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LEISURE CONSTRAINTS: MULTIPLE HILEARARCHY STRATIFICATION PERSPECTIVES

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LEISURE CONSTRAINTS: MULTIPLE HILEARARCHY
STRATIFICATION PERSPECTIVES

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
Applied Sociology

by
Yun-Jin Tae
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Accepted by:
Dr. William Haller, Committee Chair
Dr. Catherine Mobley
Dr. Melinda Denton

ABSTRACT

The disadvantaged groups (elderly, gender, minorities, and individuals of lower SES) suffer from inequality of leisure participation. This study explores the theoretical frameworks of multiple hierarchy stratification in order to better understand the perceived constraints of leisure activities according to socio-demographic variables and how single and multiple statuses influence an individual's participation in leisure activities.

This study explores the relationship between leisure constraints and socio-demographic variables using cross tabulation, and investigate net effects of socio-demographic variables and combined effects of socio-demographic variables in two different types of leisure activities using binary regression.

The findings suggest that the disadvantaged groups have parking problems and transportation problems as the main constraints. Also, it is expected that the disadvantaged groups face a higher number of leisure constraints than the advantaged groups. But, this study suggests in the number of leisure constraints for gender and race.

According to stratified groups, elderly, minorities, and females are more likely to participate in social events while they are reluctant to participate in outdoor recreation. For the combined effects, elderly minorities as well as elderly minority females are more likely to participate in social events. On the other hand, they are less likely to participate in outdoor recreation. Those interactions are significant, which corresponds to multiple hierarchy stratification.

DEDICATION

I would like to dedicate this study to my wonderful family and to my lovely husband, Dr. Soon-Jae Lee. They were always encouraging me to continue this work with constant love and belief.

ACKNOWLEDGEMENTS

I would like to express my gratitude to my advisor, Dr. Haller for his continuous support and advice. Without his supervision, I could not finish this thesis. I am also grateful to my committee member, Dr. Mobley and Dr. Denton for their guidance and their encouraging comments. In addition, I would like to thank Dr. Amirkhanian for his financial support as a research assistant during my study.

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CHAPTER ONE

INTRODUCTION

While the democratic principle of the United States says that all individuals should be treated equally, there are still social inequalities that minorities, women, the elderly, and individuals of low socio-economic status (SES) suffer from, all of whom I consider disadvantaged groups. The purpose of this study is to investigate the perceived constraints of leisure activities according to socio-demographic variables. Since our society is divided into multiple status classes, I will also investigate how a single status and combinations of multiple statuses affect an individual's participation in two different kinds of leisure activities.

This study has several objectives. First, this study sheds light on the relationships between socio-demographics variables (gender, age, education, income, and race) and leisure constraints of Washington D.C.'s dwellers. Second, the net effects of these socio-demographic variables will show how each of those variables is related to non-participation in both social events and outdoor recreation. Third, I will examine the interactions among socio-demographic variables to study the combined effects of multiple statuses in leisure activities. The multiple hierarchy stratification perspective will be employed as the theoretical framework for this study.

Socio-Demographic Characteristics and Leisure Activities

In order to examine non-participation in leisure activities, several studies introduce leisure constraints based on individual status characteristics. Among demographic groups, there are different constraints to leisure activities. I examine differences in leisure constraints by gender, race, age, income and education.

Regarding gender, women are less likely than men to participate in leisure activities (Bialeschki et al., 1996; Henderson et al., 1988; Henderson and Bialeschki, 1991; Jackson and Searle, 1985, Shaw, 1994). According to studies related to women's leisure, women are less involved in leisure activities than men because of the cost, time, fear of violence, lack of transportation, skills, and abilities associated with these activities. Not only do women generally earn less than men, but in many cases they also carry more family and home responsibilities (Henderson et al., 1988; Henderson and Bialeschki, 1991; Shaw, 1994).

Burdge (1969) and Kelly (1987) claim that leisure participation is significantly related to SES. They argue that individuals of higher SES, as measured by income and education, are more likely to participate in leisure activities than people of lower SES. Individuals of higher SES participate in these activities more because many leisure activities require cost, time, transportation, facilities, and leisure skills, which these individuals have the resources to access. In addition, Kelly (1996) argues that education is the most important predictor of leisure constraints because individuals of higher SES have more opportunities to participate in leisure activities than individuals of lower SES. He claims that the opportunities for leisure socialization and experiences depend on

education. White (1975) argues that both income and education are strongly related to participation in leisure activities. Individuals of lower SES have fewer opportunities for leisure activities because they must satisfy their basic needs, such as housing, healthcare, and food before participating in leisure activities (Markides et al., 1990).

Some studies suggest that African Americans are less involved in leisure activities than their Anglo-Americans counterparts because of a fear of violence, lack of financial resources, and racial discrimination (Floyd, 1999, 2006; Kelly, 1996; Philipp, 1995, 1997; Arnold and Shiness, 1998; Lee et al., 2001; Shiness et al., 1995). Several researchers argue that socio-economic status is related to leisure participation of African Americans. For example, African Americans of lower SES are less likely than Anglo Americans of higher SES to participate in leisure activities (Floyd, 2006; Hacker, 1994; Kelly, 1996; Lee et al., 2001; Shiness et al., 1995).

Hacker (1994) indicates that African Americans usually earn less than Anglo Americans because they are frequently less educated. Compared to Anglo Americans, African Americans on average earn less and are disproportionately excluded from higher-paying, white-collar jobs (*The Black Population in the United States*, 1992; Arnold and Shiness, 1998). Those differences in education, income, and occupational status between African Americans and Anglo Americans limit participation in leisure activities (Hacker (1994). Thomas (1993) indicates “cumulative effects” that are caused by racial differences in socio-economic status. He argues that racial discrimination still exists in our society. Due to racial inequalities, African Americans are more likely to participate in same-race leisure activities because they feel more comfortable. But, they are not likely

to participate with the comparable social class if participants are of a different race (Stamps and Stamps, 1985). Philipp (1995) also finds that 'comfort' and 'appeal' affect leisure participation, arguing that perceived and historic discrimination leaves African Americans uncomfortable in leisure involvement.

Elderly individuals are also less likely to participate in leisure activities due to the many physical problems that arise as one ages (Gordon et al., 1976; Iso-Ahola et al., 1994). Also, Kelly (1980) argues that elderly people are more likely to enjoy social and family activities instead of active leisure. Since these activities do not require serious physical activities, elderly people consider their own health conditions. Several researchers have also argued that older people are less likely to participate in leisure activities because of fear of violence, lack of socialization, and 'ageism' associated with these activities (Gross et al., 1978; Lawton, 1985; Wearing, 1999). Wearing (1999) indicates that 'ageism' inhibits older people in leisure participation because they are concerned about their abilities and the socialization required in such situations.

As described above, leisure participation is affected by the social stratification that generates leisure constraints that inhibit individuals from participating in leisure activities. Even though there are numerous studies that investigate a single effect or two combined effects of leisure behavior with one kind of leisure activity, the combined effects of three variables with two different kinds of leisure activities have been neglected.

Definitions of Terms

In this study, it is important to understand several key terms in order to fully understand the literature review. The various authors referenced these definitions and terms in their papers. I summarize the definitions as they are used in the literature. However, there are no appropriate terms for race in the previous studies, so I used the definitions from the American Heritage Dictionary of the English Language.

Leisure Constraints	Anything that inhibits individuals from leisure participation (Jackson, 1988, p.203).
Multiple Hierarchy Stratification Perspective	Social inequalities that are caused by gender, age, socio-economic status, and race (Markides et al., 1990, p.115). The effects of combinations of stratification positions that are produced by two or more statuses (Jeffries and Ransford, 1980, p 25).
Gender	The social categories that ascribe roles, appropriate behaviors, personality traits to women and men (Henderson et al., 1996).
Ageism	A form of institutional prejudice by which we convince ourselves, and many of the old themselves, that they are worth less in every respect simply because they are aged (Gross et al., 1978, p.2).
Socio-Economic Status (SES)	Social status that includes education, occupation, and income within a hierarchical social class (Lee et al., 2001, p.429)
Race	“Any groups united or classified together on the basis of common history, nationality, or geographic distribution” (The American Heritage Dictionary of the English Language, 1981, p 11).

CHAPTER TWO

LITERATURE REVIEW

Earlier studies on leisure constraints can explain various barriers inhibiting leisure involvement. Since the 1960s, numerous researchers have studied the characteristics of leisure constraints. Through the literature review, the previous studies will be utilized to examine the effects of age, race, gender, education, and income in leisure participation.

In this literature review, first, the concept of leisure constraints will be examined. Second, constraint models will be studied to investigate their effects on leisure participation. Third, the influences of socio-demographic constraints on leisure constraints will be identified. Finally, the multiple hierarchy stratification perspective will be explored as a theoretical framework for this study.

Relationship between Non-Participation and Leisure Constraints

Non-participation in leisure activities

Even though several researchers have examined non-participation in leisure activities since the 1960s to the 1970s, they have been unsuccessful in examining leisure constraints because they used poorer variable measurements (Jackson, 1988). However, in the 1980s, numerous researchers have clarified the concept of leisure constraints in order to examine a relationship between non-participation and leisure constraints

(Boothby, Tungatt & Townsend, 1981; Fracken & van Raiij, 1981; Jackson, 1983; Jackson, 1991a; Jackson & Searle, 1983; Searle & Jackson, 1985; Witt & Goodale 1981).

In their study of recreation non-participation, Jackson and Searle (1983) identify three categories of non-participation.

- 1) Non-participation because of internal barriers, but hoping to participate. (e.g. skills, abilities, or opportunities)
- 2) Non-participation because of external barriers, but hoping to participate. (e.g. lack of amenities or programs)
- 3) Non-participation because of lack of interest (e.g. lack of motivation)

Goodale and Witt (1989) classify the relationship between non-participation and barriers into two categories. One deals with the types of constraints that are anything inhibiting leisure participation, and the other deals with types of participants. Rosma and Hoffman (1980), who examined opportunity theory, provide an example of the type of constraints that Goodale and Witt mention. They consider facilities, cost of activities, and time as barriers to becoming involved in leisure activities. They argue that individuals who do not encounter any of these barriers are more likely to participate in outdoor recreation activities than individuals who have encountered these barriers. Opportunity theory suggests that perceived constraints keep people from leisure participation if they are free from any objective constraints.

There are several studies about the types of leisure- activity participants. Boothby, Tungatt, and Townsend (1981) focus on participants who have stopped leisure involvement. They argue that individual and social changes were major reasons causing individuals to cease participation in outdoor recreation. For example, Witt and Goodale (1981) investigate the connection between individual motivation and leisure participation, finding that youth wrestlers who stopped wrestling sought more enjoyment in other things, such as playing card games, watching TV, and shopping. Stadulis (1979) also notes that college students became less involved in outdoor recreation after they partake in a tournament of billiards or bowling, because they found billiards and bowling more enjoyable. Jackson and Searle (1985) argue that an individual's motivation, behavior, and leisure choices have an effect on participation decisions, even though these influences are either positive or negative.

Leisure Constraints

Jackson (1988) indicates that the term 'constraint' is a better term than 'barrier' to explain non-participation because barriers include any factors that negatively influence leisure participation. Arnold and Shinew (1998) regard barriers "either in terms of preventing participation, reducing frequency, intensity or duration of participation, or reducing the quality of the experience or satisfaction gained from the activity" (67).

Jackson (1988) argues that barriers include only one particular constraint, such as intervention between preference and participation while constraints include an individual's preference and satisfaction. For example, Rosma and Hoffman (1980) use

opportunity theory to examine the relationship between non-participants and constraints. According to their article, perceived barriers like time, cost, and lack of facilities limit individual leisure activities. Franken and van Raiij (1981) investigate the socioeconomic factors when studying the relationship between barriers and leisure satisfaction.

There are several studies investigating leisure constraints in the 1980s. McGuire (1984) examines individuals, 45 years of age or older, who have faced difficulties regarding leisure involvement. According to McGuire, external resources (time, approval, abilities, and social and physical well-being) were major constraints for study of participants. Wade (1985) describes psychological and physical constraints. Psychological constraints referred to perceived barriers, such as lack of interest and fear, but physical constraints were caused by socio-economic status, facilities, and the programs themselves. Crompton and Lamb (1986) demonstrate that individuals might not take part in leisure activities due to organizational control, social and personal situations, and external barriers.

Studies of leisure constraints flourished in the 1990s. Backman and Crompton (1990) suggest that perceived constraints influence a participants' loyalty to outdoor recreation. If an individual has lack of loyalty for a particular activity, he or she might discontinue it. Henderson and Bialeschki (1991) explore the constraints women face regarding empowerment in leisure involvement. They argue that women lack financial resources and carry a greater share of family responsibilities, both of which may lead to non-participation. Tirone and Shaw (1997) also investigate women's responsibilities and limited leisure participation. They claim that women are less likely than men to

participate in outdoor recreation because of women's responsibilities. Patterson and Carpenter (1997) study widows' leisure constraints after the death of a husband, finding that, unlike women in couples, widows are passive in leisure activities because it is often difficult for them to find a partner to join in outdoor recreation.

Constraint Models

Even though numerous scholars explore how individuals' personal lives influence various fields of leisure activities, many of them ignore leisure constraints (Arnold and Shiner, 1998). The development of leisure-constraint models took place from 1985 to 1991. Jackson (1988) reviews and integrates constraint theories, encouraging leisure researchers to see the significance of leisure constraint. Because individuals reduce constraints to leisure activities, they are more likely to participate in leisure activities. In the next paragraphs, several constraint models will be presented.

Jackson and Searle (1985) develop a decision-making model of leisure constraints from the White article, Crawford and Godbey (1987) construct a model that examined the relationship between constraints and leisure participation, Henderson et al. (1988) modify the model of antecedent constraint from the Crawford and Godbey article that also influences Jackson's studies (1990a, 1990b), and Kay and Jackson (1991) investigate the relationship between individual preference of leisure activities and the frequency of leisure involvement.

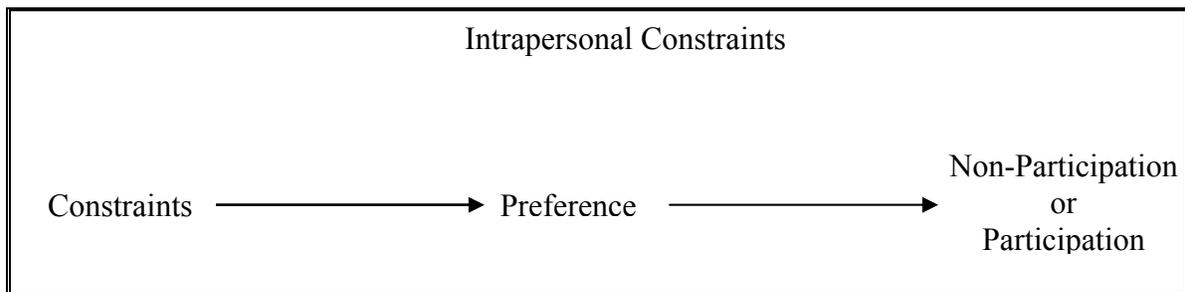
White (1961) provides a framework for the development of constraint models. He studies individual adjustments to natural dangers. In addition, his decision-making model

based on individual behaviors illustrates the effects of possible constraints. The White decision-making model encouraged Godbey (1985) and Jackson and Searle (1985) to build upon their models. Godbey (1985) argues that leisure participation constraints are created by potential participants' lack of information. According to him, recreation providers should inform non-participants about leisure activities and opportunities. Jackson and Searle (1985) have similar ideas about leisure constraints. They propose that constraints, such as lack of facilities, information, money, and time prevent leisure participation and activities. They conclude that individuals are prohibited from participating in leisure activities because of these constraints, but still hope to participate at some point. They demonstrate that "the proposed model helps to define the linkages that exist in reality between the non-participatory and the participatory aspects of an individual's recreation behavior, by examining them simultaneously in the context of the choices that he or she makes about recreation" (704).

