CHAPTER 2: LITERATURE REVIEW

This study adopts a multidisciplinary approach, looking at literature from various fields such as cultural geography, environmental psychology and forestry. This section presents a review of relevant literature in these fields, together with selected social and environmental psychological concepts and theories which will be used to facilitate an understanding and conceptualisation of how the forests are used and experienced. Therefore, this chapter is organised into four sections: (1) green space use, (2) people's attitudes to green spaces (including feelings), (3) recreational activities and patterns of recreational activity in green spaces, and (4) the impact of personal differences on people's experience. A great deal of the research regarding people's engagement with woodland and forests was done in the United Kingdom, Europe and North America, but few studies were carried out elsewhere. While the findings from previous researches may be relevant to an Asian context, it seems possible that the different environmental and cultural contexts found there would give rise to different outcomes. The literature is therefore presented with the caveat that it may or may not be relevant to a Malaysian context, and part of the purpose of the research reported in this thesis is to investigate its relevance in that context.

2.1 Physical Activity and Green Space Use

According to Pretty et al. (2005a), in the United Kingdom, there is evidence of a striking fall in physical activity over the past 50 years. The lack of exercise and sedentary lifestyles lead to many diseases such as obesity and coronary heart disease. The World Health Organisation (2009) stated that at least 2.8 million people around the world die each year as a result of obesity. There are many current researches related to physical activity and green space use that address this concern (for example, Michimi & Wimberley, 2012; Fan et al., 2011; Rung et al., 2011; Toftager et al., 2011).

The distance from a person's dwelling to the local green spaces is important in terms of his or her health and well-being (Nielsen et al., 2007; Coombes et al., 2010). Nielsen et al. (2007) found that in Denmark those who live a short distance (less than 300m) away from green spaces used them regularly, and had a lower likelihood of suffering from obesity and stress compared to those who

lived further away. Williams (1995) believed that parks for recreational purposes should be within a mile's radius. He also mentioned that "parks still remain important resources for the outdoor recreation of people of poorer status, especially those whose homes lack a private garden or who lack the means to travel more widely" (Williams, 1995, p. 168). Coles and Bussey's (2000) findings suggested that urban woodlands should within five to ten minutes' walk from home and the suitable size to create a woodland environment is a minimum of two hectares. Likewise, in Hong Kong, Jim and Chen (2010) suggested that local open spaces should be located within 400m from residents for easy access and to encourage use. Similar to Nielsen et al's (2007) study, Coombes et al. (2010) found that people who lived closest to green spaces in Bristol, England were more likely to achieve physical activity of at least 30 minutes of exercise five days per week. A recent study about the relationship between obesity, physical activity and natural amenities (physiography, land cover, climate and tourism employment) in non-metropolitan USA by Michimi and Wimberly (2012) found that the occurrence of obesity decreased and the tendency for physical activity increased with increasing levels of both recreational opportunities and natural amenities. The frequency of green open space use was found to drop with increasing distance (Nielsen, 2007; Coombes et al., 2010). These researches suggest that the provision of good access to green spaces in urban areas can help to encourage a population's physical activity. These studies also imply that people's use of green open spaces is affected by proximity. However, Michimi and Wimberley's (2012) study also highlighted the importance of recreational opportunities and natural amenities for physical activity.

In the United Kingdom, green exercise (activity in the presence of nature) is popular (Barton & Pretty, 2010), especially in the countryside (Pretty et al., 2005a). Pretty et al. (2005a) studied populations in England, Scotland, Northern Ireland and Wales in "green exercise" in the countryside using a questionnaire administered before and after the respondents had participated. They found that there was a significant improvement in self-esteem after green exercise, and respondents who exercised regularly were fitter and more satisfied emotionally.

Topography and physical features in urban parks also play a significant role in women's engagement in physical activity. Despite safety concerns, women made use of urban parks for physical exercise such as walking or running (Krenichyn, 2006). The researcher found that facilities in parks, such as rest rooms, were important to women who engage in physical activity in Prospect Park, New York. She also concluded that topography and physical features in the park such as hills, a continuous loop pathway and trails were the physical features that support women's engagement in physical activity.

To sum up, the evidence suggests that people use green spaces that are accessible and are close to their homes. In addition, physical features, such as pleasant topography, attract users to participate in physical activities.

2.2 Human Health and Green Space Use

According to the Strategic Review of Health Inequalities in England post-2010, Marmot Review, there is uneven distribution of mortality and morbidity as a result of cardiovascular disease and cancer among people living in the north of England who have low-incomes and belong to minority ethnic groups (Bambra et al., 2009). This was associated with unequal distribution of green spaces based on the socio-economic distribution of the population. Frumkin (2001) stated that human health can be enhanced by the positive health effects derived from four aspects of the natural world: animals, plants, landscapes and wilderness. For example, viewing nature from windows was a crucial factor in the residents' well-being and satisfaction in Ann Arbor, Michigan (Kaplan, 2001); and in employees' job satisfaction in Texas and the Midwest (Dravigne et al., 2008). A study by De Vries et al. (2003) in the Netherlands reported that people who lived in a greener environment believed that in general, they were healthier than those who lived in a less green environment. On the other hand, Mitchell and Popham (2008) compared income-related health inequality in nearly 400,000 deprived populations in England characterised by different amounts of green space such as parks, other open spaces and agricultural land, but excluding domestic gardens. They found that populations who had greater exposure to green space were more likely to be less deprived than those who had little exposure to such areas. They also found health inequalities related to income deprivation in all-

cause mortality were lower in populations who lived in the greenest areas. Research about the links between restorative environments and human health, such as the studies done by Korpela et al. (2010) and Van den Berg et al. (2010), is referred to in more detail later in this chapter.

Urban forests as a landscape type also provide a location for physical activities such as riding and walking (Milligan & Bingley, 2007). There is evidence that human interaction with vegetated urban landscapes, such as walking in forests for a short period (Hartig et al., 2003; Lee., 2001; Shin et al. 2010) is directly associated with improved human health and reduced health care costs (Escobedo et al., 2011). Walking among nature, helps to increase positive feelings by decreasing anger and aggressiveness (Hartig et al., 2003) and increasing the ability for cognitive tasks (Berman et al., 2008).

In Britain, an increasing number of people like to walk in the countryside as a leisure activity (Edensor, 2000). It is also the dominant activity in forests throughout Europe (Tyrväinen et al., 2009). Edensor (2000) discussed how walking can be a sensual experience and reflexive response to nature. Through the concept of "romantic walking", these sensations "can free the mind and generate reflexivity, whether through philosophical and intellectual thinking or aesthetic contemplation, states of mind that are believed to be difficult to achieve in an urban context" (p. 86). This means that "romantic walking" not only can give health benefits, it can also bring restorative and well-being benefits to the walker in terms of "contemplative", "spiritual" or aesthetic experiences. "Romantic walking" (Edensor, 2000) in the countryside first emerged in England in the 17th and 18th centuries as a "cultural act" (Solnit, 2001, p.85). However, a different concept is used in Japan when referring to walking in a forest. An interesting study by Tsunetsugu et al. (2007) in Japan used the concept of 'Shinrin-yoku', which had been introduced by the Forestry Agency of the Japanese government in 1982. It is derived from two independent words which mean 'forest' and 'bathing'. Their study aimed to investigate the effect of 'Shinrin-yoku' on physiological responses. Student research participants exposed to forest visits demonstrated significantly increased levels of feeling "comfortable", "calm" and "refreshed" in the forest area compared with those

exposed to city visits. They found that students doing activities in the forest area experienced a relaxed physiological state compared to those doping the same activities in the city area. However, their study did not examine the effect of age, gender and ethnicity on responses to the forest environment. Research related to 'Shinrin-yoku' is still ongoing in Japan.

