DETERMINING THE SPATIAL NEEDS OF INTERNATIONAL TOURISTS

SABEREH DEJBAKHSH
B. Eng Agriculture (Tabriz)

SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTERS OF APPLIED SCIENCE

SCHOOL OF MATHEMATICAL AND GEOSPATIAL SCIENCES
RMIT UNIVERSITY
MELBOURNE, VICTORIA
JUNE 2008
DECLARATION

This thesis contains no material that has been accepted for the award of any other higher degree or graduate diploma in any tertiary institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by any other person except where due reference is made in the thesis itself.

__________________________

Sabere Dejbakhsh

June 2008
ACKNOWLEDGEMENTS

For the duration of my study I have been fortunate to receive support, encouragement and advise from number of people to whom I wish to express sincere gratitude. Firstly, I wish to express my sincere gratitude and appreciation to Dr. Colin Arrowsmith, my supervisor, for his guidance, advice, support and contributions throughout this research. I would also like to thank, Dr. Mervyn Jackson, my second supervisor, for helping to set me straight particularly at the beginning of this project. Finally, I would like to thank my family for their encouragement, love and support throughout of this study.
# TABLE OF CONTENTS

DECLARATION ........................................................................................................................................ i
ACKNOWLEDGEMENTS ......................................................................................................................... ii
TABLE OF CONTENTS .......................................................................................................................... iii
LIST OF FIGURES .................................................................................................................................. vi
LIST OF TABLES .................................................................................................................................... viii
LIST OF ACRONYMS ................................................................................................................................ ix
ABSTRACT ................................................................................................................................................ x

## 1 INTRODUCTION................................................................................................................................ 1

1.1 INTRODUCTION ................................................................................................................................ 1
1.2 THE STUDY OBJECTIVE AND RESEARCH QUESTIONS ...................................................................... 4
1.3 RESEARCH STUDY RATIONALE ......................................................................................................... 5
1.4 METHODS TO BE USED ....................................................................................................................... 7
  1.4.1 Literature review ......................................................................................................................... 7
  1.4.2 Research method ....................................................................................................................... 8
  1.4.3 Study location ........................................................................................................................... 8
  1.4.4 Examining tourist behaviour .................................................................................................... 9
  1.4.5 Determining the similarities and disparities in spatial behaviour patterns ... 10
  1.4.6 Evaluating and conclusion ......................................................................................................... 10
1.5 SCOPE AND LIMITATION .................................................................................................................. 11
1.6 CONCLUSION .................................................................................................................................... 12

## 2 A REVIEW OF TOURIST SPATIAL STUDIES .................................................................................. 14

2.1 INTRODUCTION ................................................................................................................................ 14
2.2 DEFINITIONS ..................................................................................................................................... 15
  2.2.1 Tourism ...................................................................................................................................... 15
  2.2.2 Tourist ....................................................................................................................................... 15
  2.2.3 Tourist destination .................................................................................................................... 16
  2.2.4 Australia, a tourist destination ................................................................................................. 18
2.3 TOURIST SPATIAL BEHAVIOUR ......................................................................................................... 19
  2.3.1 Spatial movement patterns ....................................................................................................... 21
  2.3.2 Factors affecting tourist spatial movement patterns ................................................................. 32
2.4 CULTURE, A DIMENSION OF TOURIST SPATIAL BEHAVIOUR ..................................................... 36
  2.4.1 Definition of culture ................................................................................................................ 36
2.5 MEASUREMENT OF CULTURE ........................................................................................................ 38
  2.5.1 Power distance (PDI) ............................................................................................................... 39
  2.5.2 Masculinity/Femininity (MAS) ................................................................................................. 40
  2.5.3 Individualism/Collectivism (IDV) .............................................................................................. 41
  2.5.4 Uncertainty avoidance (UAI) ................................................................................................. 42
2.6 CROSS-CULTURAL STUDIES INTO CHOOSING A TOURIST DESTINATION .................................. 43
2.7 CROSS-CULTURAL STUDIES INTO RECREATIONAL PATTERNS .................................................. 44
6.2 DATA TREATMENT ........................................................................................................... 110
6.2.1 Spatial data.................................................................................................................. 110
6.2.2 Socio-demographic data ............................................................................................. 112
6.2.3 The method of analysis ............................................................................................. 112
6.2.4 Statistical tests .......................................................................................................... 113
6.2.5 Profile of respondents ............................................................................................... 116
6.2.6 Overall rating of tourism products in Melbourne CBD............................................. 119
6.3 DETERMINING DIFFERENT SPATIAL BEHAVIOUR PATTERNS OF INTERNATIONAL TOURISTS ............................................................................................................. 119
6.3.1 Determining the influence of demographic characteristics on spatial
behavioural patterns ........................................................................................................... 120
6.3.2 Determining the influence of cultural backgrounds characteristics on spatial
behavioural patterns ........................................................................................................... 134
6.3.3 Summary of statistical analyses findings .................................................................... 148
6.3.4 Summary of the results of the predicted hypotheses: .................................................. 150
6.4 CONCLUSION.................................................................................................................. 151
7 EVALUATION AND CONCLUSIONS ............................................................................ 153
7.1 INTRODUCTION ........................................................................................................... 153
7.2 SUMMARY OF RESEARCH FINDINGS ........................................................................ 154
7.2.1 The influence of socio-demographic characteristics on international tourists
spatial behaviour patterns .................................................................................................. 154
7.2.2 Determining the influence of cultural characteristics on international tourists
spatial behaviour patterns ................................................................................................. 158
7.3 IMPLICATIONS OF THE STUDY .................................................................................. 162
7.4 LIMITATIONS OF THE RESEARCH .......................................................................... 163
7.4.1 Limitations with the approach .................................................................................. 163
7.4.2 Limitations of the survey design .............................................................................. 164
7.4.3 Limitations of the survey implementation ............................................................... 165
7.4.4 Limitations of analysing methods ........................................................................... 165
7.5 AREAS FOR FURTHER RESEARCH ......................................................................... 166
7.6 DID THE STUDY MEET ITS OBJECTIVES? .................................................................. 168
7.7 CONCLUSIONS ............................................................................................................. 170
REFERENCES ..................................................................................................................... 172
APPENDICES ...................................................................................................................... 200
Appendix 1- Ethics Approval Letter..................................................................................... 200
Appendix 2 - Questionnaire administered to Melbourne city centre visitors
.................................................................................................................................................. 201
Appendix 3 - Hofstede country scores.................................................................................. 212
LIST OF FIGURES

Figure 2.1 International tourists to Victoria and Melbourne, 2000-2007 ......................... 19
Figure 2.2: Macro level movement patterns with simplified sketches ......................... 24
Figure 2.3 Micro level movement patterns, territorial models ..................................... 27
Figure 2.4 Micro level movement patterns, linear path models .................................... 31
Figure 3.1: A direct observation tracking example in the outdoor environment ............ 57
Figure 3.2: Camera based tracking example ................................................................. 59
Figure 3.3: Self-administered questionnaire tracking example .................................... 60
Figure 3.4: A timing systems tracking example ......................................................... 62
Figure 3.5: A GPS tracking example .......................................................................... 64
Figure 3.6: A PHS tracking example .......................................................................... 66
Figure 3.7: A GPS combined mobile phone tracking example ................................... 67
Figure 4.1: The location of Melbourne and its urban growth boundary ...................... 79
Figure 4.2: Melbourne Central Business District and surround suburbs .................. 80
Figure 4.3: Melbourne city central user numbers ....................................................... 83
Figure 4.4: Melbourne city central user by age ......................................................... 84
Figure 4.5: Mode of transport to the city centre ......................................................... 85
Figure 4.6: Top Ten Main city centre Activities ......................................................... 87
Figure 4.7: Map of Melbourne city centre showing sites used in this research .......... 91
Figure 4.8: The Old Melbourne Gaol ......................................................................... 92
Figure 4.9: The Queen Victoria Market ..................................................................... 93
Figure 4.10: The National Gallery of Victoria (NGV) .............................................. 94
Figure 4.11: The Crown Casino Complex ............................................................... 95
Figure 4.12: The Federation Square ......................................................................... 96
Figure 4.13: The Royal Exhibition Building in Carlton Garden ............................... 97
Figure 4.14: Cook’s Cottage in Fitzroy Gardens ..................................................... 98
Figure 4.15: The Conservatory of Fitzroy Gardens ................................................. 99
Figure 4.16: Melbourne city centre rectified map .................................................... 111
Figure 6.2: Movement pattern of visitors around the city centre based on the gender... 129
Figure 6.3: Movement pattern of visitors in Carlton Gardens based on the gender....... 129
Figure 6.4: Movement pattern of visitors around the city centre based on the age....... 131
Figure 6.5: Movement pattern of visitors in Federation Square based on the age ........ 132
Figure 6.6: Movement patterns of visitor around the city centre based on the power
distance index. ................................................................................................................ 143
Figure 6.7: Movement patterns of visitor in the Fitzroy Gardens based on the power
distance index. ................................................................................................................ 144
Figure 6.8: Movement patterns of visitor around the city centre based on the
individualism level.......................................................................................................... 146
Figure 6.9: Movement patterns of visitor around the city centre based on the femininity
level................................................................................................................................ 147
LIST OF TABLES

Table 3.1: Summary of capabilities of various counting and tracking technologies........ 69
Table 3.2: Advantage and disadvantage of various tracking techniques................... 70
Table 4.1: The list of attractions surveyed at the Melbourne city centre area.......... 90
Table 5.1 Key variables of the survey. ................................................................. 102
Table 6.1 Summary of study hypotheses and data analysis method..................... 114
Table 6.2: Demographic characteristics of overseas tourists.............................. 117
Table 6.3: Travel behaviour characteristics of overseas tourists.......................... 118
Table 6.4: Summary of the relationship between socio-demographic and cultural characteristics, and travel behaviour variables ........................................... 148
Table 6.5: Summary of the relationship between socio-demographic and cultural characteristics and perception and satisfaction factors............................ 149
Table 6.6: Summary of the relationship between socio-demographic and cultural characteristics and movement patterns ....................................................... 150
Table 6.7: Summary of the predicted hypotheses............................................... 151
## LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACMI</td>
<td>Australian Centre for the Moving Image</td>
</tr>
<tr>
<td>AIO</td>
<td>Interests and Opinions of respondents</td>
</tr>
<tr>
<td>ANOVA</td>
<td>ANalyse Of VAriance</td>
</tr>
<tr>
<td>CBD</td>
<td>Central Business District</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning Systems</td>
</tr>
<tr>
<td>IDV</td>
<td>Individualism</td>
</tr>
<tr>
<td>IUOTO</td>
<td>International Union of Official Travel Organisations</td>
</tr>
<tr>
<td>MAS</td>
<td>Masculinity</td>
</tr>
<tr>
<td>NGV</td>
<td>National Gallery of Victoria</td>
</tr>
<tr>
<td>PDA</td>
<td>Personal Digital Assistant</td>
</tr>
<tr>
<td>PDI</td>
<td>Power Distance</td>
</tr>
<tr>
<td>PHS</td>
<td>Personal Handy phone Systems</td>
</tr>
<tr>
<td>UAI</td>
<td>Uncertainty Avoidance</td>
</tr>
<tr>
<td>USTTA</td>
<td>United States Tourism and Travel Administration</td>
</tr>
<tr>
<td>WTO</td>
<td>World Tourism Organisation</td>
</tr>
</tbody>
</table>
ABSTRACT

Today’s tourism industry features a wide range of tourists that behave in vastly different ways. This diversity ensures that tourists may favour different experiences according to their own personal preferences, a phenomenon best reflected in the selection of suitable destinations. Thus the choices tourists make, and the behaviours that emanate from them, come about through a number of influences originating from differences in social and cultural backgrounds. These choices vary from individual to individual and can change over time. A major challenge facing tourist managers is catering for the spatial needs of tourists from diverse cultures, whilst ensuring a positive tourist experience for all. The spatial needs of tourists are the key focus behind the destination planning and management process, as they outline the individual’s basic spatial and service requirements for a particular destination. Determining these needs might lead to different groups of tourists being granted equitable access to public spaces, facilities and activities in destination countries. Additionally, these strategies ensure more practical applications in a variety of key areas such as destination management, product development and attraction marketing. This research sought to investigate the spatial behavioural characteristics of tourists whilst linking them with specific cultural attributes.

In this thesis, a comparative study was used to determine the different needs of international tourists travelling to Melbourne city centre attractions. Overseas visitors who visited Melbourne city centre attractions (N = 278) completed a self-administered questionnaire. These questionnaires sought information in regard to spatial movement, as well as socio-demographic and travel characteristics, attitudes and satisfaction levels. These criteria were singled out in order to investigate the differing needs and preferences of this particular group of visitors. The data that came about through this study was analysed using chi-square and independent samples t-tests, as well as one way ANOVA.
tests between the groups and Pearson correlate analyses, all in the aim of testing proposed hypotheses.

The results of this study showed marked differences between tourists of various socio-demographic and ethnic backgrounds regarding spatial behavioural patterns. This study confirmed that visitor behaviour appeared to be primarily associated with, and in turn influenced by, social and cultural information. In other words, this particular study was successful in reinforcing the importance of culture in the tourism industry. Future research is recommended to investigate behavioural patterns of international tourists from diverse cultures. After all, it will be useful to identify the influence of culture on spatial behaviour and to clarify whether various cultural groups indeed have dissimilar travel preferences and inherently different needs from each other – and, if so, how different.
1 INTRODUCTION

1.1 INTRODUCTION

This research project aimed to develop a method to acquire the spatial behaviour patterns of tourists from diverse cultures in a built environment and to identify the influence of cultural background characteristics on such behaviour. Tourist spatial behaviour patterns reveal how visitors move within the built environment. The built environment includes both natural systems such as parks and rivers within urban environments, and built systems such as shopping centres and entertainment complexes. The natural systems can be considered as part of the built environment as these systems have usually been altered by humans in order to provide appropriate conditions for the different activities that take place within it, as well as to satisfy the user’s comfort and safety requirements (Brandon et al., 1997).

Tourist spatial behaviour is subjective and may vary according to an individual’s gender, cultural and ethnic background, socio-economic status, educational level, family situation, health, disability and age. This study seeks to investigate the characteristics of spatial behaviour of international tourists in a tourist destination based on their cultural background in order to determine their culturally based spatial needs.
Culture is “the specialised behavioural patterns, understandings, adaptations, and social systems that summarises a group of people’s learned way of life” (Getis et al., 2004: 137). Available research has indicated that cultural background might have a significant effect on tourist behaviour (Choi and Chu, 2000). Cultural differences in tourist behaviour are apparent, however, in the varying amounts of recreation and leisure time spent across nations (Ibrahim, 1991), patterns of recreation (Rodgers, 1977), leisure and travel behaviour (Pizam and Sussmann, 1995; Pizam and Jeong, 1996; Sussmann and Rashcovsky, 1997), vacation travel preferences (Ah-Keng, 1993; Richardson and Crompton, 1988), importance of food (Sheldon and Fox, 1988) and benefits derived from travelling (Woodside and Lawrence, 1985). For example, the United States Tourism and Travel Administration (USTTA, 1984) conducted a series of surveys among vacationers from Japan, Australia, United Kingdom, Germany and France. The study found significant differences amongst the nationalities with respect to vacation preferences and the importance of various factors in choosing a destination. In this study, food, for instance, ranked as the most important part of a good vacation for British and Japanese visitors but ranked third for Australians, fifth for Germans and not at all for French (United States Tourism and Travel Administration, 1984).

Studies examining tourists from culturally diverse countries found that the most significant differences were between visitors with Western and Asian cultural backgrounds, especially when it came to choosing a destination (Kim and Lee, 2000; McClellan and Foushee, 1983; Muller, 1991; 1989; Summers and McColl-Kennedy, 1998; You et al., 2000). This was further backed up when they examined the tourists’ expectations in regards to hospitality facilities and activities (Armstrong et al., 1997; Becker et al., 1999; McCleary et al., 1998; Mok and Armstrong, 1998; Pizam and Jeong, 1996; Reisinger and Turner, 1998). For example, Pizam and Jeong (1996) found that while Korean visitors were perceived to be attracted in artifacts and purchasing souvenirs whilst Americans appeared to be more interested in people than artifacts and bought relatively fewer souvenirs. In addition, Japanese visitors were perceived to prefer short trips while Americans preferred long ones (Pizam and Jeong, 1996).

The specialty area within behavioural geography that is most interesting, and also happens to be the focus of this research project, is the research direction that deals with tourist spatial
behaviour and preference mapping based on cultural background. This field aims to distinguish between the various kinds of tourist preferences such as recreational or location preferences. In this thesis, a comparative study will be used to determine the different needs and preferences of tourists from different cultures. This involves pinpointing the various similarities and differences among the phenomena under study (Hofstede, 1980). Hofstede’s (1980) cultural dimensions provide many useful explanations for cross-cultural differences in tourist behaviour (de Mooij, 2005). According to Hofstede (1980), all cultures differed based on four dimensions of Power Distance, Individualism-Collectivism, Uncertainty Avoidance and Masculinity-Femininity. Hofstede’s cultural dimensions is defined as follows:

- **Power Distance (PDI)**: This is defined as “the extent to which the less powerful members of institutions and organizations accept that power is distributed unequally” (Hofstede and Bond, 1984: 419).

- **Individualism/Collectivism (IDV)**: This dimension refers to “the tendency to focus on the needs of self as opposed to community and society”. In individualistic cultures, people, by their very nature, tend “to look after themselves and their immediate family only”. Collectivistic cultures, by contrast, are inhibited by groups or collectives which “look after the individual in exchange for loyalty” (Hofstede and Bond, 1984: 419).

- **Masculinity/Femininity (MAS)**: This dimension refers to the degree to which masculine values such “assertiveness, acquisition of money and material possessions” prevail over feminine values such “welfare of others and quality of life” and vice versa (Reisinger and Turner, 2003: 107). Whilst it is recognised that individuals may inherently possess masculine or feminine values, it is the cultural, or learned, values to which Hofstede is referring to.

- **Uncertainty Avoidance (UAI)**: Refers to “the extent to which the members of a culture feel threatened by uncertain or unknown situations” (Hofstede, 2001: 161). Again it is recognised that some people are inherently adventurous and will seek out new and perhaps more threatening situations, as Plog (1974) refers to as the “allocentrics”, whilst others he calls the “pyschocentrics” are inhibited and more averse to risk taking. However, cultural or learned experience can also
influence the level of comfort in uncertain situations felt by people of certain nationalities.

Australian culture, for example, is characterised by low power distance, strong individualism, moderate masculinity and uncertainty avoidance. Contrastingly, the Indonesian culture is characterised as highly collectivistic, as well as having a large power distance, moderate femininity and strong uncertainty avoidance (Hofstede, 1980).

1.2 THE STUDY OBJECTIVE AND RESEARCH QUESTIONS

This study will explore the proposition that living in different socio-cultural environments affects international tourist behaviour when inhabiting the space of any given tourism destination. This is subsequently exhibited in their behaviour, attitudes, interests, opinions and needs, and this in turn has an influence on travel enjoyment and satisfaction. An understanding of these factors can be made possible by identifying differences among international tourists from diverse cultures in regard to places of interest, movement patterns, levels of satisfaction and travel experiences. It is anticipated that international tourists will exhibit different behaviours, and will therefore likely have different travel requirements.

The ultimate goal of this study will be to provide a better way of understanding the spatial behaviour patterns of tourists in urban settings, and how these behaviour patterns are subsequently informed by different cultural backgrounds. The major research questions of this study are as following:

What is “tourism”, who is a “tourist”, and where is a “tourism destination”?

What does “spatial behaviour” refer to?

What factors affect an individual’s spatial behaviour?

Does cultural difference result in differences in spatial behaviour?
What do we mean by “culture” and how do we measure it?

What cultural similarities and differences exist?

How can we identify/record spatial movement in built environments?

1.3 RESEARCH STUDY RATIONALE

Recognition of the importance of the tourism industry has risen. According to the World Tourism Organisation (WTO, 2001), tourism is the largest as well as fastest growing industry in the world. In addition it is the largest employer of people worldwide, consisting of ten percent of the global workforce (Honey, 1999; McLaren, 1998). East Asia and the Pacific are the fastest developing regions in the tourism industry, an increase of 14 million tourist arrivals occurring between 1999 and 2000 – a growth rate of 14.7% (WTO, 2001). The positive impacts of the burgeoning tourism industry upon destination countries are evident. Apart from the creation of employment opportunities, infrastructure and transportation are further developed, foreign exchange prospects increase, and the country experiences significant economic growth (Mowforth and Munt, 1998).

The Australian tourism industry has experienced strong growth over the past 20 years. There were 5.6 million overseas visitor arrivals to Australia during 2007, an increase of 2% since 2006. Tourism Australia’s Tourism Forecasting Committee forecasts a 5.5 % average annual growth rate for visitors to Australia over the period of 2007-2015 (Tourism Australia, 2007). On the Australian economy tourism is an important industry (Australian Government, 2007). This is because, tourism has a significant impact on the Australian economy (Tourism Australia, 2007). In 2005-2006, tourism consumption in Australia amounted to nearly $81 billion – it also employed 4.6 % of the Australian workforce and contributed to over 11 % of Australia's exports.

Past research has shown that tourist spatial needs vary (Holden, 2000). A spatial need is defined as a relationship between activity and space (Richards and Simoff, 2001). All of individual spatial and service requirements for a place, building or facility may be considered
under the label of spatial needs. Therefore, if different spatial needs are met for different groups of people, equitable access to public spaces, facilities and activities in destination countries may indeed be possible, with the intended result being greater tourist satisfaction. Tourist satisfaction is imperative to successful destination marketing because it influences the choice of destination, the consumption of goods and services, and the decision to revisit (Kozak and Rimmington, 2000). Essentially, tourists choose to visit places which provide favourable experiences in relation to their needs and preferences (Holden, 2000). Previous studies have identified a significant relationship between tourist satisfaction and intention to return (Ross, 1993; Pizam, 1994). Therefore, with the increasing number of tourists with various preferences and needs, planning, aims and policy in tourism management needs to be changed (Borrie et al., 1999). For success in the management of a tourist destination various tourist preference and expectation need to be addressed by the destination management. This will assist destination managers in avoiding misallocating resources, offering better tourist services, and marketing these services more effectively and obtain greater tourists satisfaction. Therefore, determining spatial needs of tourists will provide a tourist destinations success in a highly competitive tourism market.

The Australian tourism industry is faced with a growing number of visitors from culturally diverse countries that behave in different ways and have different experiences in a tourism destination (Tourism Australia, 2006). There are differences amongst people from different cultural backgrounds as to what is important when it comes to choosing a destination, as well as what activities are preferred and the expectations and needs that may arise. In these cases, the cultural conventions and customs of the tourists have a direct bearing on what is seen as interesting or preferred in the given environment (Nassauer, 1995). Paying special attention to the tourist’s spatial behaviour and their cultural background may allow the researcher to determine their culturally-based needs, which in turn enhances their holiday satisfaction and potential return visit. Moreover, these differences in cultural background might explain why tourism customers experience varying degrees of satisfaction from the same service experience (Reisinger and Turner, 1997).

In order to meet the spatial needs of international visitors from different countries visiting Australia, there is a corresponding requirement to understand their spatial behaviour.
Reasonable efforts can be made to understand the cultural background characteristic of international tourists and the potential influence of cultural background on their behaviours and preferences, as well as the promotion of tourist facilities, services and national resources. The most important thing for tourists from diverse cultures is the hosts who are aware of, understand and accept the differences among tourists, and know how to provide different tourists with physical and psychological comfort (Reisinger and Turner, 1997). However, according to Indonesian and Korean tourists, the Australian host’s knowledge of the guests’ culture is imperative to be able to respond adequately to the guest’s behaviour and needs (Reisinger and Turner, 2002). For example, too often Korean tourists are being taken through a never-ending series of shops as a part of their tour (Hobson, 1996), despite expressing a high level of dissatisfaction with forced shopping experiences (Kim and Prideaux, 1996). Hobson (1996) believes this practice will hurt Korean tourism to Australia, because it is not in the best interest of the tourist, and indeed, Australian tourism officials must make an overall effort to accommodate the cultural needs of international tourists (Reisinger and Turner, 1997). Much of the current research regarding tourist and built environment focuses on cultural considerations as an essential part. Particularly relevant to this study are the spatial needs of international tourists within the built environment, which focuses on examining and understanding visitor behaviours in order to determine the different spatial needs of international tourists visiting Australia.

1.4 METHODS TO BE USED

1.4.1 Literature review

A literature review of pertinent journal papers, books, conferences, processing and internet sites is being carried out. The plan is to review the area of research related to the tourist movement patterns at different scales, factors that influence tourist movement patterns, particularly cultural background information of the tourist, in destination countries will be reviewed. The literature review is conducted in chapter 2.
1.4.2 Research method

In order to determine the different spatial needs of international tourists visiting Melbourne’s city centre, there is a corresponding need to acquire the spatial behaviour data of culturally diverse visitors. In Chapter 3, data required for understanding tourist spatial behaviour and the techniques used for acquiring this data will be discussed. Three main steps will be followed in this chapter:

Stage 1: Verifying the data requirement for understanding spatial behaviour patterns of visitors in built environments.

Stage 2: Examining techniques for acquiring spatial behaviour patterns of tourist movements at various spatial scales.

Stage 3: Choosing suitable monitoring methods for acquiring tourist spatial behaviour for this study.

1.4.3 Study location

To develop a methodology for determining the spatial behaviours of particular groups of people such as tourists, choosing a suitable location to serve as a case study is very important. A suitable location must clearly reflect the complexity of the tourist’ choices and behaviours in the built environment, as well as provide a base for the development, validation and calibration of model parameters. In Chapter 4, the Melbourne Central Business District (CBD) will be considered as a local study area for this research. The following stages will be undertaken in this chapter:

Stage 1: Examining the built environment of Melbourne city centre as a case of study

Stage 2: Identifying characteristics of Melbourne city centre visitors (workers, students, tourists), and their visitation patterns.
Stage 3: Identifying the key tourist destinations within Melbourne city centre, such as museums, parks, entertainment complexes, shopping centres.

Stage 4: Examining the characteristics of key tourist destinations, including different services and facilities.

1.4.4 Examining tourist behaviour

The process of collecting tourist spatial behaviour data, which will be discussed in Chapter 5, includes the design of the questionnaires, issues relating to applying self-administered questionnaires at study sites and data supplied from survey participants. The following steps will be considered in this chapter:

Stage 1: Design written questionnaires that seek responses to visitor movement patterns socio-demographics, and cultural background characteristics, travel behaviour, preferences and expectations, and whatever expectations that are met.

Stage 2: developing cartographic maps of study locations which will be monitored to get an outline of how tourists moved within specific locations. This data can be combined with visitor perception surveys and demographic information to build better typologies to identify similar behavioural groupings. This can provide a rich dataset.

Stage 3: The questionnaire, once developed as part of this research program, will be submitted for approval through the usual university Ethics approval processes.

Stage 4: Handing out questionnaires at specific exit points to study locations including gardens, museums, art galleries and other points of interest. Visitors will be asked to answer the questions and draw on a map an approximate outline of how they moved around the city centre and the path they have chosen inside the study locations. They will also be asked to recall where they previously visited and to where they are next visiting on the day. The final results will quantify and classify tourists utilising cultural backgrounds, tourist group style,
movement patterns and motivation for visit. The collected data will be analysed in the next stage.

1.4.5 Determining the similarities and disparities in spatial behaviour patterns

Chapter 6 involves the quantifying and evaluating of tourist spatial behaviour data. In this chapter an in-depth assessment of the socio-demographic and cultural characteristics that lead to different choices, preferences and appreciations of tourism products will be undertaken. This will provide an opportunity to identify locations and activities of interest for tourists from diverse cultures visiting Melbourne’s central city area. The steps to be undertaken in this section are as follows:

Stage 1: Building socio-demographic and spatial databases for the study.

Stage 2: Developing methods for undertaking data analysis, including the chi-square test, t-test test, one-way ANalyse Of VAriance (ANOVA) test and Pearson correlation analysis test.

Stage 3: Determining any differences in socio-demographic and cultural characteristics among international tourists.

Stage 4: Determining any common relationship between the tourist spatial behavioural patterns and socio-demographic characteristics.

Stage 5: Determining any common relationship between the tourist spatial behavioural patterns and cultural background characteristics.

1.4.6 Evaluating and conclusion

The major findings of the research and limitation of the theories, as well as the methods and applications of determining the spatial needs of tourists will be discussed in Chapter 7. The research objectives and questions of this thesis will be reiterated to show how they were achieved. Some directions for future research that have been raised through the
creation of this thesis will be discussed. The following four steps will be considered in this section of the study:

Stage 1: Outlining the outcomes of the research.

Stage 2: Discussing the implications, contributions, and limitations of this study.

Stage 3: Presenting suggestions for further research.

Stage 4: Presenting conclusions to be drawn from the study.

1.5 SCOPE AND LIMITATION

This study will focus on the differences between tourists of various socio-demographic and cultural backgrounds regarding spatial behavioural patterns in order to clarify whether various cultural groups have dissimilar travel preferences and inherently different needs from each other. This study will only provides some baseline data on visitor behaviour throughout the study area, as well as some of the social data relating to visitor wants and needs in order to reinforce the importance of culture in the tourism industry.

In this study nationality will be used as a factor to measure cultural influence, which may be only one of the many factors that have an influence on the individual’s personal culture such as, language, nationality, ethnicity, education, profession, religion, family, gender, social class and corporate and organisational culture (Usunier, 1996). In addition, cultural influence on spatial behaviour will be investigated through the comparison of overseas visitors from various nations. However the respondent may also not representative of their country of origin culture in many aspects, such as standard of living and socio-cultural values.
In addition, there are many other factors that might have influence on visitors behavioural patterns such as, Tourist spatial and social abilities, knowledge of the region they are visiting, individual motivation, past frequency of visit, the social structure of the groups they visit with, their experience with either the activity or the setting (Lew and McKercher, 2006). Although these variables might be influential, this thesis will not reflect on them.

Melbourne’s city centre attractions will be used as a study area because of its popularity as a tourist destination. However, at no point will this thesis enter into a discussion examining the attributes of the study locations, in order to determine visitors’ behavioural pattern at various type of attractions.

Whilst it is acknowledged that only part of this relationship will be uncovered by this research, there is a clear need to more fully quantify tourist behaviour to enable this relationship to be further understood. Therefore, recommendations into maintaining and developing comprehensive behavioural data sets and cultural indicators for tourists and facilities are reinforced through research such as this.

1.6 CONCLUSION

In today’s world, the tourism is a global industry which is dealing with a comprehensive community that is characterised by a whole range of cultural aspects. Because of this, tourism industry practitioners should try and adopt a cross-cultural perspective because differences in culture may influence the tourist's enjoyment of a holiday experience. Differences in cultural background may explain why hospitality and tourism customers experience varying degrees of (dis)satisfaction from the same service. Especially with a rising number of tourists it becomes more and more important for destinations management to know where tourists really want to go, what activities they would like to engage in and what they truly interested about.

This research intends to present tourist spatial behaviour patterns in the built environment based on different cultural backgrounds to determine different spatial needs of international
tourists. The expected results will be a better understanding of how tourists move through built environments, and the cultural factors that influence their movements. This will ultimately provide the means to manage resources for future sustainable tourism in a more efficient manner, and increase tourist satisfaction on trips to the Melbourne central city.
2 A REVIEW OF TOURIST SPATIAL STUDIES

2.1 INTRODUCTION

The tourism industry of today engages with a large number of tourists from a diverse range of cultures. To be able to match the needs of tourists from different cultures with appropriate tourism products one needs to understand the factors that shape their movement and preferences. In this chapter the influence of cultural background on tourist spatial behaviour will be reviewed.

Before embarking upon this research, it is essential that terms used here be clearly understood. The basic postulate of this chapter is that cultural background bears a significant influence on tourist spatial behaviour. In this way, the chapter serves two major purposes. Firstly, it will concentrate on establishing the meaning of terms such as tourism, tourist, tourist destinations, spatial behaviour and culture, and the various contexts that are explored throughout this thesis. The second purpose of this chapter is to review previous studies into
tourist movement patterns, cross-cultural behaviour and tourist preferences in destination countries.

2.2 DEFINITIONS

2.2.1 Tourism

As a starting point, tourism is defined as “the movement of people from one geographical location to another for the purpose of engaging in leisure and/or business acts, and the economic transactions that accompany this” (Britton, 1991: 97). Further to this, three main components can be drawn from this definition. Firstly, the financial component which includes matters relating to expenditure, income and employment creation; secondly the social, cultural and environmental consequences; and thirdly the psychological implications for both the visitor and the host (Ryan, 2003). It is noteworthy that despite this tripartite, tourism remains a complex service activity which is inevitably bound up in the constant flow of capital, finance, goods, knowledge and other human resources (Britton, 1991). A further line can be drawn between the two categories of international and domestic tourism. Whilst domestic tourism is confined to the movement of residents within national borders, international tourism can involve the movement of people across a multitude of national borders (Cornelissen, 2005).

