years old (30.9%) and 45 to 54 years old (17.6%). Overall, the median age group was 35-44 years old. From the survey, it can be seen that most of the respondents were White (British) (93.2%), while the remaining percentage came from 'any other White background' (3.9%), 'Any other Asian Background' (1.0%), 'Any other mixed background' (0.5%), 'Indian' (0.5%), 'Chinese' (0.5%), and 'Do not wish to state' (0.5%).

Table 4.1: Respondent's profile

Variable	Alice Holt		Haldon		Overall	
	N	%	N	%	N	%
Gender						
• Male	25	35.2	49	36	74	35.7
• Female	46	64.8	86	63.2	132	63.8
• Preferred not to say	0	0	1	0.7	1	0.5
Total	71	100	136	100	207	100
Residence						
• United Kingdom	70	98.6	135	99.3	205	99.0
• Overseas	1	1.4	1	0.7	2	1.0
Total	71	100	136	100	207	100
Age (years)						
• 16-19	1	1.4	1	0.7	2	1.0
• 20-25	2	2.8	4	2.9	6	2.9
• 26-34	14	19.7	42	30.9	56	27.1
• 35-44	40	56.3	54	39.7	94	45.4
• 45-54	10	14.1	24	17.6	34	16.4
• 55-64	2	2.8	9	6.6	11	5.3
• 65-74	2	2.8	2	1.5	4	1.9
• >75	0	0	0	0	0	0
Total	71	100	136	100	207	100
Ethnic background						
• White (British)	65	91.5	128	94.1	193	93.2
• Any other White background	1	1.4	7	5.1	8	3.9
• Any other mixed background	1	1.4	0	0	1	0.5
• Indian	1	1.4	0	0	1	0.5
• Any other Asian background	1	1.4	1	0.7	2	1.0
• Chinese	1	1.4	0	0	1	0.5
• Do not wish to state	1	1.4	0	0	1	0.5
Total	71	100	136	100	207	100
Education						
• Professional qualification	19	26.8	26	19.1	45	21.7
• University or college degree	32	45.1	55	40.4	87	42.0
• University or college qualification below a degree	10	14.1	20	14.7	30	14.5
• Upper secondary school qualification	5	7.0	18	13.2	23	11.1
• Lower secondary school qualification	3	4.2	16	11.8	19	9.2
• None of these	2	2.8	1	0.7	3	1.4
Total	71	100	136	100	207	100
Annual income (£)						
• < 10K	3	4.2	4	2.9	7	3.4
• 10K – 20K	4	5.6	11	8.1	15	7.2
• 21K – 30K	6	8.5	17	12.5	23	11.1
• 31K – 50K	10	14.1	40	29.4	50	24.2
• 51K – 75K	15	21.1	29	21.3	44	21.3
• >75K	17	23.9	11	8.1	28	13.5
• I prefer not to answer this	16	22.5	24	17.6	40	19.3
Total	71	100	136	100	207	100

In general, about 80% of the total respondents had at least attended university or college (below a degree), with 45 of the respondents having a professional qualification: Alice Holt Forest (n=19) and Haldon Forest Park (n=26). The median annual income range was £51,000 - £75,000, with about 19% of the respondents not wishing to state their annual income in the survey. The highest annual income range for Alice Holt Forest was above £75,000 (23.9%), and between £31,000 and £50,000 for Haldon Forest Park (29.4%).

4.2 Visit Description

The visit description section portrays certain visitor characteristics of the participants during their participation in outdoor recreation. Identification of party size, number of trip members, main activity, the frequency of visits, and source of information about the forest park provided useful information about the participants. Figure 4.1(A) displays the number of adults in a group of respondents. The highest number of adults in a group of visitors was five persons, while the lowest number was one adult. 71% (n=50) of the respondents had two adults in their group, followed by one adult per group (13%, n=13) and three adults in a group (11%, n=8). The number of adults in a party at Haldon Forest Park ranged between one and seven persons (Fig. 4.1(B)). Most of the respondents came in a group of two adults (67%, n=87), 28 respondents were visiting the forest alone (20%), and about 1% (n=2) of the respondents conducted their activities in a large group that consisted of seven adults.

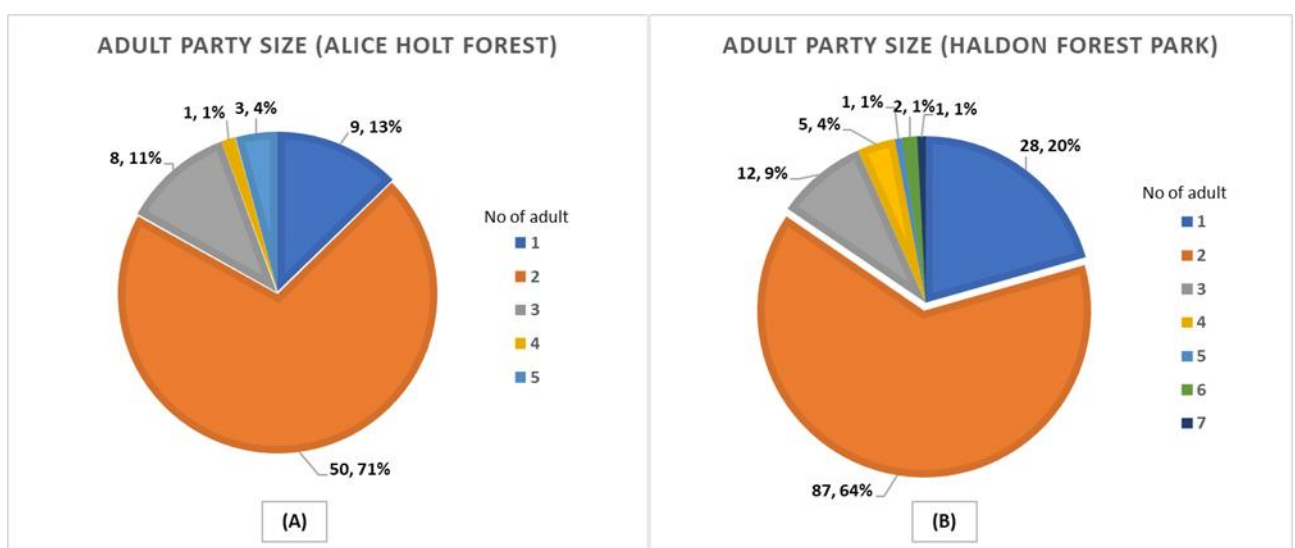


Figure 4.1: Adult party size of (A) Alice Holt Forest and (B) Haldon Forest Park.

Besides the number of adults in a group, it was also worth noting the number of children in order to evaluate the respondents' full experience during the visit to the forest park. The presence of children usually influences decisions made by adults regarding place selection, types of activities and the facilities required in the forest park. The number of children in a group ranged from zero to six children for both forest parks (Figure 4.2). A summary of party size for both forest parks is presented in Table 4.2. In brief, the largest party size at Alice Holt Forest consisted of two adults and three children (n=28). 34 respondents came from a group of two adults without children at Haldon Forest Park, followed by 31 respondents with two adults and two children. 22 respondents visited the forest alone. Overall, a group of two adults and two children dominated the party size of both forest parks (n=59).

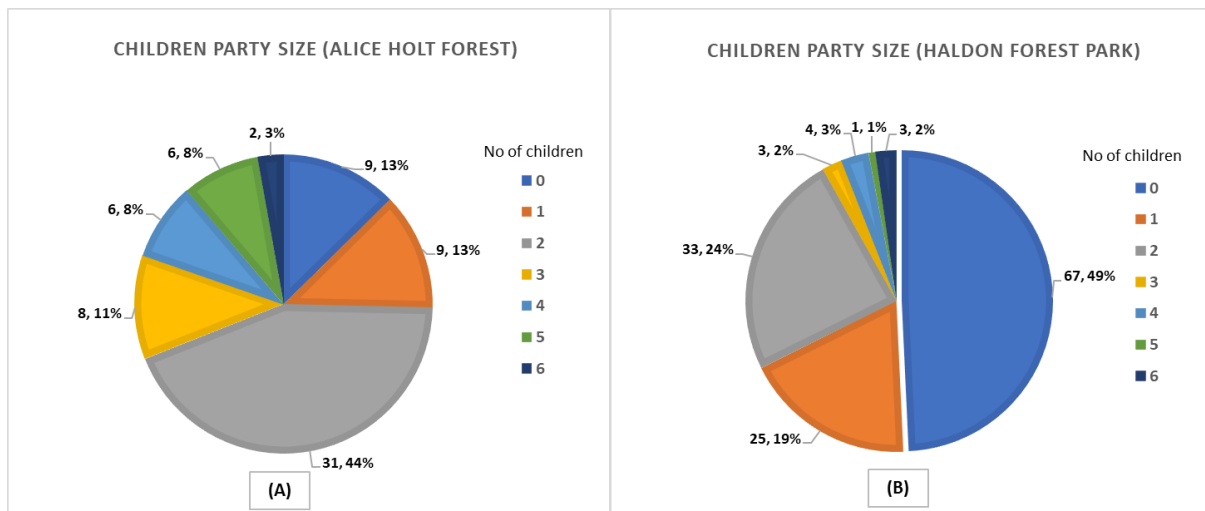


Figure 4.2 Children party size for (A) Alice Holt Forest and (B) Haldon Forest Park

Table 4.2 Summary of party size for both study areas

Forest Park	Adult	Children							Total
		0	1	2	3	4	5	6	
Alice Holt Forest	1	4	1	3	0	1	0	0	9
	2	4	6	28	7	1	2	2	50
	3	1	2	0	1	2	2	0	8
	4	0	0	0	0	1	0	0	1
	5	0	0	0	0	1	2	0	3
	Total	9	9	31	8	6	6	2	71
Haldon Forest Park	1	22	6	0	0	0	0	0	28
	2	34	17	31	3	1	1	0	87
	3	4	2	2	0	2	0	2	12
	4	5	0	0	0	0	0	0	5
	5	0	0	0	0	1	0	0	1

	6	1	0	0	0	0	0	1	2
	7	1	0	0	0	0	0	0	1
	Total	67	25	33	3	4	1	3	136
Combination	1	26	7	3	0	1	0	0	37
	2	38	23	59	10	2	3	2	137
	3	5	4	2	1	4	2	2	20
	4	5	0	0	0	1	0	0	6
	5	0	0	0	0	2	2	0	4
	6	1	0	0	0	0	0	1	2
	7	1	0	0	0	0	0	0	1
	Total	76	34	64	11	7	7	5	207

In general, most of the respondents went to the forest parks with their family members: 57 of them at Alice Holt Forest, and 95 at Haldon Forest Park (Figure 4.3). 14% of the total respondents visited the forest by themselves: Alice Holt Forest (n=4), Haldon Forest Park (n=25). Among all the respondents, 32 of them were dog walkers: Alice Holt Forest (n=5), Haldon Forest Park (n=27). Finally, about an equal number of respondents from both forest parks shared their outdoor experience with their friends: Alice Holt Forest (n=21), Haldon Forest Park (n=26).

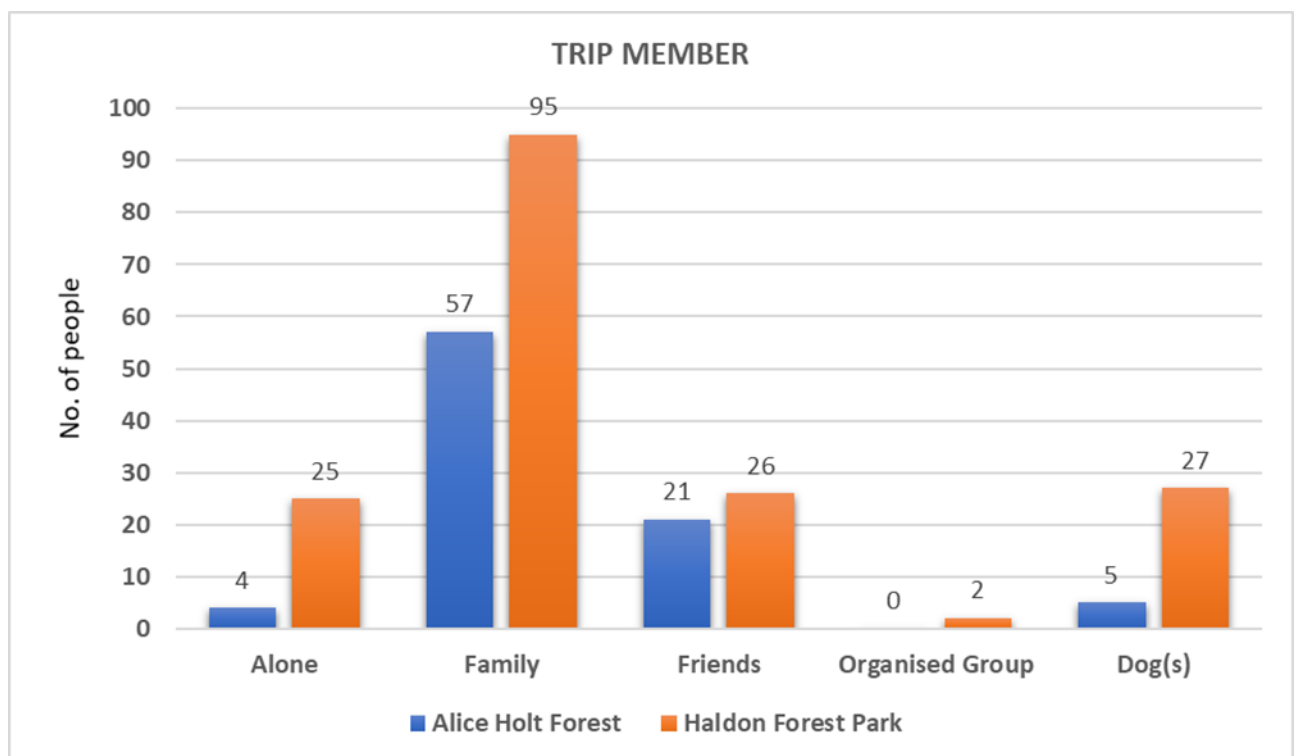


Figure 4.3: Trip member of the respondents for both forest parks

Table 4.3 shows the distribution of respondents based on gender and the activity they performed during their visit to the forest park. 69% of respondents at Alice Holt Forest reported playing with the children as one of the main activities during their visit; 18 of them were male, and 31 were female. The exercise was the second-highest activity performed by Alice Holt Forest respondents (male, n=13; female, n=24), followed by cycling (male, n=11; female, n=14), and visiting the café (male, n=11; female, n=9). Six people were dog walkers, two of them male and the remaining female. 18.3% of the respondents at Alice Holt Forest had a picnic, about 15.5% were enjoying nature, and 12.7% were performing adventure activities such as the high-rope course (Go Ape!). However, no one reported horse riding and volunteering at Alice Holt Forest during the survey period. In contrast to Alice Holt Forest, more than half of the respondents from Haldon Forest Park were cyclists (69%, n=83), with about an equal number of male (n=40) and female (n=42) respondents. 64 of the respondents were performing exercise during the visit (male, n=16; female, n=48), 29 were playing with their children (male, n=7; female, n=22), 25 of them were visiting the café (male, n=11; female, n=14), and 19 respondents were enjoying nature (male, n=7; female, n=12). 28 dog walkers were identified during the survey period, where eight of them were male, and 20 were female. Two female horse riders and one male volunteer were among the 136 respondents from Haldon Forest Park. Four respondents (male, n=1; female, n=2; prefer not to say, n=1) were joining adventure activities, and six of the respondents (male, n=3 female, n=3) were having a picnic during the survey period.

The distribution of respondents based on the trip members and activities is shown in Table 4.4. The number of respondents by activity is not necessarily equal to the total number of respondents because this question had multiple responses. Playing with children was the most frequent activity performed by respondents at Alice Holt Forest, where 43 of the respondents were visiting the forest with family, 15 of them with friends and two of them were with their dogs. Among the 37 respondents performing exercise at Alice Holt Forest, 32 of them were with family, and one of them was alone, 11 were with friends, and one with a dog(s). Most of the respondents at Alice Holt Forest were visiting with family. Besides playing with children and exercising, these respondents dominated other activities such as cycling (65.5%), picnic (70.6%), enjoying nature (73.3%), and visiting the café (69.2%). Cyclists

dominated the number of respondents at Haldon Forest Park. Most of the cyclists were visiting the forest with family (n=55), 18 were alone, 18 with friends, one with an organised group, and 14 of the cyclists came with their dog(s). Similar to Alice Holt Forest, most of the respondents from Haldon Forest Park were visiting the forest with their family (n=95). Respondents arriving with their family performed activities such as exercise (n=51), dog walking (n=19), playing with children (n=28), enjoying nature (n=15), visiting the café (n=18), having a picnic (n=6), and adventure activities (n=4). 25 of the respondents went to the forest by themselves: seven of them to do exercise, eight were dog walkers, 18 were cyclists, one was a horse-rider, one of them played with children, four were enjoying nature, one of them became a volunteer, and four of them were visiting the café in the forest.

Table 4.3: Distribution of respondents based on gender and activity

Forest Park	Gender	Activity										Total
		Exercise	Dog Walking	Cycling	Horse Riding	Adventure	Picnic	Children	Nature	Volunteering	Cafe	
Alice Holt Forest	Male	13	2	11	0	5	5	18	2	0	11	25
	Female	24	4	14	0	4	8	31	9	0	9	46
	Total	37	6	25	0	9	13	49	11	0	20	71
Haldon Forest Park	Male	16	8	40	0	1	3	7	7	1	11	49
	Female	48	20	42	2	2	3	22	12	0	14	86
	Prefer not to say	0	0	1	0	1	0	0	0	0	0	1
	Total	64	28	83	2	4	6	29	19	1	25	136

Table 4.4: Distribution of respondents based on the trip member and activity

Forest Park	Gender	Activity										Total
		Exercise	Dog Walking	Cycling	Horse Riding	Adventure	Picnic	Children	Nature	Volunteering	Cafe	
Alice Holt Forest	Alone	1	1	3	0	0	0	0	0	0	0	4
	Family	32	5	19	0	9	12	43	11	0	18	57
	Friends	11	0	4	0	1	5	15	2	0	6	21
	Dog(s)	1	5	3	0	0	0	2	2	0	2	5
	Total	37	6	25	0	9	13	49	11	0	20	71
Haldon Forest Park	Alone	7	8	18	1	0	0	1	4	1	4	25
	Family	51	19	55	0	4	6	28	15	0	18	95
	Friends	10	2	18	1	1	1	2	2	0	5	26
	Organised Group	1	0	1	0	0	0	0	0	0	0	2
	Dog(s)	12	27	14	1	0	0	3	7	1	4	27
	Total	64	28	83	2	4	6	29	19	1	25	136

Another aspect of visitor characteristic is the frequency of visits to the forest park (Figure 4.4). This information can generate data on 'place bonding'. From the results, the highest frequency of visits by the respondents at Alice Holt Forest was 'a few times a year', recorded by 38% of the total number of Alice Holt Forest respondents. About 23% of the respondents at Alice Holt Forest visited the forest a few times a week: three of them went to the forest 1-3 times a week, 11 of them visited 4-5 times a week, and two of them went to the forest every day. 38% of respondents went to Haldon Forest Park a few times a month (n=52), followed by 33% visiting the forest a few times a year (n=45). Nine of the respondents at Haldon Forest Park answered this question as 'less often'. 22% of the respondents of Haldon Forest Park were regular visitors, whereas 26 of them went to the forest at least 1-3 times a week, and the remaining four respondents visited the forest 4-5 times a week.

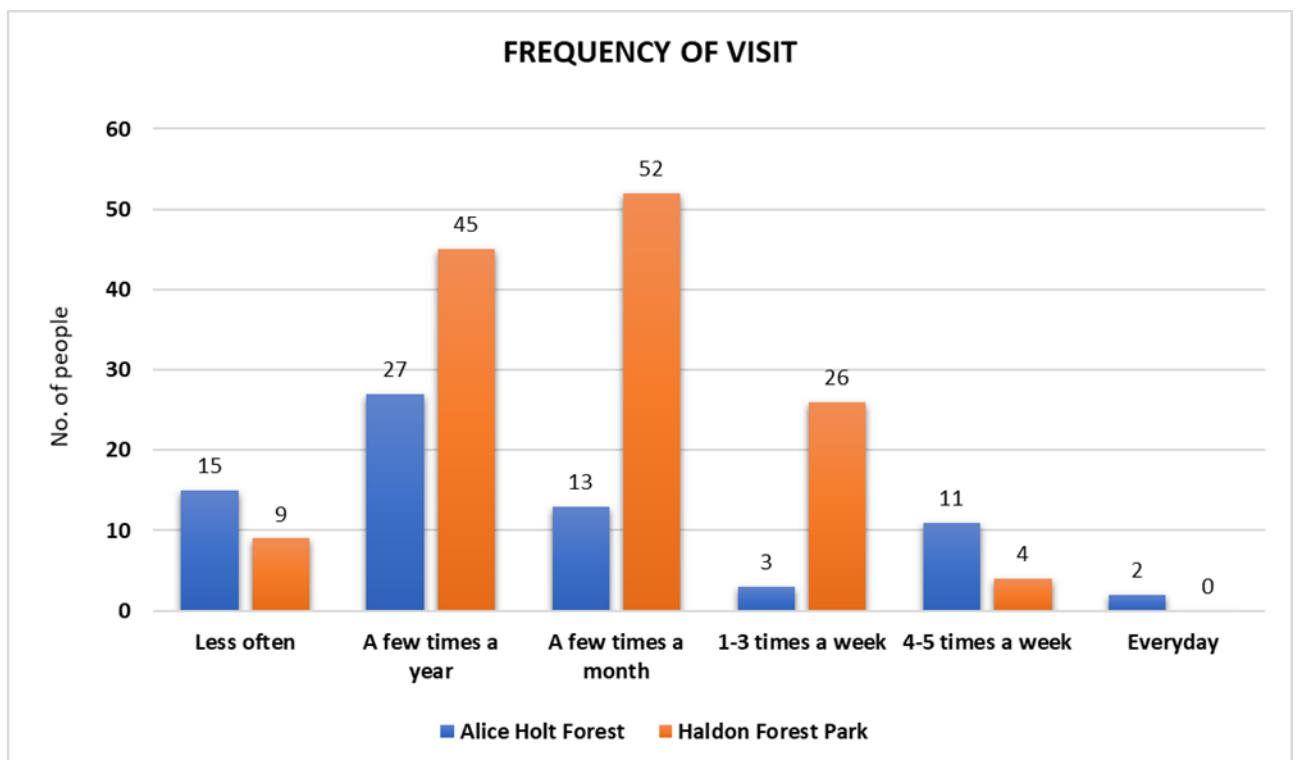


Figure 4.4: Frequency of visit to Alice Holt Forest and Haldon Forest Park

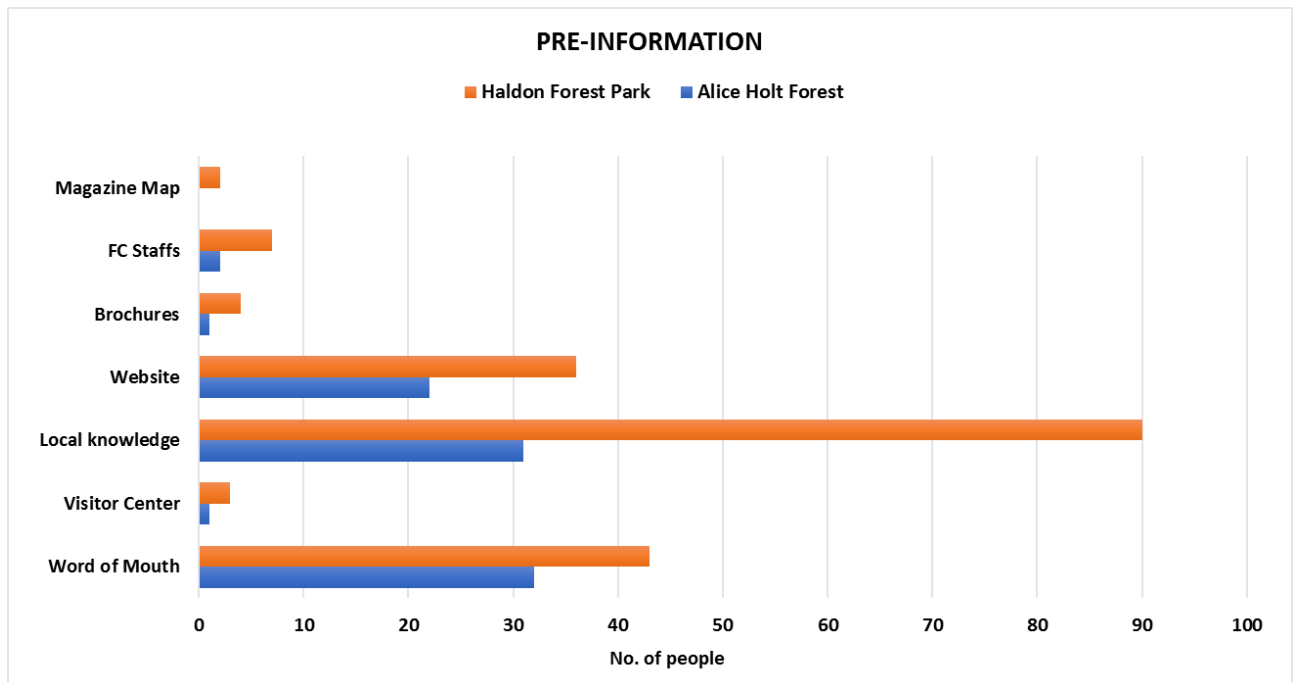


Figure 4.5: Pre-information of the forest parks

Figure 4.5 illustrates the source of pre-information about the forest parks. The context of ‘pre-information’ in this study was how the visitors had found out about the forest and the services, activities, and facilities that they offered. About 66% of respondents had obtained information about Haldon Forest Park from local knowledge. This is because most of the respondents were local people who lived near the forest. Apart from that, they also had got to know about the forest from other people (‘word of mouth’) (n=43), and by browsing the website (n=36). The highest source of information for Alice Holt Forest had been through word of mouth (n=32), followed by local knowledge (n=31). 30% of the respondents had obtained information about Alice Holt Forest by browsing the website. Overall, half of the total respondents had received information about the forest from local knowledge (58%, n=121), while the lowest percentage of pre-information had been from magazines (1%).

4.3 Recreational Motivation

Recreation motivation was measured using the Recreation Experience Preference (REP) scale. This is a scale that measures the importance of selected motivations for recreational experiences (Manfredo et al., 1996; Davenport et al., 2002). Five dimensions were selected for this study, including ‘escaping physical pressure’, ‘learning’, ‘enjoying nature’, ‘family

togetherness' and 'health'. Respondents were asked about their reasons for choosing the forest park for their outdoor recreational activities. Two items for each dimension were coded on a five-point scale, ranging from 'not at all important' (1) to 'very important' (5).

Table 4.5 shows the mean value of each item used to measure the respondents' motivation for Alice Holt Forest, Haldon Forest Park, and a combination of data from both forest parks. The results show that family togetherness contributed the highest mean value for Alice Holt Forest. The first item used to measure this dimension was *to bring my family closer together* (\bar{x} = 4.06). About 51% (n=36) of the respondents stated that it was important to bring their family closer together during the visit to the forest, while 24 of the respondents (34%) selected 'very important' as their answer to this question (Figure 4.6g). 58% (n=41) of respondents from Alice Holt Forest indicated it was 'very important' *to do something with my family* (\bar{x} = 4.28) which was the second item of family togetherness (Figure 4.6h). As compared to Alice Holt Forest, enjoying nature was the main motivation for the respondents to visit the Haldon Forest Park. 96.3% of the respondents selected the first item, *to view scenic beauty* (\bar{x} = 4.34) as 'important' and 'very important' during their trip to Haldon Forest Park (Figure 4.6e). The second item for the third dimension was *to be close to nature*. 47.1% (n=64) chose 'important' and 28.7% (n=39) selected 'very important', which contributed to a mean score of 4.00 (s=0.82) (Figure 4.6f). In brief, 'to view scenic beauty' (\bar{x} =4.20) and 'to do something with my family' (\bar{x} =4.04) were the most important reasons chosen by all the respondents in this study to represent their motivation to do outdoor activities at the forest parks.

Table 4.5: Descriptive data of recreation motivation for Alice Holt Forest and Haldon Forest Park

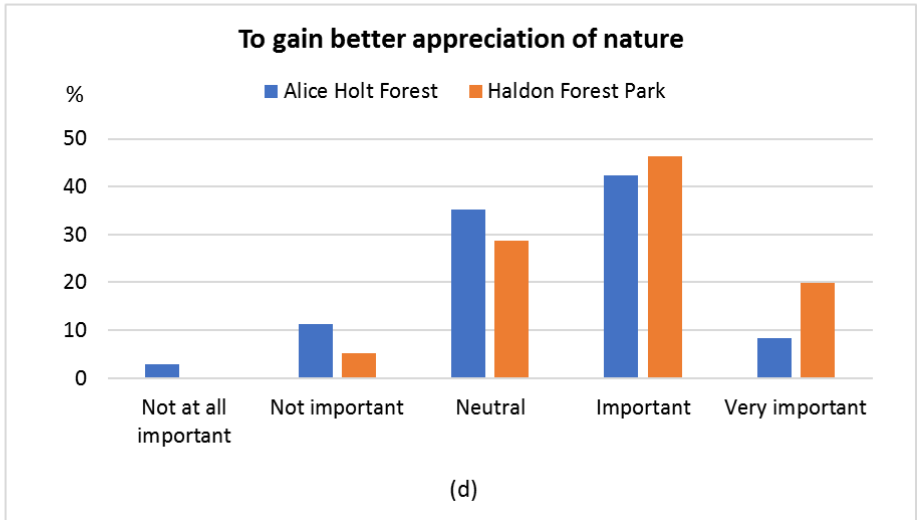
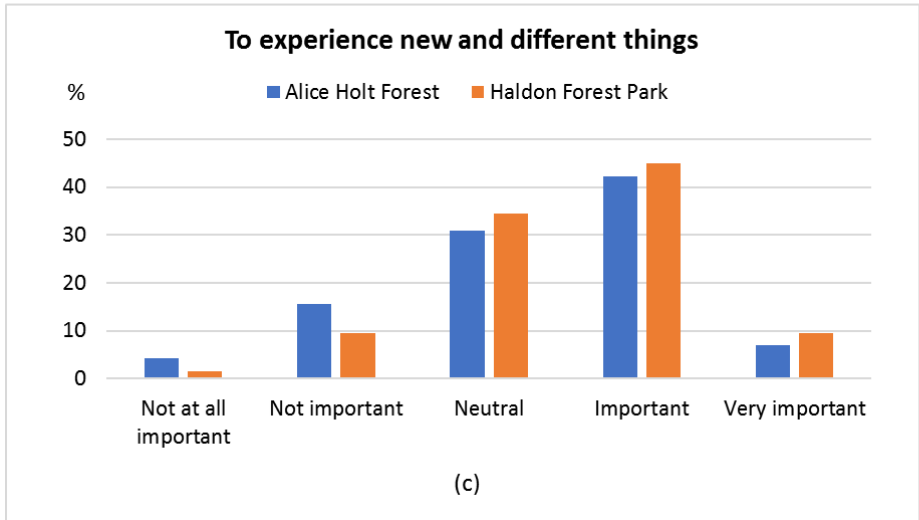
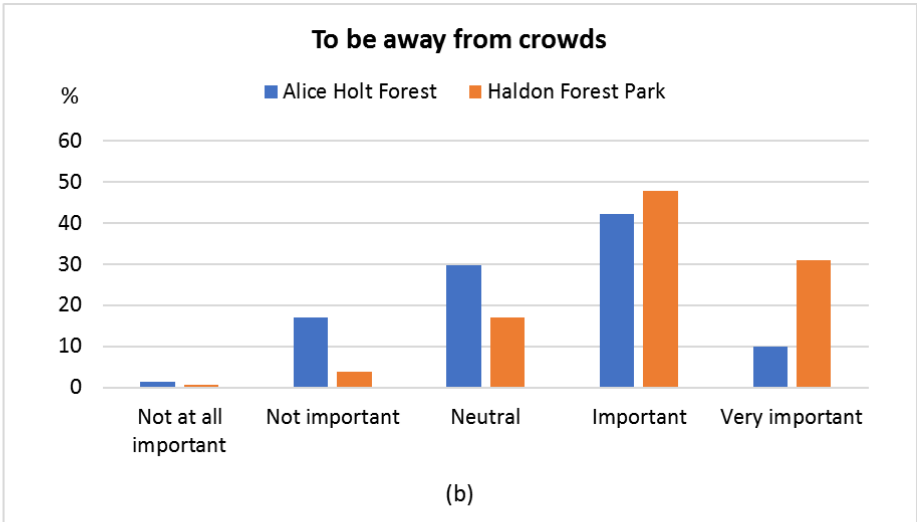
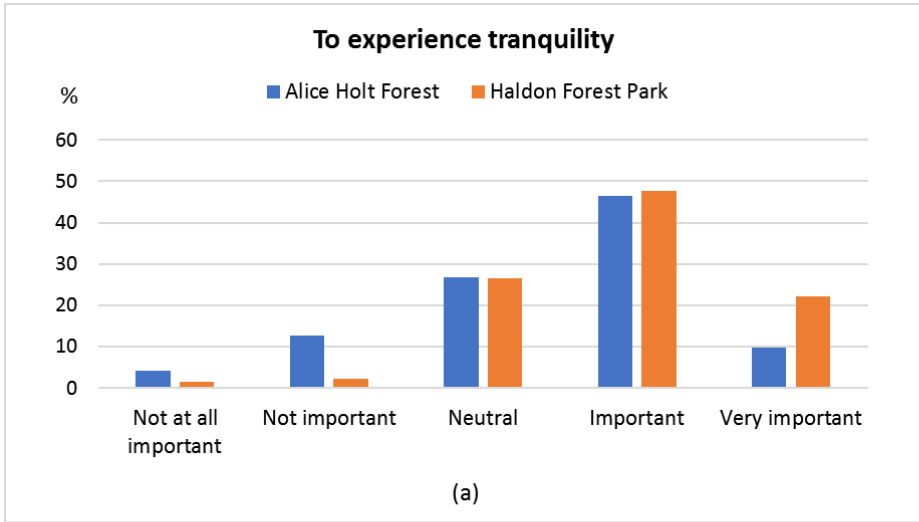
Recreational Motivation ^A	Alice Holt Forest	Haldon Forest Park	Combination
	Mean (SD)	Mean (SD)	Mean (SD)
<i>Escape physical pressure</i>			
1. To experience tranquillity	3.45 (0.98) ^b	3.87 (0.83) ^a	3.72 (0.91)
2. To be away from crowds of people	3.42 (0.94) ^b	4.04 (0.83) ^a	3.83 (0.92)
<i>Learning</i>			
1. To experience new and different things	3.32 (0.97)	3.51 (0.85)	3.45 (0.90)
2. To gain a better appreciation of nature	3.42 (0.91) ^b	3.81 (0.81) ^a	3.68 (0.86)
<i>Enjoying nature</i>			

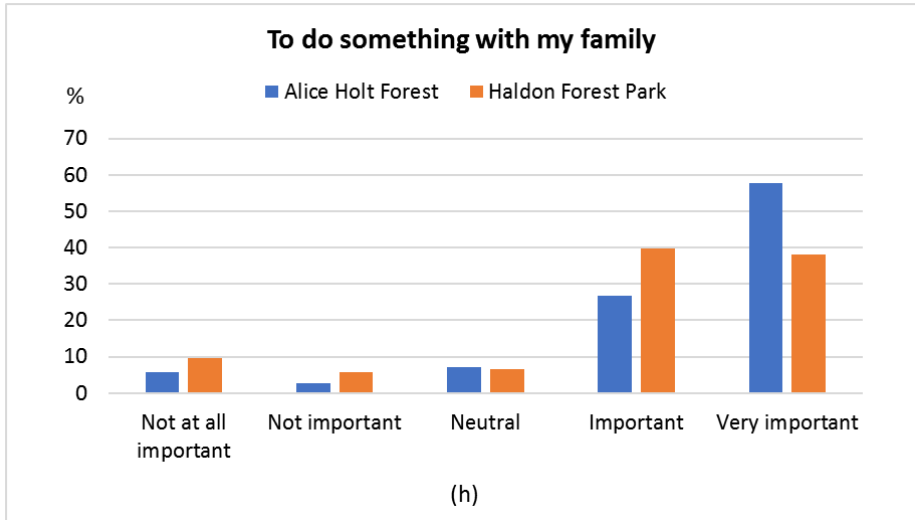
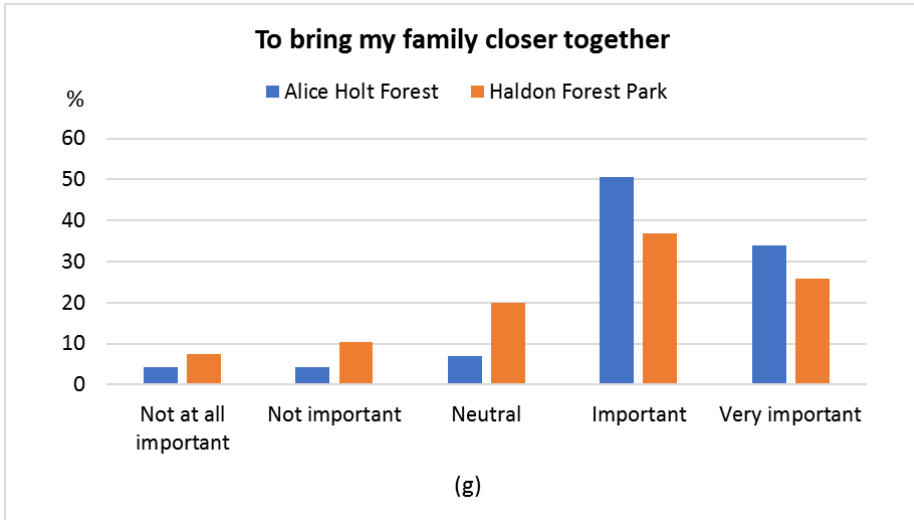
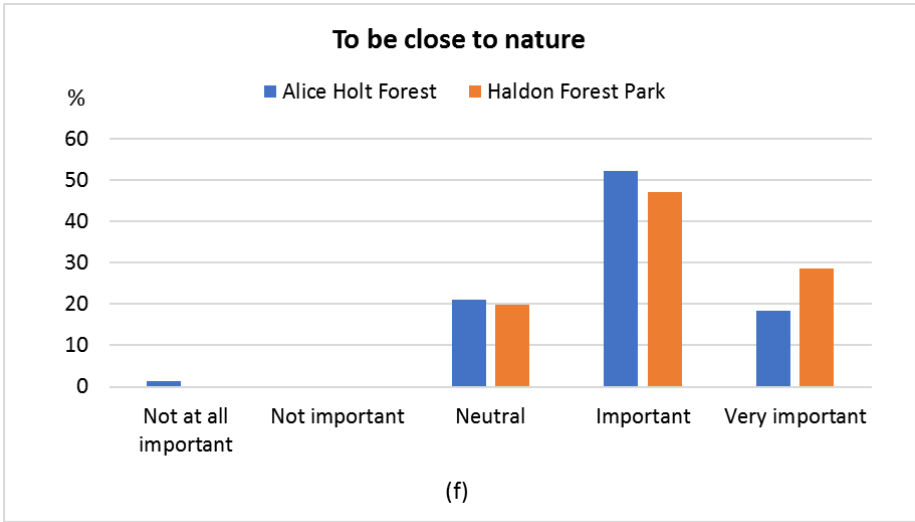
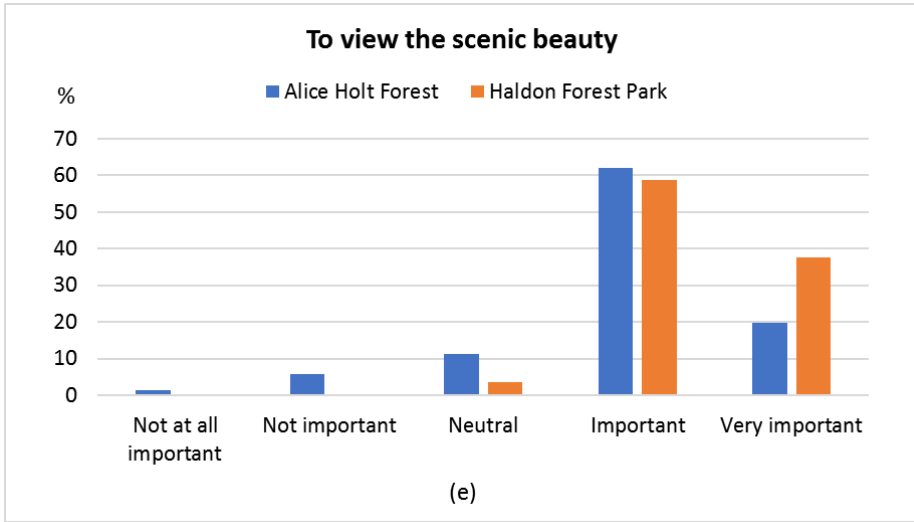
1. To view the scenic beauty	3.93 (0.82) ^b	4.34 (0.55) ^a	4.20 (0.68)
2. To be close to nature	3.79 (0.88)	4.00 (0.82)	3.93 (0.84)
Family togetherness			
1. To bring my family closer together	4.06 (0.98) ^a	3.63 (1.19) ^b	3.78 (1.13)
2. To do something with my family	4.28 (1.01) ^a	3.91 (1.24) ^b	4.04 (1.21)
Health			
1. To help reduce or release tension	3.76 (0.92) ^b	4.10 (0.81) ^a	3.99 (0.86)
2. To avoid everyday responsibilities for a while	3.38 (1.11)	3.68 (1.07)	3.57 (1.09)

^A Measured using a 5-point scale format (1 = not at all important, 3 = neutral, 5 = very important). Highlighted rows show that the items have a significant difference between both forest parks, $p < .05$.

^{a,b} indicates a significant difference between two mean values.

From independent sample tests, the results show that the mean values of seven items in recreational motivation dimension show significant differences between Alice Holt Forest and Haldon Forest Park (Table 4.5). Respondents at Haldon Forest Park felt that it was important for them to experience tranquillity during their visit to the forest, as compared to the Alice Holt Forest respondents: $t(205) = 3.211, p = 0.002$. The results also showed that *to be away from crowds of people* was an important motivation by the respondents of Haldon Forest Park in comparison to Alice Holt Forest: $t(205) = 4.881, p = 0.000$. Furthermore, respondents of Haldon Forest Park also claimed that they visited the forest as one of the ways *to gain a better appreciation of nature* [$t(205) = 3.122, p = 0.002$], *to view the scenic beauty of the forest* [$t(205) = 4.282, p = 0.000$], and it also helped them *to reduce or release tensions* [$t(205) = 2.757, p = 0.006$]. On the other hand, respondents of Alice Holt Forest were found to have a significantly higher mean score for both items relating to family togetherness. These indicated that the respondents of Alice Holt Forest felt it was important *to bring their family closer together* [$t(205) = 2.584, p = 0.010$] and *do activities with the family* [$t(205) = 2.112, p = 0.036$] as their motivation to do outdoor activities, as compared to Haldon Forest Park's respondents





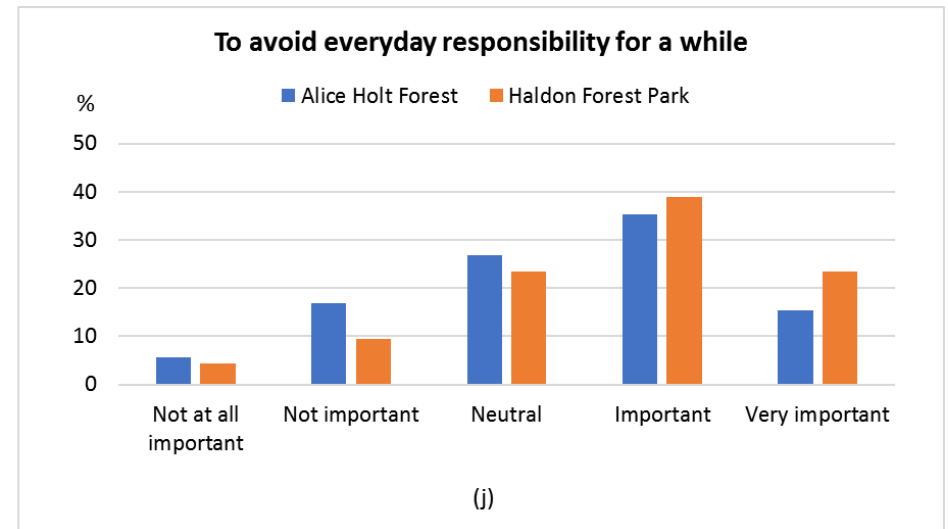
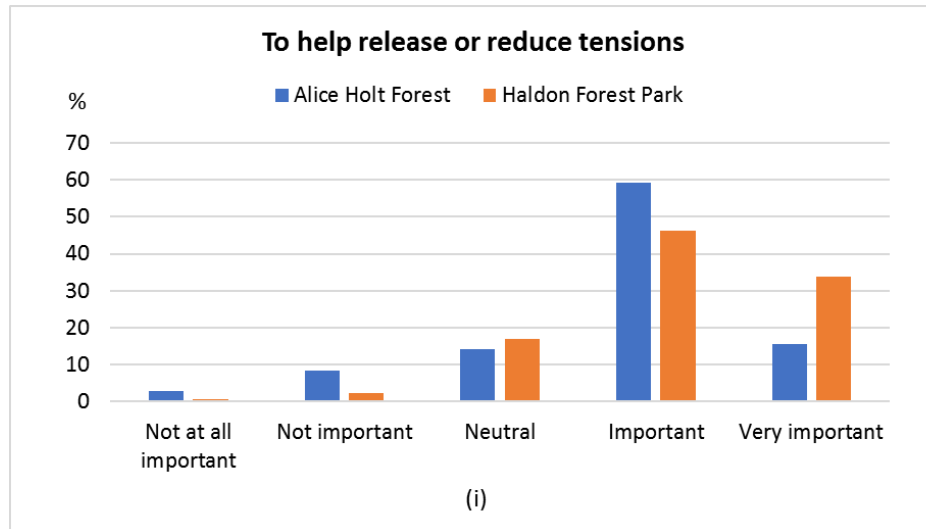


Figure 4.6: The importance of recreation experience preference of respondents from Alice Holt Forest and Haldon Forest Park (Question 7: How important are the reasons below to your visit to this park today? Please circle one relevant number to your answer)

4.4 Place Attachment

Place attachment was measured based on Williams and Roggenbuck's scale (1989). Four dimensions were included in this study: place identity, place dependence, affective attachment and social bonding. These items were borrowed from Kyle et al. (2005), Budruk & Stanis (2013), and Ramkissoon et al. (2013). The respondents were asked to rate the items on a five-point scale where 1= 'strongly disagree', and 5 = 'strongly agree'. Table 4.6 displays a summary of the mean value and standard deviation for each item of place attachment for both study areas. The last column portrays the mean values of the overall data of the sample size in this research (n=207). The first dimension of place attachment was *place identity*. This dimension refers to a symbolic connection between an individual and a place that reflects their own identity (Stedman, 2002; Ramkissoon et al., 2014). There were three items used to evaluate the place identity of the respondents in this survey. Haldon Forest Park had significantly higher mean values for all three items for place identity in comparison to Alice Holt Forest (Table 4.6). The results showed that the respondents at Haldon Forest Park agreed that the forest was a part of themselves as compared to Alice Holt Forest respondents: $t(205) = 3.926, p = 0.000$. About 35% (n=47) of total respondents at Haldon Forest Park agreed to 'strongly agree' with the statement that *I feel this forest park is a part of me*, while 43% (n=58) responded as neutral (Figure 4.7a). For the second item *I identify strongly with this forest park* ($\bar{x} = 3.35$), Haldon Forest Park gained a significantly higher mean score than Alice Holt Forest: $t(205) = 3.441, p = 0.001$, where about 43% of the respondents 'agreed' with the statement (agree, n=41; strongly agree, n=18) (Figure 4.7b). The last item of place identity was on *visiting this forest park says a lot about who I am*. From the results, it shows that 45% of the respondents from Haldon Forest Park were 'neutral' about it (n=61), while 38% (n=51) chose 'agree' or 'strongly agree' and about 18% (n=24) of the respondents chose 'disagree' or 'strongly disagree' with the statement (Figure 4.7c). These responses resulted in a significant difference of mean score in comparison with the other forest: $t(205) = 1.983, p = 0.049$.

Table 4.6: Descriptive data of place attachment for Alice Holt Forest and Haldon Forest Park

Place Attachment ^B	Alice Holt Forest	Haldon Forest Park	Combination
	Mean (SD)	Mean (SD)	Mean (SD)
Place Identity			
1. I feel this forest park is a part of me	2.61 (0.96) ^b	3.18 (1.03) ^a	2.99 (1.04)
2. I identify strongly with this forest park	2.85 (1.00) ^b	3.35 (1.02) ^a	3.18 (1.03)
3. Visiting this forest park says a lot about who I am	2.96 (0.99) ^b	3.24 (0.94) ^a	3.14 (0.96)
Place Dependence			
1. I prefer this forest park over other settings/facilities for the recreational activities that I enjoy most	3.37 (0.90)	3.39 (1.02)	3.38 (0.98)
2. For what I like to do, I could not imagine anything better than the setting and facilities provided by this forest park	3.13 (1.03)	3.28(1.08)	3.23 (1.06)
3. I enjoy visiting this forest park more than any other sites	3.27 (1.02)	3.26 (1.05)	3.27 (1.02)
4. For the recreation activities that I enjoy most, the settings and facilities provided by this forest park are the best	3.41 (0.94)	3.35 (1.11)	3.37 (1.05)
Affective Attachment			
1. This forest park means a lot to me	3.38 (0.99) ^b	3.97 (0.83) ^a	3.77 (0.93)
2. I am very attached to this forest park	3.00 (1.03) ^b	3.48 (1.02) ^a	3.31 (1.02)
3. I feel a strong sense of belonging to this forest park and its settings/facilities	2.80 (1.02) ^b	3.21 (1.04) ^a	3.07 (1.05)
4. I have little, if any, emotional attachment to this forest park and its settings/facilities	2.73 (1.11)	2.52 (1.12)	2.59 (1.12)
Social Bonding			
1. My friends/family would be disappointed if I were to start visiting other settings and facilities	2.10 (0.86)	2.18 (0.93)	2.15 (0.91)
2. If I were to stop visiting this forest park's sites, I would lose contact with a number of friends	1.72 (0.74)	1.90 (1.02)	1.84 (0.94)
3. Many of my friends/family prefer this forest park over other sites	3.01 (1.12)	3.13 (1.02)	3.09 (1.06)

^B Measured using a 5-point scale format (1 = strongly disagree, 3 = neutral, 5 = strongly agree). Highlighted rows show that the items have a significant difference between both forest parks, $p < .05$.

^{a,b} indicates significant differences between two mean values.

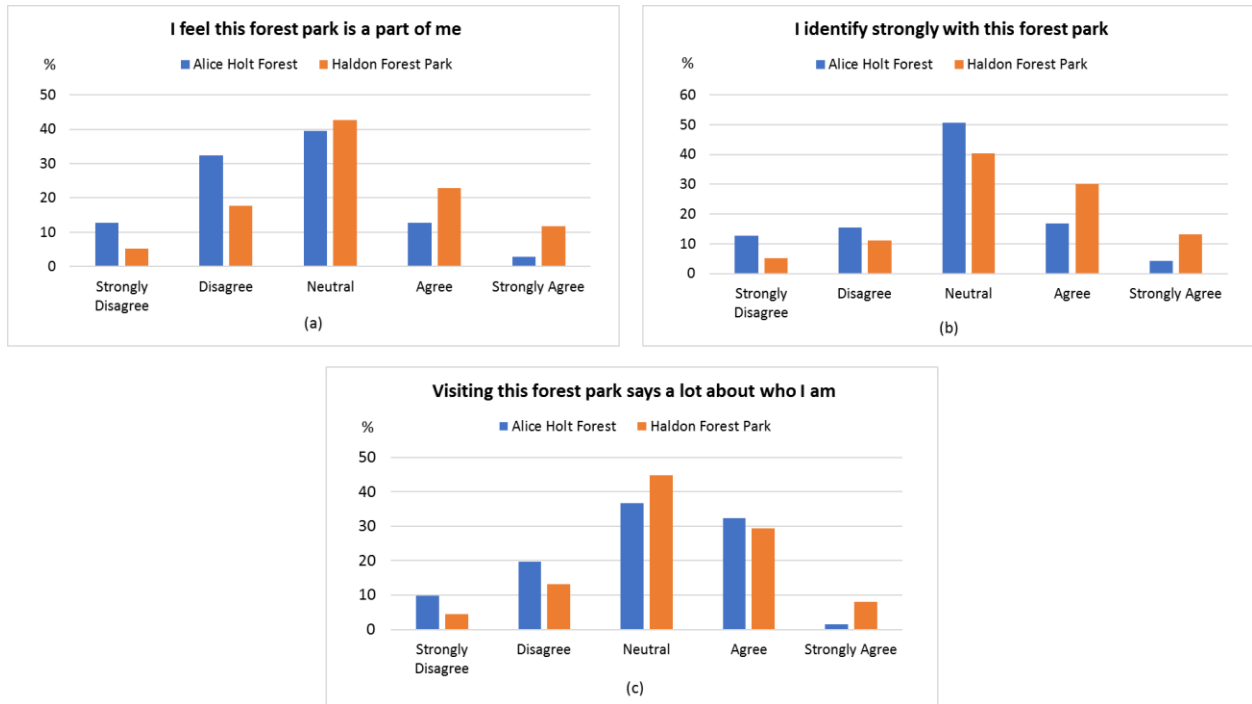


Figure 4.7: Place identity (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)

The second dimension of place attachment was *place dependence*. It is defined as a bond an individual form with the physical characteristics of a place, such as facilities and other special features, that function well to their needs. The results show that there was no significant difference in mean values for each item measured to represent the place dependence between Alice Holt Forest and Haldon Forest Park (Table 4.6). The first two items that contributed to the highest mean values of place dependence for both forest parks were item number 1: *I prefer this forest park over other settings/facilities for the recreational activities that I enjoy most* and item number 4: *For the recreation activities that I enjoy most, the settings and facilities provided by this forest park are the best*. For the first item, about 52% (n=37) of Alice Holt Forest respondents chose ‘agree’ or ‘strongly agree’ with the statement ($\bar{x}= 3.37$; $s=0.90$), while 50% (n=68) of the respondents from Haldon Forest Park selected ‘agree’ or ‘strongly agree’ ($\bar{x}= 3.39$; $s=1.02$) (Figure 4.8a). As a whole data set, the mean value of the fourth item, *For the recreation activities that I enjoy most, the settings and facilities provided by this forest park are the best* was 3.37 ($s=0.105$) (Table 4.6). About 17% (n=35) of respondents chose ‘disagree’ or ‘strongly disagree’ with the statement, 45% (n=93)

‘agree’, 9% ‘strongly agree’ (n=18), while another 29% (n=61) of the respondents chose ‘neither agree nor disagree’ with the fourth statement (Figure 4.8d).

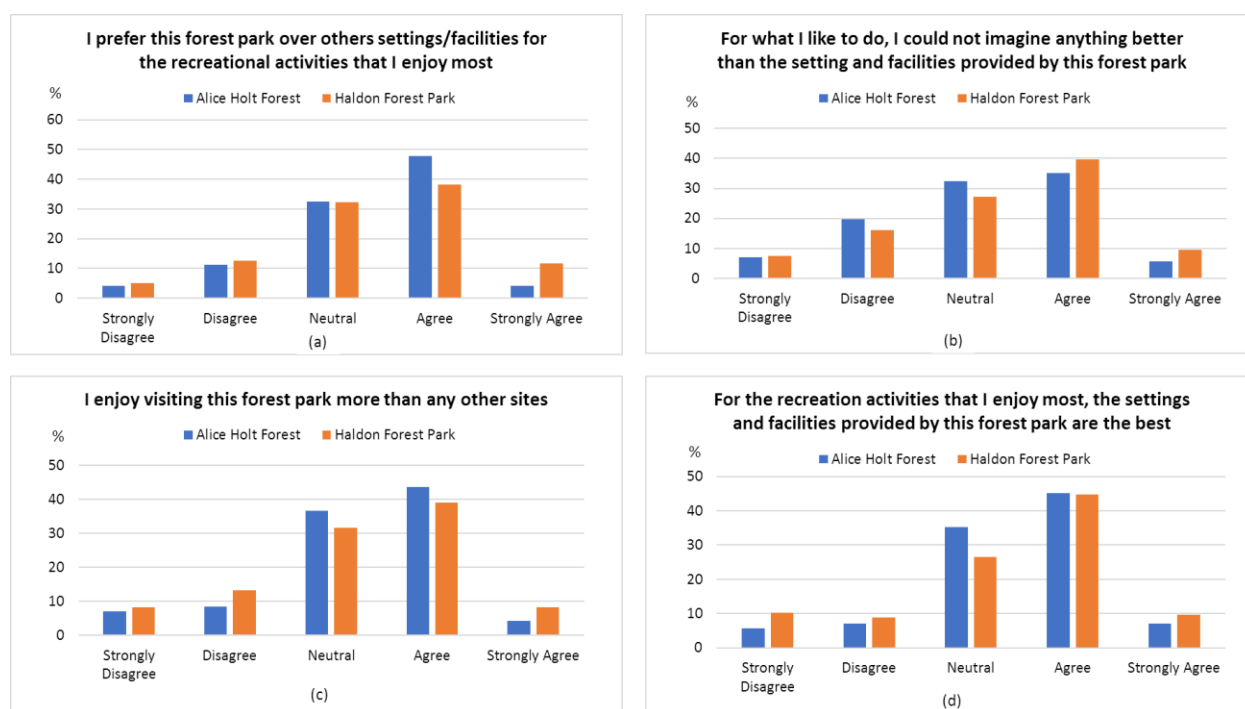


Figure 4.8: Place dependence (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)

Affective attachment involves emotional bonding that people share with a place. There were four items used to identify the affective attachment of the respondents to their respective forest parks (Table 4.6). Haldon Forest Park was found to have a significant difference in mean score as compared to Alice Holt Forest on three of the items: *this forest park means a lot to me*: $t(205) = 4.527, p = 0.000$; *I am very attached to this forest park*: $t(205) = 3.195, p = 0.002$; and *I feel a strong sense of belonging to this forest park and its settings/facilities*: $t(205) = 2.718, p = 0.007$. The highest mean value of affective attachment for Alice Holt Forest was the first item: *This forest park means a lot to me* ($\bar{x} = 3.38; s = 0.99$), where 46.5% of the respondents reported ‘agree’ (n=25) or ‘strongly agree’ (n=8) for the statement (Figure 4.9a). About 28% (n=20) of the respondents felt they were attached to Alice Holt Forest, while another 4% (n=3) believed that they were very attached to the forest (Figure 4.9b). The results also show respondents of Alice Holt Forest chose ‘disagree’ for the third and fourth statement on affective attachment: *I feel a strong sense of belonging to this forest park and its settings/facilities* ($\bar{x} = 2.80; s = 1.02$), and *I have little, if any, emotional*

attachment to this forest park and its settings/facilities ($\bar{x}= 2.73$; $s=1.11$). Regarding similar results to Alice Holt Forest, 71% (n=97) of respondents chose ‘agree’ in that Haldon Forest Park meant a lot to them, which has contributed to a mean value of 3.97 ($s=0.83$) (Figure 4.9a). The mean value of the second item: *I am very attached to this forest park* was 3.48 ($s=1.02$), with 52.5% of the respondents agreeing overall with the statement (agree, n=51; strongly agree, n=20) (Figure 4.9b). 44% (n=60) of the respondents chose a ‘neutral’ feeling against the third item about feeling a strong sense of belonging to Haldon Forest Park, while another 36% (n=49) selected to at least ‘agree’ with the statement (Figure 4.9c). Half of the respondents ‘disagreed’ that they have emotional attachment to Haldon Forest Park and its settings or facilities (n=68), while another 31% (n=42) chose to ‘neither agree nor disagree’ with the statement. This has resulted in a mean value of 2.52 ($s=1.12$) for the last item of affective attachment to Haldon Forest Park.

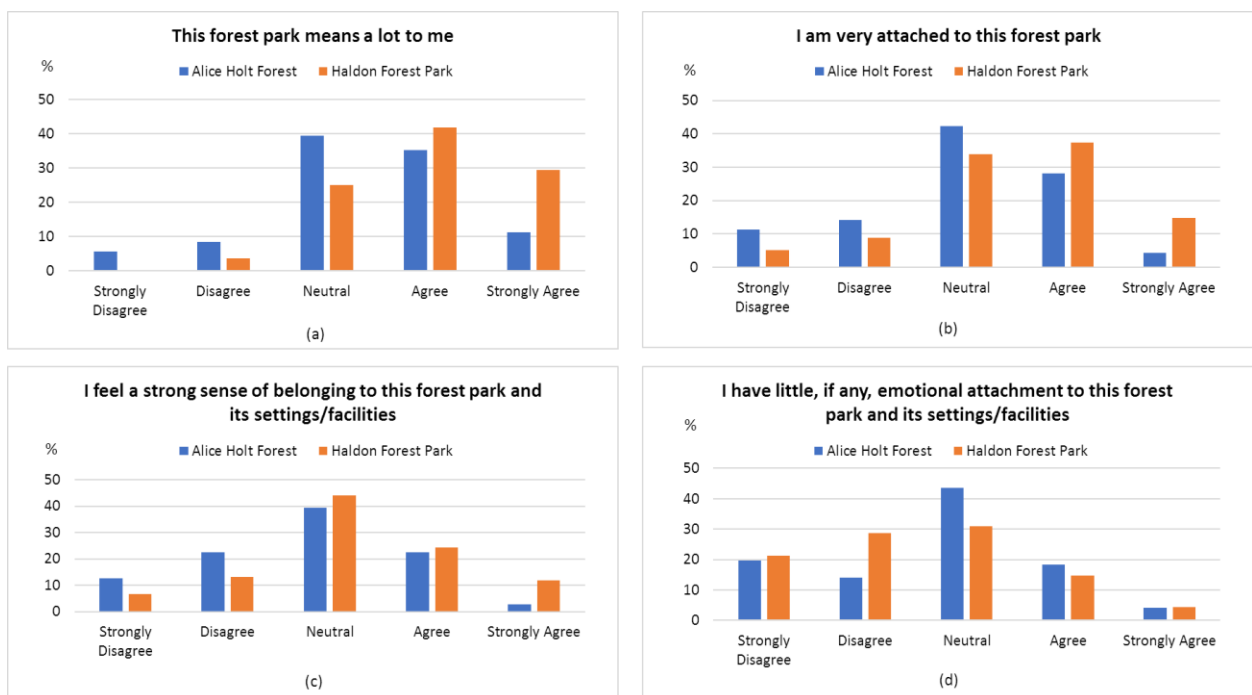


Figure 4.9: Affective attachment (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)

The last dimension used to measure place attachment was social bonding. It represents the development of communal bonds between individuals through people-place interaction. Three items were included in the questionnaire. Both forest parks displayed similar results for this dimension. More than half of the respondents of Alice Holt Forest (69%, n=49) and Haldon

Forest Park (59%, n=80) chose 'disagree' or 'strongly disagree' that their families or friends would be disappointed if they were to start visiting other settings and facilities (Figure 4.10a). It was also noticed that almost 89% (n=63) of respondents at least disagreed that they would lose contact with a number of friends if they were to stop visiting Alice Holt Forest, while 74% (n=101) of respondents from Haldon Forest Park responded in the same way to the same question (Figure 4.10b). On the other hand, the third item of social bonding obtained higher mean values as compared to the first two items, where the mean value of this item for Alice Holt Forest was 3.01 ($s=1.12$), and 3.13 ($s=1.02$) for Haldon Forest Park (Table 4.6). 39% (n=28) of the respondents have at least agreed that many of their friends or families prefer Alice Holt Forest over other sites, while the result for the same question to Haldon Forest Park was 37.5% (n=51) of them 'agree' and 'strongly agree' and 40% (n=55) chose to be 'neutral' to this question. In general, there was no strong bond between the respondents and the forest parks. This can be justified by the mean values of the overall data set which is shown in Table 4.6. On average, the mean value for place identity was 3.10, place dependence ($\bar{x}=3.31$), affective attachment ($\bar{x}=3.19$), and social bonding ($\bar{x}=2.36$).

