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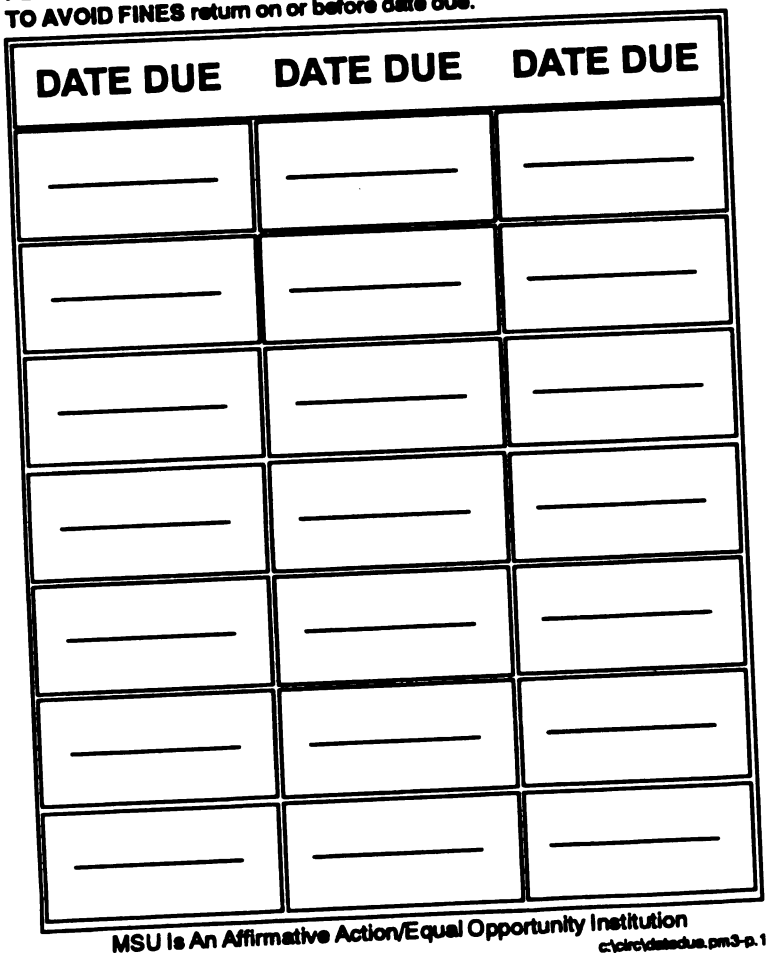

UNIVERSITY STUDENTS' PERCEPTION OF CONSTRAINTS TO PARTICIPATION IN RECREATIONAL SPORTS ACTIVITIES

By

Ahmad M. Alfadhil

A DISSERTATION

Submitted to
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ABSTRACT

UNIVERSITY STUDENTS' PERCEPTION OF CONSTRAINTS TO PARTICIPATION IN RECREATIONAL SPORTS ACTIVITIES

By

Ahmad M. Alfadhil

This study focused on the factors that hinder Michigan State University students' participation in Recreational Sports Activities. Two groups of respondents, regular participants and nonparticipants in recreational sports activities, were examined separately with an emphasis on the last group. Specifically, the purpose of the study was to examine the perception of intrapersonal, interpersonal, and structural constraints among nonparticipants. The independent variables for the nonparticipants were gender, interest in participation, and past experience with RSA.

A stratified random sample of 600 students was selected by university officials from the 1995 spring semester enrollment. From the 240 respondents, 144 were identified as not regularly participating in recreational sports activities (RSA). These were classified "nonparticipants" and made up the major sample of this study. From the 96 regular participants, 76 expressed a desire for an increase in their participation. Those were classified as "participants" and made up the second sample used in this study.