2.2.2 Tourist

A visitor is defined as any person travelling to a place other than his or her usual living environment, and whose main purpose of travel does not remunerate from an occupation originating from the destination – employees of foreign embassies, for example, are generally not considered as visitors (McIntyre, 1993). According to the World Tourism Organization, a tourist is defined as a visitor staying at least one night in a collective or private accommodation in the place visited (McIntyre, 1993).
However, the most widely accepted, but technical definition of the tourist was proposed by the International Union of Official Travel Organisations (IUOTO) in 1963 and approved in 1968 by the World Tourist Organisation (Leiper 1979: 393). This definition sees the tourist as a “temporary visitor” who takes accommodation for at least one night, the purposes of his or her journey classified as either “leisure” (which includes recreation, holiday, health, study, religion or sport) or “business” (which includes family mission or meeting) (IUOTO 1963: 14).

The label ‘tourist’ can also be broken down into its international and domestic counterparts. Thus an international tourist is regarded as a temporary visitor who spends anywhere from one night to one year in a country other than his or her own country of residence for the purpose of leisure or business (Boniface and Cooper, 1994; Mill, 1990). This is contrasted with the image of the domestic tourist, as one who spends at least one night away from home, but stays within his or her own country of residence for a minimum of 24 hours or one night (World Tourism Organisation, 1981).

For the purposes of this thesis, the word ‘tourist’ will be used to relate to the widest of all possible definitions to incorporate any person visiting a country on a temporary basis for less than one year’s duration. Moreover, in this research, the term ‘visitor’ and ‘consumer’ will be afforded a similar definition.

2.2.3 Tourist destination

The compound ‘tourist destination’ has commonly been defined as an area with prominent natural and/or human-made features which have the potential to attract non-local visitors or tourists (Georgulas, 1970). Mathieson and Wall’s (1992) definition of destination complements that of Georgulas, but emphasises the importance of destination identity, in that it must justify its attraction independent of other locations. It is important to note however that ‘destination’ is not restricted to its geographical connotation, but may be in fact consist of a whole plethora of activities or experiences (Ricci and Werthner, 2002).
Tourist activities, by their very nature, create their own demand for a variety of services (Kandampully et al., 2001), and destinations, in return, offer a number of different tourist products for consumption (Buhalis, 2000). A tourist product can refer to any number of goods, activities, and services offered to tourist by different sectors of the tourism industry in order to satisfy their needs while they are away from home. This product may even be considered to include the majority of what the tourist experiences on the way to and from the destination (French et al., 1995). Buhalis (2000) summarises the major components of the tourist destination as the following:

- **Accessibility**: Entire transportation system, comprising routes, terminals and vehicles, which enable a product to be reached.

- **Amenities**: Accommodation, catering facilities, retailing, and other tourist services.

- **Attractions**: Site attractions includes natural, human-made, artificial, purpose built, heritage (for example, scenic, historical, natural wonders) or special event attractions (for example, exhibitions, sporting events, congresses).

- **Activities**: All activities available at the destination which consumers can do during their visit (for example, outdoor and indoor recreation activities).

- **Ancillary services**: Services used by tourists (for example, banks, telecommunications, post, newsagents, hospitals).

- **Available packages**: Pre-arranged by intermediaries and principals.

In conclusion, it can therefore be said that a ‘destination’ for the purpose of this study can be defined as a specific geographical area that offers a unique cluster of attractions, products and services that will be consumed under the brand name of the destination.
2.2.4 Australia, a tourist destination

Australia’s natural environment has historically been an important attraction for both international and domestic tourists. Particularly, Australia’s natural beauty and landscape have made the country a popular destination for international travellers. An international visitor survey conducted by the Bureau of Tourism Research (1996) shows that international tourists rank factors such as beautiful scenery, vastness, cleanliness, natural wonders, wildlife and pleasant beaches as major motivations for choosing Australia as a tourist destination (Mclennan, 1996).

2.2.4.1 International tourists to Australia

Since the 1980s, Australia has faced a boom in the tourism industry which awards tourism Australia’s largest export (Shea and Sharp, 1993). The number of international visitors to Australia’s shores has increased at an average annual growth rate of 12%. Between the years of 1983 and 1993, Australia’s international tourists have increased from 944,000 to 3,000,000 people (Tourism Forecasting Council, 1995). The number of international visitors reached to 5.5 million in 2006 (Tourism Forecasting Committee, 2007).

During 2006 and 2007, New South Wales (55%), to Queensland (42%) and to Victoria (29%) were the most popular detonations visited by international tourist to Australia (Tourism Australia, 2007). Victoria, being host to 1.5 million visitors in 2005, contributes much of its economic growth to the tourism industry. More traditional Victorian industries such as agriculture and forestry; gas, electricity and water provision; cultural services and government-related industry fall second to tourism in economic contribution. Tourism to regional Victoria alone accounted for $2.3 billion during 2005.

The main origins of international tourists to Victoria include the New Zealand, the United Kingdom, China, the USA and Japan. Fifty percent of tourists travelling internationally to Victoria arrived with recreation or holiday intent while 20% arrived to visit relatives or friends and 18% were business tourists. Of these, 70% were returning to Victoria and 31% were visiting Victoria for the first time between 2005 and 2006 (Tourism Victoria, 2007).
Melbourne, the destination of almost 100% of international tourist to Victoria, received 1.4 million international visitors and ranked among the top three capital cities receivers of international visitor expenditure in 2007 (Tourism Research Australia, 2007). In the year ending June 2007, among the capital cities and the Gold Coast the highest expenditure was received by Sydney ($5 billion), followed by Melbourne ($2.8 billion) and Perth ($1.3 billion) (Tourism Research Australia, 2007).

Figure 2.1 International tourists to Victoria and Melbourne, 2000-2007.
(Source: Tourism Research Australia, 2007)

2.3 TOURIST SPATIAL BEHAVIOUR

Spatial behaviour refers to patterns of movement characterised by origins, distances, destinations, directions, and frequencies of occurrence (Lankford et al., 2004). Essentially, movement is the act or process of moving – especially when referring to a change of place (Merriam-Webster, 2002). However movement patterns are generally regarded as prominent episodes in the general representation of larger moving entities (Laube et al., 2007).
Advocates of the study of ‘spatial behaviour’ are concerned with trying to define the laws that rule behaviour, independently of the context in which it occurs. In other words, spatial behaviour seeks to understand the general principles of people-environment interaction and how humans as a whole behave differently in certain types of locations, for example, shopping centres or parks. Some studies go so far as to examine how the likelihood of an individual visiting a specific tourist attraction diminishes the further the individual is from the attraction (Lew et al., 2004).

Currently, tourism planners face with a lack of spatial concepts, models and theories with which to make use of in their profession (Dredge, 1999). Understanding the spatial behaviour of tourists is becoming increasingly significant as the economic stature of the tourist industry rapidly grows, even though spatial patterns are one of the main characteristics of tourism (Shaw and Williams, 2002). Therefore, with more detailed information relating to tourist activity and behavioural patterns, it might be possible to better anticipate development trends and to minimize the many negative impacts commonly associated with the international tourist industry (de Kadt, 1979; Lea, 1988; Mathieson and Wall, 1992; Turner and Ash, 1975).

However, tourist activity is not something which can be homogenously analysed; there are a wide variety of tourist types that behave in different ways and which share different preferred experiences. The analysis criteria can range from the tourist’s socio-demographic, cultural background and lifestyle, to their level of education, beliefs and attitudes, all of which are believed to influence tourist behaviours (Holden, 2000). Of course, the individual’s primary concern when touring is usually to have, simply, a favourable experience (Holden, 2000), but the definition of such an experience can vary between individuals. In an outdoor recreational context, for example, the individual is constantly making decisions about places to visit and how to get there (Lankford et al., 2004). In this way, the notion of accounting for visitor characteristics in destination planning is not new. In 1979, Cohen was among the first to recognise that tourists vary in terms of needs and motivations, and thus behavioural patterns. By placing emphasis on these differences in the initial stages of destination planning, one is able to secure higher visitor satisfaction levels, and this may even result in a reduction of resource costs, or encourage wider protected area benefits (Haider, 2002).
2.3.1 Spatial movement patterns

Tourist movements specifically involve changes in the tourist active locations. At a global level, tourists move from the original location to the destination, or between the two themselves (Leiper, 1979). At the local level, tourists travel within a single destination from attraction to attraction, shifting from activity to activity. The spatial scale of tourist movement patterns can be allocated two primary dimensions – the macro and the micro level. The macro level can be defined as movements originating from tourist-generating regions to one or more destinations, ranging from several to hundreds of kilometres away from the original location. By contrast, the micro level can be considered as the determination of tourist movements from within a destination (Lau and McKercher, 2007; Xia and Arrowsmith, 2005). Whilst macro level movement patterns have been studied by a number of scholars in the last few decades (Lew and McKrcher, 2002; Lue et al., 1993; Ming and McHugh, 1992; Oppermann, 1995), the study of the micro movement of tourists, however, has been largely ignored (Cooper et al., 1993; McKercher and Lew, 2004; Pearce, 1995).

2.3.1.1 Macro level

A number of scholars have studied the movement patterns of tourists based on spatial characteristics. They identified macro movement patterns pertaining to the nature of space, and described the occurrence of tourist activities in reference to their spatial location. Interestingly, the study of macro level movement patterns actually helps us in conceptualising micro level movement patterns (Lau and McKeRche, 2006).

Mings and McHugh (1992) studied the movement patterns of tourists in Yellowstone National Park in the United States. Four patterns were identified in this study: 'direct route', 'partial orbit', 'full orbit' and 'fly-drive' pattern. Lue et al (1993) envisioned five different patterns for recreational vacation trips at multi-destination level: 'single destination', 'en route', 'base camp', 'regional tour' and 'trip chaining' pattern. Oppermann (1995) categorised the previous patterns and added two more to his own model based on the exit survey of international tourists from Malaysia. The two new patterns identified are 'open-jaw loop' and 'multiple-destination areas loop'. Flognfeldt (1999) identified four types of patterns taken by
Norwegians in Southern Norway: 'day-trip', 'resort-trip', 'based-holiday' and 'round-trip'. Based on the patterns identified by previous studies (Figure 2.2) Lau and McKercher (2007) summarised the movement patterns into the three main categories listed below:

Single

- **Single point**: Tourists visit a single destination and return home using the same route without any diversions in the whole visitation process.

Multiple

- **Base site**: Tourists starts from home and travel to a primary destination, making it the 'base camp' for further overnight visits to secondary destinations within that particular area.

- **Stopover**: There is a single destination as the main focus of the trip where attractions or destinations along the route are present. Tourists are normally captured by these attractions either on their way to the main destination or on their way back.

- **Chaining loop**: Tourists go through several destinations without any repetition. Stops in between the loop may not necessarily be related or connected to each other. Tourists visit places or attractions in connection with the destination to which they are travelling.

Complex

- **Destination- region loop**: Tourists travel part of their trip over a direct route to either a primary destination or a site near the destination region, and from there start a circuitous route visiting other destinations. After finishing the touring loop, they return home through the most direct route between the primary destination and home. It is a combination of the 'single-point' and 'chaining-loop' pattern.
Complex neighborhood: Tourists who travel from one destination to another, without repeating the travelling leg tend to travel to a number of places or attractions within a specific region. This pattern can be seen as a combination of some or all patterns mentioned above. This is a pattern that is most suitable to describe the complexity of tourist movement patterns, allowing variations and blending of different patterns.
<table>
<thead>
<tr>
<th>1. Single</th>
<th>Previous study</th>
<th>Pattern name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholar</td>
<td>Ming and McHugh (1992)</td>
<td>• Direct route</td>
</tr>
<tr>
<td></td>
<td>Lue et al. (1993)</td>
<td>• Single destination</td>
</tr>
<tr>
<td></td>
<td>Oppermann (1995)</td>
<td>• Single route</td>
</tr>
<tr>
<td></td>
<td>Flognfeldt (1999)</td>
<td>• Resort-trip</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Multiple</td>
<td>Lue et al. (1993)</td>
<td>• Base camp</td>
</tr>
<tr>
<td>Base site</td>
<td>Oppermann (1995)</td>
<td>• Base holiday</td>
</tr>
<tr>
<td></td>
<td>Flognfeldt (1999)</td>
<td>• Day trip</td>
</tr>
<tr>
<td>Stopover</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lue et al. (1993)</td>
<td>• En route</td>
</tr>
<tr>
<td></td>
<td>Oppermann (1995)</td>
<td>• Stopover</td>
</tr>
<tr>
<td>Chaining loop</td>
<td>Ming and McHugh (1992)</td>
<td>• Full orbit</td>
</tr>
<tr>
<td></td>
<td>Lue et al. (1993)</td>
<td>• Trip chaining</td>
</tr>
<tr>
<td></td>
<td>Oppermann (1995)</td>
<td>• Full loop</td>
</tr>
<tr>
<td></td>
<td>Flognfeldt (1999)</td>
<td>• Open Jaw loop</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Round trip</td>
</tr>
<tr>
<td>3. Complex</td>
<td>Ming and McHugh (1992)</td>
<td>• Partial orbit</td>
</tr>
<tr>
<td>Destination region</td>
<td>Lue et al. (1993)</td>
<td>• Fly drive</td>
</tr>
<tr>
<td>loop</td>
<td>Oppermann (1995)</td>
<td>• Regional tour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Destination tour</td>
</tr>
<tr>
<td>Complex neighbourhood</td>
<td></td>
<td>• Destination area loop</td>
</tr>
<tr>
<td></td>
<td>Oppermann (1995)</td>
<td></td>
</tr>
</tbody>
</table>

| Tourists, Generating Region(s) | Tourist, Destination Region(s) |

Figure 2.2: Macro level movement patterns with simplified sketches.
(Source: Lau and McKercher, 2007)
2.3.1.2  Micro level

According to Lew and McKercher (2006) tourist movement patterns can be modeled around two separate forms of analysis: territoriality and linearity. Territorial models (Figure 2.3) reflect the impact and perception of distance and intervening opportunities, while linear models (Figure 2.4) reflect the geography of a place. With the exception of the no movement type, every trip taken by a tourist has both territorial and linear path characteristics. The start point for both dimensions is the accommodation locus, and this can be in the form of a hotel, motel, hostel, resort, campground, friends or relative’s home or holiday home.

2.3.1.2.1  Territorial Models

The group of territorial models (Figure 2.3) is divided into four sub-groups and shows variations in the distances that tourists venture from their place of accommodation. The relative distance of movement is represented by the rings surrounding the point of accommodation. These range from extremely restricted movement (No Movement) to completely unrestricted movement (Unrestricted Destination). Most of the variation that occurs among the four types of territorial models is based on differences in tourist characteristics.

- **No Movement:** Tourists never venture outside the confines of the accommodation property.

- **Convenience-based Movement:** A convenience-based travel pattern is typified by visitation to attractions or participation in activities in the immediate area of the accommodation locus.

- **Concentric Exploration:** The concentric exploration behaviour pattern reflects the movements of tourists who are initially uncertain and possibly intimidated by the destination.

- **Unrestricted Destination (wide Movement):** For tourists who have a high level of information about a destination, much of which was gained from previous visits, the entire space may be perceived as equally available for visitation. Mostly,
however, it is the existential tourist (Cohen, 1979) who is fully “at-home” in the destination and is therefore most likely to feel uninhibited in the territory of the destination.
Figure 2.3 Micro level movement patterns, territorial models.
(Source: Lew and McKercher, 2006: 414)
2.3.1.2.2 Linear Path Models

Linear itinerary patterns have been identified by several authors examining micro level movement patterns. Flognfeldt (1999), Lue et al (1993), Mings and McHugh (1992), and Opperman (1995) have collectively identified 26 such itinerary styles, which can be grouped into four broad types:

- A single destination and return trip, with or without side trips.
- A circle tour with multiple stops, with or without side-trips from some destinations.
- A transit to a destination area followed by a multiple stop circle tour.
- Complex combination of linear and circular trips from different hubs along a larger, multiple destination itinerary routes.

Of these, the first three patterns are logically evident in micro level movements. Because one’s accommodation place normally does not change during a single visit to an area, the fourth pattern would be rare. Three types of linear path models are identified as following (Figure 2.2):

- **Point-to-point pattern**: in the point-to-point pattern, the tourist follows the same path away from and back to the place of accommodation.

- **Circular pattern**: in the circular pattern, the tourist generally follows different paths away from and back to the place of accommodation.

- **Complex patterns**: Complex patterns consist of complex and undifferentiated combinations of the point-to-point and circular patterns.

These linear path models reflect the geometry of tourists’ movement away from their accommodation point. They simplify the actual movement patterns that are shaped by the
The linear path models are independent of territorial distance, and can be scaled in combination with the different types of territorial models (Figure 2.4), with the exception of the no movement form. The different linear path model forms are not exclusive of one another, as tourists may display a combination of linear patterns over the course of their visit.

The point-to-point pattern

- **Single Point-to-Point**: This involves one or more journeys directly to the desired stop and then returning to the accommodation by the same route. No significant intermediate stops are made and no deviation from the most direct route is considered. Multiple single point-to-point trips could result in a hub and spoke pattern, centred on the accommodation.

- **Repetitive Point-to-Point**: This model represents an extreme form of the accommodation-to-attraction transit where tourists travel to the same stop a number of times during the course of their stay.

- **Touring Point-to-Point**: This pattern is unique to tourists travelling through a destination. In this, one or more attractions are visited whilst being at the destination and approaching the accommodation place. The next day, the tourist departs the destination by another route and stops at one or more additional attractions on the way out. “Stops” are convenience-based and limited to attractions located on or near major thoroughfares. This pattern has been observed in automobile tourists at regional Australian destinations (McKercher, 2001) and has also been described by Gunn (1972) in Texas.

The circular pattern

- **Circular Loop and Stem and Petal**: These types of movement start at the accommodation point and include visits to two or more attraction stops in a circular pattern. The primary difference between the circular loop pattern and the stem and petal pattern is the necessity of a transit leg to the area being visited.
The complex pattern

- *Random Exploratory:* This model could be considered the antithesis of the point-to-point, circular loop, and stem and petal pattern of movement as the tourist exhibiting these other patterns undertakes a purposeful and systematic exploration of the destination. In this way individuals demonstrating the random exploratory movement show no or only a modest pattern in their actions.

- *Radiating Hub:* This is the movement pattern of tourists who will take several trips from their point of accommodation. Some of these may be point-to-point, but others will be circular loop and stem and petal patterns, and there may even be one or more random explorations. The accommodation serves as a ‘hub’ for these diverse trips of varying length and motivation.
1. **Point to Point Patterns**

   - Single point to point
   - Repetitive point to point
   - Touring point to point

2. **Circular Patterns**

   - Circular loop
   - Stem and Petal

3. **Complex Patterns**

   - Random Exploratory
   - Radiating Hub

---

Figure 2.4 Micro level movement patterns, linear path models.  
(Source: Lew and McKercher, 2006: 415)
2.3.2 Factors affecting tourist spatial movement patterns

Tourist movement patterns can be affected by a number of factors. To better understand the formation and shaping of tourist movement patterns, in-depth studies of the underlying factors contributing to tourist movement decisions are needed. Tourist movement patterns may pertain not only to space, but may also be affected by a number of factors such as physical configurations of destinations, differences in trip profile, prior visitation, socio-cultural background and personal motives (Burton, 1995; Crompton, 1979; Gunn, 1972; Holden, 2000; Lau and McKercher, 2007; Leiper, 1990; Lew and McKercher, 2006; Mansfeld, and Kamel, 1995; Xia et al., 2005). These factors can then be summarised as either destination characteristics or tourist characteristics, both of which influence the decision making and behaviour involved.

2.3.2.1 Destination characteristics

Destination characteristics are those that emerge from the external, physical environment, as opposed to those motivated by the tourists themselves. Tourist movement patterns are motivated and affected by the attractions and activities available at the destination. In other words, the “physical pull” of the destination has an immediate effect on the types of choices available to tourist itineraries (Burton, 1995; Crompton, 1979). Physical factors affecting tourist movement patterns can thus be divided into three broad aspects: destination configuration, attractions and transport network.

Visitors are drawn away from their home to tourist attractions, the quintessential representation of the ‘non-home’ place (Gunn, 1972 as cited in Lew, 1987). Different attractions create variations in the demand of tourist visits. The uniqueness, variety, number and distribution of attractions within a destination will affect tourist movement patterns. The perceived renown of an attraction represents another set of movement considerations. The ability to perpetuate its own reputation of demand is often dependent on its placement in the hierarchy of its peers (Christaller, 1963; Mill and Morrison, 1985). Attractions include natural assets, tangible heritage, intangible heritage, purpose-built attractions and shopping areas. Attractions can be arranged in a hierarchy based on the power of individual attraction
to draw tourists from a greater distance. Primary attractions are represented by places or sites that have the greatest ability to pull tourists, whereas tertiary attractions have a relatively lower pulling effect. Therefore, it is evident that the pattern of tourist movement is influenced by the distribution or placement of attractions within a destination, depending on the pulling effect of other attractions (Lau and McKercher, 2007).

2.3.2.2 Tourist characteristics

The actual behaviour of tourists in any given destination can vary considerably, even if they might happen to share common motivations. Consider Leiper’s (1990) assertion that tourists travel within their own discrete systems, however they might overlap; in this way it can be suggested that, each tourist has a unique set of motivations, consisting of resources, accommodations, services, attractions and movements. That being said, the individual tourist may visit the very same set of attractions, regardless of the differing motivations of his or her own peers (Lew and McKercher, 2006). Many visitor characteristics have shown to be significantly related to their choices of activities, not to mention spatial movement patterns such as their time budgets, past frequently of visit, cultural background, the social structure of the groups they visit with, their experience with either the activity or the setting, their attachment to the place and their environmental awareness and level of concern (Lew and McKercher, 2006).

Time budgets: The amount of time spent in a destination area is probably the single most important factor shaping tourist behaviour, as it has a direct bearing on the number and range of activities available and the extent to which they are used or experienced (Pearce 1988). Truong and Henscher (1985) argued that time is one of the few absolutes, for it cannot be stored for use at a future date. A tourist’s “time budget” is usually fixed well in advance of arrival, and is difficult to modify once in action. Because of this, how time is spent, rather than the amount of it available, becomes the key discretionary variable.

The time based nature of touring behaviour is obvious, yet few geographers have attempted to examine temporal changes in recreational behaviour. We might expect patterns of recreational behaviour to change over time, but these changes are subject to not only the
contentious constraints of the tourist’s decision-making process but also due to the “inherent reduction in uncertainty” brought about by its very exploration (Coppock and Duffield, 1975). Haldrup (2004) found that long term tourists tend to prefer one of three styles or modes of movement: inhabiting (limited movement), navigation (destination oriented), and drifting (movement oriented). Each of these reflected a different narrative of how people experience place and interpret the meaning of leisure and tourism.

**Main and secondary destination**: Leiper (1989) and McKercher (2001), showed how main and secondary destination tourists differed in their motives, consumption patterns and activities. Main tourists consume the destination at a more intense level. Stopover tourists, on the other hand, tend to restrict themselves to visiting convenience-based attractions.

**First-timers and repeaters**: Differences can be noted between first-timers and repeaters; the former prefer to explore a destination by travelling widely through it to learn more about its culture and heritage, while the latter gravitate towards more social activities such as shopping, dining and visiting friends and relatives (Fakeye and Crompton, 1991; Gitelson and Crompton, 1984; Lau and McKercher, 2004). Kempermann *et al.* (2004) complemented this view, concluding that first-timers visit a large number of attractions while repeaters are much more selective.

**Strangeness versus familiarity**: Tourists who embrace the strangeness of a destination explore it widely, travel independently and seek out activities seen as non- or anti-tourist. Others, however, are more restricted and might find such destinations too confrontational. Their actions are more tentative or structured and they are more likely to restrict their movements to areas clearly marked as being tourist friendly. In extreme cases, “they may not leave the safety of a resort or hotel, unless accompanied by a guide” (Lew and McKercher, 2006). Cohen (1979) seemingly agrees, arguing for the need for certain types of tourists to “envelop” themselves in an “environmental bubble of familiarity”.

**Special interest**: Special interest tourists are usually more purposeful and directed in their touring and therefore more willing to visit less popular, though highly specialised,
attractions, while spending all the more time at them (Fennell, 1996). This is contrasted with the “generalist” sightseeing tourist, who tends to travel more widely and with a much less easily identifiable movement pattern.

**Socio-demographic profile:** Factors such as age, education, income and occupation are possible markers for spatial behaviour classification (Debbage, 1991). Scholars have argued that the more affluent and well-educated tend to be more mobile (Hanson and Hanson, 1981), while the elderly and children tend to be the most spatially constrained (Driver and Tocher, 1979).

**Group dynamics:** Group dynamics can also influence movements, as a group of tourists must negotiate a mutually acceptable set of activities. Individual preferences are often discarded as the pressure to conform to the group’s hegemony comes to fore; this especially appears to be the case in collectivist societies like those found in Asia (Lew and McKercher, 2006). The full range of micro movement models are most applicable to independent tourists. Organised groups are more restricted in their choice of transportation mode, destinations visited, expressions of interest, and time budget allocations. While this varies from one organised tour to the next, it could be a significant variable depending on the destination.

**Fitness level:** The correlation between age and activity level has long been the subject of analysis in the tourist industry (Mill and Morrison 1985), with younger tourists seeking more energetic activities, while older ones preferring more sedentary activities. Recent research into the market of those with disabilities suggests that some disabled tourists prefer to engage in a smaller number of activities (McKercher *et al.*, 2003). Consequently, the individual’s own fitness level and the presence or absence of physical or age-related disabilities will moderate the intensity of their behaviour.

**Place knowledge:** Prior knowledge of the destination has an influence on the way tourists conceptualize and experience various attractions within the destination (Dann 1996 as cited in Ryan 2000). As a result, the tourist’s ability to understand a destination and choose what activities to pursue is highly individualistic, though subject to considerable external
influence. Furthermore, the advice of peers and word-of-mouth can have a significant influence on tourist movements (Seaton et al., 1996).

Cultural background: The cultural background of tourists also appears to have an influence, yet cultural distance is also considerably influential. Tourists from locations seen as culturally approximate source markets often seek out different attractions, and thus travel to different areas within the destination, rather than those from culturally distant origins (Flogenfeldt 1999; Lew 1987). Hall (1999) proposed that individuals from various ethnic and cultural backgrounds differ with regard to their spatial behaviour, and suggested that these differences were reflective of different cultural norms governing the use of space within different societies.

2.4 CULTURE, A DIMENSION OF TOURIST SPATIAL BEHAVIOUR

Although this section discussed a number of factors that might have influence on visitors' behavioural patterns, this study will only seeks to explore the potential influence of cultural background on tourist spatial behaviour. Indeed, it may be possible for future research to explore the development of tourists’ potential needs and preferences for other variables.

2.4.1 Definition of culture

How the word ‘culture’ has been defined was based on a wide range of implicates ideologies, rites, values, personal preferences and expectations that permeate within any given number of people. The way the individual seeks to characterise his or her own self, is self-reflexive of the uniqueness of the given social unit – its core values and beliefs (Leavitt and Bahrami, 1988).

On a basic level, members of the same culture share similar thoughts and experiences (Herbig, 1998). In other words, the culture stands in for the patterns of behaviour associated with any particular group of people (Barnlund and Araki, 1985). On a more complex level however, cultures establish standards for deciding what is and what can be, what one feels
about it, what to do about it, and how to go about doing it (Goodenough 1961: 522). Thus culture can be read as a guide to behavioural interpretation (Kim and Gudykunst, 1988). It is, first and foremost, a way of feeling and thinking (Harris, 1988), yet it also organises the way people do things (Sapir-Whorf, 1921), prioritises the satisfaction of human needs (Malinowski, 1939) and determines how values are communicated (Dodd et al., 1990). Culture, then, has a direct bearing on not only the way groups of people do things, but also the way they perceive the world (Potter, 1989).

According to Usunier (1996), at the individual level many factors are important in shaping the culture a person holds. These include the native language of a tourist, their nationality or ethnicity, gender, their social or economic status, religious persuasion, education level and occupation. It can be postulated that the majority of people from any given country possess a shared cultural identity which is indelible, resistant to change. If, indeed, it changes, it does so very slowly due to the inherent culture programming residing within the psychological framework of the individual (Reisinger and Turner, 1997). However, few humans are consciously aware of their own culture. Only when the individual’s own culture is put up against a foreign or resistant one does he or she become aware of the nuances of the dominant culture and the diversity in which the world’s cultures perceive their immediate surroundings (Reisinger and Turner, 2003).

People who share a similar culture with other people also share similar values. The conformity of shared rules and norms, the development of shared perceptions, attitudes and stereotypes, the use of common language sets and the participation of similar activities are all indicators of this (Samovar et al., 1981; Triandis, 1972). However, when anomalies are found between two or more cultures who share the same behaviour patterns, it can be posit the existence of subjectivity in these cultures (Triandis, 1972: 9). These subjective variables not only indicate that individuals belong in different cultures (Landis and Brislin, 1983: 187), but also tell us more about the more intricate details of the studied culture. Social categories such as role, status, class, hierarchy, attitudes, perceptions, and patterns of interaction, relationships, verbal and non verbal language including paralanguages; gestures, facial expressions, use of space; communication and service are all relevant in the understanding of
shared culture spaces (Bochner, 1982) and service (Wei et al., 1989) are all relevant in the understanding of shared culture spaces.

These culture differences may be “small and supplementary” or “large and incompatible” (Sutton, 1967). When the differences are small, people are not separated by cultural distance. When the differences are large, people are separated by a wider cultural distance (Sutton, 1967). The greatest cultural differences were found among Asian and Western cultures (Samovar and Porter 1991), particularly in behaviour patterns (Yum, 1985), self-presentation (Tu, 1985), self-disclosure (Ting-Toomey, 1991), expressing emotions (Scherer et al., 1986), feelings of responsibility for other people (Argyle, 1972), understanding of morality (Retting and Pasamanick, 1962), accepting compliments (Barnlund and Araki, 1985), perceptions of social interaction (Kim and Gudykunst, 1988), formality (Samovar and Porter 1988), and understanding of what constitutes friendship (Wei et al., 1989).

2.5 MEASUREMENT OF CULTURE

Over the years, numerous models have been proposed for the measurement of national cultural differences (Argyle, 1986; Bond, 1987; Hall and Hall, 1987; Hampden-Turner and Trompenaars, 1996; Hofstede, 1983; Hofstede and Bond, 1988; Kluckhohn and Strodtbeck, 1961; Maznewski, 1994; Parsons, 1951; Schein, 1992; Stewart, 1971; Trompenaars, 1993). One of the most widely considered examinations of culture are those presented by Hofstede (1980, 1983), whose theories assist us in explaining basic differences at the levels of the collective and the individual.

His model categorises cultures according to four dimensions titled Power Distance, Individualism/Collectivism, Masculinity/Femininity and Uncertainty Avoidance. These dimensions are also measured on a scale from zero to 100, for 75 countries and regions. Hofstede (1980) proposed that these scores and dimensions vary with the geographic location and history of countries, and thus suggested that countries can be classified into cultural clusters based upon similarities in geographic location and history. Specifically, Hofstede (1980) suggested that eight cultural clusters exist, including more developed Latin, less
developed Latin, more developed Asian, less developed Asian, near Eastern, Germanic, Anglo, and Nordic countries” (Hofstede, 1980: ). Although the work Hofstede conducted in 1980 is not recent, in 2001 Hofstede argued that culture changes very slowly and when it does change, changes occur in all cultures. Therefore, the relativism of Hofstede’s work remains consistent (Crotts and Erdmann, 2000).

2.5.1 Power distance (PDI)

Power distance refers to “the extent to which the less powerful members of institutions and organizations accept that power is distributed unequally” (Hofstede and Bond, 1984: 419). In a high power distance culture, values held by society are obedience, conformity, authority and regulation. Individuals from a culture scoring higher on the power distance index are more likely to be accepting of authority as they come from a society with strong social hierarchy. In such societies, one’s social status must be clearly defined so that others can treat them accordingly. For example high respect is given to people of old age (Benedict, 1974; de Mooij, 2005).

In small power distance cultures, it is commonly accepted that all people are equal, and society values independence and fair competition (Reisinger and Turner, 1998). The view held is against inequality, and decisions are made through consultancy rather than autocracy (Hofstede, 1980). As a result, authority has a negative image in such societies, as primary focus is on equality of rights, freedom of opportunity and independence. The distinctions between social status is unclear, as powerful people try to be more approachable, older people try to look younger, and children want to have more independence from a younger age.

Malaysia scores highest on power distance and Austria lowest. Mexico and France score high, the United States relatively low, Denmark and Hungary very low. The degree of power distance tends to decrease with increased levels of education. Consequently, future expectations that worldwide education will provide and lead us towards decreased power distance scores might be accurate. However, relative differences between individual
countries might not change because of the very stability that informs these cultural values (de Mooij, 2005).

### 2.5.2 Masculinity/Femininity (MAS)

The masculine/feminine dimension distinguishes between cultures on the basis of values that relate to achievement, success and status. This dimension can be seen has placing special emphasis on achievement and interpersonal harmony, which in turn categorises differences in sex in some national cultures (Hofstede, 1980). That being said, femininity and masculinity at an individual level might be equated as the degree to which people seem themselves as masculine or feminine, given what it means to be a man or a woman in the chosen society. This is referring to social definition of gender (for example, dominant or passive, brave or emotional) rather than biological sex definition (male and female). Thus the way people view themselves is dependent on the feminine-masculine line of dimensional meaning. Some people therefore see themselves as more feminine than masculine; others vice-a-versa; and others still a mixture of the two. A further important aspect of this dimension is role differentiation: small in feminine societies, large in masculine societies (Stets and Burke, 2000).