Crawford and Godbey (1987) present the relationship between three categories of constraints and leisure participation. They look at how both participation and non-participation are influenced by constraints and individual preference. They indicate three models of leisure constraints: intrapersonal constraints, interpersonal constraints, and structural constraints. According to their models, barriers interfere with preference and participation in leisure activities. Leisure preference takes place when a barrier interferes with or inhibits participation. In their study, they deem constraints as intervening factors (see Figures 1.1, 1.2, and 1.3).

The model of intrapersonal constraints (see Figure 1.1) is of internal or psychological constraints. It is related to prior experiences, causing individuals to either have an interest in a particular type of leisure activity or not. For example, individuals tend to choose leisure activities based on experiences. Henderson, Bialeschki, Shaw and Freysinger (1996) argue that preference or lack of interest in a particular activity is influenced by self-confidence.

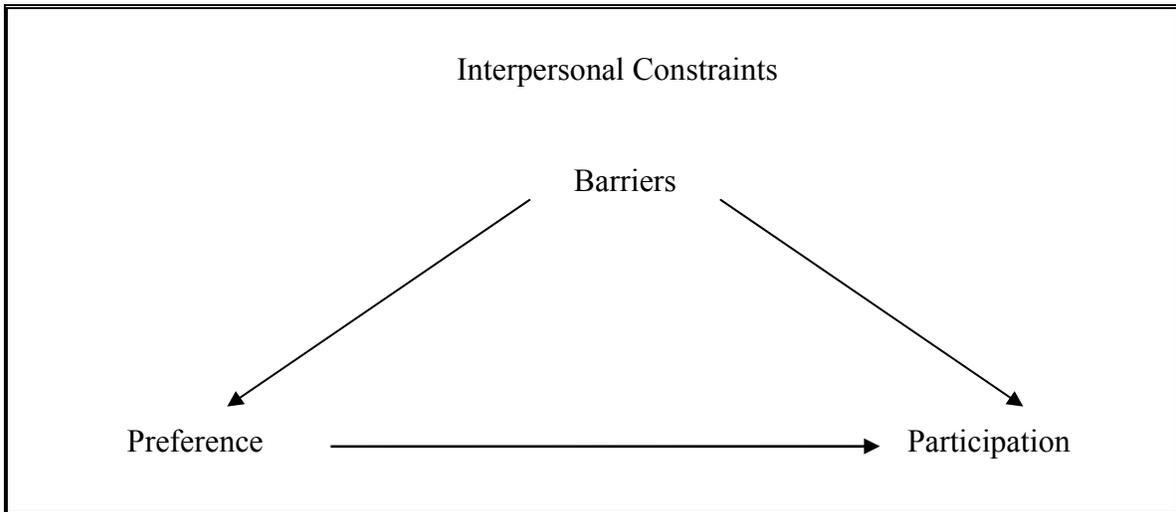
Figure 1.1: Leisure Constraints by Crawford and Godbey (Intrapersonal)



*Source from Crawford and Godbey, 1987

Interpersonal constraints (see Figure 1.2) are social and cultural constraints. Many individuals feel that they need partners in order to enjoy participating in an activity. In other words, interpersonal constraints are related to association with other individuals, which affect an individuals' preference for a leisure activity (Arnold and Shiness, 1998).

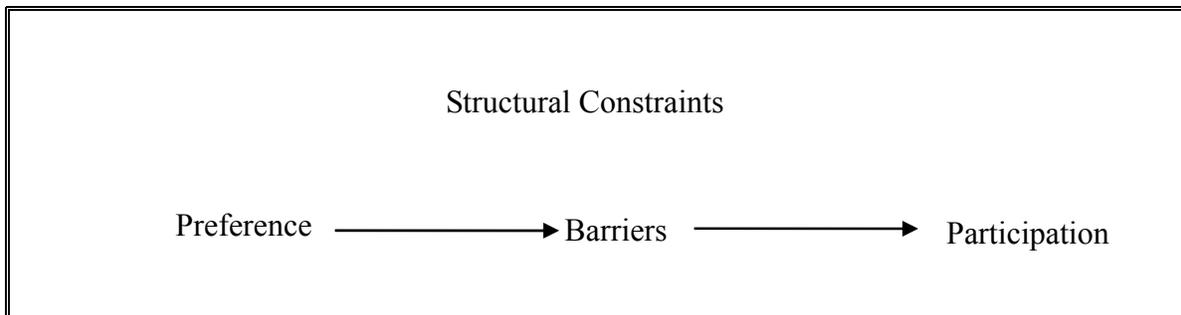
Figure 1.2: Leisure Constraints by Crawford and Godbey (Interpersonal)



*Source from Crawford and Godbey, 1987

Structural constraints interfere with leisure participation and preference. If individuals have preference for a particular activity, they try to reduce barriers in order to participate.

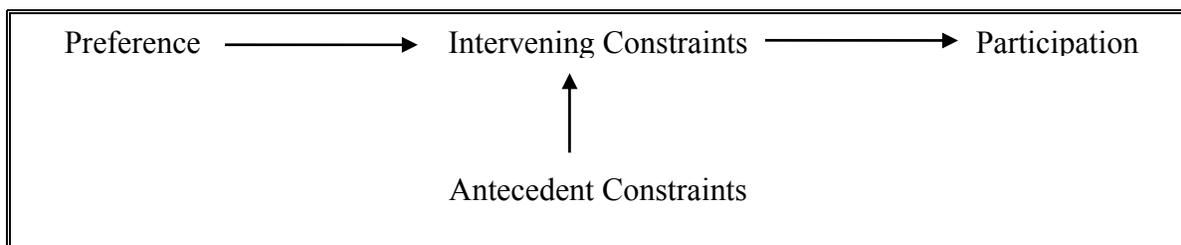
Figure 1.3: Leisure Constraints by Crawford and Godbey (Structural)



*Source from Crawford and Godbey, 1987

Henderson et al. (1988) examine the interaction between perceived constraints, outdoor recreation, and gender, by evaluating individual characteristics, such as feminine, masculine, and undifferentiated characteristics. They discover several constraints that limit leisure participation, such as money, interest, facilities, opportunities, gender roles, and decision making. The three-barrier models of Crawford and Godbey are advanced by the Henderson's study. Henderson et al. (1988) introduces antecedent constraints, which focus on preference. While antecedent constraints that are derived from an individual's abilities, traits, and socialization factors are similar to the Crawford and Godbey's intrapersonal and interpersonal barriers, intervening constraints are related to their structural constraints. Henderson's study encourages leisure scholars to investigate the association between antecedent and intervening constraints and leisure participation.

Figure 2: Modified Constraint Model by Henderson et al.



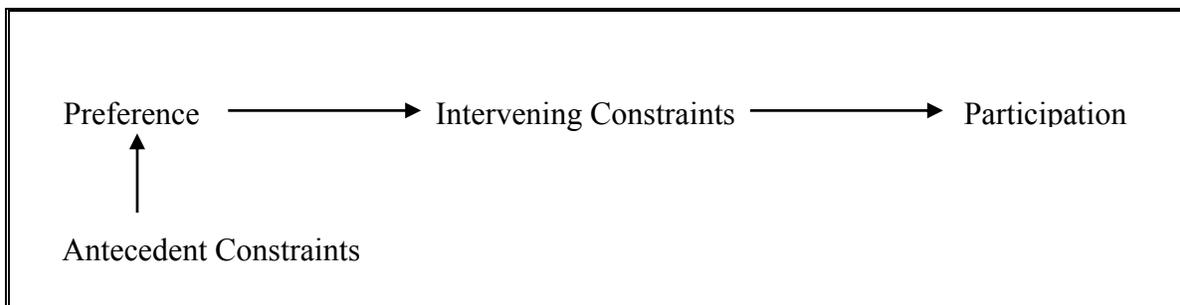
*Source from Henderson et al., 1988; Arnold and Shinew, 1998

Jackson (1990b) reviews the articles from Crawford and Godbey (1987) and Henderson et al (1988). He integrates and modifies their models to examine the relationship between preference and participation. In his article (1990a), Jackson suggests three assumptions commonly found in previous studies. First, he distinguishes two

groups of non-participants, for example individuals who want to participate and individuals who do not want to participate, despite facing no constraints. Second, he studies the individuals who are not interested in leisure activities. Finally, he notes how leisure-activity constraints affect participation when intervening between preference and participation (p.55).

Like Henderson et al. (1988), Jackson also discusses antecedent and intervening constraints. His model presents antecedent constraints that prevent preference and include Crawford and Godbey's (1987) interpersonal and intrapersonal constraints. Using data from a Canadian survey, he investigates non-participants who did not want to participate in leisure activities. In this study, he concludes that antecedent constraints' effects on leisure participation are related to the negative effects on leisure preference, rather than concentrating on leisure involvement by examining non-participants.

Figure 1.3: Alternative Models of Leisure Constraints by Jackson

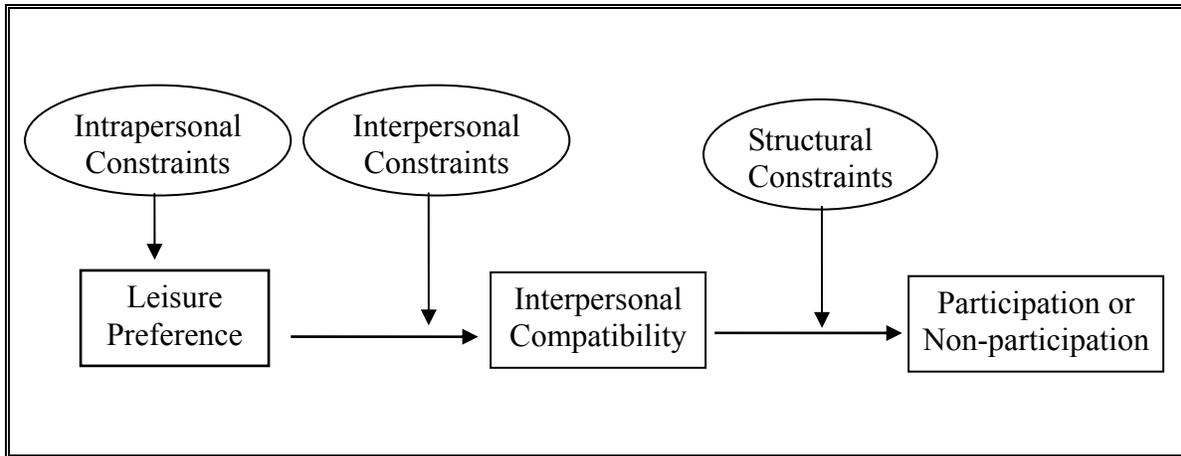


*Source from Jackson, 1990; Arnold and Shiner, 1998

There are several scholars who extend previous models of leisure constraints. Crawford et al. (1991) examines a “hierarchical” order. According to this model, intrapersonal constraints that affect leisure preferences occur first. Right after intrapersonal constraints, interpersonal constraints take place, which influence interpersonal compatibility. Finally, participation or non-participation is dependent on structural constraints.

Using variables from Crawford and Godbey (1987) and Crawford et al. (1991), Raymore et al. (1994) divide categories of barriers regarding leisure activities into a hierarchical order. Using the theoretical structure from Crawford et al. (1991), he examines how the three constraints on leisure activities affect a new leisure activity by studying a sample of high school students. Like Crawford and Godbey (1987), Raymore et al. conclude that intrapersonal, interpersonal, and structural constraints are divided and happen in a hierarchical order, ultimately supporting the hierarchical model derived by Crawford et al. (1991). However, Henderson and Bialeschki (1993) argue that the hierarchical model does not appear in their research, which looked at constraints affecting women by using a qualitative method. But Henderson et al. (1996) suggest that the hierarchical model could be a practical instrument for better understanding barriers to leisure participation.

Figure 4: A Hierarchical Model of Leisure Constraints by Crawford et al.



*Source from Crawford et al., 1991; Arnold and Shinew, 1998

In summary, as a result of Jackson’s studies, a number of researchers from 1980 to 1990 developed constraint models to explain leisure activities. To understand the constraints on leisure activities, several concepts and models that were specialized for different sectors also emerged at the same time.

Influences of Socio-Demographic Constraints

Socio-demographic characteristics are related to the extent of leisure constraints because they influence participation (Jackson, 2005; Jackson & Henderson, 1995; McGuire & O’Leary, 1992). Lovaglia (2000) states that “status position in society is relative to others and arranged in layers. Thus, status positions are not just different from each other; they are ranked” (131). The socio-demographic characteristics in Lovaglia’s

study of stratified groups include gender, socio-economic status, race, and age and are used to examine how these characteristics affect constraints on leisure participation.

Influence of Gender Constraints

In the last several decades, there have been numerous studies related to gender and leisure constraints. With regards to women's constraints in leisure, many scholars argue that women tend to participate less in leisure activities than men (Searle and Jackson, 1985; Henderson and Allen, 1991; Shaw, 1994; Jackson and Henderson, 1995; Scott and Jackson, 1996; etc.). Searle and Jackson (1985) find that women faced more constraints than men, especially in regards to family responsibilities, security, and transportation, which reduces women's involvement. Deem (1986) argues that women are reluctant to participate in these activities if they do not earn their own income. According to him, women are more likely to spend money for satisfaction of family life than they are for satisfaction of their own life.

Henderson and Allen (1991) indicate that constraints, such as lack of time, interest, money, facilities, opportunities, were associated with low rates of female involvement. Shaw (1994) suggests that a patriarchal society inhibits women's participation in leisure activities. For example, in a typical patriarchal society, males are given the privilege of participating in outdoor recreation, while females care for the family and housework. This belief limited women's participation in leisure activities. However, Jackson and Henderson (1996) also argue that the gender differences did not affect leisure participation, but patriarchal culture inhibited women's leisure.

Several researchers argue that women do not have as many opportunities to participate in leisure activities compared to their men counterparts (Green et al., 1990; Henderson and Bialeschki, 1991; Shaw, 1999). Women prefer to participate in social meetings regarding family care and home issues, rather than participating in outdoor activities like adventure recreation, which they find unsuitable (Lee et al. 2001). For instance, hunting and fishing have been favorite outdoor recreations for men; however, few women take interest in these activities because they do not want to kill animals.