Other than the two concepts ("romantic walking" and 'Shinrin-yoku') mentioned above, well-known theories or models that have been widely used in recent decades to explain the benefits of green spaces are restoration and stress reduction. Natural environments have been found to be more restorative than urban environments (Van den Berg et al., 2003), and that people gain restorative effects from natural environments (Van den Berg et al., 2003) and favourite natural places (Korpela, 2003; Korpela et al., 2010).

This section suggests that people do not use green spaces due to the uneven socio-demographic distribution of these spaces among the population. It shows that people gain benefits from recreational activities in green spaces (such as walking) which create positive feelings, restoration and well-being. In the following paragraphs, the researcher overviews several theoretical formulations concerned with the mechanisms underlying the beneficial effects of recreational activities in green spaces that relate to this study.

2.2.1 The biophilia hypothesis

The term 'Biophilia' was popularised by Edward O. Wilson (Hartig et al., 2011) and is defined as "the innate tendency to focus on life and lifelike processes" (Wilson, 1984, p. 1) and "... the innately emotional affiliation of human beings to other living organisms" (Wilson, 1993, p.31). The core concept related to the biophilia hypothesis is that humans have an affinity with life and life-like processes that motivates contact with plants, animals, and natural landscapes (Kahn, 1997; Grinde & Patil, 2009; Hartig et al., 2011). Most of the research related to biophilia has focused on the positive effects of associating with plants or physical environments, but the negative effects are seldom considered, such as the effects of removing greenery (Grinde & Patil, 2009). A great deal of biophilia-related research has been done regarding the design for healing

healthcare environments such as the impact of greenery (therapeutic) on restoration from stress (Ulrich, 2008). The ability to respond to environmental cues: either positive (such as potential food and water sources), or negative (such as danger from predators, venomous snakes and spiders), probably developed during human evolution (Ulrich, 1993; Hartig et al., 2011.) Ulrich (1993) used the term 'biophobia' to describe strong fears with respect to certain objects (such as animals) and situations that threaten humans in the natural environment. However, Grinde and Patil (2009) described biophilia as "a vague preference for having a natural environment as a consequence of our evolutionary history" (p. 2338). Other factors may shape the relationship between humans and plants such as cultural factors and individual peculiarities (Hartig, 1993). Grinde and Patil (2009) also stated that there may be cultural bias in why women are more interested in plants than men by suggesting that in "Western societies it has traditionally been the task of women to care for the home, which will typically include both garden and indoor plants" (p.2339). In addition, Kahn (1997) stated that biophilia is broadly construed and interwoven within the larger cultural and contextual fabric, especially in children.

In summary, biophilia is said to exist naturally in human beings where there is a need to feel an attachment to natural elements such as plants or animals. Biophilia is said to be the basis for a tendency for people to respond positively to natural areas such as forests, while people may also have an innate tendency to behave negatively (biophobia) when feeling threatened (such as seeing snakes). Both reactions are based on evolutionary and cultural factors or childhood experience. A great deal of research has been carried out based on this concept, such as research into restoration and stress recovery, which will be explained in the next two sections.

2.2.2 Restoration

The Attention Restoration Theory (ART) was introduced by Rachel and Stephen Kaplan (Kaplan & Kaplan, 1989) who held that natural

environments are rich in restorative qualities. When people get "directed attention fatigue; they need to have their attention restored in order to be able to continue to function" (p. 178). This is done by exposure to a restorative environment such as a natural setting. People who have "interaction with natural environments, [are] able to perform better on tasks that depend on directed-attention abilities" (Berman et al., 2008, p. 1207). This is because natural environments are said to be rich in interesting settings and elements that effortlessly command attention, thus enabling one's directed attention or ability to concentrate to be restored (Kaplan, 1995). Restorative environments are said to have four key characteristics, which are being away, extent, fascination and compatibility (Kaplan & Kaplan, 1989). These characteristics are defined as follows:

> "*Being away* refers to a change of scenery and experience from everyday life [...]. *Extent* refers to the properties of connectedness and scope in environments [...]. *Fascination* refers to the capability of environments to involuntarily catch one's attention, not demanding mental effort. *Compatibility* refers to the degree of fit between the characteristics of the environment and the individual's purposes and inclinations" (Scopelliti & Vittoria Giuliani, 2004, p. 423).

Ongoing researches based on the components mentioned (for example, Hammitt, 2000; Laumann et al., 2001; Berto et al., 2010) are explained below:

Being away concept

Based on ART, a number of studies focused further on the "being away" concept related to workload and stress. For example, Laumann et al. (2001) found that "being away" has two facets which are being physically away and being psychologically away. Hammitt (2000) distinguished between the "being away-to" and the "being away-from" components in relation to privacy in urban green spaces. Hammitt (2000) found that "being away-from" is an important motivation for people to have desired privacy in urban forest/parks. People need to escape from their daily tasks in order that they can continue to perform them well later on (Hammitt, 2000). In addition, he suggested that "being away-to" natural place motives (related to the attributes of the destination) are more important in urban

forests/parks than motives related to “being away-from” urban everyday places. Scopelliti and Vittoria Giuliani (2004) found that for some individuals, especially elderly people, natural environments are not necessarily the most restorative. They prefer more domestic environments (such as home) to natural environments (such as having a walk in an urban park, taking a trip to the countryside and spending the day at the seaside).

Fascination

Viewing and imagining being in a natural environment such as a forest, park, a seascape or snowy mountain area can also give restorative effects (Lauman et al., 2001). According to Kaplan and Kaplan (1989), fascination is generated by things that are involuntarily interesting. For example, people can get easily fascinated by viewing the changing sky, watching birds or other wildlife, feeling the breeze and fresh air while walking or being in a natural environment, and hearing natural sounds such as the sound of waterfalls, birds, trees or rustling leaves. Fascination may be derived from natural settings which Kaplan and Kaplan (1989) refer to as ‘soft fascination’. Two aspects are involved in soft fascination: involuntary interest and aesthetic components (Kaplan & Kaplan, 1989). Another recent study on the fascination component was conducted by Berto et al. (2010) who explored “the effect of high fascination scenes on orienting and recall in attentionally fatigued participants” (p. 497). They found that, surprisingly, respondents had significantly better recall of scenes of a built environment high on fascination (such as aesthetic architectural facades) over those of natural scenes (such as views of white sandy beaches). The result was similar to a natural environment which was low on fascination (such as a quarry view without plants) than a built environment low on fascination (such as a barren view of an industrial area). They concluded that the role of fascination on recall was less clear since it interacted with the naturalness of the scene.

The current research will focus more on the two concepts of being away and fascination; therefore, the other two factors (extent and compatibility) are not discussed in detail.