Masculinity is found in societies where the dominant values are success, material goods and wealth (Hofstede and Bond, 1984). In such societies – ‘masculine societies’, status and achievement must be demonstrated, as performance and winning holds high importance. Status brands are ways in which individuals display their success, and polarize themselves from other less successful people (de Mooij, 2005).

Femininity refers to a situation in which the dominant values in society are the care and welfare of others, especially unsuccessful individuals (Crotts and Erdmann, 2002). Feminine societies revolve more around services for others, with a mentality of small as beautiful. Members of the society work towards acceptance, with less emphasis on status. If success is
held by an individual, there is little or no desire to demonstrate it, as modesty is a core value shared by feminine cultures.

In comparative cross-cultural studies, researchers tend to distinguish between the Anglo-Saxon world and continental Europe, while within Europe there are also strong differences with respect to this dimension. The Scandinavians are culturally very much alike, and very much different from rest of the Europe. Sweden is lowest on the masculinity dimension, Japan highest. All Anglo-Saxon countries score high on masculinity, the Scandinavian countries and the Netherlands score low. Australia scored medium on the masculinity index, with a focus on competition but also a concern for those less well off (Reisinger and Turner, 1997). Countries in Central America score lower on masculinity than those in South America and North America.

2.5.3 Individualism/Collectivism (IDV)

Individualism and collectivism involves the ways people care for each other and themselves. In an individualist society, people are expected only to take care of themselves, being more self-conscious and expressing private opinions. Self actualization is important, with individual decisions valued higher than group-made decisions. Australian culture is individualistic (Hofstede, 1980) with a focus on independence, self-reliance and self-assertion (DeRiviera, 1977). Members of individualistic cultures have to invest time in friendships, and often belong to groups which share similar key interests (de Mooij, 2005).

Members of collectivistic cultures are born into a group that defines their identity. They are ‘we’ conscious, and higher priority is given to relationships with others (de Mooij, 2005). These societies are informed through strong family ties (Huang et al., 1996). Goals, needs and the views of the in-group are emphasised in collectivistic cultures, as opposed to individual beliefs and pleasures (Gudykunst and Ting-Toomey, 1988). Friends are common, without there being a need for mutual obligation. The needs, views and ambitions of the ‘in-group’ are regarded of high importance in collectivistic cultures (Gudykunst and Ting-Toomey, 1988).
Individualism is increasing worldwide because it is linked with wealth, but it remains a relative concept (de Mooij, 2005). Most western countries are individualistic, whilst Asian and Latin American countries are collectivistic. Within Europe, England scores highest on the individualism dimension, Portugal lowest. Between 70% and 80% of the world’s population is more or less collectivistic.

2.5.4 Uncertainty avoidance (UAI)

Uncertainty avoidance refers to the extent to which people feel threatened by feelings of uncertainty and doubt, and what measures individuals take to avoid such circumstances. Members of high uncertainty avoidance cultures try to avoid any catalysts for ambiguity, and have developed rules and regulations for almost every comprehensible situation that may occur (Gudykunst et al., 1996). Hofstede (1991) summarises the view of members of high uncertainty avoidance cultures as “what is different, is dangerous” (Hofstede, 1991: 119). Any conflict or competition is a threat (de Mooij, 2005).

In contrast, the principle belief held by members of low uncertainty avoidance cultures is that “what is different, is curious” (Hofstede, 1991:119). Emphasis is placed on common sense rather than following rules (de Mooij, 2005). Such societies with weak uncertainty avoidance, activities bearing no regulations are naturally encouraged and developed. It can be said that these cultures develop “willingness to enter into unknown ventures” (Hofstede, 2001: 164).

Hofstede (1980, 1984) plotted some countries near the dividing line between strong and weak uncertainty avoidance for instance, the US, Finland, Iran, Switzerland and Australia. A combination of implementer and pacifier leadership behaviour is likely to be the most effective in these societies. US citizens, for example, tend to expect direction, but they like to be consulted (Ali, 1992). Most of the less developed countries studied by Hofstede were classified as having moderate to strong uncertainty avoidance. Many of the advanced countries, such as the UK, Sweden, and Denmark studied were classified as moderate to weak uncertainty avoidance. These societies are likely to generally prefer pacifier leadership
behaviour. Examples of countries that score high on uncertainty avoidance are Germany, Austria, and Japan.

2.6 CROSS-CULTURAL STUDIES INTO CHOOSING A TOURIST DESTINATION

Some studies discuss the spatial implications of variations in attraction site visits (Debbage 1991; Fennell 1996). Significant differences were perceived especially between Western and Asian cultures in their destination choice behaviour. Chadee and Mattsson (1996) identified cross-cultural differences when measuring customer satisfaction. Compared to Europeans, Asian respondents were found to derive lower levels of satisfaction from eating out experiences, sightseeing tour and accommodation. A number of studies investigated Japanese tourists’ preferred destinations. Morris (1988) and Polunin (1989) studied the boom in Japanese international travel and reported that the Japanese have become more leisure and service oriented. Morris (1990) summarised a selection of data from numerous Japanese consumer surveys, and concluded that existing dining facilities influenced their choice in choosing a destination. They preferred places with natural scenery and good beaches, as well as cities rich in historical spots and modern culture. Good shopping and ‘crime free’ reputations were also seen as extremely important.

The former US Travel and Tourism Administration (USTTA, 1984a, 1984b) conducted a series of surveys conducted among potential Japanese, Australian, UK, German, and French tourists, and found significant differences amongst these nationalities in terms of vacation preferences and the prioritising of various factors in choosing a tourist destination. Woodside and Lawrence (1985), in a study examining the benefits realised from travelling to Hawaii, found a significant difference between Canadian, American and Japanese tourists. Richardson and Crompton (1988) have also found significant differences between the patterns of vacation travel of English and French-Canadians. Sheldon and Fox (1988) also released a study that examined the cross-cultural differences in the importance of food
service as a vacation choice. Their findings concluded that the Japanese, as compared to their Canadian and American counterparts, believed that foodservice had a stronger influence on their destination choice. Furthermore, various studies conducted throughout the last two decades have found that cultural norms significantly influence destination choice, participation in tourist activities, and other forms of tourist behavior.

Tourism Australia (2006) conducted holiday experience research in 2006 amongst tourists from New Zealand, UK, the US, Indonesia, Japan and China. This research concentrated chiefly on the motivations of tourists participating in activities or experiences within Australia. Eating out at restaurants and cafés, recreational shopping, beach activities and visiting National or State parks are the most favourable activities for all tourists from these countries. Tourists, however, from Asia (China, Indonesia, Japan) appeared to be interested more in market shopping, visiting public gardens, aquariums and zoos. Americans and British tourists, on the other hand, seemed to prefer going to pubs and clubs. According to Tourism Australia (2006) then, visitors from different nations are likely to plan their holiday around different activities. Therefore they have unique spatial behaviours and needs which need to be wholly realised to enhance their overall holiday satisfaction. As there is an assumption that these various spatial behaviours are influenced by cultural backgrounds, this argument will be thoroughly examined throughout this part of the thesis. If tourists’ cultural motives and preferences for visiting a recreational site are better understood, the researcher or planner can find ways to connect these motives to environmental settings, and the ability of available resources to provide such experiences.

2.7 CROSS-CULTURAL STUDIES INTO RECREATIONAL PATTERNS

The first group of social scientists who studied the recreational patterns of different nationalities was leisure and recreational studies specialists. Szalai (1972), in a minute-by-minute account of everyday living patterns of people from 12 different countries, measured the amount of time spent in 37 primary activities. Later on, Ibrahim (1991) used the same instrument to study a sample of Egyptians. In comparing the results obtained in both studies, Ibrahim (1991) found a significant variance in the amount of leisure time among nations. He
suggested that this variance is not necessarily caused by economic factors but mainly by the value system of a society. Following Szalai (1972), other recreational researchers performed further cross-cultural studies that examined the differences in recreational patterns of visitors from various nations. Such studies were conducted by Rodgers (1977), who analysed patterns of participation in sport and problems of encouraging mass participation across eight countries, and by the Council of Europe (1985). All the above studies noted differences between the leisure behaviors of various cultural backgrounds.

Some geographers such as Ritter (1987, 1989), Holzner (1985) and Groetzbach (1981, 1988) have noted, from their own observations, marked differences between tourists of different cultures. Their studies have found that the cultural background appeared to exhibit some strong and unique preferences in tourist activities, which should be taken into account when designing group tours for these nationalities. For example, Holzner (1985), as quoted by Ritter (1987), identified a few basic traits of the American culture that in his opinion have influenced the leisure and travel behavior of Americans. These traits are love of newness, desire to be near nature, freedom to move, individualism, and social acceptance. This in turn influences their preferences for spending their holidays “in a simple way in the wilderness (for example, visiting national parks and national monuments) which they try to preserve.” (Ritter 1987: 5). Groetzbach (1981, 1988) and Barham (1989) analysed the differences between the travel behavioral patterns of Muslims and Arabs as compared to that of Europeans and noted that the Arab tourists were more socially gregarious but less physically active than Europeans (Ritter, 1989).

The belief that culture has an important effect on tourist behaviour was further confirmed by Pizam and Sussman (1995), who, in a study conducted in London, set out to identify the perceptions that British tour-guides had of Japanese, American, Italian and French tourists on guided motor-coach tours. The results indicated that in 18 out of 20 researched behavioural characteristics the tour-guides perceived a significant difference between the four nationalities. The authors concluded that the majority of the perceived differences between the four nationalities resulted from cultural influences and not geographical factors or linguistic (communication) difficulties.
It is obvious from the review of the existing cross-cultural studies that national cultures affect tourist leisure and recreational patterns. But the question still remains as to the particular circumstances in which this occurs, and for which behavioural characteristics. Tourism researchers started to pay closer attention to cross cultural differences in tourist behaviour.

### 2.8 CROSS-CULTURAL COMPARISONS

Hofstede’s dimensions are increasingly being referred to, as they provide various useful justification for cross-cultural differences in tourist behaviours. Based on Hofstede’s theories regarding the likelihood of tourist participation in various activities while on a leisure trip, significant differences between different groups of countries were able to be uncovered (Pizam and Fleischer, 2005). Some researchers have argued that differences in power distance, individualism/collectivism, masculinity/femininity and uncertainty avoidance might be associated with a difference in tourist behaviour (Holzner, 1985; Ritter, 1989; Pizam and Jeong, 1996; Pizam and Fleischer, 2005). The study of Pizam and Fleischer (2005) further confirmed that the cultural dimensions of uncertainty avoidance (UAI), masculinity/femininity (MF) and individualism/collectivism (IDV) have an effect on tourists’ choice of activities. It was found that visitors from low UAI cultures versus high UAI cultures, masculine cultures versus feminine cultures and individualist cultures versus feminine cultures preferred more active and dynamic tourist activities.

Holzner (1985) claims that the Oriental style of tourism is markedly less active, more leisurely and more socially gregarious than the European style. This is explained by narrow ties among an extended family wherein the elder members make the decision to go; the need for protection of the women which makes the family groups look for privacy in recreation and leisure; and the segregation of sexes in sport and play due to strict social norms which prevent many forms of activities to be played in Europe and America. Pizam and Jeong (1996) rationalised the heaving spending on souvenirs by Korean tourists by saying that in collectivistic societies such as Japan and Korea, those who neglect the ‘in group’ and travel outside their immediate environment have a social obligation to share their travel experience and 'atone for their sins' by buying many gifts. In this way the souvenirs act as culturally
approved evidence of travel to the aforementioned tourist destination (Pizam and Jeong, 1996). Ritter (1989) asserts that both group travel and short term holidays of Japanese tourists can be traced to their cultural background. In Japanese culture, people think of themselves less of individuals and more of being members of some group. A long vacation away from the group means painful separation and a danger to their psychological well being. This national style of tourism is quite different from what is normal in Europe (Ritter, 1989). The lack of desire for adventure-seeking and tendency to plan meticulously among Japanese tourist may also be explained in relation to their collectivistic and high uncertainty avoidance characteristics. Adventurous people are normally high risk-taking individualists. The desire for adventure-seeking among American tourists, therefore, could be explained in relation to their individualistic and low uncertainty avoidance characteristics. People who come from a ‘high uncertainty avoidance’ culture, like Japan, will not be able to tolerate the apprehension associated with eating unknown foods, and will therefore prefer their own familiar cuisine. This was indeed the case in Pizam and Sussman's (1995) study where Japanese were perceived to have a low preference for eating local British foods (Pizam and Sussman, 1995).

### 2.9 CONCLUSIONS

The aim of this chapter was to explore some of the conceptual challenges in understanding tourist movement patterns, to summarise the major influences on such movement and to model the basic spatial forms that such movement can take. Although the spatial behavior of all tourists is heterogeneous to a degree, the intent of this chapter was to describe and explain why fundamental differences in spatial behavior can exist in international tourists. This chapter suggested that the spatial behaviour of members of the same culture might be predicted to a certain extent. The implications of research in this area can be significant, especially for destinations that are highly dependent on tourism. This chapter attempted to formulate and develop a theatrical framework for this research. From these theories and models a comprehensive framework of the tourist spatial behaviour was developed. It addressed a number of issues that provide a wealth of underlying information, which is vital in the model development in the subsequent chapters.
The next chapter will formulate a methodological framework for this research by discussing the content, scale and map ability of visitors’ spatial behaviour. It will also investigate different approaches and methods used for the evaluation of tourist spatial movements and in built environments.
3 METHODS FOR ACQUIRING SPATIAL BEHAVIOUR

3.1 INTRODUCTION

In the previous chapter, a theoretical framework of tourist spatial behaviour and the factors that might influence such behaviour was discussed. This chapter will discuss techniques used for acquiring spatial behaviour of tourists within the built environment. The chapter will commence by discussing what data is required for monitoring tourist spatial behaviour. A review of the techniques for the tracking of tourist movements at various spatial scales will be undertaken and each method will be assessed for its suitability as a mechanism for collecting data. Each review will briefly investigate how the technique works, the accuracy of the data collected and its advantages and disadvantages. Further to this, surveying techniques, including questionnaires and visitor interviews for accruing socio-demographic data, will also be reviewed. These techniques will then be summarised in a table listing their advantages and disadvantages and suitable corresponding applications. Thus this chapter may
serve as a guide in selecting suitable monitoring methods for modelling tourist spatial behaviour.

3.2 MONITORING VISITOR MOVEMENTS AND BEHAVIOUR WITHIN BUILT ENVIRONMENTS

It has been posited that one of the major aspects of tourism geography is the examination of tourist activities and spatial patterns in relation to the physical and built environments that surround it (Pearce, 1995). In this context, pioneering work by Jansen-Verberke (1986) in Holland, and more especially Walmesley and Lewis (1993) in Australia, have brought attention to the differing patterns of visitor behaviour. In the latter, special emphasis was placed on mapping, partly building on Pearce’s (1977) earlier study of visitors to Oxford. A study by Freytag (2003) showed that the spatial behaviour of tourists in Heidelberg, Germany is quite concentrated – most tourists visited the Old Town, while external attractions received little attention. Kempermann et al. (2004) tracked visitor behaviour at a theme park and noted significant differences between first-time and repeat visitors, stating that visitors arriving for the first time are more likely to try to attend as many attractions as possible, while repeat visitors by contrast are much more selective. An analysis by Hwang et al. (2005) showed that the trip patterns of international tourists going to US cities had larger implications for projects concerned with spatial behaviour, destination bundling and cooperative destination marketing. As such, the behavioural data of the individual traveller in an urban area is an essential part of travel demand analysis.

Traditionally it had been the work of simple techniques such as counting traffic, surveys, and on-site manager’s knowledge and expertise to reveal to researchers the important information on crowding, movement patterns and visitor experiences (O’Conner et al., 2003). However in recent years the approach is to look towards digitally based localization technologies to track individuals in built environments. While Global Positioning Systems (GPSs), mobile phone systems and other hybrid technologies might be helpful, (Shoval and Isaacson, 2007), these techniques only allow us to describe what can be seen as “observable motion behaviour” (Millonig and Gartner, 2007). To obtain a comprehensive insight into tourist spatial behaviour, detailed information of the individuals concerned is required, and this
might simply not be accessible via a mere tracking technique. A combination of several different approaches is useful in minimising the limitations of each method. Take, for instance, the collecting of activity data; GPS enhanced questionnaires recorded on PDAs (Janssens et al., 2007), streamlining tracking technologies with interviews (Millonig and Gartner, 2007) and the use of video and behavioural mapping techniques (Hartmann, 1988) are all examples of combined techniques which collectively strive to eliminate the cons associated with them as individual methods.

The following sections will investigate the data required, and the method of acquiring, the spatial behaviour of the tourist in an urban space.

3.3 TOURIST SPATIAL BEHAVIOUR DATA

In order to obtain accurate information about tourist spatial behaviour, the spatial and socio-demographic data of the visitors is first required. This can be achieved by various techniques such as direct observation, self-administered questionnaire and camera-based systems. In attempting to obtain both spatial and behavioural data, relatively more realistic understanding of visitor movement and behaviour is gained. Furthermore, in gaining insight into existing behavioural conditions, one may also use this information to build a more accurate understanding of the total field data collected. This data may then grant researchers an opportunity to identify both the points of interest and the points of conflict for specific visitor groups (Gimblett, 2005).

3.3.1 Spatial data

The spatial behaviour of current visitors consists of specific spatial attributes as to their movement. Arrowsmith et al. (2006) broke down these spatial parameters as such:

Identity: The identity of the object at any point in space allows continuous tracking of individual entities. Data collection techniques such as Global Positioning System (GPS) tracking or on-site observation can identify individuals.
**Position:** The term “Position” can be defined as; the geographic location at which an activity or an event takes place. Positioning data is can be measured according to an absolute location (the X and Y data) which are derived from a polar coordinate system. This data can also be processed on a relative location by using a spatial interface supplying position in relation to other objects.

**Distance:** Distance can be measured as linear distance in plan view or travel distance along a slope. Distance can be measured in the field using range finders, GPS receivers, or by ground measure. Typically, distance is measured from maps.

**Direction of movement:** Direction of movement can be measured if identity and position is known for at least two locations. Direction of movement is fundamental in the construction of trip itineraries from observed data.

**Sequence and itinerary:** The order in which an individual visits a number of spots is the sequence. The sequence supplies data that describes how people travel along networks by following a unique order. By analyzing these sequences one can see a decision making pattern by which people are acting. From sequences it is possible to derive individual itineraries. The ease in which sequence can be determined varies greatly depending on how information is collected. To generate sequence directly, one must know identity, location and time at each destination. Constructing itineraries, if any one of these variables is unknown or measured with poor accuracy, can complicate the task enormously.

3.3.2 **Spatial scale**

One of the most important components of tourist spatial behaviour is what is known as ‘spatial scale’ (Xia and Arrowsmith, 2005). Studying tourist spatial behaviour at various spatial scales requires different spatial parameters to be collected.

On the macro level spatial scale is a chief determiner, in which individuals’ movements between various regions or destinations, ranging from several kilometers to hundreds of were
considered. (Xia and Arrowsmith, 2005). The movement of people is described as being distinct and reduced to a sequence of movements in a geographic space between a number of destinations. Yet, more specific information about these movements is however simplified at this geographic level (Hornsby and Egenhofer, 2002). The information collected at this level may include specific movement sequences between various destinations or regions within a destination and visitors number at those places (Xia and Arrowsmith, 2005).

Contrastingly, the micro level is regarded by recreational researchers as the determination of tourist’s movement pattern at a specific location or attractions within a destination. Thus, at this level, the position changes from one spatial point (referred to by X and Y) to another rather than from one region or destination to another. The sequence of movement can be represented accurately as a set of spatial points in a coordinate system (x, y). In this way micro-level movement is represented by high spatial resolution. Direction, location and sequence are all criteria used to determine the type of information to be collected at this level (Xia and Arrowsmith, 2005). Thus, the micro level as used in this research will refer to the widest of all possible definitions to integrate any movement, or any place within a city centre, whereas the micro level movement will consider any path taken by visitors inside a city centre attraction.

### 3.3.3 Socio-demographic data

When studying tourist spatial behavior it is essential to not only gather sufficient measurements, but also to obtain information that best represents the socio-demographic changeability of the observed visitors. Such an approach aids us in two ways: firstly, in structuring the rules that govern the visitors’ decision-making processes (Gimblett, 2005), and secondly to differentiate between tourist choices and their subsequent behaviours (Murphy and Murphy, 2004).

These behaviours have commonly been broken down into three important determinants: attitudes, personalities and cultural backgrounds (Jackson, 1987; Jackson et al., 1999; Uysal and Jurowski, 1994). To cite an example, Reisinger (2003) has suggested that visitors from Eastern countries are accustomed to follow crowds whilst visitors from Western cultures...
generally prefer to avoid these situations. However additional data relating to the individual characteristics of visitors is required for a more accurate representation of visitor behaviour – factors such as gender, age, home location, education, marital status and travel purpose are equally relevant. A study of tourist behaviour conducted in Belgium grouped travellers into particular socio-demographic categories: singles, couples, families with children and friend groups (Decrop, 1999). It found that, for example, singles wished to interact with other singles during their vacations, while families with children were more concerned with safety than other groups. It has further been noted that wealthier and more educated travellers are likely to be more movable (Hanson and Hanson, 1981) while older travellers and tourists who are travelling with their young children are likely to be the least mobile (Diver and Tocher, 1979). Arrowsmith et al. (2005) posited that individual characteristics revealed four distinct spatial patterns at Port Campbell National Park in Victoria, Australia. They found that young Australian friends, who travelled together as a group, tended to stay longer and travelled more widely than elderly couples or local families. As a side note, international visitors also tended to travel more widely.

The main advantage with using this type of data is that it assists us with understanding who the tourists are and, in turn, the researcher is then able to better understand what factors make them move and behave. In particular the following attributes identified by Xia and Arrowsmith (2007), should be noted to provide adequate background and motivational data of the visitors being surveyed:

**Visitor profile**: Visitor profile relates to the individual characteristics of a visitor and may include age, sex, education, travel group style, country of residence, income and occupation.

**Visiting characteristics**: Visiting characteristics refer to methods of mode of travel to and from the visitor site, type of accommodation, activities of the visit, motivation for the visit and frequency of visit.
3.4 TRACKING TECHNIQUES FOR ACQUIRING SPATIAL DATA

A large number of methods and techniques for monitoring individual’s movement and behavior in the built environment, particularly urban settings are available now. These techniques range from fairly simple data gathering methods such as self-administered questionnaires given randomly to chosen visitors on a tourist attraction location, to more complicated techniques of data collection using the Global Positioning System (GPS) technology. Combinations of these methods have also been successfully used to research urban tourist experience, exemplified by studies of Li (2000), Arrowsmith and Chhetri (2003), Chhetri et al. (2004), Fennell (1996) and O’Connor et al. (2005).

These techniques are not homogeneous however, and how one goes about employing them very much relies on how hard it is to analyse visitors behavior within the given travel network and the duration of their subsequent visit (O’Conner et al., 2005). Xia and Arrowsmith (2005) have attempted to outline the differences of such tourist movement tracking methods. At the macro level, as the size of the study area is usually large, visitor movements are usually represented with a low spatial resolution. At this level, tourist’s movement can be tracked using low resolution techniques (for example, self-administered questionnaires, observation and interview). However, at the micro level, the size of study area is usually small and the detail of movement needs to be greater compared to the macro level movements. High resolution techniques mostly applied for tracking tourist movements at this level (for example, GPS tracking and timing system). Notably, GPS and direct observation both remain well-proven technologies for capturing movement patterns of tourists at both levels (Gimblett, 2005). That being said, an amalgamation of these methods can prove to be much more helpful – terrain, geographic extent and complexity and visitor statistics may all require multiple approaches (Xia and Arrowsmith, 2007).

This section reviews several techniques extensively used for tracking visitors of built environments including observation, camera-based systems, self-administered questionnaires, timing systems, GPS, and mobile phone tracking. These methodologies could provide important insights regarding tourist behaviours in urban destinations.
3.4.1 Direct observation

The method of direct observation can be summed up in the words: “identify, follow, observe and map” (Figure 3.1) (Thornton et al., 1997: 1851). In practical terms, this “participant-observer method” involves the researcher accompanying the individual under scrutiny in person. Alternatively, the observer may follow the subject(s) at a distance, recording the pattern of their activities over time and space, or “non-participatory” observation (Dumont et al., 2004; Shoval and Isaacson, 2007). In this way, one might read the method as an easy yet flexible tracking technique that accommodates the acquisition of detailed movement at the micro level (Xia and Arrowsmith, 2005). That being said, some researchers have criticised the technique for its time-consuming and expensive working process (Hartmann, 1988; Xia and Arrowsmith, 2007). Hartmann (1988) used both techniques when studying the spatial and temporal behaviour of American tourists in Munich. He noted that while the non-participatory technique yielded a wealth of information, it failed to unveil the purpose and meaning underlying the subjects’ decisions and activities. The act of covert pursuit also posed various ethical questions (Hartmann, 1988: 94-101). These were less of a problem in the participant-observer procedure. The observer, thanks to his or her intimate contact with the subjects, was constantly aware of what the subjects were doing and, possibly, why. In this case, however, it must be noted that there was a significant risk that the subjects were tailoring their behaviour and explanations, albeit subconsciously, to “the presumed expectations of their observer-companion” (Hartmann, 1988).

Beyond a simple visual estimate of the socio-economic background of participants, direct observation cannot adequately deal with non-visual data such as the total length of visit and the subject’s next destination. For this level of detail, it becomes necessary to interrogate the individual users of the pathways in question, and aim at gathering data relating to socio-demographic and perception (Xia and Arrowsmith, 2007; 2005). Keul and Kuheberger (1997) used the non-participatory observation technique to analyse the spatial behaviour of tourists in Salzburg. Hoping to resolve this problem, the two followed up their observations with a series of interviews of the tourists observed. Direct observation combined with interview provides a method to acquire both macro and micro level movements of tourists.
The nature of this method, however, is rather obtrusive and as such runs the risk of modifying the behaviours of those studied (Xia and Arrowsmith, 2007).

Figure 3.1: A direct observation tracking example in the outdoor environment. (Source: Millonig and Gartner, 2007)

3.4.2 Camera based systems

Camera based systems tracking or remote observation is used to record and analyse tourist movements within small and/or interior environments, and can be read as a relatively less expensive, non-participatory technique (Shoval and Isaacson, 2007). This method is particularly useful in tracking micro level movements of tourists and can also offer illustrated descriptions of the tourists by pictures and images. Consequently detail information of visitor’s movement and behavioural characteristics can be acquired, and that makes the postures and interaction between the visitors highly visible. Tools such as zooming, panning and sound recording can also be used, and these are helpful in securing a more thorough observation of the tourist behaviour. It is noteworthy however that the actual places where
the tourists are positioned need to be figured out by a Computer program (Heikkila and Silven, 2004). Hill (1984) goes so far as to say that these techniques, though effective in studying the behaviour of visitors within a limited spatial setting, become useless once the observed visitor steps beyond the observation point’s line of sight (Hill, 1984: 542). However this can also be said of most fixed point observation studies; the problem is similarly encountered in time-lapse photography, video recorders and closed circuit television (Hill, 1984), the only difference being that most of these techniques have the ability to differ the dimension of the area under observation.

Moreover, video data is known to be potentially difficult to analyse, and tedious to quantify (McKenna et al., 2000; Wang and Singh, 2003). Recognising a complex set of objects and tracking their movements in real-time using a sequence of images or video footage is said to be one of the most difficult tasks in tourism surveillance (Figure 3.2) (Bogaert et al., 1996). In the midst of expensive software installation and maintenance, and the devices themselves being open to vandalism (McKenna et al., 2000; Wang and Singh, 2003), these techniques have also been seen as a violation of civilians privacy and are therefore subject to legal or moral issues. However, surveillance cameras can be configured in a way that will not recognise individual persons visiting the site and therefore protect their privacy. Hartmann (1988) commented that remote observation techniques, though providing an objective snapshot of the subjects’ behaviour, “cannot, by their very nature, reveal the motivations underlying the activities thus documented” (Hartmann, 1988: 100). In a recent study, Janowsky and Becker (2003) videoed recreational activities of visitors in the urban forest of Stuttgart. They then followed up their monitoring with a series of interviews to better determine needs and conflicts of the different tourist groups.
There are many factors that can affect the accuracy of camera based monitoring. This includes light variation and vibrations and the image analysis software. Light variation, especially a sudden intensive light in a monitored area, can cause the camera to record images incorrectly. However, Bregler et al. (2004) and Haritaoglu et al. (1998) developed ways to overcome problems caused by shadows and illumination changes to successfully track people using real-time stereo video footage. The relocation of a camera lens caused by vibrations can also lead to erroneous image recordings and inaccurate track. In addition, different image analysis software can influence the accuracy of data. Early image analysis software had a low accuracy rate. However, Heikkila and Silven (2004) has utilised a Kalman filtering algorithm to improve the quality of tracker.
3.4.3 Self-administered questionnaires

Self-administered questionnaires are a simple and reliable method to track tourist movement patterns. As a part of a questionnaire, participants are asked to retrace their spatial movements through a designated area on a cartographic map (Figure 3.3) (Fennell, 1996; Wang and Manning, 1999). This requires participants to draw their trip route and write down any visited attractions (Xia and Arrowsmith, 2007). In practice, the questionnaire technique procedure in one of the following forms: questionnaire or diary completed during a visit or questionnaires completed after the actual tour or trip. The first involves questionnaires which the subjects complete post facto. This technique is relatively cheap, provides comparatively large samples, and affords the speedy collection of data and prompt analysis. In resolution terms, macro level movement of tourists visiting the sites can be tracked with this method (Xia and Arrowsmith, 2005). Both Cooper’s (1981) and Debbage’s (1991) employed this type of questionnaire technique for investigation into tourist behaviour. The principal problem with this type is that the amount and quality of information gathered depends on the visitor’s ability to recollect past events with any degree of precision and detail. Furthermore, most questionnaires are, of necessity, phrased rather succinctly, lest the subject lose patience, which inevitably limits the amount of information obtained (Shoval and Isaacson, 2007).

Figure 3.3: Self-administered questionnaire tracking example.
Self-administered questionnaire, to be filled by the visitor in real time, make up another type of this technique. Researchers used such method when studying the spatial and temporal behaviour of tourists (Fennell, 1996; Lew, 1987; Pearce, 1988; Thornton et al., 1997). However, while resolving the question of memory lapses, these questionnaires have several problems of their own. This method is highly intrusive and can be applied for short period of times. They demand a considerable effort on the part of the subjects who are required to record in detail their spatial activities all while busy enjoying themselves touring the city or countryside. It is a distracting, disruptive, tiring as well as time-consuming process, which goes far to explain why so few are willing to take part in such studies. Yet, even among those ready to volunteer their services, there will be distinct differences in terms of their commitment and enthusiasm, and, consequently, considerable variation in the quality of the information thus garnered (Shoval, and Isaacson, 2007). Moreover, the longer a project goes on, the less keen and thus cooperative most subjects will become (Pearce, 1988:113), leading to a sharp fall in the amount and quality of the data recorded (Anderson, 1971). According to Pearce (1988: 16), a week is the most that one can expect people to compile such a questionnaire in any satisfactory or meaningful manner.

Data accuracy of this tracking technique is dependent on spatial ability, spatial knowledge and levels of familiarity with the environment (Li, 2004). For example, if the participants have a higher spatial ability and knowledge it is the easier for them to draw their travel routes on a map. However the design of the questionnaire plays an important role in acquiring required movement and behavioural data. Additionally, the sampling methods undertaken by the researchers and the geographic trappings of the spot, has an immediate effect on the accuracy of the data collected (Xia and Arrowsmith, 2005). Also, considering the participant’s memory, it is easy to see why data accuracy is vastly dependent on when the survey was actually conducted.

3.4.4 Timing systems

Timing systems are able to record the time and location of movements for tourists. Most timing systems are comprised of, fixed receivers at the point of interests, data loggers and transmitters (with unique codes), which are connected to participant’s cloths or shoes. The
system takes records of the unique identifier and the time the moment a participant crosses over a receiver. Given the capability of this technique to track the tourist’s movement at such a high resolution, one can easily see the suitability of such a method to track micro level movements of the tourist (Xia and Arrowsmith, 2005). Whilst it does provide similar relevant data to the video tracking, this is done without the post-processing required to distinguish between the individuals (O’Connor et al., 2005).

Figure 3.4: A timing systems tracking example.
(Source: O’Connor et al., 2005)

The main advantages of timing systems over other systems such as handheld GPS is because timing systems have the ability to mark a large number of individuals per hour using unique identifiers without altering the tourist’s participation in the experiment. In this way they are as efficient as they are non-invasive (O’Connor et al., 2005). In addition, the transmitters are relatively affordable hence some loss of hardware is acceptable, and the sensor pads (receivers) are very inconspicuous and waterproof making them ideal for outdoor experiments.