Another constraint on women's leisure is their fear of crime. Women are more likely to consider safety issues than men (Whyte & Shaw, 1994; Fredrick and Shaw, 1995; Shaw, 1999). Although there are numerous public places in the United States where women can go by themselves, women tend to avoid loitering in public parks (Scott and Munson 1994). Bialeschki and Hicks (1999) argue women are faced with more violence in public parks, and thus females tend to avoid leisure participation in such areas. Another paper from Bialeschki (2005) notes how women tend to enjoy leisure participation in safe places. According to the National Survey of Recreation and the Environment, women not only fear of violence, but are also dissuaded by the lack of facilities and the presence of insects or harmful plants (Johnson et al. 2001).

In sum, there are several constraints that inhibit women's participation in leisure activities. Family care and home issues and females' place in a patriarchal society lead women to participate in leisure activities less than men. The fear of crime, outdoor pests, and other potentially harmful wildlife also lower women's involvement in leisure activities.

Influence of Education and Income Constraints

Education and income have been studied as predictors of leisure involvement (Gramann and Allison, 1999). Lee et al. (2001) argue that socio-economic status (SES) variables, such as income and education, affect leisure involvement even though they were not considered in previous studies. Early scholars like Clarke (1956) and Burdge (1969) see significant connections between leisure involvement and SES in that most leisure activities require financial and cultural resources.

According to Kelly (1996), education and income variables are significantly related to leisure involvement because they often directly contribute to participation opportunities and barriers. He argues that financial resources are required to participate in leisure activities. While the poor consider cost of living, the rich consider quality of life. Thus, rich people look for opportunities to engage in leisure activities, while poorer individuals avoid such participation due to lack of financial resources. While Scott and Munson (1994) shed light on income as a predictor of perceived leisure constraints, Kelly (1996) argues that education influences leisure participation more than other factors because education is significantly associated with leisure socialization. For instance, an individual of higher education has more opportunities for leisure participation. Since individuals of higher education are more likely than individuals of lower education to pursue quality of life, colleagues or fellows ask to take part in leisure activities frequently (Kelly, 1996).

Lee et al. (2001) use opportunity theory to demonstrate the relationship between SES and leisure participation. They suggest the removal of several constraints, such as lack of money, lack of transportation, lack of time, and lack of facilities as Rosma and Hoffman (1980) indicate. Lindsay and Ogle (1972) argue that leisure non-participation depends on both lack of cost and lack of interest. For example, leisure activities that require a great deal of money are not popular among individuals of lower income. Rosma and Hoffman (1980) investigate the differences in leisure participation between upper-class and lower-class individuals, arguing that lower-class individuals are less interested in leisure activities than those in the upper classes.

Manning (1999) indicates that some researchers have studied the connection between education and leisure participation. Kelly (1983) and White (1975) conclude that education is the most significant predictor of leisure behaviors. Lucas (1990) also argues that education influences outdoor wilderness visitation. According to his study of U.S. national park visitors, of all park visitors throughout the year, 60 to 80 percent were college graduates. He indicates that individuals with low education do not have the proper activity skills for visiting national parks, nor do they know the history of such places. According to these findings, higher education encourages individuals to take part in leisure activities. Therefore, there is a positive relationship between education and participation in leisure activities.

Influence of Racial/Ethnic Constraints

Floyd et al. (2006) note that racial differences in leisure involvement were associated with differences in SES and racial discrimination. For example, Washburne (1978) argues that historical inequity caused differences in SES, which reduced African-American leisure involvement. Floyd (1999), Gramann and Allison (1999), and Lee et al. (2001) examine the marginality hypothesis developed by Washburne. The marginality hypothesis suggests that the difference in education and income rooted in historical inequality often lowers individuals' ability to partake in leisure activities. According to Washburne (1978), lack of facilities, transportation, and low income are the factors that lower leisure involvement. Lee et al. (2001) point out that the marginality hypothesis is consistent with the differences in leisure behavior between Anglo Americans and African Americans in terms of education and income.

Several researchers study class polarization and class identification theories to examine the differences in leisure behaviors among ethnic and racial groups in terms of social class. Wilson (1978, 1980) investigates the differences in leisure behavior by comparing low- and middle-class African Americans. Wilson (1980) finds that African Americans have different leisure behaviors according to social classes. For example, lower-class African Americans tend to spend their spare time at home watching TV or sleeping. On the other hand, middle-class African Americans visit public places during their leisure time. Barr et al. (1993) asserts that SES is a considerable variable when examining the differences in leisure participation among races. Shinew et al. (1996) point out that leisure preferences in racial groups vary depending on income and level of

education. Floyd et al. (1995) find that both middle-class Anglo Americans and middle-class African Americans have similar leisure preferences, but there were participation differences in the leisure preferences of poor, working-class Anglo Americans and African Americans of the same SES. He argues that among poor, race is more important than class.

An individual's tendency to participate in leisure activities is dissimilar among different ethnic and racial groups because of the disparity in these groups' value systems, norms, and leisure socialization patterns (Washburne, 1978; Washburne and wall, 1980; Floyd, 1999; Gramann and Allison, 1999, Lee et al., 2001). Floyd (1999) finds that African Americans usually spend their leisure time with friends in shopping malls, while Anglo Americans visit parks and participate in outdoor recreation with family and colleagues. According to some researchers, Anglo Americans, on the one hand, go to national parks to enjoy outdoor recreation or escape from their daily lives. On the other hand, African Americans and Native Americans are less likely to enjoy forest-based recreation, since they regard parks as lands of oppression (Meeker, 1973; Taylor, 1989; Harris, 1997; Johnson, 1998).

Individuals' perceived discrimination and interrelation with ethnic and racial groups constrain leisure involvement (Floyd 1999; Floyd et al., 1993; Floyd et al., 2006; Gramann and Allison, 1999; West, 1989). Floyd et al. (2006) argue that perceived discrimination and actual experience reduce racial/ethnic groups' participation in outdoor recreation. West (1993) argues that African Americans are still reluctant to travel to unfamiliar places because of the fear of racial discrimination.

These findings suggest that minority groups tend to participate less in leisure activities than Anglo Americans. African Americans tend to participate less in leisure activities not only because they are in different social classes rooted in historical inequality, but also because of their differing cultural values.

Influence of Age Constraints

Many studies have investigated the effect of age on leisure activities using the perspective of the life cycle (Lee et al. 2001). From this perspective, Levinson (1978) argues that individuals pursue different leisure activities according to where they are in their lifespan. To illustrate this idea, Gordon et al. (1976) examine individuals who pursue active leisure participation in the first phase of the adult lifespan, finding that, in comparison, individuals were less likely to participate in outdoor recreation in the last phase of the lifespan. Gordon et al. (1976) find that the percentage of leisure participation declines from about 80 percent in the early adulthood to about 20 percent in late adulthood. Kelly (1980) finds that individuals tend to participate less in outdoor recreation as they get older, instead spending more time on social and family activities. Iso-Ahola et al. (1994) also argue that participation in outdoor activities declines in the last phase of adulthood.

The reasons why the elderly are less likely to participate in outdoor activities are associated with their physical constraints, socialization, and their fears of violence and socialization. Physical constraints, also called developmental effects, are caused by declining biological function that occurs with increased age (Floyd 2006). Scott and

Jackson (1996) find that elderly women are more likely than younger women to avoid leisure participation, because they fear violence and often lack friends to participate with them.

Several researchers examine *ageism* to support the tendency of decreasing leisure involvement in the last phase of the adult lifespan. Gross et al. (1978) describe ageism as “a form of institutional prejudice by which we convince ourselves, and many of the old themselves, that they are worth less in every respect simply because they are aged” (2). Lawton (1985) argues that the perceived constraints derived from ‘ageism’ might confine the elderly to participating in less demanding activities. Wearing (1999) points out that ageism creates leisure constraints because older people are skeptical about their abilities and their socialization skills when participating in leisure activities.

In conclusion, elderly people tend to participate less in active leisure because of physical constraints and ageism. Physical constraints lead old people to avoid outdoor recreation and participate more in social and family activities. Older individuals are also constrained by ageism, which disinclines them from leisure participation. But, Wearing (1999) and Floyd et al. (2006) argue that the leisure activities reduce ageism and advance older people’s physical and mental health.

Multiple Hierarchy Stratification Perspective

As shown above, a number of studies have demonstrated that leisure constraints are associated with socio-demographic variables. However, Lee et al. (2001) argue that these particular studies fail to account fully for the relationship between multiple stratified statuses and leisure participation.

Markides et al. (1990) argue that there are inequalities between individuals in terms of gender, age, education, income, and race in our society and that inequalities correspond to the multiple hierarchy stratification perspective. They argue that this perspective supports a “stratification continuum.” It suggests that older minorities of lower income represent the lower end of a stratification continuum while young Anglo Americans of higher income correspond to the higher end. Using the stratification perspective, Markides et al. (1990) create three groups to examine leisure participation: upper social class, lower social class, and the middle class, which includes individuals who do not belong either of the other two groups. In his study, he utilizes the multiple hierarchy stratification perspective to investigate multiple stratified statuses in term of housing, health coverage, life satisfaction, and leisure resources (Lee et al. 2001).

The multiple hierarchy stratification perspective was established in the 1950s. In the beginning, only two variables, race and age, were employed to explain stratification between groups. Telly and Kaplan (1956) examine this perspective by researching the elderly and African Americans. In their research, they indicate a “double jeopardy,” which uses two status variables to understand socio-demographic disparities of leisure

participation. They illustrate that older individuals and African Americans face disadvantaged circumstances as compared to other social groups.

Dowd and Bengtson (1978) also argue that the elderly, African Americans, and other racial minorities face inequalities in leisure participation; however, they found that common indicators of quality of life negatively affect leisure participation as well. In their study, Dowd and Bengtson (1978) also attempt to explore the relationship between the elderly and African Americans, arguing that the “double jeopardy” hypothesis looks at these individuals’ devaluation in stratified groups. They also compare minorities, like African Americans, to Anglo Americans in terms of the effects of aging. The hypothesis of their study was that the participation gaps between these groups declined with age. But, they conclude that there are differences among racial groups consistent with the double jeopardy hypothesis.

Several studies investigate the double jeopardy hypothesis using the multiple hierarchy stratification. Double jeopardy is expanded on by The National Urban League (1964) using age and race through its distribution of pamphlets. Jackson (1967) indicates double jeopardy as “a whole lifetime of economic and social indignities” (281). As African Americans age, double jeopardy occurs due to racial discrimination. Smith (1967) examines older African Americans in rural areas in terms of multiple jeopardy, finding that there are differences between Anglo Americans and African Americans. According to the United States Senate Special Committee on Aging (1971), African Americans are less educated, poorer, and suffer from more diseases and shorter life spans than Anglo Americans. African Americans of lower SES are less likely than Anglo

Americans of higher SES to enjoy satisfactory quality of life. After this report, Jackson (1972) developed the double jeopardy hypothesis, including education, income, age, gender, and race variables. Jackson et al. (1982) also find that African Americans who are over 65 years of age are less likely than Anglo Americans between 18 and 39 years of age to participate in outdoor recreation.

Riddick and Stewart (1994) investigate retired elderly women, using two variables to identify double jeopardy hypothesis. First, they study the differences in life satisfaction between retired Anglo- and African-American women. Second, they examine the determinants of life satisfaction. In their paper, they find that Anglo-American women are more satisfied with their life than African-American women. They include several predictors of life satisfaction, such as leisure participation, perceived health, income, and leisure planning. Although both African-American women and Anglo-American women consider perceived health as a part of life satisfaction, income did not effect life satisfaction for any group. Riddick and Stewart (1999) conclude that double jeopardy exists in terms of life satisfaction among retired elderly women.

Philipp (1995, 1997) investigates the association between race and gender and leisure activities in term of two measures: appeal and comfort. Using measures of the SES, age, race, and gender, he finds that African Americans are less likely to participate in leisure activities than Anglo Americans because they have lower levels of appeal for, and comfort in, doing these activities than Anglo Americans. According to his paper, African Americans' lower levels of appeal and comfort are derived from perceived

constraints, such as lack of access to facilities and place and indifference to special activities.

Shinew et al. (1995) also use the multiple hierarchy stratification perspective. They identify different leisure preferences according to gender, race, and social classes. They develop three hypotheses to unite the effects of inequality. First, they find that there is no difference in leisure activity participation between low-income African American women and middle- or high-income Anglo American men. Second, they find that there is no difference in the leisure preferences of middle-class men in spite of racial differences. Finally, they find that social classes have less effect regarding leisure constraints among African-American men than among African-American women.

Through the study, there is a strong relationship in the leisure preferences of African-American men and Anglo-American men, even though there was no relationship between low income African-American women and middle- or high-income Anglo-American men. Moreover, Shinew et al. (1995) argue that African-American women, whether they were lower class or upper class, did not enjoy leisure activities. They suggest that other researchers should investigate the combined effects of gender, race, and class in leisure participation. Arnold and Shinew (1998) also employ this perspective in regard to park visitors to examine the role of gender, race, and income.

In the literature review, leisure constraints derived from differences in age, race, gender, education, and income bring about multiple hierarchy stratification. Arnold and Shinew (1998) employ this perspective to investigate leisure preference, and Riddick and Stewart (1994) utilize this viewpoint to investigate the life satisfaction of retirees. Even

though they only study racial differences in leisure activities, Riddick and Stewart (1994) develop the theoretical framework to show the multiple hierarchy stratification perspective for future studies. Philipp (1995, 1997) also employs this perspective to investigate the propensity of leisure activities.

In recent years, Lee et al. (2001) and Floyd et al. (2006) use the multiple stratification hierarchy perspective to examine socio-demographic differences. Lee et al. (2001) examine the perspective to study the combined effects of SES, gender, age, and race differences on the use of parks and overall involvement in Texas. Floyd et al. (2006) explore the perspective to investigate the aggregated effects of SES, gender, age, and race differences on recreational fishing. Both Lee et al. (2001) and Floyd et al. (2006) find that older minority females of lower SES are less likely than younger Anglo-American males of higher SES to participate in outdoor recreation or fishing. Even though they examine the combined effects of demographic statuses, both Lee et al. (2001) and Floyd et al. (2006) focus on a particular activity. However, this study will investigate the differences in two types of leisure activities based on socio-demographic characteristics in terms of multiple hierarchy stratification.

Even though numerous studies examine leisure constraints, they do not reveal differences in types of leisure constraints according to an individual's status. This study will also show that there are differences in the numbers of leisure constraints according to socio-demographic variables (race, gender, age, education, and income). Comparing two types of leisure activities, this study explores how an individual's status influences non-participation in social events or outdoor recreation, and explores interactions to examine

the combined effects of socio-demographic variables in terms of multiple hierarchy stratification.

CHAPTER THREE

METHODOLOGY

The aim of this study is to explore and identify constraints to leisure involvement among city dwellers in Washington D.C. The null hypothesis is that there is no difference in the types and the numbers of leisure constraints measured by an index of leisure constraints based on socio-demographic variables. It is expected that the elderly, minorities, females, and lower-educated/poor individuals are more likely to face high numbers of leisure constraints than are youth, Anglo Americans, males, and highly-educated/wealthy individuals. In this study, the elderly, minorities, females, and lower-educated/poor individuals are used to discuss multiple hierarchy statuses. Other objectives of the study are to explore the net effects of age, race, gender, education, and income, and to examine the combined effects of these variables on two different types of leisure activities.