The self administered questionnaire consisted of three sections: the first focused on demographic information, the second section measured perception of constraints to increased participation; the third section consisted of a multi-dimensional constraints scale to be completed by the nonparticipants. Beyond the general descriptive information, the analysis of nonparticipants data started with a confirmatory factor analysis to examine the applicability of the hierarchical model of leisure constraints to RSA. One way analysis of variance and t-test were used to test the proposed hypothesis and to examine the perception of constraints to increased participation.

A major finding of this study, related to the nonparticipants, was the insignificant gender differences on perception of constraints and expressed interest in participation. In addition, the study findings supported the existence of intrapersonal, interpersonal, and structural constraints, as identified by the hierarchical model, but did not rule out the existence of more constraints types. Findings from an item based analysis of constraints to increased participation indicated significant gender differences on perception of some constraints items and supported the hierarchical model continuation position after participation.

DEDICATION

This humble work is dedicated to my parents, my brothers and sisters, my wife and our two daughters for their continuous love, patience, and support.

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No task, regardless of its scope, is completed without the influence of some significant others. This work has been no exception and I am indebted to acknowledge some of the many special people who have helped, encouraged, and supported me during my doctoral program at Michigan State University.

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Chapter I

INTRODUCTION

Inhibiting and limiting factors that constrain people from participating in desired leisure activities and from taking advantage of provided leisure services have been the focus of empirical studies since the early 1980s. The development of a variety of conceptual models and frameworks in leisure constraints literature, reflects an awareness of theoretical and practical contributions to the profession. Many researchers who have studied leisure constraints have agreed that thorough investigation of nonparticipation and constraints on leisure participation are the basis for theoretical and applied benefits of constraints research (Boothby et al, 1981; Jackson, 1983, 1990; Searle & Jackson, 1985a).

The understanding of nonparticipants and reasons for nonparticipation in leisure activities are important for constraints theory development and for leisure service agencies. Goodale and Witt (1989) stated that "the origins of recreation service provision are founded in attempts to overcome the deleterious conditions which precluded or limited recreation participation for one group or another" (p. 421). Recreation providers and practitioners, by definitions of

their profession, are "expected to remove barriers to leisure participation and facilitate the obtaining of satisfying leisure experiences" (Iso-Ahola and Mannell, 1985, p. 111). Generally, practical contributions of leisure constraints research can assist in the development of philosophy, policy, program planning, and marketing strategies (Searle and Jackson, 1985b).

Recognizing the valuable contribution of leisure constraints studies to the understanding of leisure behavior, leisure scholars have developed a variety of models and frameworks explaining the nature of constraints and their effects on an individual's decision to participate. The complexity of the phenomenon led to the categorization of leisure constraints in different ways, e.g. from an agency's perspective, constraints were divided into internal vs. external, from an individual participant's perspective, constraints are categorized as blocking vs. inhibiting, temporary vs. permanent, and antecedent vs. intervening. Although these classifications have been beneficial, they also have presented several obstacles to the understanding of leisure constraints.

In his review of leisure constraints research, Jackson (1988) suggested that "one of the most serious obstacles to the development of a body of knowledge about recreation nonparticipation and leisure constraints is variations in the number and types of items that have been included in previous studies" (p. 206). Another major fundamental obstacle is the

conceptual classification of leisure constraints. Crawford and Godbey (1987) identified several types of leisure barriers and contended that "lack of conceptual clarity results from the assumption that a barrier is any factor which intervenes between the preference for an activity and participation in it" (p. 120).

Leisure constraints which inhibit interested people from participating cover "a range of social and psychological factors as well as ones pertaining to the logistics and structure of the services offered" (Goodbey, 1989, p. 618). Thus, previous studies of leisure constraints, which have not covered the full range of constraints, have limited possible generalizations and have resulted in contradictory findings. These differences, among leisure constraints studies, indicate a need for a general constraint theory that will lead to a comprehensive understanding of leisure constraints, and their natural process and impact.