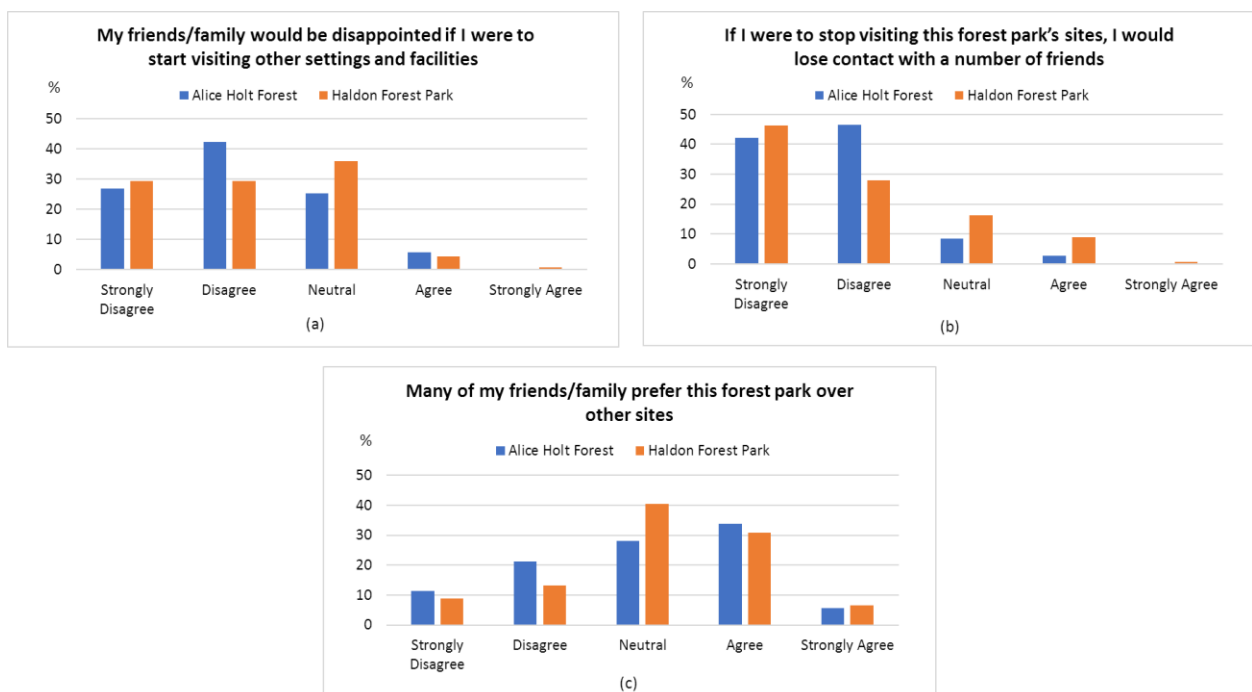


Figure 4.10: Social bonding (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)

4.5 Recreation Behaviour

Recreation behaviour was measured using the Theory of Planned Behaviour (TPB). Direct measurements were used to predict the respondents' behaviour during their visit to the forest parks. The four variables in the measurements included attitude towards behaviour, subjective norms, perceived behavioural control, and behavioural intention. The context is the attitude of respondents to the desired behaviour: for example, "staying on designated paths to minimise disturbance to wildlife during the visit to the forest park today". Respondents were asked to answer two different questions on each variable in the TPB about the desired behaviour while performing their outdoor activities at the forest parks. The respondents were asked to rate each question on a 7-point scale. Table 4.7 shows a summary of the mean scores of the variables for each item of recreation behaviour. The mean scores of attitudes, subjective norms, perceived behavioural control, and behavioural intention at Alice Holt Forest was slightly higher than for Haldon Forest Park. However, there were no significant differences between the recreation behaviour of respondents between the two parks.

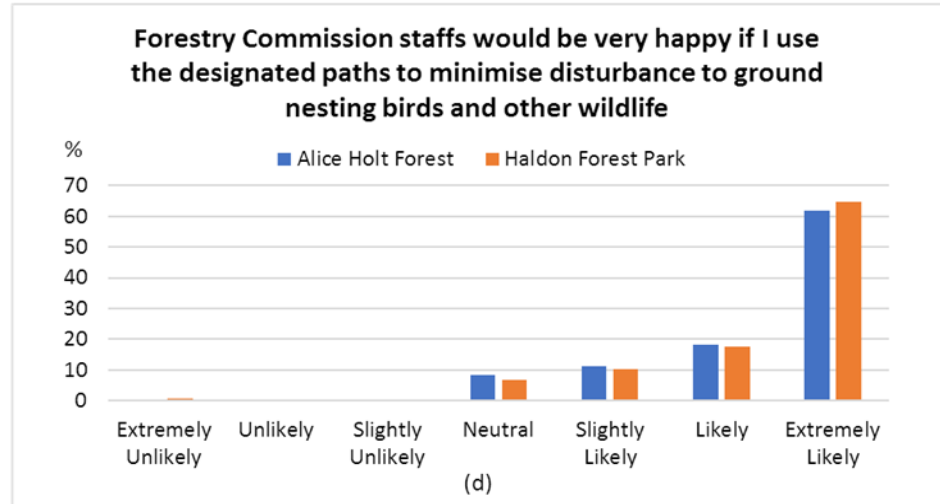
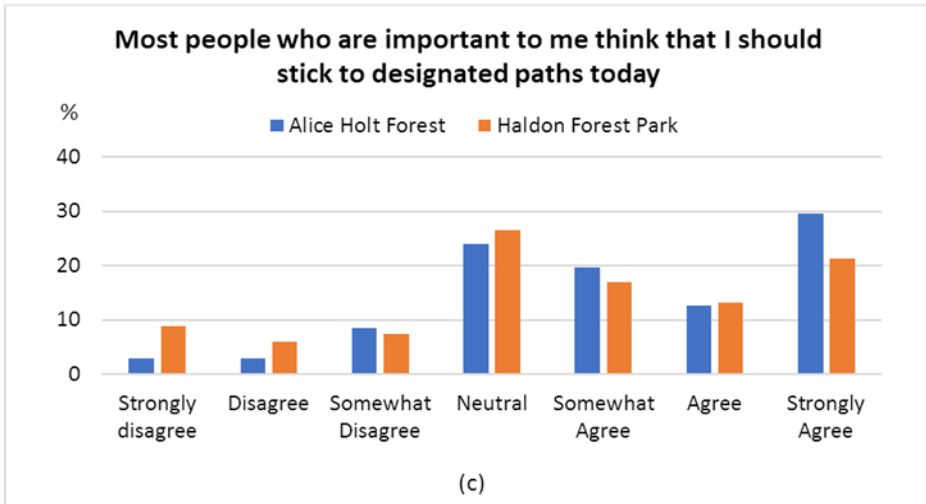
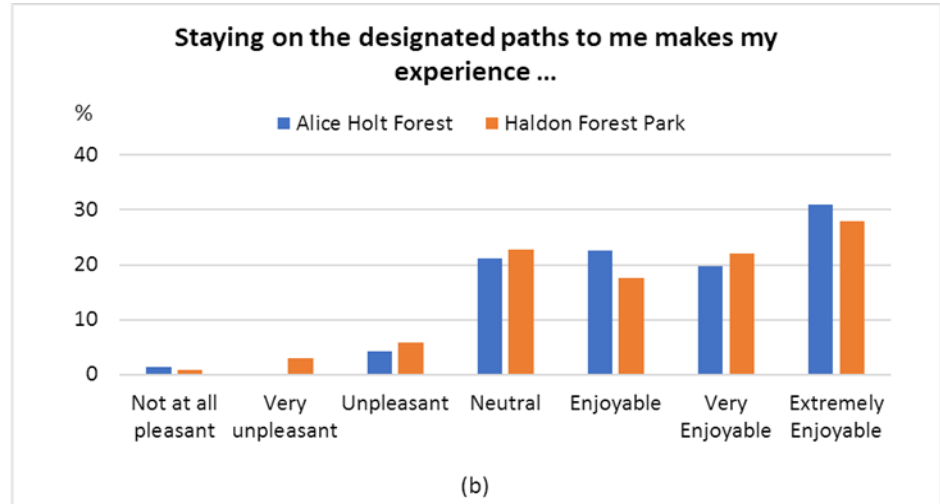
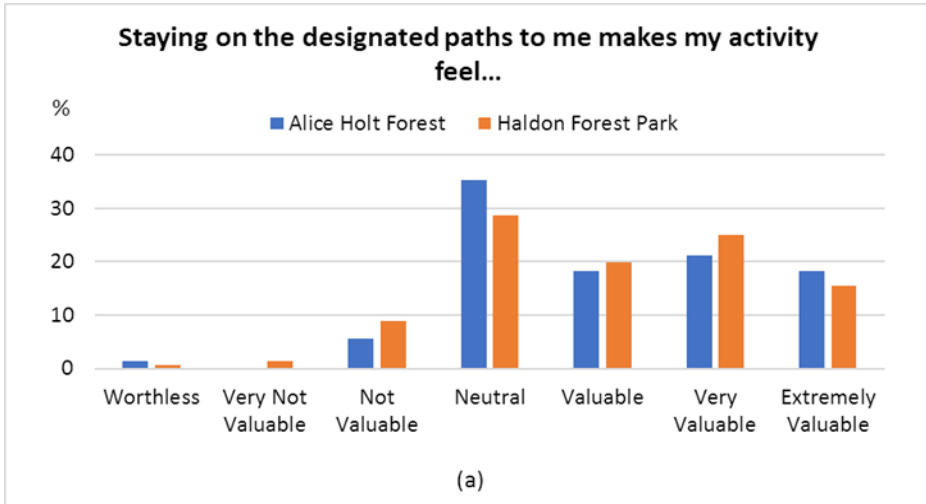
Table 4.7: Descriptive data of recreation behaviour for Alice Holt Forest and Haldon Forest Park

Recreation Behaviour ^c	Alice Holt Forest	Haldon Forest Park	Combination
	Mean (SD)	Mean (SD)	Mean (SD)
Attitude	5.26 (1.29)	5.17 (1.31)	5.20 (1.30)
1. Staying on the designated paths to me makes my activity feel...	5.06 (1.33)	5.02 (1.33)	5.03 (1.33)
2. Staying on the designated paths to me makes my experience ...	5.46 (1.40)	5.32 (1.45)	5.37 (1.42)
Subjective Norms	5.73 (1.15)	5.50 (1.23)	5.57 (1.20)
1. Most people who are important to me think that I should stick to designated paths today	5.11 (1.62)	4.62 (1.84)	4.79 (1.77)
2. Forestry Commission staffs would be very happy if I use the designated paths to minimise disturbance to ground-nesting birds and other wildlife	6.34 (0.99)	6.38 (1.03)	6.36 (1.01)
Perceived Behavioural Control	6.10 (1.21)	5.95 (1.36)	6.00 (1.31)
1. In term of my ability to stay on the designated path, I feel it is...	6.01 (1.36)	5.93 (1.56)	5.96 (1.49)
2. I feel I have control over myself to stay on the designated paths during my visit today	6.18 (1.22)	5.98 (1.38)	6.05 (1.33)

Behavioural Intention	5.85 (1.21)	5.78 (1.27)	5.80 (1.25)
1. In order to minimise disturbance to wildlife, I intend to stick to the designated paths today	5.70 (1.59)	5.76 (1.65)	5.74 (1.63)
2. I will not stray from the designated path in order to protect the ground-nesting birds	5.99 (1.34)	5.80 (1.49)	5.86 (1.44)

Note: Standard deviations in parentheses. Attitudes, subjective norms, perceived behavioural control, and intentions were measured on a scale from 1 to 7 with higher numbers indicating more positive attitudes and norms, higher perceptions of control and intentions.

Figure 4.11 displays the results for each item used to predict recreation behaviour of the respondents from Alice Holt Forest and Haldon Forest Park. 31% (n=64) of respondents chose 'neutral' as a response to the first item of attitude (Figure 4.11a), while 29% (n=60) of the overall respondents had a very positive attitude towards staying on designated paths during their visit to the forest parks (Figure 4.11b). The results also show that the respondents of Alice Holt Forest had a higher positive score for the first item of subjective norms as compared to Haldon Forest Park. 30% (n=21) of the respondents 'strongly agree' that *most of the people who are important to them think that they should stick to designated paths during the visit to the forest park*. However, the highest number of respondents from Haldon 'neither agreed nor disagreed' with the statement (Figure 4.11c). Both respondents from both forest parks were positive about the second item of subjective norms (Figure 4.11d). In terms of the reported likelihood of the respondents to *control themselves to stick to the designated paths*, this resulted in very positive behaviour (Figure 4.11e and 4.11f). Lastly, there were relatively high positive mean values of behavioural intentions by respondents from both forest parks (Figure 4.11g and 4.11h). About 47% and 50% of the respondents were 'extremely likely' and 'strongly agreed' that they would *not stray off the paths to protect wildlife and ground-nesting birds*.



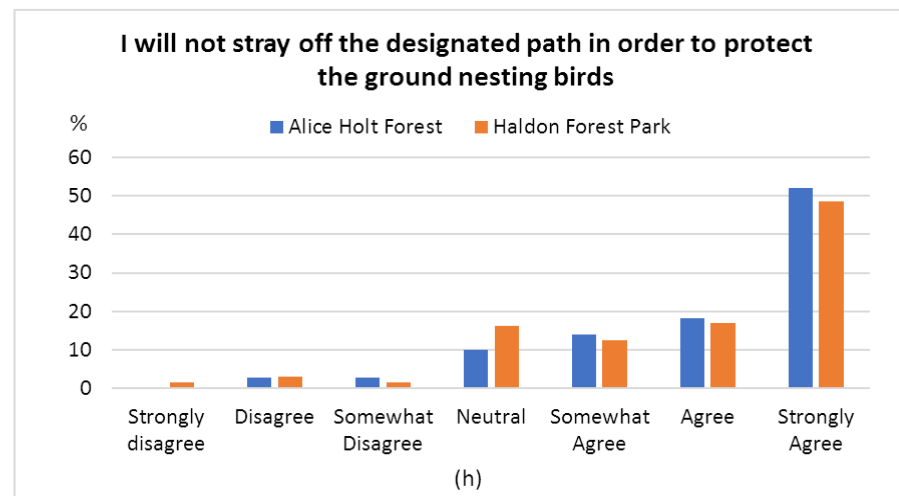
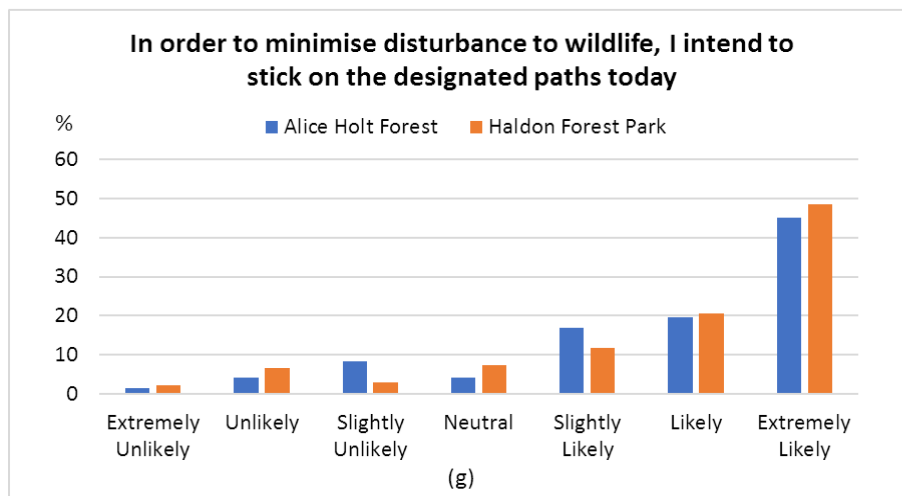
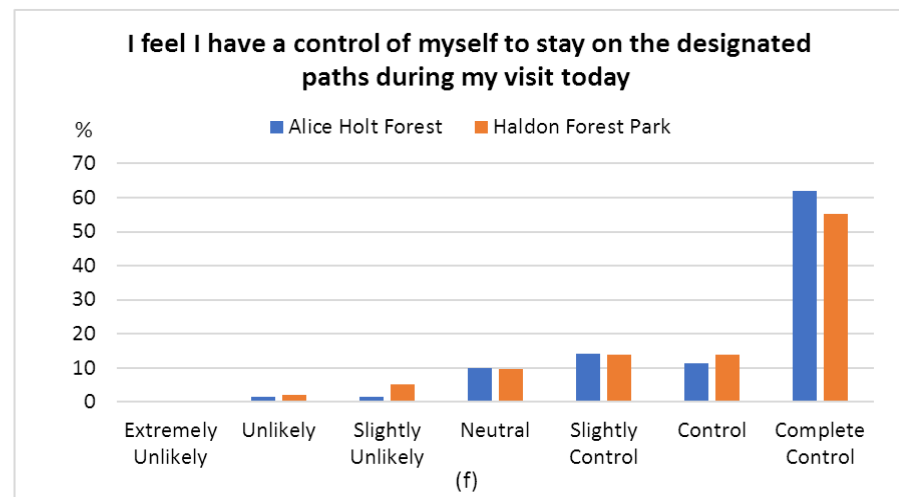
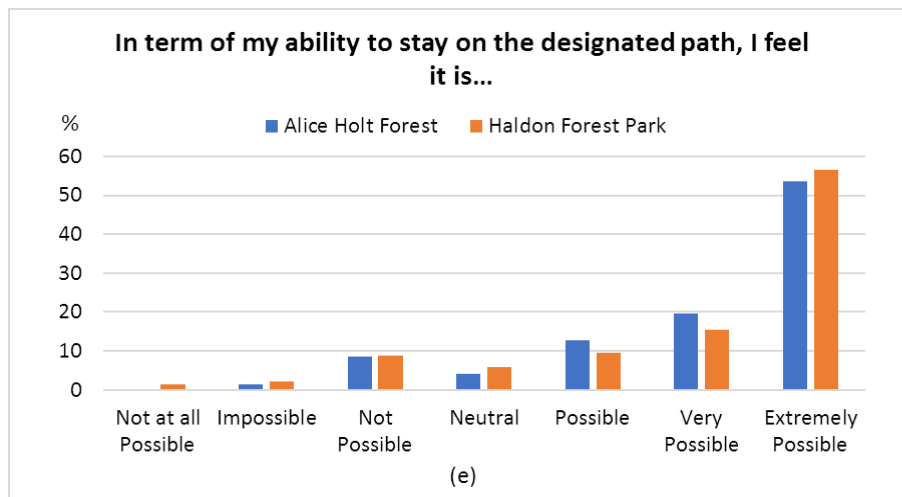


Figure 4.11: Recreation Behaviour (Question 10: The following questions are designed to understand your specific behaviour when using the park. Please circle on a scale of 1-7 on how you feel about the following behaviour

4.6 Environmental Concern

The New Ecological Paradigm (NEP) was used to measure the environmental concerns of respondents in this study. There were ten statements used in the questionnaire, divided into three categories: eco-centric, dual-centric, and techno-centric. The items were rated on a five-point scale ranging from 1 ('strongly disagree') to 5 ('strongly agree'). There were no significant differences in mean values between the two forest parks regarding the eco-centric category (Table 4.8). 66% of respondents from Alice Holt Forest and 54% of Haldon Forest Park have at least agreed with the first statement: *we are approaching the limit of the number of people the earth can support* (Figure 4.12a). Figure 4.12b shows that more than 80% of the respondents from both forest parks chose 'agree' or 'strongly agree' that *humans are severely abusing the environment* (Alice Holt Forest, 83%, n=59; Haldon Forest Park, 82%, n=112). Haldon Forest Park gained a slightly higher mean value than Alice Holt Forest for the third statement, which was *the earth is like a spaceship with very limited room and resources* ($\bar{x}=3.77$; $s=0.98$). About 71 of the respondents chose 'agree' and another 41 'strongly agree' with the statement (Figure 4.12c). More than half of the respondents from Alice Holt Forest (80.3%) and Haldon Forest Park (75%) chose 'agree' or 'strongly agree' that *the balance of nature is very delicate and easily upset* (Figure 4.12d).

Table 4.8: Descriptive data of environmental concern for Alice Holt Forest and Haldon Forest Park

Environmental Concern ^D	Alice Holt Forest	Haldon Forest Park	Combination
	Mean (SD)	Mean (SD)	Mean (SD)
Eco-centric	3.94 (0.67)	3.97 (0.71)	3.96 (0.70)
1. We are approaching the limit of the number of people the earth can support	3.73 (0.91)	3.63 (0.97)	3.66 (0.95)
2. Humans are severely abusing the environment	4.06 (0.88)	4.02 (0.92)	4.02 (0.92)
3. The earth is like a spaceship with very limited room and resources	3.65 (1.10)	3.77 (0.98)	3.73 (1.02)
4. The balance of nature is very delicate and easily upset	3.93 (0.70)	3.91 (0.87)	3.92 (0.81)
Dual-centric	3.87 (0.58)	3.89 (0.72)	3.88 (0.67)

1. Humans have the right to modify the natural environment to suit their needs*	3.30 (0.95)	3.36 (1.00)	3.34 (0.98)
2. Plants and animals have as much right as a human to exist	4.18 (0.92)	4.13 (0.95)	4.14 (0.93)
3. Despite our special abilities, humans are still subject to the laws of nature	4.10 (0.74)	4.18 (0.81)	4.15 (0.78)
Techno-centric	3.56 (0.84)	3.67 (0.77)	3.63 (0.80)
1. The balance of nature is strong enough to cope with the impacts of modern industrial nations*	3.83 (0.94)	3.85 (0.88)	3.84 (0.90)
2. The so-called “ecological crisis” facing humankind has been greatly exaggerated*	3.70 (1.05)	3.95 (0.89)	3.86 (0.95)
3. Humans will eventually learn enough about how nature works to be able to control it*	3.23 (1.10)	3.32 (1.01)	3.29 (1.07)

^D Measured using a 5-point scale format (1 = strongly disagree, 3 = neutral, 5 = strongly agree).

*Items reverse coded before data analysis, so that agreement indicates a pro-environmental view.

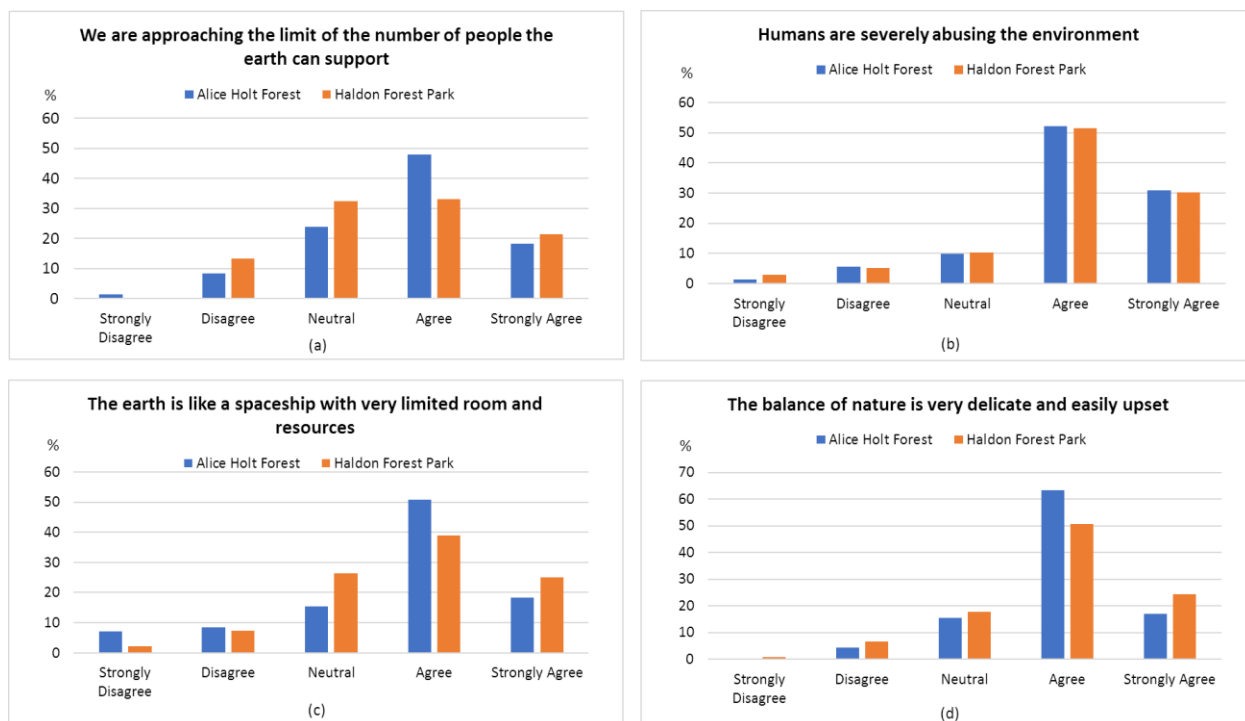


Figure 4.12: Eco-centric (Question 11: Please answer each of the following questions by circling the number that best describes your opinion about the environmental concern. Please read each question carefully)

The second category was about dual-centric concerns. Dual-centric concerns can be defined as “a symbolic dual equality attitude between humans and the environments” (Thapa, 2010, p.139). About 45% of the respondents of both forest parks (Alice Holt Forest, n= 32; Haldon Forest Park, n=61) chose ‘disagree’ or ‘strongly disagree’ that *humans have the right to modify the natural environment to suit their needs* (Figure 4.13a). Another 32% (n=23) of Alice Holt Forest’s respondents and 34% (n=46) of the respondents from Haldon Forest Park chose ‘neutral’ about the statement and another 22% (n=45) chose ‘agree’ or ‘strongly agree’. Figure 4.13b shows that most of the respondents in this study chose ‘agree’ or ‘strongly agree’ that *plants and animals have as much right as a human to exist* (84%, n=174). In line with the previous results, 86% of total respondents chose ‘agree’ or ‘strongly agree’ to the statement phrased *despite the special abilities, humans are still subject to the laws of nature*. 23 of them (11%) selected ‘neutral’, while another 3% (n=6) chose ‘disagree’ or ‘strongly disagree’ for the statement (Figure 4.13c).

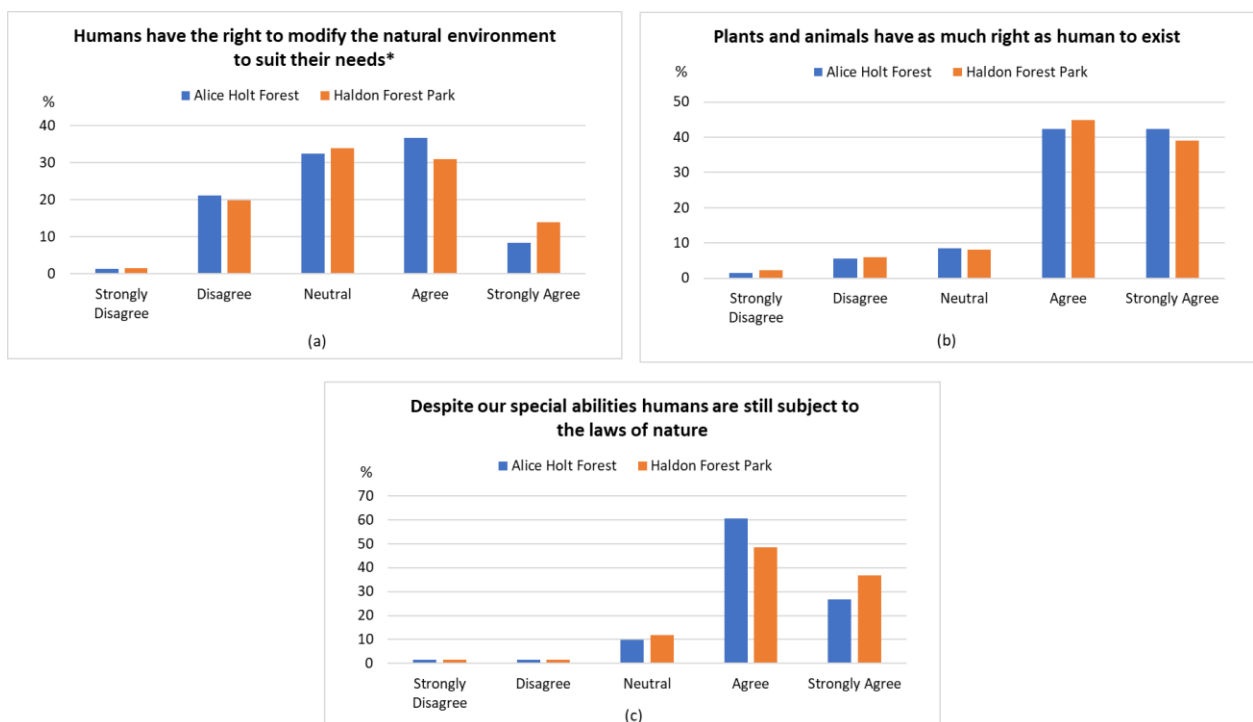


Figure 4.13: Dual-centric (Question 11: Please answer each of the following questions by circling the number that best describes your opinion about the environmental concern. Please read each question carefully)

The final dimension of environmental concern was the techno-centric aspect. It is an attitude that represents a belief that technological innovations can solve problems. All three items in this category were reverse recoded before the data analysis to make the agreement that indicates a pro-environmental view. The results showed that 70% of the respondents (n=145) chose 'disagree' or 'strongly disagree' for the first statement in the category: *the balance of nature is strong enough to cope with the impacts of modern industrial nations*. 22% (n=45) were 'neutral', and the remaining 8% (n=17) chose 'agree' or 'strongly agree' for it (Figure 4.14a). Figure 4.14b represents the frequency of responses made by the respondents of both forest parks about a statement saying *the so-called 'ecological crisis' facing humankind has been greatly exaggerated*. There were 138 respondents (67%) who chose 'disagree' or 'strongly disagree' with the statement, 27% (n=55) were 'neutral', and another 7% (n= 14) chose 'agree' or 'strongly agree' with it. 43% of the overall respondents (n=89) chose 'disagree' or 'strongly disagree' that *humans will eventually learn enough about how nature works to be able to control it*. 67 respondents (32%) chose to be 'neutral', and the remaining 25% (n=51) 'agree' and 'strongly agree' on the last item in the techno-centric category.

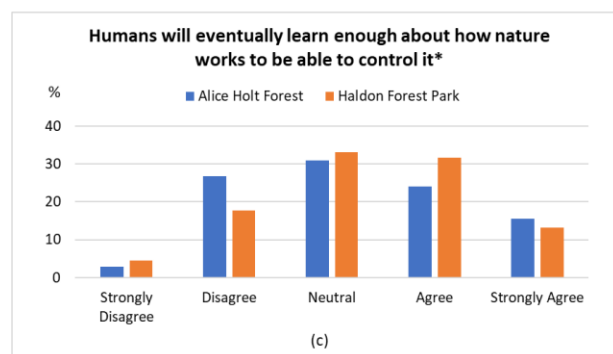
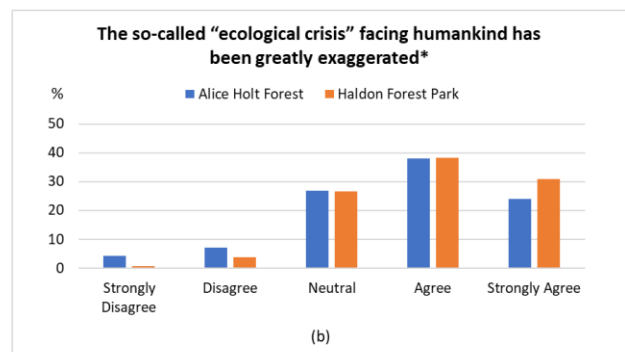
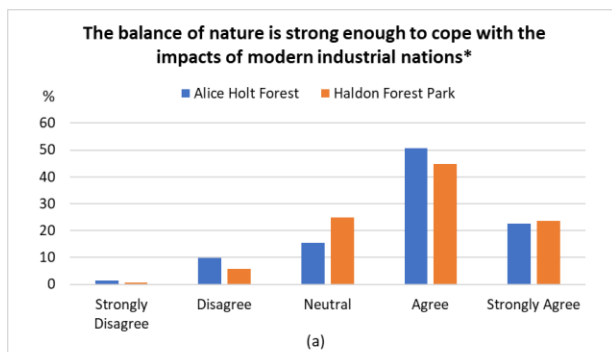


Figure 4.14: Techno-centric (Question 11: Please answer each of the following questions by circling the number that best describes your opinion about the environmental concern. Please read each question carefully)

4.7 The importance of attributes provided in forest parks

A total of 26 items were used to measure the importance of management setting, social condition and resource settings of the forest parks. These items were rated on a scale of 1 ('not at all important') to 5 ('extremely important'). Table 4.9 represents a summary of mean values for each of the items measured. The results show that nine of the items have a significant difference in mean values between Alice Holt Forest and Haldon Forest Park. The first item that showed a significant difference between both forest parks was *well designed and maintained roads*. This aspect was important to the respondents of Alice Holt Forest as compared to Haldon Forest Park: $t(205) = 2.240, p = 0.026$. In addition, the Alice Holt Forest respondents also claimed that it was more important to get an *affordable charge for visitors' parking spaces* than the respondent of Haldon Forest Park did, $t(205) = 2.944, p = 0.004$.

Regarding the *access to toilet facilities* and *clean, well-presented toilet facilities* in the forest, Alice Holt Forest gained a higher mean value in comparison to Haldon Forest Park, with the significant difference of these aspects being: $t(205) = 3.080, p = 0.002$ and $t(205) = 2.732, p = 0.007$, respectively. The results also indicated that the respondents from Alice Holt Forest felt it was more important to have *clean and well-presented picnic/BBQ facilities* than those at Haldon Forest Park: [$t(205) = 2.049, p = 0.042$], as well as well-designed and maintained children's playing areas [$t(205) = 5.126, p = 0.000$] in the forest park. On the other hand, Haldon Forest Park recorded a significantly higher mean value relating to horse riding activity as compared to Alice Holt Forest: *well-designed and maintained horse riding paths*: $t(205) = 1.974, p = 0.050$; *affordable charges for horse riding permit*: $t(205) = 3.038, p = 0.003$. There was only one item in the resource setting that showed a significant difference in mean value between the forest parks. Respondents from Haldon Forest Park felt that it was more important to be able to *observe native wildlife and birds* during their visit to the forest compared to Alice Holt Forest: $t(205) = 2.305, p = 0.022$. Table 4.10 shows the frequencies of

the answers by the respondents of both forest parks about aspects of the management settings. Almost all the management aspects were important for more than half of the total respondents. Only five aspects were less important for the respondents, such as *well designed and maintained horse riding paths, affordable charges for bicycle rental, affordable charges for BBQ facilities rental, affordable charges for high rope activities, and affordable charges for horse riding permits.*

Table 4.9: Descriptive data of importance of management, resource, and social settings of Alice Holt Forest and Haldon Forest Park

Importance ^E	Alice Holt Forest	Haldon Forest Park	Combination
	Mean (SD)	Mean (SD)	Mean (SD)
Management Settings			
1. Pre-visit Information	3.80 (1.12)	3.67 (0.99)	3.71 (1.03)
2. Useful road signs	4.00 (0.97)	3.90 (0.85)	3.94 (0.89)
3. Well-designed and maintained roads	4.08 (0.67) ^a	3.83 (0.82) ^b	3.92 (0.78)
4. Well-designed and maintained car parks areas	4.28 (0.64) ^a	3.94 (0.86) ^b	4.06 (0.80)
5. Affordable charges for visitor's parking spaces	4.21 (0.84)	4.17 (0.92)	4.18 (0.90)
6. Access to friendly, responsive park staff	3.87 (0.99)	3.76 (0.95)	3.80 (0.96)
7. Access to toilet facilities	4.51 (0.58) ^a	4.16 (0.85) ^b	4.28 (0.78)
8. Clean, well-presented toilet facilities	4.46 (0.58) ^a	4.15 (0.86) ^b	4.26 (0.79)
9. Clean, well-presented picnic/BBQ facilities	3.79 (1.00) ^a	3.49 (1.02) ^b	3.59 (1.02)
10. Well-designed and maintained walking paths	4.24 (0.67)	4.13 (0.82)	4.17 (0.77)
11. Well-designed and maintained cycling tracks	3.99 (1.05)	4.21 (1.01)	4.14 (1.03)
12. Well-designed and maintained horse riding paths	2.82 (1.39) ^b	3.19 (1.24) ^a	3.06 (1.30)
13. Well-designed and maintained children's playing areas	4.56 (0.67) ^a	3.82 (1.12) ^b	4.08 (1.05)
14. Affordable charges for bicycle rental	3.08 (1.37)	3.13 (1.21)	3.11 (1.26)
15. Affordable charges for BBQ facilities rental	2.72 (1.19)	2.85 (1.11)	2.80 (1.13)
16. Affordable charges for high rope activities	3.35 (1.24)	3.12 (1.20)	3.20 (1.22)

17. Affordable charges for horse riding permits	2.20 (1.26) ^b	2.75 (1.23) ^a	2.56 (1.27)
18. Useful visitor guides/maps in the park	3.99 (0.71)	3.96 (0.82)	3.97 (0.78)
19. Useful information on plants and animals in the park	3.56 (0.97)	3.69 (0.93)	3.65 (0.94)
20. Clear information about visitor safety	3.51 (0.95)	3.56 (0.96)	3.54 (0.96)
21. Accessible features for people with disabilities and seniors	3.63 (1.23)	3.52 (1.10)	3.56 (1.15)
Resource Settings			
1. Ability to enjoy nature in the park	4.21 (0.67)	4.17 (0.74)	4.18 (0.71)
2. Sightings of native wildlife/birds	3.27 (1.20) ^b	3.63 (1.02) ^a	3.51 (1.09)
3. A broad range of activities available in the park	4.08 (0.67)	3.93 (0.98)	3.99 (0.88)
Social Condition			
1. Feeling safe in the park	4.23 (0.76)	4.12 (0.84)	4.15 (0.81)
2. Not too many other visitors present	3.82 (0.82)	3.68 (0.95)	3.73 (0.91)

^E Measured using a 5-point scale format (1 = not at all important, 5 = extremely important), Highlighted rows show that the items have a significant difference between both forest parks, $p < .05$

^{a,b} indicates significant differences between two mean values.

Table 4.10: Importance of management settings (Question 12: For each statement below, please circle one number on how important each aspect is to you as a visitor)

Forest Park	1. Pre-visit information					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	5	5	7	36	18	71
Haldon Forest Park	4	15	26	69	22	136
Total	9	20	33	105	40	207
Forest Park	2. Useful road signs					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	3	1	12	32	23	71
Haldon Forest Park	3	6	20	79	28	136
Total	6	7	32	111	51	207
Forest Park	3. Well designed and maintained roads					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	0	1	10	42	18	71
Haldon Forest Park	3	4	29	77	23	136
Total	3	5	39	119	41	207
Forest Park	4. Well designed and maintained car parks areas					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	0	0	7	37	27	71
Haldon Forest Park	3	7	15	81	30	136
Total	3	7	22	118	57	207
Forest Park	5. Affordable charge for visitor's parking spaces					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	0	3	10	27	31	71
Haldon Forest Park	2	8	12	57	57	136
Total	2	11	22	84	88	207
Forest Park	6. Access to friendly, responsive park staffs					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	3	4	9	38	17	71
Haldon Forest Park	3	12	27	67	27	136
Total	6	16	36	105	44	207
Forest Park	7. Access to toilet facilities					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	0	0	3	29	39	71
Haldon Forest Park	1	8	9	68	50	136
Total	1	8	12	97	89	207
Forest Park	8. Clean, well presented toilet facilities					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	0	0	3	32	36	71
Haldon Forest Park	2	7	8	70	49	136
Total	2	7	11	102	85	207
Forest Park	9. Clean, well presented picnic/BBQ facilities					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	3	3	17	31	17	71
Haldon Forest Park	4	20	39	52	21	136
Total	7	23	56	83	38	207
Forest Park	10. Well designed and maintain walking paths					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	0	0	9	36	26	71
Haldon Forest Park	1	5	16	67	47	136
Total	1	5	25	103	73	207
Forest Park	11. Well designed and maintain cycling tracks					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	5	1	6	37	22	71
Haldon Forest Park	4	8	10	47	67	136
Total	9	9	16	84	89	207
Forest Park	12. Well designed and maintain horse riding paths					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	18	11	18	14	10	71
Haldon Forest Park	15	25	39	33	24	136
Total	33	36	57	47	34	207
Forest Park	13. Well designed and maintain children playing areas					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	0	1	4	20	46	71
Haldon Forest Park	9	9	17	63	38	136
Total	9	10	21	83	84	207
Forest Park	14. Affordable charge for bicycle rental					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	15	7	17	21	11	71
Haldon Forest Park	17	16	60	19	24	136
Total	32	23	77	40	35	207
Forest Park	15. Affordable charge for BBQ facilities rental					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	17	7	30	13	4	71
Haldon Forest Park	19	25	63	16	13	136
Total	36	32	93	29	17	207
Forest Park	16. Affordable charge for high rope activities					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	8	8	20	21	14	71
Haldon Forest Park	20	14	48	38	16	136
Total	28	22	68	59	30	207
Forest Park	17. Affordable charge for horse riding permit					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	30	13	16	8	4	71
Haldon Forest Park	32	14	60	16	14	136
Total	62	27	76	24	18	207
Forest Park	18. Useful visitor guides/maps in the park					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	0	0	18	36	17	71
Haldon Forest Park	2	5	21	76	32	136
Total	2	5	39	112	49	207
Forest Park	19. Useful information on plants and animals in the park					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	3	5	22	31	10	71
Haldon Forest Park	4	8	38	62	24	136
Total	7	13	60	93	34	207
Forest Park	20. Clear information about visitor safety					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	1	9	25	25	11	71
Haldon Forest Park	5	11	43	57	20	136
Total	6	20	68	82	31	207
Forest Park	21. Accessible features for people with disabilities and senior					
	Not at all important	Not important	Neutral	Important	Extremely Important	Total
Alice Holt Forest	7	7	8	32	17	71
Haldon Forest Park	9	11	43	46	27	136
Total	16	18	51	78	44	207

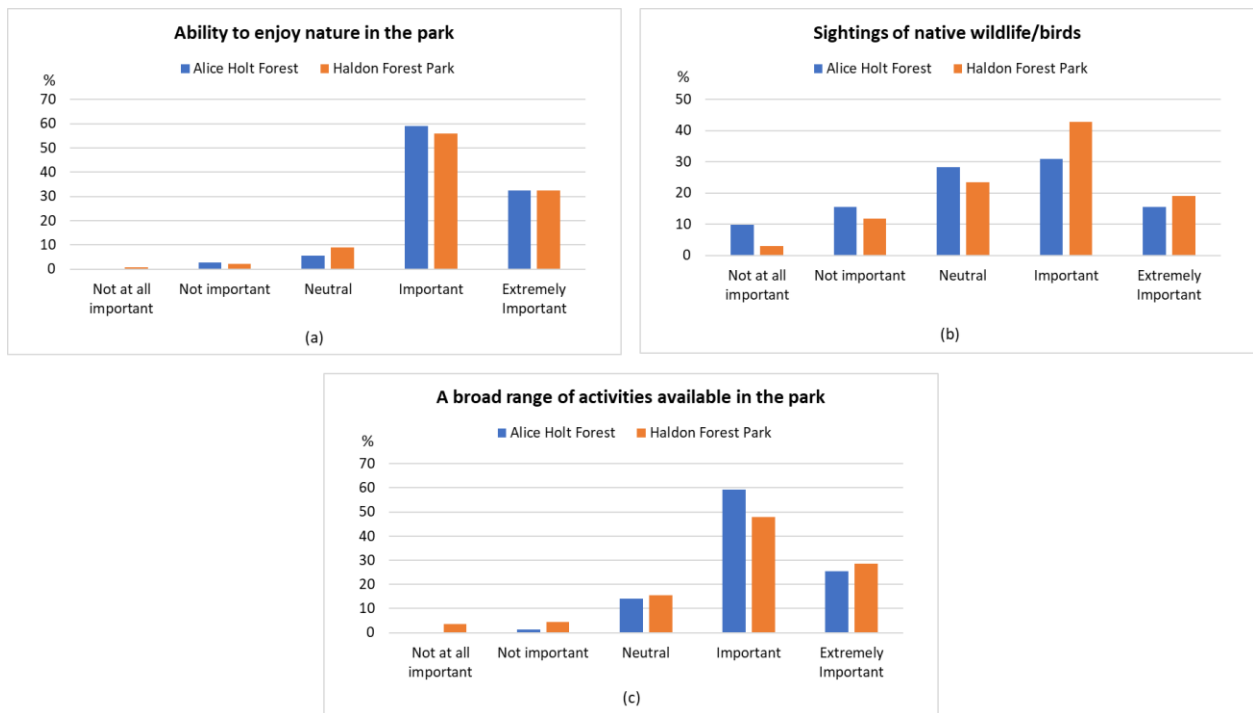


Figure 4.15: Importance of resource settings (Question 12: For each statement below, please circle one number on how important each aspect is to you as a visitor)

Figure 4.15 displays the frequencies of answers made by the respondents about resource settings. Most of the respondents felt that it was important to have the *ability to enjoy nature* during their visit to the forest park: Alice Holt Forest (92%) and Haldon Forest Park (88%) (Figure 4.15a). Haldon Forest Park recorded a slightly higher mean value of the second item in the resource setting compared to Alice Holt Forest, where about 62% of the respondents believed that it was important *to view the native wildlife and birds* while performing their outdoor activities (Figure 4.15b). Finally, the results showed that offering *a broad range of activities in the forest park* was more important to Alice Holt Forest respondents (84.5%) than to those at Haldon Forest Park (76.5%) (Figure 4.15c). Social conditions are another important aspect during a visit to a forest park. Two items were used in this survey: *feeling safe in the park* and *not too many other visitors present* (Figure 4.16). Safety aspects were important to the respondents of both forest parks (Alice Holt Forest, 86%; Haldon Forest Park, 82%), while about 69% (Alice Holt Forest) and 63% (Haldon Forest Park) of the respondents thought that the crowding issue was important to their visit to the forests.

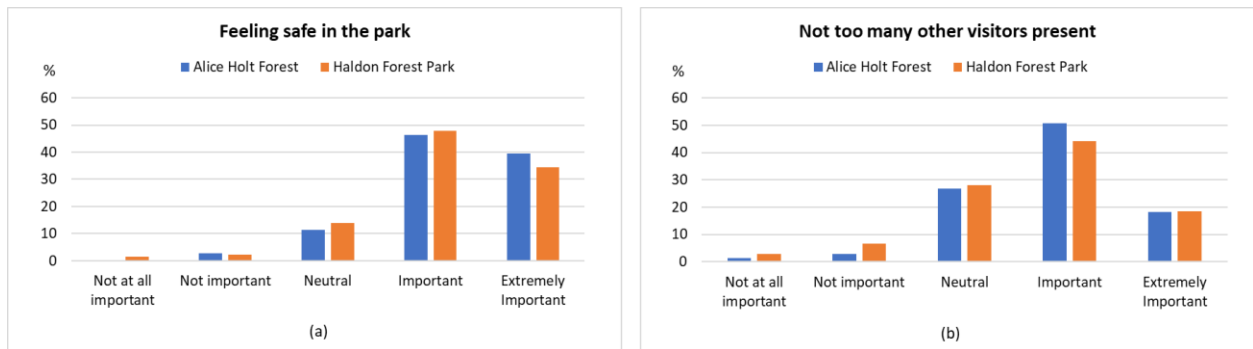


Figure 4.16: Importance of social condition (Question 12: For each statement below, please circle one number on how important each aspect is to you as a visitor)

4.8 Visitor's Satisfaction

Visitor satisfaction was measured by using similar items as were used to measure the importance of several aspects of management settings, resource settings and social conditions during a visit to the forest parks (Table 4.11). From the results, there were four items in the management settings that had significant differences of mean values between the two parks. Alice Holt Forest obtained a higher mean value for well-designed and maintained roads ($\bar{x}= 4.35$; $s=0.80$) as compared to Haldon Forest Park: $t(205) = 2.099$, $p = 0.037$. It was also shown that the respondents of Alice Holt Forest were significantly satisfied with the design and maintenance of car parks in the forest, more so than the respondents of Haldon Forest Park were $t(205) = 2.475$, $p = 0.014$. Besides this, there was also a significant difference between the visitor satisfaction regarding the parking charges in the forest parks. Alice Holt Forest obtained a slightly higher mean value for the item compared to Haldon Forest Park: $t(205) = 2.515$, $p = 0.013$. It was also noticed that the respondents of Alice Holt Forest were more 'satisfied' about the children's playing areas when compared to Haldon Forest Park. The significant difference of the mean value for this item was: $t(205) = 5.346$, $p = 0.000$. As we can see from Table 4.11, there were a few items in management settings that showed quite a low mean value (i.e. below 3). These resulted from a higher number of respondents who had had no experience of the services or facilities (Table 4.12). The affected items were: clean, well-presented picnic/BBQ facilities, well-designed and maintained horse riding paths, affordable charges for bicycle rental, affordable charges for high rope activities, affordable charges for horse riding permits, and accessible features for people with disabilities and seniors.

Table 4.11: Descriptive data of visitor's satisfaction of Alice Holt Forest and Haldon Forest Park

Visitor Satisfaction ^F	Alice Holt	Haldon	Combination
	Forest	Forest Park	
	Mean (SD)	Mean (SD)	Mean (SD)
Management Settings			
1. Pre-visit Information	3.76 (1.54)	3.69 (1.58)	3.71 (1.56)
2. Useful road signs	3.93 (1.41)	3.90 (1.28)	3.91 (1.33)
3. Well-designed and maintained roads	4.35(0.80) ^a	4.09 (0.89) ^b	4.18 (0.87)
4. Well-designed and maintained car parks areas	4.41 (0.65) ^a	4.10 (0.93) ^b	4.21 (0.85)
5. Affordable charges for visitor's parking spaces	3.68 (1.16) ^a	3.18 (1.45) ^b	3.35 (1.37)
6. Access to friendly, responsive park staff	3.45 (1.57)	3.26 (1.80)	3.32 (1.72)
7. Access to toilet facilities	4.21 (0.89)	4.07 (1.35)	4.12 (1.22)
8. Clean, well-presented toilet facilities	4.25 (0.82)	3.94 (1.40)	4.05 (1.24)
9. Clean, well-presented picnic/BBQ facilities	2.55 (2.04)	2.14 (2.11)	2.28 (2.09)
10. Well-designed and maintained walking paths	4.14 (1.15)	4.09 (1.31)	4.11 (1.25)
11. Well-designed and maintained cycling tracks	3.54 (1.79)	3.69 (1.73)	3.64 (1.75)
12. Well-designed and maintained horse riding paths	1.44 (1.93)	1.49 (1.89)	1.47 (1.90)
13. Well-designed and maintained children's playing areas	4.25 (1.31) ^a	2.85 (2.01) ^b	3.33 (1.90)
14. Affordable charges for bicycle rental	1.97 (1.94)	1.53 (1.86)	1.68 (1.92)
15. Affordable charges for BBQ facilities rental	1.34 (1.80)	1.10 (1.69)	1.18 (1.73)
16. Affordable charges for high rope activities	1.99 (1.90)	1.50 (1.85)	1.67 (1.88)
17. Affordable charges for horse riding permit	1.06 (1.66)	1.09 (1.67)	1.08 (1.66)
18. Useful visitor guides/maps in the park	3.75 (1.25)	3.74 (1.50)	3.74 (1.41)
19. Useful information on plants and animals in the park	3.15 (1.77)	3.09 (1.75)	3.11 (1.75)
20. Clear information about visitor safety	3.28 (1.72)	3.14 (1.79)	3.19 (1.77)
21. Accessible features for people with disabilities and seniors	2.32 2.05)	1.90 (2.05)	2.05 (2.06)
Resource Settings			
1. Ability to enjoy nature in the park	4.24 (0.93)	4.23 (1.01)	4.23 (0.98)
2. Sightings of native wildlife/birds	2.69 (2.03)	3.19 (1.72)	3.02 (1.84)
3. A broad range of activities available in the park	4.11 (1.06)	3.88 (1.33)	3.96 (1.25)
Social Condition			
1. Feeling safe in the park	4.39 (0.67) ^a	4.08 (1.17) ^b	4.19 (1.03)
2. Not too many other visitors present	3.58 (1.09)	3.67 (1.24)	3.64 (1.19)

^F Measured using a 5-point scale format (1 = very dissatisfied, 5 = very satisfied) and NE= No Experience. Highlighted rows show that the items have a significant difference between both forest parks, $p < .05$ ^{a,b} indicates significant differences between two mean values.

Table 4.12: Visitor's satisfaction frequencies for management settings (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle the 'NE' in the right column)

Forest Park	1. Pre-visit information							Forest Park	8. Clean, well presented toilet facilities							Forest Park	15. Affordable charge for BBQ facilities rental						
	No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total
Alice Holt Forest	8	0	1	10	25	27	71	Alice Holt Forest	1	0	0	7	34	29	71	Alice Holt Forest	43	3	1	9	12	3	71
Haldon Forest Park	18	0	1	13	59	45	136	Haldon Forest Park	12	0	2	10	58	54	136	Haldon Forest Park	93	0	4	18	17	4	136
Total	26	0	2	23	84	72	207	Total	13	0	2	17	92	83	207	Total	136	3	5	27	29	7	207
Forest Park	2. Useful road signs							Forest Park	9. Clean, well presented picnic/BBQ facilities							Forest Park	16. Affordable charge for high rope activities						
	No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total
Alice Holt Forest	5	3	0	6	27	30	71	Alice Holt Forest	26	0	0	12	20	13	71	Alice Holt Forest	30	4	2	12	18	5	71
Haldon Forest Park	9	0	4	16	60	47	136	Haldon Forest Park	65	0	0	12	40	19	136	Haldon Forest Park	78	2	4	22	22	8	136
Total	14	3	4	22	87	77	207	Total	91	0	0	24	60	32	207	Total	108	6	6	34	40	13	207
Forest Park	3. Well designed and maintained roads							Forest Park	10. Well designed and maintain walking paths							Forest Park	17. Affordable charge for horse riding permit						
	No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total
Alice Holt Forest	1	0	0	4	33	33	71	Alice Holt Forest	4	0	0	2	37	28	71	Alice Holt Forest	47	4	2	8	7	3	71
Haldon Forest Park	2	0	4	16	70	44	136	Haldon Forest Park	10	0	0	10	54	62	136	Haldon Forest Park	92	3	2	19	16	4	136
Total	3	0	4	20	103	77	207	Total	14	0	0	12	91	90	207	Total	139	7	4	27	23	7	207
Forest Park	4. Well designed and maintained car parks are as							Forest Park	11. Well designed and maintain cycling tracks							Forest Park	18. Useful visitor guides/maps in the park						
	No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total
Alice Holt Forest	0	0	0	6	30	35	71	Alice Holt Forest	13	0	0	6	27	25	71	Alice Holt Forest	3	3	2	12	32	19	71
Haldon Forest Park	2	0	6	14	66	48	136	Haldon Forest Park	19	3	4	9	41	60	136	Haldon Forest Park	15	0	4	11	62	44	136
Total	2	0	6	20	96	83	207	Total	32	3	4	15	68	85	207	Total	18	3	6	23	94	63	207
Forest Park	5. Affordable charge for visitor's parking spaces							Forest Park	12. Well designed and maintain horse riding paths							Forest Park	19. Useful information on plants and animals in the park						
	No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total
Alice Holt Forest	0	4	5	23	17	22	71	Alice Holt Forest	43	2	1	10	7	8	71	Alice Holt Forest	15	0	1	12	29	14	71
Haldon Forest Park	4	17	27	21	37	30	136	Haldon Forest Park	80	1	3	24	16	12	136	Haldon Forest Park	29	0	5	19	62	21	136
Total	4	21	32	44	54	52	207	Total	123	3	4	34	23	20	207	Total	44	0	6	31	91	35	207
Forest Park	6. Access to friendly, responsive park staffs							Forest Park	13. Well designed and maintain children playing areas							Forest Park	20. Clear information about visitor safety						
	No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total
Alice Holt Forest	10	0	0	16	28	17	71	Alice Holt Forest	4	2	0	1	23	41	71	Alice Holt Forest	13	0	2	11	29	16	71
Haldon Forest Park	28	0	2	20	51	35	136	Haldon Forest Park	41	2	3	10	51	29	136	Haldon Forest Park	30	0	2	20	57	27	136
Total	38	0	2	36	79	52	207	Total	45	4	3	11	74	70	207	Total	43	0	4	31	86	43	207
Forest Park	7. Access to toilet facilities							Forest Park	14. Affordable charge for bicycle rental							Forest Park	21. Accessible features for people with disabilities and senior						
	No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total		No Experience	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total
Alice Holt Forest	0	3	0	4	36	28	71	Alice Holt Forest	31	3	4	10	16	7	71	Alice Holt Forest	29	0	2	10	19	11	71
Haldon Forest Park	11	0	0	9	53	63	136	Haldon Forest Park	77	1	6	23	19	10	136	Haldon Forest Park	70	1	2	14	33	16	136
Total	11	3	0	13	89	91	207	Total	108	4	10	33	35	17	207	Total	99	1	4	24	52	27	207

Three items were included in the resource settings. Figure 4.17 displays the frequencies of the responses for the items in resource settings. Most of the respondents for both forest parks were 'satisfied' with their experience of *enjoying the nature* (Alice Holt Forest, 93%; Haldon Forest Park, 90%) (Fig. 22a). Similar results were obtained for the third item about offering *a broad range of activities in the park*, where 89% (n=63) of the respondents of Alice Holt Forest were at least 'satisfied' with the service, while 79% (n=108) of the respondents of Haldon Forest Park responded with the same answer (Figure 4.17c). Even though there was a high level of satisfaction concerning the *sightings of native wildlife or birds* by the respondents of both forest parks (Alice Holt Forest, 48%; Haldon Forest Park, 60%), there were also quite a noticeable number of respondents who had no experience of this aspect during their visits (Figure 4.17b). About 31% (n=22) of the respondents from Alice Holt Forest and 19% (n=26) of the Haldon Forest Park respondents reported that they had not experienced seeing any wildlife or birds while enjoying their outdoor activities in the forest.

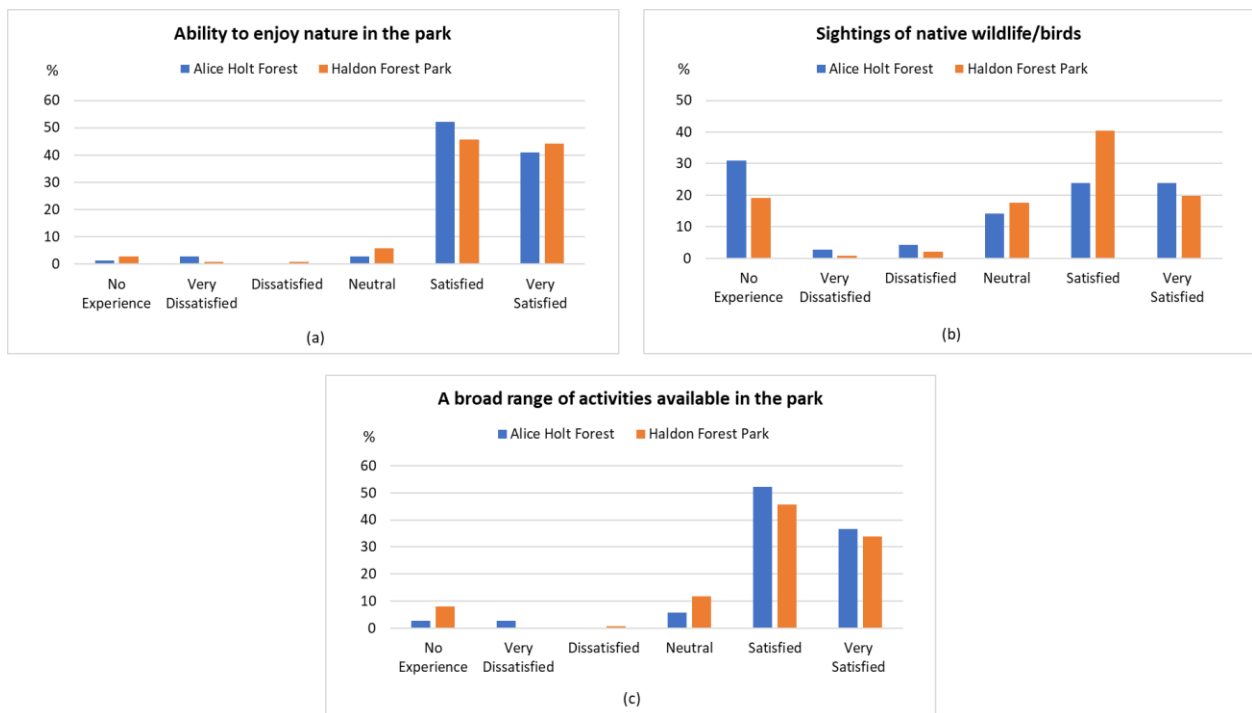


Figure 4.17: Visitor's satisfaction frequencies for resource settings (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle the 'NE' in the right

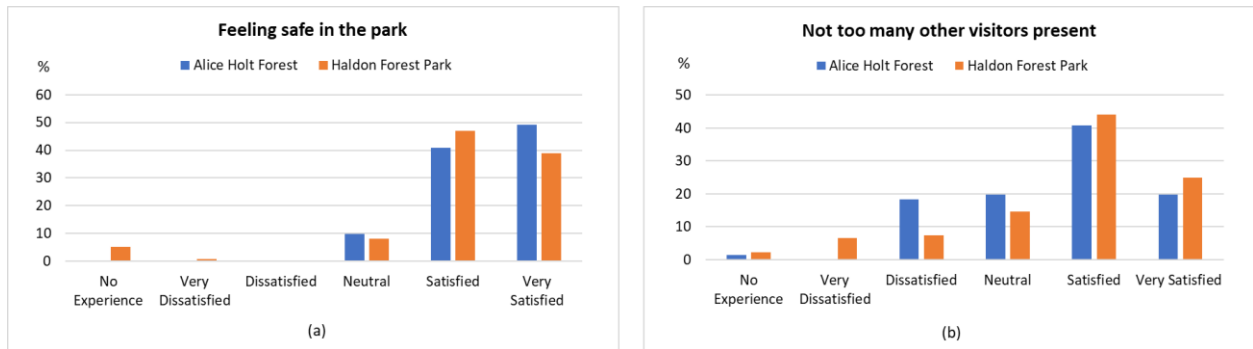


Figure 4.18: Visitor’s satisfaction frequencies for social condition (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle the ‘NE’ in the right column)

The last aspect of visitor satisfaction concerned the social conditions. Two items were used to measure visitor satisfaction with the social conditions. The first item of social conditions (*feeling safe in the park*) had a significant difference of mean value between the parks. Respondents of Alice Holt Forest felt safer compared to Haldon Forest Park respondents: $t(205) = 2.090, p = 0.038$. More than 85% of the respondents from Alice Forest Park and Haldon Forest Park were at least ‘satisfied’ with the safety aspect during their stay in the forest (Figure 4.18a). However, Alice Holt Forest responses displayed a slightly higher mean value of the first item: *feeling safe in the park* ($\bar{x} = 4.39; s = 0.67$) compared to Haldon Forest Park ($\bar{x} = 4.08; s = 1.17$). About 61% ($n = 43$) of Alice Holt Forest respondents and 69% ($n = 94$) of the respondents from Haldon Forest Park were ‘satisfied’ with the *number of visitors present during the visit*. However, there were also a small number of respondents who were ‘dissatisfied’ with the number of visitors who were present at the same time as they were in the forest (Alice Holt Forest, $n = 13$; Haldon Forest Park, $n = 19$). The mean value of *not too many other visitors present* for Alice Holt Forest ($\bar{x} = 3.58; s = 1.09$) was a little lower than from Haldon Forest Park ($\bar{x} = 3.67; s = 1.24$). Overall, there were a high number of visitors of both forest parks who were ‘satisfied’ with their experiences regarding these social conditions.

4.9 Summary

This chapter has explored the visitor characteristics from both study sites, particularly the socio-demographics and various aspects of recreational experience (motivation, place attachment, behaviour, environmental concern and satisfaction). The socio-demographic findings show that females dominated the number of respondents in this research and that most of the respondents were UK residents. The median age of the respondents was 35-44 years old, with 80 per cent of the total respondents have at least attended college as regards their level of education. The median household income of the respondents in this study was between £51 000 - £75 000. Most of the respondents went to the forest parks with their family members – 57 of them at Alice Holt Forest and 95 at Haldon Forest Park. Results found that ‘to do something with my family’ was one of the most important reasons for the respondents to represent their motivation to do outdoor activities in the forest parks. The highest frequency of visits by the respondents at Alice Holt Forest was ‘a few times a year’, 38% of the total number of Alice Holt Forest respondents. 38% of respondents went to Haldon Forest Park a few times a month (n=52). However, the descriptive analysis concluded, there was no strong bond between the respondents and the forest parks. The results also reveal that no significant difference between the respondents of the two forest parks regarding recreational behaviour and their environmental concern. Several aspects of management, resource, and social settings were found to have different level of importance and satisfaction between visitors of two forest parks. Well designed and maintained roads, car parks, clean and well-presented BBQ facilities were among the important aspects that the visitors of Alice Holt Forest took into account during their visit to the forest as compared to the visitors of Haldon Forest Park.