O’Connor et al. (2005) used the Alge timing system (ALGE-TIMING, 2005) to track visitors at the Twelve Apostles (Figure 3.4). Battery life and the data logger memory capacity were found to be a limitation in this study. The data loggers required regular battery changes to
ensure no data loss occurred. Thanks to recent advances in data logger technology, however, it appears this particular limitation will be overcome (O'Connor et al., 2005). At any rate, as the system records the location of individuals at discrete locations, the data needs to be extrapolated to provide a modelled continuous dataset using algorithms. In addition, there were some limitations with the receiver design. Receivers did not extend across the entire width of the paths which resulted in some data loss if tourists did not pass over the receiver. Thus in order to monitor the movement pattern of tourists, a more sophisticated receiver network is required, however it is noted that this could result in a higher equipment costs (O'Connor et al., 2005).

3.4.5 Global positioning systems (GPS)

Using of Global Positioning Systems (GPS) in acquiring the movement information of tourists is quite a new method. The GPS is basically a number of linked satellites that move around the earth transmitting signals caught by a system of receivers. It works on the basis that, by triangulating the information received by these satellites, it is possible to determine a receiver’s specific geographical location (figure 3.4) (Shoval and Isaacson, 2007). The GPS is a one-way broadcasting system and thus, much like television or radio broadcasting systems, a system can support an almost unlimited number of users (Zhao, 1997). The main obvious advantage to GPS lies in its global pull; as a tool for tracking visitor activity, it theoretically spans the entire world (Shoval and Isaacson, 2007). It provides to researchers a valuable tool which can continuously track individuals, provide velocity information (O'Connor et al., 2005), and display specific details as to their movement speed and directions (Xia and Arrowsmith, 2007). This makes GPS an important tool in micro-level investigations, such as studies which record the movement of tourists visiting historic cities, attractions and theme parks, all of which demand high-resolution data.

Recent GPS research has been undertaken to track visitor movement. Modsching et al. (2007) used GPS technology to record tourist movements in the city of Gorlitz; Loiterton and Bishop (2005) investigated visitor movement in Dessau’s urban parks and gardens. Ashbrook and Starner (2003) obtained spatial data of visitors travelling in and around Atlanta. However, as several researchers have pointed out, visitor behaviour can in fact be modified if
the participant is aware that he or she is being monitored for research purposes (O'Connor et al., 2005; Xia and Arrowsmith, 2007). In addition, it is a relatively expensive method and the cost of a receiver can be restrictive (O'Connor et al., 2005), although thankfully there are no subscription fees or setup charges to use GPS. Another limitation of this method is that “canopy cover can restrict the number of satellites required for high positional accuracy” (Xia and Arrowsmith, 2007). Even if the problem can be resolved through the distribution of auxiliary signal transmitters in areas where satellite coverage is not available, (Asakura and Hato, 2004; Asakura and Iryo 2007), it is still imperative to utilise algorithms to predict the locations of the missing signals (Pfoser, 2002).

Figure 3.5: A GPS tracking example.  
(Source: Shoval and Isaacson, 2007)

The accuracy of the data supplied by the GPS technique varies greatly depending on factors such as the nature of the local terrain, the presence of dense urban areas, weather conditions and the degree to which the GPS receivers are exposed to the sky. A receiver will provide an accurate reading only if exposed directly to the satellites’ signals. Any kind of obstruction, regardless of whether it wholly or even partially blocks the signal, will produce an inaccurate
reading. One may therefore conclude that GPS’s principal disadvantage lies in the fact that an accurate reading requires a direct line of sight between the receiver’s antenna and the orbiting satellites (Shoval and Isaacson, 2007).

3.4.6 Mobile phone technologies

There are a number of location positioning techniques using cellular phone systems such as Personal Handy phone Systems (PHS), GPS combined and Personal Digital Assistant (PDA). Personal Handy phone Systems (PHS) is operated by LOCUS (1999), a private company in Japan. Recently Asakura et al. (1999) and Asakura and Hato (2001) examined the use of mobile phones to help monitoring individual tourist behavior. They found that the PHS system is using lower signal power than standard mobile phone systems, and therefore requires more closely located base stations (antennas) to work. Thus, the antennas of a particular service carrier are equipped about every 100 meters in urban area. The signal strength of an antenna decreases in proportion to the distance from the antenna when it is not so far. The most useful characteristics of a PHS handset is that the handset usually measures the signal strength of multiple (up to seven) base stations even if a user does not make a call. The exact locations of antennas are known, and the signal strength from each antenna is measured. Thus, the position of the PHS handset can be calculated by a triangle survey method. The distinctive difference between GPS and PHS is that the latter is available even if a traveller is on board or in buildings. However, it is considered that the tracking data obtained with the PHS system is only effective when used on regional or metropolitan level. The PHS-based location positioning system is therefore mostly suitable for the seamless tracking of travel behaviour at micro level (Asakura and Hato, 2004; Xia and Arrowsmith, 2005). Asakura and Hato (2004) further investigated the use of PHS to track tourist movement and behavioural patterns in Japan (figure 3.6), stating that the positioning accuracy wholly relies on the concentration and distribution of the base stations (Asakura and Iryo, 2007; Asakura and Hato, 2004).
Another notable example comes from the GPS-based mobile personal location service which started in January 2000 (Figure 3.7). The Snap Track Company (1999) in US has developed the server-aided system, which includes combined GPS with cellular phone technology. A traveller is asked to operate his mobile phone frequently to identify his location position. A location positioning function will be installed in the cellular phones in the next generation. However, it is uncertain whether the GPS-supported cellular phone system or the cellular phones in the next generation would be available for the data collection instruments of travel behaviour without requiring any operation for travellers. Recent technologies in GPS enabled the development of various data collection methods. For example, Hato (2006) developed a wearable data collection instrument named Mobile Activity Loggers (MoALs) which is supported by GPS cellular phones. Ohmori et al. (2006) presented the results of an activity diary survey using a GPS mobile phone, arguing that positioning accuracy is dependant on physical obstacles within the immediate environment such a buildings.
Personal Digital Assistant (PDA) tracking involves using a cellular phone linked to a PDA to locate the mobile object in a wide range of environments. In this method, the PDA is used as a platform to communicate with mobile phone networks and download spatial and temporal data from the internet. This technique works with high spatial resolution and can be used to track tourist movement at micro level. By using this technique, it becomes possible to collect dynamic travel behaviour data digitally while avoiding a prohibitive amount of equipment fees. Moreover, PDAs enable additional data such as visitor’s preferences and attitudes to be acquired from or delivered back to the user rather than just providing movement pattern information. PDA tracking can be designed to enable observers to communicate with visitors in real-time to track not only the physical movement of visitors but also the decision-making process they make as they walk through particular locations. Research by Loiterton and Bishop (2005) involved the use of PDA and mobile phone technologies to track visitors and their decision making processes in urban parks and gardens in Dessau, Germany.

On one hand, although it is a simple and low cost tracking technology, this modern technique raises serious ethical issues in regards to personal privacy. Many visitors are thus reluctant to provide their mobile phone number. In addition, this technology is still developing and the
accuracy of location information is dependant on its distance to the nearest mobile phone network.

3.4.7 Evaluation and comparison of tracking techniques

This section will compare the technologies discussed in the previous section for acquiring spatial behaviour of tourist in urban settings. Traditional tracking techniques such as direct observation, interview and self-administered questionnaires can be used to obtain spatial information related to the movement of people in low resolutions. These techniques have the advantages of being unaffected by the weather and work well in urban regions and indoors. On the other hand, modern tracking techniques such as GPS and timing systems have the advantage of providing extremely accurate data in time and space over traditional tracking methods. However one important disadvantage of these tracking techniques is that they raise several moral and ethical questions, all which need to be addressed. Most of these relate to the way these devices might potentially impinge upon the individual’s supposedly inherent right to privacy (Renenger, 2002). In addition, GPS equipment is usually expensive and has a high risk of being misplaced. Moreover, because most of these techniques are unable to acquire socio-demographic information of individuals, they will not replace questionnaires, diaries, or interviews, which will, out of necessity, remain important sources of information on behaviour and the motives underlying it.

Of the six tacking techniques reviewed in this section, all techniques can be used to track individual visitor movement. Self-administration questionnaire techniques can obtain not only the spatial information related to the movement of visitors but also their socio-demographic characteristics, which could be very useful for some applications such as movement prediction. Although each technique has its own advantage and disadvantage, it is nevertheless important to apply them where appropriate. In table 3.1, the list of data discussed in section 3.3 required for studying tourist spatial behaviour is cross-Tabled with technologies discussed in section 3.4. Each technology is rated as to whether it has the ability to measure the said data item or not; the levels of intrusion required by the surveyor is also noted. As for the levels of reliability of data, this component is ranked as high, moderate or low. table 3.2 summarises the advantages and disadvantages of this various tracking
techniques discussed in this section. The advantages and disadvantages are allocated to each technique based on factors such as resolution, cost, intrusive, non-intrusive and sample size.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Camera-based systems</th>
<th>Direct Observation</th>
<th>GPS</th>
<th>Mobile phone</th>
<th>Questionnaires</th>
<th>Timing systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Position</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Distance</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Direction of movement</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sequence or itinerary</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Socio-demo data</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Level of intrusion</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Reliability</td>
<td>Mod</td>
<td>High</td>
<td>Mod</td>
<td>High</td>
<td>Mod</td>
<td>High</td>
</tr>
</tbody>
</table>

Table 3.1: Summary of capabilities of various counting and tracking technologies.
(Source: Xia and Arrowsmith, 2007)
<table>
<thead>
<tr>
<th>TECHNIQUE</th>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
<th>SCALE LEVEL</th>
</tr>
</thead>
</table>
| Camera-based systems | • High resolution    
                      | • Can identify unique individual                              | • Vibrations and changes in light, height, and temperature could degrade performance  
                      | • Expensive                                                  
                      | • Intrusive                                                  
                      | • Ethical issues                                             | MICRO LEVEL       |
| Direct observation  | • Can track tourists more flexibly                           | • Intrusive                                                                  | MACRO / MICRO LEVEL |
|                    | • Can acquire non-spatial information of tourist             | • Time-consuming                                                            |                   |
|                    |                                                               | • Low resolution                                                            |                   |
|                    |                                                               | • Low sample size                                                           |                   |
| GPS tracking        | • High resolution                                          | • Low sample size-limited by equipment                                      | MICRO LEVEL       |
|                    | • Mature technology                                        | • GPS signals blockage from buildings and foliage                           |                   |
|                    | • Ease to use                                               | • Expensive /High risk of loss of GPS equipment                             |                   |
|                    | • Continuous measurement                                   |                                                                               |                   |
|                    | • Uninstructive                                             |                                                                               |                   |
| Mobile phone tracking | • Non-intrusive                                            | • Ethic and Privacy security issue                                          | MICRO LEVEL       |
|                    | • Low-cost                                                  | • Signals blockage from buildings and foliage                               |                   |
|                    | • High resolution                                          | • Low resolution                                                             |                   |
|                    | • Can communicate with tourists in real-time                | • Intrusive                                                                 |                   |
|                    | • Can track their decision making process                    | • Low sample size                                                           |                   |
|                    |                                                               | • Expensive /High risk of loss of PDA equipment                             |                   |
| Questionnaire       | • Can acquire non-spatial and approximate spatial information of tourist | • Intrusive                                                                 | MACRO LEVEL       |
|                    | • more flexibly                                             | • Time-consuming                                                            |                   |
|                    | • High sample size                                          | • Low resolution                                                            |                   |
|                    |                                                               | • Low sample size                                                           |                   |
| Timing systems      | • Non-Intrusive                                             | • Expensive                                                                 | MICRO LEVEL       |
|                    | • High resolution                                          | • Limited by battery life and data logger memory capacity                    |                   |
|                    | • High sample size                                          | • Vibrations and changes in light, height, and temperature could degrade performance |               |

Table 3.2: Advantage and disadvantage of various tracking techniques.
(Source: Infodev, 2004; Klein, 1995; Skszek, 2001)
3.5 METHOD FOR ACQUIRING SOCIO-DEMOGRAPHIC DATA

Surveys are commonly used in the areas of behavior research and measuring the satisfaction of visitors (Brown and Daniel, 1987; Kroh and Gimblett 1992); Several authors even suggest the use of such surveys as integral in understanding the unseen nature of tourists travel behaviour and preferences, particularly attitudes towards the destination or attraction (Uysal and Jurowski 1994; Kiiskilä 2001; Jackson 1986; 1987). Itami and Gimblett (2005) have noted that simulate scenarios using data arriving from surveys can offer excellent view on the dynamics of present travel patterns and modes, given that the sample is in fact accurately representative of the population over the length of time the simulation took place.

Surveys are made of a number of methods through which data about the visitor behavior and patterns of travel can be determined. Surveys basically can be conducted in two ways: by a self administered questionnaire or an interview. Surveys conducted on the location using questionnaires or detailed interviews have been widely used to examine visitor’s needs, preferences as well as attitudes and level of satisfaction. It is essential to design an approach which will make it easy for participants to complete and only requires minimal intervention in order to reduce the inconvenience to participants in the survey and get high response rate. Questionnaires have been found to be valuable in gathering a wide range of information whilst analysing in details the responds of visitors on an individual level can be explored through personal interviews. Integrations of these methods have also been used in tourist behaviour research. Li (2000) approaches the task of socio-demographic data gathering by combining surveys with interviews, so that rich insights about their experiences can be gained with minimal intrusiveness. Structured interviews and questionnaires also have the potential of underpinning more quantitative research into urban tourist experience.

Survey research in general offers advantages in terms of cost, sample size, and the amount of information that can be obtained. The other advantage of survey is the standardisation of the information obtained through this method. However, survey research has several weaknesses can be to some extent false, potentially, in that its contents superficial, and somewhat rigid.
3.5.1 Self-administered questionnaire

The questionnaire starts when selecting a sample of respondents from a particular socio-demographic, cultural or physical group population. The second is to provide a number of questions or statements in line with the purpose of the study and seeking responses from the sample by a getting clear answer or level of agreements with the statements representing to the participants. Questions may be open with respondents supply their answers freely or closed questions when they select from a list of fixed answers. The layout of a questionnaire can have an influence on the quality of information obtained. Thus, the value of a questionnaires survey strongly relies on the questionnaire design and the way it has been implemented. Comprehensible design and instructions are the key factors in getting high rate as well as accurate responses in which clearly reflect individual’s needs and preferences. Fennell (1996) examined the relationship between tourism group movement patterns and their motivation by self-administered questionnaire. Questionnaires are appropriate method for studies aimed at providing description and explain a large population group from various aspects. There are many advantages for a self-administered questionnaire over an interview survey including, lack of interviewer bias, speed, economy, and the anonymity and privacy to encourage more honest responses from the participants. Using self-administered questionnaire technique provides an easy method to figure out the personal backgrounds of the participants alongside the actions and activities they are expected to show whilst in the location they visit.

3.5.2 Interviews

Interviewing visitors is another survey method to acquire an individual’s behaviour and preferences information. This method provides an easy yet flexible data collecting procedure for human behavioural researchers. Although terms such as ‘guided’ and ‘open-ended’ are often found in the discourse of interviews, they are usually referred to as ‘structured’ or ‘unstructured’ (Ryan, 1995).

The structured interviews are generally considered as applying a written questionnaire in a verbal format in which the interviewer will often read out a limited number of questions and seek responses from interviewees. That often leads to a closed questions
type but that is subject to variations. Supporters the structure interview will claim that this approach has a greater degree of reliability and validity than in the more unstructured interview formats and it is more efficient in terms of time taken to gather the information. However, the main disadvantage associated with this technique is that the data collected lacks the richness obtained by more unstructured interviews. In addition due to the fact that the number of potential answers can be limited, participants have to answer in a way who does not reflect their true mind-set at that time.

Unstructured interviews will usually not use prepared questionnaires or interview formats; for the contrary, they often have a set of issues or themes which they intend to investigate. In addition, the questions asked are more likely to be open-ended and let the participant answering in their own words. This could bring a chance to both interviewer and interviewee to control over the course of the interview such as discussing issues as they come up during the interview session. As a consequence the unstructured open-ended approach provide rich dataset for interviewers in relation to the interviewees characteristic, preferences and needs as the given responses could not affected mostly by interviewees or interviewers misinterpretation or confusion. The major difficulties facing interviewers in an unstructured interview is that it is a time consuming method and more notably, obtained data not always comparable as different respondents generally giving dissimilar responses to the same questions. These could leads to raising validity and reliability issues. Open-ended interviews involve outstanding inter-personal skills to elicit highest quality of information from interviewees. Being unbiased is the key criterion of the person conducting the interview; the responses given to questionnaire items should not be affected by his/her presence in the data collection process. Interviewers must be cautiously trained to know the questions aspects and diversity and exactly follow the question wording and question sequences while recording responses exactly as they are given by the interviewee. They can also explore an incomplete or ambiguous answer given by interviewees. Janowsky and Becker (2002) have used personal interviews to identify visitor needs and conflicts between groups in urban forests. The advantages of an interview survey above a self-administered questionnaire are less unfinished questionnaires and less misunderstood questions, in general greater flexibility in terms of sampling and observation and higher response rates.
3.6 A FRAMEWORK FOR DETERMINING SPATIAL NEEDS OF TOURIST

This study is restricted to the analysis of spatial behaviour of tourists from diverse cultures. One of its aims is to develop a framework to determine the spatial needs of international tourists. This study proposes that a combination of visitor attitude and satisfaction level surveys and socio-demographic data will provide better typologies of the study sample in order to identify similar behavioural groupings. To achieve this outcome surveys making use of self-administered questionnaires would be an appropriate method to acquire both spatial and socio-demographic information. All aforementioned tracking technologies could potentially be used as effective tools for analysing the spatial behaviour of tourists within the built environment, but only if the tracking units used do not restrict or alter the subject’s behaviour. Put simply, they must be fairly easy to undertake, less time consuming and able to track the subject reflexively, without forcing the tourist into taking any kind of special action. In this respect, the self-administered questionnaire technique has a distinct advantage over other methods.

Therefore, based on the reviews and comparisons made in this chapter relating to current survey and tracking techniques the self-administered questionnaire technique was selected as an appropriate method to acquire both socio-demographic and spatial data of tourists visiting the Melbourne CBD area.

3.7 CONCLUSIONS

This chapter reviewed and compared various tracking techniques for the acquisition of spatial movements of visitors in urban space. Each technique has also been evaluated based on the level of resolution achieved, whether it is an intrusive or non-intrusive technique, the size of sample required, the accuracy of the data collected and its advantages and disadvantages. It also discussed a number of survey techniques which investigate the socio-demographic characteristics of tourists.
The next chapter will present a case study conducted on Melbourne’s Central Business District (CBD). This case study will implement and evaluate the theories and methods of monitoring the spatial behaviour of tourists discussed in this thesis.
4 CASE STUDY: MELBOURNE CITY CENTRE

4.1 INTRODUCTION

The previous chapter discussed methods for acquiring spatial behaviour of tourists within a built environment. The Melbourne city centre was used as a case study to examine tourist behaviour and to determine their specific spatial needs. The Melbourne city centre is a popular tourist destination which features a whole range of built attractions such as museums, galleries and heritage buildings. In order to cater to the different needs of international tourists from diverse cultures who are visiting Melbourne city centre attractions, one must first understand their individual preferences. This will assist tourist managers and their customers in acquiring the highest quality tourist-related products available within the Melbourne city centre.

This chapter will also attempt to give an overview of the physical, demographic and tourism characteristics of each case study. The chapter will commence by describing the location and history of the Melbourne city centre. A review of visitation patterns, as well as user
characteristics and visiting profiles, will also be undertaken, followed by a review of the historical and cultural context of Melbourne’s major tourist attractions.

4.2 A CASE STUDY APPROACH, MELBOURNE CITY CENTRE

The study area is chosen in line with the core objectives of this research. It should be located in a popular, urban tourist destination where tourists of diversified ethnicities frequently visit.

Melbourne, the Australian second largest city after Sydney, is the capital of the state of Victoria (Australian government website, 2007). As its city centre is less than 200 years old, the city as a whole can be described as fairly modern (City of Melbourne, 2007). That being said, Melbourne has steadily evolved into the cultural capital of Australia and is famous for its multi-cultural population and rich migrant influences. It is a truly multicultural city in which more than one quarter of its population born overseas. It is also the sports capital of the country (Zhang et al., 2006). Melbourne is Victoria's primary tourist destination. As Victoria’s capital city, it enjoys considerable status a tourist destination, especially in terms of investment, visitor numbers, scale of accommodation, attractions and services (Tourism Victoria, 2007). Melbourne is also home to a number of world-class arts and cultural heritage institutions, as well as worldwide recognised visual artists and performing arts companies (Committee for Melbourne, 2006).

The Melbourne city centre is complex and supports a diverse range of uses. Melbourne and its Central Business Districts (known as CBD) are the main destinations of tourists to in the state of Victoria, as most tourists spend their time well within the centre of Melbourne (City of Melbourne, 2006). Melbourne’s city centre, in addition to being a major business and trade entity, plays host to a number of significant tourist attractions (Rowthorn et al., 2002). The city centre is home to Australia’s first Heritage-listed building, the Royal Exhibition Building and Gardens. In 2003, for the second times, Melbourne was voted as the second most favorite destination for international tourists by Guardian and Observer Travel Awards in the United Kingdom, with an overall score of 95.1%, readers giving Melbourne (Melbourne Convention and Visitors Bureau, 2007).
The unique characteristics of the city centre make it an ideal case study and a most effective laboratory to test hypotheses and concepts in urban tourism. The data for this study was collected from inbound individual tourists who visited attractions within Melbourne’s city centre.

4.3 LOCATION AND GEOGRAPHIC HISTORY

Melbourne is located at the head of Port Phillip Bay, on the southeast coast of mainland Australia. In a strikingly asymmetrical fashion, Melbourne's urban development presently lines the entire eastern shore of Port Phillip Bay, from the mouth of the Yarra River to Point Nepean (Figure 4.1). Melbourne was first founded in 1835 by John Batman, a Tasmania farmer, and John Pascoe Fawkner, a businessman, 47 years after the first European settlement in Australia. Initially, they planned to establish a small pastoral settlement around the Yarra River, however the gold rush of the 1850s brought a great influx of immigrants to region, and by the mid-1860s Melbourne became the most populous city in Australia. In fact, Melbourne acted as the nation’s capital from the Federation of Australia until Canberra took over in 1927 (The Records and Archives Branch of City of Melbourne, 1997).
Figure 4.1: The location of Melbourne and its urban growth boundary.
(Source: Victorian Government, Department of Sustainability and Environment, 2002)
Today, the original settlement area of Melbourne has evolved into a financial, legal, administrative, and ecclesiastical centre, commonly referred to as the Central Business District (CBD). Comprising of a rectangular grid of streets, the foundations of the CBD were laid out in 1837 on the northern bank of the Yarra River, and incorporated the now recognised streets of La Trobe, Spring, Flinders and Spencer (The Records and Archives Branch of City of Melbourne, 1997; City of Melbourne, 2007). However the opening of Federation Square in 2002 has freed the city centre from the confines of its grid, extending it to the riverside. This change, together with other new developments across the river in Southbank, has brought the city’s centre closer to the Yarra (Walker, 2006). Likewise, this study aims to incorporate this definition of Melbourne’s CBD in such a way as to include Southbank and other areas which stretch along the southern bank of the Yarra (Figure 4.2).

Figure 4.2: Melbourne Central Business District and surround suburbs. (Source: City of Melbourne, 2006)
4.4 PHYSICAL DESCRIPTIONS

4.4.1 Melbourne Central Business District (CBD)

Melbourne’s built space is responsible for 95.5% (9,623,000m²) of floor space in the City center while un-built land is responsible for only 4.5% (451,000m²) of floor space in the CBD, majority (81%) of which is open space such as parkland. Office Space (29%), Common Area (17%) and Parking lots (13%) counts over half of city centre’s built environments (City of Melbourne, 2005).

The complexity of the CBD allows a diverse range of uses and functions. Many services operate on a 24 hours basis and serve a diverse crowd – workers, residents, and visitors equally. The CBD is truly Melbourne’s business and financial centre, with commercial and residential properties and services dominating both the allocated floor space and the number of business locations (City of Melbourne, 2005). The CBD also contains major suburban and interstate railway stations, Victoria's Houses of Parliament, the Anglican and Roman Catholic cathedrals, arts and entertainment venues, museums, the Law Courts, the State Library, and many financial institutions, including the Melbourne Stock Exchange and the headquarters of major banks. It also houses some of the finest examples of Victorian architecture, including the Royal Exhibition Building and Carlton Gardens (City of Melbourne, 2005).

4.4.2 Southbank

Built space in Southbank accounts for 83% of floor space (2,467,000m²), mainly parking lots (23%), office space (14%) and residential accommodation (15%) whiles only consists of a small proportion of un-built space (522,000m²) including parking area (15%), open space (80%), undeveloped land (5%) and outdoor leisure (0.6%) (City of Melbourne, 2005). Southbank’s strong cultural and artistic base is home to the Victorian College of the Arts, the Malt House Theatre, the Australian Centre for Contemporary Art, the Victorian Arts Centre and the National Gallery of Victoria (City of Melbourne, 2005).
Melbourne’s city centre features well-planned tree-lined streets which are arranged in a grid-like pattern. Whilst it is compact enough to cover on foot, it is also possible to pass through on one of the many trams that cross the area (Rowthorn et al., 2002). The Melbourne CBD (and the suburbs) is one of a few cities in the world that has an electric tram network, in addition to buses and underground train systems. There is an historic tram that runs regularly around the boundary of the Melbourne CBD, taking passengers via a large number of Melbourne’s tourist attractions free of charge. This free historic tram is designed and allocated to the city centre’s visitors, offering extensive tour guides on board.

4.5 DEMOGRAPHIC DESCRIPTION

The City of Melbourne (2006) presented findings from two surveys interviewing Victorian residents 15 years and older. These surveys were conducted within the CBD, including both Southbank and Docklands. The main purpose of the surveys was to provide basic information of city centre users including their demographic characteristics, place of interest, purpose of visit to the city and mode of transport used to travel to and within the city centre.

As only two out of 23 places were conducted in the Docklands area, this was study was mainly limited to the CBD and Southbank suburbs only. The following descriptions of the city centre users and visitation characteristics are summaries from this report.

4.5.1 Visitor characteristics

4.5.1.1 City centre residents

The result of the City of Melbourne study (2006) shows that 389,000 people on an average weekend day and 543,000 people on an average weekday using city centre area. Residents living in the Melbourne city centre have diverse cultural backgrounds. Most of the city centre non-Australian residents are from Indonesia, Malaysia, Hong Kong, Singapore and New Zealand.
4.5.1.2  City centre visitors

Ten times as many people visit the city centre each day as live in it. The majority of city centre users on weekdays are workers and visitors with work related purposes, accounting for 39% of total users. However this sharply decreased to 11% on weekends. Students and people with education related purposes including students and university staffs are also a high percentage of city centre users on weekdays (7%). However the number of this group of users significantly decreased during weekends (1%).

China is the country of origin for non-city-centre residents and international students. Casual local visitors from Melbourne metropolitan area are also a major group among the city centre users, accounting 36% (196,000) of total users on weekdays and 64% (248,000) on weekends. International tourists are considered as the main group of city centre visitors (8% on weekend and 6% on weekdays) followed by regional (3% on weekdays and 4% on weekend) and interstate visitors (7% on weekend and 5% on weekdays) (figure 4.3).

![Figure 4.3: Melbourne city central user numbers.](Source: City of Melbourne, 2007)

Whilst the barometer of resident activity in Melbourne’s CBD is likely to stay relatively consistent during the average week, visitor activity, by contrast, is dependent on a whole range of factors, such as special events, conferences, shipping arrivals, retail sales and so on (City of Melbourne, 2006). The main country of origin of non-resident city centre users includes United Kingdom, New Zealand, India and China.
4.5.1.3 Language Spoken by Central City Users

Although Australia’s national language is English, more recently immigration from many other countries has increased. As a result, over a quarter of Melbourne metropolitan area speak a non English language at home (Walker, 2006). Of the non-English speaking city centre residents (excluding overseas visitors), the most widely-spoken languages are Indonesian, Mandarin and Cantonese. The main secondary languages of non-resident city centre users (overseas visitors excluded) are Mandarin and Cantonese. Among overseas visitors, about a third speak a language other than English at home, with German, Chinese, Cantonese and Mandarin dominating these groups (2006). Around half of CBD users are aged less than 30 years, while there is a minor bias towards males. However these demographics slightly differed from weekdays to weekends (figure 4.4).

![Bar Chart]

Figure 4.4: Melbourne city central user by age.

4.5.2 Visitation pattern to Melbourne city centre

4.5.2.1 Origin of visit

According to the city of Melbourne survey (2006), the majority (80%) of residents, students, workers, and visitors weekdays journeys to the city center stats form their home. However,
direct from airport, ship and work or education facility also perceived particularly among visitors groups. On weekends, journeys to the CBD by Melbourne metropolitan residents (central city and suburbs) almost universally started out at home. For other groups, as was found on weekdays, other origins also occur.

4.5.2.2 Mode of transport to the city

Most of non-residents city centre users (51%) using Trains to get into the city centre on weekdays followed by Cars (19%) and Trams (21%). The nature of the user determines the mode of transport used to get to the city on weekdays. Interstate and overseas visitors, usually stay in the city centre accommodations, however, for those who choose to stay outside the city centre area using Tram or walking are the main form of transport to travel the city. Although metro (23%) and regional (27%) visitors accounting for more than half of the private car users to the city centre area, they are more likely to use train to travel to the CBD area as well as students (67%) and workers (53%), more likely to use car to travel to the city centre while students (67%) and workers (53%) more likely to use train. Buses are more commonly used for provincial visitors (10%) rather than other groups. The private vehicle is used by a larger percentage of visitors during the weekend than during the weekends.

Figure 4.5: Mode of transport to the city centre.
4.5.2.3 Type of transport around the city

Most of the city visitors walk their way around the CBD. The same applies for all of the other visitor groups. Trams are also a solution for a high percentage of city centre users (25%) to get to the city centre various attractions. There is only a slight variation in the inner city way of transport during the week in comparison to the weekend.

4.5.2.4 Accompanying users

The Majority of the users (73%) are in the central city area on their own on weekdays particularly workers and students. However, a high percentage of interstate (61%) and overseas visitors (27%) are accompanied by relatives and friends or a spouse/partner in their visit to the city centre and its attractions. Traveling alone to the city on weekends has been perceived to be significantly less than on weekdays (50%).

4.5.2.5 Main purpose of city visit

Work (39%) or work related business (9%) is the dominant purpose for using the central city on an average weekday, accounts for over half of the city centre users purpose. Education or education related activities with, 7% to attend their education institute and 4% on a study related reason is the second major city centre users purpose to visit the city centre area. After work and education, the main purpose of users to visit the city centre is reported as, Shopping (7%), Meeting with/accompanying friends (4%), In transit (5%), Dining/eating/drinking (4%), and Sightseeing (6%).

The weekend pattern is quite different. Work is nowhere near as dominant and education is minimal. The four main reasons for visiting the city, as reported by city of Melbourne study (2006) Melbourne are, Shopping (12%), Spectator sport (14%), Working/ work related activities (14%) and watching live theatre/ballet/opera (13%). Other prominent weekend reasons include, Sightseeing (7%) Socialising with, meeting, and accompanying friends (7%) and Dining/eating/drinking (9%).
As a corollary, visits to the city for shopping, socialising and recreation can be “significantly influenced by major events both in the city and the suburbs” (City of Melbourne, 2006).

According to the City of Melbourne (2006), Southbank and Federation Square are the two main sightseeing areas, followed by the Bourke Street Mall and Docklands. Among specific venues, the Casino, the Aquarium, Queen Victoria Market and Parliament House are the main place of interest.
4.6 TOURISM IN MELBOURNE’S CITY CENTRE

In 2005-2006, almost 47 million tourists visited Australia, an increase of 1.1 million people from the previous year. International visitors have increased by 18% from 2002-2003 with 2.5 million visitors coming from overseas. Victoria and its capital city Melbourne are two of Australia’s most popular attractions for Australian and overseas tourists. According to Tourism Victoria (2004), over 1.3 million international tourists visited Victoria in 2004, staying an average of 23.8 nights. However, this figures are expected to rise to 2.2 million in 2013. In the financial year of 2004, Victoria received international tourists from over 100 different countries, with the United Kingdom, New Zealand, the USA, China, Singapore, Japan and Germany dominating.

The world began to visit Melbourne in the 1950s, during the time of the XVIth Olympiad of 1956 (Montgomery, 2007). Since then, international tourism has become a key priority for the Victorian government. Tourism and event industries are estimated to be worth $18 billion on average, and as such are one of Victoria’s leading exporters, contributing to the Victorian economy more than conventional industries such as mining, and agriculture (Victoria government, 2006). Melbourne is the destination of choice for almost all overseas visitors coming to Victoria. In 2006, 1.3 million international tourists visited Melbourne, and spent $2.1 billion on average. New Zealand is the main country of origin for Melbourne’s international visitors, followed by United Kingdom and China. Asian countries such as China, Malaysia and India account for more than 40% of all international tourists to Victoria, and over 50% of tourist spending. Holiday and pleasure are the main purposes for international tourists to visit Melbourne. The majority of Melbourne international tourists tend to stay in the city centre. The average stay in Melbourne by international visitors is quite high at 18 nights. This is so large on account of the people who come for education reasons, and backpackers who use Melbourne as a work base (Tourism Victoria, 2006).