The types and numbers of constraints items that appeared in the literature were often classified either conceptually, by means of theoretical models, or empirically by means of statistical procedures i.e. exploratory factor analysis technique. According to Jackson and Burton (1989) there is general agreement among researchers that there are three types of barriers (constraints): those that are external to the individual (environmental); those which are internal (psychological, intrapersonal); and those which are relational and social (socio-psychological).

A conceptual model of leisure constraints that corresponded to the aforementioned agreement was proposed by Crawford et al. (1991): "A hierarchical model of leisure constraints." The model was based on Crawford and Godbey's (1987) three models of leisure constraints (intrapersonal, interpersonal, and structural constraints), which provided the foundation for the hierarchical model (see Figure 1.1). Crawford et al. (1991) proposed that participation depends on successful negotiation of each of the sequentially ordered constraint levels, whereas nonparticipation might occur as a result of failure to negotiate some constraints at any of the three levels of the hierarchy of constraints as indicated in Figure 1.2.

Intrapersonal constraints are the first level of constraints in the hierarchical model as proposed by Crawford et al. (1991). This level of constraints "involve individual psychological states and attributes which interact with leisure preferences rather than intervening between preferences and participation" (Crawford & Godbey, 1987, p. 122). Only when intrapersonal constraints are absent or have been negotiated, does the individual form a leisure preference. A person must overcome intrapersonal constraints in order to reach the next level of leisure constraints -- interpersonal. Interpersonal constraints are "the result of interpersonal interaction or the relationship between individuals' characteristics" (Crawford and Godbey, 1987, p. 123) i.e. absence of a coparticipant. Only when this type of constraint