The findings are useful in providing information to understand the visitors’ background according to their preferred place to perform their outdoor activities. Park management could develop strategies to provide suitable facilities and environment that is favourable to the visitors. The information is also useful in examining which suitable types of activities may be offered based on the visitors’ background including their group or trip characteristics. Measuring visitor satisfaction helps to inform the park management on ways to improve the

quality of services and facilities, develop loyalty among the visitors, and also manage the resources in sustainable ways. The park management of Alice Holt Forest should pay more attention to expanding their recreational activities and opportunities for family-type visitors, while Haldon Forest Park should focus on their primary customers, which are the cyclists. From here, a recreation plan can be implemented in order to maximise the function of the available resources while protecting the natural resources from degradation.

Chapter 5

RESULT: EXPLORING THE OUTDOOR RECREATION EXPERIENCES OF USER GROUPS AT THE FOREST PARKS

This chapter explores the outdoor recreation experiences of visitors to two forest parks by segmenting users into groups. Data gathered from the survey questionnaires and a participatory research day was used to study their motivation, place attachment, behaviour experience, and visitor satisfaction. A brief introduction explaining the process of segmenting the user groups is explained in the first part of the chapter. Later, each perspective of an outdoor recreational experiences is discussed sequentially: recreation motivation (sub-topic 5.2); place attachment (sub-topic 5.3); recreation experience (sub-topic 5.4); visitor satisfaction (sub-topic 5.5); and support and commitment (sub-topic 5.6). This chapter will close with a short conclusion.

5.1 Introduction

Alice Holt Forest and Haldon Forest Park are examples of only a few forests in England that offer various types of outdoor activities in one place. This is one of the reasons for choosing these forest parks as study areas. With the various activities available in the two forest parks, there is a correspondingly wide range of user groups. Understanding the make-up of user groups who participate in different outdoor activities will provide useful information to help park managers manage the forests more effectively. In this study, four user groups were identified. These were walkers, dog walkers, cyclists, and horse riders. Quantitative and qualitative approaches were employed and are presented in this chapter. There were 207 participants for the survey questionnaire, and eight people participated in the Participatory Research Day, which involved a focus group study and photo-elicitation activity. Unfortunately, horse riders were excluded in the quantitative analysis due to the statistical requirements and validation of the result of the analysis. Therefore, the number of

survey participants for the user group analysis were 205 people. The survey participants were grouped into three categories: walker, dog walker, and cyclist (Table 5.1). The participant profile for the Participatory Research Day is presented in Table 5.2. This chapter will present the results from both approaches by using the outdoor recreation perspectives as the theme.

Table 5.1: User group (survey questionnaire)

User group	No. of visitor
Walker	76
Dog-walker	21
Cyclist	108
Total	205

Table 5.2: Participant's profiles of the qualitative study

ID	Gender	Age	Frequency of Visit	Activities
1	Male	73	Everyday	- Dog walking - Socialising
2	Female	70	4-6 times a week	- Walking - Socialising
3	Male	94	Everyday	- Dog walking
4	Female	43	A few times a month	- Socialising - Cycling - Walking
5	Female	74	Everyday	- Walking - Socialising
6	Male	76	4-6 times a week	- Walking - Cycling
7	Female	32	A few times a year	- Bringing children for a walk, using the playgrounds. - Meeting with friends (Socialising)
8	Female	36	1-3 times a week	- Bringing children for a walk, using the playgrounds.

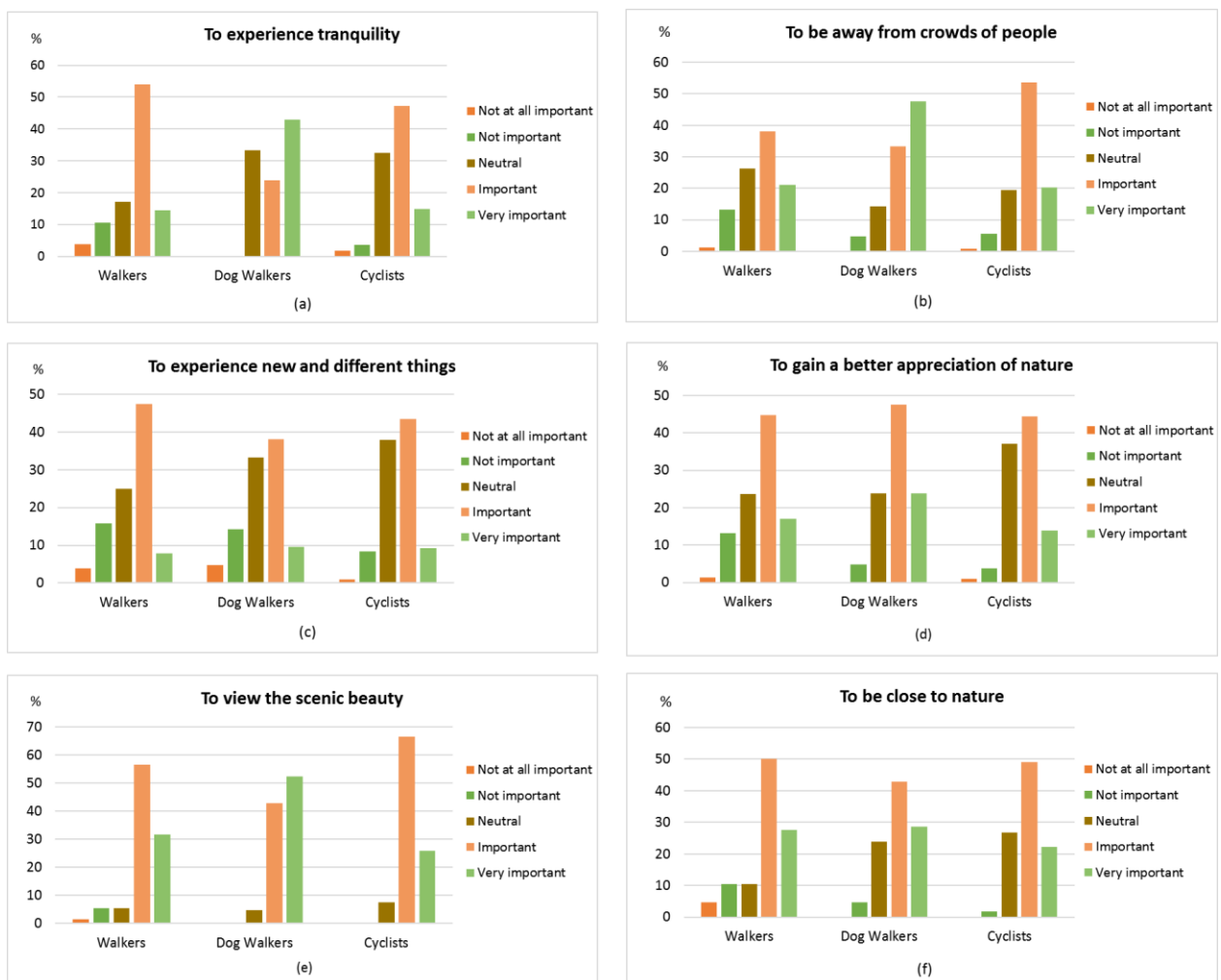
5.2 Motivation to participate in outdoor recreation activities

In theory, many types of motivation explain why people visit forest parks. This study has explored two themes of recreational motivation, which are the factors influencing visitors to

participate in outdoor activities or are acting as constraints or barriers to participating in outdoor activities in order to get a deeper understanding of the user’s motivation.

5.2.1 Factors influencing visitors to participate in outdoor activities

Five dimensions of the Recreation Experience Preference (REP) scale were used in the survey questionnaire to identify the factors that influence visitors to participate in outdoor activities. There were: *escaping physical pressure, learning, enjoying nature, family togetherness, and health*. Each of the dimensions is represented by two variables related to the motivation to participate in outdoor recreation. Figure 5.1 shows ten variables measured in recreational motivation during the survey period based on each user group in the forest parks.



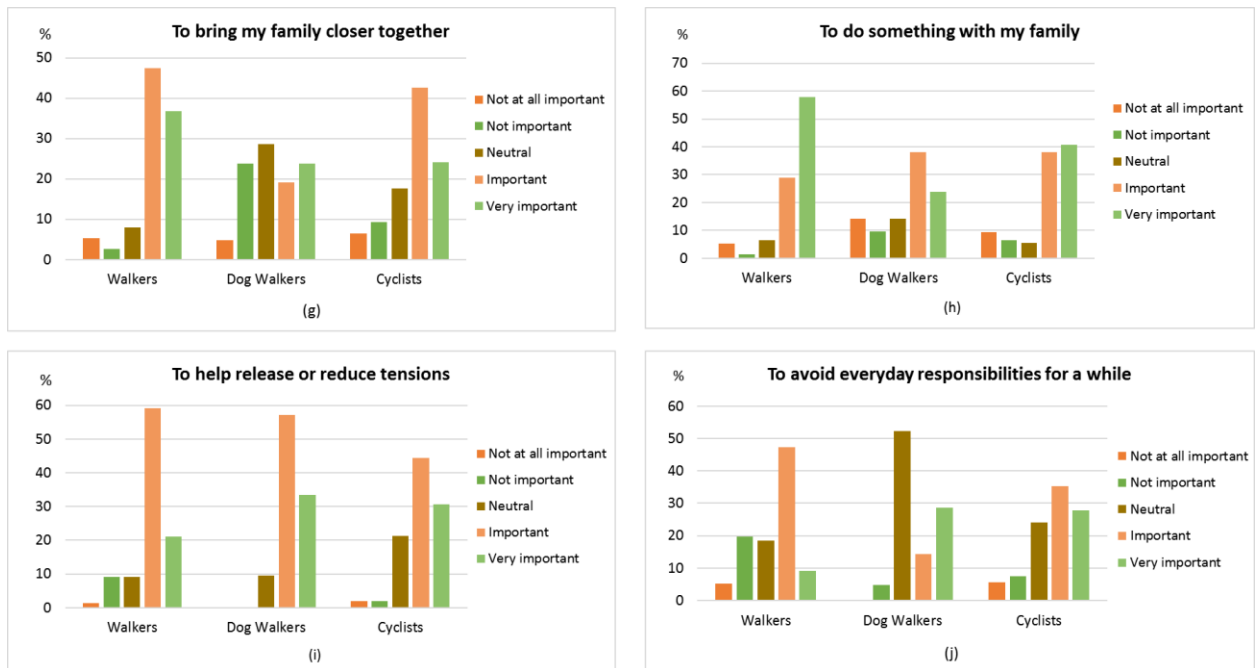


Figure 5.1: Recreation motivation of the user groups (Question 7: How important are the reasons below to your visit to this park today? Please circle one relevant number to your answer)

Walkers and cyclists were found to have a similar pattern of response to the questions related to the first REP dimension, which was to *escape physical pressure*. Both user groups thought that it was ‘important’ to *experience tranquillity* and to *be away from crowds of people* as their motivation to pursue outdoor activities. The percentage of walkers who chose ‘important’ to *experience tranquillity* was about 54% (41 walkers out of 76), while the figure was 47% (51 cyclists out of 108) for the cyclists (Figure 5.1a). About 38% of walkers, and more than half of the cyclists (54%) participated in outdoor activities as one of their alternatives in order to *be away from the crowds of people* (Figure 5.1b). From the focus group discussion, one of the factors that influenced visitors to go outside and participate in outdoor activities was to get some ‘space’ for themselves, and fresh air. As is shown in Figure 5.1b, *to be away from the crowds of people* was very important for the dog walkers who participated in the survey (48%). This result is in line with the findings from the focus group discussion where a dog owner, Participant 1, said that the primary motivation for him to go to the forest park was to exercise the dog. Figure 5.2 shows that Mars (his dog) was captured at his favourite

spot at Alice Holt Forest. The space to move around and the fresh air were the reasons for choosing this forest to do their outdoor activities.



Figure 5.2: “Mars likes leafy areas” (Participant 1)

For the second dimension of recreational motivation - *Learning* - the results of the survey portray the same pattern of responses by the walkers, dog walkers, and cyclists. Most of the respondents in these user groups thought that it was ‘important’ *to experience new and different things*, and also *to gain a better appreciation of nature* as their motivation to visit the forest parks (Figure 5.1c and 5.1d). For example, some participants in the focus group at Alice Holt Forest shared their experiences when encountering wildlife, including grey squirrels, rabbits, adders and deer. They were pleased and delighted to be able to see those kinds of animals with their naked eyes. Participant 2, who frequently visited Alice Holt Forest for walking and socialising with her friends, shared her regular activity with her grandchild when visiting the forest. She said that they usually stood still in one spot in the forest to be able to observe and hear the sound of animals. Her sharing of the experience with her grandchild was a positive practice and was confirmed by other members in the discussion. They believed that the informal education of nature for the younger generation was essential for their appreciation of the natural world in the future. Participant 1 then added that “... people like

that, that are going to look after the forest, . . . and that is a reason why people come to the forest”.

Table 5.3: Mean and Standard Deviation for recreation motivation of the user groups

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
Escape Physical Pressure							
<i>Tranquillity</i>	3.64	.989	4.10	.889	3.69	.837	3.72
<i>Away from Crowds</i>	3.64	1.003	4.24	.889	3.87	.833	3.82
Learning							
<i>New Experience</i>	3.39	.981	3.33	1.017	3.52	.814	3.45
<i>Appreciate Nature</i>	3.63	.964	3.90	.831	3.67	.797	3.68
Enjoying Nature							
<i>Scenic Beauty</i>	4.12	.832	4.48	.602	4.19	.549	4.19
<i>Close to Nature</i>	3.92	.963	3.95	.865	3.92	.750	3.92
Family Togetherness							
<i>Family Together</i>	4.08	1.017	3.33	1.238	3.69	1.133	3.78
<i>Family Activity</i>	4.33	1.038	3.48	1.365	3.94	1.252	4.04
Health							
<i>Release Tensions</i>	3.89	.888	4.24	.625	4.00	.875	3.99
<i>Avoid Daily Routine</i>	3.36	1.067	3.67	.966	3.72	1.118	3.58

Walkers (57%) and cyclists (67%) were found to have the highest percentage of choosing ‘important’ to view *scenic beauty* as their motivation for outdoor activities in the forest parks, while for dog walkers and horse riders, this motivation was reported to be ‘very important’ to them (Figure 5.1e). For the second items regarding the *enjoying nature* dimension, half of the walkers felt that it was ‘important’ for them to be close to nature during their visit to the forest park. Similar results were found with other user groups: dog walkers (43%) and cyclists (49%) (Figure 5.1f). For Participant 4, who visited Alice Holt Forest a few times a month, one of the reasons for choosing the forest as a place to enjoy outdoor activities was because of the nature and wildlife. She loved to hear the sound of animals while walking in the forest. She quoted her experience as “... it is that you can hear the cuckoos and the deer if you are really quiet, early in the morning walking around, you can see the deer, and it is just lovely.

The fourth dimension of recreation motivation was *family togetherness*, which was represented by *to bring my family closer together* and *to do something with my family*. Results from the survey show that these were either ‘important’ or ‘very important’ for most of the user groups wishing to bring the family together while pursuing their outdoor activities (Figure 5.1g and 5.1h). Easy access and good facilities provided by forest parks usually become a priority for families with children. For Participant 7, who visited Alice Holt Forest to bring her children for a walk and to socialise with her friends, easy access to move around the forest with a pushchair was important as it made it more convenient for mothers like her. This had influenced her preferences when choosing a place to bring her child for an outdoor walk.



(a)



(b)

Figure 5.3: (a) A kid hugging the Baby Gruffalo (Participant 5), (b) “Good fun building dens with the kids” (Participant 7)

Another mother of small children echoed her thoughts; Participant 8 said that “Yeah, I come because he needs some time outside every day running around, and same, you can take the pushchair everywhere as well”. Besides the good access within the forest, bigger spaces to move around in and interesting sculptures in the forest were attractive for mothers with children (Figure 5.3b). At Alice Holt Forest, there are two Gruffalo sculptures along the Easy Access Trail. These sculptures became a reason why children love to visit the forest (Figure 5.3a). Adding to the point about having a spacious place to move around in the forest park, Participant 7 argued that there would always be space for everyone even though it seemed like it could be crowded. She added that “... It is never really busy because you can always find somewhere else to stay” and “Like if you go to other places, especially indoor places, there is kind of like maximum capacity”.

The final dimension of recreation motivation measured in this study is *health*, represented by two variables: *to help release or reduce tensions* and *to avoid everyday responsibilities for a while*. Visiting a forest park as a reason to help to release stress was ‘important’ to most of the users (walkers, 59%; dog walkers, 57%; and cyclists, 44%). One horse rider felt that it was ‘very important’, while the other horse rider was ‘neutral’ on this

statement (Figure 5.1i). A high percentage of walkers said that it was ‘important’ to get away from everyday responsibilities for a while as their motivation to pursue outdoor activities at a forest park (47%); 52% of the dog walkers were ‘neutral’, 35% of the cyclists and 50% of the horse riders felt that it was ‘important’ (Figure 5.1j). For most of the focus group participants, visiting the forest park helped them to release stress by socialising with their friends, and some of them who were regular visitors at Alice Holt Forest felt that having their coffee morning with their close friends was one of the main reasons why they were going to the forest (Figure 5.4). Besides that, another factor that influenced the visitors to take part in outdoor activities was to improve their health. Participant 2 had undergone surgery on her legs a few months earlier and the surgery had limited her ability to walk. She had found out that walking in the forest was the best option to enhance her health while enjoying the peaceful environment.

“I come because I just love walking in the woods. Unfortunately, I cannot walk very far these days, but the access walk is very good for me, and I am trying to build up my walking ability and find my balance, so the forest is very good for that” –
Participant 2, 70 years old.



Figure 5.4: “Cup of tea and social” (Participant 7)



Figure 5.5: “One of my favourite seats as it is not too low to sit on after I have finished my walk, including the easy access trail. Also, surrounded by wooded area “(Participant 3)

A comparison of recreational motivation between the user groups was analysed using Factorial Analysis of Variance (ANOVA)². The results show that three variables were found to show a significant difference between user groups. These were *to be away from crowds*, *to bring my family closer together*, and *to do something with my family*. Post hoc tests were run to investigate further the differences between the groups for each variable³. The Tukey post hoc tests indicated that for the walkers, the importance *to be away from crowds* during their visit to the forest parks differed significantly from the dog walkers ($p=.023$). Walkers were also found to vary significantly from the dog walkers ($p=.018$) and cyclists ($p=.047$) concerning *bringing my family closer together*. The post hoc test also suggested that there were significant differences between the walkers and dog walkers on how important it was *to do something with your family* while visiting the forest park ($p= .011$).

² ANOVA Table of Recreation Motivation in Appendix 4A-1

³ Post Hoc Test of Recreation Motivation in Appendix 4B-1

5.2.2 Constraints to participate in outdoor activities

Besides exploring the factors that influence visitors pursuing outdoor activities in the forest park, this study also investigates the constraints for people to participate in outdoor activities. This topic was discussed in the focus group session. There were two categories of constraints captured during the discussion: the infrastructure of the forest parks and self-constraint.

a. Infrastructure of the forest parks

There were some issues regarding the infrastructure of the forest parks that became constraints for some of the users to participate in outdoor activities: limited parking spaces with expensive charges; a temporary café operating on-site, and limited swings in the play areas.

- Limited parking spaces with expensive charges

Over-priced parking charges can be one of the constraints for people to pursue their leisure time outside because some forest parks charged visitors by the hour. In general, people who come to the forest parks to enjoy outdoor activities may be in the forest for many hours. In order to reduce costs, the Forestry Commission of England has acted by offering a Discovery Pass which can be used over the whole year. However, for Participant 7, who loved to go to different places, cheaper single visit parking charges would suit her rather than taking the one-year pass.

“The only thing I would say is the parking (charge) because I do not have a (Discovery) pass. Because we like to go to different places, so the parking is quite expensive, that is sort of consideration against going to other woodlands in the area, so usually, we come when it is meeting friends and sort of more worth our while” – *Participant 7, 32 years old.*

- Temporary café

During the focus group discussion, the café at Alice Holt Forest was being renovated to expand it. Therefore, a temporary café had been set up near one of the playgrounds in the visitor centre area. With only a limited seating area and choice of foods and drinks, these

have led to a 'disruptive' experience for the regular customer who mentioned that the limited services of the café would somehow become a constraint for them should they want a morning coffee with their close friends. This situation could lead to them changing to another place to socialise with their friends.

- Limited swings in the play areas

Sometimes, a particular 'feature/facility' in the children's playgrounds become essential to some individual. For example, mothers would love if more swings were available at the playgrounds because the children love swings. Participant 8 said that "They could do with more swings in the playground. Because they only ever had two. That is how many you get at any park, wherever you go, so there's always a massive, massive queue for the swings". She suggested that the forest park management could add more swings in the playground since they are the most popular 'facility' there and there was always a high demand for them.



Figure 5.6: Temporary cafe has been set nearby the visitor centre and playground (Participant 7)



Figure 5.7: “Playground – Every time we come to Alice Holt, we end with a visit to the play areas and toilets” (Participant 8)

b. Self-constraint

A health problem can be one of the constraints for an individual when deciding to participate in outdoor activities. One of the focus group participants was having a problem with her legs, which limited her ability to do a variety of activities offered in the forest. One of the activities that she loved to do was cycling. Thus, her health condition appeared to be a barrier for her to fulfil her passion for outdoor activities. She also expressed her frustration during the discussion about not being able to cycle in the forest which she had loved to do before her surgery.

5.3 Place Attachment

The second type of user perspectives on outdoor recreation explored in this study was place attachment. In a short definition, place attachment can be defined as the bonds developed between people and place(s). The similarity and differences of place attachment between the user groups are presented in this section. During the Participatory Research Day at Alice Holt Forest, the photo-elicitation technique was applied in order to identify the

feature(s) that the participants were most attached to in the forest. The pictures captured by the participants were used to support the findings on this topic of place attachment.

5.3.1 Affective attachment of the users in the forest park

Four items of affective attachment were used to identify the attachment of visitors during the survey period (Figure 5.8). The first item was that *this forest park means a lot to me* (Figure 5.8a). The result shows that 43% of the walkers chose a 'neutral' feeling, while 43% and 44% of dog walkers and cyclists chose 'agree' concerning the statement. The highest mean value of the first item in affective attachment was dog walkers ($\bar{x}= 4.00$; $s=0.76$), while the lowest was walkers, with a mean value of 3.49 ($s=0.95$) (Table 5.4). Cyclists were found to be the group who most felt *very attached to this forest park* (42% of the cyclists chose 'agree' to the statement). Other users were found to have a 'neutral' feeling concerning the statement (Figure 5.8b). Cyclists scored a mean value of 3.44 ($s=1.01$) for this item. The total mean value for this item was 3.31, which indicated that most of the participants in the survey felt 'neutral' about feeling *very attached to the forest park*.

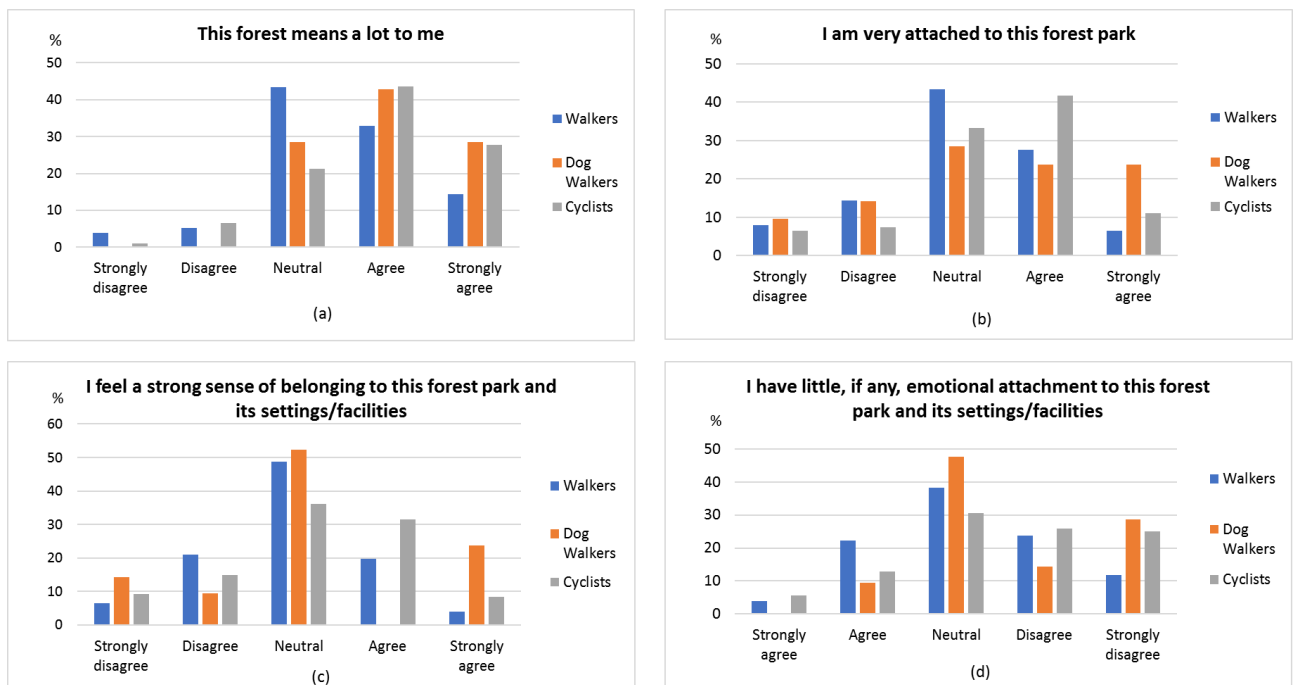


Figure 5.8: Affective attachment of the user groups (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)

The third item in affective attachment was *I feel a strong sense of belonging to this forest park and its settings/facilities* (Figure 5.8c). The figure shows that most of the walkers (49%), dog walkers (52%), and cyclists (36%) chose ‘neutral’ for the statement. However, it can be seen that another 31% of the cyclists ‘agree’ that they feel a strong sense of belonging to the forest park. The final item used to identify the affective attachment of the user groups in the forest park was *I have little, if any, emotional attachment to this forest park and its settings/facilities*. The results show that all the user groups chose ‘neutral’ in greater numbers when compared to other available answers (Figure 5.8d). This clearly is reflected in the total mean score of this item, which was slightly below ‘neutral’ (\bar{x} = 2.60). Finally, a factorial analysis of variance (ANOVA) was used to analyse any significant difference between the user groups. The results show that there was a significant difference between the user groups for the first item in the affective attachment (p = .005)⁴. The item was further analysed using the Tukey post hoc test⁵. The test results indicated that the cyclists differed significantly (p = .007) from the walker’s group in terms of their attachment to the forest park for the first statement concerning affective attachment, which is: *this forest park means a lot to me*.

Table 5.4: Mean and Standard Deviation for affective attachment of the user groups

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
<i>This forest park means a lot to me</i>	3.49	.945	4.00	.775	3.91	.912	3.76
<i>I am very attached to this forest park</i>	3.11	1.001	3.38	1.284	3.44	1.007	3.31
<i>I feel a strong sense of belonging to this forest park and its settings/facilities</i>	2.93	.914	3.10	1.300	3.15	1.075	3.06
<i>I have little if any, emotional attachment to this forest park and its settings/facilities</i>	2.83	1.038	2.38	1.024	2.48	1.164	2.60

Theoretically, affective attachment is referred to as an emotional bond an individual develops by building their sentiments in a particular setting (Ramkissoon et al., 2012; Tuan,

⁴ ANOVA Table of Affective Attachment in Appendix 4A-2

⁵ Post Hoc Test (Tukey HSD) for Affective Attachment in Appendix 4B-2

1977). From the focus group discussion, this study found that childhood memories can be categorised as this type of attachment. For example, Participant 5, who was brought up at Alice Holt Forest, is now 74 years old and still lives near the forest. She has been visiting the forest every day, and she loves to go for a walk and remember her childhood memories at a few spots there. One of her favourite spots is a pond near the picnic areas (Figure 5.9). She also said that she would go mad if she did not come to the forest as the activity was a part of her daily routine. This is anecdotal evidence of affective attachment between an individual and a place where the emotional bond started in early childhood.



Figure 5.9: Pond nearby picnic areas at Alice Holt Forest (Participant 2)

5.3.2 Place identity of the users in the forest park

Place identity refers to the symbolic meaning a particular place has to an individual (Kyle et al., 2005). According to Prohansky's concept of place identity (1978), an individual tends to develop a strong identity with a place when the place provides a sense of uniqueness or offers facilities distinctive from other places (Twigger-Ross & Uzzell, 1996). Three items of place identity have been used in this study (Figure 5.10). The first item was *I feel this forest park is a part of me*. The result shows that the highest percentage of response by each user group was similar (Figure 5.10e). 45% of walkers, 48% of dog walkers, and 38% of cyclists felt 'neutral' on the first item of place identity. The total mean for all three user groups for this

item was \bar{x} = 2.98, which indicates that most of the visitors chose ‘disagree’ to ‘neutral’ about feeling the forest park was part of themselves (Table 5.5).

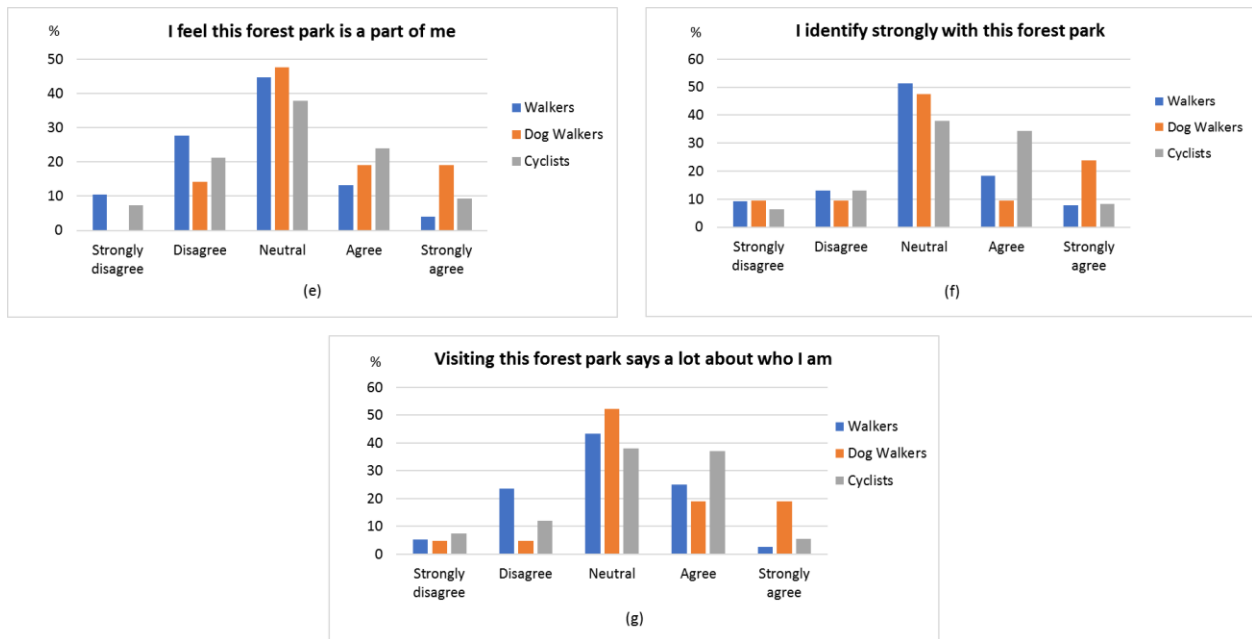


Figure 5.10: Place identity of the user groups (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)

Table 5.5: Mean and Standard Deviation for Place Identity

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
<i>I feel this forest park is a part of me</i>	2.72	.961	3.43	.978	3.06	1.061	2.98
<i>I identify strongly with this forest park</i>	3.03	1.006	3.29	1.231	3.25	1.006	3.17
<i>Visiting this forest park says a lot about who I am</i>	2.96	.901	3.43	1.028	3.21	.986	3.14

The second item in place identity was the statement: *I identify strongly with this forest park*. The highest percentage of response for all the user groups were ‘neutral’, with 51% for the walkers, 48% for the dog walkers, and 38% for the cyclists (Figure 5.10f). The total mean for the second item of place identity was 3.17 (‘neutral’) with the highest mean produced by the dog walkers at \bar{x} = 3.29 (s =1.23). The last item used to measure place identity was *visiting this forest park says a lot about who I am*. The highest percentage of responses to this item

selected by each user group was 'neutral', with the percentage for walkers (43%), dog walkers (52%), and cyclists (38%), respectively. It was also noted that 37% of the cyclists chose 'agree' to the last item in place identity (Figure 5.10g). The total mean value of the user group for this item was 3.14, which signifies that most of the survey participants felt 'neutral' about this item (Table 5.5). A comparison of response between the user groups was analysed using ANOVA. The results show that there was a significant difference between the user group on the first item measured in place identity ($p = .009$)⁶. A further analysis was carried out using the Tukey post hoc test⁷. The test result denoted that walkers differed significantly ($p = .015$) from dog walkers

From the focus group, this study found out that the destination image, such as scenery, the type of forest or landscape, and other distinct features of the forest brought out a sense of belonging in a person. For Participant 2, she had a feeling of being very close to the forest. She said "... I have been coming here what, about 30 years. When the children were young, we used to bring them up and bring the bikes. We would use this side of the forest plus the other side, and you just become attached to it, it is such a lovely forest". As Gu and Ryan (2008) have stated about when people visit natural attractions, the physical and social attributes of the place may give rise to a strong sense of place identity. The attachments expressed not only involved specific, localised experiences but also more specific memories of the place (Devine-Wright & Clayton, 2010).

5.3.3 Social bonding of the users in the forest park

The third dimension in place attachment was social bonding. This type of attachment mainly focusses on the development of common bonds between individuals through people-place interaction. Three items were used to measure the social bonding in this study (Figure 5.11). The first item was *my friends/family would be disappointed if I were to start visiting other settings and facilities*. The total mean of response to this item was 2.16, which indicates that most of the participants chose 'disagree' for the statement. The highest percentage of response based on user groups were as follows: 38% of the walkers and 43% of the dog

⁶ ANOVA Table of Place Identity in Appendix 4A-3

⁷ Post Hoc Test (Tukey HSD) for Place Identity in Appendix 4B-3

walkers chose 'disagree', while 37% of the cyclists were 'neutral' about this item (Figure 5.11h). The second item in social bonding was *If I were to stop visiting this forest park's sites, I would lose contact with a number of friends*. Figure 5.11i shows that the highest percentage of responses by the user groups fell on 'strongly disagree': 47% (walkers), 57% (dog walkers), and 40% (cyclists). The total mean for this item was 1.84, which signifies that most of the respondents felt that they would 'strongly disagree' that they would lose contact with their friends if they stopped visiting the forest park (Table 5.6). The final item used to measure social bonding was the statement *many of my friends/family prefer this forest park over other sites* (Figure 5.11j). The results show that the highest percentage of walkers felt 'neutral' about this statement (42%) and 29% of dog walkers returned 'agree'. An equal number of cyclists responded with 'neutral' (n=39, 36%) and 'agree' (n=39, 36%). These results have generated a total mean of 3.09, with the cyclists producing the highest mean value (\bar{x} = 3.17; s =1.02). A factorial ANOVA was run, and the test results showed that there was no significant difference between the user groups for any of the items for social bonding⁸.

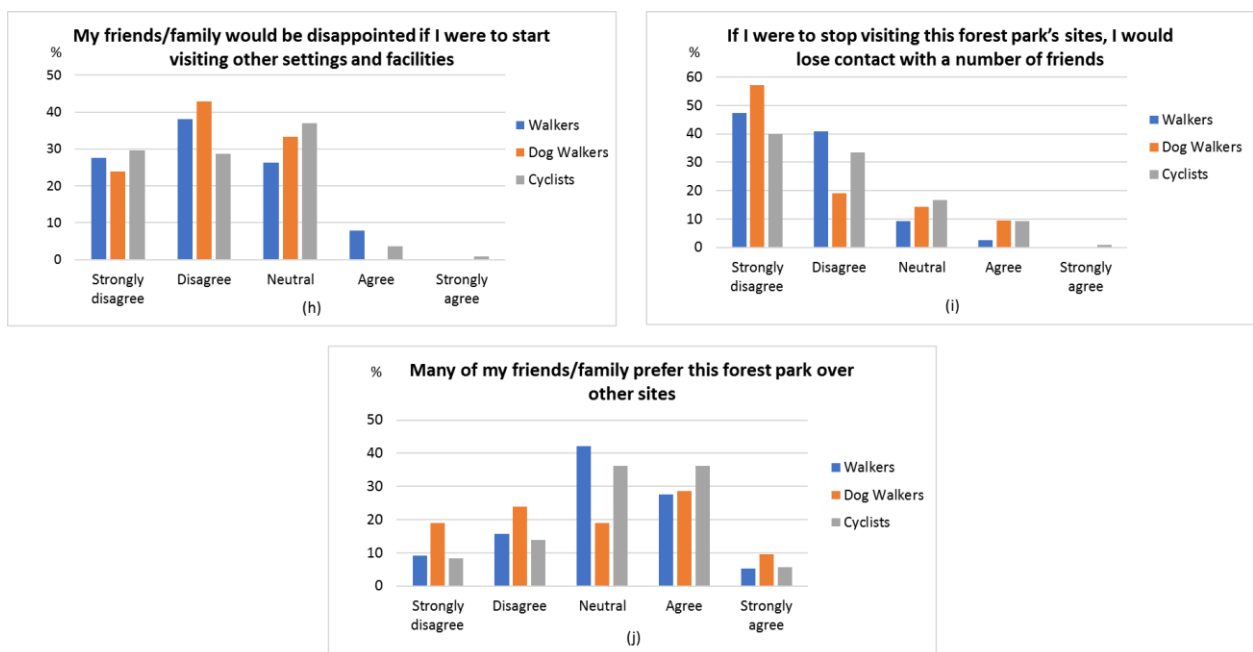


Figure 5.11: Social bonding of the user groups (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)

⁸ ANOVA Table of Social Bonding in Appendix 4A-4

Table 5.6: Mean and Standard Deviation for Social Bonding

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
<i>My friends/family would be disappointed if I were to start visiting other settings and facilities</i>	2.14	.919	2.10	.768	2.18	.936	2.16
<i>If I were to stop visiting this forest park's sites, I would lose contact with a number of friends</i>	1.67	.755	1.76	1.044	1.98	1.014	1.84
<i>Many of my friends/family prefer this forest park over other sites</i>	3.04	1.012	2.86	1.315	3.17	1.019	3.09

Conducting outdoor activities in a group in a forest park may develop social bonding between people (Figure 5.13 and Figure 5.14). People that share common interests will be more likely to have this kind of attachment. For example, few participants in the focus group knew each other beforehand but now they enjoy having coffee at the café in Alice Holt Forest every day. To them, this is the best time and an activity that enables them to socialise with their close friends (Figure 5.12). The friendship that these participants have developed over the past years indicates the social bonding that has led to the attachment to the forest park.



Figure 5.12: People enjoying their lunch at the café (Participant 1)



Figure 5.13: People enjoying the Easy Access Trail on cycles (Participant 4)



Figure 5.14: Timberline trail house. Parents chatting trying to figure out how to get their children out of the playhouse (Participant 7)

5.3.4 Place dependence of the users in the forest park

Place dependence is defined as a bond that individuals form with the physical characteristics of a place, such as the facilities and other special features that function well to fulfil their needs. Four items were used to measure place dependence among visitors at Haldon Forest Park and Alice Holt Forest (Figure 5.15). The total mean value of the first item in place dependence (*I prefer this forest park over other settings/facilities for the recreational activities that I enjoy most*) was 3.38 (Table 5.7). This result means that most of the respondents were between 'neutral' and 'agree' for the first item of place dependence. An equal number of walkers chose 'neutral' (41%, n=31) and 'agree' (41%, n=31) to this statement. Dog walkers (43%) and cyclists (43%) produced the highest percentage of the response 'agree', that they preferred Haldon Forest Park or Alice Holt Forest compared to other settings to bring their dog(s) for a walk or to come cycling (Figure 5.15k). The second item in place dependence was *for what I like to do, I could not imagine anything better than the setting and facilities provided by this forest park*. There was an equal number of walkers who chose 'neutral' (37%, n=28) and 'agree' (37%, n=28) to this statement, making both responses the highest percentage for the walkers (Figure 5.15l). For the dog walkers group, the highest percentage of response was shared between 'neutral', 'agree' and 'strongly agree', with five respondents for each response. Most of the cyclists chose 'agree' (43%, n=46) that the forest park they visited (either Haldon Forest Park or Alice Holt Forest) for cycling was better than other forest parks. Each group of users in the forest parks had a mean value above 3.00 and produced a total mean of 3.22 for the second item in place dependence (Table 5.7).

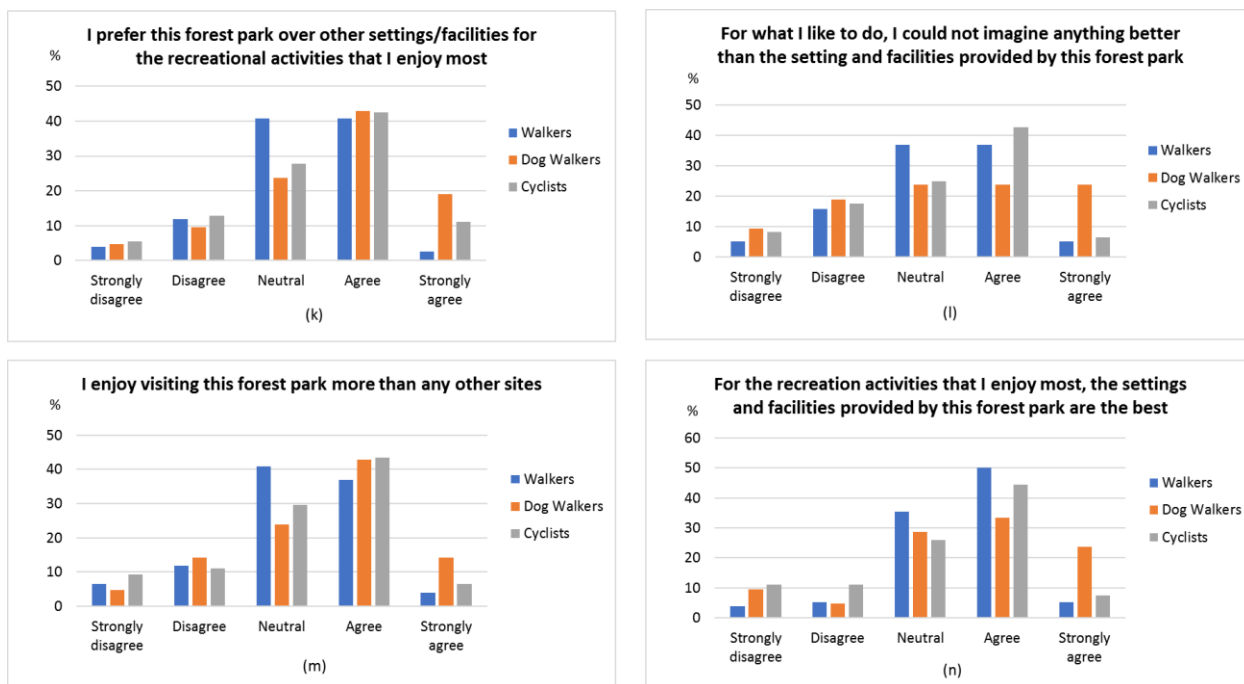


Figure 5.15: Place dependence of the user groups (Question 8: What is your attachment to this forest park? Please circle one relevant number to your answer)

Table 5.7: Mean and Standard Deviation for Place Dependence

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
<i>I prefer this forest park over other settings/facilities for the recreational activities that I enjoy most</i>	3.26	.854	3.62	1.071	3.41	1.033	3.38
<i>For what I like to do, I could not imagine anything better than the setting and facilities provided by this forest park</i>	3.21	.957	3.33	1.317	3.21	1.077	3.22
<i>I enjoy visiting this forest park more than any other sites</i>	3.20	.938	3.48	1.078	3.27	1.056	3.26
<i>For the recreation activities that I enjoy most, the settings and facilities provided by this forest park are the best</i>	3.47	.840	3.57	1.207	3.26	1.114	3.37

The third item measured for place dependence in this study was *I enjoy visiting this forest park more than any other sites*. 41% of the walkers were found to have ‘neutral’ feeling

about this, while 43% of dog walkers and 44% of the cyclists chose 'agree', that they loved to visit the forest park more than other sites (Figure 5.15m). The total mean value for the third item of place dependence was 3.26 (Table 5.7). The fourth item of place dependence was *for the recreation activities that I enjoy most, the settings and facilities provided by this forest park are the best*. The total mean value of this item was 3.37. The highest percentage of responses by each user group was 'agree': walkers (50%), dog walkers (33%), and cyclists (44%) (Figure 5.15n). The differences of place dependence between the user groups were compared using factorial ANOVA. No significant difference was found among the groups⁹.

Two forest parks (Haldon Forest Park and Alice Holt Forest) have been used as study areas in this study. Each forest offered various types of outdoor activities, facilities and services. According to Kaplan and Kaplan (1989), a visitor may develop an attachment to a place because it satisfies specific needs and serves a functional purpose. A number of factors in the development of place dependence among the users were identified during the focus group. There were good facilities for visitors, such as toilets, cafés, and visitor centres. These essential facilities were crucial for the people of the forest park. Besides these, various other activities offered at Alice Holt Forest, along with other attractions, such as the Gruffalo sculptures, helped in building an attachment between the people and the place. For Participant 8, who is a mother of two, she said that her son loved the Gruffalo (Figure 5.16). They usually visited Alice Holt Forest three times a week. The bonding between the child and the place is obvious. She also added that her son would ask her to bring him to the forest park every day - "We can go see the Gruffalo. He hugs the Gruffalo when he sees it like he thinks it is his Gruffalo because we see it so often".

⁹ ANOVA Table of Place Dependence in Appendix 4A-5



Figure 5.16: “Baby Gruffalo – he also loves big one and sticks man” (Participant 8)



Figure 5.17: A mixture of user groups at play areas (Participant 1)

5.4 Recreation Experience

In this section, the visitor behaviour sought during the survey period is elaborated upon in the first part. The qualitative findings on recreational experience and the perceptions of environmental and social issues are presented in the latter part of this section.

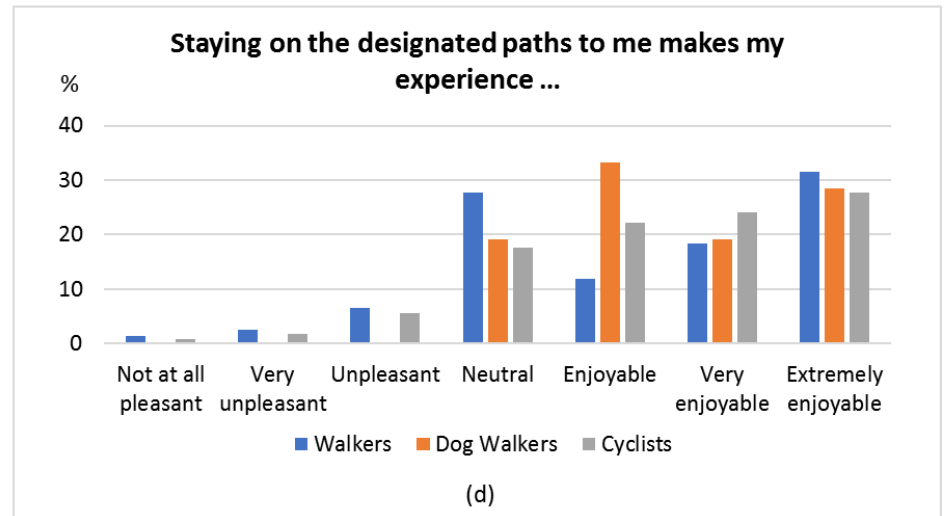
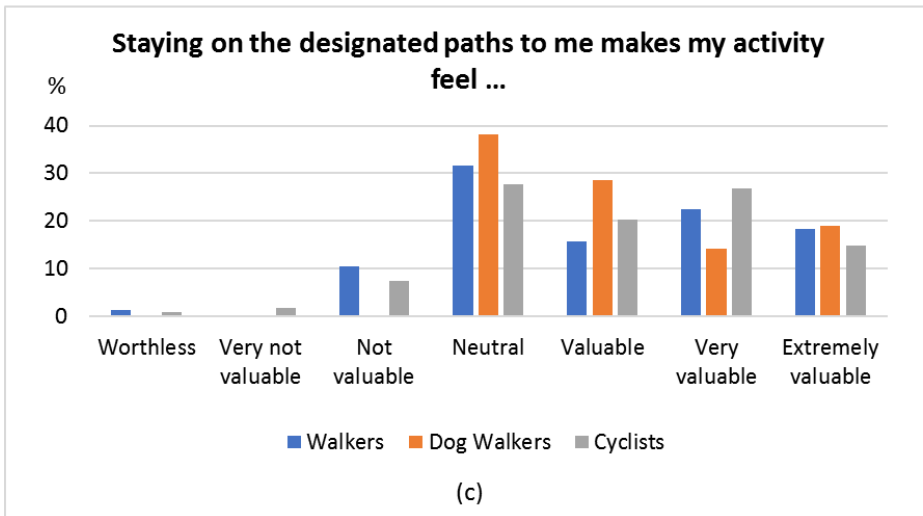
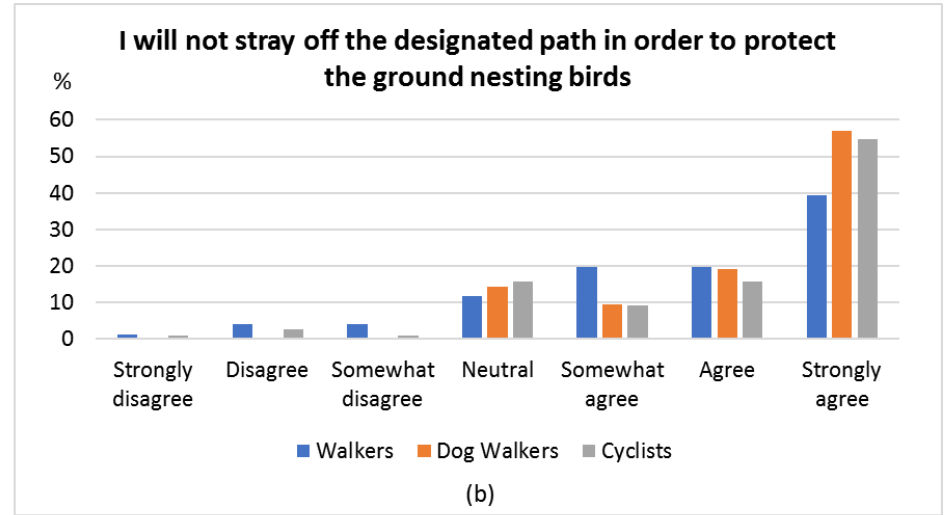
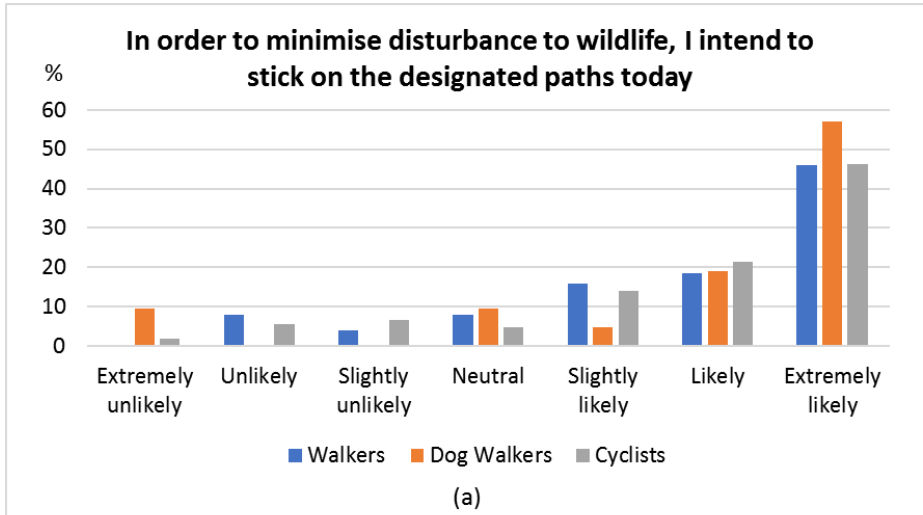
5.4.1 Attitude-behaviour of the user groups

As part of the survey, respondents were asked about their attitude and behaviour. Four components of the Theory of Planned Behaviour (TPB) were used to measure the visitors' behaviour on a specific desired behaviour: behavioural intention, attitude towards behaviour, subjective norms, and perceived behavioural control. Table 5.8 lists the mean values for each user group for items of recreational behaviour. The first item to measure visitor intention was *'in order to minimise disturbance to wildlife, I intend to stick to the designated paths today'*. The total mean value for this item was 5.73, with dog walkers contributing the highest mean of 5.86 (s=1.88). Most of the user groups' highest percentage was registered with 'extremely likely' to stick to the designated paths during their visit to the forest park: walkers (46%), dog walkers (57%), and cyclists (46%) (Figure 5.18a). The second item for behavioural intention was *'I will not stray from the designated path in order to protect the ground-nesting birds'*. The highest number of responses for each user group was 'strongly agree': walkers (39%), dog walkers (57%), and cyclists (55%) (Figure 5.18b). The total mean value for this item was 5.85 which indicates that the visitors agreed that they were to stay on the path to protect the ground-nesting birds.

Table 5.8: Mean and Standard Deviation for Recreation Behaviour

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
<i>In order to minimise disturbance to wildlife, I intend to stick on the designated paths today</i>	5.71	1.582	5.86	1.878	5.72	1.634	5.73
<i>I will not stray off the designated path in order to protect the ground nesting birds</i>	5.62	1.505	6.19	1.123	5.95	1.430	5.85
<i>Staying on the designated paths to me makes my activity feel...</i>	5.01	1.390	5.14	1.153	5.05	1.328	5.04

<i>Staying on the designated paths to me makes my experience...</i>	5.28	1.546	5.57	1.121	5.42	1.382	5.38
<i>Most people who are important to me think that I should stick to designated paths today</i>	5.01	1.621	4.95	1.774	4.62	1.878	4.80
<i>Forestry Commission staffs would be happy if I use the designated paths to minimise disturbance to ground nesting birds and other wildlife</i>	6.46	.855	6.62	.921	6.26	1.105	6.37
<i>In term of my ability to stay on the designated path, I feel it is...</i>	6.09	1.308	6.19	1.601	5.84	1.584	5.97
<i>I feel I have a control of myself to stay on the designated paths during my visit today</i>	6.13	1.147	6.43	1.028	5.94	1.487	6.06



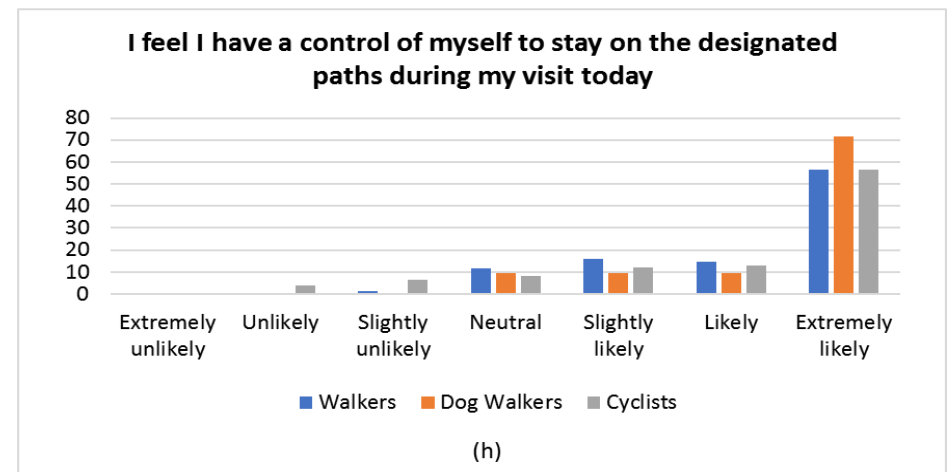
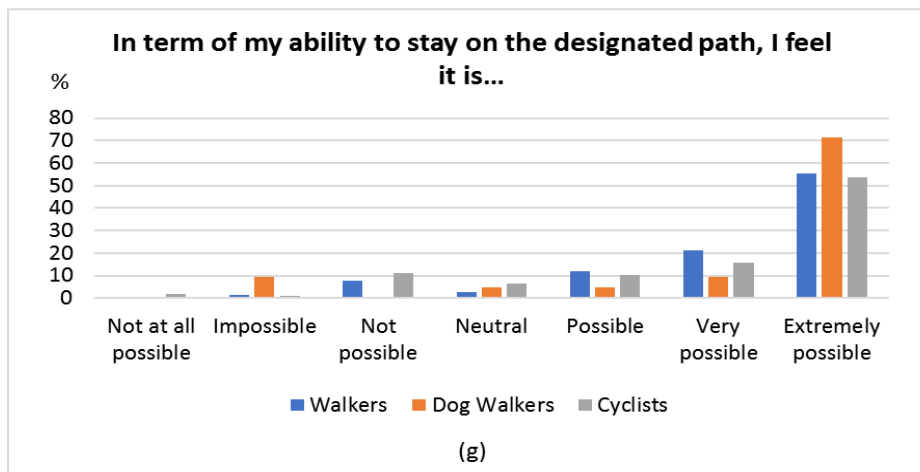
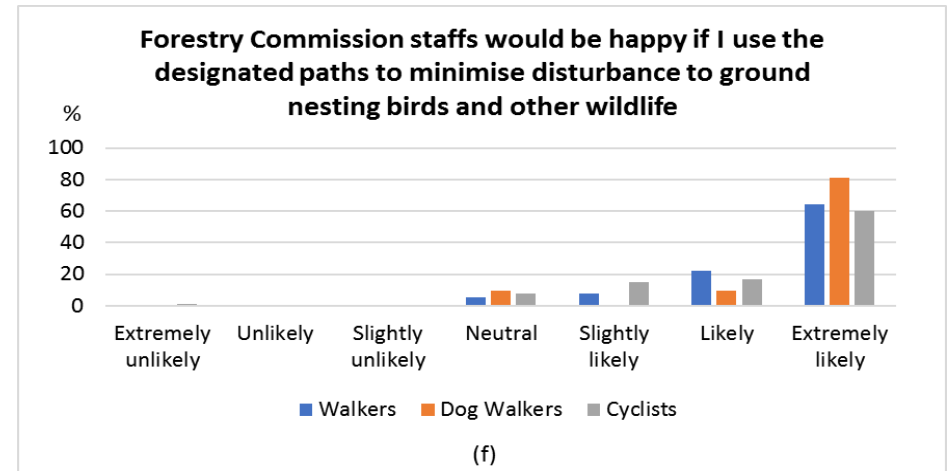
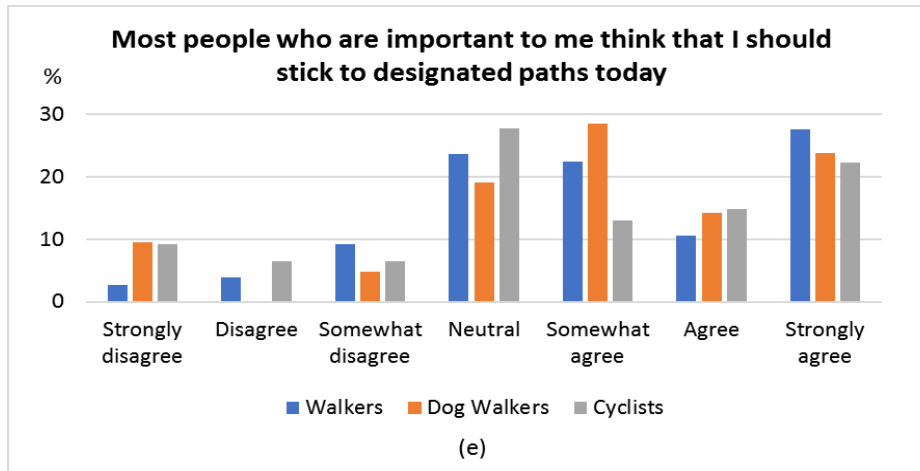


Figure 5.18: Recreation behaviour of the user groups (Question 10: The following questions are designed to understand your specific behaviour when using the park. Please circle on a scale of 1-7 on how you feel about the following behaviour)

The second component of TPB was the attitude towards behaviour. The first item of attitude was *'staying on the designated paths makes my activity feel..'*. The range of answers to this question was 'worthless' to 'extremely valuable'. All three user groups have the highest percentage of choosing 'neutral' to this statement: walkers (32%), dog walkers (38%), and cyclists (28%) (Figure 5.18c). The total mean value for the first item of attitude towards behaviour was 5.04 (Table 5.8). The second item of visitor's attitude was *'staying on the designated paths makes my experience.'* The range of answers for this item was between 'not at all pleasant' and 'extremely enjoyable'. The results show that most of the walkers (32%) and cyclists (28%) felt it 'extremely enjoyable' to stay on the designated path (Figure 5.18d), and most of the dog walkers (33%) felt it 'enjoyable' regarding the second item of attitude. This result generated a total mean value for this item of 5.38 (Table 5.8).

The third component of TPB was subjective norms. The result of the first item of subjective norms is displayed in Figure 5.18e. 28% of the walkers 'strongly agree' that most of the people who are important to them think that they should stick to designated paths during the visit to the forest park. 29% of the dog walkers 'somewhat agree', while 28% of the cyclists 'neither agree nor disagree' with the statement. The total mean value for the first item of subjective norms was 4.80 (Table 5.8). The second item used to measure subjective norms was *'Forestry Commission staff would be happy if I use the designated paths to minimise disturbance to ground-nesting birds and other wildlife'*. The three user groups have the highest percentage on choosing 'extremely likely': walkers, 64%; dog walkers, 81%; and cyclists, 60%, which generated a total mean value of 6.37 (Figure 5.18f).

The final component of TPB measured in this study was perceived behavioural control (PBC). The descriptive analysis shows a similar pattern of the answer chosen by the user groups for both items measured for perceived behavioural control. For the first item (*In terms of my ability to stay on the designated path, I feel it is...*), walkers, dog walkers, and cyclists scored the highest percentage with 'extremely possible': 56%, 71%, and 54% respectively (Figure 5.18g). The total mean value for this item was 5.97, which signifies positive behaviour regarding the visitors' ability to stay on the designated path (Table 5.8). A similar result was

arrived at for the second item of perceived behavioural control (*I feel I have control over myself to stay on the designated paths during my visit today*). Most of the user groups scored the highest percentage on 'extremely likely', with 57% for the walkers, 71% for the dog walkers, and 56% for the cyclists. From the factorial ANOVA, the results show that there was no significant difference between the user groups for each component used to measure visitor recreational behaviour¹⁰. In brief, there was no significant difference between the user groups in terms of their behavioural intention, attitude towards behaviour, subjective norms, and perceived behavioural control.

5.4.2 Findings from a qualitative study

This study also attempted to explore visitor experience through a qualitative approach. Questions were asked during a focus group that discussed the participants' experiences during their visits to the forest park, such as: "What can you say about your experience during your visits to this forest?", "How do you feel about other user groups?" and "What does this forest experience offer that you cannot get anywhere else?". These sorts of questions were useful to further investigate how the participants felt about their outdoor recreational experiences and their behaviour during their visit to the forest parks. During the focus group session, there was one section that focused on the participants' views on pictures of environmental and social perception. The pictures were used as a probe to get further information about recreational experiences that the participants had during their visit to the forest park. Findings from the qualitative study can be categorised into three topics: multiple users, user attitudes, and environmental issues.

a. Multiple users

Two images were given to the participants related to the issue of multiple users. The first picture showed a situation where a path was being shared by horse riders and cyclists (Figure 5.19a), while the second picture was a news item about the conflict between a dog walker and motorcyclists (Figure 5.19b). At first, the participants responded that they had not encountered any sort of situation displayed in the pictures. However, when the researcher

¹⁰ ANOVA Table of Recreation Behaviour in Appendix 4A-6

asked if they have had experienced any similar situations with other user groups, their responses changed. Three different situations, and attitudes were described. First, runners were the worst trail users compared to other user groups. There was usually a running event held on Saturday mornings at Alice Holt Forest. During this event, runners had to share the same trail with other visitors. Participant 5, who is a walker, shared her experience that most of the time the other users needed to move to the edge of the trail to give way to the runners because they needed to secure their running time record. She also added that the runners thought they owned everything., Another participant supported her views: “Yeah, they tell you to get out of the way. The runners are the worst”. The second situation was a conflict between a cyclist with a buggy and other trail user. During the discussion, a participant described an experience with a cyclist with a buggy that did not slow down when approaching walkers. She had to walk to the side to allow the cyclist to pass her.