According to a City of Melbourne survey (2006), the majority of international tourists stays in the city centre and visits its attractions (City of Melbourne, 2007). They are the biggest spenders among all central city users, and spend around $145 per day. The main origins of city centre overseas visitors are slightly different with Melbourne overall. Visitors from the
United Kingdom and Ireland, South East Asia, New Zealand, United States and Canada, are the main overseas visitors visiting the CBD. However, the number of tourists from most of these countries (except United Kingdom) significantly decreased between 2004 and 2006 (table 4.3). This is most significant in visitors from South East Asia, India, Sri Lanka, Japan and Korea. Nonetheless, since 2004, the number if Irish and British visitor’s to Melbourne CBD is significantly increasing in which the international component of the 2006 Comedy Festival crowd is likely to be UK based. The complexity of tourism to Melbourne central city makes this city an excellent laboratory for urban tourism research.

4.6.1 Tourist attractions

It has been argued that Attractions are the key element of the tourism industry as they are the main reason behind the tourist visits to a destination and tourism-related product and service developments. A city’s historic core, its major cultural institutions (museums, theaters, concert halls, etc), main business and shopping districts, and urban parks form the main attractions of urban tourism. These sites are usually most concentrated in the innermost parts of the city’s central area (Burtenshaw et al., 1991), together with tourist accommodation services (Yokeno, 1968; Pearce, 1987: 185; Ashworth, 1989).

Tourist attractions may fall into one of two categories. The first one includes nature-based attractions such as rivers, parks and gardens, flora and fauna, scenic vistas and noteworthy geomorphology. The second one involves culture-based attractions, such as historic sites, landmark buildings and entertainment centres. Recreational attractions however, may fall within either category. For example golf courses, tennis courts, boating facilities, picnic facilities and barbeque areas, as well as scenic lookouts, could all be considered cultural, as human intervention is seen as an integral part of their existence. Beaches and rock climbing, on the other hand, are considered recreational attractions as they are inherently related to their natural environments. Further to this, the supporting infrastructures of these very attractions must also be considered as tourist attractions themselves (Arrowsmith, 2002). Lew (1987: 557) regards these attractions as “nature-human interface” attractions. Toilets, shops, kiosks, information centres, walking tracks, and picnic and camping grounds, for example, could be labelled as infrastructure supporting primary tourist attractions. Whilst intrinsically they may not act as attractions themselves, they nevertheless encourage human
visitation and potential environmental impact, and hence are considered in this study as attractions.

Melbourne’s CBD, naturally, is host to the most dense concentration of attractions in greater Melbourne (Rowthorn et al., 2002). Historical buildings such as Parliament House, Town Hall, St. Paul’s and St. Patrick’s Cathedrals reflect the self-importance and wealth of nineteenth-century style architecture. The National Gallery of Victoria (NGV), Melbourne Museum, and the Royal Exhibition Building possess a large number of top galleries, displaying a wide range of art works and styles. Melbourne’s city centre also boasts extensive parklands particularly around the Yarra River to the south-east of the CBD, such as Alexandra Garden, Fitzroy Gardens and Carlton Gardens.

<table>
<thead>
<tr>
<th>Attraction Name</th>
<th>Attraction Type</th>
<th>Structure Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlton Garden</td>
<td>• Garden</td>
<td>Natural based</td>
</tr>
<tr>
<td></td>
<td>• Architectural building</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Natural history museum</td>
<td></td>
</tr>
<tr>
<td>Crown Casino and Southbank</td>
<td>• Entertainment</td>
<td>Cultural</td>
</tr>
<tr>
<td>Federation Square</td>
<td>• Architectural building</td>
<td>Cultural</td>
</tr>
<tr>
<td></td>
<td>• Museum complex</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Town centre/square</td>
<td></td>
</tr>
<tr>
<td>Fitzroy Garden</td>
<td>• Garden</td>
<td>Natural based</td>
</tr>
<tr>
<td></td>
<td>• Historic Building</td>
<td></td>
</tr>
<tr>
<td>National Gallery of Victoria</td>
<td>• Art museum</td>
<td>Cultural</td>
</tr>
<tr>
<td>Old Melbourne Gaol</td>
<td>• Historical monument/Building</td>
<td>Cultural</td>
</tr>
<tr>
<td>Queen Victoria Market</td>
<td>• Historic/Street market</td>
<td>Cultural</td>
</tr>
</tbody>
</table>

Table 4.1: The list of attractions surveyed at the Melbourne city centre area.

Seven separate sites were finally selected for this study as particularly noteworthy attractions in describing behaviours for different locations throughout Melbourne City Centre. All these
attractions are located within or along the border of Melbourne’s city centre boundary (Figure 4.7). The key requirements for these sites were that they attract large numbers of tourists and could be categorised as either a nature or culture-based attraction. The following section reviews some of the major tourist attractions frequented by international tourists, including the Queen Victoria Market, Federation Square, Crown Entertainment Complex, Southbank, Old Melbourne Gaol, National Gallery of Victoria, Carlton Garden and Fitzroy Gardens. The variety of functions and structures among these attractions provide opportunities to understand the tourist’s decision-making process, including as to which site (from a series of alternatives) they would travel and how they might behave there.

Figure 4.7: Map of Melbourne city centre showing sites used in this research
4.6.1.1  Old Melbourne Gaol

The Old Melbourne Gaol has long been a popular tourist destination for international visitors. It is Victoria’s oldest prison complex, as well as one of Melbourne's oldest surviving buildings. It depicts life in a nineteenth century Australian prison. The Gaol was the setting for 135 hangings, most famously that of Australian bushranger, Ned Kelly, in 1880.

Figure 4.8: The Old Melbourne Gaol.

The foundation buildings were constructed on Russell Street, on the northern part of the Melbourne city centre, between 1841 and 1844. Additional buildings, wings and demolitions marked its development through the years. It ceased operating as a prison in 1929 except for a brief period in World War II when it housed Australian soldiers found to have been absent without leave. The management of the Old Melbourne Gaol as a tourist attraction was given to National Trust of Australia (Victoria) by Australian government in 1972.
4.6.1.2 **Queen Victoria Market**

The Queen Victoria Market was established in 1878 on the northern part of Melbourne CBD. Its seven hectare size spreads itself over two city blocks. While it's mostly an open air market, some areas are roofed and buildings have been added through the years. This nineteenth century market is an historic landmark and tourist attraction, as well as an institution for Melbournian citizens, dating back more than 120 years. It is known as the biggest open-air market in the Southern Hemisphere. The market brings together a large number of trades offering a wide range of products, from fresh fruit and fish through to fashion and other goods.

![The Queen Victoria Market](image)

Figure 4.9: The Queen Victoria Market

The Queen Victoria Market offers visitors a type of local experience in the buying and selling of goods. Aside from the variety of wares offered at the Queen Victoria Market, buckers and street entertainments are a market feature.

4.6.1.3 **National Gallery of Victoria (NGV)**

The National Gallery of Victoria, commonly known as NGV, is currently one of the top tourist destinations in Australia. Located on St. Kilda Road, south-east of Melbourne CBD, the NGV was originally opened in 1861 and moved to its present site in the arts centre in
1968. It is major Australian art museum with collections spanning over European, Asian, and Australian art of all periods, including paintings, sculptures, drawings and photographs.

By growing the number of NGV visitors as well as Australian and overseas artworks collections, a new building was constructed in federation square by Victorian government in 1990. The new gallery, “Ian Potter Centre”, dedicated to Australian art works presentation while the primary renovated building named as “international Centre”, presenting artworks of worldwide artists to local community.

4.6.1.4 Crown Casino

Crown Casino Complex, the largest Casino in the southern hemisphere, is one of Australia’s major tourist attractions with over 15 million visits per year since its opening in May 1997. It located in the hearth of the city centre along the Yarra River offering a wide range of restaurants, nightclubs, gaming and entertainment facilities as well as five star hotel facilities.
In 2006, Tourism Victoria ranked Melbourne’s Crown Casino the most popular visitor attraction in Victoria. Known as the ‘World of Entertainment’, the complex has averaged more than 15 million visits per year to the site since opening in May 1997.

### 4.6.1.5 Federation Square

Federation Square, located opposite the Flinders Street Railway Station and opening out onto the Yarra River and historic Flinders street station. It is the dimension of an entire city block. Since its opening on October 2002, Federation Square became Melbourne's socializing place and a unique cultural precinct. In 2003 Federation Square was Victoria’s top tourist attraction, attracting more than 7 million visitors, a figure that was 15 per cent higher than the estimations. Not far behind Melbourne’s Crown Casino, Federation Square is now Victoria’s second most popular tourist attraction, with more than 8 million visits a year. Federation Square assemble together a creative mix of attractions, for example, NGV Australia (the Ian Potter Centre, the world’s largest Australian art collection), Australian Centre for the Moving Image (ACMI), Australian Racing Museum and Hall of Fame.
4.6.1.6 Carlton Gardens

The historic Carlton Gardens serve as the setting for the distinct structures of the historic Royal Exhibition Building and the modern Melbourne Museum. The garden, exhibition building and museum are seen as part of the major Melbourne tourist attractions. Unlike other historical parks, the Carlton Gardens has remained intact as originally designed by the Victorian Parliament in 1878 at the north-eastern edge of the CBD. The Carlton Gardens and the Royal Exhibition Building were listed on the World Heritage List at the 28th session of the World Heritage Committee held in Suzhou, China in July 2004.

Since its opening in October 2000, Melbourne Museum has more than met its target for visitors number well in advance of its first anniversary and has hosted over 1 million visitors. A latest survey showed that 95 percent of visitors grade the museum as very good to excellent and suggest it to other potential visitors.
The Royal Exhibition Building, located on the south side of the new Melbourne Museum building, was opened in 1880 for Melbourne’s first International Exhibition. Not like many international exhibitions, Melbourne's Exhibition Building was thought of as a permanent structure that would have a potential role in the intellectual and cultural future of the developing city of Melbourne.

4.6.1.7 Fitzroy Gardens

The Fitzroy Gardens, with more than two million local, interstate and international visitors per annual, is considered as one of the Melbourne’s main attractions located in the city centre. Having a history span of 150 years, make it as one of the major 19th century city gardens in Australia. As such, the Fitzroy Gardens are famous for their historic buildings, sculptures and horticulture, particularly Cook’s Cottage and the Conservatory.
Fitzroy Garden’s first major landmark Cook’s Cottage (Captain James Cook’s childhood home), was originally built in England in 1755 by Cook’s parents. A Melbournian businessman bought then dismantled it in order to bring it to the gardens brick by brick.
The Conservatory, Fitzroy garden’s renowned landmark, opened on March 13 1930 in Fitzroy gardens. It has provided five different floral displays each year for over 70 years (City of Melbourne 2007).

4.7 CONCLUSION

This chapter has discussed a popular city centre tourist destination, which is also economically and culturally important to the region. It is therefore an excellent study site in which to examine tourist spatial behaviour in order to determine the different spatial needs of international tourists. Understanding the spatial behaviour of tourists in a tourist destination like Melbourne city centre is essential for tourist managers, as it allows them to be able to match the desires of culturally diverse visitors with appropriate response.

The next chapter will analyse data collecting procedures and determine differences in the spatial needs of international tourists visiting Melbourne CBD attractions.
5 DATA COLLECTION

5.1 INTRODUCTION

The self-administered questionnaire technique was selected as an appropriate method to acquire spatial behaviour and attitudinal data of tourists visiting the Melbourne CBD area, and was based on the reviews and comparisons made in chapter three relating to current tracking techniques. This chapter will first discuss design and development of the questionnaires to acquire data related to how tourists make decisions about their movement patterns, as well as their individual socio-demographic characteristics, attitudes and satisfaction level. Further to this, implementation of questionnaires including sampling and data collection procedures will also be reviewed in this chapter.
5.2 STUDY APPROACH

In order to determine the different spatial needs of international tourists visiting Melbourne’s city centre, there is a need to understand spatial behaviour of current culturally diverse visitors. By developing a reach data set of visitor’s movement and behavioural characteristics as well as their perception and satisfaction level toward the visited destinations or attractions one can accurately describe the movement and behavioural pattern of visitors while in travel. Truly, acquiring this information is critical for the purpose of this research. This is because the spatial behaviour of tourists is subjective and, as previously discussed in section 2.3.2, such behaviour may vary according to a number of factors such as gender, cultural and ethnic background, socio-economic status, educational level, travel party size and group dynamics. It must also be pointed out that visitor attitudes may also been considered important determinants of travel behaviour (Jackson, 1987; Jackson et al., 1999; Uysal and Jurowski, 1994).

Questionnaires are popularly considered as one of the most important data collecting techniques in tourist studies and are commonly used in visitor satisfaction and behaviour research (Brown and Daniel, 1987; Kroh and Gimblett, 1992). That being said, the questionnaire’s design and implementation play a significant role in determining the quality of the data collected (Babbie, 1999). Kinnear and Taylor (1996) argue that the sequencing of the questions provided can greatly influence the nature of the respondent’s answers and thus cause errors that may seriously affect the survey’s findings. It is therefore important to design the questionnaires in a way that is easy for the participants to complete and only requires minimal intervention, without getting in the way of achieving its primary objectives. On top of this, the size of the geographic area, and the method in which it is sampled, may also have a major influence on the accuracy of the data collected (Xia and Arrowsmith, 2005).

5.3 QUESTIONNAIRE DEVELOPMENTS

A structured questionnaire was conducted and utilized for this study (see Appendix 2). The design of the questionnaire allowed a division of two separate parts: socio-demographic/
behavioral, and movement tracking. Table 5.1 provides an overview of the key variables that were incorporated into the survey. The following sections describe how the different parts of the questionnaires were designed based on the study requirements.

<table>
<thead>
<tr>
<th>Questionnaire Part</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-demographic Survey</td>
<td>Visitor profile</td>
</tr>
<tr>
<td></td>
<td>Travel characteristics</td>
</tr>
<tr>
<td></td>
<td>Perception</td>
</tr>
<tr>
<td></td>
<td>Level of satisfaction</td>
</tr>
<tr>
<td>Movement tracking</td>
<td>Macro level</td>
</tr>
<tr>
<td></td>
<td>Micro level</td>
</tr>
</tbody>
</table>

Table 5.1 Key variables of the survey.
5.3.1 Socio-demographic and behavioural survey

As clear instructions are important in communicating appropriate responses in a questionnaire, and to ensure that the respondents answer all the questions intended for them, five measurement groups relating to visitor profile, visiting characteristics, perceptions and level of satisfaction were incorporated in this section.

5.3.1.1 Visitor profile

In the first set of questions, tourists were asked about their sex, age, nationality, place of usual residence, place of birth, level of education, family size and time spent in Australia. The question of “Age” was labeled ‘optional’ to allow respondents the option not to provide their age, as a part of their privacy. These types of questions provided basic socio-demographic, as well as cultural, characteristics of the visitors, and were effectively read as useful “differentiators” in terms of tourist choice and behaviour (Murphy and Murphy, 2004).

5.3.1.2 Travel characteristics

This section incorporated questions regarding the travel behaviour of the respondents, such as the nature of their travel party, their travelling purpose, mode of transport to and in the city centre and proposed activities. Acquiring respondents visiting characteristics data was critical for this study in order to provide enough background and motivational data for better understanding of different spatial behaviour patterns (Xia and Arrowsmith, 2005).

5.3.1.3 Perception

The third category focused on perceptions about attractions, facilities and environmental attributes. Several authors have suggested that studies which incorporate attitudes towards the environment and tourism go a long way in understanding the “hidden nature” of visitor travel behaviour (Jackson 1986; 1987; Kiiskilä 2001; Uysal and Jurowski 1994). This study incorporated a set of descriptive statements regarding tourist and environmental attributes to measure the perceptions and motivations of the visitors.
To assess the Activities/attitudes, Interests and Opinions of respondents (AIO) items, statements developed by Xia and Arrowsmith (2006) were utilised as a fundamental tool. These statements were designed to elicit information about activities/attitudes, interests and opinions (AIO) concerned with leisure time/vacation activities and general behaviour predispositions. Furthermore, a number of questions were develop and added in this section. In total 13 statements were designed and utilised in this section regarding the attractiveness preferences (natural, cultural, recreational and public facilities attractiveness), visit experience (enjoyment of visit, wish to be somewhere else, and visit experience) and quality of services (overall attractiveness of locations, amount of space, cost of visit, inconvenient of location, available activities and opening time). As the inclination to visit the attractions would be affected by the level of price charged, a question on pricing was included in this part.

The questions were asked using a 5-point Likert scale measuring the degree of agreement/disagreement, from strongly disagree to strongly agree (1 = strongly disagree to 5 = strongly agree). Likert-type rating scales provide for a range of responses with various anchors which are numerical scores, and can also be used to obtain information on many topics (Thomas, 1999). Likert multipoint scales have been adapted and used in many tourism research studies (McCleary and Choi, 1999; Chen, 2001; Xia and Arrowsmith, 2007; Pizam and Sussmann, 1995). The Likert scale is very popular in survey research because the method is simple to administer and normally ranges from three to nine anchors (Zikmund, 2003). Hence, a 5-point Likert scale was applied for the section of travel attitude. Respondents were required to evaluate each AIO statement based on a five point Likert scale, to the levels of strongly disagree (1), disagree (2), average (3), agree (4) and strongly agree (5). A particularity of the scaling procedure that was employed in this category of questions was the decision to order verbal tags between the two extreme anchors of the scale so as to assist the respondents in avoiding any misinterpretation or confusion that might have resulted from the scale.

5.3.1.4  Level of satisfaction

This section measured the overall satisfaction of the visitors, specifically in terms of the availability and quality of activities on offer, as well as the types of services and facilities available at the city centre attractions. Tourists were required to rate attributes such as
safety conditions, variety of activities, and public facilities based on an itemised scale (Aaker and Day, 1990), rating them as excellent (1), good (2), fair (3) or poor (4). The reason for changing the direction from excellent to poor and opposite was to minimise the chance of bias that can be caused from the direction of weighting. This procedure was suggested by Nachmias and Nachmias (1992), who proposed that the direction of weighting is being determined by the favourableness or un-favourableness of the item, which for the case of this study had to remain strictly neutral.

The objective of this section was to determine if tourist satisfaction with a given tourism product category could be effectively predicted and profiled in terms of demographic and cultural characteristics, activities and interests. Thus the collection of tourist satisfaction data is important for the purpose of studies such as these, as satisfaction levels bear a direction influence on the choice of destination, the consumption of goods and services, and the decision to return (Kozak and Rimmington, 2000).

5.3.2 Movement tracking part

This part of the questionnaire acquired spatial data of visitors at macro and micro levels. Its design was based on two different types of macro and micro level movement tracking. Movements of visitors at these two scales were tracked using two cartographic maps. The aim was to represent the general movement patterns of a variety of tourist types around the city centre and inside some of its major attractions. An attempt was made, firstly, to design the maps in such a way as to considerably resemble real location plans and, secondly, to ensure they were made as easy to understand as much as possible.

5.3.2.1 Macro level

For acquiring macro level movement data of visitors, a map supplied from an aerial photograph of Melbourne city centre area was incorporated in this section in order to track movement of tourist around the city centre area. This map was incorporated in all the questionnaires. Tourists were asked to draw the route they have traveled within the city centre prior arriving to the study locations.
This part also required the respondents to mention previous tourist spots they had visited. This was followed by checking with them whether they were planning to visit other locations. A characteristic of these two open-ended questions was the inclusion of the ‘not applicable’ selection which aimed to avoid the possibility of forced answer bias when this response category is omitted. Forced choice scale orders potential for misinterpretation of responses and the provision of the ‘not applicable’ option appears advisable (Tsan, 1999).

5.3.2.2 Micro level

The second map collected the movement data of visitors within the study locations. This map was varied based on the location that the survey was being done in. For this purpose, seven different maps were designed and incorporated into this section. The development of each site’s map was based on building plans, or determined by maps supplied by the management of the site to assist the visitors with their particular needs and preferences.

5.4 DATA COLLECTION PROCEDURE

5.4.1 Sampling procedures

For the purposes of this paper, it has been decided to enlist the participation of foreign visitors in the survey in order to determine whether there are differences between international from diverse culture regarding their behaviours, choices and preferences. Therefore, it was decided to enact a method of “convenience sampling” in which the respondents were selected from the population based on availability and/or accessibility (Terre Blanche and Durrheim, 1999).

5.4.2 Data collection procedure

As overseas visitors might have a low response rate to mail surveys, an on-site survey collection method incorporating self-administered questionnaires was chosen. The surveys were conducted between June 6 and August 8, 2007, and at locations as diverse as Queen

When people were approached walking out of the study sites they were asked whether they would like to participate in a survey. At each site, at least 60 tourists were asked to particulate in the survey. Once respondents agreed to participate in the survey, the purpose of the survey was explained and a self-administered questionnaire was distributed to them for completion. Responses were asked to answer the questions and draw the route of their travel around the city centre on a street map of Melbourne city centre and the path they have chosen inside the particular location they have just visited. Where groups of people were encountered, one person was asked to complete the questionnaire and draw the paths, essentially becoming the representative for that group. Once the questionnaire was completed the researcher collected the material, assigned it an identifying code (survey_id) and placed it in an envelope.

A total of 350 questionnaires were completed by 72 Australians and 278 international tourists who visited Melbourne city centre attractions. The Australia sample was discarded from the data analyses as the study focus on international tourists’ behaviour. The questionnaires acquired movement patterns of respondents at the micro and macro level, along with their socio-demographic and journey characteristics. At the macro level, this involved the movements of participants around the CBD area; for the micro level, this involved examining the walking tracks inside specific attractions that were being tracked by cartographic maps designed in the questionnaire. The tourists’ perceptions and levels of satisfaction about the study locations they just visited were also collected.

5.4.3 Limitation

As the questionnaire format was originally in English, language difficulties arose with visitors who did not completely understand the questionnaires. Furthermore, lack of time to complete the questionnaire was the most common reason for a potential respondent to be unable to fill it out in its entirety. Another major limitation was the failure of participants to enter details such as the path and direction of movements into the questionnaire maps. A
reason given for this was the inability of the participant to remember the exact route taken at the micro level, when asked to draw the path they have taken in detail. In addition, even though Melbourne CBD has a well planned and clear road infrastructure system, tourists still found it difficult to record the road travelled on the way to each attraction as well the direction. This was especially the case for international tourists, whom, for the most part, did not remember the name of the roads they travelled on. Due to the time on the year, weather conditions were also a serious issue. The survey was hence conducted in a restricted area outside of the attractions, as it was the only location permitted by the attraction authority to capture potential tourists for the study.

5.5 CONCLUSION

This chapter reviewed how the study made use of the self-administered questionnaire method to collect tourist spatial behaviour data in Melbourne’s CBD area. The final sample yielded about 350 respondents, and their responses were analysed for the purposes of this study. The next chapter will look at analysing the data supplied in order to find any similarities and differences in the needs and preferences of tourists visiting Melbourne’s central city area.
6 DETERMINING SPATIAL NEEDS OF INTERNATIONAL TOURISTS

6.1 INTRODUCTION

The previous chapter discussed questionnaire development and, the collection of tourist spatial behaviour data. Chapter five also stated that opportunities exist for determining the spatial needs of visitors to the Melbourne city centre by analysing movement and behaviour data of current visitors. This chapter considers and incorporates output gained from data collected from self-administered questionnaires at major city centre attractions.

This chapter will also create a method for quantifying and evaluating tourist spatial behaviour data in order to better understand tourist movement, behaviour and decision-making processes. Identifying the different spatial behaviours of tourists, in turn, allows for more appropriate tourism products to be created. The scope of this chapter presents an in-
depth assessment of the socio-demographic and cultural characteristics that lead to differential choices, preferences and appreciations of tourism products. It also provides an opportunity to identify locations and activities of interests for tourists from diverse cultures visiting Melbourne’s central city area.

6.2 DATA TREATMENT

6.2.1 Spatial data

The spatial information that was gathered from the tourists includes both the spatial positions and the directions of path choice. From the data collected, individual path segments traversed prior arriving to attractions in Melbourne’s CBD, as well as movement inside the attractions were then studied. However, in analysing the spatial behaviour of the visitors it is vital to determine the order in which they moved in the network’s path. The definition of Networks is as “a set of interconnected lines making up a set of features through which resources can flow” (Heywood et al., 1998: 123). Taking into account that these interconnected lines bring together a series of locations, and that people can travel along each of these interconnected lines, the series of tracks that form Melbourne central city can be seen as a network. Locations that are connected include attractions, endpoints of tracks, and the connectors between alternate paths. Visitors will traverse along one or several of these links.

In this study, the approach used to evaluate and quantify the spatial data collected from visitors was based on an analysis using ArcGIS version 9.0. It is a comprehensive system for maintaining, managing, analysing, and utilising geographic data. It allows the performance of a spatial analysis, in which one may manage large amounts of movement and behavioural data, and produce cartographically maps based on the data acquired in order to aid in making a decision. It was used to adjoin cartographic maps used in the questionnaire with a map of metropolitan Melbourne. These maps were then spatially intersected with the Melbourne central city path network (Figure 6.1).
The participants’ spatial information was inserted into the GIS database as a series of lines, with each line having a unique line identification number (line_id) as well as a survey number (survey_id) for each participant. This was done to match the information against the available socio-demographic data, previously described as the individuals’ spatial behaviour in section 3.3. The result was a combined spatial model – that is, a map – of tourism movement within the city centre and inside its tourism attractions. Based on the seven different locations surveyed for the study, seven groups of these two movement patterns were derived at different study locations. ArcGIS enables the length of the movement tracks of each participant to be made at both scales.
6.2.2 Socio-demographic data

The aim of this thesis is to identify the cultural factors that affect tourist spatial behaviour. This includes an analysis of the diversity of the socio-demographic and cultural characteristics of the survey participants, and their behavioural pattern within the study area. Prior to the data analysis, the frequencies of responses to each question were inspected. Deletion of the missing values was undertaken in order to minimize incomplete cases where possible. For example, the survey included a question seeking tourist satisfaction in regards to the availability of parking areas at specific attractions. However it seemed that this question caused a problem for respondents and as a result, there was a high degree of missing data (79 cases). Thus, this data was withdrawn from the data analysis. Questions for the visitors, including country of residence and country of birth, were added to the survey to understand the ethnic backgrounds of participants. However, the majority of respondents selected “Australia” as their current country of residence due to a misunderstanding that they might have thought they were being asked about the country they were residing in at the time of the survey. In the case of country of birth, 97% of respondents selected the same value as their nationality. Thus, these data sets were also withdrawn from the data analysis. In addition, the question of “Lifestyle cycle” were also not incorporate into the data analysis as the majority (71%) of respondents were grouped into two out of seven categories and thus, there were not enough number of sample from other categories in order to perform the statistical tests. However, questions that had a few missing data values were retained in the analysis but, the missing values were not calculated in the data analysis. For instance, demographic variables such as age and level of education had 2 missing responses out of a total 278 data sample. The other missing values were smaller in number than those variables, and it was presumed that those missing values were caused mainly by the numerous questions which make it more difficult for respondents to concentrate. That is, the questionnaire was considerably lengthy with 38 questions spanning over two different maps. Finally, 35 questions were incorporated into the data analysis.

6.2.3 The method of analysis

A computer program called Statistical Package for Social Science (SPSS version 15.0) was used to find statistically significant differences in movement and behavioural patterns of
visitors from distinct cultures. SPSS is a broad and flexible statistical analysis and information management system. It enables one to perceive data from almost any type of digital sources and use it to generate reports, tables, charts, plots of distributions in addition to trends and descriptive statistics. It also allows the possibility for more complex statistical analysis. SPSS is a vehicle for discovering differences and relationships in data.

The data treatment process began by importing the socio-demographic data into SPSS. The length of the movement tracks of each participant was also incorporated into SPSS and combined with their socio-demographic data to be analysed. Hence, comparisons between tourist characteristics and behavioural variables could be made. In the first stage, a series of descriptive analyses were undertaken to investigate whether international tourists differed in socio-demographic characteristics. Travel characteristic, perception and levels of satisfaction were also analysed, with an assumption that differences were at least partially related to national culture or the country of residence. Thereafter, a set of tests was designed to determine whether any relations between culturally different groups based on movement patterns, demographic and travel behavioural factors existed. This was done on the basis of Hofstede’s (1980) cultural dimensions of power distance, individualism/collectivism, uncertainty avoidance and femininity/masculinity discussed in section 2.5.

6.2.4 Statistical tests

Chi-square test of independence, independent sample t-tests, One-way ANalysis Of Variance (ANOVA) and Pearson correlation test implemented by SPSS were all applied in this study. This was done in order to investigate the differences in movement and behavioural characteristics among overseas visitors originating from different cultures. Table 6.1 summarises the study hypotheses and the method of analysis for each hypothesis.
There are differences in travel behavioural characteristics depending on socio-demographic characteristics.

Chi-square independence test, Independent sample t-test, One way ANOVA

There are differences in movement patterns depending on socio-demographic characteristics.

Chi-square independence test, Independent sample t-test, Pearson correlation analysis

There are differences in travel behavioural characteristics depending on cultural characteristics.

Independent sample t-test, One way ANOVA

There are differences in attitudes toward the study areas depending on socio-demographic characteristics.

Independent sample t-test, Pearson correlation analysis

There are differences in satisfaction with tourism products depending on socio-demographic characteristics.

Independent sample t-test, Pearson correlation analysis

There are differences in movement patterns depending on cultural characteristics.

Independent sample t-test, Pearson correlation analysis

Pearson correlation analysis

There are differences in satisfaction with tourism products depending on cultural characteristics.

Pearson correlation analysis

There are differences in movement patterns depending on cultural characteristics.

Independent sample t-test, Pearson correlation analysis

Table 6.1 Summary of study hypotheses and data analysis method

6.2.4.1 The chi-square test

The chi-square test of independence is used to determine whether cases in a sample are independent and that there is no association between them. This test evaluates the possible effect of one variable upon an outcome.
The chi-square test of independence is used to test the null hypothesis \( H_0 \) that states there is no relationship or dependence between two different variables. The question of whether any relationship or dependence found is sufficiently different from zero that it can be regarded “statistically significant” is answered by the statistical test. A chi-square value that has a low likelihood of taking place strictly by chance leads to a refusal of the hypothesis that the attributes are autonomous. A probability distribution (p-value) of 0.05 was set up in this study (Greenwood and Nikulin, 1996).

### 6.2.4.2 Independent t-test

Independent t test and the one-way ANOVA are similar. The independent t-test is used to compare the mean of two independent samples on a single dependent variable. This is used to examine the hypothesis that the difference between the overall means of data of two samples is equal to zero. When the \( p \)-value is smaller than the conventional 0.05, the null hypothesis is refused and the conclusion is that the two means are differ considerably (Urdan, 2005). In fact the t-test could be considered a special case of the one-way ANOVA where there are two independent samples. However, the one-way ANOVA is necessary for comparing three or more groups.

### 6.2.4.3 One-way ANalysis Of VAriance (ANOVA)

The One-way ANalysis Of VAriance (ANOVA) in SPSS compares the overall means of data of more than two samples or groups in order to make inferences about the population means. The null hypothesis \( H_0 \) tested in a one-way ANOVA is that the means of several populations are equal. The alternative hypothesis is that at least one mean differs from the others (Morgan et al., 2004).

### 6.2.4.4 Pearson correlation analysis test

The strength of a linear relationship in Pearson Correlation analysis is characterised by the extent to which a straight line fits the data points. That is, by the extent to which high scores on one variable are paired with high scores on the other and low scores on one variable are paired with low scores on the other (in the case of positive, or direct, linear relationship), or, by the extent to which high scores on one variables are paired with low...
scores on the other and vice versa in the case of a negative, or indirect, linear relationship (Weinberg and Abramowitz, 2002).

6.2.5 Profile of respondents

The sample consisted of 278 international tourists who visited Melbourne city centre attractions. A descriptive analysis was used to investigate the frequencies of the various characteristics of the overseas samples. The main countries of origin of the sample included New Zealand (12%), South Korea (11%), India (8%), Britain (7%), Germany (6%) and America (6%). Most of the respondents (69%) had been in Australia for more than one month prior to the surveys whilst nearly a quarter (22%) was here for less than two weeks. The majority of the population sampled were aged between 18 and 33 (73%), with the 18-25 being the largest single age group (47%). There was a slight female bias amongst the respondents (56%). Over half (53%) of the responses were young singles. The respondents tended to be relatively well-educated people with university qualifications (73%) (Table 6.1).