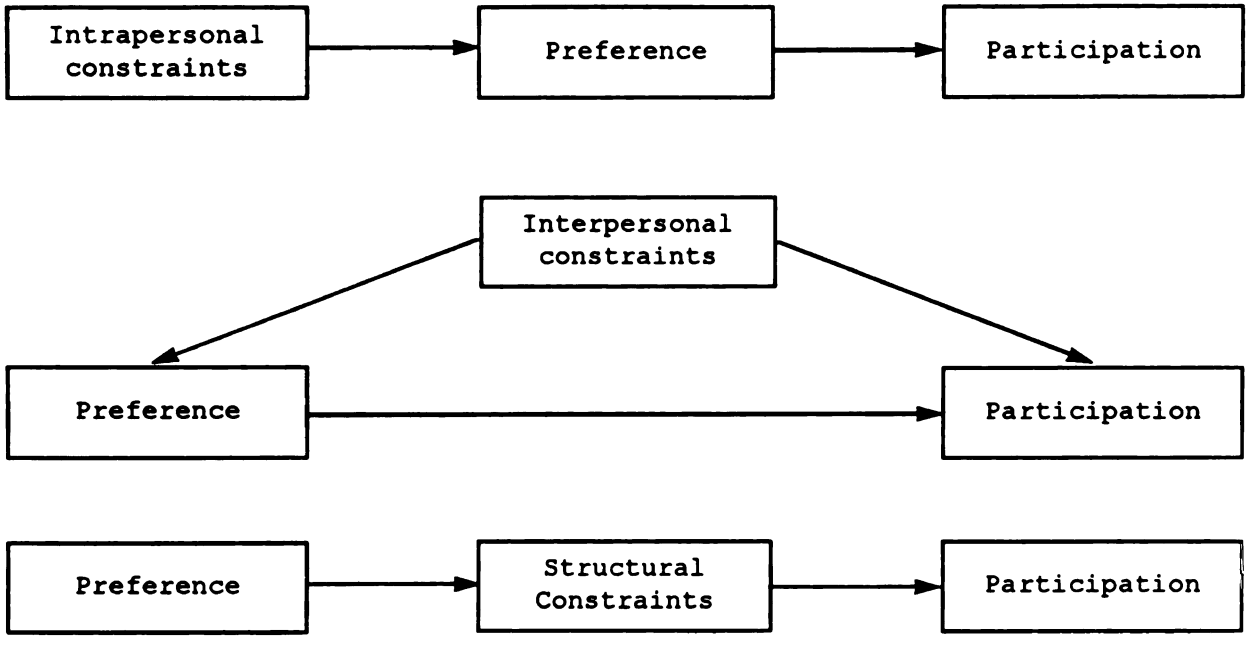


Figure 1.1 Crawford and Godbey's three models of leisure constraints. (Adopted from "Reconceptualizing barriers to family leisure" by: Crawford and Godbey, 1987, Leisure Sciences, 9, pp. 123-124).

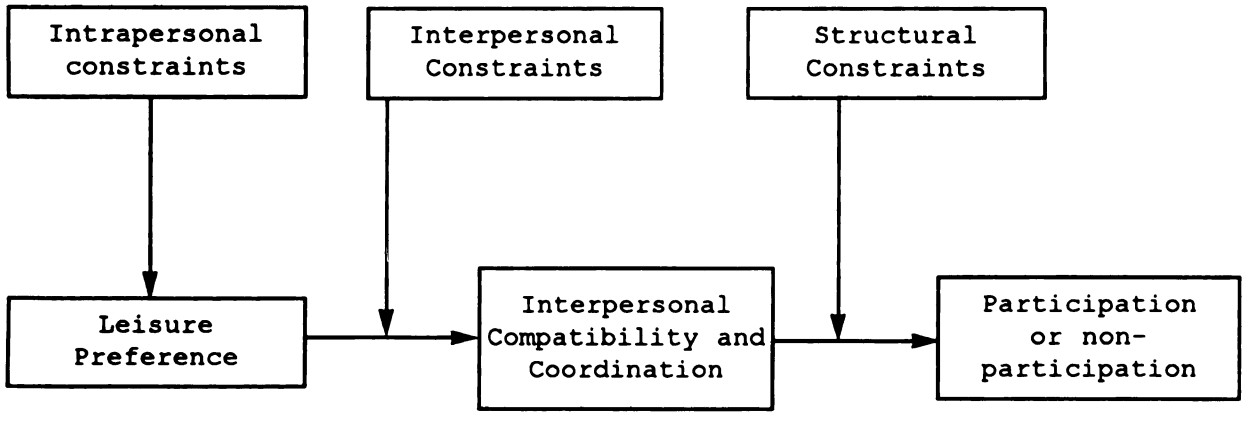


Figure 1.2 A hierarchy model of leisure constraints. Source: A hierarchical model of leisure constraints, Crawford, Jackson, and Godbey, 1991, Leisure Sciences, 13, pp. 309-320.

has been overcome, does the individual begin to encounter structural constraints. Structural constraints are "intervening factors between leisure preference and participation" (Crawford and Godbey, 1987, p. 124). When structural constraints have been overcome, participation will result, however, nonparticipation or substitution may result if structural constraints are sufficiently strong (Crawford et al., 1991).

The hierarchical model, proposed by Crawford et al. (1991), was selected as a theoretical basis for this study because of its distinctive features in contrast to other constraints models. That is, the operation of constraints is process oriented within the broad context of a preference-participation relation. Unlike previous investigations which have emphasized only constraints that intervene between preferences and participation (structural constraints), this model introduces the concept of "intrapersonal" constraints, which influence the individual preferences and "condition the will to act, or the motivation for participation" (Crawford et al. 1991, p. 314). Thus, subjects who express "lack of interest" are viewed as individuals faced with intrapersonal constraints. According to Jackson (1990), "lack of interest response may be symptomatic of barriers" (p. 58).

The utilization and examination of the hierarchical model of leisure constraints has theoretical and practical implications for leisure professionals and practitioners alike. Theoretically, the investigation of leisure constraints

and nonparticipation in leisure activities may reflect leisure identity, and further, contribute to the existing knowledge of leisure behavior.