2.2.3 Stress recovery concept

Previous scientific studies have found direct associations between natural surroundings and restoration and stress-reduction (for example, Ulrich, 1981; Ulrich et al., 1991; and Hartig et al., 2003). A study by Ulrich and his colleagues (1991) based on their stress recovery concept examined stress recovery after exposure to either natural or urban surroundings. The stress recovery concept is essentially that the stress reduction theory involves a shift from negative to positive affects accompanied by physiological changes such as reduction in blood pressure. It is also focused on the "recovery on state" focus into psychological and physiological arousal. For example, when a person sees a waterfall, he or she will feel relaxed due to a conscious consideration of the situation and the physiological arousal affect reaction of pleasure (Knecht, 2004). Ulrich et al. (1991) predicted that people who are stressed will experience stress reduction when exposed to unthreatening natural environments compared to urban environments. A total of 120 undergraduate students from the University of Delaware were shown a stressful video of an accident in a workplace. Then they were shown a video from a selection comprising two natural settings and four urban settings. Respondents who were exposed to the natural settings showed less anger/aggression and fear and experienced positive affects compared to those who were exposed to urban environments (Ulrich et al., 1991). Their conclusion was similar to other researches which used the Kaplan's ART model where respondents who were exposed to natural settings recuperated faster than those who were exposed to various urban environments.

Research is still ongoing as to the cause of restoration, including the type of green space that has the greatest restorative impact and the different impacts of various types of green spaces. A great deal of research is

being carried out in western countries on comparing the restorative value of natural and built environments (for example, Ulrich et al., 1991; Hammit, 2000; Van den Berg et al., 2003; and Berto et al., 2010). However, in Asian countries, research on this topic is limited, especially related to the impacts of gender and ethnicity. Based on the literature related to the ART and stress recovery concepts, it appears that people are motivated to visit green spaces, especially forests, due to their desire to experience feelings of being away from daily tasks, to feel restored and to reduce stress levels.

2.3 Social Cohesion Concept

The social cohesion concept is briefly explained to understand and link green space to the later sections in this study regarding social aspects and people's attitudes. It is important to understand this concept because "social cohesion is the causal system that determines individuals' membership attitudes and behaviours" (Friedkin, 2004). This concept is relevant to attitudes towards the recreational forests within this study and to people's use of the forests and their experiences during forest visits. Peters et al. (2010) suggested that there are two indicators for social cohesion: social interaction and place attachment. They studied the social interaction and use of urban parks in three Dutch cities (Utrecht, Haarlem and Arnhem) by first and second-generation non-Western migrants (people originating from Turkey, Morocco, Suriname, the Dutch Antilles or Aruba). In total, 300 immigrants and 318 native Dutch people were surveyed and 40 migrants interviewed. Their results confirmed that social interactions occurred between the users of the park and the people who came with them or with other people, either known or unknown to them. They suggested that urban parks can be seen as inclusive places where people of different ethnicities spend their leisure time. The parks can also act as favourite spaces that could stimulate social cohesion.

This current research suggests that green spaces have the potential to provide spaces for social mingling, and this may also apply to the recreational forests in Malaysia. This social mingling may be especially important for ethnic groups.

The social function of parks may contribute to the perception of these places as 'favourite places', making them more attractive as recreational destinations.

2.4 Social Aspects and Green Space Use

In general, green space is important for social functions, strengthening family ties, providing safe places for children to play (Chiesura, 2004); and cementing neighbourhood social ties (Kuo et al., 1998). Even recreational activities such as climbing trees in a community forest has a positive social impact which will lead to environmentally responsible and conservation- inclined behaviour (Gathright et al., 2007).

Canter (2000), cited in Gustafson (2001), emphasised that individuals conceptualise places differently and it is therefore important to consider places from the view point of their "users". This statement is supported by Burgess et al. (1998), who stressed that parks and gardens have differing social and cultural values to different users.

Gustafson (2001) explored the meaning of the various types of places and how people relate to these places. He grouped his findings into seven dimensions of place expressed by his interviewees: (1) "self" (the life path of the individual, expressed in terms of experience and memories); (2) "self-others" (the respondents' relationships with people living there such as friends, acquaintances and relatives leading to a sense of community); (3) "others" (the meaning is commonly attributed to places through the perceived characteristics, traits and behaviours of their inhabitants); (4) "others-environment" (this category consisted of a few themes that were difficult to categorise, located between the limit of "others" and "environment", such as "atmosphere", or "climate" which may be associated with a certain type of inhabitant, such as immigrants); (5) "environment" (most of the interviewees referred to the physical environment, including the natural or built environments and various natural conditions such as weather and seasons); (6) "environment-self" (some interviewees referred to a formal knowledge of the environment [geographical, historical], whereas some valued their familiarity with their lived-in physical environment or environments that provided many kinds of opportunities); and (7) "self-others-environments" (this category was related to associations or

organisations that made places meaningful. Self, others [other association members/society] and the environment [geographical and sometimes institutional] contributed to the whole meaning of place).

Scopelliti and Vittoria Giuliani (2004) found a significant interaction between lifespan and social interactions in home-based, built and natural environments: social interactions were more meaningful in restorative experience in adults compared to young and elderly people. Their findings also indicated that excitement plays a more important role in the restorative experiences of young people and adults compared with elderly people. However, their research did not include ethnic groups' lifespan effect. It is not known whether social interactions in those environments are influenced by culture.

In the United Kingdom, the policy agenda shifted from agro-forestry to social forestry in the late 20th Century, which means that woodland is seen as a multi-purpose, multi-benefit resource which contributes to enhanced quality of life and well-being (Milligan & Bingley, 2007, Konijnendijk, 2008). Urban forests and woodlands can also provide social learning and local identity within a community (O'Brien, 2006).

Skår (2010) claimed that people's experience in nature is vibrant, socially constructed and modified, and shaped by their lived experiences (shaped by social and cultural contexts). Thus, woodland has the potential to generate social benefits thereby enhancing the quality of life. Scopelliti and Vittoria Giuliani (2004) suggested that "sociality is a fundamental aspect of restorative experience" (p.434).

People engaged in recreational activities give their own meaning to activities in green space. A study by Garst et al. (2010) focused on experience and meaning in relation to camping activities in the Mount Rogers National Recreation Area in Southwest Virginia. They found that the second most prominent aspect was social interaction. The interviewees claimed that it was the people with whom they were doing the activities that really mattered to them. In researching tree-climbing activities in community forests in Japan, Gathright et al. (2007) found that teenagers in their 20s, and people aged over 50, were more likely to come

with a friend compared to participants in their 30s and 40s, who were most likely to come with their family. Overall, participants in their 50s and above were more likely to come alone compared to other age groups. Garst et al. (2010) confirmed that the most meaningful experiences of the campers at Mount Rogers National Recreation Area in Southwest Virginia were associated with "restoration", "family functioning", "experiencing nature", "special places", "self-identity", "social interaction" and "children's learning". They concluded that 21st Century campers need nature-based activities as these experiences have become less common for them.

From the literature, green spaces are used mainly for activities that involve the social dimension, creating positive benefits such as strengthening family, neighbourhood and community ties, as well as promoting environmental responsibility that enhances the quality of life.