This chapter will discuss the methodologies used to accomplish the objectives of this study. First, I will discuss the data source. Second, I will describe Washington D.C. as a context for this study. Third, I will explain leisure constraint index. Fourth, I will discuss the dependent variables and independent variables used in this study. Next, I will describe the data analyses. Last, I will present the research hypotheses examined in this study based on the literature review.

Data Source

Data for this study were extracted from the ABC News poll of the general population that was implemented from June to July, 2004. Participants of the ABC News poll (29,627 in total) were individuals, 18 years or older living in the continental United States. Based on the random digit dialing (RDD) procedure, the survey was conducted by TNS Intersearch of Horsham, Pennsylvania and was supported by ABC News (Washington Post, 2004).

Choosing from among the respondents, the Washington Post created ¹a subset of the data for respondents who live in Washington D.C. to examine the leisure behaviors of Washington D.C. dwellers.

The ABC News poll data asked respondents to answer a range of questions about other political and social issues. Because the ABC News poll did not limit its questions to leisure activities, the Washington Post collected data related only to the questions of leisure behavior in order to examine leisure patterns in Washington D.C., concentrating mainly on weekend leisure behaviors. The dataset used asked about leisure behaviors and leisure satisfaction, as well as the sources of information for leisure activities (Washington Post, 2004).

The total sample size included 1,001 respondents who answered demographic questions, leisure constraint questions, and leisure participation questions. However, not all 1,001 respondents were able to answer all of the questions included in this study. Thus, there are some missing values that include those respondents who did not answer some of

¹ This dataset was obtained through the Inter-University Consortium for Political and Social Research (ICPSR).

the leisure activity questions. This study uses data from the only 794 respondents who answered all of the leisure and demographic questions.

Washington D.C.

Since the 1960s, greater numbers of African Americans moved to Washington D.C. from the South. Some citizens live in poverty, and social problems are aggravated by the governmental business at the city and the District's lack of political power. Even though Washington D.C. has little industry, it is the legislative, administrative, and judicial center of the United States. There are numerous tourist attractions and cultural centers as well.

Arnold and Shinew (1998) indicate that a large metropolitan city is required as a sample in order to obtain diversity information using socio-demographic characteristics. Washington D.C was selected as an appropriate place for this study. Washington D.C has a population of 572,059 people with 248,338 households and 114,235 families living in the city. African Americans are more than a half of population comparing to other races, individuals of lower SES measured by income and education are the highest rate of population, and middle-aged people make up the highest rate of the population (US 2000 Census of Population and Housing for the District of Columbia).

Even though there are differences between Washington D.C.'s population and samples used in this study to examine socio-demographic characteristics, I will compare these samples to the population using similar groupings. Of course, all analyses will be run using weighed data to compensate for sampling biases (see below p.44). Table 1 shows

the socio-demographic characteristics of the Washington D.C., and Table 4 shows socio-demographic characteristics of sample in this study (see p.51).

Females make up 59.9 percent of the population for Table 1, while in Table 4, females make up 53 percent of the population. Among a population of 248,590, people who earn under \$25,000 are 32.2 percent, while respondents who earn under \$30,000 were 5.5 percent among the samples. The median income for a household is \$40,127, while \$46,283 is the median income for a family (US 2000 Census of Population and Housing for the District of Columbia).

Individuals with high school degrees were 42.7 percent of the population of 384,535 people, but 21 percent of respondents in sample among the 794 people have high school degree. While individuals with high school degrees were the most common in the population, individuals with college degrees or higher degrees (57.8 percent) were the highest in the sample. The percentage of high school graduates over 25 years old is 77 percent, and those with bachelor degrees or higher are 39 percent (US 2000 Census of Population and Housing for the District of Columbia).

About 68 percent of the population is composed of minorities, including African Americans and other races, while approximately 30.8 percent of the population is white. However, more than twice as many Anglo Americans as minorities participated in this study.

Table 1: Socio-Demographic Characteristics of Washington D.C.'s Population

Variables	Value	Number	Percent
Gender	Male	269,366	47.1
	Female	<u>302,693</u>	<u>52.9</u>
	Total	572,059	100.0
Race/ Ethnicity	Anglo Americans	176,101	30.8
	African Americans	<u>323,312</u>	<u>60.0</u>
	Hispanic	44,953	5.4
	Other Races	27,693	3.8
	Total	572,059	100.0
Income	Under \$25,000	<u>79,976</u>	<u>32.2</u>
	\$25,000 to \$49,999	65,909	26.5
	\$50,000 to \$74,999	39,553	15.9
	More than \$75,000	63,095	25.4
	Total	248,590	100.0
Education	High School or Less	<u>164,418</u>	<u>42.7</u>
	Associate Degree	69,880	18.2
	College Graduate or Higher	150,205	39.1
	Total	384,535	100.0
Age	Under 19	135,806	20.1
	20-24	51,823	12.7
	25-44	<u>189,439</u>	<u>33.1</u>
	45-64	125,093	21.9
	More than 65 years	69,898	12.2
	Total	572,059	100.0

- Note: Highest percentage is underlined.
- Source from 'US 2000 Census of Population and Housing for the District of Columbia'

The population consists of persons under the age of 19 (20.1 percent), age 20 to 24 (12.7 percent), age 25 to 44 (33.1 percent), age 45 to 64 (21.9 percent), and ages 65 years (12.2 percent). In sample, all respondents were over 18 years old. There are five age groups for the samples; 18-29 (17.3 percent), 30-39 (23.3 percent), 40-49 (21.9 percent), 50-64 (26.3 percent), over 65 (11.2 percent). Middle-aged people, age 30-64, were more prevalent than young or older people in the population and the sample.

Dependent Variables

Some people utilize multiple hierarchy stratification to explain these inequalities between individuals and groups (Markides et al., 1990; Philipp, 1995, 1997; Shinew, 1995; Arnold and Shinew, 1998; Lee et al., 2001; Floyd et al., 2006). As the previous studies showed, leisure constraints are associated with social inequalities.

In order to examine the multiple hierarchy stratification, logistic regression will be used. Tabachnick and Fidell (1996) state that “Logistic regression allows prediction of group membership when predictors are continuous, discrete, or a combination of the two. Thus, it is an alternative to both discriminant function analysis and logit analysis (p.24).”

In the Washington Post poll, the survey pertaining to leisure activities asked “Did you participate in leisure activities on weekend?” There is a sub-set of 25 leisure items: going to a movie, going to a professional sporting event, going to a musical performance or concert, going to a stage play, going shopping, watching a video or DVD, going to a fast-food restaurant or a non fast-food restaurant, taking a nap, working, doing home repairs, dancing, reading a book, going to a museum or art gallery, visiting the monuments around the mall, taking an overnight trip out of town, taking a day trip to a

place more than 50 miles from home, attending a youth sporting event, going on a date, barbequing food outdoors, visiting friends, participating in outdoor recreation, entertaining company at home, going to a bar or a club, going to a party, participating in social events, and going to an amusement park.

A sub-set of 25 leisure items asked whether an individual spent time on the weekends participating in the listed activities. Respondents were able to reply either “Yes” or “No” to each choice. In this study, I will use non-participation in social events and non-participation in outdoor recreation as dependent variables. My prediction of whether an individual is a non-participant in social events or a non-participant in outdoor recreation is based on gender, age, race, income, and education.

Based on the previous studies, I will explore whether or not individuals participate in two kinds of leisure activities. This study explores the net effects of predicted group variables, and the interaction among those variables: age, gender, race, income and education.

In this study, non-participation in social events is coded as ‘1’, and non-participation in outdoor recreation is also coded as ‘1.’ Conversely, participation in social events is coded as ‘0’, and participation in outdoor recreation is coded as ‘0.’ Comparing two dependent variables, I will explore how predicted group variables based on socio-demographics influence non-participation in social events, and non-participation in outdoor recreation. Table 3 shows the variables used in the analysis of non-participation in social event, and analysis of non-participation in outdoor recreation.

Independent Variables

Leisure Constraint Index and Socio-Demographic Variables

In order to examine the relationship between leisure constraints and individual status characteristics, a leisure constraint index is created, and socio-demographic variables are divided. The Leisure constraint index explores the numbers of leisure constraints, and which constraints hinder individuals to participate in leisure activities according to socio-demographic.

Leisure Constraint Index

The survey items pertaining to leisure constraints are derived from the question “Why did you not participate in leisure activities on the weekend?” For this study, a subset of constraint items were included for analysis based on previous studies that examined the relationship between these constraints and individual status characteristics. Numerous studies define that constraints are anything that inhibits leisure participation, such as parking problems, transportation problems, cost, time, skills, and abilities associated with leisure activities. In order to analyze the relationship, seven constraint items are included in a dataset use for leisure constraints.

Table 2 shows the seven leisure constraints included in this study: parking problems, transportation problems, cost, time, lack of information, crowdedness, and personal or family situation. When answering each question, respondents were able to choose if the constraints were a “major reason,” “minor reason,” or “not a reason.” In order to analyze the relationship, the three response categories were recorded as two

responses with “major reason” and “minor reason” being combining into one category. Thus, the constraints are divided into either “reason” or “not a reason.” These questions were asked to determine the extent to which the seven different constraints hinder weekend leisure participation in Washington D.C.

The leisure constraint index shows the number of constraints, and explores which constraints are the most influence on non-participation according to individual status characteristics. The sum of total constraints in this index ranges from 0 (no constraints) to 7 (high constraints).

Table 2: A Sub-Set of Constraint Items

Leisure Constraints
1. Parking is too much of a problem
2. Traffic is too much of a problem
3. Event cost too much
4. Lack of Time
5. You do not hear about things that are happening
6. Events are too crowded
7. Your personal or family situation gets in the way

Socio-Demographic Characteristics

Socio-demographic information was obtained from each of the respondents to examine relationships between socio-demographic variables and the leisure constraint index. First, gender is divided into two groups: men and women. Second, ethnicity is

divided into four groups: Anglo Americans, African Americans, Hispanic, and other races. Next, income is recoded on a scale ranging from (1) Under \$30,000, (2) \$30,000 to \$49,999, (3) \$50,000 to \$74,999, to (4) More than \$75,000. Fourth, education is recorded as (1) less than high school or high school, (2) Associate degree, (3) College degree or higher. Finally, age is recorded as (1) 18-29, (2) 30-39, (3) 40-49, (4) 50-64, and (5) more than 65.

Net effects and combined effects

Socio-demographic Variables

Logistic regression will be used to describe the degree to which gender, age, race, education, and income predict non-participation in particular leisure activities. In the logistic regressions, the multiple hierarchy stratification will be examined using the underprivileged statuses as predictors of non-participation in social events, and of non-participation in outdoor recreation. Reference groups are recorded as 0, and the other is recorded as 1.

Thus, (as indicated in table 3, below), females, those who are over 65 years of age, those having less than a college degree, those who earn less than \$30,000 per year, and minorities will be corded as 1. The other categories will serve as the reference groups in the logistic regression model. Table 3 shows the variables used in analysis of non-participation in social events, and analysis of non-participation in outdoor recreation.

Table 3: Variables Used in the Analysis of Non-participation in Leisure Activities

DEPENDENT VARIABLES	
<p>Non-participation in Social Events</p> <p>Social events sponsored by church, city, and school for socialization</p>	<p>A recorded variable is created: Those who are participants in social events are coded as '0.'</p> <p>Those who are non-participants in social events are coded as '1.'</p>
<p>Non-participation in Outdoor Recreation</p> <p>Outdoor recreation: camping, fishing, canoeing, hiking, bird watching, and barbecued outdoor food</p>	<p>A recorded variable is created: Those who are participants in outdoor recreation are coded as '0.'</p> <p>Those who are non-participants in outdoor recreation are coded as '1.'</p>
INDEPENDENT VARIABLES	
<p>Gender of Respondents</p>	<p>A dummy variable representing the gender of respondents: Those who are male = 0. Those who are female = 1.</p>
<p>Age of Respondents</p>	<p>A dummy variable representing the age of respondents: Those who are age 18-29 = 0. Those who are age 30-39 = 0. Those who are age 40-49 = 0. Those who are age 50-64 = 0. Those who are age over 65 = 1.</p>
<p>Race of Respondents</p>	<p>A dummy variable representing the race of respondents: Those who are Anglo American = 0. Those who are African American = 1. Those who are Hispanic = 1. Those who are another race = 1.</p>

Table 3: Variables Used in the Analysis (Continued)

Education of Respondents	A dummy variable representing the education of respondents: Those who have high school degree or less = 1. Those who have an associate degree = 0. Those who have a bachelor degree = 0. Those who have a master or PhD degree = 0.
Income of Respondents	A dummy variable representing the income of respondents: Those who earn under \$30,000 = 1. Those who earn \$30,000 - \$49,999 = 0. Those who earn \$50,000 - \$74,999 = 0. Those who earn over \$75,000 = 0.

Weighting

As indicated above (p.36), in this survey, the response rates of study participants were biased by race, gender, income, and education. The sample of 794 respondents used in this study consisted of people living in Washington D.C. It consisted of Anglo Americans, African Americans, Hispanics, and other races.

Weight variables were completed using demographic information from Census to adjust for sampling or non-sampling deviation from population values (Washington Post, 2004). The weights range from 0.228 to 3.971 included in this study. The average of weights is 1.029. The analysis on the dataset was conducted using the weight variables.

Data Analysis

Descriptive statistics will be used to analyze the socio-demographic data based on gender, age, race, education, and income. Next, crosstabulations will be used to determine the relationship between leisure constraints and the demographic categorical variables. Finally, logistic regression will be suitable for this study because the dichotomous responses of either “Yes” or “No” can be dealt with using this statistical method. Logistic regression is appropriate when exploring the extent to which multiple hierarchy stratification affects non-participation in leisure activities, which allows showing the net effects of predicted group variables (the elderly, females, minorities, low-educated individuals, and low-income individuals), and the interactions among those variables to examine the combined effects of multiple statuses.

In this study, differences in types and numbers of leisure constraints will be examined by crosstabulation. Next, I will explore the net effects of the predicted group variables and the combined effects using interaction among those variables by a binary logistic regression.

Research Hypotheses

Numerous researchers indicate that leisure constraints, such as lack of time, money, transportation, information, and interest, based on socio-demographics inhibit an individual’s participation in leisure activities. Also, socio-demographic characteristics are predictors of leisure constraints and subsequent of participation in leisure activities.

The main focus of this study is to examine how leisure constraints influence an individual's participation in leisure activities based on socio-demographic variables and to identify disparities of leisure participation. Three questions will be explored. First, difference in types and numbers of leisure constraints based on socio-demographic variables (gender, age, race, income and education) will be identified. Second, respondents (the elderly, females, minorities, and people with low income and low education) might enjoy different types of leisure activities. Third, the combined effects of age, gender, race, income, and education will be used to explore the interactions to interpret the multiple hierarchy stratification perspective.