Practically, constraints data pertaining to nonparticipation can improve leisure marketing strategies and the understanding of latent demand. Jackson (1990) has suggested that

> market segmentation based on the recognition of antecedent constraints (constraints affecting preference) and of factors which explain variations in such constraints should help to ensure that recreation and leisure management strategies apply to all members of a given sub-group of the population, or that alterations are made to these strategies in view of differences within the sub-group (pp. 69-70).

Further, such data can improve leisure programming and the attractiveness of recreation activities. Since characteristics of a leisure program may be a source of constraints for potential participants, as they are the source of attraction for the participants, constraints data can aid programming decisions in addressing strategies to minimize leisure constraints (McCarville and Smale, 1993). By understanding the association of certain constraints with specific types of leisure activities, it will be possible for leisure providers to reduce or remove some of the constraints affecting a targeted population.

Only one empirical study by Raymore et al. (1993) examined and supported the hierarchical model of leisure constraints. A comprehensive understanding of the impact

leisure constraints may have on leisure participation necessitates a systematic investigation of the phenomenon starting with examination of conceptual models and propositions, to safeguard against premature conclusions. Iso-Ahola (1986) in his editorial notes in the Journal of Leisure Research, expressed the need for "constructive replication," meaning "replicating the main variables of the first study and adding some other variables to the second study or otherwise changing the original design somewhat. Such studies are more than replication, they are extensions" (p. ix). Ellis and Rademacher (1986), too, have expressed the need for replication and extension to validate existing findings and assumptions.

Research has indicated that differences in perception of leisure constraints exist between early adolescents and adults, 10-15 years old and over the age of 18, respectively (Hultsman, 1993). Since Raymore et al.'s (1993) confirmation of the hierarchical model of leisure constraints was based on 12th graders' perception of constraints on beginning a new leisure activity, can the hierarchical model of constraints be confirmed with a different age group -- young adults -- and with specific type of leisure activities -- recreational sports activities? Further, can the model differentiate between nonparticipants who are interested and those who have no interest in participation in physical recreation activities?

Constraints on leisure participation are relative to the individual and his or her circumstances (Jackson & Searle, 1985). In other words, perception of constraints varies from individual to individual and from type to type of leisure activities, yet they may also be shared widely within the community (McCarville & Smale, 1993). Thus, investigation of leisure constraints should be focused on a specific type of leisure activity and within a single community. Such focus should enable providers to evaluate reported constraints and determine possible actions.

This study is concerned with the perception of constraints on recreational sports participation (a specific type of leisure activity) among young adults. Michigan State University as a community, is known for its adequate number of recreational facilities, thus providing an environment and equal opportunities for physical recreation participation with minimal constraints, especially costs and facility availability (see Appendix A). The intent is to utilize the hierarchical model of leisure constraints and examine its applicability to Michigan State University university students and their physical recreation nonparticipation.

Statement of the Problem

The purpose of this study was to determine how perceived constraints (intrapersonal, interpersonal, structural) influenced recreational sports participation among young adult male and female nonparticipants enrolled as students at

Michigan State Unviersity. This study was also designed to explore the perception of constraints influencing individuals' desire for more participation in recreational sports activities.

Importance of the Study

Much of the leisure literature, including constraints studies, has been criticized for being atheoretical. Presenting the problem of theoretical weaknesses, Iso-Ahola (1986) in his editorial notes stated "The problem of theoretically poor research is by no means limited to dissertations. It is characteristic of recreation research as a whole" (p. vi). This study, however, was based upon the hierarchical model of leisure constraints and its three concepts, providing its theoretical bases.

The significance of this study stems from its examination of the hierarchical model of leisure constraints, within specific environment and type of activities, and from the application of the model's three concepts to nonparticipants in recreational sports activities. The hierarchical model, though widely accepted, has not been examined vigorously, with the exception of an empirical study conducted by Raymore et al. (1993), and has never been applied to a group of nonparticipants. Furthermore, as the model contended, does lack of interest among nonparticipants indicate different forms of constraints (intrapersonal, interpersonal) than the traditionally studied intervening (structural) constraints?