“What I have found, there are just one or two cyclists, especially the cyclists with the buggies on the back, we had them for six months, hurtling down the path, I was in the middle of it, and I only just got to the side in time for them to go past. They did not slow down. Now, that is one thing that is bad. But fortunately, it is a minority, most of them will slow down or let you go across the path as a family”-
Participant 2



(a)



(b)

Figure 5.19: Pictures of multiple user's issues in forest park

The same question was asked to the participants about a mother with small children and using pram in the forest. Two of them responded that they had not really encountered any negative experiences of sharing the trail with another type of user group. Participant 7 said: "I've never really experienced any conflict. Yeah, occasionally someone might cycle quickly past me, I have to move over, but nothing that causes any bother", while participant

8 answered with: “Mostly a little, but generally I will only go with him on the Habitat Trail and stuff, so maybe it’s because I’m not going further than I want into the forest, where you can get a lot more (of conflict with another user)”. The third situation presented was about the presence of horse riders along the walking trail. At Alice Holt Forest, horse riding activity is permitted but the rider needs to get a permit to use the horse-riding trail. The trail is solely for the horse riders and is not shared with the other users. However, sometimes the horse riders can be seen using the walking trail. This situation can be dangerous for a mother with a pram or with small children. As well as the danger posed, the horse may tear up soil on the trail, which can make it difficult for the walkers to use the trail.

b. User attitude

Three images were used to represent user attitude in the forest park: a plastic bag of dog waste hanging on the signage (Figure 5.20a), an empty bottle lying on the ground (Figure 5.20b), and logs stacked with signage on them (Figure 5.20c). Three findings from this topic were found during the discussion. These were the issues of handling dog waste, managing the littering problem in the forest park, and handling young children, especially while walking or cycling inside the forest. Regarding the dog waste issue, not every dog owner knows the right way to manage their dog waste, and some of them do not behave responsibly concerning the proper disposal of dog waste. The participants agreed that sometimes they faced this kind of issue during their visit to Alice Holt Forest, but in comparison with another nearby forest park, Ludshott Common, Alice Holt Forest did not have a serious issue regarding dog waste. Despite this, they did suggest that the park manager could add more dog waste bins further into the forest or perhaps educate the visitors on how to handle their dog waste properly while visiting the forest.

The littering problem could be reduced by promoting good practice in the forest. One of the best campaigns is ‘Leave No Trace’, which has been implemented at most outdoor areas, such as national parks and forests. Increasing awareness of the Alice Holt Forest visitors encouraged by using this campaign could be useful in the future. Referring to the last picture, participant 5 shared her experience of seeing children playing on the top of log stacks while their mother was leaning on the signage smoking cigarettes. This situation is dangerous for

children. This could be evidence of a lack of awareness of people about safety issues while performing outdoor activities in the forest. The park management had acted responsibly by putting up signage clearly stating to keep off the log stacks, but the awareness of the dangers by visitors was still lacking.



(a)

(b)



(c)

Figure 5.20: Pictures of user's attitude in the forest park

c. Environmental issues

Two pictures were shown to the participants, as in Figure 5.21. The first picture was a muddy trail, resulting from natural causes (such as rain) and outdoor activities, while the second picture depicted the development of multiple trails in the forest, usually created by visitors. The participants were found not to have any problem if they encountered this kind of situation during their visit to the forest park (Figure 5.21a). They also mentioned that sometimes the muddy trail could be enjoyable for the children, especially where they could splash in the puddles. Only one of the participants noticed the negative impacts of creating small paths in the forest (Figure 5.21b). This attitude might be pleasant for those who like adventure activities, like trekking, but it is not an appropriate way to behave while performing outdoor activities in the forest park where there are already paths that have been designed for the visitor to use. Creating multiple trails in the forest can diminish ground vegetation and disturb small animals.



(a)



(b)

Figure 5.21: Pictures of environmental issues in the forest

5.5 Visitor Satisfaction

Visitor satisfaction was another important concept in this study. It is used as a measurement of recreational quality that provides important information to the park and forest manager on how well a recreational site is currently meeting visitors' needs and preferences. This section presents results on the degree of visitor satisfaction by user groups during the survey period.

5.5.1 Evaluating visitor's satisfaction by user groups.

Visitor satisfaction was evaluated using three aspects, namely: management settings, resource settings and social condition. There were 21 items used to measure visitor satisfaction in management settings. Descriptive data on this aspect is displayed in Table 13¹¹. Table 5.9 presents the mean values of all items in management settings. Five of the items scored total mean values above 4.00. This result indicates that the average respondent was satisfied with the services provided by the park management. Those five items were *well-*

¹¹ Management settings of visitor satisfaction at the forest park in Appendix 4C

designed and maintained roads (\bar{x} = 4.19), well-designed and maintained carpark areas (\bar{x} = 4.21), access to toilet facilities (\bar{x} = 4.16), clean, well-presented toilet facilities (\bar{x} = 4.09), and well-designed and maintained walking paths (\bar{x} = 4.15). Conversely, several items of management settings were found to have relatively low total mean values. There were well-designed and maintain horse riding paths (\bar{x} = 1.47), affordable charges for bicycle rental (\bar{x} = 1.70), affordable charges for BBQ facilities rental (\bar{x} = 1.20), affordable charges for high rope activities (\bar{x} = 1.68), and affordable charges for horse riding permits (\bar{x} = 1.08). The low mean value of these items was possibly due to the high number of respondents who did not have any experience of the particular services.

Table 5.9: Mean and Standard Deviation for Visitor Satisfaction (Management Setting)

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
Pre-Visit Info	3.51	1.669	3.43	1.805	3.91	1.431	3.71
Road Signs	3.84	1.479	3.43	1.630	4.07	1.125	3.92
Roads	4.12	1.032	4.24	.768	4.23	.731	4.19
Car parks Areas	4.21	.869	4.33	.796	4.19	.859	4.21
Parking Charge	3.41	1.328	2.95	1.627	3.44	1.285	3.38
Park Staff	3.24	1.648	3.38	1.774	3.39	1.750	3.33
Access Toilet	4.12	1.119	4.19	1.123	4.19	1.185	4.16
Clean Toilet	4.04	1.183	4.24	1.136	4.09	1.188	4.09
Clean Picnic Facilities	2.38	2.013	2.52	2.089	2.20	2.152	2.30
Walking Paths	4.41	.751	4.24	1.091	3.94	1.413	4.15
Cycling Tracks	3.03	2.065	3.43	1.777	4.18	1.214	3.67
Horse Riding Paths	1.64	2.025	1.76	2.143	1.29	1.767	1.47
Children Playing Areas	3.86	1.476	2.95	2.085	3.09	2.058	3.36
Bicycle Rental Charge	1.42	1.768	1.90	2.166	1.85	1.928	1.70
BBQ facilities Rental Charge	1.18	1.726	1.19	1.806	1.20	1.739	1.20
High Rope Activity Charge	1.80	1.918	1.86	1.931	1.56	1.851	1.68
Horse Riding Charge	1.04	1.653	1.29	1.821	1.07	1.662	1.08
Park Map	3.54	1.418	3.62	1.627	3.98	1.260	3.78
Info about Plants and Animals	3.24	1.624	3.33	1.494	3.04	1.849	3.14
Info Visitor Safety	2.75	1.884	3.33	1.742	3.53	1.579	3.22
Access for Disabilities	1.91	1.988	3.05	1.830	1.99	2.111	2.07

A factorial ANOVA was used to analyse the differences in visitor satisfaction in management settings between the user groups¹². The results show that four items of the management settings produced significant differences between the groups: *well-designed and maintained walking paths* ($p= .031$), *well-designed and maintained cycling tracks* ($p= .000$), *well-designed and maintained children’s playing areas* ($p= .015$), and *clear information about visitor safety* ($p= .011$). Further analysis was conducted using Tukey post hoc test on these four items¹³. The post hoc test suggested that there was a significant difference between the walkers and cyclists concerning their satisfaction regarding *well-designed and maintained walking paths* ($p= .044$). For the satisfaction towards *well-designed and maintained cycling tracks*, the result shows that walkers significantly differed from cyclists ($p= .000$). Walkers were also found to have significant differences from cyclists ($p= .034$) in term of their satisfaction regarding the *children’s playing areas*. For satisfaction related to *clear information about visitor safety*, the result shows that walkers significantly differed from cyclists ($p= .014$).

The second aspect used to measure visitor satisfaction was resource settings. Three items were used to measure this aspect. The first item measured for resource setting in this study was *my ability to enjoy nature in this park*. 48% of the dog walkers were found to respond with ‘very satisfied’ to this item, while 50% of walkers and 48% of the cyclists felt ‘satisfied’ with their experience regarding enjoying nature during their visit to the forest park (Figure 5.22a). The total mean value for the first item of the resource settings was 4.25 (Table 5.10). This result denotes that most of the respondents are satisfied with their ability to enjoy nature in the forest parks.

Table 5.10: Mean and Standard Deviation for Visitor Satisfaction (Resource Setting)

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
<i>My ability to enjoy nature in this park</i>	4.21	1.037	4.05	1.465	4.31	.769	4.25

¹² ANOVA Table of visitor’s satisfaction (management settings) in Appendix 4A-7

¹³ Post Hoc Test (Tukey HSD) for visitor’s satisfaction (management settings) in Appendix 4B-4

<i>Sighting of native wildlife/birds</i>	2.82	1.937	3.67	1.683	3.06	1.779	3.03
<i>A broad range of activities available (e.g. walking, picnicking, bird watching, etc)</i>	4.17	.915	4.10	1.136	3.83	1.404	3.99

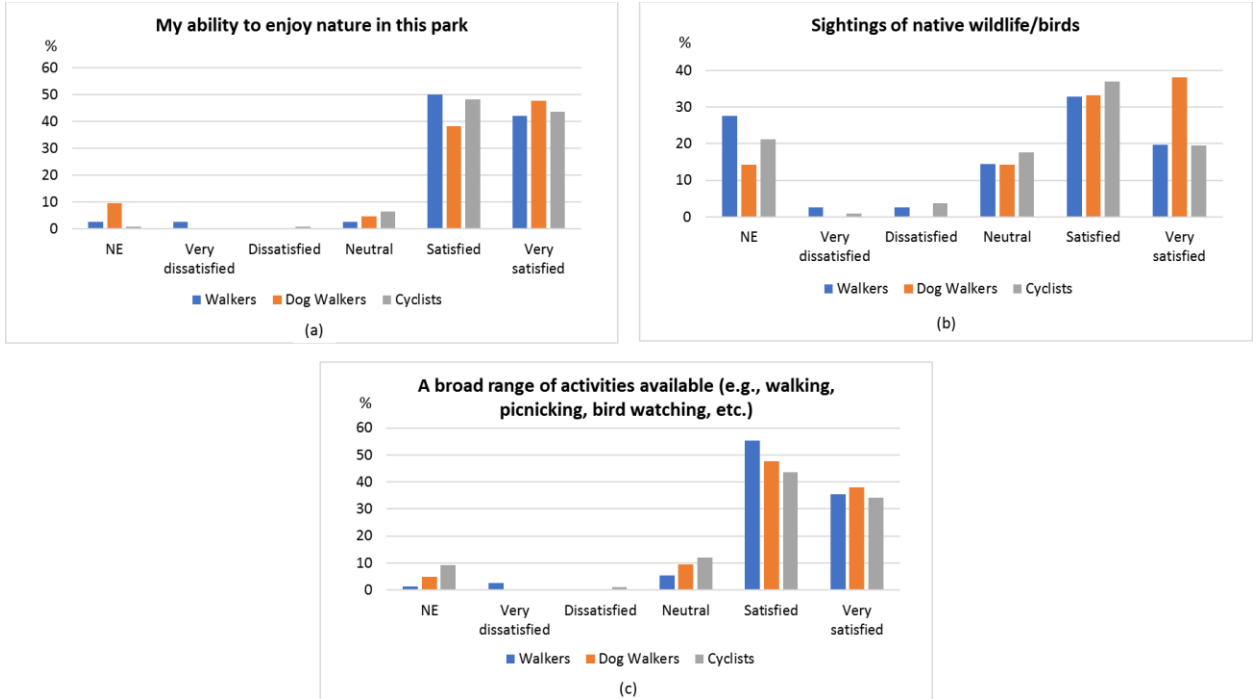


Figure 5.22: Visitor's satisfaction on resource setting (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle 'NE' in the right column).

The second item used to measure satisfaction on resource settings of the user groups in the forest park was *sightings of native wildlife or birds*. The total mean value of this item was 3.03 with the highest mean value contributed by dog walkers with $\bar{x} = 3.67$ ($s = 1.68$). 33% of the walkers and 37% of the cyclists felt 'satisfied', while 38% of the dog walkers were 'very satisfied' about their experience concerning observing wildlife or birds while walking in the forest park. However, 23% ($n = 48$) of the total respondents had not had experience of seeing wildlife or birds during their visit to the forest (Figure 5.22b). The last item used to measure the satisfaction of the user groups was related to the broad range of activities available in the forest parks. Figure 5.22c shows that most of the user groups were found to be 'satisfied' and 'very satisfied' with the selection of activities they could participate in during their visit to the

forest, which resulted in high mean values for all the user groups (Table 5.10). Results from the factorial ANOVA shows that there was no significant difference between user groups on the items in resource settings.

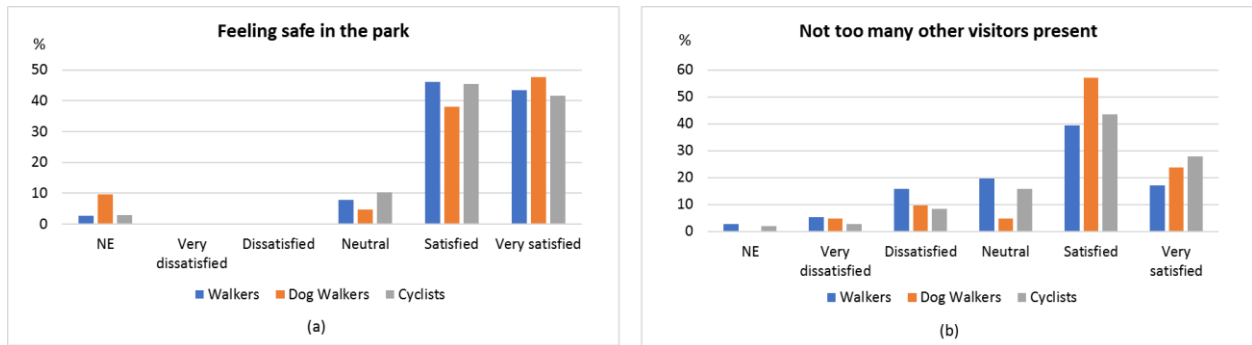


Figure 5.23: Visitor's satisfaction on social condition (Question 13: For each statement below, please circle one number on how satisfied you were regarding each aspect. If you have no experience of the aspect, please just circle 'NE' in the right column).

Table 5.11: Mean and Standard Deviation for Visitor Satisfaction (Social Condition)

Dependent Variable	Walkers		Dog Walkers		Cyclists		Total
	Mean	SD	Mean	SD	Mean	SD	
<i>Feeling safe in the park</i>	4.25	.940	4.05	1.465	4.20	.964	4.20
<i>Not too many other visitors present</i>	3.39	1.244	3.86	1.062	3.80	1.134	3.65

Visitor satisfaction concerning the social condition of the forest parks was measured using two items: *feeling safe in the park* and *not too many other visitors present*. For the first item, most of the respondents were 'satisfied' to 'very satisfied' (Figure 5.23a). 89% of the walkers, 85% of the dog walkers, and 87% of the cyclists were positively satisfied with their safety while they were in the forest parks. This result posted a total mean value for the user groups of (\bar{x} = 4.20) (Table 5.11). The total mean value of the second item was 3.65. Most of the walkers (39%), dog walkers (57%), and cyclists (44%) were 'satisfied' with the number of visitor present at the forest park during the period of conducting outdoor activities (Figure 5.23b). The differences of satisfaction with the social condition between the user groups were

arrived at using factorial ANOVA¹⁴. The results show that there was no significant difference between the user groups for the resource settings.

5.6 Support and Commitment

Support and commitment from local people and visitors may help park managers to manage the forest park more successfully. This effort can be any form of volunteering activity, financial support, or even implementing pro-environmental behaviour during the visit to the forest. For Alice Holt Forest, volunteering activities had ceased a few years earlier. Participant 3, who was a former chairman of the Friends of Alice Holt Forest, shared his experience joining the club to do volunteering activity in the forest. He also mentioned that the club organised educational activities with the Cubs and Scouts at the forest. According to him, the Friends of the Forest had disbanded in 2003 due to a lack of interest shown by the younger generation who were not prepared to take over the club. There was an attempt made by a few people to run the club again, but the most prominent constraint nowadays was the high cost to pay for public liability insurance.

“... I was Chairman for 20 years of a group called The Friends of Alice Holt Forest. And we would meet once a month and have talks of an evening, and then we would work, work parties in the forest, we restored some dew ponds and other ponds, we planted trees in the arboretum, which is over the other side of the road. We helped with the butterfly conservation area at Bentley Station, and one at Plaistow near Dunts Hall, which is all part of the forest. Because the Ranger at the time, he was into butterflies, and he got an award from the British Butterfly Association for that. And we just used to love to come up here and get together in a group and work” (*Participant 3, 94 years old*)

¹⁴ ANOVA Table of visitor’s satisfaction (social condition) in Appendix 4A-9



Figure 5.24: "Fairy Throne and Ring where I used to bring Beaver and Cub Scouts to tell them about the forest." (Participant 3)



(a)



(b)

Figure 5.25: (a) "Millennium oak planted by the Friends of Alice Holt in March 2000. 4 feet tall" (b) "Grown into a nice shaped tree" (Participant 3)

5.7 Summary

This chapter has explored the differences between user group responses regarding the forest parks in terms of their recreational experience (motivation, place attachment, behaviour, experience, and satisfaction). The data gathered from the quantitative and qualitative approaches have been used to obtain a more in-depth understanding of the user groups' attitudes. The quantitative findings show that there were significant differences between the user groups in several user perspectives, such as recreational motivation (*to be away from crowds of people, to bring my family closer together, and to do something with my family*), place attachment (*affective 1, and place identity 1*) and ten items in visitor satisfaction. However, there was no significant difference between user groups regarding recreational behaviour. Some interesting findings appear within this topic. Quantitative data suggests there was no strong relationship between respondents and the forest. Contrary, from the focus group, this study found that some of the participants were strongly attached to Alice Holt Forest. The attachments involved were place identity, affective attachment, and social bonding. This finding shows that a mixed-method approach is beneficial to provide extensive research data. Through the focus group, the recreational experience of the participants was assessed using pictures related to outdoor activities in the forest. The pictures were used as a probe. This technique was helpful to guide the discussion and had gained active participation during the session. The findings from this chapter are helpful to provide not only quantitative data but also the qualitative data. Employing the explanatory mixed-methods design has benefited this study with robust empirical data about recreational experience of the user groups in the forest parks.

Chapter 6

RESULTS:

STRUCTURAL EQUATION MODELLING (SEM)

This chapter interprets the results from the Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM). The first section describes, in brief, the theoretical framework of outdoor recreational experience proposed for this study. In the following sections, three variables (recreational motivation, place attachment, and environmental concern) used in the framework are assessed using CFA. Each of the variables will develop its measurement model to achieve the model fit (sub-topic 6.2). Once the model fit has been achieved for each measurement model, the theoretical framework will be tested using structural equation modelling (sub-topic 6.3). Finally, a summary of the results is presented at the end of the chapter.

6.1 Theoretical Framework of Outdoor Recreational Experience

This study has proposed an Outdoor Recreation Experience Model as a primary contribution to the body of knowledge (Figure 6.1). This model is an integration of two psychology theories, namely the General Theory of Motivation and the Theory of Planned Behaviour (TPB), along with other related concepts. Within this model, six main variables have been used (recreational motivation, place attachment, environmental concern, satisfaction, behavioural intention and future behaviour) to evaluate the overall experience of a visitor who had participated in outdoor recreational activities in the forest parks.

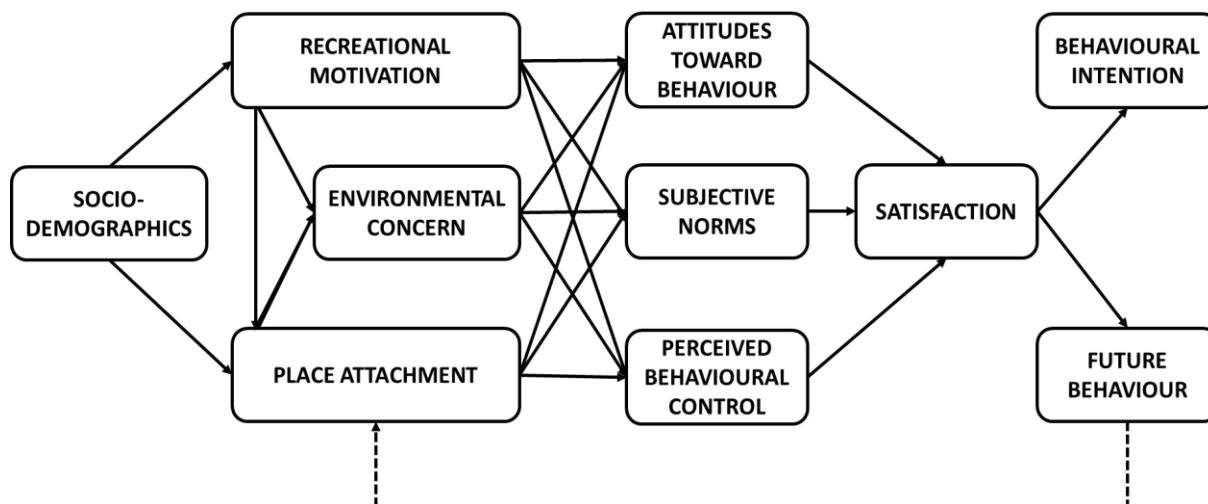


Figure 6.1: Outdoor recreational experience model

One of the objectives of this study is to assess the relationship between these variables in order to increase the understanding of the whole process of outdoor recreational participation. Therefore, in this chapter, each variable in the model will be analysed and the relationship between them identified using the SEM. The aims of this analysis, therefore are to identify the following:

- i. The influence of socio-demographics on recreational motivation and the development of place attachment.
- ii. The relationship between recreational motivation and place attachment.
- iii. The relationship between environmental concern and recreational motivation and place attachment.
- iv. The influence of recreational motivation on attitudes toward behaviour, subjective norms and perceived behavioural control.
- v. The influence of place attachment on attitudes toward behaviour, subjective norms and perceived behavioural control.
- vi. The influence of environmental concern on attitudes toward behaviour, subjective norms, and perceived behavioural control.
- vii. The relationship between satisfaction and attitudes toward behaviour, subjective norms and perceived behavioural control.

- viii. The relationship between satisfaction and behavioural intention and future behaviour.
- ix. The relationship between future behaviour and place attachment.

6.2 Confirmatory Factor Analysis (CFA)

In this section, the variables are analysed using Confirmatory Factor Analysis (CFA) using a one-factor and second-order factor model. Each measurement model was assessed for their model fit, construct validity and discriminant validity. The best measurement model with a good model fit and an acceptable value to pass the construct and discriminant validity was used in the structural model.

6.2.1 Measurement Model of Recreation Motivation

Recreational motivation represents a visitor's purpose in participating in outdoor activities. The ten items included in the questionnaire were adapted from the Recreation Experience Preference (REP) scale introduced by Driver (1983). Two hypothesised measurement models have been developed to assess the best model to fit into the structural model. The first model is a one-factor model, which is a reflective construct that is comprised of ten observed items measured in the questionnaire (Figure 6.2). The second measurement model is a second-order construct (Figure 6.3). This model consists of three first-order constructs, namely 'enjoy nature', 'escape', and 'family togetherness'. 'Enjoy nature' was represented by five observed variables: *tranquillity*, *new experience*, *scenic beauty*, *appreciate nature*, and *close to nature*. 'Escape' is represented by *release tension*, *away from crowds*, and *avoid daily activity*, while 'family togetherness' consisted of *the family together* and *family activity*. As mentioned in the previous section, these two measurement models have undergone a process of validation using Confirmatory Factor Analysis (CFA) before being modelled in a structural model (SEM). The models with the best model fits will be used in the final structural model.

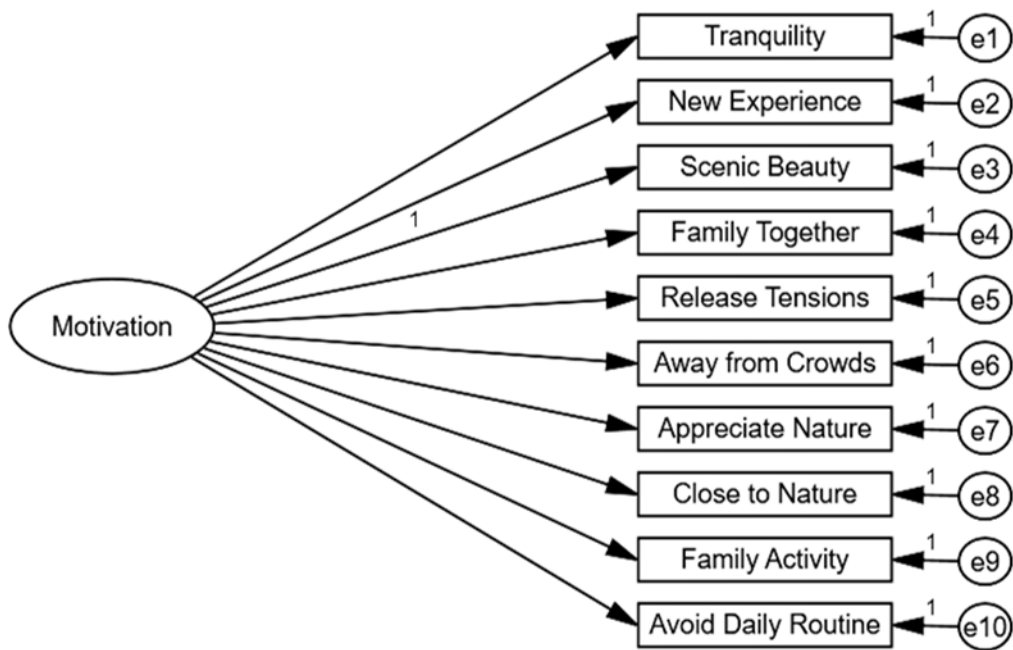


Figure 6.2: One-factor model

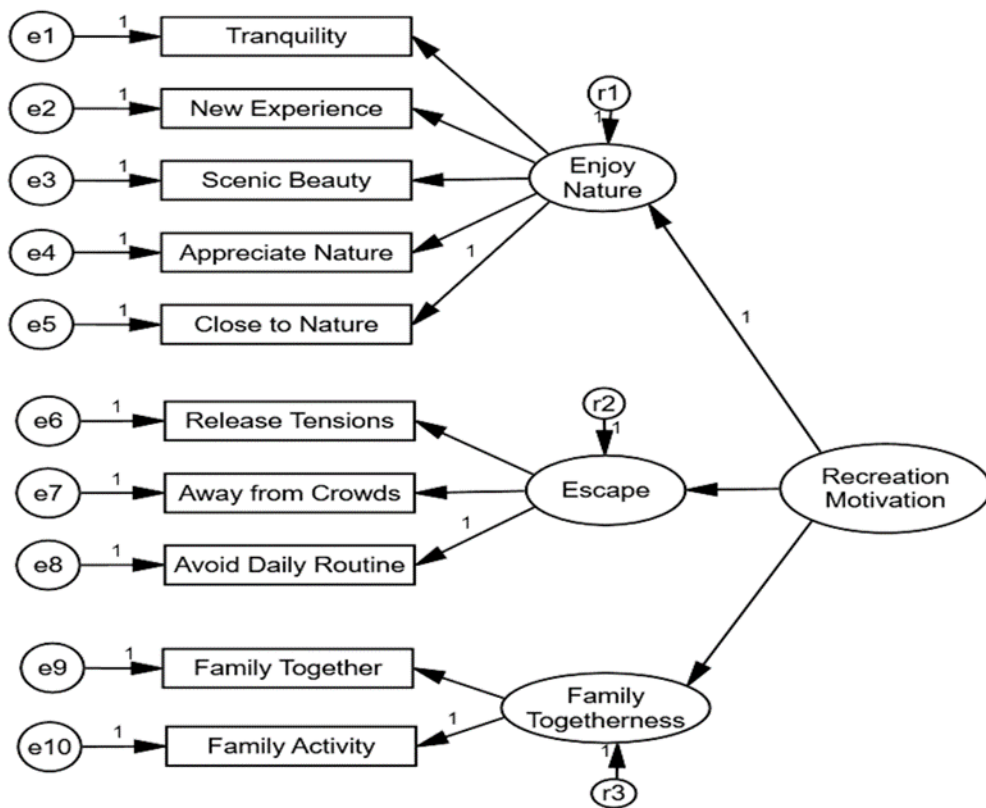


Figure 6.3: Second-order model of recreation motivation

Figure 6.4 shows the factor loadings of all the items in the one-factor model of recreational motivation. The fitness indices for this model did not achieve the required level, where $\chi^2 = 334.62$, $df = 35$, $p = .000$, $\chi^2/df = 9.56$, GFI= 0.80, TLI= 0.53, CFI= 0.63, and RMSEA= 0.20. Through an examination of the factor loadings, six items were found to have factor loadings below 0.5. These were: *new experience*, *family together*, *release tensions*, *away from crowds*, *family activity*, and *avoid daily routine*. This means these items are not suitable to represent the recreational motivation of the visitors in this model. Therefore, the six items needed to be removed to increase the fitness of this model.

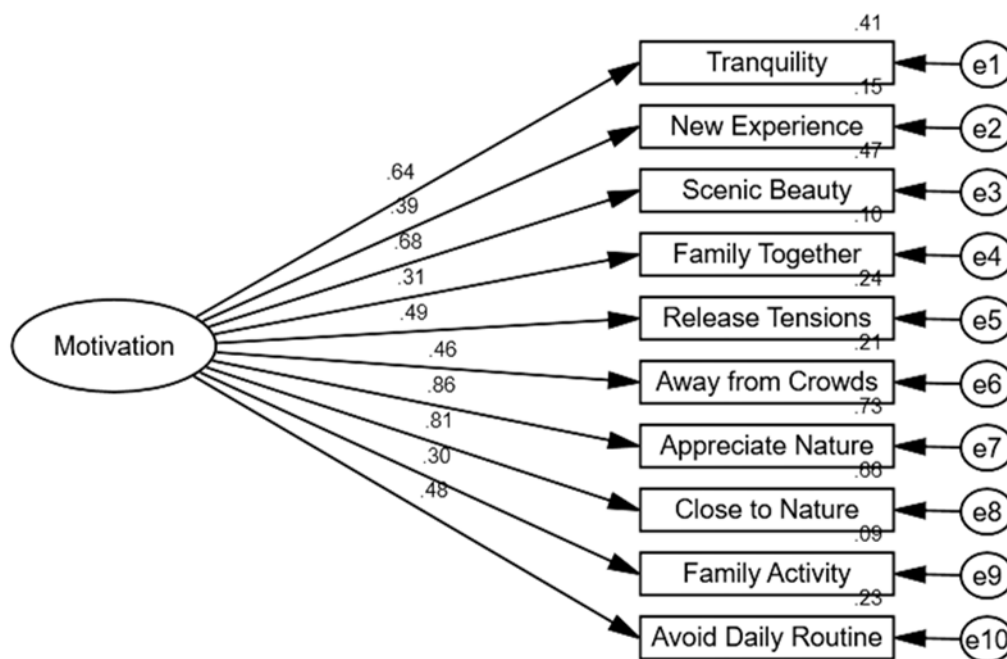


Figure 6.4: Standardized coefficient for a one-factor model of recreation motivation

After the six items were deleted, the new measurement model was run with the four remaining items: *tranquillity*, *scenic beauty*, *appreciate nature*, and *close to nature*. The new fitness indices were $\chi^2 = 23.85$, $df = 2$, $p = .000$, $\chi^2/df = 11.93$, GFI= 0.95, TLI= 0.82, CFI= 0.94, and RMSEA= 0.23. There was an improvement in the value of some of the indices, such as GFI, TLI and CFI, but not for the RMSEA value. In the AMOS software, there is a tool called ‘modification indices’ which can determine if there is any covariance between items. This tool can be used to see if the model fitness can be improved. In this case, the ‘modification indices’

suggested co-varying the error of item 1 (*tranquillity*) and item 3 (*scenic beauty*). Therefore, a new measurement model was run with these two items covaried (Figure 6.5). The fitness indices for the new measurement model were now $\chi^2 = 6.54$, $df = 1$, $p = .011$, $\chi^2/df = 6.54$, GFI= 0.99, TLI= 0.91, CFI= 0.98, and RMSEA= 0.16. This new model is assumed to be the final result for the one-factor measurement model in this study because there is no other suggestion for modification indices to improve the model fit. Even though the values of GFI, TLI and CFI satisfy the criteria of the model, the value of RMSEA does not meet the required level. Therefore, it can be said that there is still a lack of fitness in this model for it to be assumed as a good measurement model for recreational motivation.

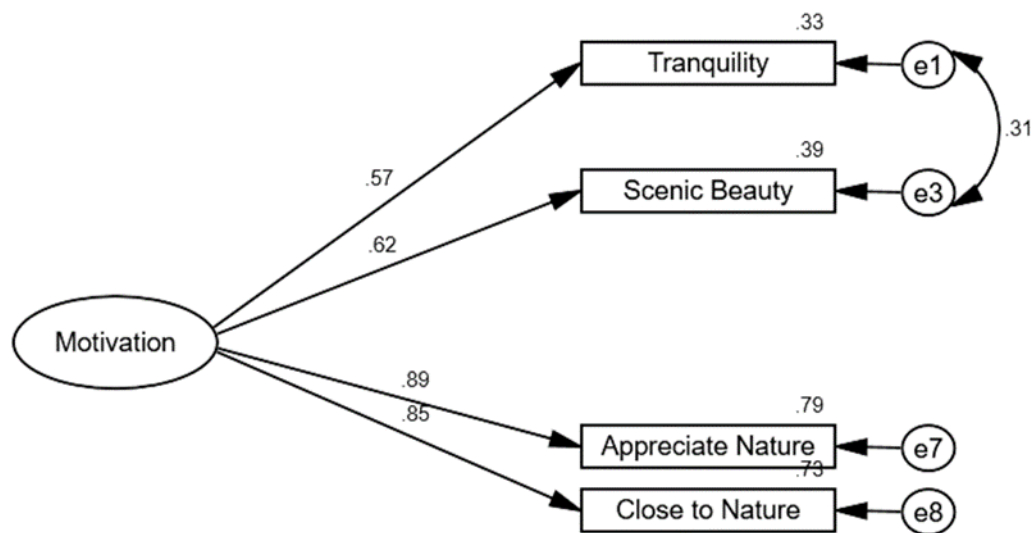


Figure 6.5: New one-factor measurement model of recreation motivation

After completing the construct validation process using the fitness indices, there was a need to check the reliability of this model during this CFA procedure. Table 6.1 shows the value of composite reliability (CR) and average variance extracted (AVE) for the one-factor model of recreational motivation. The value of CR and AVE are within the acceptable range. In brief, even though the one-factor measurement model of recreation motivation did not achieve the construct validity, this measurement model has passed the convergent validity and reliability test.

Table 6.1: The values of Composite Reliability (CR) and Average Variance Extracted (AVE) of Recreation Motivation

Construct	Item	Factor Loading	t-value	CR (minimum 0.6)	AVE (Minimum 0.5)
Recreation Motivation	Tranquillity	0.57	8.43	0.83	0.56
	Scenic Beauty	0.62	Fixed		
	Appreciate Nature	0.89	9.20		
	Close to Nature	0.85	9.23		

The second proposed model is the second-order model of recreational motivation. In this model, recreational motivation is a second-order latent variable that has three first-order variables to represent it, named 'enjoy nature', 'escape' and 'family togetherness'. These three first-order variables are represented by the observed items used in the questionnaire. 'Enjoy nature' was comprised of five items (*tranquillity, new experience, scenic beauty, appreciate nature, and close to nature*). 'Escape' was represented by three items (*release tensions, away from crowds, and avoid daily routine*), while *family together* and *family activity* were used to indicate 'family togetherness'. For the second-order factor model, the first-order factors were examined for their discriminant validity. A correlation value of each pair of the constructs in the first-order factor should not exceed 0.85. If the value of the correlation is 0.85 and above, this means that the two constructs show redundancy. If this happens, the observed variables of these constructs needs to be merged into one construct only. Figure 6.6 shows the results of the discriminant validity. As can be seen, the correlation value between these three pairs is within the permitted value. The correlation between 'enjoy nature' and 'escape' is moderately strong at 0.75, while there is a low correlation between 'escape' and 'family togetherness' and 'enjoy nature' and 'family togetherness'. These results indicate that there is no redundancy between these constructs and this measurement model can be used in the next step, which is to perform CFA and to get the fitness indices for the model.

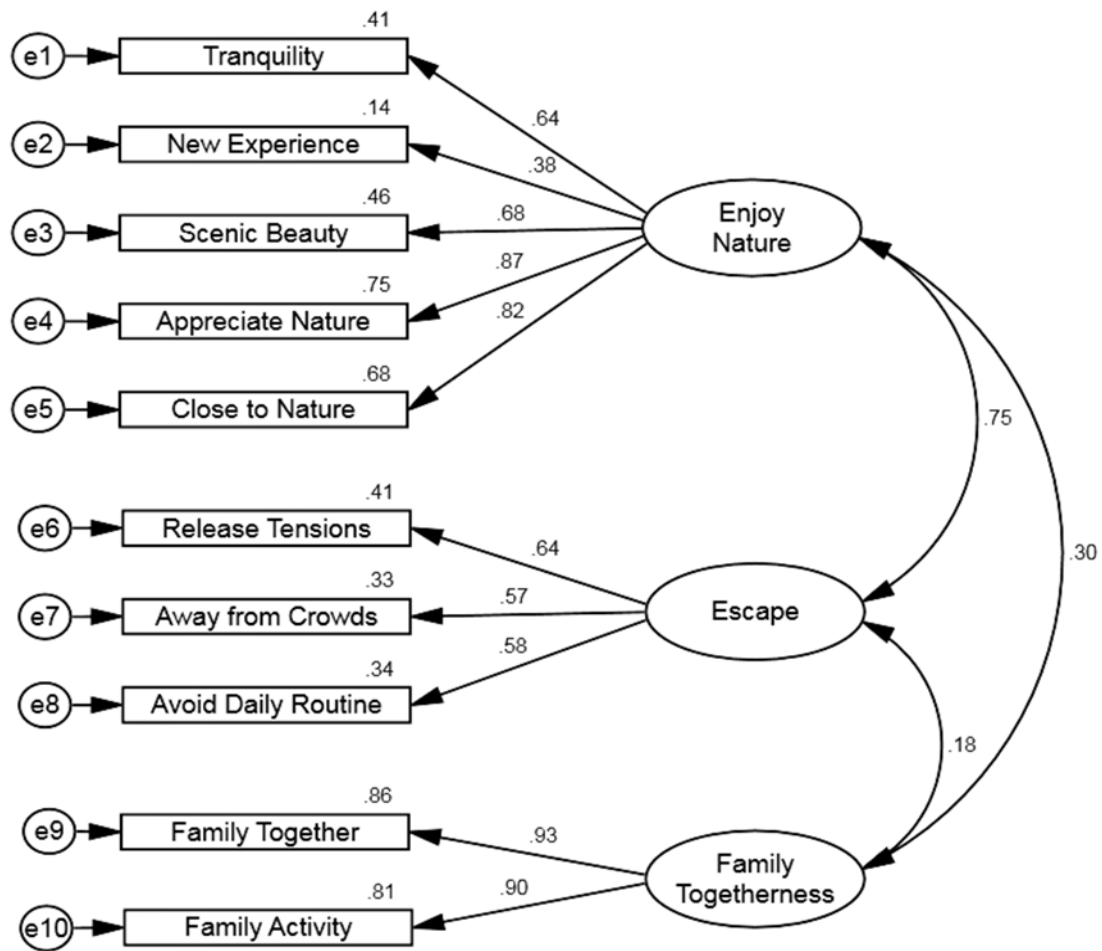


Figure 6.6: Correlation between three factors in recreation motivation

A CFA was run for the second-order factor model. The results shows that one of the fitness indices did not meet the required level, which is the RMSEA value ($\chi^2= 88.88$, $df= 32$, $p= .000$, $\chi^2/df= 2.78$, $GFI= 0.92$, $TLI= 0.90$, $CFI= 0.93$, and $RMSEA= 0.09$). It was also noticed that there were two issues which arose from this measurement model. Firstly, there was one item with a low factor loading (below 0.5) in the 'enjoy nature' variable, and secondly, the factor loading for 'enjoy nature' exceeded 1.00, which is not permitted. For the first issue, 'new experience' (factor loading: 0.38) was removed from the model. To overcome the second issue, the reference point which had been placed on the 'enjoy nature' variable was replaced by the other first-order variables, either 'escape' or 'family togetherness'. However, the results were still the same as before. The other option was to impose a fixed variance on

the second-order variable (recreation motivation) and put a similar value (e.g. aa) as a regression weight for all three first-order variables. This method is called the ‘Heywood Case’.

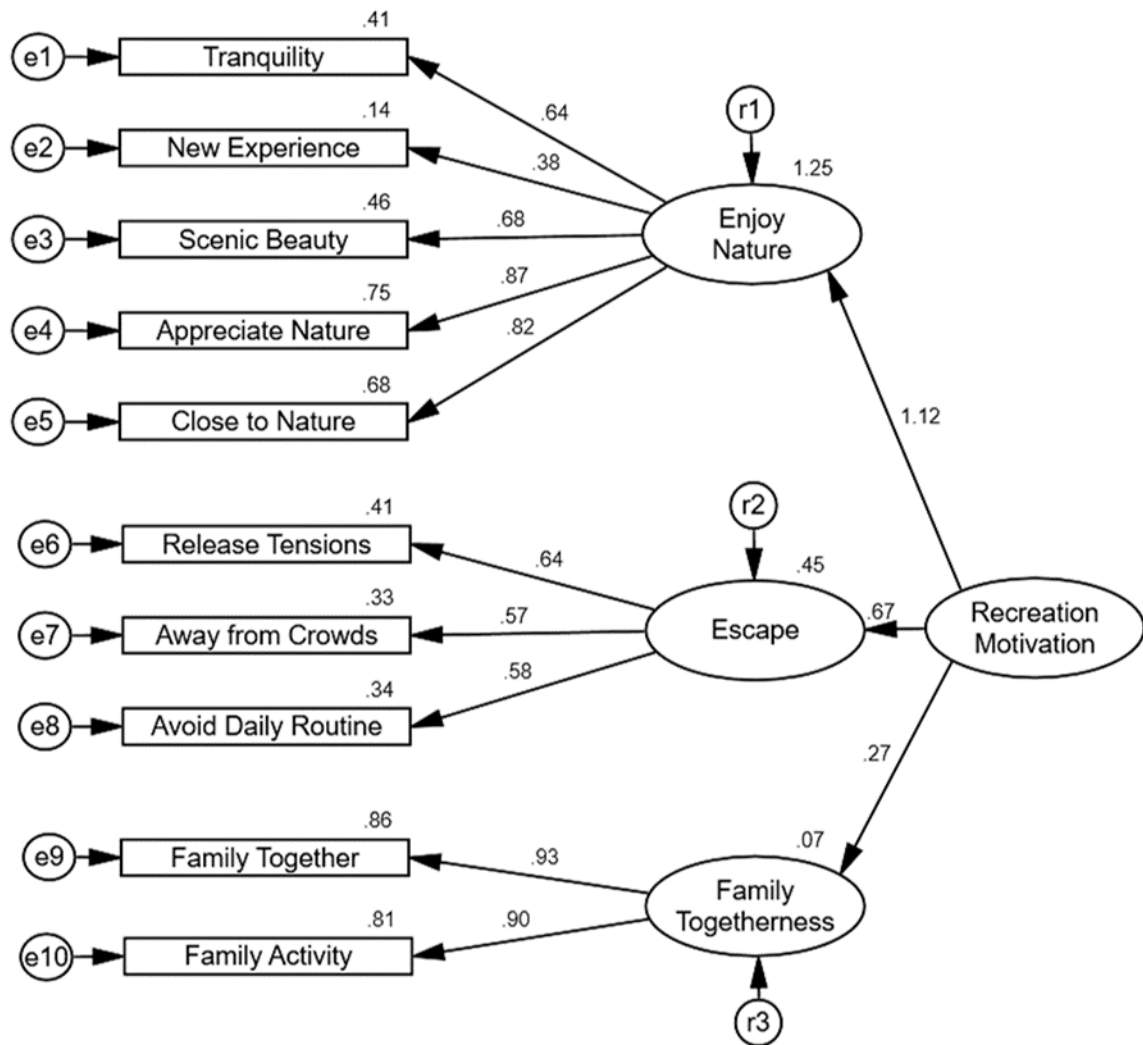


Figure 6.7: Second-order measurement model

There was no significant change in the fitness indices for a new second-order measurement model ($\chi^2= 73.54$, $df= 26$, $p= .000$, $\chi^2/df= 2.83$, GFI= 0.93, TLI= 0.92, CFI= 0.94, and RMSEA= 0.09). The RMSEA value was still outside the required value. Therefore, applying the modification indices option was considered. The modification indices indicated that covarying the error for item 1 (*tranquillity*) and item 3 (*scenic beauty*) could be useful. A new CFA was run, and the result is as shown in Figure 6.7. The fitness indices of the new second-order measurement model have achieved the required level ($\chi^2= 57.94$, $df= 25$, $p= .000$, $\chi^2/df=$

2.32, GFI= 0.94, TLI= 0.94, CFI= 0.96, and RMSEA= 0.08) which indicates that the construct validity has been successful.

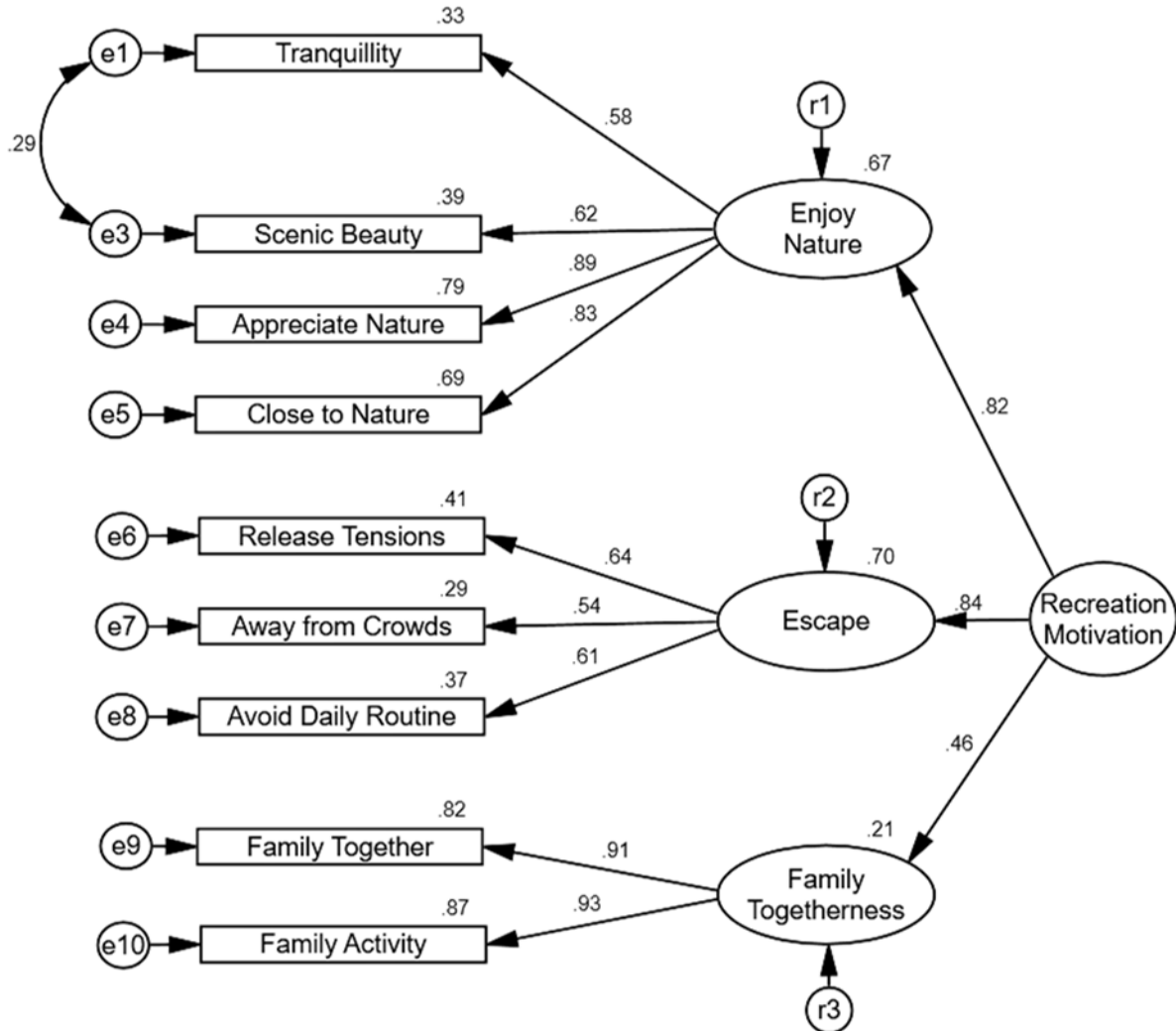


Figure 6.8: New second-order factor model of recreation motivation

Table 6.2 summarises the composite reliability (CR) and average variance extracted (AVE) values of each construct in the second-order measurement model. The CR and AVE values of the second-order construct (recreational motivation) were above the minimum values required – CR: 0.76, and AVE: 0.53. For the first-order constructs, ‘enjoy nature’, and ‘family togetherness’ passed both reliability and convergent validity by exceeding the minimum value of CR and AVE. ‘Escape’ had a low value of AVE (0.36) resulting from the low factor loading that belongs to the observed variables. However, the CR value of this construct lay above the minimum value. This result shows that the ‘escape’ construct has good internal

consistency, but there is a problem with convergent validity. In this case, a rule set by Fornell and Larcker (1981) can be applied. According to the rule, if the value of AVE is less than 0.5, but the CR value is higher than 0.6, the convergent validity of the construct is still acceptable. As compared to the one-factor model, this second-order measurement model is qualified to be used in the structural model since the RMSEA value for fitness indices is lower than in the one-factor model.

Table 6.2: The values of CR and AVE of second-order measurement model of recreation motivation

Construct	Item	Factor Loading	<i>t</i> -value	CR (minimum 0.6)	AVE (Minimum 0.5)
Recreation Motivation	Enjoy Nature	0.82	11.82	0.76	0.53
	Escape	0.84	11.82		
	Family	0.46	11.82		
	Togetherness				
<i>Enjoy Nature</i>	Tranquillity	0.58	8.44	0.83	0.55
	Scenic beauty	0.62	9.27		
	Appreciate nature	0.89	13.30		
	Close to nature	0.83	Fixed		
<i>Escape</i>	Release tension	0.64	6.58	0.63	0.36
	Away from crowds	0.54	5.85		
	Avoid daily routine	0.61	Fixed		
<i>Family</i>	Family together	0.91	Fixed	0.92	0.85
<i>Togetherness</i>	Family activity	0.93	9.38		

6.2.2 Measurement Model of Place Attachment

Understanding place bonding between people and the natural environment is useful in developing a reliable forest management plan. This study has adopted the place attachment concept introduced by Williams and Roggenbuck (1989). Four dimensions included in place attachment are place identity (three items), place dependence (four items), affective attachment (four items) and social bonding (three items). As in the previous section, two proposed models were tested using the CFA. The first model was the one-factor model

(Figure 6.9). All ten items measured in the questionnaire were used as the observed variables in the measurement model. The second proposed model was a second-order factor model (Figure 6.10). This model follows the concept of place attachment, where the second-order variable is the 'place attachment' itself. This model was comprised of four first-order variables: 'place identity' (three items), 'affective attachment' (four items), 'place dependence' (four items), and 'social bonding' (three items). A list of the actual items of place attachment is presented in Table 6.3.

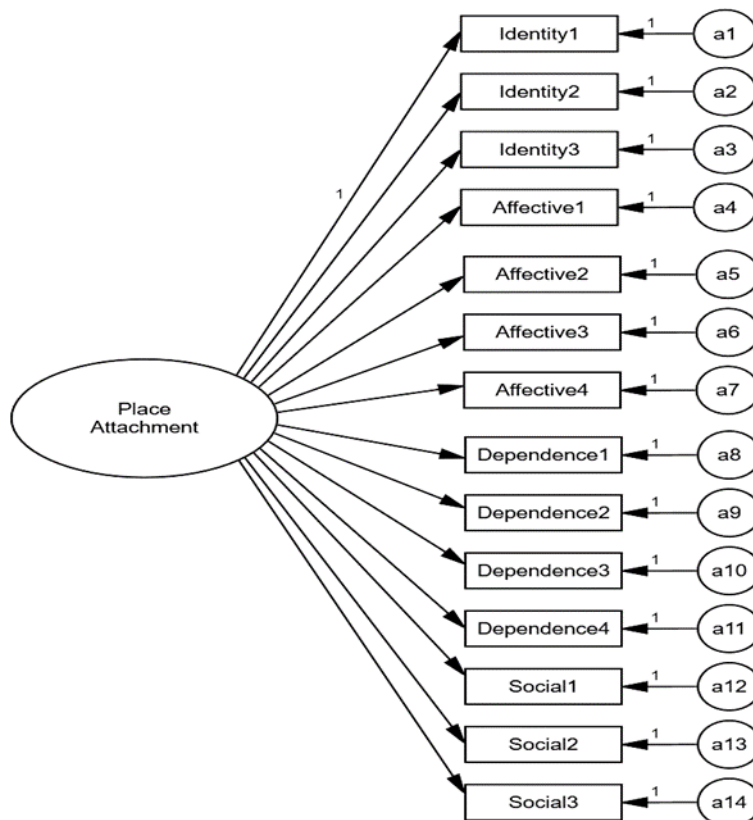


Figure 6.9: One-factor model of place attachment

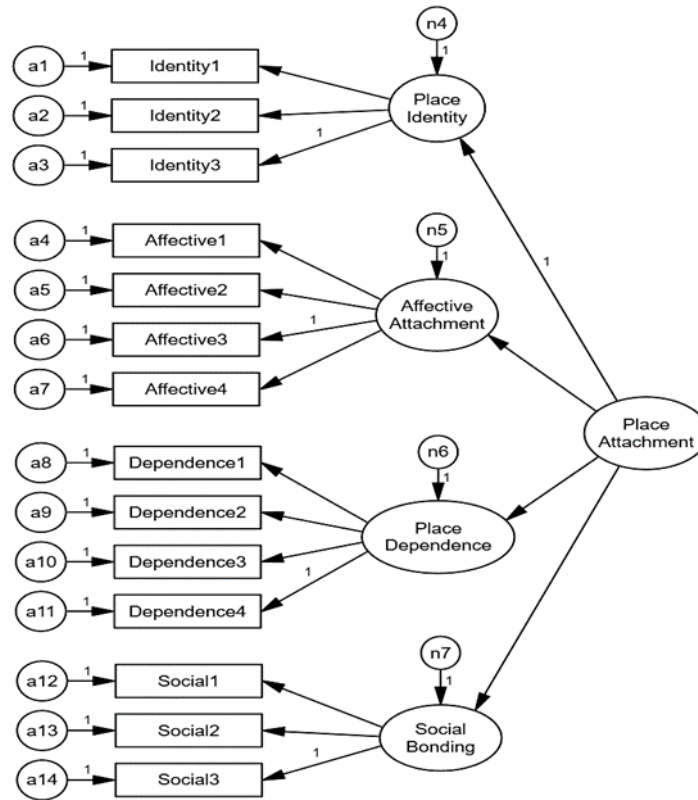


Figure 6.10: Second-order factor model of place attachment

Table 6.3: Statement of place attachment items

Place Attachment	Statement
Place Identity	Identity 1: I feel this forest park is a part of me
	Identity 2: I identify strongly with this forest park
	Identity 3: Visiting this forest park says a lot about who I am
Place Dependence	Dependence 1: I prefer this forest park over other settings/facilities for the recreational activities that I enjoy most
	Dependence 2: For what I like to do, I could not imagine anything better than the setting and facilities provided by this forest park
	Dependence 3: I enjoy visiting this forest park more than any other sites
	Dependence 4: For the recreation activities that I enjoy most, the settings and facilities provided by this forest park are the best
Affective Attachment	Affective 1: This forest park means a lot to me
	Affective 2: I am very attached to this forest park
	Affective 3: I feel a strong sense of belonging to this forest park and its settings/facilities

	Affective 4: I have little, if any, emotional attachment to this forest park and its settings/facilities
	Social 1: My friends/family would be disappointed if I were to start visiting other settings and facilities
Social Bonding	Social 2: If I were to stop visiting this forest park's sites, I would lose contact with a number of friends
	Social 3: Many of my friends/family prefer this forest park over other sites

Figure 6.11 illustrates the factor loadings of the ten items in the one-factor model of place attachment. The CFA result shows that the fitness indices for this model did not achieve the required level, where $\chi^2 = 526.36$, $df = 77$, $p = .000$, $\chi^2/df = 6.84$, $GFI = 0.69$, $TLI = 0.70$, $CFI = 0.75$, and $RMSEA = 0.17$. The factor loadings were examined, and four items were found to be problematic. Three of them had a factor loading below 0.5 ('Dependence 4', 'Social 1', and 'Social 2'), while one item had a negative value. The item with a negative value was 'Affective 4'. It needed to be deleted in order for the model to achieve unidimensionality since the other items for the same variable had positive values. The CFA test was run again with six observed variables in the model and produced fitness indices as follows: $\chi^2 = 273.51$, $df = 35$, $p = .000$, $\chi^2/df = 7.815$, $GFI = 0.75$, $TLI = 0.78$, $CFI = 0.83$, and $RMSEA = 0.18$. The fitness indices still did not meet the required level, even though the factor loadings of all the remaining items were above 0.5. Therefore, we looked for possible solutions using the modification indices. Nine pairs of covariances (M.I value above 15.0) were suggested to improve the fitness indices. These were $a4 \leftrightarrow a1$, $a14 \leftrightarrow a4$, $a10 \leftrightarrow a1$, $a10 \leftrightarrow a4$, $a10 \leftrightarrow a14$, $a9 \leftrightarrow a2$, $a9 \leftrightarrow a10$, $a8 \leftrightarrow a14$, and $a8 \leftrightarrow a10$.

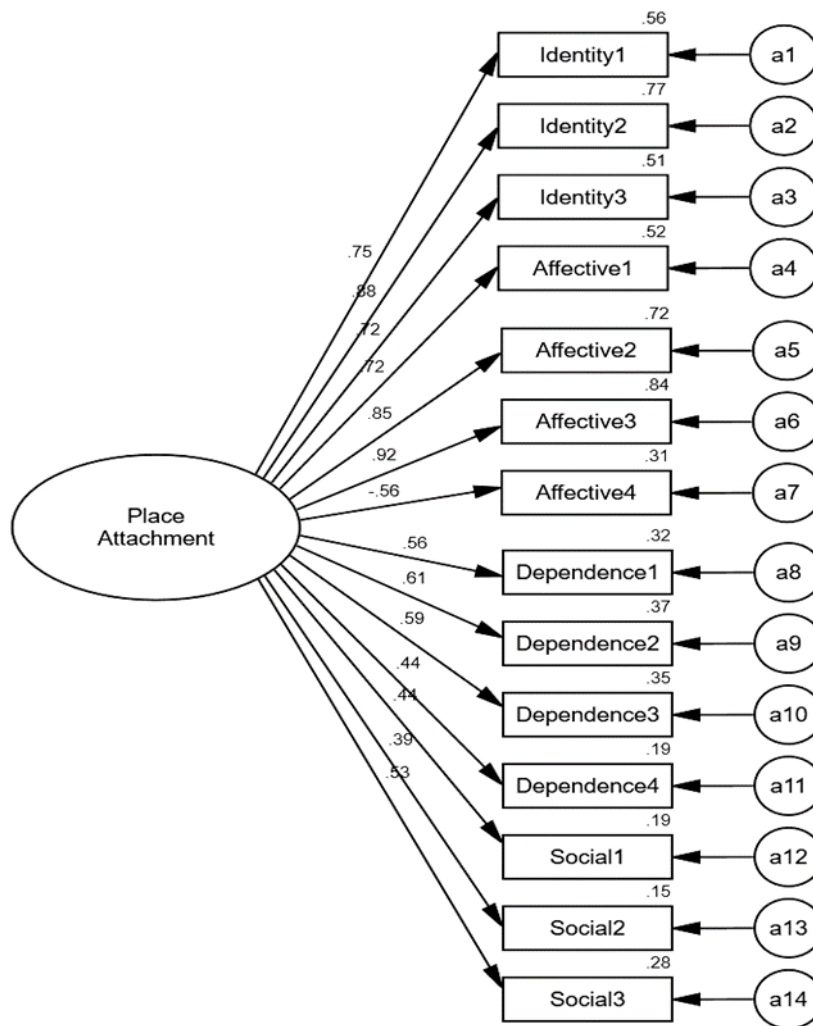


Figure 6.11: Standardized coefficient for a one-factor model of place attachment

After the nine items were covaried, the fitness indices improved and only the value of RMSEA did not meet the criteria ($\chi^2= 66.32$, $df= 26$, $p= .000$, $\chi^2/df= 2.55$, $GFI= 0.94$, $TLI= 0.95$, $CFI= 0.97$, and $RMSEA= 0.09$). All factor loadings in the new model had a value above 0.5. Therefore, the modification indices tool was rechecked. The tool suggested co-varying one pair of the items, but the M.I value was below 15.0. Item a14 and a3 were covaried to see if the fitness indices could be improved. The result was positive as the RMSEA value became 0.08, which is an acceptable value to prove a model fit. The final fitness indices of this measurement model are $\chi^2= 54.18$, $df= 25$, $p= .000$, $\chi^2/df= 2.17$, $GFI= 0.95$, $TLI= 0.96$, $CFI= 0.98$, and $RMSEA= 0.08$. Therefore, the new one-factor model of place attachment has achieved construct validity, reliability and convergent validity (Table 6.4).

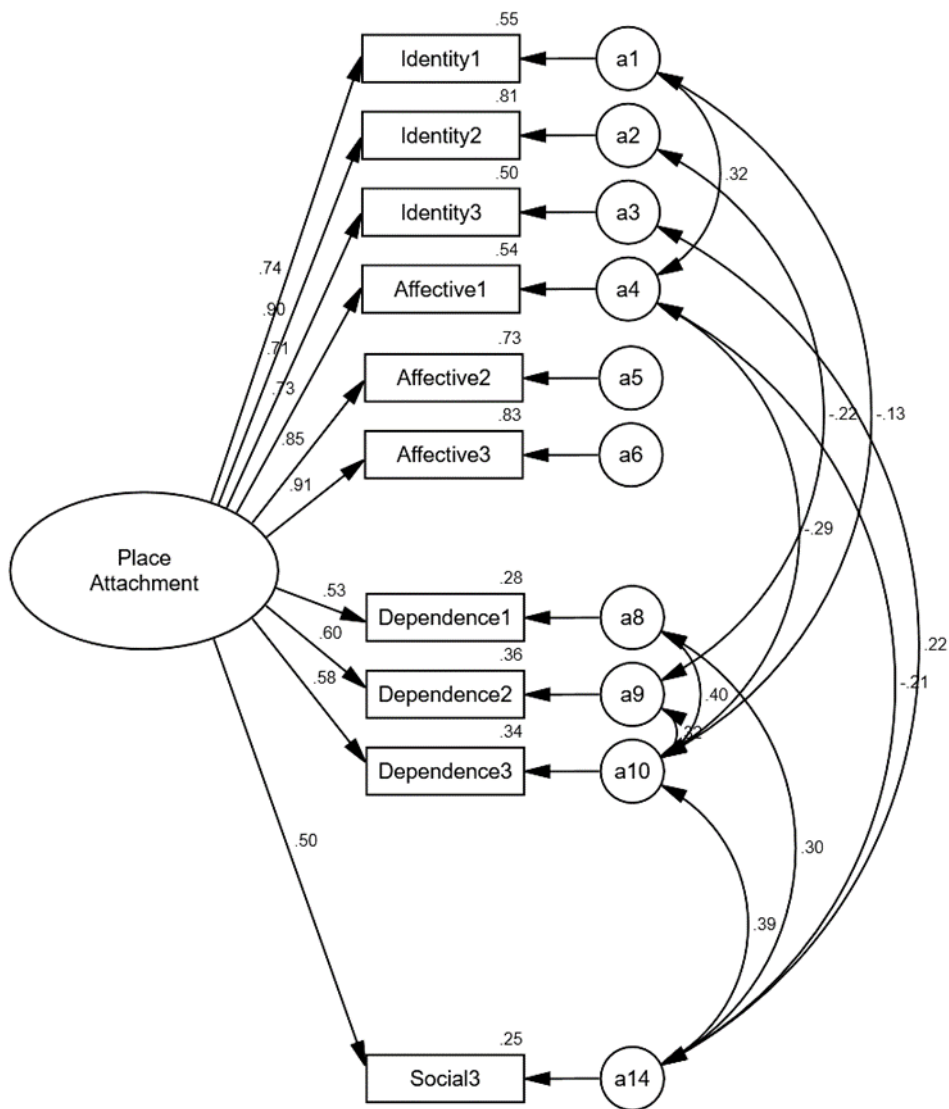


Figure 6.12: New model for a one-factor model of place attachment

Table 6.4: The values of CR and AVE of a one-factor model of place attachment

Construct	Item	Factor Loading	t-value	CR (minimum 0.6)	AVE (Minimum 0.5)
Place Attachment	Identity 1	0.74	Fixed	0.91	0.52
	Identity 2	0.90	13.37		
	Identity 3	0.71	10.30		
	Affective 1	0.73	13.01		
	Affective 2	0.85	12.63		
	Affective 3	0.91	13.59		
	Dependence 1	0.53	7.60		
	Dependence 2	0.60	8.48		
	Dependence 3	0.58			
	Social3	0.50			

Dependence 3	0.58	7.81
Social 3	0.50	7.11

Prior to performing a CFA for the second-order factor model, the correlation between each construct in the first-order model was examined to avoid redundancy. The result is presented in Figure 6.13. The correlation between 'place identity' and 'affective attachment' exceeded 0.85, which indicates redundancy. This result is in line with a previous study where they found that, in some cases, the items of place identity and affective attachment are somewhat similar and difficult to distinguish. Some of the studies merge these items into one variable (Budruk & Stanis, 2013). Therefore, the observed variables of these constructs needed to be merged into one construct only. Other than this pair, all other pairs showed a moderate correlation between them (Figure 6.13).