Leisure Constraints and Socio-Demographic Variables

Previous studies suggest that socio-demographic characteristics are related to leisure constraints. However, several researchers focus only on the relationship between socio-demographic variables and one or two leisure constraints. Based on these previous studies, I will examine differences in the types and numbers of leisure constraints according to socio-demographic characteristics. The following research questions are the first model of this study:

Hypothesis I: *There are differences in the number of leisure constraints based on socio-demographic characteristics.*

Hypothesis I-a: *Gender is strongly associated with leisure constraints. More specifically, women face a higher number of leisure constraints than men do.*

Hypothesis I-b: Education is strongly connected with leisure constraints. More specifically, individuals of lower education face a higher number of leisure constraints than individuals of higher education do.

Hypothesis I-c: Income is strongly connected with leisure constraints. More specifically, individuals of lower income face a higher number of leisure constraints than individuals of higher income do.

Hypothesis I-d: Race is strongly connected with leisure constraints. More specifically, minorities face a higher number of leisure constraints than Anglo-Americans do.

Hypothesis I-e: Aging is strongly connected with leisure constraints. More specifically, elderly face a higher number of leisure constraints than younger adults do.

The Net Effects of Socio-Demographic Variables

Previous studies indicate that women are more constrained than men, elderly people are more constrained than younger people, minorities are more constrained than Anglo Americans, and people with lower income and lower education are more constrained than people with higher income and higher education. It is believed that women might be more concerned about home responsibilities and money than men are, and that the elderly people might face physical constraints and ageism. Also, a variety of cultural values might be constraints, and socio-economic status (SES) is an indication of leisure-activity enjoyment. Based on these previous studies, I will examine the net effects of socio-demographic variables on age, gender, race, income, and education to examine

non-participation in two different kinds of leisure activities. The following research questions are the second model of this study.

Hypothesis II-1: *The likelihood of non-participation in social events is related to the net effects of age, gender, race, income, and education.*

Based on the previous studies, women, elderly, and minorities are *more* likely to participate in social events. But, numerous studies indicate that individuals of lower education and lower income are *less* likely to participate in any activities. For this study, thus, I hypothesize that women, elderly, and minorities are *more* likely to participate in social event while individuals of lower education and low income are *less* likely to participate in social events.

Hypothesis II-1a: *The odds of non-participation in social events are lower for the elderly than for the young.*

Hypothesis II-1b: *The odds of non-participation in social events are lower for females than for males.*

Hypothesis II-1c: *The odds of non-participation in social events are lower for minorities than for Anglo Americans.*

Hypothesis II-1d: *The odds of non-participation in social events are greater for individuals of lower education than they are for individuals of higher education.*

Hypothesis II-1e: *The odds of non-participation in social events are greater for individuals of lower income than individuals of higher income.*

Hypothesis II-2: *The likelihood of non-participation in outdoor recreation is related to the net effects of age, gender, race, income, and education.*

Hypothesis II-2a: *The odds of non-participation in outdoor recreation are greater for the elderly than for the young.*

Hypothesis II-2b: *The odds of non-participation in outdoor recreation are greater for females than for males.*

Hypothesis II-2c: *The odds of non-participation in outdoor recreation are greater for minorities than for Anglo Americans.*

Hypothesis II-2d: *The odds of non-participation in outdoor recreation are greater for individuals of lower education than for individuals of higher education.*

Hypothesis II-2e: *The odds of non-participation in outdoor recreation are greater for individuals of lower income than for individuals with higher income.*

The Combined Effects of Socio-Demographic Variables

Leisure constraints are believed to be associated with various social statuses as described earlier. Several studies argue that social inequalities correspond to multiple hierarchy stratification (Lee et al., 2001; Markides et al., 1990; Shinew et al., 1996). Based on these previous studies, the following research questions are hypotheses in the third model. Through the following questions, I will examine the combined effects of age, gender, and race.

Hypothesis III-1: *The likelihood of non-participation in social events is related to combined effects of age, gender, and race.*

Numerous studies argue that the disadvantaged group (elderly, minority, and women) are more likely to participate in social events, but less likely to participate in outdoor recreation. Thus, to analyze the hypotheses, this study examines that elderly minorities are *more* likely to participate in social events, but *less* like to participate in outdoor recreation. Also, elderly minority women are *more* likely to participate in social events, but *less* like to participate in outdoor recreation.

Hypothesis III-1a: *The odds of non-participation in social events are lower for elderly minorities than for young Anglo Americans.*

Hypothesis III-1b: *The odds of non-participation in social events are lower for elderly minority females than for young Anglo Americans males.*

Hypothesis III-2: *The likelihood of non-participation in outdoor recreation is related to the combined effects of age, gender, and race.*

Hypothesis III-2a: *The odds of non-participation in outdoor recreation are greater for elderly minorities than for young Anglo Americans.*

Hypothesis III-2b: *The odds of non-participation in outdoor recreation are greater for elderly minority females than for young Anglo Americans males.*

CHAPTER FOUR

RESULTS

In this chapter, I will describe the results of the study. The purpose of this study is to investigate leisure constraints based on gender, race, age, education, and income using the multiple hierarchy stratification perspective as the theoretical framework. I will examine the descriptive statistics first. Second, I will examine the significant differences in the types and the number of leisure constraints measured by the leisure constraint index based on the socio-demographic variables. Next, I will explore the net effects of age, gender, race, income, and education. Finally, I will examine the combined effects of multiple statuses using interactions of those variables.

Descriptive Characteristics of the Sample

Table 4 shows the descriptive characteristics of the sample. Among the variables, socio-demographics (gender, age, education, income, race, employment status, and marital status) will be used in the descriptive statistics. 373 males (47.0%) and 421 (53.0%) females were respondents in the sample of 794 respondents.

In term of race, Anglo Americans were 71.0 percent (n=564), African Americans were 18.3 percent (n=145), Hispanics were 3.4 percents (n=27), and other races were 7.3 percent (n=58) of the sample.

To analyze income and education, the income categories are divided into four groups: (1) less than \$30,000, (2) \$30,000- \$49,999, (3) \$50,000- \$74,999, and (4) more than \$75,000. According to Table 4, 5.5 percent (n=44) of respondents earn less than \$30,000, 34.6 percent (n=275) of respondents earn \$30,000-\$49,999, 44.5 percent (n=353) of respondents earn \$50,000-\$74,999, and 15.4 percent (n=122) of respondents earn more than \$75,000.

In the education, 21.0 percent (n=167) of respondents completed less than high school or high school, 21.2 percent (n=168) of respondents earned an associate degree, and 57.8 percent (n=556) of respondents have a college degree or a higher degree. People of higher education, having a college degree or a higher degree, make up over 50 percent of the total in the sample while other degrees have similar percentages.

There are five age groups for this study: (1) 18-29, (2) 30-39, (3) 40-49, (4) 50-64, (5) over 65. Individuals between 18-29 made up 17.3 percent (n= 137), individuals between 30-39 made up 23.3 percent (n=185), individuals between 40-49 made up 21.9 percent (n=174), individuals between 50-64 made up 26.3 percent (n=209), and individuals over 65 made up 11.2% (n=89).

Full-time employees (66.1 percent, n=525) were approximately three times more prevalent than unemployed individuals (22.9 percent, 182). The remaining respondents (11.0 percent, n=87) were part-time employees. In terms of marital status, 59.4 percent (n=472) of the respondents were married. Singles made up 40.6 percent of the respondents, included divorcees, widows/widowers, and individuals who had never been married.

Table 4: Descriptive Statistics for Demographic Characteristics

Variables	Value	Frequency	Percent
Gender	Male	373	47.0
	Female	421	<u>53.0</u>
Race/Ethnicity	Anglo American	564	<u>71.0</u>
	African American	145	18.3
	Hispanic	27	3.4
	Other Races	58	7.3
Income	Less than \$ 30,000	44	5.5
	\$ 30,000 to \$49,999	275	34.6
	\$ 50,000 to \$74,999	353	<u>44.5</u>
	More than \$75,000	122	15.4
Education	Less than High School or High School	167	21.0
	Associate Degree	168	21.2
	College Graduate or Higher	459	<u>57.8</u>
Age	18-29	137	17.3
	30-39	185	23.3
	40-49	174	21.9
	50-64	209	<u>26.3</u>
	65 +	89	11.2
Employment Status	Employed part-time	87	11.0
	Employed full-time	525	<u>66.1</u>
	Unemployed	182	22.9
Marital Status	Married	580	<u>57.9</u>
	Single	421	42.1

N= 794

* Note: Highest percentage is underlined.

Leisure Constraints

This section illustrates the leisure constraints of the 794 sample respondents. In examples of specific constraints, pertaining to participants' leisure activities and their corresponding percentages are as follows: (1) Parking problems (n= 581, 73.2 percent), (2) Transportation problems (n= 578, 72.8 percent), (3) Cost of activities (n= 512, 64.5 percent), (4) Lack of Time (n= 594, 74.8 percent), (5) Lack of information (n= 471, 59.3 percent), (6) Crowdedness (n= 528, 66.5 percent), and (7) Personal situations or family issues (n= 463, 58.3 percent). Lack of time is the most common leisure constraint. The list in Table 4.1 is in order of constraint items on the dataset.

Table 4.1: Leisure Constraints Classification

Constraint Classification	Frequency	Percent (%)
Parking	581	73.2
Transportation	578	72.8
Cost	512	64.5
Lack of Time	594	74.8
Lack of Information	471	59.3
Crowdedness	528	66.5
Personal Situations (Family issues)	463	58.3

Among the seven constraints, the respondents were able to choose how many constraints hinder leisure activities on the weekend. A leisure constraints index was developed to determine the extent of leisure constraints. Thus, leisure constraint scores

range: 0 = no constraints to 7 = high constraints, with most respondents falling in between. The Table 4.2 shows the distribution of scores on leisure constraints. In Table 4.2, there are 95 people (12.0 percent) who felt no constraints in all of the specified circumstances (score 0). Only one individual (0.1 percent) felt all of the leisure constraints in any of the circumstances (score 1). Thus, 12.0 percent of respondents (n=95) who scored 0 felt that none of the conditions were leisure constraints. A respondent who scored 7 felt that all specified circumstances were leisure constraints. The rest of the respondents fall somewhere between these two extremes. The mean score of leisure constraint index was 2.13.

Table 4.2: Leisure Constraints Index

Leisure Constraint Index	Frequency	Percent (%)
0= No Constraints	95	12.0
1	181	22.8
2	225	28.3
3	165	20.8
4	88	11.1
5	31	3.9
6	8	1.0
7= High Constraints	1	.1
Total	794	100.0

Leisure Constraints based on Socio-demographic Variables

The percentages of leisure constraints were tabulated to explore the relationship between socio-demographic variables and leisure constraints on a scale. Cross tabulation was employed to test bivariate analysis. Bivariate analysis is also conducted to determine if there are significant differences in the number of leisure constraints based on socio-demographic variables. In this test, a chi-square test is used to find differences by gender, age, income, education, and race. In order to explore the distribution of leisure constraints, percentages are initially revealed in seven classifications, and the leisure constraint index is used to examine the differences between the two independent groups.

Table 5.1: Leisure Constraints by Gender - Percentage of Classification

Constraints Classification	Male (%)	Female (%)
Parking	338 (74.0)	401 (74.3)
Transportation	329 (71.8)	397 (73.2)
Cost	289 (63.5)	338 (63.3)
Lack of Time	338 (74.1)	399 (73.8)
Lack of Information	275 (60.4)	301 (55.6)
Crowdedness	278 (61.0)	337 (69.6)
Personal Situations /Family issues	254 (55.6)	318 (58.7)

Males (n= 338, 74.0 percent) answered that lack of time is the main reason why they participate less in leisure activities, while females (n=401, 74.3 percent) answered that parking is the main reason. Even though males and females have similar percentages

in constraint classifications, females (69.6 percent) are more concerned about crowdedness than males (61.0 percent).

Table 5.2: Leisure Constraints by Gender

Constraints	Gender		Total (%)
	Male (%)	Female (%)	
0= No Constraints	42 (11.9)	53 (13.1)	95 (12.0)
1	83 (22.5)	98 (22.2)	181 (22.8)
2	118 (29.1)	107 (25.0)	225 (28.3)
3	74 (19.3)	91 (22.0)	165 (19.3)
4	40 (11.2)	48 (10.1)	88 (11.1)
5	12 (3.1)	19 (4.3)	31 (3.9)
6	4 (1.3)	4 (1.3)	8 (1.0)
7= High Constraints	0 (.0)	1 (.2)	1(0.1)
Total	373 (100)	421 (100%)	794 (100)
Pearson Chi-Square ($\chi^2=5.23$), (p= 0.63)		df= 7	p ≤ 0.05

When considering leisure constraints by gender (Table 5.1), males and female have approximately the same percentages regarding leisure constraints. No constraint is 11.9 percent (n=42) for males while no constraints is 13.1 percent (n=53) for females. The Pearson chi-square ($\chi^2=5.23$) reveals a 0.63 significance. The relationship between gender and constraints are not significant at the $p \leq 0.05$ level. Thus, the result does not support hypothesis (I-a): *Gender is strongly associated with leisure constraints. More*

specifically, women face a higher number of leisure constraints than men do. According to the result regarding gender, women face a similar number of leisure constraints compared to men.

Table 5.3: Leisure Constraints by Education - Percentage of Classification

Constraint Classification	Less High School or High school (%)	Associate Degree (%)	College Graduate or More (%)
Parking	114 (68.3)	127 (77.5)	340 (74.8)
Transportation	116 (69.0)	122 (72.6)	340 (72.8)
Cost	106 (63.5)	101 (60.1)	305 (66.4)
Lack of Time	110 (65.9)	115 (68.5)	369 (80.4)
Lack of Information	94 (56.3)	93 (53.8)	284 (59.3)
Crowdedness	102 (61.1)	110 (65.5)	316 (68.8)
Personal/Family issues	91 (54.5)	88 (52.4)	284 (61.9)

In Table 5.3, respondents who have a college degree or higher report different percentages in lack of time compared to other groups. Lack of time (80.4 percent, n=369) is the major reason for non-participation for those who have a college degree or higher. Also, they have slightly different percentages in personal problems. Compared to other education groups, people of higher education are more concerned about their personal situations and family issues. Transportation (69.0 percent, n=116) is the main reason for non-participation for respondents who complete less than high school or high school degree, and parking (77.5 percent, n=127) is the main reason for non-participation for respondents who have associate degree.

Table 5.4: Leisure Constraints by Education

Constraints	Education			Total
	High School or less (%)	Associate degree (%)	College or higher (%)	
0= No Constraints	28 (16.8)	20 (11.9)	47 (10.2)	95 (12.0)
1	34 (20.4)	45 (26.8)	102 (22.2)	181 (22.8)
2	37 (22.2)	39 (23.2)	149 (32.5)	225 (28.3)
3	33 (19.8)	40 (23.8)	92 (20.0)	165 (19.3)
4	20 (12.0)	17 (10.1)	51 (11.1)	88 (11.1)
5	10 (6.0)	6 (3.6)	15 (3.3)	31 (3.9)
6	4 (2.4)	1 (0.6)	3 (0.7)	8 (1.0)
7= High Constraints	1 (0.6)	0 (0.0)	0 (0.0)	1(0.1)
Total	167 (100)	168 (100)	459 (100)	794 (100)
Pearson Chi-Square ($\chi^2= 23.99$), (p=0.046)		df= 14		*p \leq 0.05

In Table 5.4, 10.2 percent of respondents (n=47) who earned higher a college degree reported no constraints while 16.8 percent of respondents (n=28) who earn a high school degree or less reported no constraints. Twenty people (11.9 percent of respondents) who have an associate degree reported no constraints. Those who earned a high school degree or less are more constrained than those with higher degree. For example, 21 percent of those who earn a high school degree or less reported facing four or more constraints, while 14.3 percent of those with an associate degree and 15.1 percent of those with a college degree or higher reported facing four or more constraints. The Pearson's chi-square ($\chi^2= 23.99$) revealed a 0.046 significance. The association between

education level and leisure constraints is significant at the $p \leq 0.05$ level. Thus, the result supports hypothesis (I-b): *Education is strongly connected with leisure constraints. More specifically, individuals of lower education face a higher number of leisure constraints than individuals of higher education do.* Respondents with a college degree or higher were less constrained than individuals of other education levels, as shown in Table 5.4.