2.5 People's Attitudes to Green Space

People's attitudes towards nature differ according to the stage they have reached in their life course (Lyons, 1983) and are related to their general belief. As Bell et al. (1996) said "… culture shapes our learning history, and thus, our attitudes" (p. 31). Fishbein and Ajzen (1975) defined an attitude as "a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object" (p.6). These beliefs will result in certain attitudes and these in turn affect certain actions or behaviours (McFarlane & Boxall, 2003). Lutz et al. (1999) conducted a study on rural and urban residents' attitudes and perceptions regarding the wilderness. They used the Wilderness Environmental Protection Scale to measure attitudes towards the wilderness and environmental concerns. Rural and urban residents were found to have different perceptions of what types of landscape and landscape structures constitute wilderness. However, rural and urban residents have an overall positive attitude towards the wilderness as well as high levels of environmental concern. Cultural practices and beliefs influenced people's physical and psychological responses to trees during woodland visits (Milligan & Bingley, 2007). Two factors are said to shape people's attitudes: their memories (O'Brien, 2006) and experiences (Proshansky, 1995). Positive attitudes towards woodlands are influenced by

people's memories of childhood woodland visits (O'Brien, 2006). A study by Wells and Evans (2003) confirmed that having natural elements nearby helps to reduce "the effects of stressful life events on children's well-being" (p.319). In addition, Ward Thompson et al. (2004) mentioned the importance of childhood memories in woodland in relation to visiting woodland at later stages of one's life course. A similar finding by Milligan and Bingley (2007) indicated that individuals, who used to freely play in wooded areas when they were children, unsupervised by their parents, viewed wooded areas positively and felt more confident to visit woodlands in later life. Ward Thompson et al. (2004) found that there is a highly significant association between "frequency of childhood visit" and "regular visit as adults". Their results confirmed that the desire to visit woodlands frequently in adulthood is established during childhood. Based on their previous study in 2004, Ward Thompson et al. (2008) further explored the significance of childhood experience towards patterns of woodland use in adults in different parts of Britain, ranging from urbanised areas to rural remote settlements. Their data confirmed that there is a strong relationship between regular childhood visits and being prepared to visit woodlands or green spaces alone as an adult. They found that adults who visit woodlands daily or weekly are more likely to have visited them often when they were children. In contrast, Milligan and Bingley (2007) studied young people aged 16 to 21 years in the North West of England found that there is a less direct association between childhood play in woodlands and later use of woodlands. They believed that there are other factors that influence woodland use in later life which need to be explored. Attitudes are also influenced by previous experience leading to the formation of a place-identity, as from:

> "...'good' and 'bad' experiences emerge particular values, attitudes, feelings, and beliefs about the physical world - about what is good, acceptable, and not so good - that serve to define and integrate the place-identity of the individual" (Prohansky et al., 1995, p. 90).

Macnaghten and Urry (2000b) did a study about the attitudes of nine groups of people towards woods and forests. The nine groups comprised students, sports enthusiasts, outdoor enthusiasts, retirees, fathers, outdoor specialists, country sports enthusiasts, mothers, and young people of Asian heritage. The study took place in Scotland, Wales and England in 1998. Most of these groups preferred

natural woods compared to the unnatural look of plantations which had trees in rows. However, the inner-city Asian youths disliked the English woods; instead, they preferred conifer plantations. Virden and Walker (1999) explored how ethnicity/race and gender, influence person-natural environment interactions. They sampled 525 university students in the western part of the United States, consisting of Black, Hispanic, and White ethnic/racial groups. They found that ethnicity/race and gender influenced the environmental settings preferred for outdoor recreation. Their results demonstrated that the strongest environmental-setting preference for all three ethnicities was "a place to share experiences (versus place to be by myself)". On the other hand, the strongest environmental-setting preference for men was "area with few other users" and for women "place to be with close friends or family". Men were more likely to prefer a remote natural setting than women. In another study by Ward Thompson and Aspinall (2011), Pakistani and Indian respondents appreciated trees and greenery the most, whereas these natural elements were least appreciated by black African and African-Carribean participants. In contrast, attractive views were most appreciated by British Whites. These three studies illustrate, in different contexts, how people have different preferences for woodland settings and outdoor recreational space, based on their cultural or ethnic background, gender, motivation for use or previous experiences and familiarity regarding such environments. Malaysian society is characterised by strong gender roles and ethnic differences, but little research has been carried out into how these personal differences affect people's use of recreational forests, and that is an aspect that this study aims to address.

Education also plays a role in people's attitudes towards nature. A study by Müller and Job (2009) regarding attitudes towards the bark beetle infestation in the Bavarian Forest National Park, Germany, found that tourists, who were informed about the bark beetles' function and the management's objectives for the National Park, evaluated the infestations more positively. They confirmed that higher education and a more pro-environmental world-view correlate positively with attitudes towards the bark beetle. There is also a philosophical dimension to changing human attitudes towards the wilderness. Jorgensen and Tylecote (2007b) described the transformations in British attitudes towards the

wilderness based on the concept of the "sublime". Moore (1948) categorised sublimity as "the outward or sensible side of beauty" (p. 42) and also as "the result of overwhelming ideas (such as thoughts and emotions) aroused in the mind by the object" (p. 45). Macnaghten and Urry (2000a) defined it more simply as: "The sublime involves a simultaneous mixture of excitement and horror" (p. 6). This "sublime" concept can be adapted for explaining recreational forest users' feelings and experiences and this will be explored further in Chapter Eight.

Summing up the literature in this section, people's attitudes towards green spaces are shaped by their childhood memories and previous experiences. People also have different preferences for green spaces based on their ethnicity or cultural background, gender and educational background, differences which this study will address.

2.6 People's Feelings When Using Green Space

Green space creates both positive and negative feelings amongst users (Van den Berg & Ter Heijne, 2005) as indicated by several selected research related to people's feelings in green space.

Beaney (2009) stated that people gain a broad sense of improved mood and feel happier when they have visited green spaces only for a short time (such as passing through). Basing her study on a small amount of greenery in the city centre of Sheffield, United Kingdom, another researcher, Chiesura (2004) explored the emotional dimension of nature-based experiences. She found that the feelings most frequently mentioned by the urban park uses in her study were freedom, unity with nature and happiness. She identified two aspects of these positive feelings: recreation (freedom, happiness, adventure and luck) and spirituality (unity with self and unity with nature). However, the feelings experienced are different in the wilderness context.

Fredrickson and Anderson (1999) found three factors contributing to the spiritual of a group of women experiences in wilderness in Minnesota and Arizona: sharing of different experiences, opinions and ideas among participant members, being in the wilderness and solitude. During the period of solitude,

many of the female camping and canoeing participants could contemplate some of their lives' deepest questions, such as "What really matters in life?" and "Where has my life gone?". Fredrickson and Anderson (1999) concluded that spiritual benefits are gained more in natural settings, and occur while engaging in more nature-oriented activities such as camping, and when a person is alone.