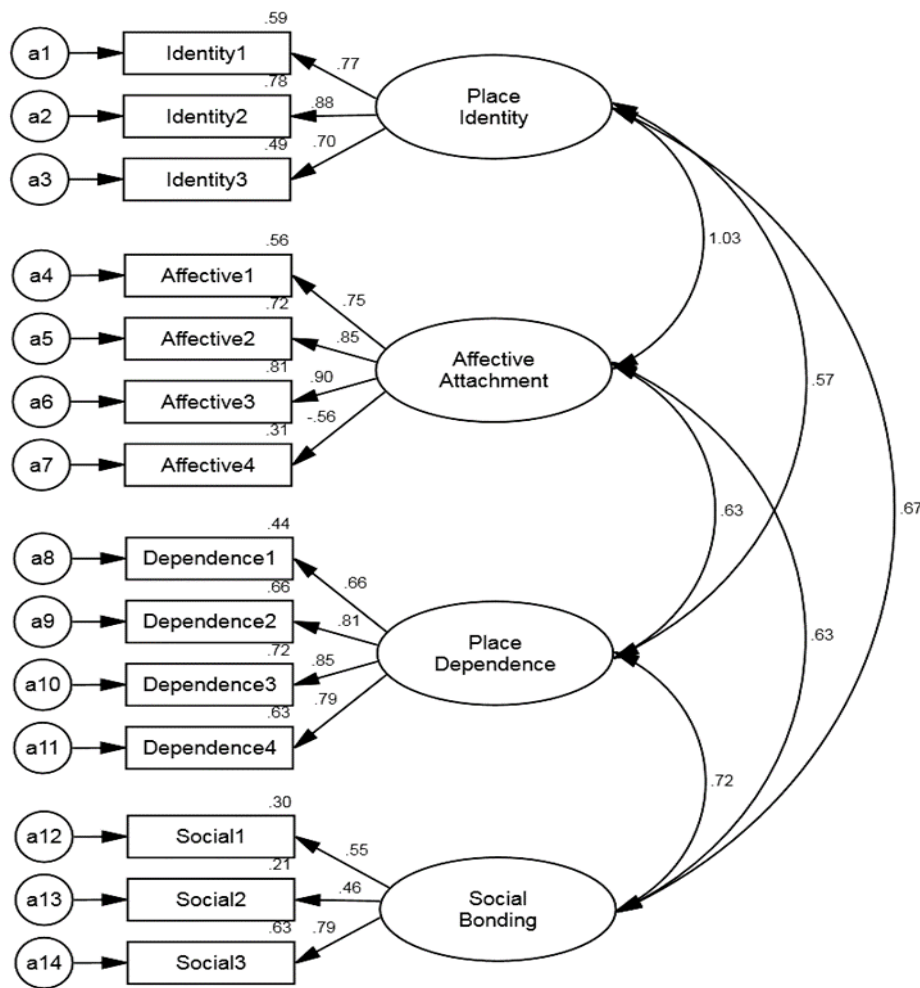


Figure 6.13: Correlation between the first-order factors for place attachment

Figure 6.14 shows the modified second-order factor model. The 'Affective attachment' construct was removed and its items were loaded into the 'place identity' construct. Three of the first-order constructs had quite high factor loadings ('place identity', 0.74; 'place dependence', 0.81; and 'social bonding', 0.88). This indicates that all three constructs represented place attachment quite well. The CFA was run for this model and the fitness indices did not achieve the required level, where $\chi^2= 263.45$, $df= 74$, $p= .000$, $\chi^2/df= 3.56$, GFI= 0.84, TLI= 0.87, CFI= 0.89, and RMSEA= 0.11. Most of the indices did not meet the required values. In order to improve the model fit, items with low factor loadings or with validity problems needed to be addressed. From the model, it can be seen that all the 'Affective' items loaded very well into the new construct, except for *Affective 4*. The factor loading of this item had a negative value. To achieve unidimensionality of all the items that lie in one construct, all the factor loadings had to be in a similar direction (whether it was positive or negative). Since all other factor loadings in 'place identity' had a positive value, item *Affective 4* needed to be removed from the model. The other item that needed to be deleted in this model was *Social 2*, which also had a low factor loading (0.46).

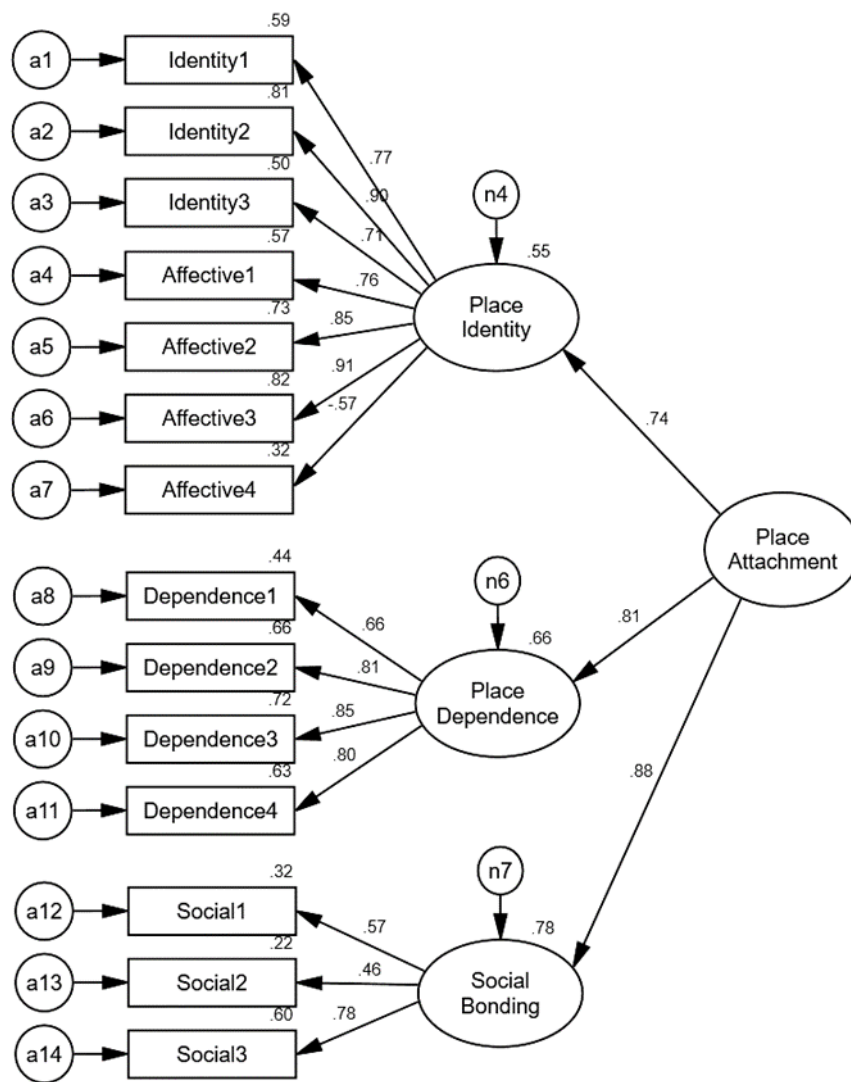


Figure 6.14: Second-order factor model of place attachment (A)

After removing *Affective 4* and *Social 2*, the fitness indices for this model were $\chi^2=224.03$, $df=51$, $p=.000$, $\chi^2/df=4.39$, GFI= 0.84, TLI= 0.86, CFI= 0.90, and RMSEA= 0.13. This model did not achieve an acceptable model fit. The factor loadings of all the observed variables were above the minimum value; therefore, it was necessary to see if there was any redundancy using the modification indices tool. The modification indices suggested covarying the error measurements of *Dependence 2* and *Dependence 4* ($a9 \leftrightarrow a11$) and *Identity 1* and *Affective 1* ($a1 \leftrightarrow a4$). Figure 6.15 shows the result of the CFA of the latest modified model. The fitness indices of the new model were $\chi^2=156.08$, $df=49$, $p=.000$, $\chi^2/df=3.19$, GFI= 0.89, TLI= 0.91, CFI= 0.94, and RMSEA= 0.10. Most of the indices still did not reach the

required level. With no suggestion from the modification indices, the other option to improve the model fit was to remove the covaried items with lower factor loadings. From Figure 6.15, the factor loading of items *Affective 1* and *Dependence 4* were slightly lower than their covarying pairs (*Identity 1* and *Dependence 1*). Therefore, these items were deleted from the model to improve the model fit.

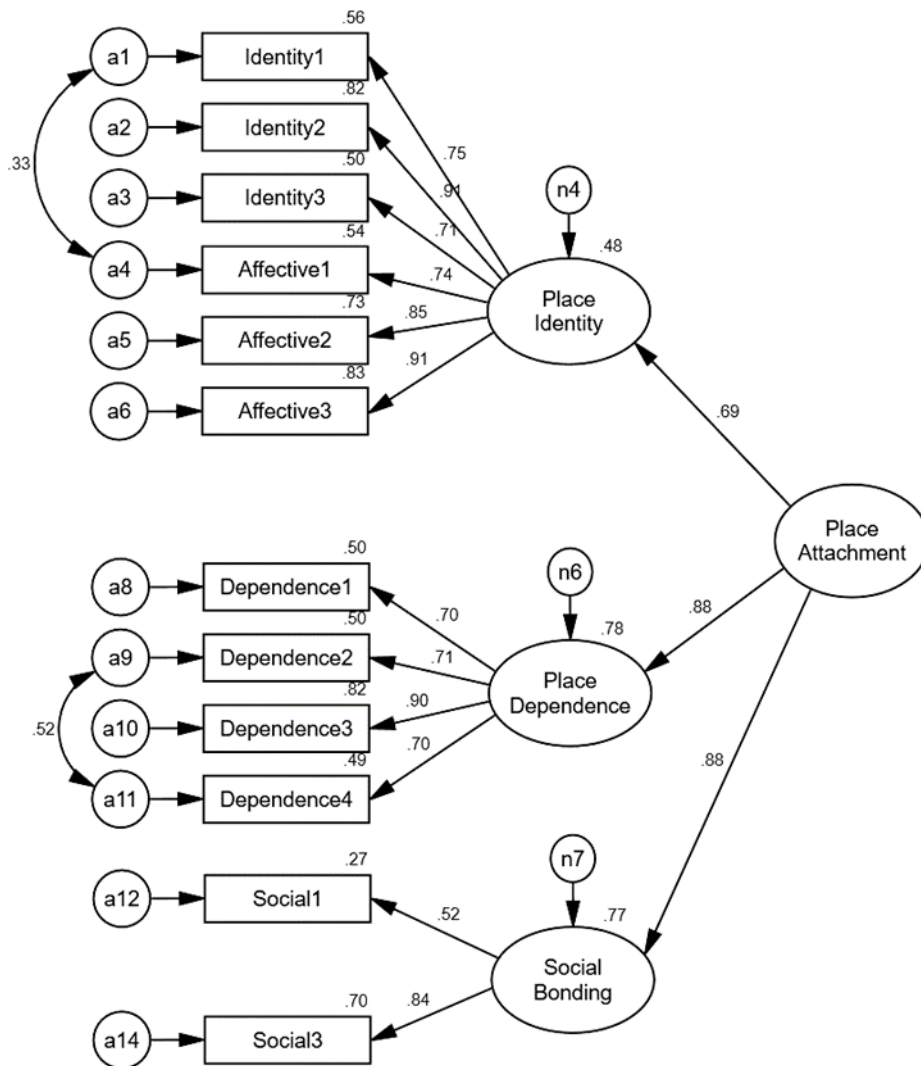


Figure 6.15: Second-order factor model of place attachment (B)

As a result of removing *Affective 1* and *Dependence 4*, the value of the fitness indices improved ($\chi^2 = 93.88$, $df = 32$, $p = .000$, $\chi^2/df = 2.93$, $GFI = 0.92$, $TLI = 0.93$, $CFI = 0.95$, and $RMSEA = 0.09$). Even though the value of $RMSEA$ did not achieve a good fit, it was still within the acceptable value (< 1.0). Finally, the new model of a second-order factor of place attachment

comprises three first-order constructs ('place identity', 'place dependence', and 'social bonding'). The 'place identity' is represented by five observed variables (*Identity 1*, *Identity 2*, *Identity 3*, *Affective 2*, and *Affective 3*), 'place dependence' has three observed variables (*Dependence 1*, *Dependence 2*, and *Dependence 3*), while 'social bonding' with two observed variables (*Social 1*, and *Social 2*).

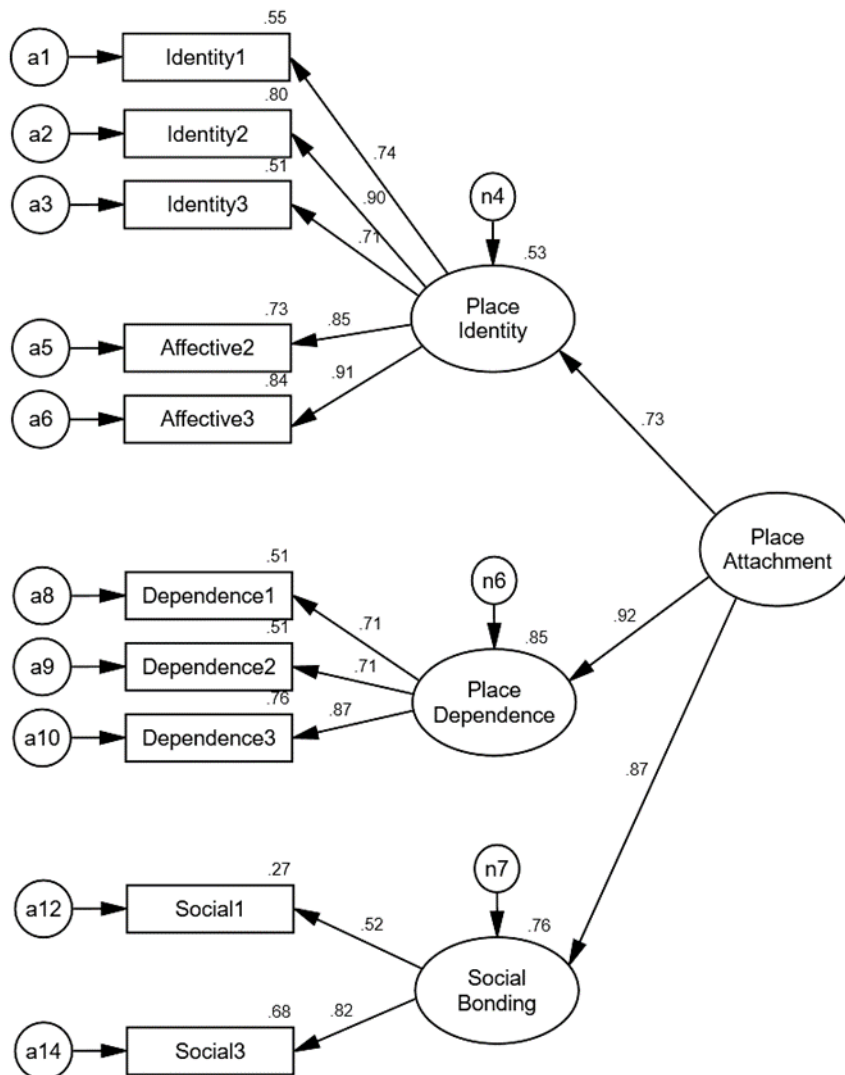


Figure 6.16: A new second-order factor model of place attachment

Table 6.5: The values of CR and AVE of second-order measurement model of place attachment

Construct	Item	Factor Loading	t-value	CR (minimum 0.6)	AVE (Minimum 0.5)
	Place Identity	0.73	Fixed	0.88	0.71

Place	Place	0.92	6.81		
Attachment	Dependence				
	Social Bonding	0.87	5.35		
<i>Place Identity</i>	Identity 1	0.74	Fixed	0.91	0.68
	Identity 2	0.90	13.37		
	Identity 3	0.71	10.36		
	Affective 2	0.85	12.64		
	Affective 3	0.91	13.66		
<i>Place Dependence</i>	Dependence 1	0.71	Fixed	0.81	0.59
	Dependence 2	0.71	9.37		
	Dependence 3	0.87	10.82		
<i>Social Bonding</i>	Social 1	0.52	Fixed	0.63	0.47
	Social 3	0.82	6.24		

In assessing the reliability of the second-order factor model of place attachment, the values of CR and AVE were computed (Table 6.5). The CR and AVE values of the second-order construct (place attachment) were above the minimum values, where CR: 0.88, and AVE: 0.71. Regarding the first-order constructs, 'place identity' and 'place dependence' passed both reliability and convergent validity by meeting the required values for CR and AVE. 'Social bonding' had a slightly low value of AVE (0.47) resulting from a low factor loading that belonged to one of the observed variables (*social 1*). However, the CR value of this construct was sufficient for the required value. In comparison with the one-factor model, this second-order factor model of place attachment is more reliable for application in the structural model. The reason behind this decision is because each first-order construct has a high value of factor loadings to the place attachment as compared to the value of factor loadings of observed variables in the one-factor model. Moreover, with several covaried items in the one-factor model, it suggests some redundancy between the pairs. Thus, the second-order factor model will represent place attachment in the structural equation modelling.

6.2.3 Measurement Model of Environmental Concern

The third important variable in the theoretical model is environmental concern. There were ten items measured in the questionnaire using the New Ecological Paradigm (NEP) which showed the visitors' beliefs and attitudes concerning the environment. Three pre-specified dimensions had been set in this study: Eco-centric, Dual-centric, and Techno-centric. The eco-

centric attitude refers to the belief that the environment is in an unsafe condition and human activities can be harmful to the environment. The techno-centric attitude represents a techno-fix mentality toward environmental concerns and issues whereby technological innovations can solve the problems. Lastly, dual-centric denotes a typical dual equality attitude between humans and the environment. Table 6.6 displays questionnaire statements for each dimension relating to environmental concerns. Eco-centric is represented by four items while dual-centric and techno-centric consists of three items each.

Table 6.6: Environmental concern items

Environmental Concern	Statement
Ecocentric	ECO 1: We are approaching the limit of the number of people the earth can support ECO 2: Humans are severely abusing the environment ECO 3: The earth is like a spaceship with very limited room and resources ECO 4: The balance of nature is very delicate and easily upset
Dualcentric	DUAL 1: Humans have the right to modify the natural environment to suit their needs* DUAL 2: Plants and animals have as much right as a human to exist DUAL 3: Despite our special abilities' humans are still subject to laws of nature
Technocentric	TECHNO 1: The balance of nature is strong enough to cope with the impacts of modern industrial nations* TECHNO 2: The so-called "ecological crisis" facing humankind has been greatly exaggerated* TECHNO 3: Humans will eventually learn enough about how nature works to be able to control it*

*Items reverse coded before data analysis, so that agreement indicates a pro-environmental view.

There are two proposed measurement models in this study. The first model is the one-factor model, while the second model is the hierarchical model of environmental concern. Ten observed variables were loaded directly as a reflective construct to the environmental concern in a one-factor measurement model (Figure 6.17). The second-order factor model is comprised of three first-factor constructs: 'eco-centric' (four observed items), 'dual-centric' (three observed items), and 'techno-centric' (three observed items) (Figure 6.18).

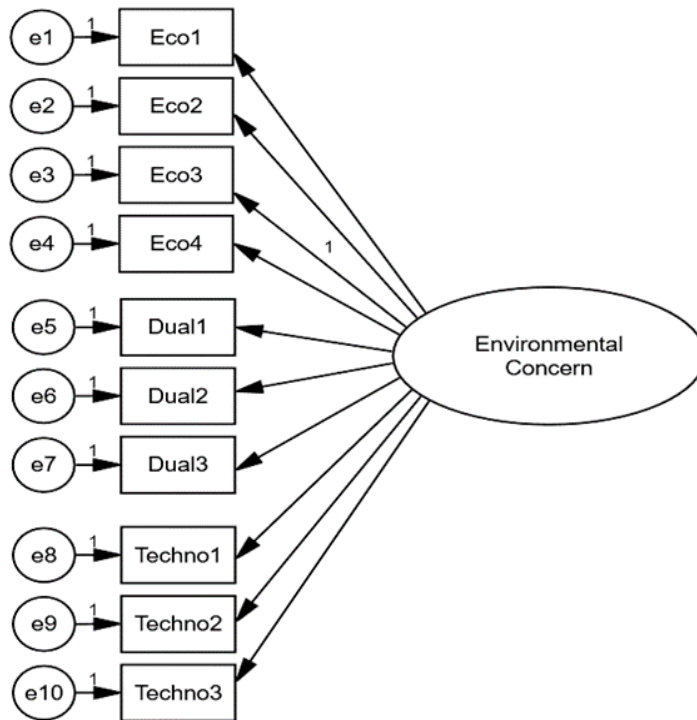


Figure 6.17: One-factor model of environmental concern

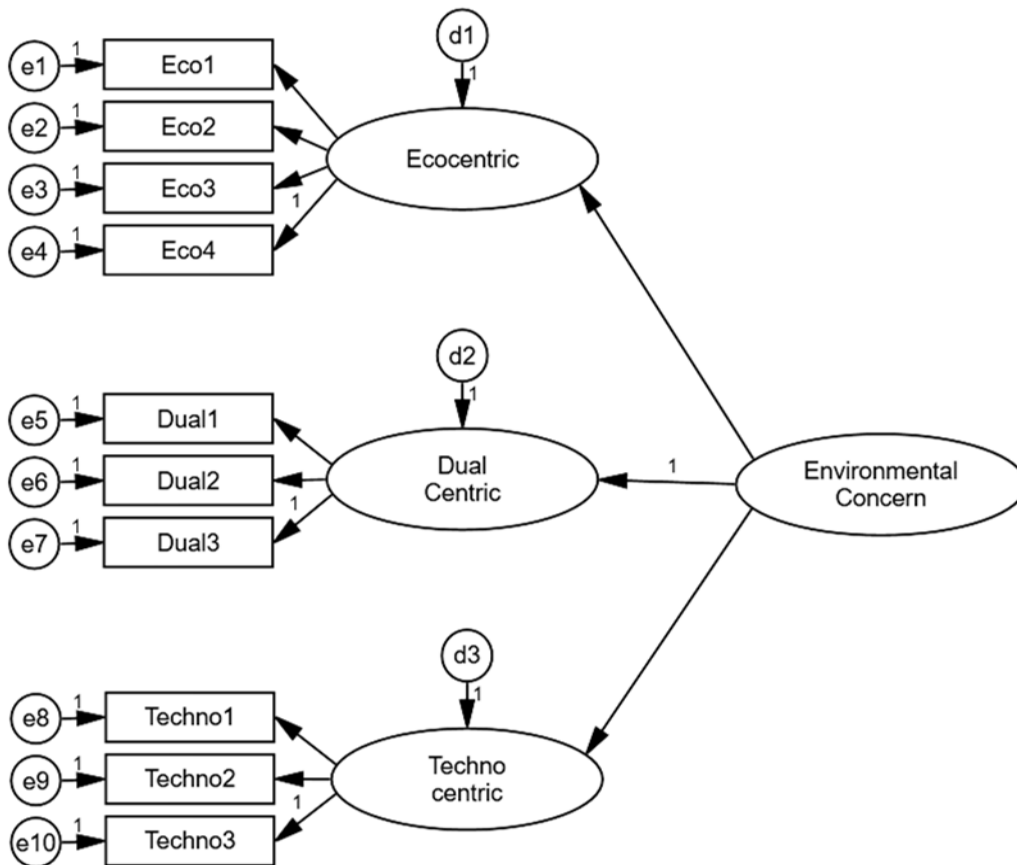


Figure 6.18: Second-order measurement model of environmental concern

Figure 6.19 demonstrates the factor loadings of the ten items in the one-factor model of environmental concern. The CFA result shows that the fitness indices for this model did not achieve the required level, where $\chi^2 = 138.42$, $df = 35$, $p = .000$, $\chi^2/df = 3.96$, $GFI = 0.87$, $TLI = 0.67$, $CFI = 0.74$, and $RMSEA = 0.12$. The factor loadings were examined, and four items were found to have a low factor loading (< 0.5). They were all three items of 'Dual-centric' and *Techno 3*. After removing the four problematic items, the result of the fitness indices was still outside of the acceptable range, especially the value for TLI, CFI and RMSEA ($\chi^2 = 53.80$, $df = 9$, $p = .000$, $\chi^2/df = 5.98$, $GFI = .92$, $TLI = .71$, $CFI = .82$, and $RMSEA = .16$). The Modification Indices tool was used and it suggested there was a co-varying error measurement of items *Techno 1* and *Techno 2* ($e8 \leftrightarrow e9$).

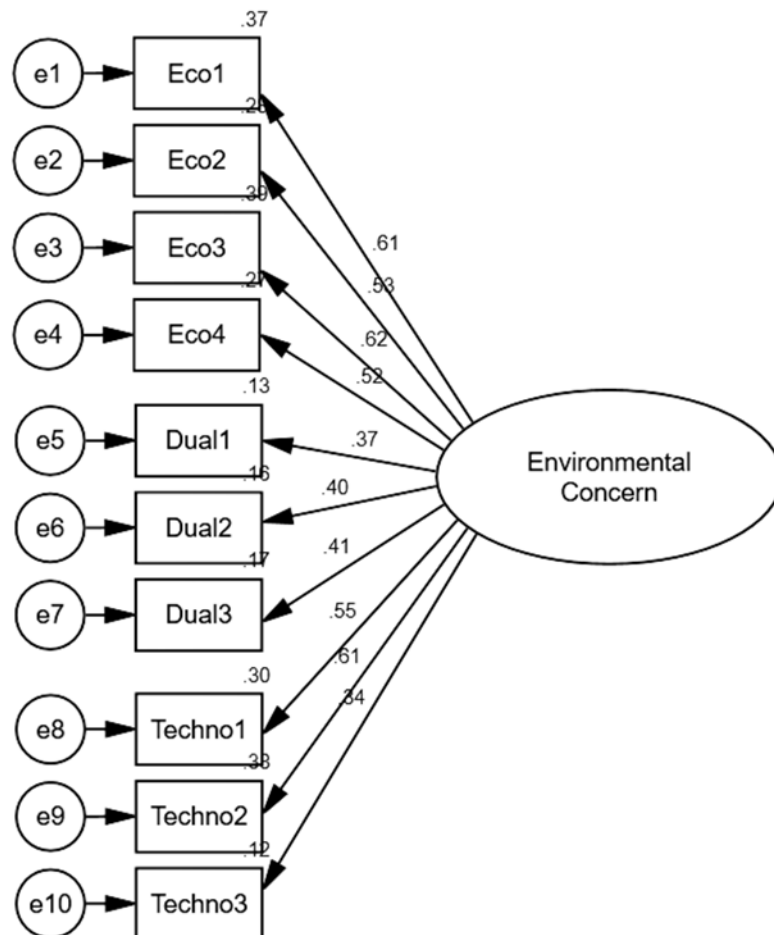


Figure 6.19: Standardised coefficient for a one-factor model of environmental concern

The CFA was run again, and the result showed an improved model, with all the fitness indices achieving the required level: $\chi^2 = 15.73$, $df = 8$, $p = .046$, $\chi^2/df = 1.97$, GFI = .96, TLI = .94, CFI = .97, and RMSEA = .07 (Figure 6.20). Even though the factor loadings of some of the items were low, any modification needed to be stopped once the construct validity was achieved by getting the model fit. In this case, the one-factor model was left as it was once the fitness indices achieved the required level. Table 6.7 shows the calculated value of composite reliability and average variance extracted. The one-factor measurement model of environmental concern had achieved reliability with a CR value of 0.73. However, this model had a low AVE value due to the low factor loading of some of the observed items.

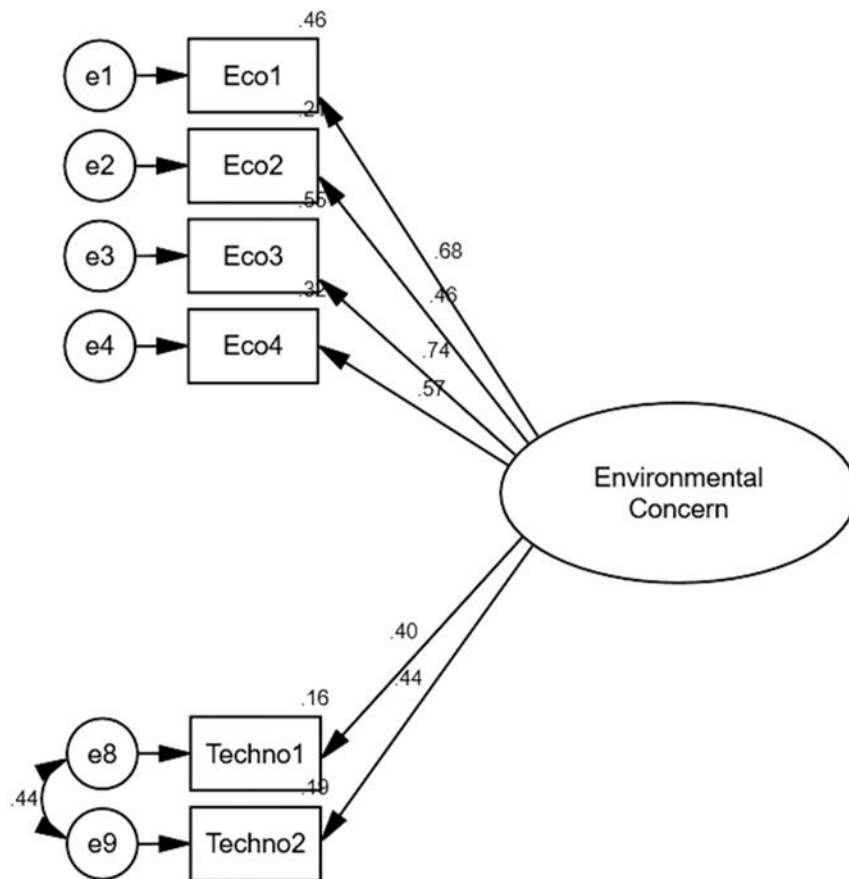


Figure 6.20: New one-factor measurement model of environmental concern

Figure 6.21 shows the results of discriminant validity. The correlation value between three pairs of constructs in environmental concern was below 0.85. The correlation between ‘eco-centric’ and ‘dual-centric’ was strong with 0.70, while there were moderate relationships

between 'dual-centric' and 'techno-centric', with a value of 0.47, and the correlation value between 'eco-centric' and 'techno-centric' was 0.56. These results indicated that there was no redundancy between these constructs and this measurement model could be used in the next step which was to perform CFA and to get the fitness indices for the model.

Table 6.7: The values of CR and AVE of Environmental Concern

Construct	Item	Factor Loading	t-value	CR (minimum 0.6)	AVE (Minimum 0.5)
Environmental Concern	Eco 1	0.68	7.27	0.73	0.32
	Eco 2	0.46	5.46		
	Eco 3	0.74	Fixed		
	Eco 4	0.57	6.53		
	Techno 1	0.40	4.75		
	Techno 2	0.44	5.20		

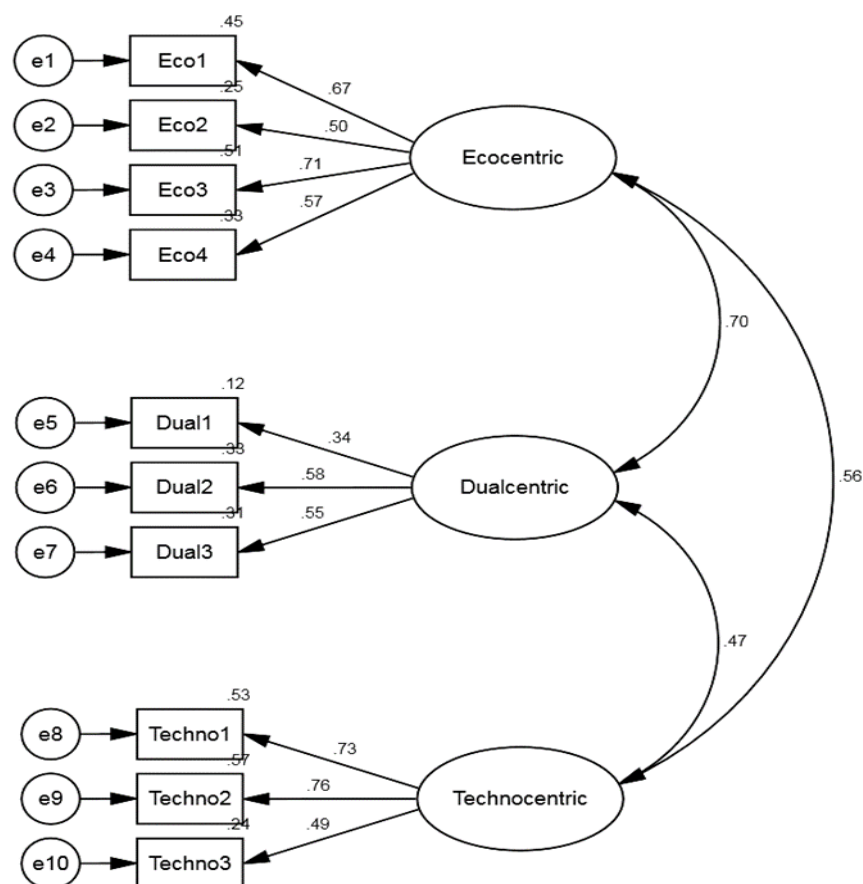


Figure 6.21: The correlation between three constructs in environmental concern

A CFA was run for the second-order factor model (Figure 6.22). The result showed that the fitness indices did not meet the required level: $\chi^2 = 75.81$, $df = 32$, $p = .000$, $\chi^2/df = 2.37$, GFI = 0.93, TLI = 0.85, CFI = 0.89, and RMSEA = 0.08. Thus, items with low factor loading were removed. The first item to be removed was *Dual 1*, with 0.34 factor loading. The new CFA result after deleting *Dual 1* was $\chi^2 = 53.74$, $df = 24$, $p = .000$, $\chi^2/df = 2.24$, GFI = 0.95, TLI = 0.88, CFI = 0.92, and RMSEA = 0.08 (Figure 6.23). The fitness indices had improved slightly. However, addressing the factor loading of each item in 'Dual-centric', it appeared that there would be a problem with the reliability and convergent validity. Therefore, the CR and AVE values were computed earlier in order to secure the best model fit for the second-order measurement model of environmental concern.

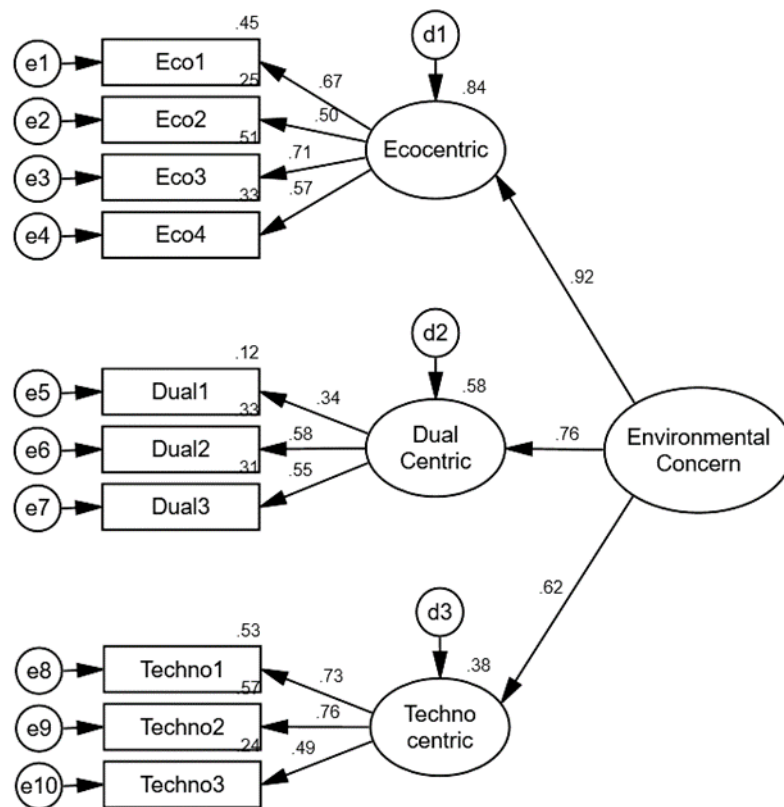


Figure 6.22: Second-order factor model of environmental concern (A)

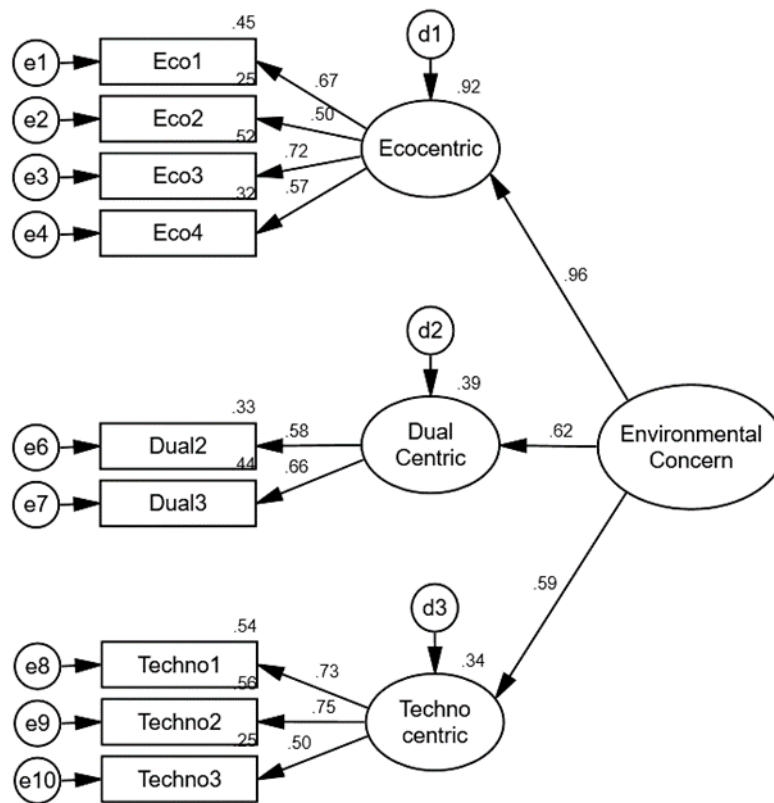


Figure 6.23: Second-order factor model of environmental concern (B)

The CR and AVE values of the second-order construct (environmental concern) passed the minimum values, where CR: 0.78, and AVE: 0.55 (Table 6.8). For the first-order constructs, 'eco-centric' and 'techno-centric' had required a composite reliability (CR) value of 0.71 and 0.71, respectively. However, the AVE value of these constructs was below the minimum levels ('eco-centric': 0.39, and 'techno-centric': 0.45). The results also showed that the 'dual-centric' construct did not achieve reliability and convergent validity as the values of both CR and AVE were below the required levels. Thus, the 'dual-centric' construct needed to be removed from the measurement model in order to improve it.

Table 6.8: The values of CR and AVE of Environmental Concern

Construct	Item	Factor Loading	t-value	CR (minimum 0.6)	AVE (Minimum 0.5)
Environmental Concern	Eco-centric	0.96	3.15	0.78	0.55
	Dual centric	0.62	Fixed		
	Techno-centric	0.59	3.64		

Ecocentric	Ecocentric 1	0.67	6.40	0.71	0.39
	Ecocentric 2	0.50	5.35		
	Ecocentric 3	0.72	6.57		
	Ecocentric 4	0.57	Fixed		
Dual centric	Dual centric 2	0.58	4.14	0.56	0.39
	Dual centric 3	0.66	Fixed		
Techno-centric	Techno-centric 1	0.73	5.82	0.70	0.45
	Techno-centric 2	0.75	5.82		
	Techno-centric 3	0.50	Fixed		

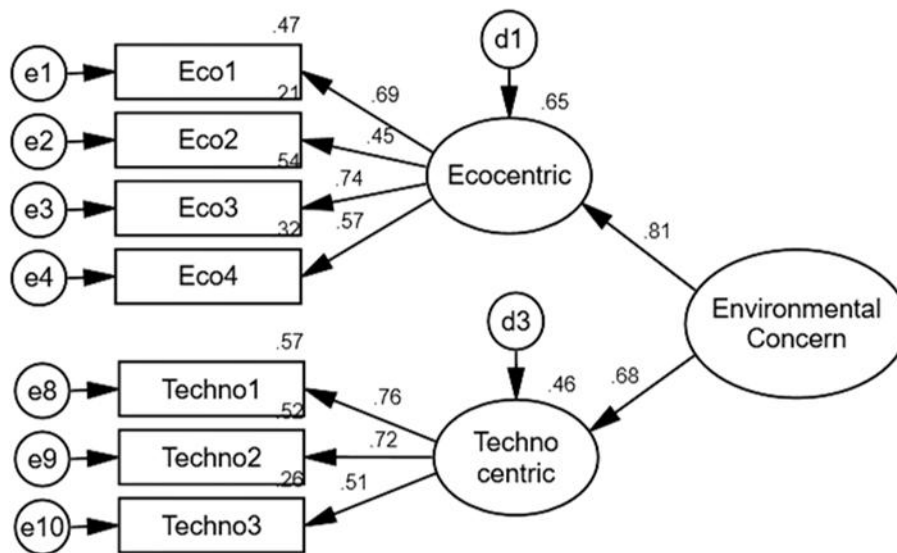


Figure 6.24: Second-order factor model of environmental concern (C)

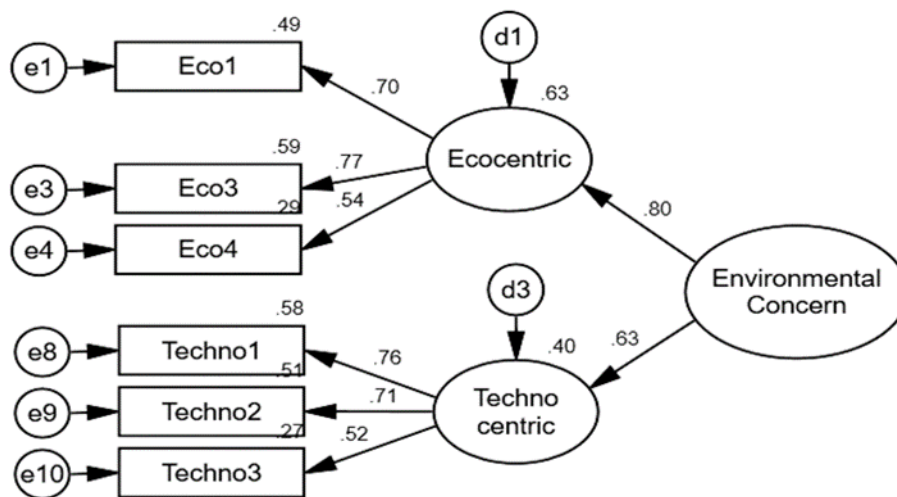


Figure 6.25: Second-order factor model of environmental concern (D)

A new second-order measurement model of environmental concern was analysed using the CFA (Figure 6.24). The fitness indices of the new model were $\chi^2= 25.71$, $df= 13$, $p= .019$, $\chi^2/df= 1.98$, GFI= 0.97, TLI= 0.93, CFI= 0.96, and RMSEA= 0.07. The model fit was achieved with this model. However, *Eco2* was found to have a low factor loading (0.45). This item needed to be removed to avoid a low value of composite reliability and the average variance having to be extracted. Figure 6.25 displays the factor loadings of all the variables in the latest model after deleting item *Eco 2*. The fitness indices of this model achieved the required level with $\chi^2= 9.149$, $df= 8$, $p= .33$, $\chi^2/df= 1.14$, GFI= 0.99, TLI= 0.99, CFI= 0.99, and RMSEA= 0.03. The values of CR and AVE were computed to assess the reliability and convergent validity of the model (Table 6.9). The value of CR and AVE of the second-order construct (environmental concern) achieved minimum values. For the first-order construct, both 'eco-centric' and 'techno-centric' had the same value of CR (0.71), while the value of AVE was 0.46 and 0.45, respectively. Even though the minimum value of AVE required for convergent validity is 0.5, a few scholars have accepted an AVE value of at least 0.4. According to Fornell and Larcker (1981), if the value of AVE is less than 0.5, but the CR value is higher than 0.6, the convergent validity of the construct is still adequate. Therefore, the new second-order measurement model of environmental concern has achieved construct validity, reliability, and convergent validity and will be used in the structural model.

Table 6.9: The values of CR and AVE of Environmental Concern (B)

Construct	Item	Factor Loading	<i>t</i> -value	CR (minimum 0.6)	AVE (Minimum 0.5)
Environmental Concern	Ecocentric	0.80	Fixed	0.68	0.52
	Technocentric	0.63	Fixed		
Ecocentric	Ecocentric 1	0.70	6.13	0.71	0.46
	Ecocentric 3	0.77	6.10		
	Ecocentric 4	0.54	Fixed		
Techno-centric	Techno-centric 1	0.76	5.88	0.71	0.45
	Techno-centric 2	0.71	5.91		
	Techno-centric 3	0.52	Fixed		

6.2.4 Measurement Model of other Variables

Earlier sections have identified the appropriate measurement models of the three main variables in the Recreation Experience Model, which are: recreational motivation, place attachment and environmental concern. There are a further six variables: four components of the Theory of Planned Behaviour (attitude towards behaviour, subjective norms, perceived behavioural control, and behavioural intention), visitor satisfaction and future behaviour. Visitor satisfaction was measured using overall satisfaction, while future behaviour was measured by the intention to revisit the forest park in the future and recommend the park to other friends and family. Other than these variables, the socio-demographic status was also inserted into the model. The socio-demographic characteristics were represented by gender, age, ethnic background, household income and level of education. The factor loadings and *t*-value of the latent constructs are displayed in Table 6.10.

Table 6.10: Factor loadings of other latent variables

Construct	Item	Factor Loading	<i>t</i> -value
Attitude toward behaviour	ATT1	0.87	Fixed
	ATT2	0.92	15.85
Subjective norms	SN1	0.86	Fixed
	SN2	0.52	6.99
Perceived behavioural control	PBC1	0.89	Fixed
	PBC2	0.82	13.16

Behavioural intention	INT1	0.76	6.44
	INT2	0.42	Fixed
Future Behaviour	FB1	0.98	Fixed
	FB2	0.33	3.84

6.3 Structural Equation Modelling

Structural equation modelling (SEM) was used to test the proposed model; it is a method suitable for samples of more than 200 respondents (Zainuddin, 2005). SEM is mostly used in social sciences, especially in testing hypotheses of causal influences (Snoj et al., 2004). Compared with multivariate procedures, SEM is a more powerful alternative that takes into account the correlated independents, measurements error and multiple latent independents (Byrne, 2000, p.54). SEM has been widely used in leisure studies (Marques et al., 2017; Kil et al., 2014; Budruk & Stanis, 2013; White, 2008; Lee, 2007).

6.3.1 Structural Model

Figure 6.26 displays a structural model of recreational experience proposed in this study. The socio-demographics are represented by the visitors' background, particularly data about their gender, age, ethnic background, education and income. There are three second-order constructs within this structural model: recreation motivation, place attachment and environmental concern. Both recreational motivation (enjoy nature, escape, and family togetherness) and place attachment (place identity, place dependence, and social bonding) constructs consist of three latent variables, while environmental concern has two latent variables (eco-centric and techno-centric). Four components of the Theory of Planned Behaviour (TPB) were used to examine the visitors' intention to perform the desired behaviour in this study. Attitudes towards behaviour (ATT1 and ATT2), subjective norms (SN1 and SN2), perceived behavioural control (PBC1 and PBC2) and behavioural intention (INT1 and INT2) were each represented by two observed variables. Visitor satisfaction was measured using overall satisfaction. The final construct in this model is future behaviour. This latent variable was measured using two observed variables (FB1 and FB2).

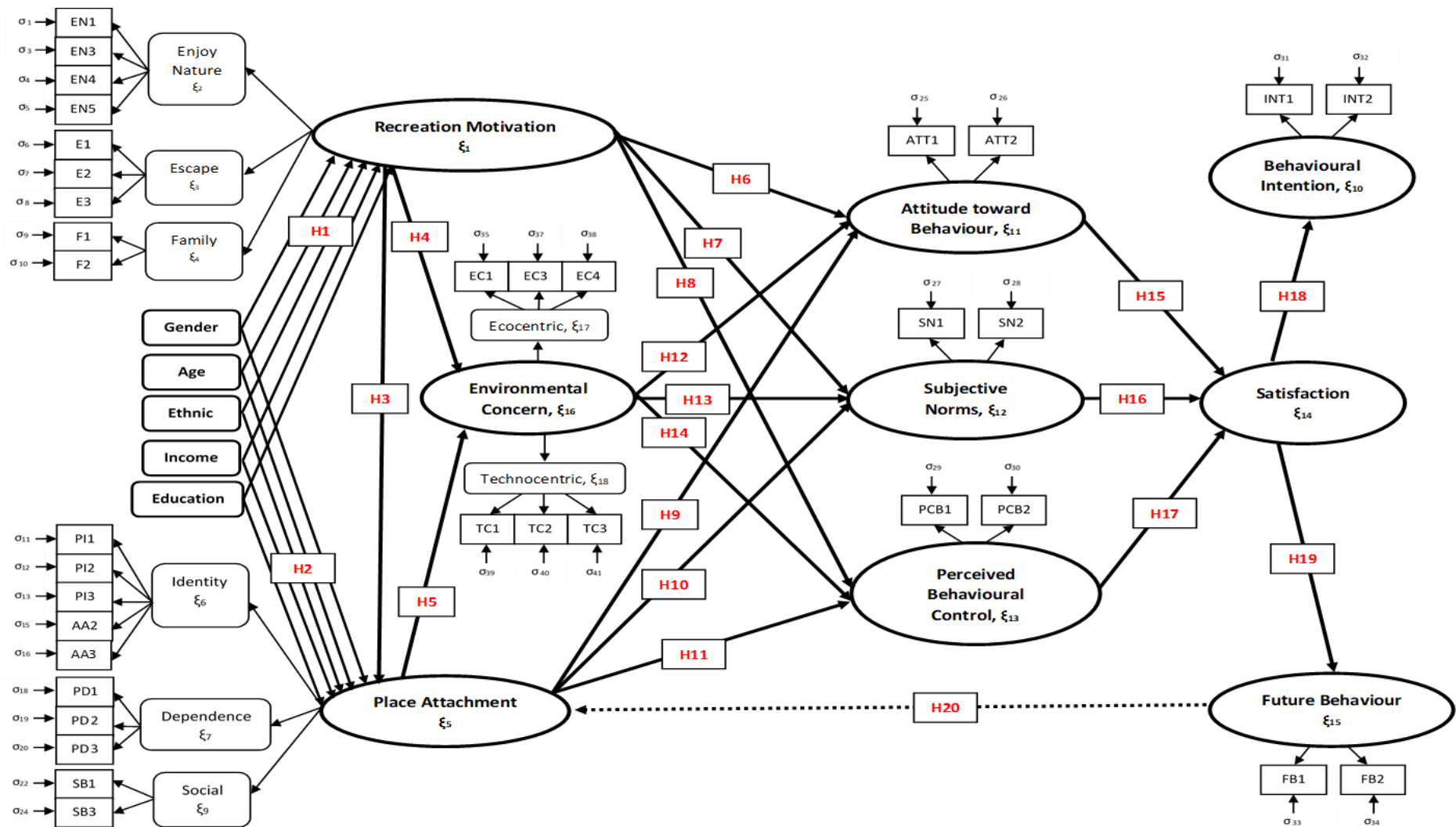


Figure 6.26: Structural Model of Recreation Experience

Table 6.11: Summary of variables in the SEM

Scale Items			α	Factor Loading	t-value
Recreational Motivation (ξ_1)			.80		
<i>Enjoy Nature</i>	ξ_1			.82	11.82
EN1	σ_1	To experience tranquillity		.58	8.44
EN3	σ_3	To view the scenic beauty		.62	9.27
EN4	σ_4	To gain a better appreciation of nature		.89	13.30
EN5	σ_5	To be close to nature		.83	-
<i>Escape</i>	ξ_3			.84	11.82
E1	σ_6	To help release or reduce tensions		.64	6.58
E2	σ_7	To be away from crowds		.54	5.85
E3	σ_8	To avoid everyday responsibility for a while		.61	-
<i>Family</i>	ξ_4			.46	11.82
F1	σ_9	To bring my family closer together		.91	-
F2	σ_{10}	To do something with my family		.93	9.38
Place Attachment (ξ_5)			.87		
<i>Place Identity</i>	ξ_6			.73	-
PI1	σ_{11}	I feel this forest park is a part of me		.74	-
PI2	σ_{12}	I identify strongly with this forest park		.90	13.37
PI3	σ_{13}	Visiting this forest park says a lot about who I am		.71	10.36
AA2	σ_{15}	I am very attached to this forest park		.85	12.64
AA3	σ_{16}	I feel a strong sense of belonging to this forest park and its settings/facilities		.91	13.66
<i>Place Dependence</i>	ξ_7			.92	6.81
PD1	σ_{18}	I prefer this forest park over others settings/facilities for the recreational activities that I enjoy most		.71	-
PD2	σ_{19}	For what I like to do, I could not imagine anything better than the setting and facilities provided by this forest park		.71	9.37

PD3	σ_{20}	I enjoy visiting this forest park more than any other sites	.87	10.82
Social Bonding	ξ_9		.87	5.35
SB1	σ_{22}	My friends/family would be disappointed if I were to start visiting other settings and facilities	.52	-
SB3	σ_{24}	Many of my friends/family prefer this forest park over other sites	.82	6.24
Environmental Concern (ξ_{16})			.76	
Eco-centric	ξ_{17}		.80	-
EC1	σ_{35}	We are approaching the limit of the number of people the earth can support	.70	6.13
EC3	σ_{37}	The earth is like a spaceship with very limited room and resources	.77	6.10
EC4	σ_{38}	The balance of nature is very delicate and easily upset	.54	-
Techno-centric	ξ_{18}		.63	-
TC1	σ_{39}	The balance of nature is strong enough to cope with the impacts of modern industrial nations*	.76	5.88
TC2	σ_{40}	The so-called "ecological crisis" facing humankind has been greatly exaggerated*	.71	5.91
TC3	σ_{41}	Humans will eventually learn enough about how nature works to be able to control it*	.52	-
Recreational Behaviour			.89	
Behavioural intention	ξ_{10}			
INT1	σ_{31}	In order to minimise disturbance to wildlife, I intend to stick to the designated paths today	.76	6.44
INT2	σ_{32}	I will not stray from the designated path in order to protect the ground-nesting birds	.42	-
Attitude toward behaviour	ξ_{11}			
ATT1	σ_{25}	Staying on the designated paths to me makes my activity feel...	.87	-
ATT2	σ_{26}	Staying on the designated paths to me makes my experience92	15.85
Subjective norms	ξ_{12}			

SN1	σ_{27}	Most people who are important to me think that I should stick to designated paths today	.86	-
SN2	σ_{28}	Forestry Commission staffs would be very happy if I use the designated paths to minimise disturbance to ground-nesting birds and other wildlife	.52	6.99
Perceived behavioural control	ξ_{13}			
PBC1	σ_{29}	In term of my ability to stay on the designated path, I feel it is...	.89	-
PCB2	σ_{30}	I feel I have control over myself to stay on the designated paths during my visit today	.82	13.16
Satisfaction	ξ_{14}	Overall, how satisfied are you with your visit to this park?	.89	
Future behaviour	ξ_{15}			
FB1	σ_{33}	How strongly would you recommend this park to friends who share your interests?	.98	-
FB2	σ_{34}	Will you be visiting this forest park again in the future?	.33	3.84

In order to understand the overall recreation experience of the visitors in the forest parks, this study proposed to test the following hypotheses:

-
- H₁ Recreational motivation is significantly influenced by the visitor's socio-demographic background.
 - H₂ Attachment to the forest park is significantly influenced by the visitor's socio-demographic background.
 - H₃ Recreational motivation has a direct effect on place attachment.
 - H₄ Recreational motivation has a direct effect on environmental concern.
 - H₅ Place attachment has a direct effect on the environmental concern.
 - H₆ Visitor attitude is significantly influenced by recreational motivation.
 - H₇ Subjective norms are significantly influenced by recreational motivation.
 - H₈ Perceived behavioural control is significantly influenced by recreational motivation.
 - H₉ Visitor attitude is significantly influenced by place attachment.
 - H₁₀ Subjective norms are significantly influenced by place attachment.
 - H₁₁ Perceived behavioural control is significantly influenced by place attachment.
 - H₁₂ Visitor attitude is significantly influenced by the visitor's environmental concern.
 - H₁₃ Subjective norms are significantly influenced by the visitor's environmental concern.
 - H₁₄ Perceived behavioural control is significantly influenced by the visitor's environmental concern.
 - H₁₅ Visitor attitude toward a behaviour has a direct effect on satisfaction.
 - H₁₆ Subjective norms have a direct effect on satisfaction.
 - H₁₇ Perceived behavioural control has a direct effect on satisfaction.
 - H₁₈ Satisfaction has a direct effect on behavioural intention.
 - H₁₉ Satisfaction has a direct effect on future behaviour.
 - H₂₀ Future behaviour is directly affected by the development of the place attachment of the visitor.
-

6.3.2 Assessing the Structural Model

An overall SEM was estimated in order to test the proposed research hypotheses. The fitness indices for the structural model were $X^2= 1641.592$, $df= 739$, $p= .000$, $X^2/df= 2.221$, $GFI= 0.740$, $TLI= 0.753$, $CFI= 0.778$, and $RMSEA= 0.077$. The structural model was accepted. The relative chi-square indicated a favourable fit to the data. The RMSEA value of 0.078 indicated a good fit. However, the values of the GFI, TLI and CFI indicated potential improvements were required in the model fit.

Table 6.12: Summary of assessment on the structural model

H	Construct		Construct	Coefficients*		S. E	C.R	P	Result
				Std	UnStd				
Effect on Recreation Motivation				R² = 0.100					
H _{1a}	Recreation motivation	< ---	Gender	.271	.257	.078	3.297	***	S
H _{1b}	Recreation motivation	< ---	Age	.152	.069	.035	1.996	.046	S
H _{1c}	Recreation motivation	< ---	Ethnic	-.008	-.002	.020	-.103	.918	NS
H _{1d}	Recreation motivation	< ---	Income	-.140	-.039	.021	-1.858	.063	NS
H _{1e}	Recreation motivation	< ---	Education	.035	.013	.027	.477	.633	NS
Effect on Place Attachment				R² = 0.717					
H _{2a}	Place attachment	< ---	Gender	-.231	-.289	.068	-4.252	***	S
H _{2b}	Place attachment	< ---	Age	-.027	-.016	.028	-.589	.556	NS
H _{2c}	Place attachment	< ---	Ethnic	-.017	-.006	.016	-.380	.704	NS
H _{2d}	Place attachment	< ---	Income	-.067	-.025	.017	-1.420	.156	NS
H _{2e}	Place attachment	< ---	Education	.006	.003	.022	.142	.887	NS
H ₃	Place attachment	< ---	Recreation motivation	.717	.945	.163	5.784	***	S
H ₂₀	Place attachment	< ---	Future behaviour	.418	.398	.088	4.525	***	S
Effect on Environmental Concern				R² = 0.229					
H ₄	Environmental concern	< ---	Recreation motivation	.647	.640	.231	2.776	.006	S
H ₅	Environmental concern	< ---	Place attachment	-.338	-.253	.164	-1.542	.123	NS
Effect on Attitude toward Behaviour				R² = 0.834					
H ₆	Attitude toward behaviour	< ---	Recreation motivation	1.800	4.724	.835	5.660	***	S
H ₉	Attitude toward behaviour	< ---	Place attachment	-1.226	-2.438	.571	-4.270	***	S
H ₁₂	Attitude toward behaviour	< ---	Environmental concern	-.482	-1.278	.427	-2.992	.003	S

Effect on Subjective Norms			R² = 0.792						
H ₇	Subjective norms	< ---	Recreation motivation	1.747	5.985	1.076	5.565	***	S
H ₁₀	Subjective norms	< ---	Place attachment	-1.329	-3.450	.756	-4.562	***	S
H ₁₃	Subjective norms	< ---	Environmental concern	-.508	-1.757	.582	-3.017	.003	S
Effect on Perceived Behavioural Control			R² = 0.696						
H ₈	Perceived behavioural control	< ---	Recreation motivation	1.650	4.727	.878	5.386	***	S
H ₁₁	Perceived behavioural control	< ---	Place attachment	-1.398	-3.037	.629	-4.825	***	S
H ₁₄	Perceived behavioural control	< ---	Environmental concern	-.480	-1.389	.468	-2.969	.003	S
Effect on Satisfaction			R² = -0.111						
H ₁₅	Satisfaction	< ---	Attitude toward behaviour	.455	.271	.125	2.157	.031	S
H ₁₆	Satisfaction	< ---	Subjective norms	.067	.030	.111	.273	.785	NS
H ₁₇	Satisfaction	< ---	Perceived behavioural control	.138	.075	.109	.690	.490	NS
Effect on Behavioural Intention			R² = 0.009						
H ₁₈	Behavioural intention	< ---	Satisfaction	.097	.334	.136	2.451	.014	S
Effect on Future Behaviour			R² = 0.773						
H ₁₉	Future behaviour	< ---	Satisfaction	.935	.829	.052	15.808	***	S

*Coefficients: Std= Standardised, UnStd= Unstandardised;
Results of hypotheses are as follows: S=support, NS=not supported

Table 6.12 displays the summarised results from the assessment of the structural model. The R^2 results of variance explained for recreation motivation construct indicate that the direct effect of gender, ethnic, income, and education accounted for 10 per cent of the variance of the construct. The effect of gender (0.271, $p < 0.001$) and age (0.152, $p < 0.05$) are positive and significant, while the effect of ethnic, income and education to recreational motivation were not certain. The R^2 results for the place attachment construct measured 0.717. This indicates that the direct effect of the gender, age, ethnic, income, education, recreational motivation and future behaviour constructs accounted for 72 per cent of the variance of the place attachment construct. The path coefficient between place attachment and gender was negative and significant (-0.231, $p < 0.001$), while the path coefficients between place attachment and two other constructs, namely recreational motivation (0.717, $p < 0.001$), and future behaviour (0.418, $p < 0.001$) were positive and significant. The results of the other constructs were inconclusive. The R^2 results or variance explained for the environmental concern construct indicate that the direct effects of recreational motivation and place attachment accounted for 23 per cent of the variance of the construct. The path coefficient between environmental concern and recreational motivation was positive and significant (0.647, $p < 0.01$). Conversely, the direct effect of place attachment to environmental concern was not significant.