The conceptual inconsistency that characterized most constraints studies necessitates a utilization of a theoretically sound model.

The application of the model to nonparticipants in recreational sports activities required development of a questionnaire. The questionnaire is of practical significance, and collected data will provide descriptive information of constraints on participation in recreational sports activities, which are deemed important for recreational planners, providers, and policy makers at Michigan State University.

Hypotheses

There are five hypotheses directed toward perception of constraints on participation in recreational sports activities among current nonparticipants.

Hypothesis 1. Respondents who perceive a high level of intrapersonal constraints perceive a lower level of interpersonal and structural constraints than those who perceive low intrapersonal constraints.

Hypothesis 2. Nonparticipants who express a high level of interest in regular participation perceive a lower level of intrapersonal constraints than those with a low level of interest.

Hypothesis 3. Male nonparticipants express a lower level of interest in recreational sports participation than female nonparticipants.

Hypothesis 4. Female nonparticipants perceive a higher level of constraints on recreational sports participation than male nonparticipants.

Subhypothesis A. Females perceive more intrapersonal constraints than males.

Subhypothesis B. Females perceive more interpersonal constraints than males.

Subhypothesis C. Females perceive more structural constraints than males.

Hypothesis 5. Nonparticipants who have had past experience with regular recreational sports actitivies (RSA) participation perceive a lower level of each type of constraints (intrapersonal, interpersonal, structural) than those who have had no past experiences.

Delimitations

This study was delimited to students attending Michigan State University, specifically, to nonparticipants in recreational sports activities at the time of data collection.

This study was further delimited to recreational sports activities, on and off campus, among students not majoring in physical education and exercise science.

Definitions

As used in this study, the following terms were defined:

Constraints - factors perceived to inhibit or limit participation in recreational sports activities. Jackson defined constraints as "a subset of reasons for not engaging in a particular behavior" (p. 211).

Intrapersonal constraints - "involve individual psychological states and attributes which interact with leisure preferences rather than intervening between preferences and participation" (Crawford and Godbey, 1987, p. 122).

Interpersonal constraints - factors resulting from individual social interactions and relationships which interact with preference for and participation in leisure activity.

Structural constraints - factors that intervene between the individual preference in participation and his or her actual participation.

Recreational sports activities (RSA) - consists of any cooperative, competitive physical activities participated in voluntarily. They encompass all recreational sports activities provided by the Department of Intramural and Recreational Services, Michgan State University, i.e., informal, intramural, extramural, and sport clubs activities (see Appendix A).

Basic Assumptions

An assumption of the hierarchical model of leisure constraints is that "fewer subjects advance as their position along the hierarchy increases" (Raymore et al., 1993). That is, if a subject scored high in one of the two lower level constraints, he/she would not be able to confront the next higher level of constraints. In this study, it is assumed that participants in recreational sports activities, who do not express a desire for an increase in their participation, perceive no constraints on RSA participation.

Limitations

Plausible limitations of this study are the climate conditions and timing during which the study is conducted. The impact of cold weather on participation might affect the self-reported data, similarly the timing of the study which may have influenced the response rate.

Another limitation is related to the measurement of participation rate. To minimize recall error, respondents were asked to report the average of weekly participation and the average time spent per participation session. The reporting of average participation rate might be affected by the first limitation (the cold climate).

The number of nonparticipants responding to this study presents a limitation to the confirmatory factor analysis results. The appropriateness of the ratio of the estimated parameters and the 144 nonparticipant respondents is suspect, in relation to statistical procedures of factor analysis.