For those participants who did not stay in the city (63%), the tram (40%) is the main forms of transport to get into the city. The tram (37%) was also the most popular mode of travel around the city after walking (47%). Most visitations to the city centre (37%) were for the purposes of sightseeing. It was also the most widespread planned activity for the survey participants into study locations (29%). Half (51%) of the visitations were first time visits whilst a high proportion (31%) of visitation was for more than twice. Furthermore, being accompanied by friend or/and relatives (37%) was the most popular grouping of visit to the locations under study. However, a high proportion of participants (34%) were on their own during their visit to the city centre attractions (Table 6.2).
## Table 6.2: Demographic characteristics of overseas tourists

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>Tourists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>123</td>
</tr>
<tr>
<td>Female</td>
<td>155</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>18-25 years</td>
<td>131</td>
</tr>
<tr>
<td>26-33 years</td>
<td>71</td>
</tr>
<tr>
<td>34-41 years</td>
<td>17</td>
</tr>
<tr>
<td>42-49 years</td>
<td>13</td>
</tr>
<tr>
<td>50 years and over</td>
<td>19</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>5</td>
</tr>
<tr>
<td>Secondary</td>
<td>32</td>
</tr>
<tr>
<td>Post secondary</td>
<td>38</td>
</tr>
<tr>
<td>Tertiary</td>
<td>203</td>
</tr>
<tr>
<td><strong>Lifestyle cycle</strong></td>
<td></td>
</tr>
<tr>
<td>Young single</td>
<td>148</td>
</tr>
<tr>
<td>Young couple</td>
<td>18</td>
</tr>
<tr>
<td>(No children)</td>
<td></td>
</tr>
<tr>
<td>Young family</td>
<td>48</td>
</tr>
<tr>
<td>(Children younger than 6 years)</td>
<td></td>
</tr>
<tr>
<td>Middle family</td>
<td>23</td>
</tr>
<tr>
<td>(Children between 6 and 15 years)</td>
<td></td>
</tr>
<tr>
<td>Mature family</td>
<td>12</td>
</tr>
<tr>
<td>(Children older than 15 years)</td>
<td></td>
</tr>
<tr>
<td>Old couple</td>
<td>10</td>
</tr>
<tr>
<td>(No children at home)</td>
<td></td>
</tr>
<tr>
<td>Mature single</td>
<td>18</td>
</tr>
</tbody>
</table>

Missing values are not calculated in percentage (%)
Total percentages may not equal 100 due to rounding
<table>
<thead>
<tr>
<th>Travel Characteristics</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transport to the city centre</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None, stayed in the city</td>
<td>104</td>
<td>37.4</td>
</tr>
<tr>
<td>Car</td>
<td>19</td>
<td>6.8</td>
</tr>
<tr>
<td>Tram</td>
<td>69</td>
<td>24.8</td>
</tr>
<tr>
<td>Train</td>
<td>49</td>
<td>17.6</td>
</tr>
<tr>
<td>Taxi</td>
<td>12</td>
<td>4.3</td>
</tr>
<tr>
<td>Bus</td>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>Transport to the attractions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk</td>
<td>130</td>
<td>46.8</td>
</tr>
<tr>
<td>Car</td>
<td>16</td>
<td>5.8</td>
</tr>
<tr>
<td>Tram</td>
<td>103</td>
<td>37.1</td>
</tr>
<tr>
<td>Train</td>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>Taxi</td>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Past frequency of visit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once</td>
<td>139</td>
<td>50.5</td>
</tr>
<tr>
<td>Twice</td>
<td>50</td>
<td>18.2</td>
</tr>
<tr>
<td>More than twice</td>
<td>86</td>
<td>31.3</td>
</tr>
<tr>
<td><strong>Travel companions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>95</td>
<td>34.2</td>
</tr>
<tr>
<td>With spouse/partner and children</td>
<td>60</td>
<td>21.6</td>
</tr>
<tr>
<td>With friends/relatives</td>
<td>104</td>
<td>37.4</td>
</tr>
<tr>
<td>Other</td>
<td>19</td>
<td>6.8</td>
</tr>
<tr>
<td><strong>City travelling purpose</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business/Education</td>
<td>68</td>
<td>18.2</td>
</tr>
<tr>
<td>A day trip</td>
<td>47</td>
<td>12.6</td>
</tr>
<tr>
<td>Stay in city centre (no reason)</td>
<td>63</td>
<td>16.9</td>
</tr>
<tr>
<td>Shopping</td>
<td>58</td>
<td>15.5</td>
</tr>
<tr>
<td>Sightseeing</td>
<td>137</td>
<td>36.7</td>
</tr>
<tr>
<td><strong>Planned activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walking</td>
<td>170</td>
<td>25.6</td>
</tr>
<tr>
<td>Shopping</td>
<td>146</td>
<td>21.4</td>
</tr>
<tr>
<td>Eating</td>
<td>149</td>
<td>21.9</td>
</tr>
<tr>
<td>Sightseeing</td>
<td>196</td>
<td>28.8</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Missing values are not calculated in percentage (%)
Total percentages may not equal 100 due to rounding

Table 6.3: Travel behaviour characteristics of overseas tourists
6.2.6 Overall rating of tourism products in Melbourne CBD

Key findings from the visitors’ attitudes toward the study sites included:

- The majority of respondents believed that the locations were within easy access (74%), very attractive (72%) and offered interesting activities (72%).

- The majority of visitors enjoyed their visit (86%) and had pleasant experiences (75%) and did not wish to be somewhere else (66%) at the time of visit.

- Most of the visitors liked the study locations because of their public facilities (58%), and cultural attractiveness (57%).

- The natural beauty of each attraction was the reason for almost half of the tourists to visits the attractions (45%).

- The overall safety conditions (84%), cleanliness (82%), amount of space (80%), and attractiveness of locations (80%), satisfied the majority of participants,

- A high proportion of visitors ranked infrastructure such as information centres (34%) and public facilities (26%) inside the attractions as fair and poor. The opening hours of the attractions were also another limitation (28%) in satisfying visitors at various locations.

- A high percentage of the respondents thought that the locations were crowded (23%), had inconvenient opening times (15%) and cost too much (14%).

6.3 DETERMINING DIFFERENT SPATIAL BEHAVIOUR PATTERNS OF INTERNATIONAL TOURISTS

In this thesis consideration was given to differences in behavioural patterns of overseas visitors to city centre attractions based on their respective cultural characteristics. These differences are important insofar as providing the necessary services and facilities for
international visitors from different ethnic backgrounds at any given tourist destination. These services and facilities may include such things as transportation, location of accommodation, and activity preferences during visits to specific tourist destinations within the Melbourne CBD. However, since the overseas visitors who participated in the survey originated from various cultural backgrounds, they are thus very different in terms of their socio-demographic characteristics. In this way there is a corresponding need to determine whether or not their spatial behaviour patterns are influenced by socio-demographic information, in addition to cultural background characteristics already made apparent in the study.

The following section’s first aim is to investigate differences in spatial behaviour patterns of visitors depending on socio-demographic characteristics. Its second aim is to test the influence of cultural background characteristics on the spatial behavioural patterns of the visitors. The assumption of this section is that the spatial behaviour patterns of visitors from various socio-demographic and cultural categories are intrinsically different, and thus are varied in terms of specific travel needs and preferences.

6.3.1 Determining the influence of demographic characteristics on spatial behavioural patterns

In this section, travel behavioural patterns – specifically travel behavioural characteristics, attitudes, levels of satisfaction and movements patterns around Melbourne city centre and within its tourism attractions– will be tested on tourists with differing demographic characteristics. The demographic characteristics used to distinguish visitors in this section were “gender”, “age” and “level of education”. Behavioural patterns that varied in these factors were investigated in order to determine the effect socio-demographic characteristics have on the visitor, especially in regards to his or her individual spatial needs and preferences.

6.3.1.1 Identification of significant differences in travel behaviour pattern based on demographic characteristics

In order to test the influence of socio-demographic characteristics on the respondents’ travel behaviours, a chi square test of independence, independent samples t-test and one way ANOVA test were all conducted taking into account the seven factors of travel
behaviour, which include “Accommodation location” (in terms of staying inside or outside the CBD), “Type of transport to the city centre”, “Mode of transport to the attractions”, “Past frequency of visit”, “Travel companions”, “City travelling purpose” and “Planned activities”. The hypotheses tested in this section are as followed:

**Hypothesis 1: There are differences in travel lifestyles and behaviours between travellers, with respect to:**

1-1 Gender  
1-2 Age  
1-3 Level of education

**Gender**

A chi square test of independence was performed to test the effects of gender on the seven factors of travel behaviour as independent variables (hypothesis 1-1). The results of the chi-square test revealed that there were statistically significant differences between male and female tourists in relation to their “Mode of transport within the city centre” and “Past frequency of visit” \((p<.05)\). Females preferred to explore the city centre and access its tourist attractions by tram (47%) as opposed to male visitors (32%), while male visitors overwhelmingly chose walking (57%) to move throughout the city centre than females (44%) \((\chi^2 = 8.106, df = 3, p = 0.044)\). Furthermore, female tourists were more likely to be on their first visit to a city centre attraction (58%) while male visitors were more likely to be returning (58%). Of those who had visited these attractions before, male visitors were likely to visit more than two times (36%) when compared to female visitors (28%) \((\chi^2 = 6.807, df = 2, p = .033)\). However it was also found that there were no significant differences in variables of “Accommodation location”, “Type of transport to the city centre”, “City centre travelling purpose”, “Planned activity for the visit” and “Travel companions” between the two groups of respondents \((p>.05)\). As result, Hypotheses 1-1 was partially accepted.

**Age**

To assess the influence of age on travel behaviour (hypothesis 1-2), an independent sample t-test and a one way ANOVA test between the groups were both performed. The independent sample t-test was used for the “Accommodation location” factor, whilst the
one way ANOVA tests were used to investigate any differences in the factors of “Type of transport to the city centre”, “Mode of transport within the city centre”, “City centre travelling purpose”, “Past frequency of visit”, and “Planned activity for the visit”. The results of the two statistical tests revealed that the age of visitors significantly differed when it came to factors of “Accommodation location”, “City centre travelling purpose” and “Travel companions” ($p<.05$). In relation to “Accommodation location” factor, overseas visitors who stayed in city centre accommodation had higher mean ages ($M = 31.74$) than those groups of visitors who preferred to stay outside the city centre ($M = 26.82$) ($t = 13.718$, $df = 1$, $Sig. = .046$). In terms of travelling purpose to the city centre and visiting its tourism attractions, visitors with business purposes had the highest mean age ($M = 32.65$), and by contrast those visitors who came to city for the purpose of education had the lowest mean age ($M = 23.48$) ($F = 3.416$, $df = 5$, $Sig. = .018$). In relation to travel companion of visitors to Melbourne city centre attractions, visitors accompanied by spouse/partner and children had higher mean ages ($M = 36.31$) than those visitors who went on their own ($M = 27.03$) or with friends and relatives ($M = 27.23$) ($F = 11.652$, $df = 3$, $Sig. = .001$). However, the factors of “Past frequency of visit”, “Type of transport to the city centre”, “Mode of transport within the city centre” and “Planned activity for the visit” were identified as not being statistically significant ($p>.05$). Hypotheses 1-2 was therefore partially accepted.

**Level of education**

To assess the influence of education on visitor behavioural characteristics (hypothesis 1-3), independent sample t-tests and one way between the groups ANOVA tests were performed. Specifically, independent sample t-tests were used for the “Accommodation location” factor, whilst one way ANOVA tests were used to investigate differences in “Type of transport to the city centre”, “City centre travelling purpose”, “Mode of transport on the city centre”, “City centre travelling purpose”, “Past frequency of visit”, and “Planned activity for the visit”. The results of these tests revealed that there are differences in factors of travel characteristics pertain to “Accommodation location” and “city travelling purposes” ($p<.05$).

The travel factor of “Accommodation location” appears to be dependent on the highest level of education visitors have reached. According to the results of the independent t-
tests, visitors who stayed in city centre accommodation had significantly higher mean education levels (M = 3.70) than those who chose to stay outside the city centre (M = 3.43), (F =15.918, df = 1, Sig. = .040). In relation to travelling purposes, visitors with business purposes were more likely to be highly educated (M = 3.33) than other groups; visitors with shopping purposes were more likely to be less educated (M = 3.24) (F = 3.416, df = 5, Sig. = .005). However, as there were no significant differences in other travel behaviour factors from this perspective (p>.05), hypotheses 1-3 was only partially accepted.

6.3.1.2 Identification of significant differences in attitude based on socio-demographic characteristics

To identify whether overseas visitors with different socio-demographic backgrounds exhibit differences based on reported perceptions of activities/attitudes, interests and opinions regarding tourist products throughout city centre attractions, independent sample t-tests and Pearson correlation analyses were performed on 13 AIO’s items for perceptions of visit discussed in 5.2.1.3. The perception factors were tested in this section includes “Natural beauties”, “Cultural attractiveness”, “Recreational attractiveness” and “Public facilities”, “Enjoyment of visit”, “Wish to be somewhere else”, “Visit experience”, “Overall attractiveness”, “Crowdedness” “ Cost of visit”, “Inconvenient of location”, “Attractiveness of activities” and “Opening time”. The following hypothesis was proposed in this section:

**Hypothesis 2:** There are differences in perception and attitudes among overseas visitors at city centre attractions, with regard to:

2-1 Gender
2-2 Age
2-3 Level of education

**Gender**

In order to investigate the influence of “Gender” on perceptions and attitudes factors regarding tourism products, an independent sample t-test was performed. The results revealed that there are statistically significant differences in 6 items out of 13 attitudes statements between male and female visitors regarding cultural and recreational
attractiveness preferences, wish to be somewhere else whilst visiting Melbourne CBD attractions, costs of visit, overall attractiveness and crowdedness of attractions.

It was shown that female visitors more likely to prefer locations with recreational attractiveness \( (M = 3.08 \text{ and } M = 3.82) \), \( (t = 3.121, df = 275, \text{ Sig.} = .001) \) than males, whilst males were more likely to enjoy locations with perceived cultural attractiveness than females \( (M = 4.07 \text{ and } M = 3.30) \) \( (t = 2.966, df = 274, \text{ Sig.} = .003) \). Female visitors were also perceived city centre attractions to be more attractive than males \( (M = 3.07 \text{ and } M = 3.52) \), \( (t = 3.089, df = 277, \text{ Sig.} = .002) \). Consequently, female visitors at various study locations were seemingly less likely to wish being somewhere else while visiting CBD attractions than their male counterparts \( (t = 2.319, df = 275, \text{ Sig.} = .021) \). In terms of reported perceptions regarding crowdedness of locations, females visitors were more likely to notice a lack of space at the attraction than male visitors \( (M = 2.59 \text{ and } M = 3.47) \), \( (t = -2.099, df = 275, \text{ Sig.} = .044) \). Additionally, they were more likely to think that visiting attractions costs too much money \( (M = 2.08 \text{ and } M = 2.73) \) \( (t = 1.991, df = 275, \text{ Sig.} = .047) \).

However, no significant differences were found in other perception factors of “Natural beauties”, “Public facilities”, “Enjoyment of visit”, “Visit experience”, “Inconvenient of location”, “Attractiveness of activities” and “Opening time” between male and female visitors. Hypothesis 2-1 was only partially accepted.

**Age**

Pearson correlation analyses were performed in order to investigate the relationship between factors of travel perception and “Age”. The results revealed that there is a statistically significant relationship between the age of visitors and their attitudes in regards to visits to city centre attractions. Particularly significant relationship were found between the age of participants and their attitude in regard to “Wish to be somewhere else”, “Costs of visit”, “Crowdedness” and “Inconvenient of location”. The results of the Pearson analyses revealed that by increasing the age of visitors, the wish of being somewhere else during the visit significantly decreased \( (P = -.270, \text{ Sig.} = .001, N = 275) \). On top of this, by increasing the age of participants, they were also more likely to noticed a lack of space and perceive the location as crowded \( (P = -.191, \text{ Sig.} = .001, N = 275) \).
There was also a correlation between the age of participants and attitudes towards the location of the attraction; the more the age increased, the more likely they were to perceive the locations of attractions as somewhat inconvenient (P = .299, Sig. = .001, N = 275). However, as no significant relationship was found in regard to other perception factors from this point of view, hypothesis 2-2 was only partially accepted.

**Level of education**

Pearson correlation analyses were performed in order to investigate any relationship between the travel perceptions and levels of education amongst overseas visitors. The results revealed that there is a statistically significant relationship between the education levels of visitors and their attitudes in regard to 4 perception factors of “Cultural attractiveness”, “Visit experience”, “Cost of visit” and “Inconvenient of location”.

According to the results of the Pearson correlation analyses, by increasing the level of education, visitors were also more likely to prefer to visit locations seen as having cultural attractiveness (P = .389, Sig. = .001, N = 275). In relation to the enjoyment of visit CBD attractions, by increasing the level of education, visitors were more likely to have a pleasant experience (P =.183, Sig. =.002, N = 275). It was also revealed that there is a significant relationship between education and feelings of farness, whereby increasing the level of education visitors were less likely to perceive the location as too far (P = -.270, Sig. = .001, N= 276). This might be as a result of higher rates of staying in CBD accommodations by highly educated visitors. It was also revealed that highly educated visitors were less likely to perceive the cost of visit to the attraction as too high (P =-.191 Sig. = .001, N = 275). However, there were no significant relationship between the educational level of visitors and their attitude regarding the other perception factors. As a result, hypothesis 2-3 was partially accepted.

### 6.3.1.3 Identification of significant differences in satisfaction based on socio-demographic characteristics

To determine whether overseas visitors with different socio-demographic backgrounds exhibited differences in satisfaction levels regarding the availability and quality of tourist products throughout city centre attractions, independent sample t-tests and Pearson correlation analyses were performed on the nine factors of satisfaction as discussed in
5.2.1.4. “Overall Cleanliness”, “Variety of activities”, “Safety conditions”, “Public facilities”, “Amount of space (lack of crowdedness)”, “Attractiveness of location”, “Hours of operation”, “Information centres”, “place overall” are the factors which tested in this section. The factors were tested in this section were include. The hypotheses tested in this section are as follows:

**Hypothesis 3**: There are differences in levels of satisfaction amongst overseas visitors at city centre attractions, in regard to:

- **3-1 Gender**
- **3-2 Age**
- **3-3 Level of education**

**Gender**

In order to investigate the influence of “Gender” on levels of satisfaction pertaining to tourist products, an independent sample t-test was performed. The result of the t-test revealed that there are statistically significant differences in satisfaction levels between male and female visitors regarding the two satisfaction factors of “Hours of operation” and “Place overall” ($p<.05$). More specifically, male visitors were less likely to be satisfied with the operation hours of attractions than female visitors ($M = 2.26$ and $M = 1.93$) ($t = 2.130$, $df = 275$, Sig. = .04), and were also less likely to satisfied with CBD attractions overall ($M = 1.77$ and $M = 1.35$) ($t = 2.43$, $df = 277$, Sig. = .016).

However, there were no significant differences in satisfaction level of visitors in regard to the factors of “Overall Cleanliness”, “Variety of activities”, “Safety conditions”, “Public facilities”, “Amount of space”, “Attractiveness of location” and “Information centres” ($p>.05$). Therefore hypothesis 3-1 was partially accepted.

**Age**

A Pearson correlation analysis was performed in order to investigate any correlation between visitor travel satisfaction and age. The result revealed a statistically significant relationship existing between the age of visitors and their travel satisfaction in regards to the chosen study locations within the Melbourne city centre. Of the 9 factors of satisfactions tested in this section, 4 factors of “Overall cleanness” “Variety of activities”
“Safety condition” and “Place overall” were found to be significantly dependent on the visitors’ ages. It was shown that by increasing the age of visitors, satisfaction levels relating to cleanliness (P = - .139, Sig. = .021, N = 275) and variety of activities (P = - .259, Sig. = .001, N = 275) also increased. As a corollary, increasing visitor age also led to an improvement in safety condition satisfaction (P = -.174, Sig. = .004, N = 275), as well as satisfaction with the place in general (P = -.296, Sig. = .001, N = 275). However, there were no significant differences in satisfaction level of visitors in regard to the other factors. Therefore hypothesis 3-2 was partially accepted.

**Level of education**

A Pearson correlation analysis was performed in order to investigate any pre-existing relationship between visitor travel satisfaction and levels of education. The result revealed that there is a statistically significant relationship existing between the educational levels of visitors and their levels of satisfaction in regards to 4 factors of “Overall cleanliness”, “Safety condition”, “Amount of space” and “Place overall” to the study locations. It was thus shown that by increasing education levels, satisfaction levels regarding overall cleanliness of locations also increased (P = -.124, Sig. =.041, N = 275), as well as safety condition satisfaction (P = -.151, Sig. =.013, N = 275) and satisfaction with regards to amount of space and crowdedness (P = -.138, Sig. =.023). Moreover, by increasing the education level of visitors, satisfaction in regards to attractiveness increased (P = -.165, Sig. = .006, N = 275), as did place overall (P = -.128, Sig. = .033=.116, N=277).

However, there were no significant differences in satisfaction level of visitors in regard to the factors of “Variety of activities”, “Public facilities”, “Attractiveness of location”, “Hours of operation” and “Information centres”. Therefore hypothesis 3-3 was partially accepted.

**6.3.1.4 Identification of significant differences in movement patterns based on socio-demographic characteristics**

This section aims to determine the influence of socio-demographic characteristics on movement patterns of visitors at both the macro and micro level. At the macro level, the movement of visitor within the CBD in terms of the length, type (planned vs. unplanned)
and direction (clockwise vs. anti clockwise) of movement; single point to point and stopover patterns as well as territorial models discussed in 2.3.1 were all tested. At the micro level the length of track visitors have travelled inside the attractions were tested. These are all based on the responses to the questions of “Previous location” and “Next location to visit”, as well as travel tracks drawn on the two maps designed in the questionnaires. They were analysed using independent chi square tests, independent t-test samples and Pearson correlation tests. The following hypothesis was proposed in this section:

**Hypothesis 4: There are differences in movement pattern of visitors in regard to**

4-1 Gender

4-2 Age

4-3 Level of education

**Gender**

To assess the influence of gender on movement behaviour, a chi square test of independence and an independent sample t-test between the groups were both performed. The chi square test of independence was used for investigating the type and direction of movement; single point to point and stopover patterns as well as territorial models whilst the t-test was used to examine any differences in the factors of length of movement around the CBD and inside its’ attractions. The results of the two statistical tests revealed that there were statistically significant differences between male and female tourists in relation to their type and length of movement around the CBD and inside its’ tourism attractions ($p<.05$). More specifically, male visitors were more likely to move to a specific destination (66%) whilst visiting the city centre, whilst female visitors were more likely to move all over the city centre, not being entirely sure about their next destination (34%) ($\chi^2 = 7.482, df = 1, p = .006$). The results of the independent sample t-also indicated that female visitors explored the city centre ($M = 1615.87$) and its tourism attractions ($M = 673.62$) more widely than males ($M = 1388.37$ and $M = 497.18$) [Respectively ($t = 2.144, df = 277, \text{Sig.} = .032$) and ($t = 2.012, df = 277, \text{Sig.} = .046$)].
Figure 6.2: Movement pattern of visitors around the city centre based on the gender

Figure 6.3: Movement pattern of visitors in Carlton Gardens based on the gender
No significant differences were perceived between male and female visitor in regard to direction of movement as well as the single point to point, stopover patterns and territorial models. Hypotheses 4-1 was therefore partially accepted.

Age

To assess the influence of “Age” on visitor movement behaviour characteristics (hypothesis 4-2), independent sample t-tests and Pearson coloration analysis were performed. Specifically, independent sample t-tests were used for the examining the type and direction of movement; single point to point and stopover patterns as well as territorial models, whilst Pearson correlation analysis were used to investigate differences in the length of movement track around the CBD and inside its tourism attractions. The results of the t- test revealed that Tourists who had a higher mean age (M = 26.82) were more likely to move to a planned destination than lower mean age visitors (M = 29.37). They were also explored the city centre attractions more widely than higher mean age visitors (P = -2.083, Sig. = .039, N = 277). In addition, visitors with higher mean ages (M =32.67) were more likely to move clockwise, whilst visitors with lower mean ages were more likely to move anti-clockwise within the Melbourne city centre (M = 28.00) (t = -2. 737, df = 277, Sig. = .007).
Figure 6.4: Movement pattern of visitors around the city centre based on the age
Figure 6.5: Movement pattern of visitors in Federation Square based on the age
When taking into account the territorial models, visitors with higher mean ages (M = 31.60) appeared to be more likely to stay within the immediate area of city centre accommodations (Convenience-based Movement), whilst visitors with lower mean ages (M = 27.94) were more likely feel uninhibited in the territory of the destination and travel far away from their accommodation either inside outside of the Melbourne city centre (Unrestricted Destination or Wide Movement) (t = -2.498, df = 275, Sig. = .013).

However, the age of visitors were not significantly differed when it came to the length of movement track within the city center as well as stop-over and single point-to-point movement patterns. Hypotheses 4-2 was thus, only partially accepted.

**Level of education**

To assess the influence of educations on visitor movement behaviour characteristics (hypothesis 4-3), independent sample t-tests Pearson coloration analysis and one way between the groups ANOVA tests were performed. Specifically, independent sample t-tests were used to examine the type and direction of movement, single point to point and stopover patterns as well as territorial models, whilst one way ANOVA were used to investigate differences in the length of movement around the CBD and inside its attractions.

The results of the independent t-test sample revealed that, highly educated people (M = 3.59) were more likely to have a planned destination for their visit, whilst visitors with low levels of education (M = 3.34) were more likely to move all over the city without a specific destination (t = 2.042, df = 276, p =.042). In terms of territorial models, visitors with high levels of education (M = 3.71) were more likely to have limited movement within the immediate area of the city centre accommodation (Convenience-based Movement). By comparison, visitors with lower levels of education were more likely to travel further away from their accommodation (M = 3.49) (Unrestricted Destination or Wide Movement) (t= -2.078, df = 275, Sig. = .039). However, there were no significant differences in other movement behavioural characteristics from this perspective (p>.05). Thus, Hypotheses 4-3 was only partially accepted.
6.3.2 Determining the influence of cultural backgrounds characteristics on spatial behavioural patterns

In order to investigate any apparent cultural differences amongst overseas visitors, there was a corresponding need to measure the cultural distances found within the samples. One of the most widely considered examinations of cultural distance are those presented by Hofstede (1980, 1983), which is discussed in Section 2.5. Hofstede’s theories explain basic differences by distinguishing cultures according to four dimensions of Power Distance, Individualism/Collectivism, Masculinity/Femininity and Uncertainty Avoidance. These categories are measured on a scale from 0 to 100 for 75 countries and regions.

Nationality was used in this study to measure the cultural distances among the visitors. The cultural scores of the visitors were generated according to Hofstede’s cultural dimension of Power Distance, Individualism/Collectivism, Masculinity/Femininity and Uncertainty Avoidance, as made explicit in the Hofstede study (2001; see Appendix 3). According to these scores, overseas tourists visiting the Melbourne city centre were more likely to be from cultures with moderate levels of power distance (M = 56.77) and uncertainty avoidance (M = 52.99), as well as from cultures deemed as slightly feminine (M = 55.56) and collectivistic (M = 48.75).

This following section investigates the influence of cultural background characteristics on the spatial behaviour patterns of visitors. This includes factors such as travel characteristics, and perception and satisfaction levels towards the various study locations and movement patterns. Differences in spatial behaviour patterns of the visitors will be determined through the four dimensions of Power Distance, Individualism/Collectivism, Femininity/Masculinity and Uncertainty Avoidance. It is contended that determining the kind of influence cultural characteristics have on visitor behaviour will assist destination countries in providing tourists with more individually tailored recreational packages. In this way, tourist products will be geared more appropriately to tourists’ own preferences in spheres such as accommodation, transportation and activity preferences. It is hoped that this method will result in higher tourist satisfaction levels in regards to tourism products in destination countries.
Identification of significant differences in travel behavioural characteristics based on cultural background characteristics

To assess the influence of culture on travel behaviour (Hypothesis 5), independent sample t-tests and one way ANOVA tests were performed between the groups. This involved taking into account the six factors of travel behaviour, which included “Accommodation location”, “Transport to the city centre”, “Transport to the attractions”, “Past frequency of visit”, “Travel companions”, “City travelling purpose” and “Planned activities”. The independent sample t-tests were used for factors pertaining to “Accommodation location preferences” whilst one way ANOVA tests were used to investigate any differences in factors relating to “Type of transport to the city centre”, “Mode of transport within the city centre”, “City centre travelling purpose”, “Past frequency of visit”, and “Planned activity for the visit”. The hypotheses tested in this section are as follows:

Hypothesis 5: There are differences in travel life style and behaviour between travellers with respect to:

5-1 Power Distance
5-2 Individualism / Collectivism
5-3 Femininity / Masculinity
5-4 Uncertainty Avoidance

Power Distance

The results of the independent t-test and the one way ANOVA test revealed that there were significant differences in “Accommodation location”, “City centre travelling purpose”, “Type of transport to the city centre” and “Mode of transport within the city centre”, specifically when it came to visitors from various power distance cultures (p<.05). In terms of “Accommodation location”, it was concluded that visitors who stayed in city centre accommodation were more likely to be from lower power distance cultures (M = 52.79) than those who preferred to stay outside the city centre (M = 59.1) (F = 5.862, df = 1, p = .016). In terms of city travelling purpose, visitors from high power distance cultures were more likely to travel to the city for educational (M = 66.16) and/or business (M = 65.43) purposes whilst visitors from low power distance cultures were more likely to travel to the city for general holidaying purposes (M = 48.94) (F = 3.608,
In relation to the type of transport used by respondents to travel to the city centre and move within it, visitors from high power distance cultures (M = 63.35) were considered more likely to prefer travelling to the city by car, whilst visitors from low power distance cultures appeared to prefer walking within the city itself (M = 43.28) (F = 3.262, df = 5, p = .01). Tourists from high power distance cultures were also more likely to use tour buses to explore the city and travel to its various attractions (M = 63.65), whilst visitors from low power distance cultures preferred to explore the city by walking (M = 51.96) (F = 3.790, df = 4, p = .005). However, no significant differences were found in variables relating to “Travel companions”, “Past frequency of visit” and “Planned activity for the visit” amongst the respondents (p > .05). As result, Hypothesis 5-1 was partially accepted.

**Individualism/Collectivism**

The results of the independent t-tests and one way between the groups ANOVA revealed that there were significant differences between factors relating to “Accommodation location”, “City centre travelling purpose”, “Type of transport to the city centre” and those pertaining to “Mode of transport within the city centre”, “Travel companions” and “Past frequency of visit” (p < .05). According to the results of the tests, visitors who stayed in city centre accommodation had significantly higher mean individualism/collectivism (M = 57.22) than those who stayed outside the city (M = 44.90) (F = 6.469, df = 1, p = .012). In terms of mode of transport to get into the city centre, visitors who used cars (M = 38.35) and trams (M = 41.84) appeared to have lower mean individualism scores than other respondents. By contrast, visitors who moved through the CBD by foot had higher mean individualism/collectivism scores (M = 65.44) (F = 3.162, df = 5, p = .009). Visitors who stated their purpose of visit to the city center was for “Education” purposes had lower mean scores in the individualism/collectivism dimension (M = 36.84), whilst those who travelled to the city for general holidaying purposes were seen as coming from higher individualism-collectivism cultures than their peers (M = 56.34) (F = 3.230, df = 5, p = .007). In terms of mode of transport to CBD attractions, visitors who used tour buses had lower individualism/collectivism means (M = 36.83). This contrasted significantly with walkers who had the highest means (M = 53.26) (F = 3.790, df = 4, p = .005). In regards to travelling companions, visitors accompanied by a spouse/partner or children were more likely to be from individualistic
cultures (M = 55.48) whilst visitors who travelled with friends or relatives were more likely to be from collectivistic cultures (M = 42.50) (F = 3.510, df = 3, p = .016). In addition, visitors from collectivistic cultures were more likely to be on their return visit, with those having visited the location more than two times better represented in the findings (M = 43.19). Visitors from individualistic cultures (M = 52.52) were, by contrast, more likely to be on their first visit (F = 3.252, df = 2, p = .040). However, as there were no significant differences in variables between individualistic and collectivistic respondents when it came to “Planned activity for the visit” (p>.05), hypothesis 5-2 was partially accepted.

**Femininity/Masculinity**

It was revealed from the statistical tests that there were no significant differences in travel behaviour variables relating to “Accommodation location”, “City centre travelling purpose”, “Type of transport to the city centre” “Travel companions” “Mode of transport within the city centre”, “Planned activity for the visit” and “Past frequency of visit” when comparing visitors from feminine and masculine cultures against each other. As result, Hypothesis 5-3 was rejected.

**Uncertainty Avoidance**

The results of the independent sample t-tests and one way AVOWA on travel behavior variables revealed that there were significant differences between visitors from high and low uncertainty avoidance cultures, especially in travel behaviour variables regarding “Type of transport to the city centre” and “Travel companions” (p<.05). In terms of the types of transport used to travel to the city, visitors who walked to the city were more likely to be from low uncertainty avoidance cultures (M = 39.75), whilst visitors who used buses (M = 57.11) and cars (M = 56.55) were more likely to be from strong uncertainty avoidance cultures (F = 2.992, df = 5, p = .02). In addition, those respondents accompanied by friends or relatives in visits to city centre attractions were more likely to be from high uncertainty avoidance cultures (M = 55.79). By comparison, those who traveled on their own (M = 42.91) or with spouses/partners or children were more likely to be from weak uncertainty avoidance cultures (M = 58.52) (F = 4.662, df = 3, p = .001).
However no statistically significant differences were found in “Accommodation location”, “City centre travelling purpose”, “Mode of transport within the city centre”, “Planned activity for the visit” and “Past frequency of visit” when visitors from high and low uncertainty avoidance cultures were taken into account (p>.05). Hypothesis 5-4 was only partially accepted.