From the structural model assessment, the direct effects of recreational motivation, place attachment and environmental concern on attitude towards behaviour were significant, with an R^2 value of 83 per cent. The path coefficient between recreational motivation and attitude towards behaviour was positive (1.80, $p < 0.001$). However, the path coefficients between attitude towards behaviour and the other two constructs (place attachment and environmental concern) were negative. The R^2 value measured for subjective norms was 0.792. This suggested that the direct effects of the recreational motivation, place attachment and environmental concern constructs accounted for 79 per cent of the subjective norms construct's variance. The path coefficient between subjective norms and recreational motivation was positive and significant (1.747, $p < 0.001$), while the path coefficients between subjective norms and place attachment (-1.329, $p < 0.001$) and environmental concern (-0.508, $p < 0.05$) were negative and

significant. The R^2 value recorded for the perceived behavioural control construct indicates the direct effects of recreational motivation, place attachment and environmental concern, which accounted for almost 70 per cent of the variance for the construct. The direct effects of these constructs to perceived behavioural control were significant, whereby recreational motivation was found to be positively significant (1.650, $p < 0.001$), while place attachment (-1.398, $p < 0.001$) and environmental concern (-0.480, $p < 0.01$) were negatively significant.

The R^2 value of visitor satisfaction was relatively low at 11 per cent. This variance was accumulated directly by three constructs of the Theory of Planned Behaviour: attitude towards behaviour, subjective norms and perceived behavioural control. The path coefficient between satisfaction and attitude towards behaviour was positively significant (0.455, $p < 0.05$). In contrast, the effects of subjective norms and perceived behavioural control to satisfaction were not certain. The result of the structural model assessment also found that the path linking visitor satisfaction and behavioural intention was positively significant (0.097, $p < 0.05$), with the R^2 value of 0.009. The final construct in the structural model is future behaviour. The R^2 value of this construct was 0.773. This indicates that the direct effect of visitor satisfaction accounted for 77 per cent of the variance of the future behaviour construct. The path coefficient between satisfaction and future behaviour was positively significant, at 0.935 ($p < 0.001$).

6.3.3 Hypothesis tests

Based on Table 6.12, the results can be summarised as in Table 6.13. The results show that from the 20 proposed hypotheses in this study, 17 of them have been accepted, with two of the hypotheses partially accepted, while three of them have been rejected. Hypothesis 1 (*Recreation motivation is significantly influenced by the visitors socio-demographic*) is partially accepted because some of the variables that represent socio-demographic variables produced non-significant results during the path analysis. Only gender and age had significantly positive effects on recreational motivation. The same reason can be applied to hypothesis 2 (*Attachment to the forest park is significantly influenced by the visitors socio-demographic*) where the only

construct that was found to have a significant relationship with place attachment was gender. Therefore, it can be concluded that, based on the analysis, hypothesis 2 is partially accepted. Hypothesis 3 (*Recreational motivation has a direct effect on the place attachment*) is accepted. The result indicates that visitor motivation to participate in an outdoor activity in a forest has potentially developed the bonding between the person and the place. The result for Hypothesis 4 (*Recreational motivation directly affects the environmental concern*) is accepted, which means that visitor environmental concern has been significantly influenced by the visitor motivation to perform outdoor recreational activities. However, Hypothesis 5 (*Place attachment directly affects the environmental concern*) was rejected, which indicates that place attachment did not influence the level of environmental concern of the visitors who participated in this study. The results from the SEM analysis also reveal that recreational motivation has significantly influenced three of the Theory of Planned Behaviour's (TPB) components: attitude towards behaviour (Hypothesis 6), subjective norms (Hypothesis 7), and perceived behavioural control (Hypothesis 8).

Table 6.13: Summary of results of hypotheses testing

Hypotheses	Research Hypotheses	Results
Hypothesis 1	Recreational motivation is significantly influenced by the visitor's socio-demographic background.	<i>Partial Accepted</i>
Hypothesis 1a	Gender has influenced recreational motivation	<i>Accepted</i>
Hypothesis 1b	Age has influenced recreational motivation	<i>Accepted</i>
Hypothesis 1c	Ethnicity has influenced recreational motivation	<i>Rejected</i>
Hypothesis 1d	Income has influenced recreational motivation	<i>Rejected</i>
Hypothesis 1e	Education has influenced recreational motivation	<i>Rejected</i>
Hypothesis 2	Attachment to the forest park is significantly influenced by the visitor's socio-demographic background.	<i>Partial Accepted</i>
Hypothesis 2a	Gender has influenced place attachment	<i>Accepted</i>
Hypothesis 2b	Age has influenced place attachment	<i>Rejected</i>
Hypothesis 2c	Ethnicity has influenced place attachment	<i>Rejected</i>
Hypothesis 2d	Income has influenced place attachment	<i>Rejected</i>
Hypothesis 2e	Education has influenced place attachment	<i>Rejected</i>
Hypothesis 3	Recreational motivation has a direct effect on place attachment.	<i>Accepted</i>
Hypothesis 4	Recreational motivation has a direct effect on environmental concern.	<i>Accepted</i>
Hypothesis 5	Place attachment has a direct effect on environmental concern.	<i>Rejected</i>

Hypothesis 6	Visitor's attitude is significantly influenced by recreational motivation.	Accepted
Hypothesis 7	Subjective norms are significantly influenced by recreational motivation.	Accepted
Hypothesis 8	Perceived behavioural control is significantly influenced by recreational motivation.	Accepted
Hypothesis 9	Visitor attitude is significantly influenced by place attachment.	Accepted
Hypothesis 10	Subjective norms are significantly influenced by place attachment.	Accepted
Hypothesis 11	Perceived behavioural control is significantly influenced by place attachment	Accepted
Hypothesis 12	Visitor attitude is significantly influenced by visitor environmental concern.	Accepted
Hypothesis 13	Subjective norms are significantly influenced by visitor environmental concern.	Accepted
Hypothesis 14	Perceived behavioural control is significantly influenced by visitor environmental concern.	Accepted
Hypothesis 15	Visitor attitude toward a behaviour has a direct effect on satisfaction.	Accepted
Hypothesis 16	Subjective norms have a direct effect on satisfaction.	<i>Rejected</i>
Hypothesis 17	Perceived behavioural control has a direct effect on satisfaction.	<i>Rejected</i>
Hypothesis 18	Satisfaction has a direct effect on behavioural intention.	Accepted
Hypothesis 19	Satisfaction has a direct effect on future behaviour.	Accepted
Hypothesis 20	Future behaviour directly affects the development of place attachment of the visitor.	Accepted

The acceptance of these hypotheses denotes that visitor motivation somewhat affects the attitude of visitors toward desired behaviour, subjective norms and the degree of control of the visitors themselves to act pro-environmentally during their visit to the forest park. Besides recreational motivation, place attachment was used to identify its relationship with the three components of TPB using hypothesis 9 (*Visitor attitude is significantly influenced by place attachment.*), hypothesis 10 (*Subjective norms are significantly influenced by place attachment*) and hypothesis 11 (*Perceived behavioural control is significantly influenced by place attachment*). All the path coefficients between place attachment and these constructs were significant but in a negative direction. These results suggest that visitor attitude towards behaviour, subjective

norms and perceived behavioural control decreases with the influence of place attachment. Another variable used to examine the relationship with TPB components was environmental concern. The results show that all three path coefficients were negative and significant. Therefore, hypothesis 12 (*Visitor attitude is significantly influenced by visitor environmental concern*), hypothesis 13 (*Subjective norms are significantly influenced by visitor environmental concern*) and hypothesis 14 (*Perceived behavioural control is significantly influenced by visitor environmental concern*) were accepted. The results confirm that the level of visitor attitude towards behaviour, subjective norms and perceived behavioural control declined with the influence of environmental concern.

The SEM analysis also examined the influence of TPB components on visitor satisfaction through hypothesis 15 (*Visitor attitude toward a behaviour has a direct effect on satisfaction*), hypothesis 16 (*Subjective norms have a direct effect on satisfaction.*) and hypothesis 17 (*Perceived behavioural control has a direct effect on satisfaction*). Hypothesis 15 was accepted while the other two hypotheses were rejected. These results denote that visitor attitude toward pro-environmental behaviour in the forest park influenced the satisfaction of participating in outdoor recreational activities. However, the perception of people toward performing pro-environmental behaviour and the degree of control of the visitors during their visit to the forest park did not affect visitor satisfaction. This study found that visitor satisfaction does influence the intention to perform pro-environmental behaviour during the visit to the forest park (Hypothesis 18 was accepted). Visitor satisfaction also affected the future behaviour of the visitors (Hypothesis 19 was accepted), which signifies that when the visitor is satisfied with their visit to the forest park, they tend to revisit the place in the future and recommend the place to their family and friends. The final hypothesis is *future behaviour directly affects the development of place attachment of the visitor* (Hypothesis 20). This hypothesis was accepted, which indicates that the future behaviour of the visitor increases the development of bonding between the person and the place.

6.4 Summary

This chapter has involved a comprehensive statistical analysis of the proposed theoretical model. The first part of this chapter mainly interpreted the results from the CFA of the three main variables: recreational motivation, place attachment and environmental concern. In this section, two proposed measurement models were analysed using the CFA in order to get the best measurement model for each variable to be used in the final analysis. The results showed that the second-order factor model was appropriate for the selected variables. Other measurement models used in the structural model were the four components of The Theory of Planned Behaviour (attitude towards behaviour, subjective norms, perceived behavioural control and behavioural intention) and future behaviour, which was represented by *revisiting the forest park in the future* and *recommend the forest park to families and friends*. Six observed variables were included in the structural model: gender, age, ethnic background, household income, level of education and overall satisfaction. The structural model was then analysed in the SEM. The fitness indices results show that the structural model can be accepted but that some of the values indicated the potential for improvement. From the assessment of the structural model, fifteen hypotheses were accepted, two hypotheses were partially accepted, and three hypotheses were rejected.

Hypothesis 1 was partially accepted with two variables were found to have significant positive effects on recreation motivation. They are gender and age. The results justified by the previous studies, where females were more interested in enjoying nature, experiencing wildlife, improving health condition, and having social contact with friends and family. However, males were found to be more keen in exploring new sites and activities including taking risks by participating in adventure activities (Ho et al., 2005; Lee et al., 2007; Caglar et al., 2009; O'Connell, 2010). On the other hand, young adults were found rated important to the motivation relating to health, appearance, and social and enjoyment as compared to other aged-groups (Caglar et al., 2009). Son et al. (2008) argued that age and gender have a direct influence on the relationship between recreation motivation and level of physically active leisure especially for

adults who 50 years old and above. Similarly, Hypothesis 2 was also partially accepted, as only gender found to has significant relationship with place attachment. The finding is in line with the other studies where, as expected, gender affected the development of attachment between people and place. Females have shown higher tendency to develop social bonding, which is one of the types of place attachment (Tartaglia, 2006; Rolero & Picolli, 2010). Additionally, females expressed a higher preference for seeking environments offering intimacy with close friends and family than was expressed by males (Virden & Walker, 1999).

Hypothesis 3 testing the relationship between recreational motivation and place attachment. The hypothesis is accepted. The result indicates that the visitor's motivation to participate in an outdoor activity in a forest influenced the development of the bonding between person and the place. There were quite extensive studies conducted on this topic. Enjoying the natural environment and spending time with family and friends significantly predicted place attachment (Budruk & Stanis, 2013). Anderson and Fulton (2008) stated that visitor's with learning and creative experiences as their motivation, positively influenced place identity, while learning and introspection positively predicted place dependence. Furthermore, experiencing solitude was found to be essential for visitor's who had a high level of place identity (Warzecha et al, 2000). Finding from the SEM exposes that recreational motivation directly affects the environmental concern (H_4), which means that visitor's environmental concern has been significantly influenced by the visitor motivation to perform outdoor recreational activities. This finding supported by Luo & Deng (2008), which they found that people with motivations to develop skills, experience new things, and seek social contacts tend to be more supportive towards environmental attitudes. Interestingly, Hypothesis 5 was rejected which indicates that place attachment did not influence the level of environmental concern of the visitors who participated in this study.

The results from the SEM analysis also reveal that recreational motivation has significantly influenced three of the Theory of Planned Behaviour's (TPB) components: attitude towards

behaviour (H₆), subjective norms (H₇), and perceived behavioural control (H₈). The acceptance of these hypotheses denotes that visitor motivation somewhat affects the attitude of visitors toward desired behaviour, subjective norms and the degree of control of the visitors themselves to act pro-environmentally during their visit to the forest park. Visitors' recreational motivation which oriented on the appreciation of nature, learning, and improving health were among those who hold positive behavioural beliefs (Lee et al., 2004; Yoon & Uysal, 2005). However, there is lack of study that explain the direct influence of recreational motivation to the attitudes toward behaviour, subjective norms, and perceived behavioural control. Besides recreational motivation, place attachment was used to identify its relationship with the three components of TPB (H₉, H₁₀, and H₁₁). Surprisingly, all the path coefficients between the place attachment and these constructs were significant but in negative directions. These results suggest that visitor attitude toward behaviour, subjective norms and perceived behavioural control decreases with the influence of place attachment. Similar results were obtained from the hypotheses tests between TPB components and environmental concern (H₁₂, H₁₃, and H₁₄). The results recommend that the level of visitor attitude toward behaviour, subjective norms and perceived behavioural control have been declined with the influence of environmental concern. The results are contrast from previous studies, where the stronger visitors' place attachment level, the more positive and active visitors were in regards to their attitude and behaviour. Furthermore, previous place attachment studies in tourism suggesting visitors' place attachment is associated with positive visitor behavioural intentions (Tsai, 2011; Scannell & Gifford, 2010).

Visitor attitude toward pro-environmental behaviour in the forest park influenced the satisfaction of participating in outdoor recreational activities (H₁₅ was accepted). In addition, this study found that visitor satisfaction does influence the intention to perform pro-environmental behaviour during the visit to the forest park (H₁₈ was accepted). This finding is supported by previous studies covering the relationships among visitor attitude, satisfaction, and future behaviour (Ragheb & Tate 1993; Lee, 2009; Ramkissoon et al., 2014; Ramkissoon & Mavondo, 2015). Visitor satisfaction also affected the future behaviour of the visitors (H₁₉ was accepted),

which signifies that when the visitor is satisfied with their visit to the forest park, they tend to revisit the place in the future and recommend the place to their family and friends, which then leads to the attachment to the particular place (O'Neill, et al., 2010; Ramkissoon & Mavondo, 2015). The final hypothesis is *future behaviour directly affects the development of place attachment of the visitor* (H₂₀). This hypothesis was accepted, which indicates that the future behaviour of the visitor increases the development of bonding between the person and the place. Intention to revisit a destination allows them to develop an attachment to the place and encourages them to act pro-environmentally during their visit to the forest park (Sivaliöglu, & Berköz, 2012; Oliver, 2000). Findings from this chapter provides robust empirical data on the outdoor recreational experience that can be used by the park management to improve outdoor recreation and resource management. Information about visitor recreational experience can aid better management and optimise visitor satisfaction. The park management can facilitate more opportunities for the visitors to experience outdoor recreation and improve their understanding of the attitude and behaviour of the visitors. Therefore, suitable resource management strategies can be developed to achieve demands by the visitors, while conserving and managing the forest in sustainable ways.

Chapter 7

DISCUSSION AND CONCLUSION

This chapter discusses the findings from this research and offers a conclusion. The first part summarises the research output, particularly focussing on the significant findings (sub-topic 7.1). A brief discussion on the efficacy of the outdoor recreational experience model is then presented (sub-topic 7.2). Finally, a conclusion is presented in sub-topic 7.3, followed by the research implications (sub-topic 7.4) and research limitations (sub-topic 7.5).

7.1 Summary of research findings

This research aims to explore the relationship between motivation, place attachment, attitude-behaviour, and satisfaction of outdoor recreation participants in forest parks. These four main aspects of outdoor recreation are adequate to explain the overall process of recreational experience sought by the visitors during their participation in outdoor activities. Alice Holt Forest and Haldon Forest Park were selected as study areas. Besides providing good infrastructures for the visitors, they accommodate various types of outdoor activities. The activities range from the passive (enjoying nature, wildlife observation) to adventure activities (mountain biking and rope course activities), leading to high numbers of visitors annually. The background of the forest park visitors was not too different. Women dominated the gender proportion in this study, for both forest parks. This may be because the sampling points of the study were located in such places as play areas, the café, the visitor centre (entrance) and also locations which were mostly visited by women with children, such as the Gruffalo sculptures. Playing with children was the main activity for the female respondents of Alice Holt Forest, while exercise was the favourite activity for those of Haldon Forest Park. In general, most of the respondents in this research went to the forest parks with their family members, including their children. Having a child in their group seems to have influenced the selection of the places they visited in the park, and the kinds of

activities they chose for outdoor recreation. This is consistent with the findings from a study where visitors with children preferred recreational activities and sites within the scenic area, and they more interest in family recreation as compared to counterpart groups (Lee et al., 2006). Family recreation refers to the family participating in leisure activities together (Hornig, 2005). This study found that parents, especially a mother, would probably choose a place that provides good facilities and a safe environment for the children, such as a playground, clean toilets with a changing room and also a good café. In addition, special features in a forest, such as the aforementioned Gruffalo sculptures, help to attract visitors. It can be said that the aim the park management of Alice Holt Forest has set in providing an attractive and interesting natural environment for the family to spend their leisure time has been successful. In addition to offering this kind of family recreation, visiting the park has a lot of other benefits for people, including encouraging a healthy lifestyle, strengthening family bonds and increasing levels of happiness. These can be effective channels for developing a healthy youth (Mannell & Kleiber, 1997; Hornig, 2005; Lee et al., 2006; Lee, 2008).

Based on the types of outdoor activities on offer, the visitors' motivation to pursue their leisure time at forest parks were examined using the Recreation Experience Preference (REP) scale (Driver, 1983). It is important to select suitable dimensions of the REP scale based on the specific sites and the population (Manfredo et al., 1996). This research used five dimensions of REP to represent recreational motivation (escaping physical pressure, learning, enjoying nature, family togetherness, and health) based on the range of activities offered at both forest parks. Among all the dimensions, family togetherness was found to be the most important motivation for the respondents of Alice Holt Forest and also for the walkers group. This result was reflected by the composition of the walkers group, the participants mostly being women who visited forest parks with their families and children. In the case of Alice Holt Forest, easy access, adequate space to move around and good facilities were among the reasons the visitors chose the forest park as their place to conduct activities with the family. Enjoying nature and wishing to improve health were the primary motivations for the respondents of Haldon Forest Park. As most of the

respondents from Haldon Forest Park were cyclists, enjoying nature while riding in the forest was important for most of them, and that cycling could help to reduce tensions for them. A previous study had found that viewing outdoor scenes produced positive feelings and reduced symptoms related to stress (Mace et al., 2004). For the dog walkers group, escaping physical pressure by experiencing tranquillity and being away from the crowds was their motivation for being in the forest park. The open spaces for their dogs to move around in in the forest, and the uncrowded environment were important for making their dogs feel comfortable during their visits to the forest park. For some of the focus group participants at Alice Holt Forest, their experience of encountering wildlife in the forest was one of the better ways of learning more about the environment. Direct contact with nature through participatory experiences was effective in changing people's behaviour toward the environment, more so than using indirect experiences (Rajecki, 1982). Such experiences can be more valuable for children, helping to make them more likely to appreciate the forest and nature in the future.

Constraints to participating in outdoor activities were explored in the focus group. Limited parking spaces with expensive parking charges were one of the barriers raised by the participants at Alice Holt Forest. The issue of parking charges was also highlighted in the survey, where visitor satisfaction with both forest parks produced a neutral feeling. Hence, park managers should emphasise this issue because parking facilities are an essential part of the infrastructure of these forest parks. If this issue is not handled properly, visitors would potentially choose another site in order to perform their outdoor activities. However, in the case of Alice Holt Forest, the Forestry Commission of England offers the Discovery Pass, which can be bought and used for one year. This is an alternative way for regular visitors to visit that particular forest as often as they want at a lower price. During the focus group discussion, the cafe at Alice Holt Forest was being renovated in order to expand its size. Limited services at the replacement temporary café was also a constraint for the participants who visited Alice Holt Forest regularly. They did not feel comfortable with the environment where the management had set up the café, i.e. near a playground. Furthermore, the limited choice of foods and beverages was also an influence on

their decision to visit the forest park. The other constraint related to the infrastructure was limited swings in the play areas because the swings were always under high demand from the visitors with small children. This constraint could be overcome by adding more swings in the play areas. Apart from the infrastructure in the forest, having health problems was the other barrier that constrained visitors from performing their outdoor activities. Limited ability to move comfortably might reduce the satisfaction of doing one's favourite activity while visiting the park. On the other hand, being in the forest can be beneficial through enhancing a person's health, including reducing stress (Mace et al., 2004).

People-place bonding is another important aspect in recreational experience. In general, the survey results showed that there was no strong bond between the respondents and the forest parks. This result can be justified by the descriptive data, where the mean values for most of the place attachment elements lay between 'strongly disagree' and 'neutral'. However, there were a few instances of place attachment discovered through the focus group discussion at Alice Holt Forest. This study found that childhood memories sometimes influenced the affective attachment between a person and the forest. One of the participants who was brought up at Alice Holt Forest and now lived near the forest shared that her routine of visiting the forest every day to walk and remember her childhood memories at a few spots in the forest made her day valuable. She even said that she might go mad if she was not able to go to the forest. This attachment is valued more as an emotional bonding between a person and place. This finding proves that "the emotional attachment that forms between a person and place usually involves strong sentiments that see them unwilling to substitute their 'place' for another and often results in heightened concerns about how the places are managed" (Gunderson & Watson, 2007 in Tonge, et al., 2013, p. 43). Social bonding was another attachment found in this study. A few participants in the focus group had known each other for quite some time, and they enjoyed having a coffee morning at the café in Alice Holt Forest every day. To them, that was the best time and activity that made them socialise with their close friends. The friendship that these participants had developed over the years somehow indicates that their social bonding has led to an attachment to the forest park. In another situation, a visitor may develop an attachment to

a place because it satisfies specific needs and serves a functional purpose (Kaplan & Kaplan, 1989). The good facilities for the visitors, such as the toilets, café, and visitor centre, and the various activities offered at Alice Holt Forest, along with other attractions such as the Gruffalo sculptures, have helped in building an attachment between the people and the place. This is called place dependence.

The attitude-behaviour of the visitors, including their environmental concern during their visit to the forest parks, was measured using The Theory of Planned Behaviour and The New Ecological Paradigm. The desired behaviour set in this study was on the ability for a visitor to follow the designated trails during his/her visit to the forest, and not stray off into the woodland. This study found that there was no significant difference in the recreational behaviour between the two forest parks nor between the three user groups. The respondents responded positively to each of the elements of The Theory of Planned Behaviour about the desired behaviour. This result reflects that the attitude and behaviour of the visitors of Alice Holt Forest and Haldon Forest Park were in positive, regardless of their preferred types of activity. Most of them self-reported that it was possible for them to stick on the trail during their visit to the forest in order to minimise disturbance to the wildlife and protect ground-nesting birds. However, there have been researchers who have argued that self-reporting is somehow vague when it relates to a person's attitude or behaviour. Thus, it is recommended an observation study be conducted, apart from the survey, to capture the real behaviour of the visitors. For environmental concern, there was no significant difference between the respondents from Alice Holt Forest and Haldon Forest Park with regards to the three categories of beliefs (eco-centric, dual-centric, and techno-centric). Visitor perceptions of environmental disturbance and the social issue regarding outdoor recreation was investigated during the focus group discussion. Questions regarding their experiences during the visit to the forest were probed using pictures that related to the three topics (multiple users, user attitudes, and environmental issues). This study found that multiple user conflict occurred at Alice Holt Forest between walkers and runners, cyclists with buggies and another particular trail user, and the presence of horse riders along the walking trail. These kinds of conflicts could lead to a disruption of the experience sought by the visitors, and can even be

dangerous, especially for visitors with small children. Litter problems and handling dog waste in the forest were the issues caused by user attitude. Environmental education programmes, such as 'Leave No Trace', could be organised by the forest managers to increase awareness among the visitors on how important it is to implement good practices while pursuing their outdoor activities in the forest. In relation to the environmental issues, pictures of muddy trails and the development of multiple trails in the forest were shown to the focus group. Most of the participants found no issues or problem with these situations. Only one of the participants acknowledged the negative side of creating multiple trails in the forest. The situation might be pleasant for visitors who love adventurous activities such as trekking but creating new trails could diminish ground vegetation and disturb small animals. Hence, awareness campaigns and forest education could help to increase the visitors' knowledge on the importance of natural resources and also to encourage them to follow the rules while in the forest.

This study also aimed to explore the relationship between socio-demographic characteristics, motivation, place attachment, environmental concern, visitor satisfaction and future behaviour. Structural Equation Modelling (SEM) was used to investigate the relationships. This study found that gender influenced the development of place attachment at forest parks. The result is in line with findings by Hidalgo and Hernandez (2001), that gender may play an important role in place bonding. Previous studies have also suggested that females create more attachment to a place, especially with regard to social engagement, as compared to males (Pretty et al., 2003; Tartaglia, 2006). Besides gender, the result indicates that visitor motivation to participate in outdoor activities in the forest would potentially develop bonds between the person and the place. The influence of Recreation Experience Preference on place attachment has been previously explored. Halpenny (2006) reported that enjoying nature and spending time with family or friends would significantly and positively predict place attachment, while Anderson and Fulton (2008) found that learning as a motivation positively influenced place identity. In addition, sharing positive experiences together may create a feeling of uniqueness among family members that leads to attachment and bonding within the family and also to the place (Zabriskie & McCormick, 2001). The empirical data show that environmental concern was significantly

influenced by visitor motivation to perform outdoor recreational activities. This result suggests that people with a motive to be close to nature and learn about nature has pro-environmental attitudes as compared to those who are motivated to develop skills and experience new things (Luo and Deng, 2008). This study found that recreational motivation affects visitor attitudes, subjective norms and perceived behavioural control. The types of activity performed by the visitor is closely related to the motivation. Therefore, it can be concluded that the types of activity that individuals perform during their visit to the forest park may influence how they respond to pro-environmental behaviour. Previous studies have stated that place attachment increases pro-environmental behaviour in a person (Ramkissoon et al., 2013, 2014). In contrast, this study found that visitor attitudes, subjective norms and perceived behavioural control decreased with the influence of place attachment. This finding may be the result of the neutral bonds between the respondents and the forest parks, as reported in the survey, or it may be because of the small sample size in the study. However, the respondents had a positive attitude and behaviour toward desired behaviour. Visitor attitude toward pro-environmental behaviour influenced their satisfaction of participating in outdoor recreation activities. This finding is supported by previous studies covering the relationships among visitor attitude, satisfaction, and future behaviour (Ragheb & Tate 1993; Lee, 2007; Ramkissoon et al., 2014; Ramkissoon & Mavondo, 2015). Visitor satisfaction has also been found to have a direct effect on future behaviour. This result signifies that when the visitor is satisfied with their visit to the forest park, they tend to revisit the place in the future and recommend the place to their family and friends, which then leads to the development of emotional ties with the natural settings (O'Neill, et al., 2010; Ramkissoon & Mavondo, 2015). Ramkissoon et al. (2014) found that visitor satisfaction has a strong effect on visitor place attachment. Intention to revisit a destination is "a proxy for loyalty as the likelihood to return to a destination for future vacations reveals a deeply held commitment" (Oliver, 1997, p. 32). In brief, the more satisfied visitors are, the more likely they are to visit the place again, which then allows them to develop an attachment to the place (Sivaliöglu & Berköz, 2012) and encourages them to act pro-environmentally during their visit to the forest park (Oliver, 2010).

7.2 The efficacy of integrating The General Model of Motivation and Theory of Planned Behaviour in understanding outdoor recreational experience in the forest parks

The primary contribution from this study to the body of knowledge is by providing empirical data of a visitor's outdoor recreational experience. This study has attempted to develop an Outdoor Recreation Experience Model. The tested model was accepted, although some of the values indicated the need for potential improvement. This proposed model can be used to explain the overall outdoor recreational experience of the visitors to forest parks. The Outdoor Recreation Experience Model was developed by integrating two theories with other related concepts. These were The Theory of Planned Behaviour, The General Theory of Motivation, and the place attachment concept. There are advantages and disadvantages of integrating these theories and concepts into one theoretical framework. The first advantage of the model is that the integration of the theories and concepts in a theoretical framework allows the researcher to understand the whole process of outdoor recreation experienced by the visitors. This includes pre-experience, which refers to the motivation for visiting and attachment to the forest. This was also denoted by the socio-demographic characteristics of the visitors, such as gender, level of education, income and other characteristics. The process of experience was then followed by the behaviour and environmental attitude held by the visitors during their visits to the forest park. Finally, visitor satisfaction and future behaviour were measured to look further at how the visitors evaluated the experience during their participation in outdoor activities in the forest parks. Secondly, by using the Outdoor Recreation Experience Model, the potential relationship between the recreation experiences variables involved in the model could be examined. The findings discussed in previous chapters denoted that there were a number of significant results in structural equation modelling that denoted the development of the relationship between certain important perspectives of outdoor recreational experience. From the results, researchers and future studies can replicate the model or test the same model using a different set of samples or cross-validate the results with another sample from other forest parks or countries, even. Finally, the Outdoor Recreation Experience Model can also be used to evaluate the visitor experience not only through using a quantitative approach but also a qualitative approach. Using

the model, qualitative researchers can adopt it to evaluate results using a qualitative approach. This will be useful for expanding the knowledge of outdoor recreational experience not only through statistical analysis but also by using an analytical analysis. However, there are some shortcomings in the model of this study. The results of SEM show that the model was accepted, but with some of the value of fitness indices indicating the need for potential improvement. This result means that there are some modifications required to improve the structural model. These may include adding more variables or reducing any irrelevant ones. However, to do this, the researchers should test the model first to identify which variables work well in the model for a particular sample size. Another disadvantage is that The Outdoor Recreation Experience Model does not include actual behaviour. The proposed model in this study was intended to evaluate only the behavioural intentions of the visitors related to performing the desired behaviour. Future research can move further along by including the actual behaviour of the visitors during their participation in outdoor activities.

7.3 Conclusion

An effective park management system can be achieved by implementing sustainable conservation of the natural resources and, at the same time, provide recreational opportunities for people to experience nature. These resources and social aspects in recreational management are the dual mandates that are the responsibility of the park managers. Within the scope of recreational resource management, natural resources, such as soil, vegetation, water, and wildlife, must be protected to provide the recreational experience demanded by the visitors. On the other hand, the social aspects with regards to the visitors' experience, including their attitude and behaviour towards the natural resources, need to be controlled. Thus, both of these recreational management aspects are important, and they need to be considered together when developing a successful forest park. The present study focuses on evaluating the relationship of several important aspects that explain the recreational experience process; these include socio-demographic characteristics, recreational motivation, place attachment, attitude and behaviour, as well as satisfaction. This study employed an explanatory sequential mixed methods approach

(involving quantitative and qualitative methods), which is considered one of its strengths. The combination of multiple methods provides the park managers with a more holistic picture of recreation, and has enhanced the knowledge about the research topics, both in capturing a variety of perspectives and in exploring in-depth meanings (Davenport et al., 2002). A survey questionnaire, interviews, a focus group and photo-elicitation were the methods used to investigate the outdoor recreational experience of four main user groups (walkers, dog walkers, cyclists, and horse riders) at two forest parks – Alice Holt Forest and Haldon Forest Park.

The study is important to park management and academia in providing empirical data of the social aspects of visitors to forest parks, including an understanding of the recreational experience sought by them. Data on recreation motivation were used to investigate the factors that influence visitors to participate in outdoor recreational activities, mainly in forest parks. The information is useful in addressing which suitable types of activities may be offered to maximise the function of the available resources while protecting the natural resources from degradation. This information also helps to distinguish visitors according to their types of activities. Place attachment is another imperative aspect in this study. Examining the relationship between visitors and the forest parks may assist in decision-making by the park administration to develop strategies for providing facilities and an environment that is favourable to the visitors, one from which they may develop loyalty to the forest park. In addition, using an effective tool such as photo-elicitation is valuable in identifying place attachment when considering the plan to preserve places that have special sentimental value to the visitors (Beckley et al., 2007). Researching on visitor attachment to the forest was also useful in getting the visitors and local people to become engaged directly in the forest management and conservation through participatory programmes. The third aspect in outdoor recreational experience was the attitude and behaviour of the visitors. Studying this aspect provided an insight into how the visitors would react to certain conditions. This study focussed on the willingness of visitors to obey the rule as one of the actions that could lead to the protection of the natural resources in the forest. Assessing this attitude-behaviour may contribute to effective resource and visitor management plans in the forest parks. Using the right strategy to manage the visitors can minimise heavy

degradation of the resources, and if a problem can be detected earlier, a suitable protection plan can be implemented. Visitor satisfaction is crucial in outdoor recreational management because it involves two important factors – time and money. Good recreational experience will produce happy customers. Thus, measuring visitor satisfaction is vital in that it informs the park management on ways to improve the quality of services and facilities, develop loyalty among the visitors, and also manage the resources in sustainable ways. The park management of Alice Holt Forest should pay more attention to expanding their recreational activities and opportunities for family-type visitors, while Haldon Forest Park should focus on their main customers, which are the cyclists. With all this information on visitor motivation, place attachment, attitude-behaviour and satisfaction, both forest parks can develop a realistic recreation management plan that will be very useful in both satisfying the visitors and protecting the resources. This study also aimed to develop a model that represented the visitor outdoor experience process. The Outdoor Recreation Experience Model is an integration of two bodies of theories and other related concepts. Using Structural Equation Modelling (SEM), this proposed model was tested. The fitness indices results show that the structural model can be accepted but that some of the values indicated the potential for improvement. The model can be informative in that it provides information about the relationships between all the aspects of the recreational experience. The overall outdoor recreational experience can be explained by this model, and it is useful not only for the results of its quantitative study, but also for its qualitative study. The model can be a reference in designing a similar study and can be tested with different samples anywhere in the world.

In conclusion, the findings from this study benefit the park management in that they reflect robust empirical data on the outdoor recreational experience. Employing an explanatory mixed method has provided a thorough process to help us understand each aspect in the process of the outdoor recreational experience. Even though the number of samples was relatively small compared to the target number, this study has still produced valuable findings that can answer the research questions. However, some recommendations may help in improving this kind of study should it be conducted in the future. First, future research may apply the Outdoor

Recreation Experience Model and test the efficacy of the model on different populations and sites. There might be different findings from other studies that can help to improve the fitness of the model. Also, the replication of similar studies to similar forest parks would be useful in order to create visitor data over multiple years. From there, trends of the outdoor recreational experience of the visitors of Alice Holt Forest and Haldon Forest Park could be assessed. Finally, cooperative planning between park managers and university researchers can greatly improve the quality and usefulness of this kind of research (Fletcher & Fletcher, 2003; O'Neill, et al., 2010).

7.4 Research Implications

The implications of this research to the body of knowledge is that it has provided empirical data on the outdoor recreational experience for visitors of UK forests, particularly for Alice Holt Forest and Haldon Forest Park. Information about visitor recreational experience can aid better management, as well as optimise visitor satisfaction. Park management can facilitate more opportunities for the visitors to experience nature, learn about the woodland, use recreational equipment and facilities at their convenience, and provide a variety of activities. The efforts are valuable for the improvement of recreational management plans that include visitor management and resource protection. Besides this, understanding the recreational experience of the visitors can give insights to the park managers leading to a better understanding of the attitude and behaviour of their clients (visitors). From there, suitable resource management strategies can be developed to achieve demands by the visitors, while conserving and managing the forest in sustainable ways. Therefore, successful park management may increase the number of visitors, which could then lead to a healthy population.

7.5 Research limitations

There are several limitations arising from this research. First, this study did not undergo a pilot study due to time constraints. In addition, it was challenging to get park visitors to become involved in this study. This was probably due to time constraints, particularly during the survey period, where the participants wanted to do their outdoor activities rather than spend 20

minutes answering the questionnaire. Furthermore, the weather was also an important factor to be considered. Relatively cold weather during the autumn and winter contributed to the low response rate. Regarding the small number of participants at the Participatory Research Day, the researcher tried her best to advertise the recruitment with the help from the rangers at the forest parks. Unfortunately, the researcher did not manage to attract more visitors to be part of this research. Secondly, the researcher did not manage to apply the exact same methods for each of the forest parks. The online survey, as an alternative to capture respondents, was rejected by Alice Holt Forest. Hence, this study only obtained the on-site survey from the Alice Holt Forest. Finally, The Outdoor Recreation Experience Model was tested in specific settings – Alice Holt Forest and Haldon Forest Park. Therefore, it cannot be generalised. However, the replication of this study in other settings is suggested. This can provide opportunities to evaluate the function of each aspect embedded within the model. An application of the model to other settings would help to produce reliable indicators, and further validate the constructs, thus producing a more robust and stable model.

References

- Ainsworth, M. D. S., and Bell, S. (1970). Attachment, Exploration, and Separation: Illustrated by the Behavior of One-Year-Olds in a Strange Situation. *Child Development*, 41(1), 49-67.
- Ajzen, I., and Fishbein, M. (1980). Understanding attitudes and predicting social behaviour. New Jersey: Prentice-Hall Inc.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50: 179-211.
- Ajzen, I. (2002). Constructing a TPB Questionnaire: Conceptual and Methodological Considerations. Working Paper, University of Massachusetts, Amherst, September 2002 (available online at <http://www-unix.oit.umass.edu/~aizen/pdf/tpb.measurement.pdf>)
- Anderson, D.H., Wilhelm Stanis, S. A., Schneider, I. E., and Leahy, J. E. (2008). Proximate and distant visitors: Differences in importance ratings of beneficial experiences. *Journal of Park and Recreation Administration*, 26(4): 47-65
- Anderson, D. H., and Fulton, D. C. (2008). Experience Preferences as Mediators of the Wildlife Related Recreation Participation: Place Attachment Relationship. *Human Dimensions of Wildlife*, 13(2):73-88
- Armitage, C. J., and Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40: 471-499.
- Awang, Z. (2014) A Handbook on SEM, MPWS Publisher.
- Babbie, E. (2011). Introduction to Social Research (5th Ed). Canada: Wadsworth, Cengage Learning.
- Backman, K., Backman, S., and Malinovsky, J. (2000). An assessment of service quality in a nature-based tourism setting. *Journal of Quality Assurance in Hospitality and Tourism*, 1(2): 9-30
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, 13(4): 544-556.

Bayfield, N. G. (1973). Use and deterioration of some Scottish hill paths. *The Journal of Applied Ecology*, 10: 635-644

Beckley, T.M., Stedman, R.C., Wallace, S.M., and Ambard, M. (2007). Snapshots of what matters most: using resident-employed photography to articulate attachment to place. *Society and Natural Resources*, 20: 913–929.

Berns, G. N., & Simpson, S. (2009). Outdoor recreation participation and environmental concern: A research summary. *Journal of Experiential Education*, 3(1)

Bjerke, T., And, C. T., and Kleiven, J. (2006) Outdoor recreation interests and environmental attitudes in Norway. *Managing Leisure*, 11(2): 116-128

Bjorkman, A.W. (1996). Off-road bicycle and hiking trail user interactions: A report to the Wisconsin Natural Resources Board. Wisconsin Natural Resources Bureau of Research, Madison, WI.

Boldero, J. (1995). The prediction of household recycling of newspapers: The role of attitudes, intentions, and situational factors. *Journal of Applied Psychology*, 31:1300-1329

Bowlby, J. (1980). Attachment and loss: Loss (Vol. 2). New York: Basic Books.

Botterill, D. (2001). The epistemology of a set of tourism studies. *Leisure Studies*, 20(3):199-214

Bricker, K. S., and Kerstetter, D. L. (2000). The level of specialisation and place attachment: An exploratory study of Whitewater Recreationists. *Leisure Sciences: An Interdisciplinary Journal*, 22(4): 233-257.

Brown, G., Kangas, K., Juutinen, A., and Tolvanen, A. (2017). Identifying Environmental and Natural Resource Management Conflict Potential Using Participatory Mapping, *Society & Natural Resources*, 30(12): 1458-1475.

Budruk, M., & Stanis, S. A. W. (2013). Place attachment and recreation experience preference: A further exploration of the relationship. *Journal of Outdoor Recreation and Tourism*, 1: 51-61.

Byrne, B. M. (2001). Structural equation modelling with AMOS: Basic concepts, applications, and programming. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Calais, S.S. and Kirkpatrick, J.B., (1986). The impact of trampling on the natural ecosystems of the Cradle Mt. - Lake St. Clair National Park. *Aust. Geogr*, 17: 6-15.

Caglar, E., Canlan, Y., Demir, M. (2009). Recreational exercise motives of adolescents and young adults. *Journal of Human Kinetics*, 22: 83 – 89

Chan, K. (1998). Mass communication and pro-environmental behaviour: Waste recycling in Hong Kong. *Journal of Environmental Management*, 52: 317-325

Chan, R.Y.K., and Lau, L.B.Y. (2002). Explaining green purchasing behaviour: A cross-cultural study on American and Chinese consumers. *Journal of International Consumer Marketing*, 14: 9-40

Chao, Y-L. (2012). Predicting people's environmental behaviour: Theory of planned behaviour and model of responsible environmental behaviour. *Environmental Education Research*, 18(4): 437-461.

Cheung, S. F., and Chan, D.K-S. (1999). Re-examining the theory of planned behaviour in understanding wastepaper recycling. *Environment and Behaviour*, 31:587-612

Chon, K.S. (1989). Understanding Recreational Traveler's Motivation, Attitude and Satisfaction. *The Tourist Review*, 44(1): 3-7

Chu, P-Y., and Chiu, J.-F. (2003). Factors influencing household waste recycling behaviour: Test of an integrated model. *Journal of Applied Social Psychology*, 33:604-626.

Clark, R.N. (1987). Recreation management: A question of integration. *Western Wildlands*, 13(1), 20–23.

Clark, R. N., and Stankey, G. H. (1979). The recreation opportunity spectrum: A framework for planning, management, and research. Portland, OR

Cole, D.N. (1990). Ecological impacts of wilderness recreation and their management. In J.C. Hende, H. Stankey, and R.C. Lucas, *Wilderness Management*, 2nd Edn. Golden, CO: North American Press, pp. 425-466

Cole, D.N. (1991). Changes on Trails in the Selway-Bitterroot Wilderness, Montana 1978-89. Research Paper INT-450. USDA Forest Service, Intermountain Research Station, Ogden, UT.

Coleman, R. (1981). Footpath erosion in the English Lake District. *Applied Geography* 1:121-131

Crossan, F. (2003). Research philosophy: Towards an understanding. *Nurse Researcher*, 11(1): 46-55

Dann G. (1977). Anomie, Ego enhancement and Tourism. *Annals of Tourism*, 4(4):184- 194.

Davenport, M.A., Borrie, W.T., Freinund, W.A., and Manning, R.E. (2002). Assessing the relationship between desired experiences and support for management actions at Yellowstone National Park using multiple methods. *Journal of Park and Recreation Administration*, 20(3): 51-64

Dawson, C. (2006). A Practical Guide to Research Methods – A User-friendly Manual for Mastering Research Techniques and Projects (2nd Ed). Oxford: How to Books Ltd.

Dempster, M., Mclean, C., Daniels, C., and Barucchi, T. (2008). Assessing Trail Degradation on the Hermit Trail, Glacier National Park, BC. *Geography* 477: University of Victoria.

Devesa, M., Laguna, M., and Palacios, A. (2010). The Role of Motivation in Visitor Satisfaction: Empirical Evidence in Rural Tourism. *Tourism Management*, 31:547-552

Devine-Wright, P., and Clayton, S. (2010). Introduction to the special issue: Place, identity, and environmental behavior. *Journal of Environmental Psychology*, 30: 267-270

Diamantis, D. (2004). Ecotourism management: An overview Ecotourism: Management and Assessment (pp. 3-26). London: Thomson.

Dorwart, C. E., Moore, R. L., and Leung, Y.-F. (2006). Visitor Employed Photography: Its Potential and Use in Evaluating Visitors' Perceptions of Resource Impacts in Trail and Park Settings, Paper presented at the 2006 Northeastern Recreation Research Symposium, Bolton Landing, New York.

Douglass, R. W. (1975). *Forest Recreation* (2nd Edn.). New York: Pergamon Press, Inc.

Douglass, R. W. (2000). *Forest Recreation* (5th Edn.). Illinois: Waveland Press, Inc.

Driver, B.L. (1983). Master list of items for Recreation Experience Preference scales and domains. Unpublished document. USDA Forest Service, Fort Collins, CO: Rocky Mountain Forest and Range Experiment Station

Dunlap, R.E., Van Liere, K. D., Mertig, A.G., and Jones, R.E. (2000). Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues*, 56(3): 425-442

Eagles, P. (2001). *International Trends in Park Tourism*. EUROPARC 2001. Edition 4:17 September 2001.

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *The Academy of Management Journal*, 50(1): 25-32

Elands, B. and van Marwijk, R. (2008). Keep an eye on nature experiences: Implications for management and simulation. In Gimblett, R. and Skov-Petersen, H., editors, *Monitoring, Simulation and Management of Visitor Landscapes*, pages 59–84. Tucson, USA, University of Arizona Press.

Ellis, C. and Vogelsong, H. (2002). Assessing indicators relating to overall tourist satisfaction of ecotourism developments in Eastern North Carolina. *Proceedings of the 2002 Northeastern Recreation Research Symposium*, 52-57.

Ewert, A. W., Dieser, R. B., and Voight, A. (1999). Conflict and the Recreational Experience. In E. L. Jackson, and T. L. Burton (Eds.), *Leisure Studies: Prospects for the 21st Century* (pp. 335-343). State College, PA: Venture

Ewert, A., Place, G., and Sibthorp, J. (2005). Early-life outdoor experiences and an individual's environmental attitudes. *Leisure Sciences*, 27:225-239

Farrell, T.A., and Marion, J. L. (2002). Trail impacts and trail impact management related to ecotourism visitation at Torres del Paine National Park, Chile, Leisure/ Loisir. *Journal of the Canadian Association for Leisure Studies*, 26: 31-59

Fefer, J., De Urioste-Stone, S. M., Daigle, J., & Silka, L. (2018). Understanding the perceived effectiveness of applying the visitor experience and resource protection (VERP) framework for recreation planning: A multi-case study in U.S. national parks. *The Qualitative Report*, 23(7): 1561-1582.

Fishbein, M., and Ajzen, L. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. London: Addison-Wesley.

Fishbein, M., and Ajzen, I. (1980). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, Mass: Addison-Wesley

Fletcher, D., and Fletcher, H. (2003). Manageable predictors of park visitor satisfaction: Maintenance and personnel. *Journal of Park and Recreation Administration*, 21(1):21-37

Fulton, D.C., Manfreda, M.J., and Lipscomb, J. (1996). Wildlife value orientations: A conceptual and measurement approach. *Human Dimensions of Wildlife*, 1(2): 24-47

Floyd, M. F., Bocarro, J. N., and Thompson, T. D. (2008). Research on Race and Ethnicity in Leisure Studies: A Review of Five Major Journals. *Journal of Leisure Research*, 40(1): 1-22

Foster, D. (1999). Measuring Customer Satisfaction in the Tourism Industry. Paper presented at the Third International & Sixth National Research Conference on Quality Management, Melbourne, Victoria.

Gale, T., and Beeftink, K. (2005). Exploring Differences between Positivist and Post-positivist Philosophy: An Interpretivistic Case Study of Tourist Expectation and Satisfaction. In: Peden, John G.; Schuster, Rudy M., comps., eds. *Proceedings of the 2005 north eastern recreation research*

Garst, B., Schneider, I.E., and Baker, D. (2001). Outdoor adventure programme participation impacts on adolescent self-perception. *Journal of Experiential education*, 24(1): 41-49

Geisler, C. C., Martinson, O. B., & Wilkening, E. A. (1977). Outdoor recreation and environmental concern: A restudy. *Rural Sociology*, 42(2): 241–249.

Gentin, S. (2011). Outdoor Recreation and Ethnicity in Europe – A Review. *Urban Forestry & Urban Greening*, 10:153-161

Gu, H., & Ryan, C. (2008). Place attachment, identity and community impacts of tourism – The case of a Beijing Hutong. *Tourism Management*, 29(4): 637–647

Guba, E.G., and Lincoln, Y.S. (1998). Competing Paradigms in Social Research. In N.K. Denzin, and Y.S. Lincoln (Eds). *The Landscape of Qualitative Research*. London: Sage

Gunderson, K. and Watson, A.E. (2007). Understanding Place Meanings on the Bitterroot National Forest, Montana. *Society & Natural Resources*, 20(8): 705-721

Gustafsson, J. (2017). Single case studies vs multiple case studies: A comparative study. [Online] Available <http://www.diva-portal.org/smash/get/diva2:1064378/FULLTEXT01.pdf>. [2018, May 2].

Hall, C. M., and Page, S. J. (1999). *The Geography of Tourism and Recreation*. London: Routledge

Halpenny, E. (2006). *Environmental behavior, place attachment and park visitation: A case study of visitors to Point Pelee National Park*. Unpublished doctoral theses, University of Waterloo, Waterloo, Ontario, Canada

Hammit, W. E., and Schneider, I. E. (2000). Recreation Conflicts Management. In W. C. Gartner and D. W. Lime. (Eds.), *Trends in Outdoor Recreation, Leisure, and Tourism* (pp. 347-356). Wallingford, UK: CABI Publishing.

Hammit, W. E., Cole, D. N., and Monz, C. A. (2015). *Wildland Recreation: Ecology and Management* (3rd Ed). New York: John Wiley and Sons.

Harland, P., Staats, H., and Wilke, H.A.M. (1999). Explaining pro-environmental intention and behaviour by personal norms and the theory of planned behaviour. *Journal of Applied Social Psychology*, 29:2505-28

Harmon, D. (2006). *People, places, and parks: Proceedings of the 2005 George Wright Society Conference on Parks, Protected Areas, and Cultural Sites*. Hancock, Michigan: The George Wright Society

Hartig, T., Book, A., Garvill, J., Olsson, T., and Garling, T. (1996). Environmental influences on psychological restoration. *Scandinavian Journal of Psychology*, 37(4): 378-393

Hendee, J.C. (1969). Rural-urban differences reflected in outdoor recreation participation. *Journal of Leisure Research*, 1: 333-341

Henderson, K. A., Presley, J., and Bialeschki, M. B. (2004). Theory in Recreation and Leisure Research: Reflections from the Editors. *Leisure Sciences*, 26: 411-425

- Henderson, K.A. (2011). Post-positivism and the pragmatics of leisure. *Leisure Sciences*, 33(4): 341-346
- Hendricks, J. and Burdge, R. (1972). The nature of leisure studies: A reflection and comment. *Journal of Leisure Research*, 4: 215-217.
- Hidalgo, M. C., and Hernandez, B. (2001). Place attachment: Conceptual and empirical questions. *Journal of Environmental Psychology*, 21: 273-281
- Hinds, J., and Sparks, P. (2008). Engaging with the natural environment: The role of affective connection and identity. *Journal of Environmental Psychology*, 28(2): 109-120
- Hines, J.M., Hungerford, H.R., & Tomera, A.N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *Journal of Environmental Education*, 18(2): 1-8
- Ho, C., Sasidharan, V., Elmendorf, W., Willits, F.K., Graefe, A. and Godbey, G. (2005). Gender and ethnic variations in urban park preferences, visitation and perceived benefits. *Journal of Leisure Research*, 37: 281-306
- Hollenhorst, S., and Garner, L. (1994). The indicator performance estimate approach to determining acceptable wilderness conditions. *Environmental Management*. 18(6): 901-906.
- Hornig, E. (2005). Bringing family back to the park. *Parks and Recreation*, 40(7): 47-50
- Hrubes, D., Ajzen, I., and Daigle, J. (2001). Predicting hunting intentions and behaviour: An Application of the Theory of Planned Behaviour. *Leisure Sciences*, 23:165-178.
- Hummon, D. M. (1992). Community attachment: Local sentiment and sense of place. In I. Altman and S. M. Low (Eds). *Place Attachment* (pp. 253-277). Plenum Press: New York.
- Jackson, E. L. (1986). Outdoor recreation participation and attitudes to the environment. *Leisure Studies*, 5: 1-23
- Jacobsen, J. K.S. (2007). Use of Landscape Perception Methods in Tourism Studies: A Review of Photo-Based Research Approaches. *Tourism Geographies*, 9(3): 234-53.
- Jensen, J. L., and Rodgers, R. (2001). Cumulating the Intellectual Gold of Case Study Research. *Public Administration Review*, 61(2): 236-246

Jensen, C.R. (1995). *Outdoor Recreation in America* (5th ed). Champaign, IL: Human Kinetics

Johnson, C.Y., Bowker, J.M., and Cordell, H.K. (2004). Ethnic variation in environmental belief and behaviour: An examination of the New Ecological Paradigm in a social psychological context. *Environment and Behaviour*, 36: 157-186

Jorgensen, B., and Stedman, R. (2001). Sense of place as an attitude: Lakeshore owners' attitude toward their properties. *Journal of Environmental Psychology*, 21(3): 233-248

Kahn and Cannel (1987) in Marshall, C., and Rossman, G.B. (1999). *Designing Qualitative Research*. London: Sage Publication

Kaplan, R. and Kaplan, S. (1989). *The experience of nature: A psychological perspective*. New York: Cambridge University Press.

Kasarda, J. and Janowitz, M. (1974). Community attachment in mass society. *American Sociological Review*, 39: 328-39.

Kil, N., Holland S.M., and Stein, T.V. (2014). Structural relationships between environmental attitudes, recreation motivations, and environmentally responsible behaviours. *Journal of Outdoor Recreation and Tourism*, 7-8: 16-25

Kil, N., Holland S.M., and Stein, T.V., and Anderson, D.H. (2012). Understanding place meanings in planning and managing the wildland-urban interface: The case of Florida trail hikers. *Landscape and Urban Planning*, 107: 370-379

Kil, N., Holland S.M., and Stein, T.V. (2012). Identifying differences between off- highway vehicle (OHV) and non OHV user groups for recreation resource planning. *Environmental Management*, 50: 365-380

Knopf, R. C. (1987). Human behaviour, cognition, and affect in the natural environment. In D. Stokols, & I. Altman (Eds), *Handbook of Environmental Psychology*, Vol 1 (pp. 783-825). New York: Wiley

Kollmuss, A. and Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behaviour? *Environmental Education Research*, 8(3): 239-260.

- Krippendorff, K. (2004). Reliability in Content Analysis: Some Common Misconceptions and Recommendations. *Human Communication Research*, 30 (3), 411-433
- Krueger, R. (1988). Focus Groups. Thousand Oaks, CA: Sage
- Kyle, G., Graefe, A., Manning, R., and Bacon, J. (2004). Effect of activity involvement and place attachment on recreationists' perceptions of setting density. *Journal of Leisure Research*, 36(2): 209-231
- Kyle, G. T., Mowen, A. J., & Tarrant, M. (2004). Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology*, 24(4): 439-454.
- Kyle, G., Graefe, A. R., Manning, R. E., and Bacon, J. (2004). Effects of place attachment on users' perceptions of social and environmental conditions in a natural setting. *Journal of Environmental Psychology*, 24(2): 213-225
- Kyle, G., Graefe, A. R., and Manning, R. E. (2005). Testing the dimensionality of place attachment in recreational settings. *Environment and Behaviour*, 37(2): 285-303
- Kyle, G., Graefe, A., and Manning, R. (2004). Attached recreationists... Who are they?. *Journal of Park and Recreation Administration*, 22(2): 65-84
- Lam, S-P. (2006). Predicting intention to save water: Theory of planned behaviour, response efficacy, vulnerability, and perceived efficiency of alternative solutions. *Journal of Applied Social Psychology*, 36:2803-2824
- LaPage, W. F., and Bevins, M. I. (1981). Satisfaction monitoring for quality control in campground management. United States Department of Agriculture, Research Paper NE-484.
- Lee, B., Graefe, A., and Burns, R. (2004). Service quality, satisfaction, and behavioural intention among forest visitors. *Journal of Travel and Tourism Marketing*, 17(1): 73-82
- Lee, B., Graefe, A., and Burns, R. (2008). Family Recreation: A study of visitors who travel with children. *World Leisure Journal*, 50(4): 259-267
- Lee, J., Kyle, G., and Scott, D. (2012). The mediating effect of place attachment on the relationship between festival satisfaction and loyalty to the festival hosting destination. *Journal of Travel Research*, 51(6): 754-767

- Lee, T. H. (2009). A structural model to examine how destination image, attitude, and motivation affect the future behavior of tourists. *Leisure Sciences*, 31(3): 215-236.
- Lee, S. H., Graefe, A. R., and Li, C. L. (2007). The effects of specialization and gender on motivations and preferences for site attributes in paddling. *Leisure Sciences*, 29(4): 355-373.
- Leung, Y. F., and Marion, J. L. (1996). Trail degradation as influenced by environmental factors: A state-of-knowledge review. *Journal of Soil and Water Conservation*, 51(2): 130-136.
- Leung, Y.-F., and Marion, J. L. (2000). Recreation Impacts and Management in Wilderness: A State-of-Knowledge Review. Paper presented at the Wilderness Science In a *Time of Change Conference*, Missoula, Montana.
- Liddle, M. J. (1997). Recreation ecology: the ecological impact of outdoor recreation and ecotourism: London. Chapman & Hall.
- Lewicka, M. (2010). Place attachment. How far have we come in the last 40 years? *Journal of Environmental Psychology*.
- Loeffler, T. A. (2004). A Photo Elicitation Study of the Meanings of Outdoor Adventure Experiences. *Journal of Leisure Research*, 36(4):536-556
- Lofland, J., Snow, D., Anderson, L., and Lofland, L.H. (2006). *Analysing Social Settings: A Guide to Qualitative Observation and Analysis* (4th Ed). Belmont, CA: Wadsworth
- Low, S., and Altman, I. (1992). Place attachment: A conceptual inquiry. In I. Altman & S. Low (Eds.), *Place attachment* (pp. 1–12). New York: Plenum Press.
- Luo, Y., and Deng, J. (2008). The new environmental paradigm and nature-based tourism motivation. *Journal of Travel Research*, 46:392-402
- Mace, B. L., Bell, P. A., and Loomis, R.J. (2004). Visibility and quiet in national parks and wilderness areas. *Environment and Behaviour*, 36(1): 5-33
- Manfredo, M. J., Driver, B. L. and Tarrant, M. A. (1996). Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. *Journal of Leisure Research*, 28: 188-213
- Manning, R. E. (1999). *Studies in outdoor recreation* (2nd Ed.). Corvallis, OR: Oregon State Press

Mannell, R.C., and Kleiber, D.A. (1997). *A Social Psychology of Leisure*, State College, PA: Venture Publishing.

Manzo, L.C. (2008) "Chapter 7 - Understanding Human Relationships to Place and Their Significance for Outdoor Recreation and Tourism", In *Understanding Concepts of Place in Recreation Research and Management*, edited by Linda E Kruger, Troy Hall and Maria Stiefel, US Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon.

Marion, J. L. (1994). *An Assessment of Trail Conditions in Great Smoky Mountains National Park*. Atlanta, GA: USDI National Park Service, Southeast Region

Marion, J. L., and Leung, Y.-F. (2001). Trail resource impacts and an examination of alternative assessment techniques. *Journal of Park and Recreation Administration*, 19(3):17-37.

Marion, J. L., Leung, Y-F., and Burroughs, H. E. K. (2016). A Review and Synthesis of Recreation Ecology Research Findings on Visitor Impacts to Wilderness and Protected Natural Areas, *Journal of Forestry*, 114(3): 352-362

Marion, J. L. (2016). A Review and Synthesis of Recreation Ecology Research Supporting Carrying Capacity and Visitor Use Management Decision making, *Journal of Forestry*, 114 (3): 339–351

Marzano, M., and Dandy, N. (2012). *Recreational Use of Forests and Disturbance of Wildlife*. Research Report, Forestry Commission, Edinburgh.

Mazumdar, S. (2005). Religious place attachment, squatting and “qualitative” research: A commentary. *Journal of Environmental Psychology*, 27(1), 87–95.

Mazursky, D. (1989). Past Experience and Future Tourism Decisions. *Annals of Tourism Research*, 16:333-344.

McCool, S. (2007). *Sustainability of Nature-based Tourism*. Missoula, MT, The University of Montana: 1-16

McCool, S. F., Clark, R. N., & Stankey, G. H. (2007). An assessment of frameworks useful for public land recreation planning. General technical report No.PNW-GTR-705 (p. 125). Portland,OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

- Meng, F., Tepanon, Y., and Uysal, M. (2006). Measuring Tourist Satisfaction by Attribute and Motivation: The Case of a Nature-Based Resort. *Journal of Vacation Marketing*, 14: 41-56
- Migiros, S. O. and Magangi, B. A. (2011). Mixed methods: A review of literature and the future of the new research paradigm. *African Journal of Business Management*, 5(10): 3757-3764
- Miles, M. B., and Huberman, A. M. (1994). *Qualitative Data Analysis* (2nd Edn). Thousand Oaks, CA: Sage
- Moore, S. A., Crilley, G., Darcy, S., Griffin, T., Taplin, R., Tonge, J., Wegner, A., and Smith, A. (2009). Designing and testing a park-based visitor survey. The Gold Coast: Sustainable Tourism Cooperative Research Centre.
- More, T. A. (1980). Trail Deterioration as an Indicator of Trail Use in an Urban Forest Recreation Area. Research Note NE-292. USDA, Forest Service, Northeastern Forest Experiment Station, Broomall, PA.
- Morgan, D.L., (1993). *Successful Focus Groups: Advancing the State of Art*. Thousand Oaks, CA: Sage
- Moutinho, L. (1987). Consumer Behaviour in Tourism. *European Journal of Marketing*. 21(10): 3-44.
- Nelson, A., Capple, M., and Adkins, D. (1995). Strengthening families through recreation: Family outdoor recreation activities provide opportunities for skill development and socialization. *Parks & Recreation*, 30(6): 44-47.
- Nepal, S. K., and Way, P. (2007). Characterising and comparing backcountry trail conditions in Mount Robson Provincial Park, Canada. *AMBIO* 36, 394-400
- Nickerson, N. P. (2016). "What We Know about Crowding and Visitor Experiences". Institute for Tourism and Recreation Research Publications, p.340.
- O'Brien, L. and Morris, J. (2010). Estimating visitor and visit numbers to woodlands. Research Report. Forestry Commission
- O'Connell, T. S. (2010). The effects of age, gender and level of experience on motivation to sea kayak, *Journal of Adventure Education and Outdoor Learning*, 10(1): 51-66

- Olive, N.D. and Marion, J.L. (2009). The influence of use-related, environmental, and managerial factors on soil loss from recreational trails. *Journal of Environmental Management*, 90: 1483-1493.
- Oliver, R. L. (2000). Customer satisfaction with service. *Handbook of services marketing and management*, 247-254.
- O'Neill, M. A., Riscinto-Kozub, K. A., and Hyfte, M. V. (2010). Defining visitor satisfaction in the context of camping oriented nature-based tourism – the driving force of quality!. *Journal of Vacation Marketing*, 16(2): 141-156
- Ong, T. F., and Musa, G. (2010). An examination of recreational divers' underwater behaviour by attitude-behaviour theories. *Current Issues in Tourism*, 14(8):779-795.
- Onwuegbuzie, A. J., Dickinson, W. B., Leech, N. L., and Zoran, A. G. (2009). A Qualitative Framework for Collecting and Analyzing Data in Focus Group Research, *International Journal of Qualitative Methods*, 8(3)
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbury Park: Sage
- Pounder, E.J.(1985). The effects of footpath development on vegetation at the Okstindan Research Station in Arctic Norway. *Biological Conservation*, 34 (1985):273–288
- Pigram, J. J., and Jenkins, J. M. (1999). *Outdoor Recreation Management*. New York: Routledge
- Plummer, R. (2009). *Outdoor Recreation: An Introduction*. New York: Routledge
- Powell, R.A., Single, H. M., and Lloyd, K.R. (1996). Focus groups in mental health research: enhancing the validity of user and provider questionnaires. *International Journal of Social Psychology*, 42(3):193-206
- Pretty, G. H., Chipuer, H. M. and Bramston, P. (2003). Sense of place amongst adolescents and adults in two rural Australian towns: The discriminating features of place attachment, sense of community and place dependence in relation to place identity. *Journal of Environmental Psychology*, 23(3): 273-287
- Prohansky, H. M. (1978). The city and self-identity. *Environment and Behaviour*, 10(2): 147-169
- Rajecki, D. W. (1982). *Attitudes: themes and advances*. Sunderland: Sinauer

- Ragheb, M. G., and Tate, R. L. (1993). A behavioural model of leisure participation, based on leisure attitude, motivation and satisfaction. *Leisure studies*, 12(1): 61-70.
- Ramkissoon, H., and Kneebone, S. (2014). Visitor satisfaction and place attachment in national parks. *Tourism Analysis*, 19: 287-300.
- Ramkissoon, H., and Mavondo, F. T. (2015). The satisfaction-place attachment relationship: Potential mediators and moderators. *Journal of Business Research*, 68: 2593-2602
- Ramkissoon, H., Smith, L.D.G., and Weiler, B. (2013). Relationship between place attachment, place satisfaction, and pro-environmental behavior in an Australian national park. *Journal of Sustainable Tourism*, 21(3): 434-457.
- Ramkissoon, H., Smith, L.D.G., and Weiler, B. (2013). Testing the dimensionality of place attachment and its relationships with place attachment and pro-environmental behaviours: A structural equation modelling approach. *Tourism Management*, 36: 552-566.
- Ramkissoon, H., Weiler, B., and Smith, L.D.G. (2012). Place attachment and pro-environmental behavior in national parks: The development of a conceptual framework. *Journal of Sustainable Tourism*, 20(2): 257-276.
- Ramkissoon, H., Smith, L. D. G., and Kneebone, S. (2014). Visitor satisfaction and place attachment in national parks. *Tourism Analysis*, 19(3): 287–300.
- Rolero, C., and De Piccoli, N. (2010). Place attachment, identification and environment perception: An empirical study. *Journal of Environmental Psychology*, 30: 198-205.
- Roggenbuck, J. W., Williams, D. R., and Watson, A. E. (1993). Defining acceptable conditions in wilderness. *Environmental Management*, 17: 187-197.
- Root, J.D., and Knapik, L.J. (1972). Trail Conditions along a Portion of the Great Divide Trail Route, Alberta and British Columbia Rocky Mountains. Rep. 72-5. Edmonton, AB: Resource Council, Alberta. 24p.
- Ryan, A. B. (2006). Post-positivist approaches to research. In M. Antonesa, H. Fallon, A. B. Ryan, A. Ryan, & T. Walsh, with L. Borys, *Researching and Writing your Thesis: A Guide for Postgraduate Students* (pp. 12–28). Maynooth, Ireland: MACE, National University of Ireland.