Table 5.5: Leisure Constraints by Income -Percentage of Classification

Constraint Classification	Under \$30,000 (%)	\$30,000 - \$49,999 (%)	\$50,000- \$74,999 (%)	More than \$75,000 (%)
Parking	25 (56.8)	207 (75.3)	254 (72.0)	90 (73.8)
Transportation	32 (72.7)	205 (74.5)	258 (73.1)	88 (72.1)
Cost	29 (65.9)	182 (66.2)	228 (64.6)	73 (58.8)
Lack of Time	28 (63.6)	189 (68.7)	285 (80.7)	92 (75.4)
Lack of Information	23 (52.3)	164 (59.6)	206 (58.4)	78 (63.9)
Crowdedness	28 (63.6)	186 (67.6)	237 (67.1)	77 (63.1)
Personal/Family issues	21 (47.7)	143 (52.0)	224 (63.5)	75 (61.5)

Table 5.5 shows the different rates of leisure constraints according to income. Even though there are not significant differences in the percentages of the cost of leisure activities, individuals earning more than \$75,000 (58.8 percent, n=73) were less likely to consider cost as an issue than individuals in other income groups. Individuals who earn under \$30,000 (72.7 percent, n=32) reported that transportation problems are a major constraint, and individuals who earn \$30,000 to \$49,999 (75.3 percent, n=207) pointed out parking problems as the main constraint. But, individuals who earn \$50,000 to

\$74,999 (80.7 percent, n=285) as well as individuals who earn more than \$75,000 (75.4 percent, n=92) indicate lack of time as the major constraint. Respondents who earned a high school degree or less and respondents who earn under \$30,000 both report that transportation problems are their main constraints. Parking problems are a main constraint for those who earn \$30,000 to \$49,999 as well as those with an associate degree. Respondents who earn more than \$50,000 reported that lack of time is their main constraint, which is similar to what respondents with a college degree or higher reported. Therefore, it is clear that education and income are similarly related to leisure constraints.

Table 5.6: Leisure Constraints by Income

Constraints	Income				Total (%)
	Under \$30,000 (%)	\$30,000-\$49,999 (%)	\$50,000-\$74,999 (%)	More than \$75,000 (%)	
0 = No Constraints	4 (9.1)	37 (13.5)	38 (10.8)	16 (13.1)	95 (12.0)
1	12 (27.3)	54 (19.6)	84 (23.8)	29 (23.8)	181 (22.8)
2	9 (20.5)	70 (25.5)	104 (29.5)	42 (34.4)	225 (28.3)
3	14 (31.8)	59 (21.5)	75 (21.2)	19 (15.6)	165 (20.8)
4	3 (6.8)	37 (13.5)	33 (9.3)	15 (12.3)	88 (11.1)
5	1 (2.3)	16 (5.8)	14 (4.0)	0 (0)	31 (3.9)
6	0 (0)	2 (0.7)	5 (1.4)	1 (0.8)	8 (1.0)
7= High Constraints	1 (2.3)	0 (0)	0 (0)	0 (0)	1 (0.1)
Total	44 (100)	275 (100)	353 (100)	122 (100)	794 (100)
Pearson Chi-Square ($\chi^2= 39.68$), (p=0.008)			df= 21	*p \leq 0.05	

In Table 5.6, 9.1 percent of respondents (n=4) who earn under \$30,000 reported facing no constraints. In addition, 13.4% percent (n=33) of respondents who earn \$30,000 to \$49,999, 10.8 percent of respondents (n=38) who earn \$50,000 to \$74,999, and 13.1 percent of respondents (n=16) who earn more than \$75,000 reported no constraints. Because individuals who earn more than \$75,000 make up a lower percentage than the other income groups, it is clear that those individuals are less constrained. The Pearson chi-square ($\chi^2=39.68$) revealed a 0.008 significance. The association between education levels and leisure constraints is significant at the $p \leq 0.05$ level. The result supports hypothesis (I-c): *Income is strongly connected with leisure constraints. More specifically, individuals of lower income face a higher number of leisure constraints than do individuals of higher income.* In sum, respondents of lower education and income were more constrained than respondents of higher education and income.

Table 5.7: Constraints to Leisure Participation – Percentages by Race

Constraint Classification	Anglo American (%)	African American (%)	Hispanic (%)	Other Races (%)
Parking	414 (73.4)	104 (71.7)	18 (66.7)	45 (77.6)
Transportation	416 (73.8)	96 (66.2)	21 (77.8)	45 (77.6)
Cost	373 (66.1)	89 (61.4)	17 (63.0)	34 (58.6)
Lack of Time	433 (76.8)	101 (69.7)	17 (63.0)	43 (74.1)
Lack of Information	326 (57.8)	98 (62.8)	18 (66.7)	36 (62.1)
Crowdedness	377 (66.8)	97 (66.9)	16 (59.3)	37 (65.5)
Personal/Family issues	330 (58.5)	79 (54.5)	18 (66.7)	36 (62.1)

Table 5.7 illustrates leisure constraints in terms of participants' race. Lack of time is the major constraint for Anglo Americans (76.8 percent, n=433), parking is the major constraint for African Americans (71.7 percent, n=104), transportation is the major constraint for Hispanics (77.8 percent, n=21), and both parking and transportation are equally divided constraint for other races (77.6 percent, n=45 for each issue). Anglo Americans (66.1 percent, n=373) are more constrained than other race groups by cost while they (57.8 percent, n=326) are less constrained than others by lack of information. Also, Table 5.7 shows that African Americans (54.5 percent, n=79) are less constrained by their personal/family issues, Hispanics (59.3 percent, n=16) are less constrained by crowdedness, and other races (58.6 percent, n=34) are less constrained by cost.

Table 5.8: Leisure Constraints by Race

Constraints	Race				Total (%)
	Anglo Americans (%)	African Americans (%)	Hispanics (%)	Other Race (%)	
0 = No Constraints	63 (11.2)	24 (16.6)	3 (11.1)	5 (8.6)	95 (12.0)
1	130 (23.0)	31 (21.4)	9 (33.3)	11 (19.0)	181 (22.8)
2	165 (29.3)	36 (24.8)	6 (22.2)	18 (31.0)	225 (28.3)
3	113 (20.0)	30 (20.7)	5 (18.5)	17 (29.3)	165 (20.8)
4	65 (11.5)	18 (12.4)	2 (7.4)	3 (3.4)	88 (11.1)
5	21 (3.7)	6 (4.1)	2 (7.4)	2 (3.4)	31 (3.9)
6	6 (1.1)	0 (0)	0 (0)	2 (2.4)	8 (1.0)
7= High Constraints	1 (0.2)	0 (0)	0 (0)	0 (0)	1 (0.1)
Total	564 (100)	145 (100)	27 (100)	58 (100)	794 (100)
Pearson Chi-Square ($\chi^2= 17.81$), (p= 0.66)			df= 21	p ≤ 0.05	

These different races (Anglo American, African Americans, Hispanics, and other races) are similarly related to leisure constraints. In Table 5.8, 9.1 percent of Anglo Americans, 13.5 percent of African Americans, 10.8 percent of Hispanics, and 8.6 percent of other races reported no constraints. Anglo Americans only reported 7 constraints. The Pearson’s chi-square ($\chi^2= 17.81$) revealed a p-value of 0.66. The association between race/ethnicity and leisure constraints is not significant at the $p \leq 0.05$ level. The results do not support hypothesis (I-d): *Race is strongly connected with leisure constraints. More specifically, minorities face a higher number of leisure constraints than Anglo Americans do.* Anglo Americans face a similar number of the leisure constraint compared to minorities.

Table 5.9: Constraints to Leisure Participation – Percentages by Age

Constraints Classification	18-29 (%)	30-39(%)	40-49(%)	50-64(%)	65 + (%)
Parking	95 (69.3)	141 (76.2)	130 (74.7)	156 (74.6)	59 (66.3)
Transportation	92 (67.2)	132 (75.1)	133 (76.4)	163 (78.0)	51 (57.3)
Cost	77 (56.2)	118 (63.8)	117 (67.2)	158 (75.6)	47 (52.8)
Lack of Time	104 (75.9)	155 (83.8)	134 (77.0)	153 (73.2)	43 (48.3)
No Information	90 (65.7)	129 (69.7)	93 (53.4)	116 (55.5)	43 (48.3)
Crowdedness	71 (51.8)	134 (72.4)	118 (67.8)	151 (72.2)	54 (60.7)
Personal/Family issues	64 (46.7)	112 (60.5)	121 (69.5)	128 (61.2)	38(42.7)

Leisure constraints by age are reported in Table 5.9. The group of respondents between 50-64 years of age (73.2 percent, n=153), and the group of those over 65 years

of age (48.3 percent, n=43) are less likely to be constrained by lack of time than the other groups. Also, those who are over 65 years of age are less constrained by cost. Among the age groups, those groups, the 18-29 years-of-age group (46.7 percent, n=64), the 30-39 years-of-age group (60.5 percent, n=112), and the over 65 years-of-age group (42 percent, n=32) consider their personal situations as less of a constraint than the other age groups. Both the 40-49 years-of-age group (53.4 percent, n=93) and the 50-64 years-of-age group (55.5 percent, n=116), indicated that lack of information is less of a constraint than the other groups.

Table 5.10: Leisure Constraints by Age

Constraints	Age					Total (%)
	18-29 (%)	30-39 (%)	40-49 (%)	50-64 (%)	65+ (%)	
0 = No Constraint	19 (13.9)	18 (9.7)	20 (11.5)	20 (9.6)	18 (20.2)	95 (12.0)
1	48 (35.0)	33 (17.8)	41 (23.6)	42 (20.1)	17 (19.1)	181 (22.8)
2	34 (24.8)	61 (33.0)	49 (28.2)	61 (29.2)	20 (22.5)	225 (28.3)
3	23 (16.8)	42 (22.7)	35 (20.1)	44 (21.1)	21 (23.6)	165 (20.8)
4	10 (7.3)	20 (10.8)	19 (10.9)	28 (13.4)	11 (12.4)	88 (11.1)
5	3 (2.2)	8 (4.3)	10 (5.7)	8 (3.8)	2 (2.2)	31 (3.9)
6	0 (0)	3 (1.6)	0 (0)	5 (2.4)	0 (0)	8 (1.0)
7= High Constraints	0 (0)	0 (0)	0 (0)	1 (0.5)	0 (0)	1 (0.1)
Total	137 (100)	185 (100)	174 (100)	209 (100)	89 (100)	794 (100)
Pearson Chi-Square ($\chi^2= 44.06$), (p=0.042)				df= 28		*p ≤ 0.05

According to Table 5.9, 20.2 percent of individuals over 65 years (n=18) reported facing no constraints, while the 18-29 age group (13.9 percent, n=19), the 30-39 age group (9.7 percent, n=18), the 40-49 age group (11.5 percent, n=20), and the 50-64 age group (9.6 percent, n=20), reported facing no constraints. Except for 0.5 percent of respondents age 50-64 (n=1), no one reported facing high constraints. According to Table 5.10, respondents 18-29 years of age are less constrained than the other respondents because they have the lowest percentage of high constraints in two or more constraint categories. On the other hand, respondents age 50-64 and respondents over 65 are more constrained than younger respondents because they have the highest percentages of high constraints in two or more constraints. The Pearson's chi-square ($\chi^2 = 44.06$) revealed a p-value of 0.042. The relationship between age and leisure constraints is significant at the $p \leq 0.05$ level. The result supports hypothesis (I-d): *Aging is strongly connected with leisure constraints. More specifically, elderly people face a higher number of leisure constraints than younger people do.*

To sum up, the bivariate analyses showed that there were statistically significant relationships between leisure constraints and education, income, and age, while race and gender is not statistically significant relationship. The purpose of this study is to investigate the relationship between leisure constraints and socio-demographic variables. Also, the other objective of this study is to study net effects of socio-demographic variables, and to investigate identify the combined effects of multiple statuses. A multiple analysis using logistic regression is employed to test research questions.

Effects of Socio-Demographic Characteristics

Logistic regression is employed to measure the likelihood of the dependent variables based on independent variables. This section explores the influences of the independent variables (gender, age, race, education, and income) on non-participation in social events and non-participation in outdoor recreation. Two steps were required to add the variables. First, the socio-demographic variables are included in Table 6.1. To explore the net effects of socio-demographic variables on the elderly, female, minorities, and people of low education and low income, the socio-demographic groups are divided into age (over 65 years of age), gender (females), race (minorities), education (high school degree or less), and income (under \$30,000). Second, the interactions among these variables are added to examine the combined effects of multiple statuses. Each research hypothesis will be discussed separately. Table 6.1 (p.69) and table 6.2 (p.75) will show the results of the logistic regression.

The Net Effects of Socio-Demographics

Model 1 estimates the net effects of the characteristics affecting the non-participation of the elderly, females, minorities, and people of lower education and lower income influence the likelihood of non-participation in social events, and Model 2 estimates the net effects of the characteristics affecting the non-participation of the elderly, female, minorities, and people of lower education and lower income shows the likelihood of non-participation in outdoor recreation in Table 6.1. The net effects are multivariate models.

In this study, the individual independent variables, the significance of model, and the percent of accurate prediction are discussed. Finally, I explore the hypothesis (II-1): *The likelihood of non-participation in social events is related to the net effects of the socio-demographic variables on elderly, females, minorities, individuals of lower income, and individuals of lower education*, and hypothesis (II-2): *The likelihood of non-participation in outdoor recreation is related to the net effects of socio-demographic variables on the elderly, females, minorities, individuals of lower income, and individuals of lower education*.

Table 6.1 shows that the independent variables (age, gender, race, and education and income) and illustrates that models predicting non-participation are significant at the $p \leq 0.001$ level. In Model I, there is a Nagelkerke R^2 of 0.051, which is utilized to determine the strength of the association and correctness of the model when comparing steps. Also, the Nagelkerke R^2 is 0.109 in Model 2. The logistic regression analysis also indicates that all the independent variables are significant at the $p \leq 0.01$ level with non-participation in outdoor recreation.