Some people associate visits to the forest with negative feelings. Bixler and Floyd (1997) stated that "negative perceptions" towards wildlife environments may be caused by "disgust sensitivity" and "desire for modern comforts" (p.462). Positive feelings towards forests create a "transcendent" experience for users (Williams & Harvey, 2001). Williams and Harvey (2001) mentioned two distinct forms of a transcendent experience occurring in forests: one form is influenced strongly by feelings of insignificance (such as tall trees, extreme hot or cold) and the second form is characterised by a strong sense of compatibility and familiarity. Fredrickson and Anderson (1999) mentioned that the transcendent experience gained when a person is in an outdoor setting is usually "the result of intense physical and/or emotional challenge" (p.22). As cited in Hull et al. (1994), Russell and Snodgrass (1987) maintained that:

> "place features seem to be valued because, on their recollection and/or experience, they evoke desired emotional states. The memories stored in a place icon and triggered by its encounter/recall may have the power to trigger emotional states previously experienced and associated with past events" (Hull et. al., 1994, p.116).

Safety issues were mentioned by Hunter (2001) as the main reason for under-utilised urban forests in case studies in the United Kingdom. Security issues are associated more with elderly people (aged 65 and above) and women (Jorgensen & Anthopoulou, 2007a). For example, elderly people, especially women, in Sheffield feel fear regarding their personal security when using urban woodlands and parks. Their frailty and lack of mobility make them feel vulnerable in the event of an attack (Jorgensen & Anthopoulou, 2007a). Older people and mothers in Scotland worry about walking by themselves (Ward Thompson et al., 2004). Issues related to safety in relation to gender will be discussed in the gender section later on.

People's relationship with the nearby neighbourhood forest of Buttekvernskogen in Norway is constructed through their embodied forest experiences, emotions and feelings related to it, and through their norms and expectations (Skår, 2010). Skår (2010) said, "These factors are knit together in individual and social constructions of meaning – and are in constant change" (pg. 111). Ross et al. (2011) confirmed that interactions with pristine natural environments in South Africa emerged brought forth feelings on cognitive, affective and spirituals levels. They found that there were diverse meanings from the participants' experiences such as a sense of escape (cognitive freedom), curiosity, feelings of calmness (affective dimension) and feeling closer to God (spiritual experiences).

However, deeper understanding about people's feelings and emotions in recreational forests and the impact of ethnicity and gender ars still lacking in an Asian context. As Virden and Walker (1999) mentioned:

> "The general lack of understanding of environmental meaning and preferences associated with different ethnicity/race and gender groups suggests a need for additional qualitative research in this area" (Virden & Walker, 1999, p. 237).

The evidence suggests that green spaces, and especially wilderness-like environments such as forests, have the capacity to produce strong pleasurable feelings such as calmness, unity with nature and happiness. However, there is also the potential for negative affects, ranging from fear to vulnerability. Factors that impact on these feelings include perceptions of safety and users' physical condition. This research is obviously relevant to a study of recreational forests in Malaysia because these are forested environments with wilderness-like characteristics.

2.7 Recreational Activities and Patterns of Green Space Use

Patterns of usage are varied as is the frequency of visits. It is difficult to summarise research findings concerning patterns of use because they differ between locations and populations or according to site accessibility (Ward Thompson et al., 2005). However, the sections below will give a general view of recreational use patterns mainly in the United Kingdom context.

2.7.1 Activities engaged in green space

Different types of activities are carried out in forests and woodlands. According to Lee (2001), the most popular activities in forests and woodlands in the United Kingdom are walking (with or without a dog), viewing scenery, looking at the flora and/or fauna, picnicking and playing games. He categorised the forest and woodland users into four types of people: "dog walkers", "day visitors", "forest enthusiasts" and "sport enthusiasts". He also named four factors that forests can offer to Britons, which are: factor 1 – "wilderness experience"; factor 2 – "a family/social outing"; factor 3 – "walking trips" and factor 4 – "walking the dog". Arnberger (2006) conducted studies on two urban forests in Vienna, Austria through video observation for one year. Similar to Lee's (2001) findings, he identified the main users as walkers, cyclists, dog walkers and joggers. Ward Thompson et al. (2004) categorised activities into two types: active and passive activities. They stated that the most popular active pursuits in woodlands are walking and dog walking and the most popular passive activities are seeing animals, looking at views/hills and bird watching. Findings from Tzoulas and James (2010) regarding recreational activities in Birchwood Forest Park in the United Kingdom were similar to those of Lee (2001) and Ward Thompson et al. (2004) in terms of walking and dog-walking, but differed in relation to passive activities. The Birchwood users were frequently observed to be walking for leisure, and chatting with acquaintances or friends whilst standing or sitting. These differences may be caused by the location of the forest parks in the sense that the forests in Lee's (2001) and Ward Thompson et al.'s (2004) studies were located in more rural areas compared to Birchwood Forest Park, which is located in a suburban setting. However, as in the Birchwood Forest Park, forest users of the National Park in Korea desired socially based activities such as "family togetherness" and "being with friends". However, "meeting/observing new people" was the least important to them (Shin et al., 2001).

The types of activity carried out on a site are clearly strongly linked to the specific characteristics of that site (Grahn, 1991). For example, the

most important activities engaged in by campers at the Mount Rogers National Recreation Park were nature-based activities and included "chopping wood", "fishing", "hiking", "biking", "birding" and many more. However, in the Malaysian urban context, such as in Kuala Lumpur, urbanites prefer organised types of recreational activities in local parks such as jogging, walking, playing basketball and football (Hussain & Abdul Mohit, 2005). Chinese people like to do activities related to their health such as jogging or brisk walking, and elderly Chinese like to do exercise related to their culture such as "tai chi" (Hussain & Abdul Mohit, 2005). Malays with children in Seremban Urban Park in Malaysia engaged in activities involving the whole family such as playing games, having picnics or doing exercise together (Maulan, 2002). According to Maulan (2002) there are five factors that determine public preferences for recreational activities. These are passive observation and contemplation, passive observation and socialising, exploration, physical activities and family activities (Maulan, 2002). Adults prefer active recreation activities such as jogging and group playing [games].

This section concludes that there are two types of activities: active and passive which relate to site characteristics which may also occur in the recreational forests in Malaysia. This study will explore the ways in which these activities vary by ethnicity.

2.8 The Impact of Personal Differences on People's Experience

Several researches indicate that personal differences (life cycle, gender, ethnicity and education) impact on the use of and experience in public spaces, parks and forests.

2.8.1 Age

The life-cycle stages of individuals also influence their experience in parks or familiar environments (Grahn, 1991). Children can benefit from nature through play and contact with nature. The natural landscape has a potential for meeting "children's needs for a varied and stimulating play environment" (Fjørtoft & Sageie, 2000, p.83), and also as a learning

medium. O'Brien (2006) emphasised the importance of woodland as a place to come into contact with nature, as a learning area and as a play area for children. Researchers found that natural surroundings and materials develop creativity in children through their sensory engagement. They can also provide therapy for children who have Attention Deficit Hyperactivity Disorder (ADHD) (Louv, 2006).