6.3.2.2 Identification of significant differences in attitude based on cultural background characteristics

This section is concerned with identifying whether overseas visitors with dissimilar cultural backgrounds exhibit differences based on reported perceptions regarding activities/attitudes, interests and opinions regarding various tourist products found throughout Melbourne’s city centre attractions. To investigate this, a Pearson correlation analysis was performed on 13 AIO’s items for perceptions of visit, as discussed in 5.2.1. The factors were tested was “Natural beauties “, “Cultural attractiveness”, “Recreational attractiveness” and “public facilities”, “ enjoyment of visit , “wish being somewhere else”, and “Visit experience” “Overall attractiveness of locations”, “Crowdedness of location” “ Cost of visit”, “Inconvenient of location”, “Attractiveness of activities” and “Opening time”. The hypothesis tested in this section is as follows:

Hypothesis 6: There are differences in perception and attitudes among overseas visitors at city centre attractions with respect to:

6-1 Power Distance
6-2 Individualism - Collectivism
6-3 Femininity-Masculinity
6-4 Uncertainty avoidance

Power Distance

In terms of the visitors’ attitude towards the study locations, the result of the Pearson correlation test revealed that as power distance increases, visitors thus became more likely to prefer locations with natural beauty (P = .277, Sig. = .000, N = 277). Moreover, in terms of attractiveness preferences, an increase in the power distance score of “culture” meant visitors became more likely to be interested in attractive, recreational
locations (P = .139, Sig. = .021, N = 275). However, people from higher power distance cultures were more likely to perceive that activities available at CBD attractions were not interesting (P = .168, Sig. = .005, N = 275). In addition, by increasing power distance scores, visitors were more likely to perceive the location of CBD attractions as inconvenient or too far way (P = .118, Sig. = .050, N = 277), as well as crowded (P = .131, Sig. = .03, N = 276). This might be the reason why visitors from high power distance cultures were more likely to express a wish to be somewhere else whilst visiting Melbourne city centre attractions (P = .291, Sig. = .000, N = 276).

However, no statistically significant relationship was found relating to other attitude factors from this perspective. The hypothesis 6-1 therefore partially accepted.

**Individualism/Collectivism**

According to the results of the Pearson correlation test on perception statements, visitors from collectivistic cultures were more likely be interested in the natural beauty of the location than visitors from individualistic cultures (P = -.266, Sig. = .000, N = 277), whilst tourists from individualistic cultures were more likely to be interested in the recreational attractiveness of the location (P = -.187, Sig. = .002, N = 276). Thus it may be concluded that individualistic visitors were more likely to perceive activities available at CBD attractions as interesting than their collectivistic counterparts (P = -.185, Sig. = .002, N = 275). This was further confirmed by results revealing that collectivistic tourists were more likely to wish to be somewhere else whilst visiting Melbourne city centre attractions (P =-.405, Sig. = .000, N = 276). That being said, individualistic tourists were more likely to enjoy their visit to CBD attractions than collectivistic visitors on the whole (P = .116, Sig. = .050, N = 277). However no statistically significant differences were found in other perception factors when individualistic and collectivistic visitors were taken into account (p>.05). Hypothesis 6-2 was only partially accepted.

**Femininity/Masculinity**

Based on the results of the Pearson correlation test on factors of perception, visitors from masculine cultures were more likely to be interested in recreationally attractive locations than feminine cultures (P =.261, Sig. = 001, N = 276). In addition, they were more likely to perceive the amount of space available at various locations as appropriate than visitors
from feminine cultures (P = -.140, Sig. = .020, N = 276). Interestingly, by increasing the femininity, visitors were significantly more likely to wish being somewhere else whilst visiting Melbourne city centre attractions. On the other hand, visitors from masculine cultures were more likely to enjoy their visit to the attractions than visitors from feminine cultures (P = -.234, Sig. = .000, N = 276).

However, no significant relationship were identified between the femininity-masculinity and perception factors of “Natural beauties”, “Cultural attractiveness”, and “public facilities”, and “Visit experience” “Overall attractiveness of locations”, “Cost of visit”, “Inconvenient of location”, “Attractiveness of activities” and “Opening time”. The hypothesis 6-3 was therefore partially accepted.

**Uncertainty Avoidance**

The results of the Pearson correlation analysis revealed that there was a strong pre-existing relationship between natural beauty preferences and levels of uncertainty avoidance. Visitors with weak uncertainty avoidance were more likely to be interested in naturally (P = .146, Sig. = .015, N = 277) and recreationally (P = .131, Sig. = .028, N = 276) attractive locations than strong uncertainty avoidance visitors. They were also more likely to perceive opening times (P = .171, Sig. = .005, N = 275) and costs (P = -.156, Sig. = .008, N = 276) of visits to attractions as convenient. However, they did appear to be more interested in being somewhere else whilst visiting Melbourne city centre attractions (P = .126, Sig. = .036, N = 276). The hypothesis 6.4 was therefore partially accepted.

The results of the Pearson correlation analysis also indicated that, there is no significant relationship between the uncertainty avoidance and perception factors of “Cultural attractiveness”, “public facilities”, “enjoyment of visit”, and “Visit experience” “Overall attractiveness of locations”, “Crowdedness of location”, “Inconvenient of location” and “Attractiveness of activities”. Hypothesis 6-4 was partially accepted.

**6.3.2.3 Identification of significant differences in satisfaction based on cultural background characteristics**

To identify whether overseas visitors with different cultural backgrounds exhibited differences based on satisfaction levels regarding the availability and quality of tourist
products throughout city centre attractions, Pearson correlation analyses were performed on 9 satisfaction factors of “Overall Cleanliness”, “Variety of activities”, “Safety conditions”, “Public facilities”, “Amount of space (lack of crowdedness)”, “Attractiveness of location”, “Hours of operation”, “Information centres”, “place overall”. The hypothesis tested in this section was as follows:

Hypothesis 7: There are differences in level of satisfaction among overseas visitors at city centre attractions in regard to:

7-1 Power Distance
7-2 Individualism - Collectivism
7-3 Femininity-Masculinity
7-4 Uncertainty avoidance

Power Distance

The results of the Pearson correlation analysis indicated that visitors from low power distance cultures were more likely to be satisfied with the overall cleanliness (P = .087, Sig. = .151, N=276) and availability of information desks (P = .278, Sig. = .001, N=277) at attractions than visitors from high power distance cultures. However no significant relationships were found in regard to other factors of satisfaction from this perspective. Therefore hypothesis 7.1 was partially accepted.

Individualism/Collectivism

According to the result of Pearson correlation analysis, visitors from individualistic cultures were more likely to be satisfied with safety conditions (P = .129, Sig. = .032, N=276) hours of operation (P = .140, Sig. = .02, N = 276), availability of information desks (P = .213, Sig. = .001, N = 277) and the variety of tourism activities available at various attractions (P = .163, Sig. = .006, N = 276) than collectivistic visitors. However there was no significant relationship between the individualism-collectivism dimension and satisfaction factors of “Overall Cleanliness”, “Public facilities”, “Amount of space”, “Attractiveness of location”, “place overall”. The hypothesis 6-2 was partially accepted.
Femininity/Masculinity

Based on the result of Pearson correlation analysis, an increase in femininity revealed an increase in satisfaction with overall cleanliness ($P = -.755, \text{Sig.} = .001, N = 2768$), hours of operation ($P = -.254, \text{Sig.} = .001, N = 276$), availability of information desks ($P = -.203, \text{Sig.} = .001, N = 277$) and variety of activities available at various study locations ($P = -.405, \text{Sig.} = .001, N = 276$). But as no significant relationship were found in relation to the factors of “Safety conditions”, “Public facilities”, “Amount of space (lack of crowdedness)”, “Attractiveness of location” and “place overall”, The hypothesis 6-3 was partially accepted.

Uncertainty Avoidance

According result of Pearson correlation analysis, there were no significant differences found between tourists from high and low uncertainty avoidance cultures in relation to satisfaction levels with tourist products at city centre tourist attractions. The hypothesis 6-4 was rejected.

6.3.2.4 Identification of significant differences in movement patterns based on cultural background characteristics

The movement information of participants including the responses to the questions of “Previous location” and “Next location to visit”, as well as travel tracks drawn on the two maps designed in the questionnaires was subjected to independent sample t-tests and Pearson correlation analyses to investigate the influence of cultural characteristics on tourist movement behaviour. The visitors’ movement data was investigated at both macro and micro levels, as discussed in Section 2.3.1. At the macro level, the movement of visitor within the CBD in terms of the length, type (planned vs. unplanned) and direction (clockwise vs. anti clockwise), of movement; single point-to-point and stop-over patterns as well as territorial models discussed in 2.3.1 were tested. At the micro level the length of track visitors have travelled inside the attractions were tested. The following hypothesis is proposed in this section:

*Hypothesis 8: There are differences in movement behaviour among overseas visitors at city centre attractions in regard to:*
Power distance

The results of the independent t-test were shown that visitors from high power distance cultures were more likely to plan their visit and movement to the city centre (M = 60.51) than low power distance cultures (M = 49.23) (t = 2.842, df = 277, Sig. = .004). This refers to having a planned destination for the movement pattern rather than exploring a location without a specific destination in mind. This might further explain why visitors from low power distances explored the city centre more widely than visitors from high power distance cultures (P = -.140, Sig. = .0210, N = 278). However, visitors from high power distance cultures were likely to explore the attraction more widely than visitors from low power distance cultures (P = .183, Sig = .002, N = 278).

Figure 6.6: Movement patterns of visitor around the city centre based on the power distance index.
When the territorial models were taken into account, it was further concluded that visitors from low power distance cultures ($M = 50.82$) were more likely to stay in a convenient distance away from their accommodations whilst visitors with lower means of power distance were likely to explore a destination more widely and travel a further distance away from their place of residence ($M = 59.34$) ($t = 2.793$, $df = 276$, Sig. = .006). However in terms of direction of movement; single point-to-point and stop-over patterns there were no significant differences between visitors from high and low power distance culture. Hypothesis 8-1 was therefore partially accepted.

**Individualism/Collectivism**
The results of the t-test revealed that individualistic visitors (M = 55.39) were more likely to travel by way of multiple stop-over movement patterns. This involved visitors going from one destination to another with a single destination as the main focus of the trip, whilst being captured by a number of destination or attractions either on their way to the main destination or on their way back (M = 47.4) (t = -2.108, df = 275, Sig. = .038). Likewise, on this level, there was a correlation between the length of travel tracks visitors created within the Melbourne city centre and their individualistic or collectivistic characteristics. It was thus concluded that individualistic visitors moved through the Melbourne city centre more widely than collectivistic visitors (P = .146, Sig. = .015, N = 278). Collectivistic visitors (M = 42.74), on the other hand, were more likely to follow one single point-to-point pattern in which a single destination is visited and the return home makes use of the same route without any diversions in the visitation process (M = 55.82) (t = 3.352, df = 276, Sig. = .001). Individualistic visitors (M = 53.90) were more likely to travel in a convenience-based movement patterns – that is, travelling within a convenient distance of their accommodation. Collectivistic visitors (M = 46.52), by contrast, were more likely to travel in a wide movement pattern far away from their accommodation (t = -2.105, df = 276, Sig. = .036). In terms of direction of movement around the Melbourne city centre, visitors from collectivistic cultures (M = 46.53) were more likely to move clockwise, whilst individualistic visitors were more likely to move anticlockwise (M = 59.00) (t = 2.552, df = 91, Sig. = .012). However no statistically significant relationships were identified in terms of type of movement and stop-over patterns at macro level and the only micro level variable of length of movement path inside CBD attractions from this perspective.
According to the result of t-test, visitors from masculine cultures (M = 49.71) were more likely to be on single point-to-point patterns than their feminine counterparts (M = 56.61) (t = 3.227, df =276, Sig =.001). Visitors from masculine cultures (M= 54.00) were also more likely to move clockwise (M = 59.45) (t = 2.062, df = 91, Sig. = .042). Additionally, at this level, feminine visitors were likely to explore the city more widely than visitors from masculine cultures (P = 0152, Sig. = .011, N = 278). However, no significant differences were found in type and length of movement path at both scales; stop-over and territorial models. Thus, hypothesis 8-3 was only partially accepted.
Uncertainty avoidance

The result of t-test on movement characteristics revealed that, visitors who had weak uncertainty avoidance (M = 54.45) were more likely to engage in stop-over movement patterns than those from strong uncertainty avoidance cultures (M = 46.67) (t = 2.635, df = 275, Sig. = .009). On the other hand, weak uncertainty avoidance visitors were more likely to visit suburban attractions before arriving at the city centre or have a plan to go to a suburban attraction after visiting city centre attractions. In terms of planned travel movement, visitors from strong uncertainty avoidance (M = 55.17) were more likely to plan their visit and movement patterns around the city centre than weak uncertainty avoidance visitors (M = 49.68) (t = 2.797, df = 277, Sig = .006). In contrast, visitors from weak uncertainty avoidance cultures were more likely to travel all over the city centre in their visit to the CBD than visitors from strong uncertainty avoidance backgrounds. Visitors from high uncertainty avoidance cultures (M = 62.31) were also more likely to be on single point-to-point movement patterns than weak uncertainty avoidance visitors.
(M = 51.33) (t = -3.302, df = 276, Sig = .001). Additionally in terms of territorial patterns of movement, those with strong uncertainty avoidance (M = 56.45) were more likely to stay within convenient distance of their accommodation, whilst visitors with lower mean ages were more likely to travel a further distance away from their accommodation (M = 51.49) (t = -2.448, df = 276, Sig. = .010). However there were no significant differences in other movement behavioural characteristics from this perspective. Hypothesis 8-4 therefore was partially accepted.

### 6.3.3 Summary of statistical analyses findings:

First, three demographic factors of “Gender”, “Age”, and “Education” as well as cultural dimension of power distances, individualism collectivism, femininity and masculinity and uncertainty avoidance were identified as being different based on travel behavioural characteristics of accommodation location, travel companions, purpose of travel, mode of transport used to travel, past frequency of visit and planned activities for visit (Table 6.5).

<table>
<thead>
<tr>
<th>Travel Characteristics</th>
<th>Cultural Characteristics</th>
<th>Demographic Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PDI IDV FM UAI Age Gender Education</td>
<td></td>
</tr>
<tr>
<td>Accommodation location</td>
<td>✓ ✓ - - ✓ - ✓</td>
<td></td>
</tr>
<tr>
<td>Transport to the city centre</td>
<td>✓ - ✓ - ✓ -</td>
<td></td>
</tr>
<tr>
<td>City travelling purpose</td>
<td>✓ ✓ - - ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>Transport in the CBD</td>
<td>- ✓ - - ✓ ✓ -</td>
<td></td>
</tr>
<tr>
<td>Past frequency of visit</td>
<td>- ✓ - ✓ ✓ -</td>
<td></td>
</tr>
<tr>
<td>Travel companions</td>
<td>- ✓ - ✓ ✓ -</td>
<td></td>
</tr>
<tr>
<td>Planed activities</td>
<td>- - - - ✓ -</td>
<td></td>
</tr>
</tbody>
</table>

(✓) Indicates a significant difference between variables (p < .05)

Table 6.4: Summary of the relationship between socio-demographic and cultural characteristics, and travel behaviour variables
In this chapter, two series of analyses attempted to examine the series of perception statements and satisfaction factors within various study locations. It was presumed that the attitude of the two samples would perhaps be varied. The result of the independent t-test and Pearson correlation analysis revealed that there were significant differences in perception and satisfactions of the along various cultural and socio-demographical groups of visitors.

<table>
<thead>
<tr>
<th>Cultural characteristics</th>
<th>Socio-demographic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PDI</td>
<td>IDV</td>
</tr>
<tr>
<td><strong>Perception</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural attractiveness</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Recreational attractiveness</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Natural beauty</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Public facilities</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wish to be somewhere</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Enjoyment of visit</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Pleasant Experience</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Overall Attractiveness</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Costs of visit</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Crowdedness</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Inconvenient of location</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Opening times</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tourism Activities</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Level of Satisfaction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Attractiveness</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Overall cleanliness</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Variety of activities</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Safety conditions</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Public facilities</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Amount of space</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hours of operation</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Information centre</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Place overall</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

(✓) Indicates a significant difference between variables ($p < .05$)

Table 6.5: Summary of the relationship between socio-demographic and cultural characteristics and perception and satisfaction factors

In terms of comparing movement behavioural data, the mean scores of the overseas visitor t-tests generally revealed a various level of movement at both macro and micro level movements depending on visitors’ demographical and cultural backgrounds. The micro level
related to the widest of all possible definitions to incorporate any movement, or any place within a city centre, whereas the micro level movement considered any path taken by visitors inside a city centre attraction. Although both the overall macro and micro level movement of the two groups of visitors displayed significant differences, a consideration of the facts and theories of travel may reveal that overseas visitors in fact differed in terms of macro and micro level movement patterns.

<table>
<thead>
<tr>
<th>Cultural characteristics</th>
<th>Socio-demographic</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD I</td>
<td>IDV</td>
</tr>
<tr>
<td>FM</td>
<td>UAI</td>
</tr>
<tr>
<td>Gender</td>
<td>Age</td>
</tr>
<tr>
<td>education</td>
<td></td>
</tr>
</tbody>
</table>

**Macro level**
- Length of movement
- Type of movement (planned vs. unplanned)
- Direction of movement (clockwise vs. anti clockwise)
- Single point-to-point pattern
- Stop-over patterns
- Territorial models

**Micro level**
- Length of movement

✓ Indicates a significant difference between variables ($p < .05$)

Table 6.6: Summary of the relationship between socio-demographic and cultural characteristics and movement patterns

### 6.3.4 Summary of the results of the predicted hypotheses:

In order to test the proposed hypotheses, a number of data analyses were conducted and results were discussed throughout this chapter. Table 6.4 shows that based on the result of statistical tests, the entire hypotheses tested in this study have been accepted to some extend.
<table>
<thead>
<tr>
<th>No</th>
<th>Hypothesis</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁</td>
<td>There are differences in travel behavioural characteristics depending on socio-demographic characteristics.</td>
<td>Partly accepted</td>
</tr>
<tr>
<td>H₂</td>
<td>There are differences in attitudes toward the study areas depending on socio-demographic characteristics.</td>
<td>Partly accepted</td>
</tr>
<tr>
<td>H₃</td>
<td>There are differences in satisfaction with tourism products depending on socio-demographic characteristics.</td>
<td>Partly accepted</td>
</tr>
<tr>
<td>H₄</td>
<td>There are differences in movement patterns depending on socio-demographic characteristics.</td>
<td>Partly accepted</td>
</tr>
<tr>
<td>H₅</td>
<td>There are differences in travel behavioural characteristics depending on cultural characteristics.</td>
<td>Partly accepted</td>
</tr>
<tr>
<td>H₆</td>
<td>There are differences in attitudes toward the study areas depending on cultural characteristics.</td>
<td>Partly accepted</td>
</tr>
<tr>
<td>H₇</td>
<td>There are differences in satisfaction with tourism products depending on cultural characteristics.</td>
<td>Partly accepted</td>
</tr>
<tr>
<td>H₈</td>
<td>There are differences in movement patterns depending on cultural characteristics.</td>
<td>Partly accepted</td>
</tr>
</tbody>
</table>

Table 6.7: Summary of the predicted hypotheses

### 6.4 CONCLUSION

In this study, the travel behaviour of overseas visitors from different socio-demographic and ethnical backgrounds were explored and compared. The objective of this study was to identify how social, cultural and physical environments influence perception, satisfaction and behaviours related to travel. This was done by investigating the relationship between socio-demographic and cultural characteristics and spatial behaviour, and by then comparing these results between the groups of respondents. It was theorised that the cultural differences of the overseas visitors would lead to different travel preferences and patterns. The results suggested that the travel characteristics and behaviours of the overseas samples significantly differed based on their socio-demographic and cultural in several ways.
The next chapter presents a conclusion and a discussion, and further examines the links between the review of the theories and the findings of this study.
7 EVALUATION AND CONCLUSIONS

7.1 INTRODUCTION

The previous chapter presented a case study that incorporated the evaluation and application of the theories and methods discussed in Chapter 2 and 3. This chapter summarises the major findings of this research, and discusses the limitation of the theories and methods for determining the spatial needs of tourists. The research objectives and research questions of this thesis are reiterated to show how they were achieved. The chapter concludes by looking at some directions for future research that have been raised through the creation of this thesis and how determined needs and preferences can be used to assist tourism management to meet planning objectives.
7.2 SUMMARY OF RESEARCH FINDINGS

This research has concentrated on examining tourist spatial behavioural patterns in relation to built-up environments in order to determine their spatial needs. As individual characteristics may be the data that most accurately reflects the tourists’ actual needs and preferences, thus, an attempt has been made in this study, to discriminate among distinct socio-demographic and cultural groups of tourists. Spatial behaviour information of tourists at major Melbourne city centre attractions were acquired. This included the spatial movement of visitors, along with their socio-demographic and cultural characteristics, travel behaviour, perception and satisfaction levels at each attraction. The spatial movements of tourists were considered at both the macro and micro level. This was done in order to represent the general travel patterns around the city centre and inside its major attractions.

In order to investigate the influence of socio-demographic and cultural background characteristics on tourists’ movement and behavioural patterns. Chi-square test of independent, independent sample t-test, one way ANalysis Of VAriance (ANOVA) and Pearson correlation analysis were used. Finally, it was theorised that different cultural and socio-demographic characteristics would lead to different travel behaviours and preferences.

7.2.1 The influence of socio-demographic characteristics on international tourists spatial behaviour patterns

The influence of socio-demographic characteristics on the spatial behavioural patterns of the visitors has been tested. The results confirmed the assumption that the spatial behaviour patterns of visitors from various socio-demographic characteristics are different, and thus are varied in terms of specific travel needs and preferences. These differences are important insofar as providing the necessary services and facilities for international visitors with different socio-demographic characteristics at any given tourist destination. The following section’s reviewed the findings of the study after investigating the spatial behavioural patterns that varied in socio-demographic factors of “Age”, “Gender” and “Level of education”.

154
7.2.1.1 Relationship between tourist socio-demographic and travel characteristics

The result of this study revealed that demographics include “Gender”, “Age” and “Level of education” is the cause of great variations on travel behavioural characteristics of accommodation location, travel companions, purpose of travel, mode of transport used to travel, past frequency of visit and planned activities for visit.

According to the result of this study, visitors who preferred to stay in city centre accommodation had significantly higher mean age and educational levels than those who preferred to stay outside the city centre. In relation to travel companions of visitors, visitors accompanied by spouse/partner and children had higher mean age than those visitors who went on their own or with friends and relatives. In terms of travelling purpose to the city centre and visiting its tourism attractions, visitors with business purposes had the higher mean age and educational level. In contrast, those visitors who came to city for the purpose of education and/or shopping had the lower mean age and educational level. Regarding the city centre travelling purposes of male and female visitors, males were more likely to engage in day trips to travel to the city centre, whilst females were more likely to travel to the city for sightseeing purposes. In terms of differences in type of transport visitors used to get into the city centre, female visitors were more likely to use the tram to travel to the city centre than male visitors. They also preferred to explore the city centre and access its tourist attractions by tram, while male visitors overwhelmingly chose walking to move throughout the city centre. In relation to the past frequency of visit to the attractions, female tourists were more likely to be on their first visit to a city centre attraction while male visitors were more likely to be returning particularly more than two times. In addition, in most cases female visitors were more likely to plan their visit to the attraction around sightseeing activities. However during their visit males were shown to be more likely to be interested in walking activities in contrast to female visitors.

7.2.1.2 Relationship between tourist socio-demographic and perception factors

The result of this study confirmed the theory that overseas’ visitors with different socio-demographic backgrounds exhibit differences based on reported attitudes, interests and opinions regarding tourist products throughout city centre attractions.
In terms of perception of visitors toward the study locations, the results of this study revealed that female visitors and visitor with higher mean age perceived city centre attractions to be more attractive. Consequently, they were seemingly less likely to wish being somewhere else while visiting CBD attractions than others. Further, females were more likely to prefer locations with recreational attractiveness whilst males were more likely to prefer to visit locations seen as having cultural attractiveness. Highly educated visitors were also more likely to prefer to visit locations seen as having cultural attractiveness than low educated tourists.

However, in terms of the quality of tourist products throughout city centre attractions includes location of attractions, cost of visit and amount of space, there was a relationship between socio-demographic characteristics and attitude of visitors. Female visitors and visitor with higher mean age were more likely to notice a lack of space and perceive the attractions as crowded. On top of this, visitors with higher mean age were more likely to perceive the locations of attractions as somewhat inconvenient. There is also a significant relationship between education and feelings of farness, whereby increasing the level of education visitors were less likely to perceive the location as too far. This might be as a result of higher rates of staying in CBD accommodations by highly educated visitors. Additionally, females as well as lower mean education visitors were more likely to think that visiting attractions costs too much money.

7.2.1.3 Relationship between tourist socio-demographic characteristics and satisfaction level

The result of the study determined that overseas visitors with different socio-demographic backgrounds exhibited differences in satisfaction levels regarding the availability and quality of tourist products throughout city centre attractions. In this study it was found that female and visitor with higher mean age were more likely to be satisfied with CBD attractions overall. Female visitors were also more likely to be satisfied with the operation hours of attractions than male. In addition, increasing visitor age also led to an improvement in satisfaction with the variety of activities in general. It was also shown that by increasing age and education levels, satisfaction levels regarding overall cleanliness of locations also increased, as well as safety condition satisfaction. Moreover,
by increasing the education level of visitors, satisfaction in regards to attractiveness and amount of space increased.

### 7.2.1.4 Relationship between tourist socio-demographic characteristics and movement patterns

This section highlights the finding from the influence of socio-demographic characteristics on movement patterns of visitors at both the macro and micro level. This may in fact be a result of differences in travelling requirements, as well as individual preferences related to tourist destinations. It is contended that these factors should be a significant consideration in destination management.

In terms of movement patterns of visitors within the Melbourne city centre area (macro level), male and higher mean age and education visitors were more likely to move with a plan. More specifically, they were more likely to move to a specific destination whilst visiting the city centre than others. On the other hand, female visitors and visitors with lower mean age and education were more likely to move all over the city centre, not being entirely sure about their next destination. In terms of the length of track visitors have travelled around the city centre, female visitors explored the city centre more widely than males. Direction of movement is also found to be dependant on the factor of age. Visitors with lower mean ages were more likely to move anti-clockwise whilst visitors with higher mean ages were more likely to have clockwise movement. In terms of territorial models discussed in section 2.3.1.2, visitors with higher mean age and education were more likely to travel within a convenient distance to their accommodation (Convenience-based Movement Patterns). By comparison, visitors with lower age and levels of education were more likely to explore a destination more widely and travel a further distance away from their accommodations (Wide Movement Pattern).

At micro level in which the movement of visitors inside the CBD attractions was considered, it has been found that visitors with lower mean ages were more likely to explore the city centre attractions more widely, whilst visitors with higher mean ages were more likely to have limited movement within the Melbourne city centre attractions.
7.2.2 Determining the influence of cultural characteristics on international tourists' spatial behaviour patterns

The influence of cultural background characteristics on tourists’ spatial behavioural patterns has been investigated through this study. The assumption of this study was that the Hofstede (1980) cultural dimensions of power distance, individualism/collectivism, masculinity/femininity and uncertainty avoidance has an influence on tourists’ spatial behaviour patterns, which may result in various travel needs and preferences. These needs and preferences are important for destination management in order to enhance holiday satisfaction of international tourists and market them more effectively as well as providing the necessary services and facilities for future tourism. The following section’s highlighted the findings of the study in regards to different behavioural pattern of tourists from diverse cultures.

However, although the results of the current study revealed differences between social and cultural groups of visitors in regards to their travel behaviour, the differences might be smaller than expected due to increasing cultural exchange made possible by growing population levels and mass immigration.

7.2.2.1 Relationship between tourist cultural background and travel characteristics

The influence of cultural background characteristics on visitors travel lifestyle has been found in relation to accommodation locations, travelling purpose, mode of transport used to travel, travel companions and number of visit. In terms of travel preferences of visitors from different cultural backgrounds, it was concluded that visitors who preferred to stay in city centre accommodation were more likely to be from collectivism and low power distance cultures than those who preferred to stay outside the city centre. In terms of city travelling purpose, visitors from collectivistic and high power distance cultures were more likely to travel to the city for educational and/or business purposes whilst visitors from individualistic and small power distance cultures were more likely to travel to the city for general holidaying purposes.
In relation to the type of transport used by visitors to travel to the city centre and move within it, visitors from strong uncertainty avoidance, collectivism and high power distance cultures were considered more likely to prefer travelling to the city by car, whilst visitors from low uncertainty avoidance, individualism and small power distance cultures appeared to prefer walking to get to the city itself. Visitors who used tour buses had also higher collectivism and uncertainty avoidance means.

In regards to travelling companions, visitors accompanied by a spouse/partner or children were more likely to be from individualistic and weak uncertainty avoidance cultures whilst visitors who travelled with friends or relatives were more likely to be from collectivistic and high uncertainty avoidance cultures. In addition, visitors from collectivistic cultures were more likely to be on their return visit, with those having visited the location more than two times better represented in the findings. Visitors from individualistic cultures were, by contrast, more likely to be on their first visit.

7.2.2.2 **Relationship between tourist cultural background and perception factors**

This section presents the finding regarding the influence of cultural background characteristics on overseas visitors’ perception and attitude toward the Melbourne city centre attractions. It has been found that visitors with dissimilar cultural backgrounds exhibit differences, based on reported interests and opinions, regarding various tourist products found throughout Melbourne’s city centre attractions.

There were a strong pre-existing relationship between attractiveness preferences and power distance, individualism/collectivism, femininity/masculinity and uncertainty avoidance scores. As power distance and collectivism increases, visitors became more likely to prefer locations with natural beauty. Moreover, with increasing the power distance, individualism and masculinity scores, visitors became more likely to be interested in attractive, recreational locations. In contrast, with increasing the level of uncertainty avoidance and visitors were less likely to prefer location with natural beauty and recreational attractiveness to visit.
In terms of visitors' perception regarding the quality of tourism services and facilities throughout Melbourne's city centre, individualistic, masculine and low power distance visitors were more likely to perceive activities available at CBD attractions as 'interesting'. This might be the reason why interestingly, by increasing the power distance, collectivism and femininity, visitors were significantly more likely to prefer being elsewhere, whilst visiting Melbourne city centre attractions. However, visitors from strong uncertainty avoidance also appear to be more interested in being somewhere else, whilst visiting Melbourne city centre attractions. In addition, visitors from high power distance and masculine culture were more likely to perceive the amount of space available at various locations as appropriate. Moreover, by increasing power distance scores, visitors were more likely to perceive the location of CBD attractions as inconvenient or too far away. Strong uncertainty avoidance visitors were also more likely to perceive opening times and costs of visits to attractions as convenient.

7.2.2.3 Relationship between tourist cultural characteristics and satisfaction level

Overseas visitors with different cultural backgrounds exhibited differences based on satisfaction levels regarding the overall cleanliness, safety conditions, hours of operation, variety of activities, and availability of information desks at attractions. The results of the statistical analyses indicated that visitors from low power distance and feminine cultures were more likely to be satisfied with the overall cleanliness and availability of information desks at attractions than visitors from high power distance and masculine cultures. Visitors from individualistic culture were also more likely to be satisfied with availability of information centres at various attractions as well as safety conditions than collectivistic culture. Interestingly, an increase in femininity and individualism revealed also an increase in satisfaction with hours of operation and variety of activities available at various study locations.
7.2.2.4 Relationship between tourist cultural characteristics and movement patterns

The results of this study show that cultural background characteristics of visitors have an influence on their movement patterns at both macro and micro levels. In terms of the influence of cultural background characteristics on macro level movement patterns in which movement of visitors around the city centre were considered, the result was shown that visitors from high power distance and strong uncertainty avoidance cultures were more likely to have a planned destination for their movement rather than exploring a location without a specific destination in mind. In contrast, visitors from low power distance and weak uncertainty avoidance cultures were more likely to travel all over the city centre in their visit to the CBD. This might further explain why at this level visitors from low power distances explored the city centre more widely than visitors from high power distance cultures. There was also a correlation between the length of travel tracks visitors created within the Melbourne city centre and their individualistic/collectivistic and femininity/masculinity characteristics. It was concluded that individualistic and feminine visitors moved through the Melbourne city centre more widely than collectivistic and masculine visitors. In terms of relationship between direction of movement within the Melbourne city centre and cultural characteristics, visitors from collectivistic and masculine cultures were more likely to move clockwise, whilst individualistic and feminine visitors were more likely to move anticlockwise.

Additionally, at this level, individualistic and weak uncertain avoidance visitors were more likely to travel by way of multiple stopover movement patterns than those from collectivistic and strong uncertainty avoidance culture. On the other hand, they were more likely to visit suburban attractions before arriving at the city centre or have a plan to go to a suburban attraction after visiting city centre attractions. However, visitors from high uncertainty avoidance, masculine and collectivistic cultures were more likely to follow single point-to-point patterns in which a single destination is visited and the return home without any diversions in the visitation process than their individualistic and feminine counterparts. When the territorial models were taken into account, it was concluded that visitors from how power distance and strong uncertainty avoidance cultures were more likely to travel by way of convenience-based movement pattern, whilst visitors with low power distance and
uncertainty avoidance culture were likely to explore a destination widely and travel far away from their city or suburb accommodations (Wide Movement Pattern). Individualistic visitors were also more likely to travel in a “Convenience-based Movement” pattern. Collectivistic visitors, by contrast, were more likely to travel in a “Wide movement” pattern far away from their accommodation.