Table 6.1: The Net Effects of Socio-demographic Variables

	Model 1 Non-Participation in Social Events (N=794) Odds ratio (standard error)	Model 2 Non-participation in Outdoor Recreation (N=794) Odds ratio (standard error)
Age (over 65)	0.337 (0.493)**	2.356 (0.336)***
Gender (Female)	0.568 (0.184)**	1.375 (.210)**
Minorities	0.796 (0.208)	3.675 (.208)***
Education: High school degree or less	0.778 (0.259)	1.672 (.221)**
Income: Under \$30,000	0.675 (0.259)*	.590 (.268)**
Constant	3.405 ***	0.181
-2 Log Likelihood	775.176	638.106
Chi- Square (χ^2)	26.454***	52.645***
Nagelkerke R ²	.051	.109
Percent of Correct Prediction	80.7	84.6

*p ≤ 0.10, **p ≤ 0.05, *** p ≤ 0.01

Hypothesis II-1: *The likelihood of non-participation in social events is related to the net effects of socio-demographic variables on the elderly, females, minorities, individuals of lower income, and individuals of lower education.*

In model 1, the effects of age, gender, race, education, and income on the likelihood of non-participation in social events are presented. To be more specific, I developed sub-hypotheses based on these socio-demographic variables. The results of each sub-hypothesis are described below.

The results shown in Table 6.1 indicate that the odds of non-participation in social events are 66 percent lower for elderly people (over 65 years old) than they are for the younger people less than 65 years old (odds ratio = 0.337, $p = 0.041$). The age group with respondents over 65 years of age is significant at the $p \leq 0.01$ level. Based on this result, the study strongly supports hypothesis (II-1a) that *the odds of non-participation in social events are lower for the elderly than for the young*.

Regarding gender, the results indicate that the odds of non-participation in social events are 44 percent lower for females than they are for males (odds ratio = 0.568, $p = 0.039$). Gender is significant at the $p \leq 0.01$ level. Thus, hypothesis (II-1b) *the odds of non-participation in social events are lower for females than for males*, is supported.

The results regarding race indicate that the odds of non-participation in social events for minorities (African Americans, Hispanics, and others) are approximately 20 percent lower for minorities than they are for the majority (Anglo Americans) (odds ratio = 0.796, $p = 0.268$). But the relationship between non-participation in social events and minorities is not statistically significant even though this study hypothesized that it would be. Thus, this study rejects hypothesis (II-1c) that *the odds of non-participation in social events are lower for minorities than for Anglo Americans*.

The results for education indicate that the odds of non-participation in social events are approximately 22 percent lower for those with a high school degree or less than for those with a college degree or a higher degree (odds ratio = 0.778, $p = 0.213$). Not only does education not have a statistically significant relationship to participation in social events based on this analysis, but also this study does not support hypothesis (II-1d) that *the odds of non-participation in social events are greater for individuals of lower education than they are for individuals of higher education.*

The results regarding income indicate that the odds of non-participation in social events are approximately 33 percent lower for individuals earning under \$30,000 than they are for the other groups (odds ratio = 0.675, $p = 0.074$). Income is also significant at the $p \leq 0.10$ level. Even though income has a statistically significant relationship to participation in social events, the study rejects hypothesis (II-1e) that *the odds of non-participation in social events are greater for individuals of lower income than for individuals of higher income,*

As described in Table 6.1, the R^2 of Model 1 indicates that 5.1 percent of the variability in the odds of non-participation in social events is explained by the set of variables included in Model 1. It also indicates that the percent of accurate prediction is 80.7 percent for non-participation in social events. The chi-square of Model 1 is statistically significant at the $p \leq 0.01$ level. Thus, the set of predictors included in Model 1 was reliable for predicting the odds of non-participation in social events.

Hypothesis II-2: The likelihood of non-participation in outdoor recreation is related to the net effects of socio-demographic variables on the elderly, females, minorities, individuals of lower income, and individuals of lower education.

The second model identifies that the effects of age, gender, race, education, and income have on the odds of non-participation in outdoor recreation. Sub-hypotheses are also developed to analyze specific variables. The results of the research questions are discussed as below.

Table 6.1 shows that the odds of non-participation in outdoor recreation were approximately 2.4 times higher for elderly people (over 65 years of age) as they are for younger people (64 years of age or younger), (odds ratio = 2.356, $p = 0.000$). Age is significant at the $p \leq 0.01$ level. Based on the results, this study supports the hypothesis (II-2a) that *the odds of non-participation in outdoor recreation are greater for the elderly than for the young.*

The results regarding gender indicate that the odds of non-participation in outdoor recreation are approximately 1.4 times higher for females than they are for males (odds ratio = 1.375, $p = 0.048$). Gender is significant at the $p \leq 0.05$ level. Thus, these results support the hypothesis (II-2b) that *the odds of non-participation in outdoor recreation are greater for females than for males.*

Similarly, the results indicate that the odds of non-participation in outdoor recreation are approximately 3.7 times higher for minorities (African Americans, Hispanics, and others) than they are for the majority (Anglo Americans), (odds ratio = 3.675, $p = 0.001$). The relationship between non-participation in outdoor recreation and

minorities is statistically significant at the $p \leq 0.01$ level. According to these results, this study supports hypothesis (II-2c) that *the odds of non-participation in outdoor recreation are greater for minorities than for Anglo Americans.*

The results for education indicate that the odds of non-participation in outdoor recreation are approximately 1.7 times higher for those with a high school degree or less than they are for those with a college degree or a higher degree (odds ratio = 1.672, $p = 0.035$). Education also has a statistically significant relationship at the $p \leq 0.05$ level. Based on these results, this study supports hypothesis (Hypothesis II-2d) that *the odds of non-participation in outdoor recreation are greater for individuals of lower education than for individuals of higher education.*

Interestingly, the result indicates that the odds of non-participation in outdoor recreation are 41 percent lower for individuals who earn under \$30,000 than they are for the other groups that earn more than \$30,000 (odds ratio = 0.590, $p = 0.041$). The relationship between the odds of non-participation in outdoor recreation and income is statistically significant at the $p \leq 0.05$ level. Therefore, this study rejects hypothesis (II-2e) that *the odds of non-participation in outdoor recreation are greater for individuals of lower income than for individuals of higher income.*

There is a statistically significant relationship between underprivileged groups (the elderly, females, minorities, and people of lower education and income) and the likelihood of non-participation in outdoor recreation. The R^2 of Model 2 indicates that 10.9 percent of the variability in the odds of non-participation in social events is explained by the set of independent variables. Model 2 for non-participation in outdoor

recreation is significant at the $p \leq 0.01$ level, and age, gender, race, education, and income at the $p \leq 0.01$ level, at the $p \leq 0.05$ level, or at the $p \leq 0.10$ level. The percent of accurate prediction is 84.6 percent as seen in (Model 2) in Table 6.1.

In summary, the elderly and females are more likely to participate in social events than the young and males are. The study also suggests that individuals who earn under \$30,000 are more likely to participate in social events than individuals who earn more than \$30,000 are. In addition, the elderly, females, minorities, and individuals of lower education are less likely to participate in outdoor recreation while individuals of lower income are more likely to participate in outdoor recreation. Even though age and gender are significant predictors of the odds of non-participation in social events, all of the socio-demographic variables are significant predictors of the odds of non-participation in outdoor recreation.

The Combined Effects of Socio-Demographic Variables

The next step of the model incorporates the interactions among socio-demographic variables to examine the combined effects of age, gender, race, income, and education. As described above, Model 1 in Table 6.2 shows the likelihood of non-participation in social events, and Model 2 shows the likelihood of non-participation in outdoor recreation (Table 6.2). The combined effects of multiple statuses are multivariate models.

I explore the Hypothesis III-1: *the likelihood of non-participation in social events is related to interactions among age, gender, race, income, and education, and*

Hypothesis III-2: *The likelihood of non-participation in outdoor recreation is related to interactions among age, gender, race, income, and education.*

Table 6.2: Interactions among Socio-Demographic Variables

	Model 1 Non-Participation in Social Events (N=794)	Model 2 Non-participation in Outdoor Recreation (N=794)
	Odds ratio (standard error)	Odds ratio (standard error)
Age (Over 65)	0.340 (0.524)**	2.217 (0.392)**
Gender (Female)	0.576 (0.188)**	1.342 (0.213)**
Minorities	0.813 (0.197)	3.631 (0.213)***
Education: High School degree or less	0.749 (0.208)	1.679 (0.222)**
Income: Under \$30,000	0.680 (0.217)*	0.580 (0.269)**
Age*Minorities	0.094 (0.428)**	1.549 (0.270)*
Age*Gender*Minorities	0.235 (0.194)*	2.213 (0.389)**
Constant	3.382***	0.267
-2 Log Likelihood	773.081	636.202
Chi- Square (χ^2)	28.549***	54.549***
Nagelkerke R ²	0.055	0.113
Percent of Correct Prediction	80.7	85.0

*p ≤ 0.10, **p ≤ 0.05, *** p ≤ 0.01

Hypothesis III-1: The likelihood of non-participation in social events is related to the combined effects of age, gender, race, income, and education.

Table 6.2 shows the interactions between age, gender, race, income, and education and odds of non-participation in social events. Based on previous studies, specific research hypotheses are described as below.

The results regarding the interactions between age and race indicates that the odds of non-participation in social events are 90 percent lower for elderly minorities than they are for young Anglo Americans (odds ratio = 0.094, $p = 0.049$). The relationship illustrates the expected result. The relationship between the interaction and the odds of non-participation is statistically significant at $p \leq 0.05$. Based on these results, the study supports Hypothesis III-1a that *the odds of non-participation in social events are lower for elderly minorities than for young Anglo Americans.*

The results for the interaction among age, race, and gender indicate that the odds of non-participation in social events are 76 percent lower for elder minority females than they are for young Anglo-Americans males (odds ratio = 0.235, $p = 0.098$). The relationship between the interaction and the odds of non-participation in social events is statistically significant at $p \leq 0.10$. Thus, these results support Hypothesis III-1b that *the odds of non-participation in social events are lower for elderly minority females than for young Anglo Americans males.*

As described in Table 6.2, the interactions among the socio-demographic variables show the combined effects of age, gender, race, income, and education on non-participation in social events. The odds of non-participation in social events for these

socio-demographic variables increase from Table 6.1 to Table 6.2. According to the data analysis, the odds of non-participation based on the socio-demographic variables decrease from 67 percent to 66 percent (age), from 54 percent to 53 percent (gender), from 20 percent to 19 percent (race), from 22 percent to 19 percent (education), and from 33 percent to 32 percent (income). However, race and education are not significant predictors for non-participation in social events.

The R^2 of Model 1 in Table 6.2 indicates that 5.5 percent of the variability in the odds of non-participation in social events is described by the set of variables. The R^2 slightly increases from Table 6.1; therefore, it has more predictive power than the first model described in Table 6.1. Nevertheless, the value of the -2 log likelihood (775.176) included in Table 6.2 slightly decreases compared to Table 6.1 (773.081), which suggests that there is a slight improvement in appropriateness of Model 1 after adding the interactions among the socio-demographic variables. The model is significant at the $p \leq 0.01$ level.

Hypothesis III-2: The likelihood of non-participation in outdoor recreation is related to combined effects of age, gender, race, income, and education.

Interactions among the socio-demographic variables are used to identify the combined effects of age, gender, race, income, and education on non-participation in outdoor recreation. The specific research hypotheses regarding the odds of non-participations in outdoor recreation are discussed in Model 2 included in Table 6.2.

The results regarding the interaction between age and race indicate that the odds of non-participation in outdoor recreation are 1.5 times higher for elderly minorities than they are for young Anglo Americans (odds ratio = 1.549, $p = 0.094$). The relationship between this interaction and the odds of non-participation is statistically significant at $p \leq 0.10$. Based on these results, the study supports Hypothesis III-2a that *the odds of non-participation in outdoor recreation are greater for elderly minorities than for young Anglo Americans*.

The results for the interaction among age, gender, and race indicates that the odds of non-participation in outdoor recreation are 2.2 times higher for elderly minority females than they are for young Anglo-Americans males (odds ratio = 2.213, $p = 0.041$). The relationship between the interaction and the odds of non-participation in outdoor recreation is statistically significant at $p \leq 0.05$. These results support Hypothesis III-1b that *the odds of non-participation in outdoor recreation are greater for elderly minority females than for young Anglo Americans males*.

All significant predictors of non-participation in outdoor recreation increase in this study. Even though the socio-demographic variables are not extensively different, all significant predictor variables remain constant despite the addition of these interactions.

The R^2 of Model 1 included in Table 6.2 indicates that 11.3 percent of the variability is the odds of non-participation in social events. Because the R^2 slightly increases compared to Table 6, this model has more predictive power than the first model in Table 6. On the other hand, the value of -2 log likelihood (638.106) in Table 7 is also slightly decreased from Table 6 (636.202). The model is significant at the $p \leq 0.01$ level.

In summary, two different models are designed to predict the combined effects of age, gender, race, income, and education have on non-participation in leisure activities. Even though there are some independent variables that indicate insignificant predictors on non-participation in leisure activities, the reliability of predictors is shown by the interaction model chi-square that is significant at the $p \leq 0.01$ level. The decrease in -2 log likelihood from Table 6.1 to Table 6.2 indicates that there is an improvement in the appropriateness of the models after adding the interactions among the socio-demographic variables. The R^2 value suggests that the amount of explained variation in the odds of non-participation in outdoor recreation is lower in the constant model in Table 6.1 than in the interaction model in Table 6.2. Likewise, the amount of explained variation in the odds of non-participation in social events is higher in the interaction model than in the constant model. Based on these results, the study finds that the net effects of socio-demographic variables have a greater influence on the likelihood of non-participation in outdoor recreation than the combined effects of the socio-demographic variables, even though the net effects as well as the combined effects have an influence on the likelihood of non-participation in social events. Those interactions included in Table 6.2 are significant, which corresponds to the multiple hierarchy stratification perspective.

CHAPTER FIVE

DISCUSSION

Most studies that employed the multiple hierarchical stratification perspectives (Shinew et al., 1995; Philip, 1997; Arnold & Shinew, 1998; Lee et al., 2001; Floyed et al., 2006) primarily explored the differences in social inequalities of leisure behavior. However, I used multiple hierarchical stratification to explore leisure constraints comparing two different leisure activities (social events versus outdoor recreation). In this study, leisure constraints based on socio-demographic variables and the correlates of non-participation in particular leisure activities were examined. In order to complete this study successfully, I examined the likelihood of non-participation in leisure activities by examining the net effects of age, gender, race, income, and education, and identifying the combined effects of these variables using interactions. In this section, I summarize the discussion and the conclusions drawn from the results of this study.

Findings

There is a great deal of evidence in previous studies that indicates the relationship between socio-demographic variables and leisure activities. Even though the some of findings from this study support the previous research, the other findings are contrary to previous studies' results.

Leisure Constraints based on Socio-Demographic Variables

This study examined the leisure constraint index in terms of age, gender, race, education, and income. Even though the previous studies do not present specific types of leisure constraints according to socio-demographic variables, this study finds which constraints influence non-participation in leisure activities. Also, it hypothesizes that there are differences in the numbers of leisure constraints based on socio-demographic variables.