Ward Thompson et al. (2004) confirmed that the patterns of forest usage in Central Scotland differ according to "life stages", related to "health and fitness, family commitments and independence and lack of responsibilities for others" (p. 74). In general, people in their late adolescence and early twenties socialise more closely with their peers as opposed to with their families. They are more concerned with occupation, intimacy, and friends (Bammel & Burrus-Bammel, 1982). During their thirties, aspects of social life and marital satisfaction decline. They focus more on materialism which they had neglected during their twenties. Career development is the main concern of people in their thirties (Bammel & Burrus-Bammel, 1982). However, when they get older, other factors seem more important, along with having money. As Roberts (2006) stated, "satisfactory health and income are important for well-being in later life" (p. 155). Roberts (2006) mentioned that today's adulthood is at a greater risk of interruption because of occupational reorganisations and the relationship breakdown. There are many phases normally involved in the transition to becoming an adult, such as marrying and having children, living independently from one's parents and becoming financially self-sufficient. On the other hand, elderly people are less likely to have paid jobs and heavy family responsibilities compared to other age groups, and leisure differences can be expected to differentiate their general life satisfaction more strongly than other age groups of the population (Roberts, 2006).

Age has an effect on activity preferences. Gathright et al. (2007) found that age is correlated with the variables of "experience", "participation", "tree appreciation" and "scary" in the context of Tree Climbing (TC)

activities. A study by Woolley and Amin (1999) on Pakistani teenagers' use of public open space in Sheffield found that the most popular active activities in developed parks that they would like to undertake were cricket and soccer, and the main passive activity undertaken was meeting a friend. The teenagers used parks because they felt comfortable being with friends and also experienced the feeling of "good atmosphere" (which relates to the experience of "fresh air", "peace", "quiet", "nice", "relaxation" and "fun"). However, different types of activities occur in natural areas such as forests. Garst et al. (2010) found that younger adults were more interested in night hiking compared to older adults, whereas, middle-aged people were more likely to want to camp and observe nature. Ward Thompson et al. (2004) found that preferences for "specialist outdoor activities: cycling" were higher in young adults (under 24 years old) and mature adults (aged 55-64) who had no family commitments and were in good health. Tzoulas and James (2010) found that people aged between 19 and 39 years old used Birchwood Forest Park more than any other age group. Teenagers and people over 60 years old were least likely to use the local urban green space network in Birchwood. People who used forests and woodlands in the United Kingdom aged 31 - 40 years normally had young children and tended to choose "day visitors' activities: such as playing games, relaxing and nature trails" (Lee, 2001, p. 88).

Elderly people in Sheffield, United Kingdom, liked to walk in the woodlands because woodlands gave them health and spiritual benefits. They appreciated urban woodlands because of their "power, complexity and order" (Jorgensen & Anthopoulou, 2007a). On the other hand, different factors contributed to the walking activities of older people in neighbourhood open spaces in Great Britain. Sugiyama and Ward Thompson (2008) found that pleasantness (such as "the open space being welcoming and relaxing" and "the quality of trees and plants") and the lack of nuisance (such as "signs of vandalism" and "dog fouling") were associated with walking for recreation in neighbourhood open spaces for older people aged over 65 in Great Britain (England, Scotland and

Wales). These two studies showed that the physical environment plays a role in influencing older people to engage in walking activities that can contribute to their quality of life.

Scopelliti and Vittoria Giuliani (2004) focused on another aspect of restorative experience which was meaning. Their study explored the characterisation of restorative experiences for people at different phases in their lifespans. They asked people about their own leisure experiences rather than using a predefined set of environments. Their findings indicated that natural and built environments could have different restorative potential in relation to the stage of the lifespan and the time available. Young people mentioned outdoor settings and natural environments more often than their home environment; adults mentioned nature more frequently; and elderly people indicated domestic environments more frequently than natural environments. Their research indicates that life course stage impacts on people's choice of environment for restorative outcomes.

Feelings of fear in public parks in Leicester city have been found to increase with age (Madge, 1997). This situation may be related to a feeling of fear of incivilities. The life cycle stages may influence a person's attitudes towards the environment. Lyon (1983) found that landscape preference changes during the life cycle and that preference scores decreased from a high in early childhood, stabilised or increased in adulthood and dropped in old age.

To sum up, different life stages and life spans do impact what people experience in green spaces. Activity preferences also differ between ages. Evidence also shows that landscape preferences change during the life cycle. This study will also look at the effect of age on use of and experience in the recreational forests in Malaysia.

2.8.2 Gender

Female respondents felt more threatened than male respondents in a forest environment in the western part of the United States (Virden &

Walker, 1999). Virden and Walker (1999) found that this was derived from stronger feelings concerning natural threats such as wild animals, remoteness, the elements or the unknown, and the male members of their own species. Burgess (1998) stated that the intrinsic qualities of woods and forests, such as bushes, and tall shrubs contribute to women's fear in British woodland in the United Kingdom. Another reason for the fear was that women who venture alone into naturalistic settings were stigmatised by mass media that sensationalised violent crimes against women and children in urban parks and other green spaces (Burgess, 1998). Kong et al.'s (1997) findings were quite similar with Virden and Walker (1999), namely, that Singapore women felt afraid in natural environments because of socially and naturally based fears. They found that besides fear of humans, women feared various aspects of nature, including wildlife threats such as snakes (Kong et al., 1997).

There are many factors which influence the use of public space by women such as their early socialisation, their daily activities and responsibilities, and their experiences and feelings (Franck & Paxson, 1989). There were also differences between gender and setting-preference among university students in the western part of the United States. Virden and Walker (1999) found that female respondents preferred places where they could be with close friends and family compared to male respondents. This finding is supported by Madge's (1997) study in which the female respondents stated that they liked to use parks when "in a group rather than if alone" (Madge, 1997, p. 245). The women also used parks as a form of being away or for socialising. For example, mothers who were "being cooped up with young children" used parks or gardens to meet others and to escape from daily tasks (Burgess et al., 1988). Madge (1997) mentioned that "female respondents indicated that they avoided large open spaces, unlit areas, sections with blind corners and zones with extensive undergrowth and trees" (p. 244). The women tended to avoid walking alone in public spaces (Madge, 1997). The research shows that safety is the main underlying reason affecting different patterns of park or forest usage

according to gender. As Burgess (1998) mentioned, personal safety played an important role, leading to the decrease in pleasure that people experience in park and green spaces. It may be inferred that socialising is a means of providing personal security to women users in parks or open spaces.

Preference for types of activities was also said to differ according to gender. For example, male respondents who lived near the Savannah River Site in south eastern United States were more interested in vigorous activities such as fishing, camping and hunting, compared to women, who liked photography (Burger et al., 1998). These findings may relate to the nature of male and female social roles and were supported by Cillessen and Bruyn (2008) who found that adolescent boys could relate to challenging activities while girls were more into "nurturance" and "beauty" activities. Similar findings from Kong et al. (1997) stated that women's relationship with nature in Singapore is strongly oriented towards nurturing: teaching, tending and caring. Ho et al. (2005) found that women related to three park characteristics more than men did: "traditional park landscapes (short grass, open forests, paved paths, shade trees)", "logistics (proper signs and instruction boards and parking space)," and "ethnic sensitivity/representation (presence of others from one's ethnic/racial group, availability of information in one's language, staff who know visitors' customs)". These studies may indicate that culture influences women's activities in green spaces.