- Sarason, S.B. (1974). *The Psychological Sense of Community: Perspective for Community Psychology*. San Francisco: Jossey-Bass.
- Schultz, J., and Svajda, J. (2017). Examining crowding among winter recreationists in Rocky Mountain National Park, *Tourism Recreation Research*, 42:1: 84-95.
- Shaw, S., and Dawson, D. (2001). Purposive leisure: Examining parental discourses on family activities. *Leisure Sciences*, 23: 217-231.
- Silverman, D. (2000). *Doing Qualitative Research: A Practical Handbook*. Thousand Oaks, CA: Sage
- Sivalioğlu, P., and Berköz, L. (2012). Perceptual evaluation of the national park users. *Procedia-Social and Behavioral Sciences*, 50: 928-940.
- Smaldone, D., Harris, C. and Sanyal, N. (2008). The Role of Time in Developing Place Meanings. *Journal of Leisure Research*, 40(4): 479-504.
- Smith, S. (1975). Toward meta-recreation research. *Journal of Leisure Research*, 7(3): 235-239
- Son, J. S., Kerstetter, D. L., & Mowen, A. J. (2008). Do age and gender matter in the constraint negotiation of physically active leisure? *Journal of Leisure Research*, 40(2): 267-289. doi: <http://dx.doi.org/10.1080/00222216.2008.11950141>
- Stankey, G. H., Cole, D. N., Lucas, R. C., Petersen, M. E., and Frissell, S. S. (1985). *The Limit of Acceptable Change (LAC) System for Wilderness Planning*. Ogden, UT: USDA Forest Service, Intermountain Research Station.
- Stedman, R. C. (2002). Toward a social psychology of place: Predicting behavior from place-based cognitions, attitudes, and identity. *Environment and Behaviour*, 34(5): 561-581
- Stedman, R., Beckley, T., Wallace, S., and Ambard, M. (2004). A picture and 1000 words: using resident-employed photography to understand attachment to high amenity places. *Journal of Leisure Research* 36: 580–606.
- Stewart, W. P., and Floyd, M. (2004). Visualizing Leisure. *Journal of Leisure Research*, 36(4); 445-460

- Stylos, N., Bellou, V., Andronikidis, A., and Vassiliadis, C. A. (2017). Linking the dots among destination images, place attachment, and revisit intentions: A study among British and Russian tourists. *Tourism Management*, 60: 15-29.
- Tarrant, M. A., and Green, G. A. (1999). Outdoor recreation and the predictive validity of environmental attitudes. *Leisure Sciences*, 21: 17-30.
- Tartaglia, S. (2006). A preliminary study for a new model of sense of community. *Journal of Community Psychology*, 34: 25-36.
- Terry, D. J., Hogg, M. A., and White, K. M. (1999). The theory of planned behaviour: Self-identity, social identity and group norms. *British Journal of Social Psychology*, 38: 225-244.
- Thapa, B. (2010). The mediation effect of outdoor recreation participation on environmental attitude-behaviour correspondence. *The Journal of Environmental Education*, 41(3):133-150.
- Thapa, B. and Graefe, A.R. (2003). Forest recreationists and environmentalism. *Journal of Park and Recreation Administration*, 21(1): 75-103
- Theodori, G.L., Luloff, A.E., and Willits, F.K. (1998). The association of outdoor recreation and environmental concern: Re-examining the Dunlap-Heffernan thesis. *Rural Sociology*, 63(1):94-108
- Tonge, J., Moore, S., Ryan, M., and Beckley, L. (2013). Using photo-elicitation to explore place attachment in a remote setting. *The Electronic Journal of Business Research Methods*, 11(1): 41-50
- Trumbo, C.W., and O'Keefe, G.J. (2001). Intention to conserve water: Environmental values, planned behaviour, and information effects: A comparison of three communities sharing a watershed. *Society and Natural Resources*, 14: 889-899
- Tsai, S. P. (2012). Place attachment and tourism marketing: Investigating international tourists in Singapore. *International Journal of Tourism Research*, 14(2): 139-152.
- Tuan, Y. (1977). *Space and place: The perspective of experience*. Minneapolis, MN: University of Minnesota Press.
- Twigger-Ross, C. L., and Uzzell, D. L. (1996). Place and identity processes. *Journal of Environmental Psychology*, 16(3): 205-220

- Ulrich, R. S. (1979). Visual landscapes and psychological well-being. *Landscape Research*, 4(1): 17-23
- Uysal, M., and Jurowski, C. (1994). Testing the Push and Pull Factors. *Annals of Tourism Research*, 21(4):844-846
- Vaesna, S., Wu, W., and Huang, C. (2013). The impact of destination source credibility: The mediating effect of destination attachment on destination image. *Tourism Management*, 36: 511-526
- Vaske, J., Decker, D., and Manfredo, M. (1995). Human Dimensions of Wildlife Management: an Integrated Framework for Coexistence, in Knight, R., and Gutzwiller, K. (Eds) *Wildlife Recreationists: Coexistence through Management and Research*, Washington D.C: Island Press.
- Vaske, J. and Korbin, K. (2001). Place attachment and environmentally responsible behaviour. *Journal of Environmental Education*, 34(2):16-21
- Veal, A.J. (2011). *Research Methods for Leisure and Tourism: A Practical Guide* (4th Ed). England: Pearson Education Limited.
- Virden, R.J. and Walker, G.J. (1999). Ethnic/racial and gender variations among meanings given to, and preferences for, the natural environment. *Leisure Sciences*, 21: 219–39
- Walker, G.J., Deng, J., and Dieser, R.B. (2001). Ethnicity, acculturation, self-construal, and motivations for outdoor recreation. *Leisure Sciences*, 23: 263–283.
- Warzecha, C. A., Lime, D. W., and Thompson, J. L. (2000). Visitors' Relationship to resource: Comparing place attachment in wildland and developed settings. In *Wilderness science in a time of change conference, Volume 4: Wilderness visitors, experiences, and visitor management*, Missoula, Montana, May 23–27, 1999. (USDA Forest Service Proceedings).
- Wilkes, B. (1977). The myth of the non-consumptive user. *Can. Field Natur*, 91(4): 343-349
- Williams, D., and Roggenbuck, J. W. (1989). Measuring Place Attachment: Some Preliminary Results.
- Williams, D. R., Patterson, M. E., Roggenbuck, J. W., and Watson, A. E. (1992). Beyond the commodity metaphor: Examining emotional and symbolic attachment to place. *Leisure Sciences*, 14(1): 29-46

Williams, D.R. (2008) "Chapter 2 - Pluralities of Place: A User's Guide to Place Concepts, Theories and Philosophies in Natural Resource Management", In *Understanding Concepts of Place in Recreation Research and Management*, edited by Linda E Kruger, Troy Hall and Maria Stiefel, US Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon.

Wimpey, J.F. and Marion, J.L. (2010). The influence of use, environmental and managerial factors on the width of recreational trails. *Journal of Environmental Management*. 91: 2028-2037

Yin, R. K. (1994). *Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage

Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (2009). *Case Study Research: Design and Methods* (4th Edn). Thousand Oaks, CA: Sage Publications

Yoon, Y. and Uysal, M. (2005). An examination of the effects of motivation and satisfaction on destination loyalty: a structural model. *Tourism Management*, 26: 45-56

APPENDICES

APPENDIX 1

Documents for Survey Questionnaire

Appendix 1A:	Information Sheet for participants
Appendix 1B:	Consent Form
Appendix 1C:	Questionnaire



School of Archeology, Geography and Environmental Science

INFORMATION SHEET

OUTDOOR RECREATION EXPERIENCE AND VISITOR SATISFACTION SURVEY

Dear Visitor,

Welcome to Alice Holt Woodland Forest Park/ Haldon Forest Park; these are areas managed by the Forestry Commission England. I would like to invite you to participate in my research project on *evaluating visitors' experience during their visit to the forest park*. Before you decide, it is important for you to understand why this research is being done and what it will involve. Please take your time to read the following information carefully.

- **What is the purpose of this study?**

The main purpose of this study is to evaluate four important recreational user's perspectives during their participation in outdoor recreation activities, with regards to their motivation, place attachment, behaviour, and satisfaction. Data obtained from this survey will provide information to increase understanding of the overall outdoor recreation experience of the users who visited the forest park. Besides, the information can be used to assist policymakers and land managers in developing a realistic recreational management plan in order to fulfil public demand to use the forest and protecting natural resources from degradation.

- **Who is doing this research and why?**

This study is part of a PhD research project undertaken by the Department of Geography and Environmental Science, University of Reading in conjunction with Forestry Commission England. The primary investigator is Noor Jalilah Jumaat, who may be assisted by appointed enumerators. This research is supervised by Dr Geoffrey Griffith from the Department of Geography and Environmental Science, University of Reading.

- **Who can take part?**

Visitors age 16 and above are welcome to participate in this study. Participants will be randomly selected among the visitors who visit the forest park during the data collection period.

- **How long will it take?**

This survey will take about 15-20 minutes to complete. We would be grateful if you could spare a little time to participate in this study.

- **What will I be asked to do?**

You will be asked to complete a set of closed-ended questionnaire. It contains seven sections about; a) trip description, b) recreation motivation, c) place attachment, d) recreation behaviour, e) environmental awareness, f) visitor's satisfaction, and g) background information.

- **Who should I send the questionnaire back to?**

Once completed, please return the questionnaire to the main investigator or her representatives, who are on site today. Thank you for sharing your thoughts and ideas. We value your feedback!

- **Once I take part, can I change my mind?**

Yes! After you have read this information and asked any questions you may have we will ask you to complete an Informed Consent Form, however, if at any time, before, during or after the sessions you wish to withdraw from the study please just contact the main investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

- **Will my taking part in this study be kept confidential?**

Please be advised that the information obtained from this study will be kept strictly confidential and will be identified by a number code. The information linking your name with the code will be known only to the investigators. All data will be kept in a secure place at the University of Reading. The data will be destroyed securely once the findings of the study are written up, after five years.

- **What will happen to the results of the study?**

Data gained from this survey will be used to complete my PhD thesis. The information may also be used to write and publish articles in academic journals. You are welcome to see the final thesis and/or a copy of the articles before they are published.

- **What do I get for participating?**

You will be remunerated for your time with a coupon of free hot drink on completion of the study. The coupon can be redeemed at the forest park café.

- **What if I am not happy with how the research was conducted?**

The university has a policy relating to Research Misconduct. [http://www.reading.ac.uk/UnivRead/vb/RES/gar/QAR_documents/UCOGPR2012\(UKRIOWebAument\) VersUBRIapproved July2012 web 09Jan13.pdf](http://www.reading.ac.uk/UnivRead/vb/RES/gar/QAR_documents/UCOGPR2012(UKRIOWebAument) VersUBRIapproved July2012 web 09Jan13.pdf)

- **If I have some more questions, who should I contact?**

If you have any questions or concerns regarding this research activity, please do not hesitate to contact:

Researcher:

Noor Jalilah Binti Jumaat
n.j.b.jumaat@pgr.reading.ac.uk

Supervisor:

Dr Geoffrey Griffith
g.h.griffiths@reading.ac.uk
+44(0) 118 378 8737

Department Address:

Department Geography and Environmental Science, University of Reading, Whiteknights, Reading, RG6 6AB

This project has been subject to ethical review, according to the procedures specified by the University Research Ethic Committee and has been given a favourable ethical opinion for conduct.



School of Archeology, Geography and Environmental Science

CONSENT FORM

1. I have read and had explained to me by the study researcher, the accompanying Information Sheet relating to the project on **Outdoor Recreation Experience and Visitor Satisfaction Survey**
2. I have had explained to me the purposes of the project and what will be required of me, and any questions I have had have been answered to my satisfaction. I agree to the arrangements described in the Information Sheet in so far as they relate to my participation.
3. I understand that participation is entirely voluntary and that I have the right to withdraw from the project at any time, and that this will be without detriment.
4. This application has been reviewed by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct.
5. I have received a copy of this Consent Form and of the accompanying Information Sheet.

Name:

Date of birth:Date:

Signature:

Name of person taking consent:

Signature: Date:



Office use only
 Site: AHWFP / HFP
 Participant number: _____
 Date of visit: ____ / ____ / ____

OUTDOOR RECREATION EXPERIENCE AND VISITOR SATISFACTION SURVEY

A. TRIP DESCRIPTION

Please complete the questionnaire by ticking the relevant box/number or by writing on the space provided.

1. How many are in your party? *please write your answer(s) in the box:*

Adult Children

2. Who is with you today? *please tick all that apply:*

Alone	<input type="checkbox"/>	An organised group	<input type="checkbox"/>
Family	<input type="checkbox"/>	With your dog(s)	<input type="checkbox"/>
Friends	<input type="checkbox"/>	Others: _____	<input type="checkbox"/>

3. What is your main activity here today? *please tick all that apply:*

Exercise (e.g., walk, run)	<input type="checkbox"/>	Picnic or barbecue	<input type="checkbox"/>
Dog walking	<input type="checkbox"/>	Play with the children	<input type="checkbox"/>
Mountain biking, cycling	<input type="checkbox"/>	Watch nature	<input type="checkbox"/>
Horse riding	<input type="checkbox"/>	Volunteering	<input type="checkbox"/>
Adventure activities (e.g., Go Ape)	<input type="checkbox"/>	Visit the cafe	<input type="checkbox"/>
Organised activities/events	<input type="checkbox"/>	Other (specify): _____	<input type="checkbox"/>

4. Have you visited this forest park before?

Yes (Continue to Question 5) No (Skip to Question 6)

5. How often do you visit this park? *Please tick **one** box only*

- Everyday A few times a month
- 4-6 times per week A few times a year
- 1-3 times per week Less often

6. Prior to your visit, how did you obtain information to plan today's trip to this forest park? *Please tick all that apply*

- Word of mouth /friends Brochures
- The visitor centre (local tourism office) Forestry Commission office/ staff members
- Local knowledge Tourist magazine/map
- Internet / Website Other (specify): _____

B. RECREATION MOTIVATION

7. How important are the reasons below for your visit to this park today? Please circle **one** relevant number to your answer.

	Not at all important	Not important	Neutral	Important	Very Important
To experience tranquility	1	2	3	4	5
To experience new and different things	1	2	3	4	5
To view the scenic beauty	1	2	3	4	5
To bring my family closer together	1	2	3	4	5
To help release or reduce tensions	1	2	3	4	5
To be away from crowds of people	1	2	3	4	5
To gain a better appreciation of nature	1	2	3	4	5
To be close to nature	1	2	3	4	5
To do something with my family	1	2	3	4	5
To avoid everyday responsibilities for a while	1	2	3	4	5

C. PLACE ATTACHMENT

8. What is your attachment to this forest park? Please circle **one** relevant number to your answer.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
This forest park means a lot to me	1	2	3	4	5
I feel this forest park is a part of me	1	2	3	4	5
My friends/family would be disappointed if I were to start visiting other settings and facilities	1	2	3	4	5
I prefer this forest park over others settings/facilities for the recreational activities that I enjoy most	1	2	3	4	5
I am very attached to this forest park	1	2	3	4	5
I identify strongly with this forest park	1	2	3	4	5
If I were to stop visiting this forest park's sites, I would lose contact with a number of friends	1	2	3	4	5
For what I like to do, I could not imagine anything better than the setting and facilities provided by this forest park	1	2	3	4	5
I feel a strong sense of belonging to this forest park and its settings/facilities	1	2	3	4	5
Visiting this forest park says a lot about who I am	1	2	3	4	5
Many of my friends/family prefer this forest park over other sites	1	2	3	4	5
I enjoy visiting this forest park more than any other sites	1	2	3	4	5
I have little, if any, emotional attachment to this forest park and its settings/facilities	1	2	3	4	5
For the recreation activities that I enjoy most, the settings and facilities	1	2	3	4	5

provided by this forest park are the best

9. Overall, how would you describe your feelings of attachment to this forest?

No Attachment

Very Attached

1

2

3

4

5

D. RECREATION BEHAVIOUR

10. The following questions are designed to understand your specific behaviour when using the park. Please circle on a scale of 1-7 on how you feel about the following behaviour.

In order to minimise disturbance to wildlife, I intend to stick on the designated paths today.

Unlikely

Likely

1

2

3

4

5

6

7

Staying on the designated paths to me makes my activity feel ...

Worthless

Valuable

1

2

3

4

5

6

7

Most people who are important to me think that I should stick to designated paths today.

Disagree

Agree

1

2

3

4

5

6

7

In term of my ability to stay on the designated path, I feel it is...

Impossible

Possible

1

2

3

4

5

6

7

I will not stray off the designated path in order to protect the ground-nesting birds.

Strongly disagree

Strongly agree

1

2

3

4

5

6

7

Staying on the designated paths to me makes my experience ...

Unpleasant

Enjoyable

1

2

3

4

5

6

7

Forestry Commission staffs would be happy if I use the designated paths to minimise disturbance to ground-nesting birds and other wildlife.

Unlikely

Likely

1

2

3

4

5

6

7

I feel I have a control of myself to stay on the designated paths during my visit today.

No control

Complete control

1 2 3 4 5 6 7

E. ENVIRONMENTAL CONCERN

11. Please answer each of the following questions by circling the number that **best** describes your opinion about the environmental concern. Please read each question carefully.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
We are approaching the limit of the number of people the earth can support	1	2	3	4	5
Humans have the right to modify the natural environment to suit their needs	1	2	3	4	5
Humans are severely abusing the environment	1	2	3	4	5
Plants and animals have as much right as a human to exist	1	2	3	4	5
The balance of nature is strong enough to cope with the impacts of modern industrial nations	1	2	3	4	5
Despite our special abilities, humans are still subject to the laws of nature	1	2	3	4	5
The so-called "ecological crisis" facing humankind has been greatly exaggerated	1	2	3	4	5
The earth is like a spaceship with very limited room and resources	1	2	3	4	5
The balance of nature is very delicate and easily upset	1	2	3	4	5
Humans will eventually learn enough about how nature works to be able to control it	1	2	3	4	5

A. VISITOR'S SATISFACTION

12. For each statement below, please tell us:

(A) How important each aspect is to you as a visitor and (B) How satisfied you were regarding each aspect.

For both Importance (A) and Satisfaction (B), please circle one number. If you have no experience of the aspect, please just circle the "NE" in the Satisfaction section (B).	(A) Importance					(B) Satisfaction						
	Not at all important		Extremely important			Very Dissatisfied			Very Satisfied			
	←—————		—————→			←—————			—————→			
Pre-visit information about the park was easy to obtain	1	2	3	4	5	1	2	3	4	5	NE	
Useful directional road signs in the park	1	2	3	4	5	1	2	3	4	5	NE	
Well designed and maintained roads	1	2	3	4	5	1	2	3	4	5	NE	
Well designed and maintained carpark areas	1	2	3	4	5	1	2	3	4	5	NE	
Affordable charge for visitors' parking spaces (e.g., cars, coach, etc.)	1	2	3	4	5	1	2	3	4	5	NE	
Access to friendly, responsive park staffs	1	2	3	4	5	1	2	3	4	5	NE	
Access to toilet facilities	1	2	3	4	5	1	2	3	4	5	NE	
Clean, well presented toilet facilities	1	2	3	4	5	1	2	3	4	5	NE	
Clean, well presented picnic/BBQ facilities	1	2	3	4	5	1	2	3	4	5	NE	
Well designed and maintain walking tracks/paths	1	2	3	4	5	1	2	3	4	5	NE	
Well designed and maintain cycling tracks	1	2	3	4	5	1	2	3	4	5	NE	
Well designed and maintain horse riding tracks/paths	1	2	3	4	5	1	2	3	4	5	NE	

13. Overall, how satisfied are you with your visit to this park? *Please circle **one** answer only:*

**Very
Dissatisfied**

Very Satisfied

1 2 3 4 5

14. How strongly would you recommend this park to friends who share your interests?
*Please circle **one** answer only:*

Not at all

Very strongly

1 2 3 4 5

15. Will you be visiting this forest park again in the future?

Yes No

16. Tell us about **one** aspect that you would like to change in the Park

17. Tell us about one aspect that you really **like** in the Park

18. BACKGROUND INFORMATION

Please complete the questionnaire by ticking the relevant box or by writing on the line provided.

19. What is your gender? *Please tick **one** box only*

Male Female Prefer not to say

20. Where is your usual place of residence?

United Kingdom Overseas

Postcode: _____ Please state which country: _____

21. What is your age? *Please tick **one** box only*

16-19 20-25 26-34 35-44
45-54 55-64 65-74 75+

22. How would you describe your ethnic background? *Please tick **one** box only.*

White

- British
- Irish
- Any other white background

Mixed race

- White and Black Caribbean
- White and Black African
- White and Asian
- Any other mixed background

Any other ethnic background

Please specify: _____

Asian or Asian British

- Indian
- Pakistani
- Bangladeshi
- Any other Asian background

Chinese

Black or Black British

- Caribbean
- African

Do not wish my ethnic background to be recorded

23. What is the highest level of education you have completed? *Please tick **one** box only.*

- Professional qualification (e.g., RICS, ICAEW, PhD, etc)
- University or college degree
- University or college qualification below a degree (e.g., HND, HNC, City and Guilds advanced certificate, nursing diploma, primary school teaching diploma)
- Upper secondary school qualification (e.g., Highers, A Level)
- Lower secondary school qualification (e.g., Standard Grade, Intermediates, O Grade, GCSE)
- None of these

24. What is the approximate total annual income in your household? *Please tick **one** box only*

- | | |
|--|------------------------------------|
| Under 10K <input type="checkbox"/> | 31 to 50K <input type="checkbox"/> |
| 10 to 20K <input type="checkbox"/> | 51 to 75K <input type="checkbox"/> |
| 21 to 30K <input type="checkbox"/> | 75K+ <input type="checkbox"/> |
| I prefer not to answer this <input type="checkbox"/> | |

Thank you very much for taking the time to complete this survey.

Have a safe journey!

APPENDIX 2

Documents for Participatory Research Day

Appendix 2A:	Information Sheet for participants
Appendix 2B:	Focus Group Topic Guide
Appendix 2C:	Photograph Logbook



School of Archaeology, Geography and Environmental Science

INFORMATION SHEET

RESEARCH PARTICIPATORY DAY

Evaluation of Outdoor Recreation Experience and Place Attachment among Visitors at Forest Parks

Dear Visitor,

I would like to invite you to participate in my research project on understanding outdoor recreation experience and place attachment among visitors to forest parks. There is information related to the research which is important for you to understand (e.g. why this research is being done and what it will involve) before participating in this research. Please take your time to read the following information carefully.

- **What is the purpose of this study?**

This study is conducted to achieve three objectives.

1. To evaluate the outdoor recreation experience between different user groups in the forest parks.
2. To identify visitors' attachment to this forest park.
3. To evaluate visitors' perception of the environment and social impacts in the forest setting.

- **Who is doing this research and why?**

This study is part of a PhD research project undertaken by the Department of Geography and Environmental Science, University of Reading in conjunction with Forestry Commission England. The primary investigator is Noor Jalilah Jumaat, who may be assisted by appointed enumerators. This research is supervised by Dr Geoffrey Griffith from the Department of Geography and Environmental Science, University of Reading.

- **Who can take part and how long will it take?**

Visitors age 18 and above are welcome to participate in this study. The overall session will take about 2 ½ hours.

- **What will I be asked to do?**

Activity 1: Focus group

If you agree to participate in the study, first you need to fill in a questionnaire about yourself, then take part in a focus group. The session will involve 6-10 people to discuss issues concerning outdoor recreation experience during your visits to the forest park. The focus

group will last for a maximum of one hour and will be recorded using audio and video equipment so that the researcher has a record of what was said during the sessions.

Activity 2: Photography and Mapping Activity

This study will employ the photo-elicitation method. You will be given a disposable camera along with a photograph log booklet. There are three aspects need to be considered when taking pictures: 1. *My Place*, 2. *Disturbed*, and 3. *People*. Description of each aspect is explained in the booklet. Three simple steps that we need you to do during the session:

STEP 1: Use the camera to take photographs of three different aspects mentioned in section A.

STEP 2: Mark where you took the photos on the attached map in section B.

STEP 3: Explain to us why you selected that particular spot to take a photo in section C.

- **Once I take part, can I change my mind?**

Yes! After you have read this information and asked any questions you may have we will ask you to complete an Informed Consent Form before the session start. However if at any time, before, during or after the sessions you wish to withdraw from the study please just contact the main investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

- **Will my taking part in this study be kept confidential?**

Participants will be allowed to speak as little or much as they wish in discussing the issues during the workshop. Everything said during the session are confidential. Data gained from the focus group discussion will be transcribed. In the transcript, the names of yourself and all the other participants, as well as those people who you mention, will be changed so you will not be identifiable. Please be advised that the information obtained from this workshop will be kept strictly confidential and will be identified by a number code. The information linking your name with the code will be known only to the investigators. All data will be kept in a secure place at the University of Reading. The data will be destroyed securely once the findings of the study are written up, after five years.

- **What will happen to the results of the study?**

Data gained from this study will be used to complete my PhD thesis. The information may also be used to write and publish articles in academic journals. You are welcome to see the final thesis and/or a copy of the articles before they are published.

- **What do I get for participating?**

We will provide refreshments during the sessions. To thank you for participating in this research, we offer £20 to each participant.

- **What if I am not happy with how the research was conducted?**

The university has a policy relating to Research Misconduct. [http://www.reading.ac.uk/UnivRead/vb/RES/qar/QAR_documents/UCOGPR2012\(UKRIOWebAugment\)VersUBRIapprovedJuly2012web09Jan13.pdf](http://www.reading.ac.uk/UnivRead/vb/RES/qar/QAR_documents/UCOGPR2012(UKRIOWebAugment)VersUBRIapprovedJuly2012web09Jan13.pdf)

- **If I have some more questions, who should I contact?**

If you have any questions or concerns regarding this research activity, please do not hesitate to contact:

Researcher:

Noor Jalilah Binti Jumaat

n.j.b.jumaat@pgr.reading.ac.uk

Supervisor:

Dr Geoffrey Griffith

g.h.griffiths@reading.ac.uk

Department Address:

Department Geography and Environmental Science, University of Reading, Whiteknights, Reading, RG6 6AB

This project has been subject to ethical review, according to the procedures specified by the University Research Ethic Committee and has been given a favourable ethical opinion for conduct.



School of Archeology, Geography and Environmental Science

FOCUS GROUP TOPIC GUIDE

INTRODUCTION SESSION (10 minutes)

- Welcoming note** *Good afternoon. My name is Noor Jalilah and this is my colleague _____.*
- Thank you for coming. A focus group is a relaxed discussion.*
- Purpose** *We are here today to talk about your perspectives, experiences, and opinions as related to outdoor recreation at Alice Holt/Haldon Forest Park. This focus group is for research purposes only. Your input will help to provide useful information for our research and the park management to understand visitors' interests and expectations, so they can tailor their services and amenities accordingly.*
- Before we get started, have any of you been in a focus group before?*
- For those of you who haven't, I'll give you some information. This is a free-flowing discussion. We're here to learn as much as possible about everyone's ideas. There are no wrong answers. I am not here to share information or to give you my opinions. Your perceptions are what matter. There are no right or wrong or desirable or undesirable answers. You can disagree with each other, and you can change your mind. I would like you to feel comfortable saying what you really think and how you really feel.*
- Procedure** *Here are some guidelines for you to know about:*
- _____ (colleague) will be taking video and tape recording the discussion so that I do not miss anything you have to say. As you know everything is confidential. No one will know who said what. I want this to be a group discussion, so feel free to respond to me and to other members of the group without waiting to be called on. However, I would appreciate it if only one person did talk at a time. Everyone does not have to answer every single question, but make sure I hear from each one of you at some point this evening. The discussion will last approximately one hour. There is a lot I want to discuss, so at times I may move us along a bit.*
- Ice breaking session** *Now, let's start with everyone sharing their name, where do you live, and what is your favourite activity in this forest park.*

INTERVIEW SESSION (45 minutes)

A. Recreation Motivation and Participation

- i. *What motivates you to do outdoor activities and get involved?*
Probe: Health, social interaction, emotional, stress reliever.
- ii. *What do you like best about outdoor activities? What are the benefits? The reason for the benefit?*
Probe: -
- iii. *What do you like least about outdoor activities? What are the reasons you dislike that aspect?*
Probe: Barriers, constraints.

B. Place Attachment

- i. *Why did you choose this particular forest to perform your recreational activities?*
Probes: Is there any other forest park near your house? Distance, Resources.
- ii. *What factors influence you to perform recreation activities in this forest?*
Probes: Facilities, scenery, costs, etc.

C. Recreation Experience

- i. *What can you say about your experience during your visits to this forest?*
Probes: Have you encountered any problem(s) during your visit(s)?
- ii. *How do you feel about other user groups?*
Probes: -
- iii. *What does the AHF/HFP experience offer that you can't get anywhere else?*
Probes: Facilities, Environment, etc.

D. Environmental and Social Perceptions

- i. *I am going to show you a few pictures and get your reactions. What is your opinion about these pictures?*
Probe: *Have you encountered this situation during your visit? What are your reactions? What was your experience?*
Picture 1: Crowding/Multiple Users
Picture 2: User's Attitude (dog poo, off-trail, litters, etc.)
Picture 3: Environmental issues (Erosion, ground-nesting birds)

E. Support/Commitment

- i. *What would you do to protect the things that are important to your visit here?*
Probes: Volunteering activity, financial support, pro-environmental behaviour

WRAP-UP (5 minutes)

I have a quick thing for you to do. Please list one aspect that you would like to change in this park, and also one aspect that you really like about this forest park.

Thank you very much for your time and opinions. We value your time and feedback. Thank you!



PHOTOGRAPH LOG BOOKLET

Dear Visitor,

This research is conducted to identify your place attachment and perception on environmental and social impacts in the forest park. We would be grateful if you could spare a little time during your visit today to take part in this study. Your participation will make this research worthier.

You will be given a disposable camera along with this booklet. You are free to spare your time to complete this photograph log book during your visit today. Here are four simple steps that we need you to do:

- STEP 1:** Use the camera to take photographs of three different aspects mentioned in section B.
- STEP 2:** Mark where you took the photos on the attached map in section C.
- STEP 3:** Explain to us why you selected that particular spot to take a photo in section D.

Once completed, please return this booklet to the University of Reading's researchers or their representatives, who are on site today. Thank you for sharing your thoughts and ideas. We value your feedback!

Office use only

Site: AHWFP / HFP

Participant number: _____

Date of visit: ____ / ____ / ____

Time: _____ am / pm

A. VISITOR-EMPLOYED PHOTOGRAPHY

When you are in the park today, we would like you to do stop now and again and take photographs for us.



These photographs are to indicate places that represent **three different** things to you. The three things we are interested in are:

1. **My Place** – places you are most attached to (PHOTOS 1A, 1B, AND 1C).
2. **Disturbed** – places where you see environmental disturbance (PHOTOS 2A, 2B, AND 2C).
3. **People** – places where you see the interaction between park users (PHOTOS 3A, 3B, AND 3C).

For each of the above categories, please take up to 3 photos – so take up to **9 photos** in totalBUT NO MORE!

After each photo you take, we need you to do **two** more things.



First, mark where you took the photo on the attached map on page 5.



Second, explain to us why you selected that particular spot to take a photo in section D: Photo-essay.

For examples:

1A: "this is where my husband proposed marriage to me twenty years ago",

2B: "look at how much litter has been dropped here"

We have made this little booklet for you to make it easy. Please enjoy taking your photos and writing on the book.

THANK YOU!

APPENDIX 3

FOCUS GROUP

Appendix 3A:	Focus Group Transcript
Appendix 3B:	Focus Group – Summary Tables

Hello everyone, good morning, I hope everyone is good today. My name is Noor Jalilah, and those are my team, these are in my (inaudible), they will be helping me today. So, thank you for coming, and as you know we will have two activities today. For the first one I will be going to discuss about several topics on your experience during your visits here. And then we'll have a 15-minute break for you to get refreshments, then after that we will continue with the second activity. You will go out and take photographs and we will do some mapping on the booklets, is that OK, everyone?

(general agreement, yes)

Basically, we are here today to talk about your perspective, your experience and also opinion related to outdoor recreation activities. This focus group is only for research purposes, so your input will help us to provide detail for my research, and also this data will go to the Forest Management so that it will give insight to them on developing a more realistic forest management plan, hopefully. This is a free-flowing discussion, so we are here to learn more about your opinion, so I'm not giving my opinion here, I'm just asking questions and I will get your feedback. And feel free to talk, you can argue to each other if you want.

(laughter)

But in a controlled situation, and I would like you to be comfortable in the sessions, so feel free to talk and give your opinions here, OK? So, we will be taking video and tape recording, as you see here, so that I do not miss anything you say. As you know, everything is confidential, I'm not going to put your names in my transcripts and so on. I hope only one person talks at one time, so we can focus on what *you say*.

(laughter)

Hopefully we'll get good useful information from you, so I think that's all for the introduction. And now let's start by everyone sharing their names and where do you live, and also what is your favourite activities in this forest. So maybe you can start, yes?

F I live in Upper Hale in Farnham.

How far from here?

M Seven miles.

F Seven miles, yeah, and I come here every day. What else can I say, I love it (laughs).

Lovely, and go on?

M Yeah, I live at Upper Hale, Farnham as well, I come here most days, yeah, to do walking and bike riding, yeah, which is, which is pretty good for those activities, this place.

F It is.

F Hi, I'm Rachel, I live in Headley Down, which is about a 15-minute drive from here. We usually come here probably every couple of months with the children and walk, use the playgrounds, meet the friends.

Thank you.

F Hi, I'm Samantha, I come here a few times a week, and it's normally so that he can use the playground and maybe walk to the Gruffalo.

(baby screeches) (laughter)

M Well done *Pete*, yeah.

M I live in Lindford, I come to this whole forest at least three times a day.

A day?

M Yes, because I take this large hairy thing for a walk at Bentley Station twice a day, and then I bring him her, so we can meet everybody else.

Your friends here?

M Yeah.

F Yeah, I live in Lindford, I come here to go for walks, I love walking in the forest, and also to socialise.

M I live in Bordon, which is just over four miles away. I come every day and sometimes twice, to walk my dogs, I've been doing it for 50 years.

(laughter)

M Before I was born.

M Mm?

M Before I was born.

M (laughs) yeah.

F I live in *Congleton*, which is probably about three miles, I actually used to work here, so I know all these guys from that, but now I come sort of, come to visit people and walking and cycling.

You're not walking here?

F Not, not at the moment, no, yeah, yeah.

Thank you everyone, so we know each other's' names, so we can start our discussion. So, there'll be several topics we will discuss and there'll be a few sub questions, so we can start now. The first part is about your motivations doing the outdoor activities. My first questions will be what motivates you to do outdoor recreation activities here? So anyone who would like to?

M Well for health, for health reasons, yeah.

Did you have any suggestions from doctor maybe to go out, or you're willing to do it yourself?

M Yes, yes, yeah, from the Heart Foundation, (coughs) excuse me, they also run here Walking For Health once a week from the forest, an organised.

An organised walk?

M Yeah, yeah, yeah, about an hour, hour and a half, we do three miles, five miles. It's once a week, which is an organised activity, *for our sins*.

How about everyone else?

F I do the same really, for health.

For health reasons.

F But now I can't walk too much and I've got a buggy, so, which is good for me around here, that's if I don't cadge a lift off *Gillian*.

(laughter)

F Yeah, I, I'd say the same, there's lots, lots of space and outside, so good for fresh air and children running around.

F Yeah.

F And I also like the fact that the Gruffalo Trail you can take the pushchair round, because obviously some forests are a bit limited when you've got pushchairs. And my little boy's eight months now, so he's a bit heavy to carry in the carrier.

How about Samantha?

F Yeah, so I come because he needs some time outside every day running around, and same, you can take the pushchair everywhere as well, so.

It's convenience for you is more the thing?

F Yeah, yeah.

Anyone else?

M I, I bring the dog.

M Yes.

F I come because I just love walking in the woods. Unfortunately, I can't walk very far these days, but the easy access walk is very good for me, and I'm trying to build up my walking ability and find my balance, so the forest is very good for that.

F I think the nature and the wildlife here.

(general agreement, yes)

F Like last year I heard one this morning out on the golf course, but it's that you can hear the cuckoos and the deer if you're really quiet, early in the morning walking round, you can see the deer and it's just lovely, yeah.

F Yes.

F Yeah.

F So yeah, for me it's going for a walk in the forest, yeah.

And that's the best thing?

F Yeah, yeah.

F And socialising of course.

F Yeah, yeah.

M Yes, we have a coffee morning.

M Yes, coffee, yeah.

(laughter)

M That's the real reason they come.

F It's one of the reasons.

F Another thing is you can go to the sort of busy areas and see everybody and have a chat, and then literally within five, ten minutes you can go to a quieter area.

M Oh yeah, you won't see a soul, yeah.

F Oh that's true, yeah.

F Yeah, I would say, I would agree, it's never really busy because you can always find somewhere.

M Yeah.

F Like if you go to other places, especially indoor places, there's kind of like maximum capacity.

F Yes, yeah.

F Whereas even if the playgrounds are busy you can go for a walk and it, it won't be.

Thank you, so may I know what do you like least about outdoor activities here? What do you?

F The frustration of not being able to cycle.

F Yeah.

That's the only, more reasons, anyone?

F The only thing I would say is the parking is

F Yes.

F Because we don't have a pass, because we like to go to different places, so the parking is quite expensive, so that is sort of a consideration against going to other woodlands in the area, so usually we come when it's meeting friends and sort of more worth our while.

F Yeah.

F But then if you

M How often do you come?

F Probably every couple of months.

M Oh, so if you come once a week it's cheaper to get a pass.

F Well yeah, but we go to Farnham Park.

M Yeah.

F We live in Headley, we've got Hedley Nature Reserve, that's just been built.

M Yeah, yeah, well you've got Grayshott Common and loads of country?

F We've got Ludshott Common and we've got Hindhead (laughs).

M Yeah, you're sharing it about, yes.

F So it, yeah, and then we've got the same thing with we could buy National Trust membership, but then we'd only go to the National Trust places and we wouldn't come here, so it's just

M Yeah that's right, yeah.

F Because we like variety.

M Yeah.

F Yes.

Anyone else got any thoughts, no?

F They could do with more swings.

(laughter)

F In the playground, yeah.

F That's true.

F Yes, that's true.

F Because they, like they only ever had two.

F That's how many you get at any park, wherever you go, so there's always a massive, massive queue for the swings.

F Yeah.

F And we could do with a, a café that would be open.

(laughter)

F I think we all could say that.

F Yeah, there's a plan.

M Yes.

F It's been a very long time in the waiting (laughs).

F Yeah, because every day coming here.

F We're thinking, yes, we're thinking of changing the signs that used to say 2016 when it was opened, and say 2017, I think it's going to be 2018.

M Might be '18.

F Oh dear.

F It's not good.

F No, it's not good, no.

Now we move to another topic about your attachment to this forest. So why did you choose these forests to perform your activity? I know some of you gave the answer about meeting friends, or maybe you have any other reason why you get engaged with this?

F Well Michael and I were brought up here, we've

F What, in the forest?

(laughter)

F Lived here all our lives, so we, we've come here since we were tiny, so that's why.

F I like the drive.

F Yeah, I like the drive here, when it all used to be open and you could drive.

M Oh yeah, yes.

F Yeah.

F Because I used to come here with my father and I would drive, so it was off the roads.

So it's so much difference now you're saying then?

F Yeah.

F So you can see from

M Oh yes, it's changed, I used to bring Cubs and Scouts, and the Cubs used to make nest boxes for the birds and help the Rangers to put them up. And the Scouts would do activities here building bivouacs, and night activities and tracking and finding animal spores and trails, and that

F It's memories, isn't it?

F It is.

F Yeah.

M Yeah.

F I brought some pictures up actually.

F Have you?

F Yeah, 2000, 2001 and 2002.

F Oh lovely, yeah.

F Where we were all making camps here, and so I brought those, if you'd like to see them.

I would like see it, yeah.

M That's with, with your grandchildren?

F Yes, with the grandchildren.

M We do make camps.

M Well actually you'll remember when the Roman kilns were built.

M Yeah (laughs) when we used to do pottery, proper pottery.

M Oh yeah, yeah, where we'd dig, did dig those out, I was Chairman for 20 years of a group called The Friends of Alice Holt Forest. And we'd meet once a month and have talks of an evening, and then we'd work, work parties in the forest, we, we stored some dew ponds and other ponds, we planted trees in the arboretum, which is over the other side of the road. We helped with the butterfly conservation area at Bentley Station, and one at Plaistow near Dunts Hall, which is all part of the forestry. Because the Ranger at the time, he was into butterflies, and he got an award from the British Butterfly Association for that. And we just used to love to come up here and get together in a group and work.

F Yeah, that was the way we grew up, yeah.

F The same for me really, I've been coming here what, about 30 years. When the children were young we used to bring them up and bring the bikes. We'd use this side of the forest plus the other side, and you just become attached to it, it's such a lovely forest.

(general agreement, yes)

F What I find now is a lot of country walks, I can't go very far so I'm stuck, I've just got to go up a path and come back again, I can't do a lot of steep hills. But here there's a lot of variety, you've got the easy access, and also I get a bit further, there are lots of paths that aren't too steep, I might just do one steep path.

F Well the answer to that is get a buggy.

F But I want to walk, yeah, I could get a buggy, yes.

F I like the fact, I like the fact that you've got the Gruffalo Trail and you've got the timber trail with the play area en route.

M Yeah.

F Yes.

F So it does keep people, little people interested on the walk.

F Yeah.

F There's only so many sticks and leaves that you can pick up. But if you're heading for the next play area or something, then that's definitely

F Yeah.

M The Friends of the Forest raised money and Forest Lodge gave us £10,000 towards the cost of the easy access trail. And as well as laying the trail so it was smooth for buggies, we put aromatic and different plants on the trail so people with deaf and blind could feel the leaves or smell and see what they were, and it was for everybody.

F It's lovely learning in a forest, yeah.

M Yeah.

F Yeah.

F That's great.

M When did the Friends disappear?

M 2003, yes.

F So sad.

M We were all, we were all getting older.

M Because I think we joined when it started.

M Yes you did.

F Yes we did.

M Yeah, it was getting old, people were getting older and we had a lot of single ladies. And where we met in the Research Centre it was all right, but they didn't like driving up through the forest on dark winter nights on their own.

F No.

F No.

F No.

M They were a bit, bit scared of it, so we couldn't attract younger people for the working parties.

M No.

M So it just disappeared naturally, which was a shame.

F It was a shame, yes.

F Perhaps we should put a notice up in the Visitors Centre, anybody interested in starting up Friends of the Forest again?

F Yes.

F That's a good idea.

F Yeah.

M I have, I have tried it, but the biggest stumbling block now is, is two dreaded words, health and safety.

F Oh yeah.

F Oh God, yes.

M And also public liability insurance, it used to cost us somewhere about £100 for a year, it's 1,000 to 2,000 now.

F 1,000 now, yeah.

M We just, we just couldn't raise that sort of money to pay for that.

F No.

F No.

M I know Julian was very keen on it starting, and so is Jo.

F Yeah.

M But there's too many

F ifs and buts.

M It's the restrictions in the way now, not, you're not free to do these things.

F No.

(baby crying during this section making it difficult to hear)

M You find it with the Scouts, I'm still involved with the Scouts, and we're finding it with that, we've got to be extremely careful what we do now. There's so many rules and regulations.

F Yeah.

M And this society we're living now, they'll sue you for the slightest thing.

F Oh yes, I know.

F Yeah, they do.

F You have to be so careful.

M Somebody like Angus, he fell over this morning, some parents would sue you for that.

F Yeah.

(laughter)

M They would, honestly, they would.

F Yeah, I know, I know.

M This litigation is dreadful.

F Well it's like when they closed the forest for the ice and that a little while ago.

M Oh yeah.

F And honestly it really didn't warrant closing.

M No.

F It's just the risk element.
F But they had to do it.
M Yeah, I've been up here in a lot, I've been up here in worse weather.
F And I think it's quite sad, I could walk out of my front door and break my neck.
F Yeah.
M And trip over, oh yeah.
F Yes, they've got like a responsibility, haven't they?
M I know.

(general agreement, yes)

F Yes, health and safety is mad.
F I know, you should have seen them in the last winds, he was standing on the tables with this wind
F Windometer.
F Yeah, it mustn't go over 50, was it? 50 mile and hour?
M 40.
M Yeah, 40 miles an hour it is, yeah.
F Yes, looking like he might go, yeah.
F I know.
M That's not, all the National Trust places close if the wind that's predicted to go more.

(general agreement, yes)

M Yeah it's the same, it's 40 miles an hour.
M But there is another organisation, I think, isn't there? Because the arboretum, which is on the other side has a group of people, and they'll work once a month on the arboretum.
M Is there, yes?
F Yes, yes there is.
F I think there is on the arboretum.
F Yeah, yeah.
M Yes there is over there.
M I'm trying to think of his name, because he also does pottery.
M Yeah, there's something over there I know, yeah.
M Yeah.
M But they're not the Friends like they used to be.
M Oh no, but
F No, no, but they do do some work over there.
M Yeah they do work over there.
F Which is good, it's a voluntary group.
F I reckon in the next 12 weeks
M It's over the other side of the road, yes.
F That's over the other side, yes, yeah.
M It's all Alice Holt, same as Abbott's Wood up the other end.
F Yeah.

Mostly your attachment to the forest is more like emotional?

M Yes.
F Yeah, well when my daughter was only about five weeks old we came here because the NCT, National Childbirth Trust, used to do a monthly like toddler and baby walk, and so it was just really nice to get out with new baby and meet new friends. And we're still in touch with people that we met on that day so it, it was lovely.
F Yeah, that's really nice, isn't it?
M Do they do that now?

F The Farnham NCT Group is just about to be re-launched. The trouble, the trouble is, as with anything, people go back to work and their children get older, and it needs a continual recruitment. But I did, I did see recently that a group of people are trying to sort of re-launch it, and I think they did say that they'd like to do an event here in the holidays with the Gruffalo Trail and read the story. So hopefully you'll get more small people back.

M Yeah.

F Yeah.

F Yeah that's good.

M And of course it is pretty much the only forest around, isn't it? So if you, if you like forests then

F A size, sizeable forest, yeah.

F A sizeable forest, yeah.

M Well you've got to like forests, then.

M Yeah, well you've got to go to Micheldever.

M Yeah, you go

M Or, or down to Queen Elizabeth Country Park.

F Yes.

M Yes, but Queen Elizabeth Country Park is like that.

(general agreement, yes)

F Yes that is steep, yeah, yeah.

F It's horrible unfortunately, it's downhill.

F And it's parking as well, I used to go to Boxhead Common a lot, I could walk previously, but when I found I found I couldn't walk I was taking my car there. But now the farmer has closed his private road.

M Yeah.

F So you can't get into Boxhead Common.

F Gosh, has he closed it then?

M Yes he's closed it off, yes.

F He closed it, yes, on the Boxhead Farm Road, he's closed it, yes. I used to park there.

There's a limited access to that?

F So you've got limited access, yes.

F Oh right.

M You've got to be a cricket club, haven't they, to park there now?

(laughter)

F But if you can't walk far you probably won't be playing cricket.

F Cricketers, where the cricket's played is where you car park.

F You could be here all day, it's where the cars park.

M If you're a member you can go in, yeah.

(different conversations are going on at this point making it difficult to hear)

F Because a lot of places it's a sort of half, half an hour or 45 minutes, but here you can literally stay all day.

F Which I do, I know is it £8 for the day here?

F I think if you're *a member* here yeah, yeah.

F But when you've got a family £8 isn't bad, and then you've got facilities for the children.

F No.

F It's reasonable for a whole day.

M If there's four of you or five of you, yeah.

F You've got lots of things here.

F You could definitely keep busy for a whole day.

M Oh yes, you can keep them

F Yeah, yeah.

M And you do get 10% off your coffee.

(laughter)

F Win, win.

I want to ask about your recreational experience here. Have you encountered any problems during your visits here? Maybe you got in conflict with other users or something like that?

M No.

F No, not really.

F Yes.

F I think we only

M I think you find people lost, they don't know where to go.

F Yes.

F (laughs) Yes.

M They have to go back to the car park, you find that.

F Yes.

F Yes there are quite a few people that say this.

M Oh yeah, they do.

F It all kind of looks the same when you're out there.

(general agreement, yes)

M Yeah.

M You get these really noisy children around, don't you?

M They don't pay attention, they're talking and they don't pay attention to what they're doing.

F Yeah, there's one problem, sorry?

F I don't think it's as much of an issue now, because obviously they've put a lot of investment into the car park, but there used to be a time when if it was a sunny weekend day and you weren't there by 10.00 you wouldn't get a parking space.

M Oh no.

F Yeah, yeah.

F Listen, I'll tell you one thing

M But then to a certain extent that's one reason why, even if you said, even if the car park's full you could just walk for a while and the place is empty.

F Yes.

M But of course the car park is relatively small, from that point of view.

F In comparison to the whole forest, yeah.

M So if, if they doubled the size of the car park, on occasions they'd fill it, but it wouldn't be quite as, quite as quiet, you know, it's yeah.

F But it's getting the balance, isn't it?

M Well there's restrictions on that because the relief car park up at the top, they're only allowed to open it for a certain number of days a year.

M Yeah, that's right.

F Oh, OK.

M So there's restrictions on what they can do to

F Yeah, it's definitely improved.

M Oh yes, it's much better, sure.

F I'm sure probably five, five six years ago it was just, you'd drive three or four laps round.

M Yeah.

F Because the trouble is people stay all day, so you don't have the cars moving.

M Stay, that's true, not in and out.

F If you're at sort of lunchtime everyone brings a picnic, so.

M Of course one probably shouldn't say this, but if it's full here you just drive over to the other side, go past the research station

F Oh yeah, yes.

M And there's a car park that is virtually you can

F It's not always empty.

M You can escape from here.

F Right.

M Past, with a queue of cars going back to the main road, and you can get there.

F Because it's not labelled that side, is it, that's the thing, yeah.

M It's empty, no it's not labelled at all.

F But there are only eight parking spaces there.

M Well there are only a small number of car park spaces, but

F It is quite often.

F Yeah.

F I think it's difficult

M But it hasn't got a play area.

F Yeah.

F Yeah, you wouldn't want too many more people.

M No.

F It's a happy medium, isn't it? You wouldn't want too, it's so crowded that, that you couldn't enjoy it.

F No.

F If there weren't still those quiet places, if you wanted to go and find them.

(some agreement, yes)

F When the car park's full and that one full it's busy and vibrant, but not, not too bad.

M Yeah.

F Yeah.

F And the environment could be ruined if there were too many people.

(general agreement, yes)

F Cars would get destroyed, trees would get destroyed.

M You've got to, got to draw the line somewhere.

(general agreement, yes)

What does this forest offer that you cannot get anywhere else? So it's about the *emotional* that you've built here, do you have many?

F Well if I didn't come up here I would go mad. It's true, if I don't come here in the mornings I, I'm

M Well you are mad (laughs).

Are you distressed, or?

F Pardon?

You would be distressed, or not?

F I would be, yes, I would be if I didn't come up here.

M Yeah, why, why here compared to Farnham Park, for instance, which is closer?

F But, because it, it's the socialising up here.

M Definitely, that's right.

F It's the, we all get on, we all have a laugh, and if we want to moan we can have a moan and, which is quite often (laughs).

F I think it's got a good, it's got more play opportunities than the alternatives around here.

M Oh yes, it has, yeah.

F For young, for young children. Farnham Park's playground is not very good for under fives, it's, they get stuck at the top (laughs).

F Well I live right on Farnham Park Road.
F That's the nearest.
F As I say, sort of across the road, sort of thing, and I always used to go there as well as up here, but now it's always up here, because I find
F It's peaceful.
F The Rangers, everybody that
F It's like a family?
F I know, yes, it is, it is.
F For me it's very therapeutic, I just love the woods and I like wildlife, so I can just get lost in the environment, it makes, it's so peaceful and it's very restful.
M I find it the same, very therapeutic.
F So do I.

For the walkers, this is the best place for you, isn't it, for the walkers?
(general agreement, yes)

F It is, you get to meet everybody you know, the people that are dog walking as well, usually there's a
F Yeah, it does.
M Yes, you get to know the regulars and other people, and, and it's nice to see the changing seasons.
M If, if the dog could speak.
M I look to see how many different flowers are coming out every day, especially this time of the year, and I look at all the different flowers and the plant stuff and just like
M I was just going to say, if the dog could speak and we could go for a walk anywhere, but most other places around here, if he goes for a walk he doesn't get fed by Esta.
F Yes, yeah.
M And he doesn't get fed by Derek.
F Yeah, he knows, he knows everyone, doesn't he?
M Derek's dog doesn't get fed by me.
M No, that's right.
F Yeah.
M And that, and I think that, that if you like, one of the problems with this group for you is that what you've got is five or six people who are all in the same little group.
F And it's like we've been
M We come up here to meet each other.
F Yeah we do, we do.
M Basically, you could take the dog for a walk anywhere, you could drive your buggy anywhere.
F Another thing, like Derek and I, we were walking through one part, and there was this little slow worm walking across the path, wasn't it?
M Oh yeah.
F So we picked him up and had a little feel. And the snakes and things you see.
M Yeah, the wildlife you see, yeah.
F Yeah, oh yeah.
F I saw an adder on the trail obviously sort of sunbathing, and it kind of reared up.
F Yeah, it does, they do.
M Yeah, oh they will do, yeah.
F It was almost like having a really, really quiet
F Isolated from everything.
F Yeah, yeah, yeah.
F And deer, as you said.
M Oh yeah, the deer are about.

F They're out during the day as well.

M Yeah, and rabbits.

F Yes.

M Yeah, there's all sorts of things to see.

F And squirrels and I just love it.

F Yeah, yeah.

F For me it was when you saw, I remember once seeing a kid and his mum on one of the paths, and he was so excited because he was following, they'd seen a deer and he was following the deer trails.

F Path.

F And I just, that was, it's so lovely.

F It is.

M Yeah.

F That a kid of that age who's obviously so, so excited.
(general agreement, yes)

F That's what is going to, sort of in the long term, is going to, people like that that's going to look after the forest, it's, that's the reason why people come to the forest.

F Yeah, yeah, I think so.

F Angus loves it, like he will ask to come to this spot, and he'll say like the pirate ship swings and all right, really sweet, but he means Alice Holt, and he'll describe it to me, like pond, café, grandma and grandpa Mat. But it's, he'll come here and he'll have a great time, we'll have some food. We can go in the Gruffalo, he hugs the Gruffalo when he sees it, like he thinks it's his Gruffalo (laughs), because we see it so often.

For the walkers with children, so this area is very good with the playground?
(general agreement, yes)

F Yeah, playground, and you can take like you said, the pushchair on it, and it's short enough routes that he can do them.

F We also sometimes do say stuff like you have to be quiet, we have to like listen to the wildlife, and have like a little moment of quiet.

F Yes, yes, yeah.

F Because sometimes they're just running like crazy, and I'm come on, listen, let's see if we can hear any birds.

M You'll get a few if you sit on the seats around the forest here, and just sit there quiet, it's amazing what you see, isn't it?

F It is.

F Yeah.

F We could do with some more seats a bit further out.

M Yes, they could do, yeah.

F We are lacking in seats.

M It is very child oriented as well.

F It, it's the whole family friendly.

M And I don't know if you know, Fiona, you used to work here so you'd know whether I'm right, but I do get the impression that the foresters leave small branches all over the place so children can build this, that and the other.

F Yes, the dads as well.

M Yeah they do here, yeah.

M Yeah.

F These photographs that I've got

F It's sort of creativity, isn't it? That actually instead of using a computer game, you're using nature.

F That actually yes, we're able to make *tanks* and things, and it's just great.

F Yeah, yeah.

F It is, it is good because it's for all ages, so you can bring tiny babies, you can bring grandparents.

M Yeah.

F And everybody enjoys it the same, the same amount.

F Yes, yes that's true.

F Yeah, that is true.

F Because otherwise you're like we'll go here, but it's primarily for one person, yeah.

F Someone, yes.

M The children or something, yeah, as you say, everybody can.

I would like to know your environmental and social perspective. So my colleague will give a picture. (material is handed round the group)

We will go through some more pictures, so I'm going to show you this picture, so give me your opinions about what you saw?

F They should be where they're riding.

M Oh I see, sorry.

F Yeah, that's better.

So it's about multiple users in one trail, so what is your opinion? Have you encountered this kind of situations?

M Yeah I think so.

F Yeah, yeah.

M Yeah, I've encountered that many a time.

F What I have found, there are just one or two cyclists, especially the cycles with the buggies on the back, we had them for six months, hurling down the path, I was just in the middle of it, and I only just got to the side in time for them to go past. They did not slow down. Now that's one thing that is bad, but fortunately it's the minority, most of them will slow down or let you go across the path as a family.

M Yeah some of them, some of them shout out they're coming.

What did you do at the time, you just?

F I just went to the side, there was nothing I could do.

F No, it is bad, like that sort of thing.

F That was bad because that was, that kind of shook me up.

F Yeah, yeah.

F Because at the time I wasn't walking very well at all. No, they just didn't slow down.

M And you find horses where they shouldn't be.

F Yes, yeah I was just going to say that, sometimes horses will go, yeah.

M Yeah, they've got, if they're given a permit they're given a map of what paths they can use. But you find them on normal footpaths.

F Paths, yes.

M And they tear it up and make it difficult to walk on.

F Yeah, walk, yeah.

F And it's dangerous with mothers with prams.

M Yes it is.

F Sometimes I find them on an easy access trail.

M Yeah, they shouldn't be there.

F Yeah, yeah.

F Shouldn't be there.

M There's the bridleways for them.

F There is a place we're designating?

M Yes, they've got, there's

F It's the same as you've got the cycle loop.

M Yes.

F Because if you want to actually cycle, and not stop every two minutes to walk around pushchairs or whatever.

M Yeah.

F They're on the long cycle trail.

F You can go on the cycle trail, and that's, that's the best place for you.

F Yeah, but they do go off the cycle trails.

F Yes, people do.

M What's that?

F I don't know, what's that?

Can we move to the second picture? It's a news headline, it's about

M Oh that was in Wales, wasn't it, somewhere, yeah?

This was about dog walking, the walkers and motorcyclists.

M No that, yeah, that's it, yeah.

Can you give me any ideas, opinions about this?

F I don't really think that's probably the best way to deal with it.

M Yes, I think I'd have electrified the barbed wire.

M Yeah.

(laughter)

M I think that's terrible.

F No.

Have you ever encountered these kind of situations, that you have conflict with other users in the same trail?

F No.

M No, not here, no.

M No, the motorcyclists use the old drovers road.

F Yeah.

F Yes.

M Which goes through here, and they're very considerate.

F Yes they are considerate.

M They, they really are considerate.

How about cyclists?

M Cyclists are very good, you get the odd one who'll come hurtling through and

F Yeah, yeah.

M One one day swore at me, and I told him you're not to go down there. So he went down, and he fell off the steps and broke his arm.

(laughter)

M He'd been, it sort of fits my MO, I just laughed and said "Serves you B well right", and I didn't help him.

(laughter)

M I think the worst ones are the

F Runners.

M Runners, runners actually.

M The runners, that's it.

M The runners? Oh they're the worst, yeah.

F They are, they think they own everything.

F They're running's their personal time, yeah.

M Yeah, they tell you, they tell you to get out the way. The runners are the worst.

F Yeah.

M Yeah, but the cyclists cause trouble for the runners.

M That's really only on a Saturday morning, isn't it?

M Yeah.

M Yeah I know.

F It's the group, it's when you get groups of people, like Nordic walkers, some, some of them will just go, and they won't go to the side.

M They won't slow down for you, no, you've got to get out of their way.

F They just think it's their right of way.

F Yes, but it is again the minority, isn't it?

M Yes, it is the minority.

F Yes.

How about relations (inaudible) with the kids?

F I've, I've never really experienced any conflict, yeah occasionally someone might cycle quickly past me, I have to move over, but nothing that causes any bother.

F No, I haven't either, to be honest.

M Yeah.

F Mostly the little, but I generally will only go with him on the habitat trail and stuff, so maybe it's because I'm not going further than I want into the forest, where you can get a lots more.

F Yeah, it's more the easy access that you get a few cyclists on.

F Yeah, it's easy access where I came across a problem.

F Yeah, yeah.

F What's that on there?

The next is

M Well they put a poo bag on it.

M They put a poo bag on it.

F Oh that's what it is.

M Yeah, it's a poo bag hanging on.

F Yeah.

M There's poo, people pick it up and then they leave the bag on the side or they throw it in the trees.

F Yeah, yeah, yeah.

F Well what about that woman in the, outside the Visitors Centre, this was only a couple of days ago, we actually watched her dog do it right in the middle, and she walked off and left it. But Chris was there, so he said, "Did you actually see that?", we said "Yes, we did", so he went over to her, and do you know what she said? She said "That's not from my dog", she said, "It's too big".

F Crikey, yeah.

F Clarice actually cleaned it up, you were there, weren't you?

F Can they fine within? I don't have a dog so I don't know, but I know obviously on council property they can fine you.

F I don't think so.

M Oh they can be fined here, yeah.

F So I didn't know if you could fine within the forest?

F I don't know.

F If it was a Ranger.

M It would cost them far too much.

F Yes it would.

F Yes, it would, it would.

M Yeah.

F To be, to be honest it's, this is not a location where I've found dog poo to be an issue. Ludshott Common is terrible.

M Oh Ludshott Common's dreadful.

F It's dreadful, yes.

M The first 200 yards from the car park is, is evil.

F Yeah.

Do you think the dog waste bin is enough for this area?

F In here?

M No there's, no we could do with a few more, especially deeper into the forest.

F Into the forest, yes.

M That's why people throw it in the trees, because there's nowhere to put it.

F Yeah.

F Well they sort of pick it up when they think somebody's watching, I think.

F Yeah.

F Yeah.

M Yeah, they do.

F Then when nobody's watching they do the classic and hang it in the tree.

M Yeah.

F Or they just throw it in an ordinary rubbish bin, I've seen that so many times.

F Yeah, yeah.

M But if you have loads of them, then somebody's got to empty them.

M Yeah.

M And dogs are trained that they always do it as far as possible from any poo bin, but

F Yeah, but it's the access to empty it, isn't it?

F Yeah.

M I did notice on the, on the Forestry Commission website one of the things they say, and I did notice that there was, somebody said this in Parliament a few weeks ago, in that the suggestion is that actually, unless you're very close to a poo bin, just get a stick and flick it into the undergrowth.

F Yeah, that's right, yeah.

F Yeah.

F I think when you're near the car parks.

M If you're near the car park.

F And near a dog bin, do the right thing.

F Yes.

M Yeah.

F If you're far out in the forest, if you stick it, flick it far away.

M They'll flick it away.

F Well that's got to be better than leaving it in a carrier bag on a tree, nothing, that's never going to degrade.

F Absolutely.

M No, no.

F So many people leave them on the trees.

M Yeah they do.

F Or the side of the path, which is so wrong.

F I don't even really know where the whole habit came from.

F No.

M You can get degradable bags, but they take quite a while to degrade.