In regards to influence of gender constraints, numerous scholars found that women are less likely to participate than men in leisure activities due to family issues and security as well as money and opportunities (Searle and Jackson, 1985; Henderson and Allen, 1991; Shaw, 1994; Jackson and Henderson, 1996). But, I found that there is no difference in the number of leisure constraints faced by men and women. According to the results of influence of gender constraints, women do not face a higher number of leisure constraints than men. For the type of leisure constraints based on gender, lack of time is a main constraint for men while parking is a major constraint for women. Women might need to care of their kids, so they need a car to reach some places for leisure activities. On the other hand, men do not have enough time for leisure participation because they might have to earn more for their household.

Regarding influence of education and income constraints, Kelly (1996) argues that education and income variables are important predictors of measuring leisure constraints due to the fact that some leisure activities require not only financial resources, but also certain skills. As this study's results illustrate, there are differences in the

numbers of leisure constraints according to education and income. Like Kelly's argument, individuals of lower education and lower income face a higher number of leisure constraints than individuals of higher education and higher income. For the type of leisure constraints based on education, lack of time is the main constraint for individuals of higher education while parking problems and transportation problems are the major constraints for individuals of lower education. For the type of leisure constraints based on income, lack of time is the main constraint for individuals of higher income (over \$50,000) while transportation problems and parking problems are the major reason for individuals earning \$30,000-\$49,999 and for individuals earning under \$30,000 respectively. Individuals of lower class are restricted by financial resources, which makes it difficult for them to participate in leisure activities. Not only transportation but parking, too, requires financial resources. On the other hand, individuals of higher class might need more time to work for their high salary.

Regarding influence of race constraints, minorities including African Americans, Hispanics, and other races are less likely to take part in leisure activities than Anglo Americans because of differences in socio-economic status and historical inequities (Washburne, 1978; Floyd, 2006). Regarding the effects of race, there are no differences in leisure constraints among different races like other studies found. According to this study's result, minorities do not face a higher number of leisure constraints than Anglo Americans. Anglo Americans have similar percentages to minorities in the leisure constraint index. For the type of leisure constraints based on race, lack of time is the main constraints for Anglo Americans while transportation problems, parking problems, or

both problems are the major constraints for African Americans, for Hispanic, and for other races respectively. The differences in education and income between Anglo Americans and minorities limit participation in leisure activities (Hacker, 1994). He argues that minorities usually earn less than Anglo Americans because they are frequently less educated. Because minorities might not have enough financial resources, they face parking problems or transportation problems. On the other hand, because Anglo Americans usually earn more, they might not have a time for leisure participation.

Finally, regarding influence of age constraints, researchers suggest that physical decline and ageism interfere with older people's ability to participate in leisure activities (Gross et al., 1978; Lawton, 1985; Wearing, 1999; Floyd, 2006). As these previous studies describe, I found that elderly people are more likely to be influenced by leisure constraints in outdoor recreation than younger adults (under 50 years of age). According to the results of the influence of age constraints, elderly individuals face a higher number of leisure constraints than the younger adults. For the type of leisure constraints based on age, lack of time is the main constraint for younger people (18-49 of age) while parking and transportation are the major constraints for older people (over 50 of age). Because the elderly have more physical problems than younger people, driving a car could be more worrisome for them than for younger people. But, younger people need more time to work for financial resources.

In sum, gender and race are not considerable predictors of non-participation when this study examined the relationships between socio-demographics and the number of leisure constraints. The disadvantage groups point out that transportation problems and

parking problems are the major constraints. Thus, these findings reveal that the disadvantaged groups have similar constraints for leisure participation.

The Net Effects of Socio-Demographic Variables

Several previous studies argue that the elderly, females, minorities, people of lower education, and people of lower income suffer from constraints to leisure activities. In the study, dependent variables, such as non-participation in social events and non-participation in outdoor recreation, were utilized to examine the likelihood of participation based on several independent variables using logistic regression.

Elderly people are more likely to participate in social events, but they are less likely to participate in outdoor recreation as Kelly (1980) suggests. Kelly (1980) indicates that the elderly are less likely to participate in outdoor recreation because of health conditions, but more likely to join social and family activities. In addition, the elderly are less likely to participate in outdoor recreation because they tend to avoid active leisure in the last phase of their life spans (Gordon et al, 1976). Wearing (1999) also argues that ageism may make the elderly less prone to participate in outdoor recreation due to lack of socialization and recreation skills. This study strongly supports these facts finding that there are statistically significant relationships between non-participation in social events and the elderly and between non-participation in outdoor recreation and the elderly. The elderly tend to participate in social event, but avoid outdoor recreation.

According to Lee et al. (2001), females would rather participate in social activities than outdoor recreation because the latter often requires specific skills, which are frequently limited to males. This study found that the odds of non-participation in social events for females are lower than for males. Other studies suggest that females tend to avoid outdoor recreation because of their fear of violence, the lack of facilities, and the presence of outdoor insects or harmful plants. The results of this study showed that the odds of non-participation in outdoor recreation for females are greater than for males. Therefore, it could be expected that females are more likely to participate in social events than males whereas females are less likely to participate in outdoor recreation than males.

Most of the previous studies indicate that low income and low education causes people to be less likely to participate in leisure activities. This study found that the odds of non-participation in social events for individuals of lower education and lower income are lower than for people of higher income and higher education which is contrary to previous studies. But, the results did not support a statistically significant relationship between income and education and the likelihood of non-participation in social events. Thus, income and education are not considerable predictors of non-participation in social events in this study.

On the other hand, I found that the odds of non-participation in outdoor recreation for individuals of lower education are greater than for individuals of high education. Therefore, this study supports the previous studies' findings that education resources are an important predictor of leisure participation based on opportunity theory. However, the odds of non-participation in outdoor recreation for individuals of lower income are lower

than for individuals of high income. Thus, financial resources are not a pivotal predictor of leisure participation. Contrary to what Rosma and Hoffman (1980) indicate, this study does not support the notion that the lower class was less interested in leisure activities than the upper class because of cost.

The previous studies argue that individuals tend to spend time with people in their racial/ethnic group because of differences in value systems, norms, and socialization patterns. They also argue that the fear of racial discrimination may make individuals of the same race stick together during leisure time. Even though this study found that the odds of non-participation in social events are lower for minorities than for Anglo Americans, there is no statistically significant result. Therefore, in this study, race is not an important predictor of social events. Floyd (1999) indicates that minorities are likely to avoid outdoor recreation in parks, while Anglo Americans enjoy leisure participation in parks. This study's results show that the odds of non-participation in outdoor recreation are greater for minorities than for Anglo Americans. Thus, this study supports Floyd's (1999) findings.

The Combined Effects of Socio-Demographic Variables

The combined effects of socio-demographic variables were employed to explore interactions in terms of the multiple hierarchical stratification perspectives. Several researchers argue that leisure constraints according to socio-demographic variables cause multiple hierarchical stratification (Arnold & Shniew, 1998; Lee et al., 2001; Floyd et al., 2006).

Jackson et al. (1982) argue that the differences between age and race cause double jeopardy. According to them, elderly minorities are more disadvantaged than young Anglo Americans in leisure participation. This study found that the odds of non-participation in social events are lower for elderly minorities than for young Anglo Americans. Based on the literature review, both the elderly and minorities are more likely to take part in social meeting than in outdoor recreation. Thus, the results regarding social events did not support double jeopardy. On the other hand, this study suggested that the odds of non-participation in outdoor recreation are greater for elderly minorities than for young Anglo Americans. According to the types of leisure activities, double jeopardy might be present.

With regard to gender, age, and race, this study examined the different leisure constraints that elderly minority women face in their leisure patterns compared to young Anglo-American men. Philipp (1997) indicates that elderly minority women are less likely to participate in leisure activities than young Anglo American men due to the fact that perceived constraints hinder their participation. This study suggested that the odds of non-participation in social events are lower for elderly minority women than for young Anglo-American men.

Based on previous studies, multiple hierarchy stratification causes leisure disparities in unprivileged groups. Like several previous studies supporting the multiple hierarchy stratification perspective, this study shows statistically significant relationships between non-participation in leisure activities and multiple disadvantaged statuses.

Implications

Practical implications can be helpful for future policy and programming around the disadvantaged groups using the results of analysis. Public and commercial agencies are concerned about how leisure participation impacts expenditures for activities and facilities, and fiscal resources for activity education and diverse programs associated with activities. Murdock et al. (1991) suggest that participation will dramatically increase when disadvantaged groups take part in leisure activities.

Not only policy makers but also program managers should consider what kinds of constraints hinder individuals to participate in leisure activities. Based on the findings, this study suggests several recommendations to increase leisure participation among the underprivileged groups. First, multiple constraints that inhibit leisure participation should be figured out according to socio-demographic variables. For example, the transportation and parking spaces should be adequate to make leisure activities' accessibility to underprivileged groups. Also, time should be considered for majority groups. Second, various programs that introduce elderly or women to provide opportunities for outdoor recreation should be offered. Next, satisfying and comfortable experiences increase minorities' participation in outdoor recreation. Finally, participation opportunities should be encouraged for individuals of lower SES. Thus, place and cost should be considered to promote equity.

Even though this study examined the respondents of Washington D.C, it suggests some general insight into how constraints to leisure activities influence individuals' participation and how policy makers and program managers might deal fairly with them.

Limitations

Using the applied nature of the data set, there were significant limitations when measuring the leisure constraint index. In order to analyze the relationship between the leisure constraint index and the socio-demographic variables (gender, age, education, income, and race), few leisure constraints were examined. Based on the literature review, an ideal data set needs to consist of a number of classifications in order to completely test the concepts and equivalent resources in relation with leisure constraints. The previous studies about leisure constraints suggest a variety of constraints that affect participation in leisure activities including time, information, cost, facilities, geographic location, transportation, awareness, fear of crime, personal reasons, safety, socialization, and interest. But the limited variables of this study do not deal with all of the constraints identified in the literature review because this study only employed seven constraint items on the leisure constraint index.

In spite of the limitations, this study is helpful in promoting clearer understanding of the relationship between leisure constraints and socio-demographic variables. It also provides researchers' information to measure the multiple hierarchy stratification perspective more precisely according to types of leisure activities.

Suggestions for Future Study

Because this study presents the multiple hierarchy stratification perspective as its theoretical framework in terms of socio-demographic variables (gender, age, education,

income, and race), it described the relationship between leisure constraints and socio-demographic variables, the net effects of socio-demographics on non-participation in leisure activities, and the combined effects of multiple statuses using two types of leisure activities as dependent variables.

Future studies might need to employ more leisure constraint items to identify what kinds of leisure constraints affect non-participation in leisure activities according to more types of leisure activities. In addition, an examination of various constraints may help to explore leisure behavior according to socio-demographic variables. Also, they can explore more leisure activities to examine individuals' leisure preferences by adopting multiple hierarchy stratification perspectives. These studies will help individuals better understand the relationship between constraints and socio-demographics using the multiple hierarchy stratification according to different types of leisure activities. Next, this study does not focus on majorities' constraints to leisure activities. An examination of leisure constraints for majorities (men, Anglo Americans, younger people, and individuals of higher SES) can be helpful to understand the reason why they do not participate in leisure activities, and explore how constraints affect leisure participation more generally. Finally, researchers may figure out leisure preferences based on socio-demographic variables.

CHAPTER SIX

CONCLUSION

In this study, I examined how multiple statuses are related to leisure constraints and how they affect two different kinds of leisure activities. Based on previous studies, not only did the relationship between the leisure constraint index and socio-demographic variables prove or disprove the hypotheses, but the net effects and combined effects of the group variables also provide interesting results. Like other researchers, who used three or more variables to examine multiple hierarchy stratification perspective (Shinew, 1995; Arnold and Shinew, 1998; Lee et al., 2001; Floyd et al., 2006), the results in this study demonstrated that three variables of multiple statuses are statistically significant in supporting multiple hierarchy stratification.

According to this study, the relationships between socio-demographic variables and the leisure constraint index show that gender and race do not support several hypotheses: (I-a): women face a higher number of leisure constraints than men do, and (I-c); minorities have a higher number of leisure constraints than Anglo Americans do.

Regarding the net effects of the stratified groups in the socio-demographic variables in two different types of leisure activities, I found that those groups have different propensities to participate. For example, elderly, minorities, and females are more likely to participate in social events as previous studies indicate. On the other hand, they are reluctant to participate in outdoor recreation. Also, this study shows that individual of lower education are less likely to participate than individuals of higher

education in outdoor recreation. Interestingly, individuals of lower income are more likely to participate in outdoor recreation than individuals of higher income.

For the combined effects of multiple statuses, the interaction between minorities and elderly as well as the interaction among elderly, females, and minorities decrease non-participation in social events. Also, the interaction between minorities and elderly people and the interaction among elderly, females, and minorities increase non-participation in outdoor recreation. Thus, the findings, which examined the three variables of multiple statuses in two different types of leisure activities, support the claim that individuals of these disadvantaged statuses report higher participation in social events, but lower participation in outdoor recreation than individuals of more advantaged statuses.

APPENDICES

Appendix A

Table 1: Leisure Constraints based on Socio-Demographic Characteristics

Variables	Value	Significance	Type of Constraints
Gender	Male	No (P=0.63)	Parking
	Female	No (P=0.63)	Lack of Time
Race/ Ethnicity	Anglo Americans	No (P=0.66)	Lack of Time
	African Americans	No (P=0.66)	Parking
	Hispanic	No (P=0.66)	Transportation
	Other Races	No (P=0.66)	Parking and Transportation
Income	Under \$25,000	Yes (P=0.008)	Transportation
	\$25,000 to \$49,999	Yes (P=0.008)	Parking
	\$50,000 to \$74,999	Yes (P=0.008)	Lack of Time
	More than \$75,000	Yes (P=0.008)	Lack of Time
Education	High School or less	Yes (P=0.046)	Transportation
	Associate Degree	Yes (P=0.046)	Parking
	College or Higher	Yes (P=0.046)	Lack of Time
Age	18-29	Yes (P=0.042)	Lack of Time
	30-39	Yes (P=0.042)	Lack of Time
	40-49	Yes (P=0.042)	Lack of Time
	50-64	Yes (P=0.042)	Transportation
	More than 65 years	Yes (P=0.042)	Parking

Appendix B

Table 2: Measurement of Dependent and Independent Variables

DEPENDENT VARIABLES	
Non-participation in Social Events	Participants in social events are coded as '0.' Non-participants in social events are coded as '1.'
Non-participation in Outdoor Recreation	Participants in outdoor recreation are coded as '0.' Non-participants in outdoor recreation are coded as '1.'
INDEPENDENT VARIABLES	
Gender of Respondents	Male = 1. Female = 2.
Age of Respondents	Age from 18 to 89 (be consistent)
Race of Respondents	Anglo American = 0. African American = 1. Hispanic = 1. Other race = 1.
Education of Respondents	8 grades or less = 6. Some High school = 5. High school degree = 4. Associate degree = 3. Bachelor degree = 2. Post-graduate = 1.
Income of Respondents	Under \$30,000 = 6. \$30,000 - \$49,999 = 5. \$50,000 - \$74,999 = 4. \$75,000 - \$99,999 = 3. \$100,000 - \$149,999=2. Over \$150,000 = 1. ²

² These alternate codings were examined. The results not shown above are available on request.

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