In terms of frequency of use, results from Ward Thompson et al.'s (2008) study indicated that Scottish men were more likely to visit woodlands on a daily or weekly basis, compared to women who were more likely to visit once a month or less frequently. This may be due to the domestic constraints that influenced the women's visitation pattern. This statement is supported by Loukaitou-Sideris (1995) and Kay (1996). There were also other constraints that constrain women's use of public spaces, such as the reduction in their discretionary time (particularly for working mothers), family roles and restrictions (paid employment) and

the types of activities that could enhance and detract from leisure (Loukaitou-Sideris, 1995; Kay, 1996, 2000). However a study by Zainun and Zoraini (1996) found that leisure activities are important for contemporary Malaysian women. The female respondents in their study sometimes pursued physical activities such as jogging/brisk walking (53.8%), and indoor exercises (47.5%). Over 30% played indoor games (32.5%), went camping or mountain climbing (31.3%), or swam (30.3%). Their study also examined the reasons that the women did not have more leisure time. As with the Loukaitou-Sideris's (1995) and Kay's (1996) findings, Zainun and Zoraini (1996) found that the most frequently indicated reasons that the respondents did not get involved in physical or leisure activities were: busy working (79.1%), fatigue (77%), distances to be travelled (65.2%), lack of facilities (53.9%), and family commitments (52.7%). On the other hand, a study by Arab-Moghaddam et al. (2007) regarding Iranian women's leisure and constraints to participation indicated that there are three personal factors related to leisure participation: (1) personal responsibilities, (2) interests and skills; and (3) health and psychological safety. There is also a lack of infrastructure for leisure opportunities.

In summary, there are similarities between women in Asia and those in Western countries, for example, they are afraid of natural threats such as wild animals or snakes. Setting-preference also influences women's use of green spaces; compared to men, they like to be in a place where they can be with friends or families. Women's engagement in recreational activities is also influenced by their social roles as nurturers compared to males who traditionally act as breadwinners. It is assumed that there are similarities between women in Malaysia and Muslim Iranian women who are constrained by their personal commitments and lack of appropriate facilities for engaging in recreational activities.

2.8.3 Cultural background and ethnicity

Nature has different meanings and is perceived differently by people from different ethnic backgrounds. In relation to cultural experiences,

urban woodlands can aid social integration for immigrants (Jay & Schramel, 2009). Jay and Schraml (2009) confirmed that the cultural background of migrants and individual life courses play important roles in forest usage in Germany. Turkish females were more into their family and children, whereas, the males were into sports either alone or with friends. Madge's (1997) study found that there were two factors underlying African-Caribbean and Asian fear of using public parks in Leicester city, which were fear of dogs and racial attacks.

Buijs et al. (2009) investigated preferences for natural landscapes amongst immigrants from Islamic countries (Turkey and Morocco) and amongst the native Dutch people in the Netherlands. They found that the immigrants preferred "agriculture", and liked more "managed landscape" compared to "natural" or "wilderness landscape", whilst most of the native Dutch preferred a "wilderness landscape". Buijs et al. (2009) assumed that the landscape preferences of all the immigrant groups in that study were caused by a lack of familiarity with Dutch landscapes. Brody et al. (2004) studied residents' perceptions of two major watersheds for Salado and Leon Creek in the United States, and confirmed that familiarity was associated with distance in the sense that respondents who lived closer to the watersheds were more familiar with those areas compared to those who lived far away. Respondents who were familiar with the watersheds felt that the water quality was polluted compared to those who were unfamiliar with these areas. Buijs et al.'s (2009) study also showed that images of nature were related to landscape preferences. They stated that"People with a functional (focuses on anthropocentric values and intense management of nature) as opposed to an inclusive image of nature (focuses on ecocentric values and a broad definition of nature) showed lower relative preferences for natural landscapes; while people with a wilderness image (focuses on ecocentric values and the independence of nature) showed a higher relative preference for natural landscapes" (Buijs et al., 2009, p.121). They further found that people who focused on anthropocentric values were more likely to agree with items: "nature is less fragile then some people

think", "not every single rare plant needs to be protected" and "humans may use nature as they see fit" (Buijs et al., 2009). Moreover, African Americans in Ann Arbor and Detroit were found to dislike "settings with dense vegetation or with a sense of enclosure" (Kaplan & Talbot, 1988, p.116) due to safety factors that made them fearful of using public spaces. White respondents had more positive perceptions of forests than the Black and Hispanic respondents. Compared to the Blacks' participants, the Whites saw forests as being more pleasing. Likewise, compared to the participants of the Blacks and the Hispanics, the Whites thought that forests are safer (Virden & Walker, 1999). It was thought that these attitudes were related to childhood outdoor experience (Virden & Walker, 1999). This claim is supported by Ward Thompson et al.'s (2004; 2008) studies on the association between childhood experience and patterns of woodland use in adults. However, Ward Thompson et al. (2004; 2008) did not study the effect of ethnicity in childhood experience. In a later study, Ward Thompson and Aspinall (2011) explored the impact of green space quality on deprived and minority ethnic communities as discussed in the earlier section. They found that their Indian respondents were more likely to go to a park for "a family outing or to take the children/grandchildren out, and to value a good playground" (p. 238). They also found that the Indian respondents, followed by the white British respondents were most likey to use green spaces for physical activity.

According to Jim and Chen (2009), residents in Hong Kong do not like "living near naturally vegetated areas" because they believe that burglaries occurred more frequently at residences near the vegetated areas. They also mentioned that differences in attitude towards nature may be the result of "cultural variation". For example, Chinese people prefer sea views compared to mountains because, according to their culture, water brings luck to them (Jim & Chen, 2009). In addition, they believe that the proximity of the mountains to their apartments contributed to the negative impact. In a later article on "External Effects of Neighbourhood Parks and Landscape Elements on High-rise

Residential Value", Jim and Chen (2010) mentioned that the association between recreational and amenity aspects was valued by residents in the urban Quarry Bay, Hong Kong. It was ranked the third most important attribute in the hedonic price model they used. A view of neighbourhood parks from an apartment raised the apartment price by an extra 1.95%. They concluded that the neighbourhood parks in their study gave economic value provided public venues that were equally accessible to different social groups, and fostered social interaction and integration. However, there are other factors that influence people to use and engage in activities in the urban parks, and these will be explained in the next paragraph.

Activity participation, use and preference for recreation areas, as well as the meanings and values attributed to outdoor recreation were associated with certain levels of acculturation and activity participation with other socio-cultural and demographic factors and differed both among and within ethnic and immigrant groups (Sasidharan et al., 2005). The ethnic groups included in that study were African-Americans, Hispanics, Chinese, Japanese, Koreans and Whites/Caucasians. Social activities were reported as the most likely activity by all six ethnic groups and the least popular activities for all of the ethnic groups were educational and "experiential" activities (Tai Chi, Qigong and yoga). However, the Chinese respondents reported the greatest participation in "experiential" activities, whereas Whites and Hispanics were more likely to engage in educational activities compared to other groups. Rishbeth and Finney (2006) found that "refugees and asylum seekers" from Asia and Africa who were involved in organised visits to urban green space in Sheffield in the United Kingdom mostly gave positive feedback about these places. However, their positive reactions during these visits were not necessarily associated with an increase in green space usage. The positive reactions were due to the memories and experiences of familiar settings in their home countries. Members of different ethnic groups use urban parks differently. A study by Loukaitou-Sideris (1995) in four neighbourhood parks in America found that Hispanics visited the parks more frequently

compared to other ethnic groups (Whites, Africa-Americans and Asians). They always visited the parks with family members and created their own "territory" for their own spaces. They liked to engage in social activities such as "parties, celebrations or birthdays and weddings, anniversaries and picnics" (Loukaitou-Sideris, 1995, p. 94). On the other hand, Caucasians appreciated parks for their aesthetics ("greenness, landscaping and natural elements") more than other groups. Asians (Chinese people) did not use the park frequently because they felt that the park was not properly planned and not landscaped well.