M Well I think it's, it's easy enough to, you're miles away from anywhere, so you fill, fill the bag up and you know you're going up there and that you're coming back.

F Yes.

M So you just leave it by the side of the path.

F I can understand that.

M To pick up, and then you
F It's the people that don't come back.
F Yes.
M No they don't.
M And then you, and then you forget all about it.
M Yeah.
M That's what people do.
F Yeah.
F We don't.
M Sorry?
F We don't do that.
M No, no, it's completely different people.
(laughter)
F Get that one in.
M Samantha puts it in the pushchair, and then three months later we find it again.
(laughter)
F No, it's not that bad.
Let's move on to the next pic, so.
F Oh yes.
It's about litter.
M I wish I'd had a video, because we were walking round, Fiona will know, there are some log stacks.
F Not far from here.
M Over there, and a big sign saying words to the effect of do not allow your children to play on log stacks. And there were three or four children
F On top of them.
M On the log stacks playing up and down.
M Yeah.
M And their two mothers were leaning on the sign smoking cigarettes. And you sort of say
F The sign's only there for safety, isn't it?
M Oh they'll be all right.
F Be all right till the whole lot goes.
F Whole lot goes, yeah, then you see what you get.
F Yeah, yeah.
F It's not that *Lesley*?
M And then as somebody said, then it will be the Forestry Commission's fault.
F It's not like there's not enough other places to play.
F No, no.
F To play, that's right.
F It's put there for safety, like. And the litter again, like you want to be able to enjoy the place.
M Oh yeah, yes, the drivers were out this morning, empty bottles, these bottles thrown away, and cans.
F That's a bottle that's been shoved in the *lawnmower*.
F Yes.
M Yes, there's one in there, yeah.
F The tools.
F I just can't understand it.
F No, I can't.
M No, it's easy enough to put it in your pocket and take it home. You put it in your pocket to come out, so put it in your pocket to take it home.

F Exactly, you were carrying it till you drank it, so.

F I always used to think, if you carry a heavy picnic out, when you eat it it's light to carry back.

F Yeah.

M Well yes, you're supposed to carry it back, aren't you, yeah.

M Fiona were you ever, were you ever the litter collector?

M Oh yeah.

F I was.

M I've seen her go round with her bag and her picker upper.

M One of the things you want us to do when we disappear off into the distance is take photographs of

F Yeah.

M And one of them is something that you don't really approve of. Wrong time of day. Get here 9 o'clock in the morning and just wait around here for whichever forester has got the job for the day, carrying a huge bag full of litter. That all he's done is collect all, he or she has done is collected from 100 yards around here.

F The surprising thing is how bad the car parks are. They're, they're

F The car parks?

F The car parks, yeah, they are

F People just don't want to take it in their own car back home.

F No.

F Some people just empty *a can*, yeah.

M Oh yeah.

F But there's plenty of litter bins.

M Well you talk about that, talking about the other subject, a lady comes up in a van, dog walking, oh yeah, and she got back to her van, she went to drive off and there was seven or eight poo bags there. So I stood in the way so she couldn't move and made her get out and put them in the dog bin.

F Good for you.

M Yeah, and I tore her off a strip, I said "You get dog walkers a bad name". And I said, "You're being paid to walk a dog".

F Yeah.

F Oh is that a dog walker walker?

M Yeah, yeah.

F Yeah, *like Haversham*.

M Oh yeah, yeah, all over her van, Rosie's Dog Walkers.

F Oh lovely.

F Most people are, with a dog are responsible, aren't they? It's just the minority that make it bad

M Yeah, well this one wasn't, I wasn't there about, several times before.

F Yeah, exactly.

M But I caught her that day before she could drive off.

Shall we move to the next bit, these are news headlines about dogs and runners are disturbing birds in this forest. Did you have any thoughts about this one?

F That's probably a ground nesting one, isn't it?

M Yeah.

F I don't think, I haven't come across the problem here.

M I don't think this is relevant.

M No it's not really, no.

F No

I want to have your general perceptions of this.

F I'm sure the common puts signs up when it's the season.

M Yes, they do on, they do on Boxhead Common, but here it's not relevant.

F No.

F If people stick to the areas that are designated for walking

F Yeah.

F And then there's plenty of space left for wildlife then, everybody can live in harmony.

F Yes, that's right.

M Yeah, oh yeah.

F If you just sort of stick to your own areas.

M Well it's big enough, you can get away from those ground nesting areas.

F Exactly.

M Boxhead's a bit smaller, and you keep your dog on a lead from May to September.

F Yeah, during the season.

F Well you should, but they, they don't always.

F Some people don't.

M No I know, they don't, no.

M And it's also a matter of, sometimes of ignorance. I remember, I think it was last year on Boxhead, they, because they regularly clear the heather.

M Yeah, clear a bit of heather, yes.

M Yeah, there was a chap running his dog on the area that had been cleared, and he said, "Oh no, it'll be all right because the birds don't nest on the cleared areas". What?

F Yes.

M But they, they cleared it.

M No, that's not quite true.

M No.

F I think it is, there's two sides, isn't there? There's the education and then there's the adherence to rules.

M Oh yeah, yeah, yeah.

F Some people choose not to, some people don't sort of realise the value of it.

M Yeah, that don't apply in the New Forest because people know they've gone off the piste and

M But I do feel sorry for those who feel obliged to keep their dogs on a lead.

M Yes, it's more peace for the forest.

M When actually the dog will not move from their heel if he's off the lead. He will never go anywhere further than a couple of feet from them.

F Yeah.

M This one will, anything *moves I catch it*.

(laughter)

F Yes, it depends on the dog and the people, doesn't it?

M Yeah, but a well trained collie will stay there.

F Oh absolutely.

M Yeah, however.

Now we move to the last pictures, it's about making small trails and also some kind of muddiness there. Does this kind of situation affect your experience when you're walking in the forest?

F Not sometimes.

M Yeah it does, but you've got to expect it in the forest.

F Yeah.

F Yes, I think so.

M Yes, if you're coming from

Sometimes there's like a situation like this, isn't it, it will be more like adventure if it's muddy, something?

M Yeah, sometimes it's muddy, sometimes it's hard.

M What do you expect in a forest?

F Exactly, it's natural.

F It's natural, yeah.

M I'm awfully sorry, Norm, but you see ladies turn up in scrappy sandals with five or six inch high heels.

F Well you need to come

M And they, and they can't walk anywhere.

F Yeah, it's true though, it's true (laughs).

M Yeah.

F You can find muddy paths, certainly when it's been heavy rain, but that doesn't really matter because there are lots of other paths you can use.

M Yes.

F Yes there are.

F And, and you should have natural paths in the forest, so I don't think mud's going to be a problem.

F And you'd come

M Yeah, but if you, if you come to the forest you expect it.

F Yeah.

F And you come dressed for the occasion, don't you?

F Of course, yeah.

F Exactly, yeah

F You bring your wellies, you bring your raincoat.

M Yes, that's right.

F And the kids love it when they're splashing around.

M Oh yeah.

(general agreement, the kids love it)

M Puddle jumping, yeah, it's great.

F I think that's the really nice thing is that you, you can stick to the sort of made up paths or you can go off and find your own route, and absolutely be in nature.

F Yes.

M Yeah, yeah, oh there's lots of little narrow paths to wander around there.

F Exactly, you've got the option.

F There are plenty of hard paths.

M Yeah, but there's plenty of others made.

F Yeah, now he's older, if I wanted to let him have a proper explore I put him in a carrier and you go off on a little thing, and then

F Yeah, I think the fact you've got the options.

F *The trouble is there's a lot to explore, isn't it?*

M Oh yeah, yeah, there is.

(general agreement, yes)

F It's a bit of both, so you get a mixture.

M Yeah, you get a mixture then, especially where the, the stream runs down, yeah.

F Well literally just over the, over the sort of brow here and you just go down.

F Yeah.

F And it's just, it's lovely, the little stream, yeah.

Now the last question, this is about your support and commitment. So what would you do to protect things that are important to you here? So what would you do, maybe volunteering, or maybe you want to do kind of financial support, or maybe *appropriate environmental* behaviour?

F I used to volunteer, but I can't do it anymore because I can't, I haven't got the physical ability. But I think I've done it in the past, so I've done my bit.

M That's what I, that's what I said, what we used to do was run working parties. But it's so restrictive now on rules and regulations, and also people sue you for anything, liability insurance.

F Yes.

F Yeah.

M It's out of the question now, you can't get the volunteer groups to do.

F I don't, I don't think they have one either, do they? Some Forestry Commission sites you can volunteer, but I think here it's

F *They did it all by themselves to now, so.*

F Yeah, by employees rather than volunteers.

F Yes.

M Yes, it's done, we used to have, we had what, 50 members in the Friends of the Forest, and we used to get quite good working parties. And even we used to do bracken bashing with walking sticks or branches. You're not even allowed to do that now because you might hit somebody on the shins and hurt them.

F So different, isn't it?

(respondents all talk at once)

M It is, it's so ridiculous, and this is, it's not just here, it's sprawling everywhere, you find it wherever you go.

F Yeah.

M All the national parks are the same, they can't get the volunteers for work because of the litigation and health and safety laws.

F Yeah.

M Well 20 years ago the, the, where the old café used to be, they just knocked it down?

M Yeah.

M That pond there would be perfect now because the volunteers would be looked after.

M Oh yes, oh we looked after it, we cleaned, we cleaned it out two or three times a year.

M But, but the thought of letting people like us in there now we

M No, they won't let you in, yeah.

M They won't let you.

M We used to put our waders on and go in there and sort all the muck out.

M Well we did one, we're doing one on the other side.

F We did, didn't we, on the other side we did, we cleared a pond.

M Yes, we had one, it was a little one next to the big one.

M Behind the Research Station.

M Yes.

F There's some really great things to do here.

M Yes.

F Volunteering.

M But as I say you're so restricted now by rules and regulations and litigation.

F Yeah.

F I guess it's the effort of, so someone's got to organise it, do the risk assessment.

F Organise it, yeah.

F And then it's like, is it really worth it? As you say, if you don't get very many volunteers show up on the day and you can't do what you wanted to do anyway.

F Yes.

M We used to have a bonfire and put jacket potatoes in

F Oh yeah, good.

M And Nelly would bring a big cauldron of soup.

F I used to love it.

F Yeah.

F It was lovely.
M And we had soup and jacket potatoes with chunks of bread, and it was a lovely day out.
F Yeah.
F Very enjoyable, yes.
F Yeah.
F Yes, lovely.
F I did something, well when they were older, like I can't remember how old we were.
F You were, you were about four and six when we started.
F Yeah, and I really enjoyed it, so I think at the moment they'd be far too young, but if there was something like that.
M No, oh yes.
F When they're old enough to do it, I'd definitely come and help out.
M And you see their faces when they see the butterflies and damselflies and dragonflies there, it's worth doing.
F Oh they love them, yes.
M It's well worth doing.
F Well Deadwater Valley do a lot of volunteer activities.
M Yes, yeah.
F Right, they do.
F And they also do a lot of children's, they have like two toddler walks.
M Yes they do do that.
F The Wildlife Trust does as well, doesn't it?
M Yes.
F Yeah.
M But to get, as I say I mentioned it last year to get the Friends started, I had a secretary and I had a treasurer, Jo and I and Julian, we tried to get it going, but we just couldn't.
F That's it, well you need, you need committed people.
(some agreement, yes)
M Yes, and then as I say, when we found out what liability insurance was going to cost us.
F Exactly.
F That's a problem, isn't it?
F Barriers.
M That is a problem.

That ends our discussions, but before that I have quick break up questions, it's about what you would like to change in this park, and what you really like about this park.

(respondents carry out task)

(end of recording)

FOCUS GROUP 1
Alice Holt Forest

Participant's profile

ID	Gender	Age	Frequency of Visit	Pre-information	Activities	Other Information
2	Male	73	Everyday	- Local knowledge	- Dog walking - Socialise	- Live in Lindford. - Visit AHF at least three times a day.
3	Female	70	4-6 times a week	- Visitor Centre	- Walking - Socialise	- Live in Lindford.
4	Male	94	Everyday	- Visitor Centre - FC Staffs	- Dog walking	- Live in Bordon. 4 miles from AHF. - Visit every day. Sometimes twice a day. - Being doing this for 50 years. - A former member of 'Friends of Forest'.
5	Female	43	A few times a month	- Website	- Socialise - Cycling - Walking	- Live in Congleton. 3 miles from AHF. - She used to work at AHF – FC staff.
6	Female	74	Everyday	- Visitor Centre	- Walking - Socialise	- Live in Upper Hale, Farnham. 7 Miles from AHF.
7	Male	76	4-6 times a week	- Visitor Centre	- Walking - Bike riding	- Live in Upper Hale, Farnham. 7 Miles from AHF.
8	Female	32	A few times a year	- Local knowledge - FC Staffs	- Bring children for walk, use the playgrounds. - Meet with friends.	- Live in Headley Down. 15-min drive from AHF.
9	Female	36	1-3 times a week	- Words of mouth	- Bring children for walk, use the playgrounds.	

Theme 1: Recreation Motivation

	QUESTION	STATEMENT(S)	WHO?	NOTE (IDEA)
1.	What motivates you to do outdoor activities and get involved?	"Well for health, for health reasons, yeah"	7	For health: Suggested by the Heart Foundation. They also organised event such as 'Walking for Health' once a week in the forest. An hour to hour and a half (3 – 5 miles).
		" I do the same really, for health"	6	For health: She can't walk too much, but having walking around the forest using her buggy.
		"I would say the same, there's lots, lots of space and outside, so good for fresh air and children running around" "And I also like the fact that the Gruffalo Trail you can take the pushchair around, because obviously some forests are a bit limited when you've got pushchairs. And my little boy's eight months now, so he's a bit heavy to carry in the carrier"	8	For health Easy access
		"Yeah, I come because he needs some time outside every day running around, and same, you can take the pushchair everywhere as well"	9	Bring her children go out for walk Easy access – convenience for mother with pushchair
		"I bring the dog"	2	Dog walking
		"I come because I just love walking in the woods. Unfortunately I can't walk very far these days, but the access walk is very good for me, and I'm trying to build up my walking ability and find my balance, so the forest is very good for that"	3	Enjoying nature Enhance health
		"I think the nature and the wildlife here" "Like last year I heard one this morning out on the golf course, but it's that you can hear the cuckoos and the deer if you're really quiet, early in the morning walking around, you can see the deer and it's just lovely, yeah"	5	Enjoying nature Wildlife Walking in the forest
2.	What do you like best about outdoor recreation?	"Socialising of course"	6	They usually have coffee morning at the café in AHF together.
		"Yes, we have a coffee morning"	7	
		"Yes, coffee, yeah. That's the real reason they come"	2	

	<ul style="list-style-type: none"> - What are the benefits? - The reason for benefits? 	<p>"Another thing is you can go to the sort of busy areas and see everybody and have a chat, and then literally within five, ten minutes you can go to a quieter area"</p>	5	
		<p>"Yeah, I would say, I would agree, it's never really busy because you can always find somewhere"</p> <p>"Like if you go to other places, especially indoor places, there's kind of like maximum capacity".</p> <p>"Whereas even if the playgrounds are busy you can go for a walk and it, it won't be"</p>	8	
3.	<p>What do you like least about outdoor activities?</p> <ul style="list-style-type: none"> - What are the reasons you dislike that aspect? 	<p>"The frustration of not being able to cycle"</p>	3	
		<p>"The only thing I would say is the parking because I don't have a (Discovery) pass. Because we like to go to different places, so the parking is quite expensive, so that is sort of a consideration against going to other woodlands in the area, so usually we come when it's meeting friends and sort of more worth our while"</p>	8	Parking charge
		<p>"Oh, so if you come once a week it's cheaper to get a pass"</p>	2	
		<p>"They could do with more swings in the playground, yeah"</p> <p>"Because they, like they only ever had two. That's how many you get at any park, wherever you go, so there's always a massive, massive queue for the swings"</p>	9	More swing at the playgrounds.
		<p>"And we could do with a, a café that would be open"</p>	6	New café to be opened. Catering services were offered temporarily near the playground area.
		<p>"It's been a very long time in the waiting"</p> <p>"Yeah, because every day coming here"</p>	F	

Theme 2: Place Attachment

	QUESTION	STATEMENT	WHO?	NOTE (IDEA)
1.	Why did you choose this particular forest to perform your recreational activities?	<p>"Well Michael and I were brought up here, we've lived here all our lives, so we come here since we were tiny"</p>	6	
		<p>"I like the drive here, when it all used to be open and you could drive"</p>	5	

		“because I used to come here with my father and I would drive, so it was off the roads”		
		“Oh yes, it’s changed. I used to bring Cubs and Scouts, and the Cubs used to make nest boxes for the birds and help the Rangers to put them up. And the Scouts would do activities here building bivouacs, and night activities and tracking and finding animal spores and trail”	4	
		“Oh yeah, yeah, where we’d dig, did dig those out, I was Chairman for 20 years of a group called The Friends of Alice Holt Forest. And we’d meet once a month and have talks of an evening, and then we’d work, work parties in the forest, we, we stored some dew ponds and other ponds, we planted trees in the arboretum, which is over the other side of the road. We helped with the butterfly conservation area at Bentley Station, and one at Plaistow near Dunts Hall, which is all part of the forestry. Because the Ranger at the time, he was into butterflies, and he got an award from the British Butterfly Association for that. And we just used to love to come up here and get together in a group and work”	4	
		“The same for me really, I’ve been coming here what, about 30 years. When the children were young we used to bring them up and bring the bikes. We’d use this side of the forest plus the other side, and you just become attached to it, it’s such a lovely forest”	F	
		“What I find now is a lot of country walks, I can’t go very far so I’m stuck, I’ve just got to go up a path and come back again, I can’t do a lot of steep hills. But here there’s a lot of variety, you’ve got the easy access, and also I get a bit further, there are lots of paths that aren’t too steep, I might just do one steep path”	F	
		“The Friends of the Forest raised money and Forest Lodge gave us £10,000 towards the cost of the easy access trail. And as well as laying the trail so it was	4	

		smooth for buggies, we put aromatic and different plants on the trail so people with deaf and blind could feel the leaves or smell and see what they were, and it was for everybody.”		
		“When did the Friends disappear?”	M	
		“2003, yes”	M	
		“Yeah, it was getting old, people were getting older and we had a lot of single ladies. And where we met in the Research Centre it was all right, but they didn’t like driving up through the forest on dark winter nights on their own”	M	
		“They were a bit, bit scared of it, so we couldn’t attract younger people for the working parties”	M	
		“So it just disappeared naturally, which was a shame”	M	
		“Perhaps we should put a notice up in the Visitors Centre, anybody interested in starting up Friends of the Forest again?”	F	
		“I have, I have tried it, but the biggest stumbling block now is, is two dreaded words, health and safety”	M	
		“And also public liability insurance, it used to cost us somewhere about £100 for a year, it’s 1,000 to 2,000 now”	M	
		“We just, we just couldn’t raise that sort of money to pay for that”	M	
		“It’s the restrictions in the way now, not, you’re not free to do these things”	M	
		“You find it with the Scouts, I’m still involved with the Scouts, and we’re finding it with that, we’ve got to be extremely careful what we do now. There’s so many rules and regulations”	M	
		“And this society we’re living now, they’ll sue you for the slightest thing”	M	

		“Well it’s like when they closed the forest for the ice and that a little while ago”	F	Respond to the event of closing the forest because of the ice condition in the winter.
		“And honestly it really didn’t warrant closing”	F	
		“It’s just the risk element”	F	
		“But they had to do it”	F	
		“Yeah, I’ve been up here in a lot, I’ve been up here in worse weather”	M	
		“And I think it’s quite sad, I could walk out of my front door and break my neck”	F	
2.	Mostly your attachment to the forest is more like to be emotional bonding?	“Yeah, well when my daughter was only about five weeks old we came here because the NCT, National Childbirth Trust, used to do a monthly like toddler and baby walk, and so it was just really nice to get out with new baby and meet new friends. And we’re still in touch with people that we met on that day so it, it was lovely.”	F	
		“The Farnham NCT Group is just about to be re-launched. The trouble, the trouble is, as with anything, people go back to work and their children get older, and it needs a continual recruitment. But I did, I did see recently that a group of people are trying to sort of re-launch it, and I think they did say that they’d like to do an event here in the holidays with the Gruffalo Trail and read the story. So hopefully you’ll get more small people back”	F	

Theme 3: Recreation Experience

	QUESTION	STATEMENT	WHO?	NOTE (IDEA)
1.	What can you say about your experience during your visits to this forest?	“I think you find people lost, they don’t know where to go”	M	
		“They have to go back to the car park, you find that”	M	
	Have you encountered any problems during your visits here?	“I don’t think it’s as much of an issue now, because obviously they’ve put a lot of investment into the	F	

		car park, but there used to be a time when if it was a sunny weekend day and you weren't there by 10.00 you wouldn't get a parking space"		
		"But then to a certain extent that's one reason why, even if you said, even if the car park's full you could just walk for a while and the place is empty. But of course the car park is relatively small, from that point of view"	M	
		"So if, if they doubled the size of the car park, on occasions they'd fill it, but it wouldn't be quite as, quite as quiet, you know, it's yeah"	M	
		"Well there's restrictions on that because the relief car park up at the top, they're only allowed to open it for a certain number of days a year"	M	
3.	What does this forest experience offer that you can't get anywhere else?	"Well if I didn't come up here I would go mad"	6	Emotional bonding
		"Because it's the socialising up here"		
		"I think it's got good, it's got more play opportunities than the alternatives around here"	F	There is another park nearby, called Farnham Park.
		"For young children, Farnham Park's playground is not very good for under-fives, it's, they get stuck at the top"		
		"It's peaceful"	F	
		"The Rangers, everybody that like a family"	F	
		"For me it's very therapeutic. I just love the woods and I like wildlife, so I can just get lost in the environment, it makes, it's so peaceful and it's very restful"	F	
		"I find the same, very therapeutic"	M	
		"It's nice to see the changing seasons"	M	
		"Another thing, like Derek and I, we were walking through one part, and there was this little slow worm walking across the path, wasn't it? So we	F	

		picked him up and had a little feel. And the snakes and things you see”		Ability to see the wildlife in the forest
		“I saw an adder on the trail obviously sort of sunbathing. And it kind of reared up”	F	
		“And deer, as you said. They are out during the day as well”	F	
		“Yeah, and rabbits”	M	
		“And squirrels and I just love it”	F	
		“For me it was when you saw, I remember once seeing a kid and his mum on one of the paths, and he was so excited because he was following, they’d seen a deer and he was following the deer trails”	F	
		“That a kid of that age who’s obviously so, so excited” *	F	
		“That’s what is going to, sort of in the long term, is going to, people like that that’s going to look after the forest, it’s, that’s the reason why people come to the forest”	F	*In response to the above statement.
		“Angus loves it, like he will ask to come to this spot, and he’ll say like the pirate ship swings and all right, really sweet, but he means Alice Holt, and he’ll describe it to me, like pond, café, grandma, and grandpa Mat. But it’s, he’ll come here and he’ll have a great time, we’ll have some food. We can go in the Gruffalo, he hugs the Gruffalo when he sees it, like he thinks it’s his Gruffalo, because we see it so often”.	9	AHF has good facilities and interesting features to accommodate children’s needs during their visit to the forests. <ul style="list-style-type: none"> - Easy access for pushchairs - Short trail - Gruffalo sculptures - Many choices of playgrounds
		“Yeah, playground, and you can take like you said the pushchair on it, and it’s short enough routes that he can do then”	8	
		“It is very child oriented as well”	M	
		“It’s the whole family friendly”	F	

		"We also sometimes do say stuff like you have to be quiet, we have to like listen to the wildlife, and have like a little moment of quiet"	F	(Emerging theme) Informal way to educate about nature (outdoor learning) to the young children.
		"Because sometimes they're just running like crazy, and I'm come on, listen, let's see if we can hear any birds"	F	
		"You'll get a few if you sit on the seats around the forest here, and just sit there quiet, it's amazing what you see, isn't it?" **	M	
		"... I do get the impression that the foresters leave small branches all over the place so children can build this, that and the other"	M	
		"It is good because it's for all ages, so you can bring tiny babies, you can bring grandparents"	F	
		"We could do with some more seats a bit further out"	F	
		"We are lacking in seats"	F	**In response to the previous statement re: experience nature in the forest.

Theme 4: Environmental and Social Perceptions

	QUESTION	STATEMENT	WHO?	NOTE (IDEA)
1.	What is your opinion about these pictures?			
	Picture 1: Crowding/Multiple Users	"Yeah, I have encountered that many times"	M	In response to a question about multiple users in one trail.
		"What I have found, there are just one or two cyclists, especially the cyclists with the buggies on the back, we had them for six months, hurling down the path, I was in the middle of it, and I only just got to the side in time for them to go past. They did not slow down. Now that's one thing that is bad, but fortunately it's the minority, most of them will slow down or let you go across the path as a family" "I just went to the side, there was nothing I can do"	3	She told us her own experience engaging with the multiple users during her walk in the forest.

		<p>“That was bad because that was, that kind of shook me up”</p> <p>“Because at the time I wasn’t walking very well at all. No, they just didn’t slow down”</p>		
		“Yeah some of them, some of them shout out they’re coming”	M	
		“And you find horses where they shouldn’t be”	M	<ul style="list-style-type: none"> - Horse riders appear on normal trail – not the horse riding paths. - Horse riders at AHF need a permit to conduct the activity in the forest.
		“If they’re given a permit, they’re given a map of what paths they can use. But you find them on normal footpaths”	M	
		“And they tear it up and make it difficult to walk on”	M	
		“And it dangerous with mothers with prams”	F	
	Picture 2: User’s attitude	“No, the motorcyclists use the old drovers road”	M	The news headline is about dog walkers, walkers, and motorcyclist.
		“They’re very considerate”	M	Everyone agreed on this statement.
		“Cyclists are very good, you get the odd one who’ll come hurtling through and”	M	Changing the situation of motorcyclist to a cyclist.
		“I think the worst ones are the runners actually”	F	<p><i>(Emerging theme)</i></p> <ul style="list-style-type: none"> - They agreed that runners are the worst user. - The runners are usually participate in a running event on Saturday morning.
		“They are, they think they own everything”	F	
		“They’re running’s their personal time, yeah”	F	
		“Yeah, they tell you, they tell you to get out of the way. The runners are the worst”	M	
		“Yeah, but the cyclists cause trouble for the runners”	M	
		“It’s the group, it’s when you get groups of people, like Nordic Walkers, some of them will just go, and they won’t go to the side”	F	
		“They won’t go slow down for you, no, you’ve got to get out of their way”	M	
		“They just think it’s their right of way”	M	
		“I’ve never really experienced any conflict, yeah occasionally someone might cycle quickly past me, I have to move over, but nothing that causes any bother”	F	
		“No, I haven’t either, to be honest”	F	

		"Mostly the little, but I generally will only go with him on the habitat trail and stuff, so maybe it's because I'm not going further than I want into the forest, where you can get a lots more"	F	Response by mothers who use pram/ with children about conflict they experienced with multiple users in the forest.
Picture 3: User's attitude		"There's poo, people pick it up and then they leave the bag on the side or they throw it in the trees"	M	
		"Well, what about that woman in the, outside the Visitors Centre, this was only a couple of days ago, we actually watched her dog do it right in the middle, and she walked off and left it. But Chris was there, so he said, "Did you actually see that?", and we said, "Yes, we did", so he went over her, and do you know what she said? She said, "That's not from my dog", she said, "It's too big".	F	
		"Clarice actually cleaned it up"	F	
		"Can they fine within? I don't have dos so I don't know, but I know obviously on council property they can fine you"	8	Fine charge to people who did not responsible to their dog's poo?
		"Oh they can be fined here, yeah"	M	
		"If it was a Ranger"	M	
		"To be honest, this is not a location where I've found dog poo to be an issue. Ludshott Common is terrible"	F	Comparing the issue between AHF and other site.
		"Oh Ludshott Common's dreadful"	M	
		The first 200 yards from the car park is evil"	M	
		"No, there's, no we could do with a few more, especially deeper into the forest"	M	Responding to a moderator's question: "Do you think the dog waste bin is enough for this area?"
		"That's why people throw it in the trees, because there's nowhere to put it"	M	
		"Well they sort of pick it up when they think somebody's watching, I think"	F	User's attitude
		"Then when nobody's watching the do the classics and hang it in the tree"	F	
		"Or they just throw it in an ordinary rubbish bin. I've seen that so many times"	F	

		"But if you have loads of them, then somebody's got to empty them"	M	
		"I did notice on the Forestry Commission website one of the things they say, and I did notice that there was, somebody said this in Parliament a few weeks ago, in that the suggestion is that actually, unless you're very close to a poo bin, just get a stick and flick it into the undergrowth"	M	The good practices in handling dog waste
		"I think when you're near the car parks, and near a dog bin, do the right thing"	F	
		"If you're far out in the forest, if you stick it, flick it far away"	F	
		"Well, that's got to be better than leaving it in a carrier bag on a tree, nothing, that's never going to degrade"	F	
		"So many people leave them on the trees or the side of the path, which is so wrong"	F	
	Picture 4: User's attitude	"I wish I'd a video, because we were walking round, Fiona will know, there are some log stacks"	M	Children playing on the log stacks, even though there was a signage.
		"Over there, and a big sign saying words to the effect of do not allow your children to play on log stacks. And there were three or four children"	M	
		"on top of them"	F	
		"On the log stacks playing up and down"	M	
		"And their two mothers were leaning on the sign smoking cigarettes"	M	
		"It's easy enough to put it in your pocket and take it home. You put it in your pocket to come out, so put it in your pocket to take it home"	M	Good practice to reduce litter problem in the forest.
		"I always used to think, if you carry a heavy picnic out, when you eat it's light to carry back"	F	
		"The surprising thing is how bad the car parks are"	F	
		"People just don't want to take it in their own car back home"	F	

		<p>“Well you talk about that, talking about the other subject, a lady comes up in a van, dog walking, oh yeah, and she got back to her van, she went to drive off and there was seven or eight poo bags there. So, I stood in the way so she couldn’t move and made her get out and put them in the dog bin”</p>	M	
		<p>“Yeah, and I tore her off a strip, I said “You get dog walkers a bad name”. And I said, “You’re being paid to walk a dog”.</p> <p>“Oh yeah, yeah, all over her van, Rosie’s Dog Walkers”</p> <p>“But I caught her that day before she could drive off”</p>	M	
	Picture 5: Environmental issues	“I haven’t come across the problem here”	F	Ground-nesting birds is not relevant to AHF.
		“I don’t think this is relevant”	M	
		<p>“If people stick to the areas that are designated for walking”</p> <p>“And then there’s plenty of space left for wildlife then everybody can live in harmony”</p>	F	
		“Well it’s big enough, you can get away from those ground nesting areas”	M	
	Picture 6: Environmental issues	“Yeah it does, but you’ve got to expect it in the forest”	M	
		“You can find muddy paths, certainly when it’s been heavy rain, but that doesn’t really matter because there are lots of other paths you can use”	F	
		“And you should have natural paths in the forest, so I don’t think mud’s going to be a problem”	F	
		“You bring your wellies, you bring your raincoat”	F	
		“And the kids love it when they’re splashing around”		
		“Puddle jumping, yeah its great!”	M	
		“I think that’s the really nice thing is that you can stick to the sort of made up paths or you can go off and find your own route, and absolutely be in nature”	F	

		"Yeah, oh there's lots of little narrow paths to wander around there"	M	
--	--	---	---	--

Theme 5: Support and Commitment

	QUESTION	STATEMENT	WHO?	NOTE (IDEA)
1.	What would you do to protect the things that are important to your visit here?	"I used to volunteer, but I can't do it anymore because I can't, I haven't got the physical ability. But I think I've done it in the past, so I've done my bit"	F	
		"I don't think they have one either, do they? Some Forestry Commission sites you can volunteer, but I think here they did it all by themselves"	F	
		"Yes, it's done, we used to have, we had what, 50 members in the Friends of the Forest, and we used to get quite good working parties. And even we used to do bracken bashing with walking sticks or branches. You're not even allowed to do that now because you might hit somebody on the shins and hurt them"	4	
		"All the national parks are the same, they can't get the volunteers for work because of the litigation and health and safety laws."	M	
		"The pond there would be perfect now because the volunteers would be looked after"	M	Last time they did volunteer works at AHF. They cleaned the pond and did some other works in the forest.
		"We cleaned it out two or three times a year"		
		"But as I say you're so restricted now by rules and regulations and litigation"	M	
		"I guess it's the effort of, so someone's got to organise it, do the risk assessment"	F	
		"And then it's like, is it worth it? As you say, if you don't get very many volunteers show up on the day and you can't do what you wanted to do anyway"	F	
	"We used to have a bonfire and put jacket potatoes in"	M		

	<p>“And Nelly would bring a big cauldron of soup”</p> <p>“And we had soup and jacket potatoes with chunks of bread, and it was a lovely day out”</p> <p>“Very enjoyable”</p>	<p>M</p> <p>M</p> <p>F</p>	
	<p>“Well Deadwater Valley do a lot of volunteer activities”</p> <p>“And they also do a lot of children’s, they have like two toddler walks”</p> <p>“The Wildlife Trust does as well”</p> <p>“But to get, as I mentioned it last year to get the Friends started, I had a secretary and I had a treasurer, Jo and I and Julian, we tried to get it going, but we just couldn’t”</p> <p>“That’s it, well you need committed people”</p> <p>“Yes, and then as I say, when we found out what liability insurance was going to cost us”</p>	<p>F</p> <p>F</p> <p>F</p> <p>M</p> <p>F</p> <p>M</p>	<p>Other sites implemented the volunteer works.</p> <p>Liability insurance is the barrier!</p>

APPENDIX 4

ANOVA and Post Hoc Tests Results

Appendix 4A:	ANOVA Tables
Appendix 4B:	Post Hoc Tests
Appendix 4C:	Description Analysis of Visitor's Satisfaction on Management Settings

Appendix 4A-1: Tests of Between-Subjects Effects of Recreation Motivation

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
<i>Tranquillity</i>	Corrected Model	3.456 ^a	2	1.728	2.127	.122
	Intercept	1866.834	1	1866.834	2297.514	.000
	User Group	3.456	2	1.728	2.127	.122
	Error	164.134	202	.813		
	Total	3000.000	205			
	Corrected total	167.590	204			
<i>Away from Crowds</i>	Corrected Model	6.275 ^f	2	3.138	3.832	.023
	Intercept	1972.377	1	1972.377	2408.790	.000
	User Group	6.275	2	3.138	3.832	.023
	Error	165.403	202	.819		
	Total	3170.000	205			
	Corrected total	171.678	204			
<i>New Experience</i>	Corrected Model	1.022 ^b	2	.511	.630	.533
	Intercept	1499.119	1	1499.119	1848.871	.000
	User Group	1.022	2	.511	.630	.533
	Error	163.788	202	.811		
	Total	2610.000	205			
	Corrected total	164.810	204			
<i>Appreciate Nature</i>	Corrected Model	1.257 ^e	2	.629	.838	.434
	Intercept	1792.036	1	1792.036	2389.480	.000
	User Group	1.257	2	.629	.838	.434
	Error	151.494	202	.750		
	Total	2926.000	205			
	Corrected total	152.751	204			
<i>Scenic Beauty</i>	Corrected Model	2.112 ^c	2	1.056	2.332	.100
	Intercept	2331.983	1	2331.983	5149.969	.000
	User Group	2.112	2	1.056	2.332	.100
	Error	91.469	202	.453		
	Total	3693.000	205			
	Corrected total	93.580	204			
<i>Close to Nature</i>	Corrected Model	.023 ^h	2	.011	.016	.984
	Intercept	1984.780	1	1984.780	2770.187	.000
	User Group	.023	2	.011	.016	.984
	Error	144.729	202	.716		
	Total	3298.000	205			
	Corrected total	144.751	204			
<i>Family Together</i>	Corrected Model	11.906 ^d	2	5.953	4.898	.008
	Intercept	1758.430	1	1758.430	1446.918	.000
	User Group	11.906	2	5.953	4.898	.008
	Error	245.489	202	1.215		
	Total	3210.000	205			
	Corrected total	257.395	204			
<i>Family Activity</i>	Corrected Model	14.007 ⁱ	2	7.003	4.952	.008
	Intercept	1971.162	1	1971.162	1393.773	.000
	User Group	14.007	2	7.003	4.952	.008
	Error	285.681	202	1.414		
	Total	3644.000	205			

	Corrected total	299.688	204			
Release Tensions	Corrected Model	1.989 ^e	2	.994	1.348	.262
	Intercept	2101.850	1	2101.850	2850.112	.000
	User Group	1.989	2	.994	1.348	.262
	Error	148.967	202	.737		
	Total	3407.000	205			
	Corrected total	150.956	204			
Avoid Daily Routine	Corrected Model	6.181 ⁱ	2	3.090	2.626	.075
	Intercept	1648.245	1	1648.245	1400.453	.000
	User Group	6.181	2	3.090	2.626	.075
	Error	237.741	202	1.177		
	Total	2872.000	205			
	Corrected total	243.922	204			

- a. R Squared = .021 (Adjusted R Squared = .011)
- b. R Squared = .006 (Adjusted R Squared = -.004)
- c. R Squared = .023 (Adjusted R Squared = .013)
- d. R Squared = .046 (Adjusted R Squared = .037)
- e. R Squared = .013 (Adjusted R Squared = -.003)
- f. R Squared = .037 (Adjusted R Squared = .027)
- g. R Squared = .008 (Adjusted R Squared = -.002)
- h. R Squared = .000 (Adjusted R Squared = -.010)
- i. R Squared = .047 (Adjusted R Squared = .037)
- j. R Squared = .025 (Adjusted R Squared = .016)
- k. Computed using alpha = .05

Appendix 4A-2: Tests of Between-Subjects Effects of Affective Attachment

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
<i>This forest park means a lot to me</i>	Corrected Model	9.227 ^a	2	4.613	5.545	.005
	Intercept	1853.740	1	1853.740	2228.094	.000
	User Group	9.227	2	4.613	5.545	.005
	Error	168.061	202	.832		
	Total	3077.000	205			
	Corrected total	177.288	204			
<i>I am very attached to this forest park</i>	Corrected Model	4.982 ^e	2	2.491	2.323	.101
	Intercept	1405.476	1	1405.476	1310.397	.000
	User Group	4.982	2	2.491	2.323	.101
	Error	216.657	202	1.073		
	Total	2464.000	205			
	Corrected total	221.639	204			
<i>I feel a strong sense of belonging to this forest park and its settings/facilities</i>	Corrected Model	2.065 ⁱ	2	1.033	.948	.389
	Intercept	1202.639	1	1202.639	1103.689	.000
	User Group	2.065	2	1.033	.948	.389
	Error	220.110	202	1.090		
	Total	2146.000	205			
	Corrected total	222.176	204			
<i>I have little if any, emotional attachment</i>	Corrected Model	6.508 ^m	2	3.254	2.665	.072
	Intercept	844.668	1	844.668	691.645	.000

to this forest park and its settings/facilities	User Group	6.508	2	3.254	2.665	.072
	Error	246.692	202	1.221		
	Total	1639.000	205			
	Corrected total	253.200	204			

- a. R Squared = .052 (Adjusted R Squared = .043)_a
- b. R Squared = .022 (Adjusted R Squared = .013)_e
- c. R Squared = .009 (Adjusted R Squared = -.001)_i
- d. R Squared = .026 (Adjusted R Squared = .016)_m
- e. Computed using alpha = .05_o

Appendix 4A-3: Tests of Between-Subjects Effects of Place Identity

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
I feel this forest park is a part of me	Corrected Model	9.992 ^b	2	4.996	4.831	.009
	Intercept	1213.007	1	1213.007	1173.017	.000
	User Group	9.992	2	4.996	4.831	.009
	Error	208.887	202	1.034		
	Total	2034.000	205			
	Corrected total	218.878	204			
I identify strongly with this forest park	Corrected Model	2.541 ^f	2	1.271	1.197	.304
	Intercept	1305.502	1	1305.502	1229.521	.000
	User Group	2.541	2	1.271	1.197	.304
	Error	214.483	202	1.062		
	Total	2278.000	205			
	Corrected total	217.024	204			
Visiting this forest park says a lot about who I am	Corrected Model	4.771 ^j	2	2.386	2.589	.078
	Intercept	1316.456	1	1316.456	1428.729	.000
	User Group	4.771	2	2.386	2.589	.078
	Error	186.126	202	.921		
	Total	2214.000	205			
	Corrected total	190.898	204			

- a. R Squared = .046 (Adjusted R Squared = .036)_b
- b. R Squared = .012 (Adjusted R Squared = .002)_f
- c. R Squared = .025 (Adjusted R Squared = .015)_j
- d. Computed using alpha = .05_o

Appendix 4A-4: Tests of Between-Subjects Effects of Social Bonding

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
My friends/family would be disappointed if I were to start visiting other settings and facilities	Corrected Model	.130 ^c	2	.065	.078	.925
	Intercept	587.750	1	587.750	703.039	.000
	User Group	.130	2	.065	.078	.925
	Error	168.875	202	.836		
	Total	1122.000	205			
	Corrected total	169.005	204			
If I were to stop visiting this forest park's sites, I would	Corrected Model	4.456 ^g	2	2.228	2.578	.078
	Intercept	418.586	1	418.586	484.416	.000
	User Group	4.456	2	2.228	2.578	.078

lose contact with a number of friends	Error	174.549	202	.864		
	Total	876.000	205			
	Corrected total	179.005	204			
Many of my friends/family prefer this forest park over other sites	Corrected Model	1.967 ^k	2	.983	.893	.411
	Intercept	1172.866	1	1172.866	1065.029	.000
	User Group	1.967	2	.983	.893	.411
	Error	222.453	202	1.101		
	Total	2179.000	205			
	Corrected total	224.420	204			

- a. R Squared = .006 (Adjusted R Squared = -.009)_c
b. R Squared = .033 (Adjusted R Squared = .015)_g
c. R Squared = .010 (Adjusted R Squared = -.001)_k
d. Computed using alpha = .05_o

Appendix 4A-5: Tests of Between-Subjects Effects of Place Dependence

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
I prefer this forest park over other settings/facilities for the recreational activities that I enjoy most	Corrected Model	2.315 ^d	2	1.157	1.219	.298
	Intercept	1511.734	1	1511.734	1592.434	.000
	User Group	2.315	2	1.157	1.219	.298
	Error	191.763	202	.949		
	Total	2530.000	205			
	Corrected total	194.078	204			
For what I like to do, I could not imagine anything better than the setting and facilities provided by this forest park	Corrected Model	.278 ^h	2	.139	.123	.884
	Intercept	1359.234	1	1359.234	1207.411	.000
	User Group	.278	2	.139	.123	.884
	Error	227.400	202	1.126		
	Total	2359.000	205			
	Corrected total	227.678	204			
I enjoy visiting this forest park more than any other sites	Corrected Model	1.285 ⁱ	2	.643	.623	.538
	Intercept	1411.340	1	1411.340	1367.404	.000
	User Group	1.285	2	.643	.623	.538
	Error	208.491	202	1.032		
	Total	2393.000	205			
	Corrected total	209.776	204			
For the recreation activities that I enjoy most, the settings and facilities provided by this forest park are the best	Corrected Model	2.993 ⁿ	2	1.497	1.407	.247
	Intercept	1516.074	1	1516.074	1425.525	.000
	User Group	2.993	2	1.497	1.407	.247
	Error	214.831	202	1.064		
	Total	2547.000	205			
	Corrected total	217.824	204			

- a. R Squared = .016 (Adjusted R Squared = .002)_d
b. R Squared = .002 (Adjusted R Squared = -.009)_h
c. R Squared = .011 (Adjusted R Squared = -.004)_i
d. R Squared = .014 (Adjusted R Squared = .004)_n
e. Computed using alpha = .05_o

Appendix 4A-6: Tests of Between-Subjects Effects of Recreation Behaviour

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
<i>In order to minimise disturbance to wildlife, I intend to stick on the designated paths today</i>	Corrected Model	.374 ^a	2	.187	.069	.933
	Intercept	4268.369	1	4268.369	1585.326	.000
	User Group	.374	2	.187	.069	.933
	Error	543.870	202	2.692		
	Total	7279.000	205			
	Corrected total	544.244	204			
<i>I will not stray off the designated path in order to protect the ground nesting birds</i>	Corrected Model	7.669 ^e	2	3.834	1.871	.157
	Intercept	4504.956	1	4504.956	2198.384	.000
	User Group	7.669	2	3.834	1.871	.157
	Error	413.941	202	2.049		
	Total	7446.000	205			
	Corrected total	421.610	204			
<i>Staying on the designated paths to me makes my activity feel...</i>	Corrected Model	.278 ^b	2	.139	.078	.925
	Intercept	3299.869	1	3299.869	1849.914	.000
	User Group	.278	2	.139	.078	.925
	Error	360.327	202	1.784		
	Total	5576.000	205			
	Corrected total	360.605	204			
<i>Staying on the designated paths to me makes my experience...</i>	Corrected Model	1.732 ^f	2	.866	.428	.652
	Intercept	3777.062	1	3777.062	1867.315	.000
	User Group	1.732	2	.866	.428	.652
	Error	408.590	202	2.023		
	Total	6345.000	205			
	Corrected total	410.322	204			
<i>Most people who are important to me think that I should stick to designated paths today</i>	Corrected Model	7.426 ^c	2	3.713	1.177	.310
	Intercept	3037.697	1	3037.697	962.723	.000
	User Group	7.426	2	3.713	1.177	.310
	Error	637.374	202	3.155		
	Total	5368.000	205			
	Corrected total	644.800	204			
<i>Forestry Commission staffs would be happy if I use the designated paths to minimise disturbance to ground nesting birds and other wildlife</i>	Corrected Model	3.250 ^g	2	1.625	1.620	.200
	Intercept	5339.959	1	5339.959	5324.810	.000
	User Group	3.250	2	1.625	1.620	.200
	Error	202.575	202	1.003		
	Total	8526.000	205			
	Corrected total	205.824	204			
<i>In term of my ability to stay on the designated path, I feel it is...</i>	Corrected Model	3.907 ^d	2	1.953	.881	.416
	Intercept	4690.745	1	4690.745	2115.413	.000
	User Group	3.907	2	1.953	.881	.416
	Error	447.917	202	2.217		
	Total	7760.000	205			
	Corrected total	451.824	204			
<i>I feel I have a control of myself to stay on the designated paths during my visit today</i>	Corrected Model	4.924 ^h	2	2.462	1.396	.250
	Intercept	4884.295	1	4884.295	2768.522	.000
	User Group	4.924	2	2.462	1.396	.250
	Error	356.373	202	1.764		
	Total	7886.000	205			
	Corrected total	361.298	204			

a. R Squared = .003 (Adjusted R Squared = -.009)_a

- b. R Squared = .007 (Adjusted R Squared = -.009)_b
- c. R Squared = .017 (Adjusted R Squared = .002)_c
- d. R Squared = .018 (Adjusted R Squared = .001)_d
- e. R Squared = .024 (Adjusted R Squared = .008)_e
- f. R Squared = .013 (Adjusted R Squared = -.006)_f
- g. R Squared = .022 (Adjusted R Squared = .006)_g
- h. R Squared = .020 (Adjusted R Squared = .004)_h
- i. Computed using alpha = .05;

Appendix 4A-7: Tests of Between-Subjects Effects of Visitor Satisfaction (Management Settings)

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Pre-Visit Info	Corrected Model	8.816 ^a	2	4.408	1.805	.167
	Intercept	1680.613	1	1680.613	688.324	.000
	User Group	8.816	2	4.408	1.805	.167
	Error	493.204	202	2.442		
	Total	3327.000	205			
	Corrected total	502.020	204			
Road Signs	Corrected Model	8.096 ^b	2	4.048	2.319	.101
	Intercept	1837.669	1	1837.669	1052.611	.000
	User Group	8.096	2	4.048	2.319	.101
	Error	352.656	202	1.746		
	Total	3514.000	205			
	Corrected total	360.751	204			
Roads	Corrected Model	.624 ^c	2	.312	.423	.656
	Intercept	2262.511	1	2262.511	3068.189	.000
	User Group	.624	2	.312	.423	.656
	Error	148.957	202	.737		
	Total	3749.000	205			
	Corrected total	149.580	204			
Car parks Areas	Corrected Model	.341 ^d	2	.171	.232	.793
	Intercept	2316.865	1	2316.865	3157.622	.000
	User Group	.341	2	.171	.232	.793
	Error	148.215	202	.734		
	Total	3790.000	205			
	Corrected total	148.556	204			
Parking Charge	Corrected Model	4.348 ^e	2	2.174	1.213	.299
	Intercept	1372.612	1	1372.612	765.987	.000
	User Group	4.348	2	2.174	1.213	.299
	Error	361.974	202	1.792		
	Total	2709.000	205			
	Corrected total	366.322	204			
Park Staff	Corrected Model	1.088 ^f	2	.544	.185	.831
	Intercept	1429.742	1	1429.742	485.917	.000
	User Group	1.088	2	.544	.185	.831
	Error	594.356	202	2.942		

	Total	2871.000	205			
	Corrected total	595.444	204			
Access Toilet	Corrected Model	.219 ^g	2	.110	.082	.921
	Intercept	2228.877	1	2228.877	1670.819	.000
	User Group	.219	2	.110	.082	.921
	Error	269.469	202	1.334		
	Total	3819.000	205			
	Corrected total	269.688	204			
Clean Toilet	Corrected Model	.654 ^h	2	.327	.235	.791
	Intercept	2184.883	1	2184.883	1566.362	.000
	User Group	.654	2	.327	.235	.791
	Error	281.765	202	1.395		
	Total	3708.000	205			
	Corrected total	282.420	204			
Clean Picnic Facilities	Corrected Model	2.558 ⁱ	2	1.279	.291	.748
	Intercept	721.615	1	721.615	164.394	.000
	User Group	2.558	2	1.279	.291	.748
	Error	886.691	202	4.390		
	Total	1976.000	205			
	Corrected total	889.249	204			
Walking Paths	Corrected Model	9.778 ^j	2	4.889	3.529	.031
	Intercept	2263.387	1	2263.387	1633.856	.000
	User Group	9.778	2	4.889	3.529	.031
	Error	279.831	202	1.385		
	Total	3814.000	205			
	Corrected total	289.610	204			
Cycling Tracks	Corrected Model	60.355 ^k	2	30.177	11.273	.000
	Intercept	1613.654	1	1613.654	602.792	.000
	User Group	60.355	2	30.177	11.273	.000
	Error	540.748	202	2.677		
	Total	3367.000	205			
	Corrected total	601.102	204			
Horse Riding Paths	Corrected Model	7.725 ^l	2	3.862	1.064	.347
	Intercept	314.560	1	314.560	86.649	.000
	User Group	7.725	2	3.862	1.064	.347
	Error	733.319	202	3.630		
	Total	1183.000	205			
	Corrected total	741.044	204			
Children Playing Areas	Corrected Model	29.853 ^m	2	14.927	4.286	.015
	Intercept	1399.486	1	1399.486	401.880	.000
	User Group	29.853	2	14.927	4.286	.015
	Error	703.434	202	3.482		
	Total	3049.000	205			
	Corrected total	733.288	204			
Bicycle Rental Charge	Corrected Model	9.283 ⁿ	2	4.642	1.292	.277
	Intercept	382.777	1	382.777	106.508	.000
	User Group	9.283	2	4.642	1.292	.277
	Error	725.965	202	3.594		
	Total	1326.000	205			

	Corrected total	735.249	204			
BBQ facilities Rental Charge	Corrected Model	.017 ^o	2	.009	.003	.997
	Intercept	182.832	1	182.832	60.329	.000
	User Group	.017	2	.009	.003	.997
	Error	612.178	202	3.031		
	Total	905.000	205			
	Corrected total	612.195	204			
High Rope Activity Charge	Corrected Model	3.233 ^p	2	1.617	.455	.635
	Intercept	389.746	1	389.746	109.779	.000
	User Group	3.233	2	1.617	.455	.635
	Error	717.157	202	3.550		
	Total	1301.000	205			
	Corrected total	720.390	204			
Horse Riding Charge	Corrected Model	1.016 ^q	2	.508	.181	.835
	Intercept	164.986	1	164.986	58.822	.000
	User Group	1.016	2	.508	.181	.835
	Error	566.575	202	2.805		
	Total	808.000	205			
	Corrected total	567.590	204			
Park Map	Corrected Model	9.325 ^r	2	4.663	2.520	.083
	Intercept	1771.936	1	1771.936	957.555	.000
	User Group	9.325	2	4.663	2.520	.083
	Error	373.797	202	1.850		
	Total	3313.000	205			
	Corrected total	383.122	204			
Info about Plants and Animals	Corrected Model	2.642 ^s	2	1.321	.439	.645
	Intercept	1317.869	1	1317.869	437.661	.000
	User Group	2.642	2	1.321	.439	.645
	Error	608.255	202	3.011		
	Total	2634.000	205			
	Corrected total	610.898	204			
Info Visitor Safety	Corrected Model	27.289 ^t	2	13.644	4.641	.011
	Intercept	1318.939	1	1318.939	448.654	.000
	User Group	27.289	2	13.644	4.641	.011
	Error	593.833	202	2.940		
	Total	2746.000	205			
	Corrected total	621.122	204			
Access for Disabilities	Corrected Model	22.746 ^u	2	11.373	2.734	.067
	Intercept	688.936	1	688.936	165.614	.000
	User Group	22.746	2	11.373	2.734	.067
	Error	840.298	202	4.160		
	Total	1740.000	205			
	Corrected total	863.044	204			

- a. R Squared = .018 (Adjusted R Squared = .008)_a
- b. R Squared = .022 (Adjusted R Squared = .013)_b
- c. R Squared = .004 (Adjusted R Squared = -.006)_c
- d. R Squared = .002 (Adjusted R Squared = -.008)_d
- e. R Squared = .012 (Adjusted R Squared = .002)_e

- f. R Squared = .002 (Adjusted R Squared = -.008)_f
- g. R Squared = .001 (Adjusted R Squared = -.009)_g
- h. R Squared = .002 (Adjusted R Squared = -.008)_h
- i. R Squared = .003 (Adjusted R Squared = -.007)_i
- j. R Squared = .034 (Adjusted R Squared = .024)_j
- k. R Squared = .100 (Adjusted R Squared = .091)_k
- l. R Squared = .010 (Adjusted R Squared = .001)_l
- m. R Squared = .041 (Adjusted R Squared = .031)_m
- n. R Squared = .013 (Adjusted R Squared = .003)_n
- o. R Squared = .000 (Adjusted R Squared = -.010)_o
- p. R Squared = .004 (Adjusted R Squared = -.005)_p
- q. R Squared = .002 (Adjusted R Squared = -.008)_q
- r. R Squared = .024 (Adjusted R Squared = .015)_r
- s. R Squared = .004 (Adjusted R Squared = -.006)_s
- t. R Squared = .044 (Adjusted R Squared = -.006)_t
- u. R Squared = .026 (Adjusted R Squared = .017)_u
- v. Computed using alpha = .05_{aa}

Appendix 4A-8: Tests of Between-Subjects Effects of Visitor Satisfaction (Resource Settings)

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Enjoy Nature	Corrected Model	1.432 ^a	2	.716	.774	.463
	Intercept	2257.109	1	2257.109	2439.723	.000
	User Group	1.432	2	.716	.774	.463
	Error	186.880	202	.925		
	Total	3889.000	205			
	Corrected total	188.312	204			
Sighting Native Wildlife	Corrected Model	12.127 ^b	2	6.063	1.810	.166
	Intercept	1301.475	1	1301.475	388.538	.000
	User Group	12.127	2	6.063	1.810	.166
	Error	676.634	202	3.350		
	Total	2576.000	205			
	Corrected total	688.761	204			
Variety of Activities	Corrected Model	5.370 ^c	2	2.685	1.810	.166
	Intercept	2090.360	1	2090.360	1409.455	.000
	User Group	5.370	2	2.685	1.810	.166
	Error	299.586	202	1.483		
	Total	3561.000	205			
	Corrected total	304.956	204			

- a. R Squared = .008 (Adjusted R Squared = -.002)_a
- b. R Squared = .018 (Adjusted R Squared = .008)_b
- c. R Squared = .018 (Adjusted R Squared = .008)_c
- d. Computed using alpha = .05_{aa}

Appendix 4A-9: Tests of Between-Subjects Effects of Visitor Satisfaction (Social Condition)

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Feeling Safe	Corrected Model	.674 ^a	2	.337	.326	.722
	Intercept	2231.461	1	2231.461	2159.607	.000
	User Group	.674	2	.337	.326	.722

	Error	208.721	202	1.033		
	Total	3834.000	205			
	Corrected total	209.395	204			
Not Crowding	Corrected Model	8.162 ^b	2	4.081	2.984	.053
	Intercept	1742.844	1	1742.844	1274.416	.000
	User Group	8.162	2	4.081	2.984	.053
	Error	276.248	202	1.368		
	Total	3021.000	205			
	Corrected total	284.410	204			

- a. R Squared = .003 (Adjusted R Squared = -.007)_a
b. R Squared = .029 (Adjusted R Squared = .019)_b
c. Computed using alpha = .05_{aa}

APPENDIX 4B

Appendix 4B-1: Post Hoc Test (Tukey HSD) for Recreation Motivation

Dependent Variable	User Group	Walkers	Dog Walkers	Cyclists
Away from Crowds	Walkers	-	.59 (.223) *	.23 (.135)
	Dog Walkers	-.59 (.223) *	-	-.37 (.216)
	Cyclists	-.23 (.135)	.37 (.216)	-
Family Together	Walkers	-	-.75 (.272) *	-.39 (.165) *
	Dog Walkers	.75 (.272) *	-	.35 (.263)
	Cyclists	.39 (.165) *	-.35 (.263)	-
Family Activity	Walkers	-	-.85 (.293) *	-.38 (.178)
	Dog Walkers	.85 (.293) *	-	.47 (.284)
	Cyclists	.38 (.178)	-.47 (.284)	-

Standard Error in parentheses

* Significant $p < 0.05$

Appendix 4B-2: Post Hoc Test (Tukey HSD) for Affective Attachment

Dependent Variable	User Group	Walkers	Dog Walkers	Cyclists
<i>This forest park means a lot to me</i>	Walkers	-	.51 (.225)	.42 (.137) *
	Dog Walkers	-.51 (.225)	-	-.09 (.218)
	Cyclists	-.42 (.137) *	.09 (.218)	-

Standard Error in parentheses

* Significant $p < 0.05$

Appendix 4B-3: Post Hoc Test (Tukey HSD) for Place Identity

Dependent Variable	User Group	Walkers	Dog Walkers	Cyclists
<i>I feel this forest park is a part of me</i>	Walkers	-	.70 (.251) *	.34 (.152)
	Dog Walkers	-.70 (.251) *	-	-.36 (.243)
	Cyclists	-.34 (.152)	.36 (.243)	-

Standard Error in parentheses

* Significant $p < 0.05$

Appendix 4B-4: Post Hoc Test (Tukey HSD) for Visitor Satisfaction (Management Settings)

Dependent Variable	User Group	Walkers	Dog Walkers	Cyclists
Walking Paths	Walkers	-	-.17 (.290)	-.46 (.176) *
	Dog Walkers	.17 (.290)	-	-.29 (.281)
	Cyclists	.46 (.176) *	.29 (.281)	-
Cycling Paths	Walkers	-	.40 (.403)	1.15 (.245) *
	Dog Walkers	-.40 (.403)	-	.75 (.390)

	Cyclists	-1.15 (.245) *	-.75 (.390)	-
Children Playing Areas	Walkers	-	-.90 (.460)	-.76 (.279) *
	Dog Walkers	.90 (.460)	-	.14 (.445)
	Cyclists	.76 (.279) *	-.14 (.445)	-
Info Visitor Safety	Walkers	-	.58 (.423)	.78 (.257) *
	Dog Walkers	-.58 (.423)	-	.19 (.409)
	Cyclists	-.78 (.257) *	-.19 (.409)	-

Standard Error in parentheses

* Significant $p < 0.05$

Appendix 4C: Descriptive analysis of visitor's satisfaction of the user groups in the forest park

User group	NE	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	Total
Pre-visit information about the park was easy to obtain							
Walkers	12	0	1	9	32	22	76
Dog Walkers	4	0	0	2	9	6	21
Cyclists	10	0	1	12	41	44	108
Total	26	0	2	23	82	72	205
Useful directional road signs in the park							
Walkers	6	3	2	5	30	30	76
Dog Walkers	3	0	1	3	9	5	21
Cyclists	5	0	0	14	47	42	108
Total	14	3	3	22	86	77	205
Well designed and maintained roads							
Walkers	3	0	1	3	43	26	76
Dog Walkers	0	0	1	1	11	8	21
Cyclists	0	0	1	16	48	43	108
Total	3	0	3	20	102	77	205
Well designed and maintained carpark areas							
Walkers	1	0	2	6	37	30	76
Dog Walkers	0	0	1	1	9	10	21
Cyclists	1	0	3	12	49	43	108
Total	2	0	6	19	95	83	205
Affordable charge for visitors' parking spaces (e.g., cars, coach, etc.)							
Walkers	1	7	11	17	21	19	76
Dog Walkers	0	7	1	4	4	5	21
Cyclists	1	7	20	23	29	28	108
Total	2	21	32	44	54	52	205
Access to friendly, responsive park staffs							
Walkers	13	0	1	20	26	16	76
Dog Walkers	4	0	0	2	10	5	21
Cyclists	20	0	1	14	43	30	108
Total	37	0	2	36	79	51	205
Access to toilet facilities							
Walkers	2	3	0	5	35	31	76
Dog Walkers	1	0	0	1	10	9	21
Cyclists	6	0	0	7	44	51	108
Total	9	3	0	13	89	91	205
Clean, well presented toilet facilities							

Walkers	4	0	1	8	34	29	76
Dog Walkers	1	0	0	1	9	10	21
Cyclists	6	0	1	8	49	44	108
Total	11	0	2	17	92	83	205
Clean, well presented picnic/BBQ facilities							
Walkers	30	0	0	13	23	10	76
Dog Walkers	8	0	0	2	8	3	21
Cyclists	51	0	0	9	29	19	108
Total	89	0	0	24	60	32	205
Well designed and maintain walking tracks/paths							
Walkers	1	0	0	2	36	37	76
Dog Walkers	1	0	0	0	11	9	21
Cyclists	10	0	0	10	44	44	108
Total	12	0	0	12	91	90	205
Well designed and maintain cycling tracks							
Walkers	22	1	0	7	22	24	76
Dog Walkers	4	0	0	1	11	5	21
Cyclists	4	2	4	7	35	56	108
Total	30	3	4	15	68	85	205
Well designed and maintain horse riding tracks/paths							
Walkers	43	2	1	9	11	10	76
Dog Walkers	12	0	0	2	4	3	21
Cyclists	68	0	3	22	8	7	108
Total	123	2	4	33	23	20	205
Well designed and maintain children playing areas							
Walkers	7	2	1	3	35	28	76
Dog Walkers	6	1	0	0	9	5	21
Cyclists	30	1	2	8	30	37	108
Total	43	4	3	11	74	70	205
Affordable charge for bicycle rental							
Walkers	42	4	4	12	10	4	76
Dog Walkers	11	0	1	2	3	4	21
Cyclists	53	0	5	19	22	9	108
Total	106	4	10	33	35	17	205
Affordable charge for BBQ facilities rental							
Walkers	49	3	1	9	12	2	76
Dog Walkers	14	0	1	0	3	1	21
Cyclists	71	0	3	16	14	4	108
Total	134	3	5	25	29	7	205
Affordable charge for high rope activities (e.g., Go Ape)							
Walkers	36	5	2	9	19	5	76
Dog Walkers	10	0	1	5	3	2	21

Cyclists	60	1	3	20	18	6	108
Total	106	6	6	34	40	13	205
Affordable charge for horse riding permit							
Walkers	51	5	0	8	10	2	76
Dog Walkers	13	1	0	3	3	1	21
Cyclists	74	0	4	16	10	4	108
Total	138	6	4	27	23	7	205
Useful visitor guides/maps in the park							
Walkers	6	3	4	11	35	17	76
Dog Walkers	3	0	0	2	10	6	21
Cyclists	7	0	2	10	49	40	108
Total	16	3	6	23	94	63	205
Useful information on plants and animals in the park							
Walkers	13	0	3	11	38	11	76
Dog Walkers	3	0	0	4	12	2	21
Cyclists	26	0	3	16	41	22	108
Total	42	0	6	31	91	35	205
Clear information about visitor safety							
Walkers	22	0	2	14	27	11	76
Dog Walkers	4	0	0	2	11	4	21
Cyclists	15	0	2	15	48	28	108
Total	41	0	4	31	86	43	205
Accessible features for people with disabilities and seniors							
Walkers	38	0	1	11	20	6	76
Dog Walkers	5	0	0	3	10	3	21
Cyclists	54	1	3	10	22	18	108
Total	97	1	4	24	52	27	205