The movement patterns of visitors inside the city centre attraction (micro level), was also influenced by their cultural background characteristics. Visitors from high power distance cultures were likely to explore the attractions more widely than visitors from low power distance cultures.

7.3 IMPLICATIONS OF THE STUDY

Tourism is one of the largest industries in Australia as well as in many other countries. The benefits of this industry are significant all around the world. Cultural characteristics are definitely a variable to be considered by tourist management bodies within the tourism industry. Cultural research in the tourism industry is requisite to adopting effective strategies for proper management, as guests and even hosts are, for the most part, culturally diverse. Hence, tourist managers must consider visitors’ needs and preferences through an understanding of their indigenous culture, values and lifestyles in order to develop and provide better products and services. Understanding cultural differences and then providing quality services that meet customer expectations are essential in the construction of tourist destinations (Mok and DeFranco, 1999). At present, many organisations within the tourism industry have recognised that cross-cultural understanding gives destinations more opportunities to develop market segments. Kim and Lee (2000) considered that cultural understandings in tourist motivations may encourage more participation of diverse cultural groups in tourism facilities. They also emphasised that the tourism industry should adopt a broad range of users, taking into account their cultural values, preferences and behaviours.

Previously, researchers have found that different nationalities and ethnicities displayed different travel behaviours and preferences. However, the findings of this research revealed
that there are significant differences in the travel behaviour of visitors from diverse cultures. Tourist managers should take these points into consideration as they develop new products and services to extend current and potential markets. In this way the targeting of international tourists, products and services may need to be customised for each visitor’s ethnic group, and may even depend on the cultural characteristics of the groups concerned. Tourism products in any given region can be enhanced through the application of identified needs and preferences. In doing so, tourist managers, such as operators and information officers, can utilise tourist travel needs and preferences to offer enhanced tourism opportunities to particular tourist segments when planning or marketing certain tourist destinations. Such a method would also assist tourism managers in deciding how to manage an attraction and what activities could be arranged for various groups of visitors. Furthermore, the discovery of significant spatial behaviour patterns of tourists would enable tourism managers to better understand what type of tourists are the most frequent visitors of city centre attractions, as well as how tourists consume a particular attraction, and how they might develop an itinerary for their trip. In this way they might be able to inform tourists about related attractions and facilities and provide complementary material to the tourists themselves.

People working outside the tourism industry can also benefit from this research. For example, the travel patterns of tourists developed in this thesis can be applied to city centre transportation planning for future infrastructures. A review of tracking and survey techniques can provide guidance in other research projects that aim to study how the people move and behave. Academic people such as psychologists and social scientists can review socio-demographic and cultural information and determine if there are any individual differences associated with particular needs.

7.4 LIMITATIONS OF THE RESEARCH

7.4.1 Limitations with the approach

The application of tracking technologies is largely depend upon research objectives. Perhaps in this study the single most limiting factor in using self-administered questionnaires was
acquiring actual tracks tourists have made, which would in turn allow for a better assessment of their behavioural patterns. The movement tracking technique of the self-administered questionnaire proved to be a suitable method for obtaining tourist movement data at the macro level. However, for the movement of tourists at the micro level, there are fundamental limitations with this method in terms of determining tourism movement behaviour. Factors such as where tourists actually go inside the attractions, direction and pattern of movement are still relatively unknown. The results from the investigation into the advantages and disadvantages of techniques for tracking the spatial movement of tourists within the built environment conducted in chapter 3 showed that modern technologies such as GPS or mobile phone tracking or a combination of several tracking techniques might strengthen the overall tracking process.

7.4.2 Limitations of the survey design

In order to identify the differences in behavioural pattern of visitors, although the questionnaire were kept as short as possible, the survey instrument still contained a large number of questions (32 questions), which may have decreased the accuracy of the data due to the some respondents getting distracted. Conducting individual in-depth interviews or focus groups prior to the survey may have proved useful to reduce the number of questions, and to improve the reliability of the results. Tourist spatial and social abilities, knowledge of the region they are visiting, individual motivation, spatial constraints and the configuration of the built environment are the factors that might have influence on visitors behavioural patterns. However although these variables might be influential, this thesis did not reflect on them.

In this study nationality was presented as a factor to measure cultural influence, which may be only one of the many factors that have an influence on the individual’s personal culture. These may include, but are not limited to, language, nationality, ethnicity, education, profession, religion, family, gender, social class and corporate and organisational culture (Usunier, 1996).
7.4.3 Limitations of the survey implementation

In this thesis, the survey was conducted within limited locations in the Melbourne city centre. Therefore, the results are that each location may only incorporate a small section of what is a larger potential tourist site and, as such, be overlooked as a potential location. In particular, it will be necessary to investigate more carefully the actual tourist sites in the region in order to ascertain how socially and physically prominent the features are. Likewise, it should be noted that each particular attractions has different attributes meaning. However, the current study has not made clear whether tourists’ behaviour differ from attraction to attraction. Additionally, as the questionnaires were primarily administered in situ, views on tourist behaviour and perception were obtained only for particular tourists who were both financially and physically able to visit such attractions. Therefore, the samples of this study may not be representative of the broad population of overseas tourists in terms of age, gender, educational level, and so on. In other words, this study may, in some way, be biased towards a certain type of tourist.

Whilst these data sets were acquired over the autumn period, there still needs to be some travel and movement behavioural assessment, as well as a scrutiny of attitudinal and satisfaction levels under differing weather conditions at various time of the year. In addition, different tourist types would visit the region at different times of the year. For example, during school holidays it is expected that children and their guardians would be visiting the area more frequently. Tourists of various lifecycle cycles could exhibit vastly different behaviours. Take, for instance, young children, whose desires are inherently different to those of their grandparents. Or, consider groups of families who have different requirements to individual visitors. However, as the surveys were conducted in the year’s least busy time period there were not enough sample from various life style cycle, therefore, it does not corporate into the data analysis.

7.4.4 Limitations of analysing methods

Different types of data analysis need different sample sizes. For example, one important issue for chi-square utilisation is sample size. When the sample size is small, the accuracy of
residual and component chi-square statistics may become negatively affected (Kennedy, 1992). In particular,

when the frequencies of data are zero, the log of zero will be $-\infty$. Consequently, the likelihood ratio chi-square becomes meaningless. Agresti (1990) suggests adding an extremely small constant (such as 10-8) to the cell frequencies. This method can overcome the difficulties of the chi-square, but if zero is recorded too often as the frequency of behavioural variables, the expected frequencies of behavioural variables will converge to zero during iterative fitting. Therefore, a larger sample size is required (Kennedy, 1992). In this study, 278 self-administered questionnaires were collected from overseas visitors to Melbourne’s CBD and incorporated into data analysis. The sample sizes were suitable for most analyses conducted in this thesis based on socio-demographic and cultural characteristics. However for classify and identify differences between tourist groups, based on the travel behavioural characteristics or various type of attraction a larger sample size is required.

7.5 AREAS FOR FURTHER RESEARCH

Recommendations for future study have been made through the findings and limitations of this study. This study provides some baseline data on visitor behaviour throughout the study area, as well as some of the social data relating to visitor wants and needs. This thesis has uncovered a number of areas where further research is required.

New navigation technologies could dramatically change the way researchers track movement, and so the next research stage should apply modern technologies such as Personal Digital Assistants (PDAs) which independently record time and location. This can then be combined with questionnaires to support movement tracking and decision-making processes at various spatial scales. In addition, in section 2.3.2.2 it was noted that tourist spatial behaviour is subjective and may vary according to an individual’s past frequency of visit, the social structure of the groups they visit with, their experience with either the activity or the setting, their attachment to the place and their environmental awareness and level of concern
(Lew and McKercher, 2006). However, no attempt has been made in the questionnaire analysis to segment the tourists’ responses and match these with variables such as whether the individual was travelling as part of a group or individually, levels of knowledge of the tourist destination, previous visits to the site and so forth. Indeed, it may be possible for future research to explore the development of tourists’ potential needs and preferences for these variables to make a comparison of these. How long a tourist stays in his or her own destination can also affect their behavioural patterns. Therefore, future research could extend the present study to look at patterns of travel in terms of time of residence in Australia. It is hoped that this may lead to different results from the current study.

Melbourne’s city centre was used as a study area because of its popularity as a tourist destination. This tourism destination provided an excellent study area which is culturally, historically and environmentally rich. The Melbourne city centre offers a large number of built attractions. These attractions are characterised by unique architectural designs and methods of operation. However, at no point did this thesis enter into a discussion examining the attributes of the study locations, in order to determine visitors’ behavioural pattern at various type of attractions. Therefore, it may be useful to extend further this research by comparing visitors behavioural pattern at various CBD attractions in an attempt to identify whether there is a relationships between tourist spatial behaviour patterns and the surrounding environment. For example, how will the variation of attraction within the city centre affect the spatial movement sequence of tourists? Is there any association between types of attractions and tourists’ movement and behaviour patterns? Is there any association between attraction facilities and visitor movements? Can the number of attractions visited by tourists during a single day trip affect spatial movement? In addition, there is no reason to doubt that developed travel preferences could be applied more widely than just to the built-up environments in Melbourne’s CBD. For example, tracking the spatial behaviour of visitors could be made possible in both urban and rural tourist contexts, in order to better understand the tourists’ travel needs and preferences.

The questionnaires were administered at one time period in the year throughout Melbourne city centre area. It could be expected that different tourist types would visit the region at different times of the year. Future research into obtaining spatial behaviour at various times
of the year would benefit potential tourist needs and preferences. Moreover, comparisons of movement and behavioural patterns in different seasons could be the subject of further research.

Finally, recommendations into maintaining and developing comprehensive behavioural data sets and cultural indicators for tourists and facilities are reinforced through research such as this. Whilst it is acknowledged that only part of this relationship has been uncovered by this research, there is a clear need to more fully quantify tourist behaviour to enable this relationship to be further understood. Future research should include developing better estimates of actual tourist movement and behaviour – particularly at micro level – and developing more objective methods for ascertaining tourist needs and preferences.

### 7.6 DID THE STUDY MEET ITS OBJECTIVES?

The main objective of this research was to develop a methodology for determining the spatial needs of tourists in built environments. In order to ascertain whether this was possible, it was necessary to first uncover answers to the following research questions:

1. What is “tourism”, who is a “tourist”, and where is a “tourism destination”? 
2. What does “spatial behaviour” refer to? 
3. What factors affect an individual’s spatial behaviour? 
4. Does cultural difference result in differences in spatial behaviour? 
5. What do we mean by “culture” and how do we measure it? 
6. What cultural similarities and differences exist? 
7. How can we identify/record spatial movement in built environments?
The first research questions dealt with the terms “tourists”, “tourism” and “tourism destinations”, which have thus been defined in Chapter 2. Throughout this chapter, spatial behaviours and needs have also been discussed, which answered the second research question of the study. Spatial behaviour patterns of tourist in tourism destinations have been considered at two different scales – macro and micro. Various models studied by other literatures have been explored throughout this chapter. As the third and forth research questions dealt with the factors that might influence such patterns, Chapter 2 also reviewed the individual and physical factors that could affect tourist spatial movement patterns, such as configuration of physical environment, socio-demographic and cultural background characteristics. The belief that culture has an important effect on tourist behaviour was further discussed in this chapter by looking at the difference between leisure and recreational patterns of different nationalities. Cross cultural studies into choosing a tourist destination were also discussed as incorporating the objectives of the study. Chapter 6 also answered the forth research question, which clarified the relationship between the roles of culture and tourists spatial behaviour pattern.

In order to answer the fifth research question, the term “culture” was defined in Chapter 2. For the second part of this research question, Hofstede (1980, 1983) theories have been discussed in Chapter 2 to attempt to measure national culture and explain basic cultural differences at the levels of the individual and collective. This model distinguishes cultures according to four dimensions of Power Distance, Individualism/Collectivism, Masculinity/Femininity and Uncertainty Avoidance. Each dimension was reviewed in this chapter in order to represent the culturally similarities and differences among the nations which answered sixth research questions.

The seventh research question regarding the tracking of tourists within built environments was answered in Chapter 3. First, the data required to study the spatial behaviour of tourists at both the macro and micro level has been defined. Then, the appropriate techniques for acquiring this data within the built environment were investigated. The advantages and disadvantages of the technique were discussed and suitable applications for the techniques were presented. Finally, the data collection step of the case study in Chapter 5 applied the
tracking techniques of the self-administered questionnaire to acquire tourist behavioural data at both the micro and macro level.

By addressing all of the research questions it can be seen that the primary objective of acquiring spatial behaviour of tourists, involving a method of identifying tourist spatial needs, has been satisfied.

### 7.7 CONCLUSIONS

In conclusion, this thesis has established a methodology for determining spatial needs of tourists in a tourist destination. A case study undertaken on Melbourne city centre was used to apply and evaluate methods and theories related to the spatial behaviour of international tourists from diverse cultures. The methodology used in this thesis involved self-administered questionnaires, which was then combined with cartographic maps, GIS and SPSS techniques. The self-administered questionnaires acquired tourist spatial movement data as well as socio-demographic information – data which could in fact affect tourist spatial movement patterns. GIS was the platform for visualising and measuring the movement data of tourists collected from the questionnaires’ maps. The method draws upon the SPSS program, which is used to determine variables that exhibit optimal differences in various visitor groups.

This study investigated the factors that influence tourist spatial behaviour, including the ethnic backgrounds and socio-demographic characteristics. A number of relationships sought to investigate the series of effects from the point of view of socio-demographic and the cultural characteristics on travel behaviour patterns. One was the relationship between travel behavioural pattern and socio-demographic characteristic, which was unexpectedly strong. Another was the relationship between cultural and behavioural characteristic, in which the connection was also strong. The results identified a marked difference in social and cultural background characteristics, which in turn had a strong effect on travel behaviour.
The findings of this thesis can assist tourist managers in designing tour itineraries and packages that may support tourist organisations in improving the management of their facilities. A range of tourist products can be developed to suit the desires and fitness requirements of different types of tourists. This methodology can also be used to further clarify and develop the knowledge of tourist movements and behaviours. However, putting the results of previous research and the current study together, it would appear that there is no absolute or definitive method to determine the needs of visitors. Indeed, such needs can be diverse depending on the many factors, such as physical configurations of destinations, differences in trip profile, prior visitation, time of residence, personal motives economic and so on. Hence, constant and varied behavioural studies should be conducted to meet changing consumer expectations and needs.
REFERENCES


Arrowsmith, C. and Chhetri, P. 2003, *Port Campbell National Park: Patterns of Use*. A report for the development of visitor typology as input to a generic model of visitor movements and patterns of use, Department of Geospatial Science, RMIT University, Melbourne, Victoria


Gudykunst, W.B. and Ting-Toomey, S. 1988, *Culture and interpersonal communication*, Sage, Thousand Oaks, USA.


Hanson, S. and Hanson, P. 1981, ‘The travel-activity patterns of urban residents: dimensions and relationships to socio-demographic characteristics’, *Economic geography*, vol. 57, no. 4, p. 332-47.


Hofstede, G. 1980, Culture’s consequences: international differences in work-related values, Sage, Newbury Park, USA.


Janowsky, D. and Becker, G. 2002, ‘Recreation in urban forests: Monitoring specific user groups and identifying their needs with video and GIS-support’, *Conference proceedings of the Monitoring and Management of Visitor Flows in Recreational and Protected Areas*, Bodenkultur University, Vienna, Austria, p. 296-301.


Kim, S., and Prideaux, B. 1996, ‘Korean Inbound Tourism to Australia a Demand Side Analysis’, *Occasional Paper*, Department of Business Studies, University of Queensland, Brisbane, Australia.


Tourism Australia 2006, *Forecast: the Fourth Release from the Tourism Forecasting Committee*, Tourism Australia, Canberra.


Tourism Australia 2007, ‘Forecast - the Fourth Release from the Tourism Forecasting Committee’, April 2007, Canberra, Australia.


USTTA 1984a, ‘A Survey of Potential Vacation Travelers to the U.S. from Britain, West Germany, and France’, Conducted by the Gallup Organization, for the USTTA, United States Travel and Tourism Administration, Washington DC.

USTTA 1984b, A Survey of Potential Vacation Travelers to the US from Australia and Japan, Conducted by the Gallup Organization for the USTTA, United States Travel and Tourism Administration, Washington D.C.


Walker, K. 2006, Melbourne, Gareth Stevens, Strongsville, USA.


Zhang, J., Inbakaran, R. J. and Jackson, M. S. 2006, ‘Understanding community attitudes towards tourism and HostGuest interaction in the UrbanRural border region’, *Tourism Geographies*, vol. 8, no. 2, p. 182-204.


5th June 2007

Sabereh Dejbakhsh
GPO Box 2476 V
Melbourne 3001

Dear Sabereh

BSETAPP 11 – 07 DEJBAKHSH Determining the spatial needs of international tourists

Thank you for submitting your amended application for review.

I am pleased to inform you that the committee has approved your application for a period of 12 Months to June 2008 and your research may now proceed.

The committee would like to remind you that:

All data should be stored on University Network systems. These systems provide high levels of manageable security and data integrity, can provide secure remote access, are backed up on a regular basis and can provide Disaster Recover processes should a large scale incident occur. The use of portable devices such as CDs and memory sticks is valid for archiving data transport where necessary and for some works in progress;
The authoritative copy of all current data should reside on appropriate network systems; and the Principal Investigator is responsible for the retention and storage of the original data pertaining to the project for a minimum period of five years.

Annual reports are due during December for all research projects that have been approved by the Human Research Ethics Sub-Committee.

The necessary form can be found at:
http://www.rmit.edu.au/rd/hrcc

Yours faithfully,

Associate Professor Barbara Polus
Chair, Science Engineering & Technology Portfolio
Human Research Ethics Sub-Committee B
Appendix 2 - Questionnaire administered to Melbourne city centre visitors

Invitation To Participant In A Research Project

Project Title:

Determining the spatial needs of the international tourist

Investigator:

- Ms Sabere Dejbakhsh (Geospatial science master degree student)
- Dr Colin Arrowsmith (project supervisor: Assistant Professor, Geospatial science, RMIT University)

Dear participant

You are invited to participate in a research project being conducted by RMIT. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask the investigator.

- **Who is involved in this research project? Why is it being conducted? What is the project about?**

My name is Sabere Dejbakhsh and I am doing Masters by research at RMIT University in the School of Mathematical and Geospatial Science. I am currently undertaking a project to understand how tourists use the Melbourne Business District and what their needs are. The project is under the supervision of Dr Colin Arrowsmith and the project has been approved by the RMIT University Human Research Ethics Committee.

- **If I agree to participate, what will I be required to do?**

Your participation in this research will involve filling in a questionnaire designed to ascertain basic behaviour patterns. The questionnaire will take approximately 10 minutes of your time. The questionnaire is designed to find out more about how you move about inside the specific tourist attraction, mentioned on the top of the questionnaire which you have just visited. You will be asked to complete a number of questions that relate to how you feel about specific facilities and activities at that location. You will be asked to draw on a map of the site, an approximate outline of how you moved within that location. You
will also be asked to recall where you previously visited and to where you are next visiting today.

- **What are the risks or disadvantages associated with participation?**
  There is no risk or disadvantage for participants in this project.

- **What are the benefits associated with participation?**
  The final results will quantify and classify tourists utilizing cultural backgrounds, tourist group style, movement patterns and motivation for visit. The data will provide the means to manage resources for future sustainable tourism and to increase tourist satisfaction on trips to Melbourne.

- **What will happen to the information I provide?**
  The collected data will be analysed and reported in my thesis. However, because the data will be aggregated, no individual responses will be identified and therefore your anonymity will be protected. All individual survey forms will be destroyed at the end of the research.

- **What are my rights as a participant?**
  You have been selected randomly and you have right to withdraw your participation at any time without prejudice. You have also the right to have any questions answered at any time.

- **Whom should I contact if I have any questions?**
  If you have any queries regarding this project please contact Sabere Dejbakhsh on (03)9925 3277, S3117725@student.rmit.edu.au or Dr Colin arrowsmith on colin.arrowsmith@rmit.edu.au

Yours sincerely

---

Sabere Dejbakhsh  
B.Eng Agriculture (Tabriz)  
(HIE), PhD (RMIT)  

Dr Colin Arrowsmith  
BSurv, MSurvSc, MEnvS (Melb), GradDipEd

---

Any complaints about your participation in this project may be directed to the Secretary, RMIT Human Research Ethics Committee, University Secretariat, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 1745.
Office use only

Location: _______________

Date: _______________  Time: ____________

1) Gender

☐ Male  ☐ Female

2) Age (optional): _______ years

3) Nationality _____________________________

4) Current Country of Residence _____________

5) Country of birth _________________________

6) Which describes the highest level of education you have reached?

☐ Primary  ☐ Secondary  ☐ post secondary  ☐ Tertiary

7) How long have you been in Australia?

☐ Less than one week  ☐ 2-4 weeks

☐ 1-2 week  ☐ One month and more
8) Which life style cycle best describes you?

- [ ] Young single
- [ ] Mature family (children older than 15)
- [ ] Young couple/no children
- [ ] Old couple/no children at home
- [ ] Young family (children younger than 6 years)
- [ ] Middle family (children 6-15)
- [ ] Mature single

9) With whom did you travel to this location?

- [ ] Travelling alone
- [ ] Travelling with spouse/partner and children
- [ ] Travelling with friends/relatives
- [ ] Travelling in organised group/club
- [ ] Other ________________

10) If you are staying outside the city what form of transport did you use to get into the city?

- [ ] None, stayed in the city
- [ ] Car
- [ ] Tour bus/coach
- [ ] Public transport (tram, train, taxi or bus) specify__________
- [ ] Walk
- [ ] Other (please specify) ___________

11) Why are you travelling to the city today?

- [ ] Business
- [ ] Educational
- [ ] A day trip as a part of a longer holiday
- [ ] A holiday in which you stayed in or near the city at least one night or longer
- [ ] Shopping
- [ ] Sightseeing

12) What was your previous location before coming to this location?

____________________________
13) What form of transport did you use to travel to this location from your previous location?

- [ ] Car
- [ ] Tour bus/coach
- [ ] Public transport (tram, train, taxi or bus) specify__________
- [ ] Walk
- [ ] Other (please specify) ___________

14) What other locations are you going to visit today? (If applicable)

_________________________

15) Including today’s visit, how many times have you visited this location?

- [ ] Once
- [ ] Twice
- [ ] More than twice

16) What recreational activities have you planned for your visit?

- [ ] Walking
- [ ] Shopping
- [ ] Eating
- [ ] Sightseeing (Cultural or historical)
- [ ] Other (please specify) ____________
Rate the following statements:

(Circle a number between 1 and 5, which describe your state of mind while in this setting).

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Average</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>17) This tourist attraction is very attractive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18) I chose this location for its natural beauty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19) I am having a pleasant experience at this location</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20) I like this location for its cultural attractiveness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21) I wish I could be somewhere else</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22) I like this location for its recreational attractiveness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23) I am enjoying being here</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24) I like this location for its public facilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25) This place is crowded</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26) A visit here costs too much</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27) This place is too far away</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28) Opening times are inconvenient</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29) Activities here are not interesting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
For this location/attraction, circle your response to the following:

<table>
<thead>
<tr>
<th>Question</th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>30) Overall Cleanliness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31) Variety of activities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32) Safety conditions (including feeling of security)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33) Public facilities (eg, Restrooms, toilets)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34) Amount of space (lack of crowdedness)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35) Attractiveness of location</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36) Parking area</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37) Hours of operation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38) Information centres</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

39) How would you rate this place overall?

- [ ] Excellent
- [ ] Good
- [ ] Fair
- [ ] Poor

40) Please draw an outline of your plan around this location on the map over the page.

Thank you for your time
Melbourne city centre

Crown Casino
Queen Victoria Market

Old Melbourne Gaol
Fitzroy Gardens

 Carlton Gardens
Appendix 3 - Hofstede country scores

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>Abbreviation</th>
<th>PDI</th>
<th>IDV</th>
<th>MAS</th>
<th>UAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>ARG</td>
<td>49</td>
<td>46</td>
<td>56</td>
<td>86</td>
</tr>
<tr>
<td>Australia</td>
<td>AUL</td>
<td>36</td>
<td>90</td>
<td>61</td>
<td>51</td>
</tr>
<tr>
<td>Austria</td>
<td>AUT</td>
<td>11</td>
<td>55</td>
<td>79</td>
<td>70</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>BAN</td>
<td>80</td>
<td>20</td>
<td>55</td>
<td>60</td>
</tr>
<tr>
<td>Belgium</td>
<td>BEL</td>
<td>65</td>
<td>75</td>
<td>54</td>
<td>94</td>
</tr>
<tr>
<td>Brazil</td>
<td>BRA</td>
<td>69</td>
<td>38</td>
<td>49</td>
<td>76</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>BUL</td>
<td>70</td>
<td>30</td>
<td>40</td>
<td>85</td>
</tr>
<tr>
<td>Canada</td>
<td>CAN</td>
<td>39</td>
<td>80</td>
<td>52</td>
<td>48</td>
</tr>
<tr>
<td>Chile</td>
<td>CHL</td>
<td>63</td>
<td>23</td>
<td>28</td>
<td>86</td>
</tr>
<tr>
<td>China</td>
<td>CHN</td>
<td>80</td>
<td>20</td>
<td>66</td>
<td>30</td>
</tr>
<tr>
<td>Colombia</td>
<td>COL</td>
<td>67</td>
<td>13</td>
<td>64</td>
<td>80</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>COS</td>
<td>35</td>
<td>15</td>
<td>21</td>
<td>86</td>
</tr>
<tr>
<td>Croatia</td>
<td>CRO</td>
<td>73</td>
<td>33</td>
<td>40</td>
<td>80</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>CZE</td>
<td>57</td>
<td>58</td>
<td>57</td>
<td>74</td>
</tr>
<tr>
<td>Denmark</td>
<td>DEN</td>
<td>18</td>
<td>74</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>Ecuador</td>
<td>ECA</td>
<td>78</td>
<td>8</td>
<td>63</td>
<td>67</td>
</tr>
<tr>
<td>Estonia</td>
<td>EST</td>
<td>40</td>
<td>60</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Finland</td>
<td>FIN</td>
<td>33</td>
<td>63</td>
<td>26</td>
<td>59</td>
</tr>
<tr>
<td>France</td>
<td>FRA</td>
<td>68</td>
<td>71</td>
<td>43</td>
<td>86</td>
</tr>
<tr>
<td>Germany</td>
<td>GER</td>
<td>35</td>
<td>67</td>
<td>66</td>
<td>65</td>
</tr>
<tr>
<td>Great Britain</td>
<td>GBR</td>
<td>35</td>
<td>89</td>
<td>66</td>
<td>35</td>
</tr>
<tr>
<td>Greece</td>
<td>GRE</td>
<td>60</td>
<td>35</td>
<td>57</td>
<td>112</td>
</tr>
<tr>
<td>Guatemala</td>
<td>GUA</td>
<td>95</td>
<td>6</td>
<td>37</td>
<td>101</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>HOK</td>
<td>68</td>
<td>25</td>
<td>57</td>
<td>29</td>
</tr>
<tr>
<td>Hungary</td>
<td>HUN</td>
<td>46</td>
<td>80</td>
<td>88</td>
<td>82</td>
</tr>
<tr>
<td>India</td>
<td>IND</td>
<td>77</td>
<td>48</td>
<td>56</td>
<td>40</td>
</tr>
<tr>
<td>Indonesia</td>
<td>IDO</td>
<td>78</td>
<td>14</td>
<td>46</td>
<td>48</td>
</tr>
<tr>
<td>Iran</td>
<td>IRA</td>
<td>58</td>
<td>41</td>
<td>43</td>
<td>59</td>
</tr>
<tr>
<td>Ireland</td>
<td>IRE</td>
<td>28</td>
<td>70</td>
<td>68</td>
<td>35</td>
</tr>
<tr>
<td>Israel</td>
<td>ISR</td>
<td>13</td>
<td>54</td>
<td>47</td>
<td>81</td>
</tr>
<tr>
<td>Italy</td>
<td>ITA</td>
<td>50</td>
<td>76</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>Jamaica</td>
<td>JAM</td>
<td>45</td>
<td>39</td>
<td>68</td>
<td>13</td>
</tr>
<tr>
<td>Japan</td>
<td>JPN</td>
<td>54</td>
<td>46</td>
<td>95</td>
<td>92</td>
</tr>
<tr>
<td>Korea, Rep.</td>
<td>KOR</td>
<td>60</td>
<td>18</td>
<td>39</td>
<td>85</td>
</tr>
<tr>
<td>Malaysia</td>
<td>MAL</td>
<td>104</td>
<td>26</td>
<td>50</td>
<td>36</td>
</tr>
<tr>
<td>Malta</td>
<td>MLT</td>
<td>56</td>
<td>59</td>
<td>47</td>
<td>96</td>
</tr>
<tr>
<td>Mexico</td>
<td>MEX</td>
<td>81</td>
<td>30</td>
<td>69</td>
<td>82</td>
</tr>
<tr>
<td>Morocco</td>
<td>MOR</td>
<td>70</td>
<td>46</td>
<td>53</td>
<td>68</td>
</tr>
<tr>
<td>Netherlands</td>
<td>NET</td>
<td>38</td>
<td>80</td>
<td>14</td>
<td>53</td>
</tr>
<tr>
<td>New Zealand</td>
<td>NZL</td>
<td>22</td>
<td>79</td>
<td>58</td>
<td>49</td>
</tr>
<tr>
<td>Norway</td>
<td>NOR</td>
<td>31</td>
<td>69</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>Pakistan</td>
<td>PAK</td>
<td>55</td>
<td>14</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>COUNTRY</td>
<td>Abbreviation</td>
<td>PDI</td>
<td>IDV</td>
<td>MAS</td>
<td>UAI</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Panama</td>
<td>PAN</td>
<td>95</td>
<td>11</td>
<td>44</td>
<td>86</td>
</tr>
<tr>
<td>Peru</td>
<td>PER</td>
<td>64</td>
<td>16</td>
<td>42</td>
<td>87</td>
</tr>
<tr>
<td>Philippines</td>
<td>PHI</td>
<td>94</td>
<td>32</td>
<td>64</td>
<td>44</td>
</tr>
<tr>
<td>Poland</td>
<td>POL</td>
<td>68</td>
<td>60</td>
<td>64</td>
<td>93</td>
</tr>
<tr>
<td>Portugal</td>
<td>POR</td>
<td>63</td>
<td>27</td>
<td>31</td>
<td>104</td>
</tr>
<tr>
<td>Romania</td>
<td>ROM</td>
<td>90</td>
<td>30</td>
<td>42</td>
<td>90</td>
</tr>
<tr>
<td>Russia</td>
<td>RUS</td>
<td>93</td>
<td>39</td>
<td>36</td>
<td>95</td>
</tr>
<tr>
<td>Salvador</td>
<td>SAL</td>
<td>66</td>
<td>19</td>
<td>40</td>
<td>94</td>
</tr>
<tr>
<td>Singapore</td>
<td>SIN</td>
<td>74</td>
<td>20</td>
<td>48</td>
<td>8</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>SLK</td>
<td>104</td>
<td>52</td>
<td>110</td>
<td>51</td>
</tr>
<tr>
<td>Slovenia</td>
<td>SLV</td>
<td>71</td>
<td>27</td>
<td>19</td>
<td>88</td>
</tr>
<tr>
<td>South Africa</td>
<td>SAF</td>
<td>49</td>
<td>65</td>
<td>63</td>
<td>49</td>
</tr>
<tr>
<td>Spain</td>
<td>SPA</td>
<td>57</td>
<td>51</td>
<td>42</td>
<td>86</td>
</tr>
<tr>
<td>Sweden</td>
<td>SWE</td>
<td>31</td>
<td>71</td>
<td>5</td>
<td>29</td>
</tr>
<tr>
<td>Switzerland</td>
<td>SWI</td>
<td>34</td>
<td>68</td>
<td>70</td>
<td>58</td>
</tr>
<tr>
<td>Taiwan</td>
<td>TAI</td>
<td>58</td>
<td>17</td>
<td>45</td>
<td>69</td>
</tr>
<tr>
<td>Thailand</td>
<td>THA</td>
<td>64</td>
<td>20</td>
<td>34</td>
<td>64</td>
</tr>
<tr>
<td>Turkey</td>
<td>TUR</td>
<td>66</td>
<td>37</td>
<td>45</td>
<td>85</td>
</tr>
<tr>
<td>United States</td>
<td>USA</td>
<td>40</td>
<td>91</td>
<td>62</td>
<td>46</td>
</tr>
<tr>
<td>Uruguay</td>
<td>URU</td>
<td>61</td>
<td>36</td>
<td>38</td>
<td>100</td>
</tr>
<tr>
<td>Venezuela</td>
<td>VEN</td>
<td>81</td>
<td>12</td>
<td>73</td>
<td>76</td>
</tr>
<tr>
<td>Vietnam</td>
<td>VTN</td>
<td>70</td>
<td>20</td>
<td>40</td>
<td>30</td>
</tr>
</tbody>
</table>