Ho et al. (2005) studied gender and ethnicity in Atlanta and Philadelphia in the United States, focusing on six ethnic groups (African-Americans, Hispanics, Chinese-Americans, Japanese-Americans, Korean-Americans and Whites). They investigated the preferences for various park characteristics, pattern of visits to parks and open spaces, and the perception of park benefits. There were six factors (sets of attributes) related to park preferences, visitation and perceived benefits items that seemed important to the residents. these were "recreational facilities", "water amenities" (lakes, rivers, streams), "wildlife" (birds and fish), "logistic-related items" ("proper signs and instruction boards, and parking space"), "ethnic sensitivity/representation" (presence of others from your ethnic/racial group, availability of information in one's language, staff who know visitors' customs) and "traditional park landscapes" (short grass, open forests, paved paths, shade trees). African-Americans and Hispanics rated the presence of "recreational facilities" and "traditional park landscapes" as the highest. African-Americans were significantly more likely than other ethnic groups to highlight the importance of "ethnic sensitivity/representation"; Whites and Hispanics rated the presence of "wildlife" as more important and "water amenities" were rated as important by both Hispanics and Chinese respondents.

Chavez and Olson (2009) studied Latino use, perception and experience in four urban-proximity day-use National Forests located in the Los Angeles and San Bernardino counties in the United States. The main

activity they engaged in at the four sites was having picnics/barbecues. The site attributes they rated important or very important were all park amenities and facilities (such as water taps, cooking grills, parking areas, telephones and trash cans) as well as law enforcement and patrols. Their results showed that there was a continuous demand for facilities and amenities from Latinos. They concluded that if the facilities and amenities were upgraded, the Latino users were more likely to continue to recreate in those forests. However, they did not examine the effect of age and gender.

There is a different cultural context in Malaysia, and a dearth of studies regarding the experience of Malaysians in recreational forest environments, especially related to ethnicity. This study's findings are expected to show some similarities and some differences to the research in Western countries been discussed above. Therefore, it may have different implications for the management and planning of future recreational forests in Selangor.

An aspect of Malaysian culture that remains important for a significant proportion of the population, and which may impact on their recreational forest usage, is Malaysian village life. In general, village people are dependent on forest products and agricultural activities for their socio-economy. The traditional Malay way of life is formed around the concept of the village (kampong), "a place where life is centred on wet rice farming and fruit tree cultivation" (Thompson, 2004; Ismail & Hussein, 2005; Toshihiro, 2009, p.68), and fishing (Wijnen, n.d.). The 'kampong' environment is generally cool and shady, surrounded by lush greenery, and house compounds are kept very clean (Wijnen, n.d.). Even in the 1990s, the main employment status of people in Sungai Siputeh, Malaysia was "village work", such as collecting rattan and food crops (Thompson, 2004). While, Ismail and Hussein (2005) stated that the villagers' normal occupations in a rural Malay village are related to the agriculture sector, such as working in orchards, palm oil plantations or rubber estates. The men bring their wives and occasionally their children

to help them in their work. Children in Malay villages are used to nature as their playground area and as a medium for learning. Their informal activities include games such as hide and seek, fishing and hunting. They use spaces that exist in their village as recreational areas, such as "nearby river area", "bushes", and "grazing grounds" (Ismail & Hussein, 2005). Sometimes women will pick "edible herbs nearby river" to cook (Ismail & Hussein, 2005).

Thus, this aspect of Malay or village culture may influence how Malay, Chinese and Indian people perceive a forest environment, in this scenario, a recreational forest. People who were familiar with rural or forest environments in their youth will have more positive feelings and strong attachments to these environments than people who are not familiar with rural, forest or village environments.

2.8.4 Education and socioeconomic factors

Education among ethnic groups influenced the type of park visitation in two urban centres (Atlanta and Philadelphia) in the United States. Sasidharan et al. (2005) found that education is positively related to the frequency of visiting. The respondents in their study who had higher education levels were most likely to visit urban parks on their own, while higher income respondents showed a reverse pattern. Education also influences a person's discretionary time. McLean et al. (2008) found that the availability of discretionary time was dependent on age, education, gender, and the existence of impairment. Children and seniors had significantly more discretionary time than persons who were in the workforce. They also found that physical, mental or economic conditions deterred the seniors' ability to participate in recreation activities. Education also influences people's inclination to engage in sports. Lee (2001) found that there was a positive significant association between lengths of education in relation to the likelihood of engagement in sports.

Kay (1996) stated that there were differences in leisure patterns between the higher and lower socioeconomic groups. Leisure activities for higher socioeconomic groups were more varied, took place in wider contexts

and were more geographically dispersed. In contrast, the leisure activities of the lower groups were more home-based, less varied, more likely to involve family and other relatives and took place in local areas.

The literature concludes that green spaces are used differently based on age, gender and cultural differences. Children use forests to be in contact with nature and as a learning medium through playing. Younger groups, adults and elderly use green spaces for their restorative outcomes, nature trails, playing games, relaxing, and walking. Women use green spaces as a form of escape or for socialising, and immigrants use them as an aid to social integration by engaging in activities such as picnics, parties or barbeques. Being in social groups either with friends or relatives helps to create a sense of personal safety for women.

2.9 Conclusion

Even though the research presented in this chapter is mostly related to the urban forest/park context, some results may apply to the recreational forests in Malaysia. As previously indicated, there has been little research on recreational forests in a Malaysian context and generally in Asia. The existing research reveals that green spaces are used by people at all life stages and for a variety of reasons including physical activity and for health and social purposes. Accessibility and proximity to users' homes are important factors that influence the use of green spaces. There are many benefits which people gain from engagement with green spaces, such as restoration, stress relief, social engagement and cohesion. Wilderness-like environments such as forests can evoke strong pleasurable feelings such as happiness and calmness. However, some factors may generate negative feelings such as fears of personal insecurity that link to users' physical condition. Ethnicity, age and gender are likely to have significant effects on people's social roles and interactions with the outside world. Furthermore, there are differences in the physical appearance, climate, ecology and structure of tropical forests as opposed to temperate forests that differentiate the types of activity in which people engage. For example, Malaysians like to have picnics with family members and to go swimming in cool, clear and clean rivers while in the recreational forest (See Appendix). On the other hand, in Britain, walking in the countryside is generally favoured by

the British, including walking in forests. Respondents in the United Kingdom and Central Scotland revealed that forests are used for recreational activities such as cycling, jogging, walking the dog, looking at views/hills and bird watching and to seek privacy. Thus, there is clear evidence of cultural differences in patterns of park, woodland and forest recreation, and of the impact of life course stage, gender and demographics on activities in public green spaces. Therefore, the predominantly Western findings on the use of green spaces cannot be unreservedly transferred wholesale to the Malaysian context. Issues related to women's safety, forest management and maintenance, and users' experience related to forest environments will also be explored. Chapter 3 will describe the methods used in this study.