Chapter II

REVIEW OF LITERATURE

A growing body of leisure constraints research has developed over the decades of the '80s and early '90s, as signified by the number of leisure constraints studies, a special section of the sixth Canadian Congress on leisure research designated for leisure constraints, two special issues of the publications Leisure Sciences and Journal of Leisure Research devoted to leisure constraints, and several critical reviews and summaries of leisure constraints research (e.g. Goodale and Witt, 1989; Jackson, 1988). This development reflects an awareness of potential contributions of leisure constraints research to public and private leisure and recreation services.

The purpose of this study was to determine how perceived constraints (intrapersonal, interpersonal, structural) influenced recreational sports participation among young adult male and female nonparticipants enrolled as students at Michigan State University. This study was also designed to explore the perception of constraints influencing individuals' desire for more participation in recreational sports activities. The survey of related literature is divided into four major areas of constraints: constraints on leisure

participation, leisure constraints and women, constraints on physical recreation participation, and variability of leisure constraints.

CONSTRAINTS ON LEISURE PARTICIPATION

The existing constraints literature have examined constraints on participation from different, yet similar, perspectives. Three approaches have been used to examine constraints on participation, each approach offering a different means to the constraints investigation. All approaches focus on constraints on participation in either leisure activities in general, a group of specific types of activities, or a single type of activity.

Constraints and Leisure in General

Studies from the first approach have focused on the examination of constraints in general, as they applied to leisure participation. For example, McGuire (1984) provided a sample of respondents with a list of thirty constraints and asked them to indicate whether each constraint was "very important," "somewhat important," or "not important" in limiting their leisure involvement at a desired level. Similarly, McGuire et al. (1986) used data from a nationwide recreation survey to examine constraints on participation in general outdoor recreation activities across the life span.

The great diversity of leisure activities makes it difficult to develop a comprehensive list of constraints for all activities. Thus, some studies from this approach have

attempted to account for activity preference. Jackson (1983) and Searle and Jackson (1985a) have analyzed secondary data (1981, Alberta Recreation and Parks Survey) in which respondents were asked "Is there any recreational activity that you don't take part in now but would like to start regularly?" Respondents who replied affirmatively were asked for reasons for nonparticipation in this activity, and were presented with a list of fifteen predetermined reasons to check whether each reason was perceived as "never," "sometimes," or "often a problem." One aspect of Jackson's (1983) analysis findings was that perception of barriers to participation and their effects, depends on the type of activity respondents desired but were unable to participate in.

Another general perspective to the study of constraints on participation can be depicted in a study conducted by Henderson et al. (1988). In their study, the relationship between barriers to recreation and gender-role personality traits for women, they have defined recreation activities very broadly as "all the free time endeavors which one might undertake" (p. 73). The researchers, therefore, developed fifty-five items concerning general barriers to recreation, with a five point Likert Scale response ranging from strongly disagree to strongly agree.

In a qualitative study conducted in England, Kay and Jackson (1991) utilized an interviewer-administered questionnaire survey. Interviewees were shown a checklist of nineteen types of general constraints and asked, "Do you feel

that any of these stop you from doing things you would otherwise do, or do more often, in your leisure time?" (p. 303). The generality was apparent not only on leisure activities, but also on the list of constraints. However, the qualitative nature of the study permits further investigation. Respondents were asked to rank order, from the checklist, the constraints most affecting them, and to indicate the two constraints which most affect their leisure participation. Further, the subjects were questioned about the type of activities affected, and how they reacted to the constraints. The findings supported a domination of two types of constraints: "money" and "time," which were considered as main influences on leisure participation by a large number (56% and 45% respectively) of interviewees, but were not significant.

General perception of constraints on beginning any new leisure activity was examined by Raymore et al. (1993). Subjects were asked to list the five leisure activities they enjoyed the most and to indicate the extent of agreement or disagreement with twenty-one statements of constraints on new leisure activity participation. The measurement of constraints was based on Crawford et al's (1991) hierarchical model of leisure constraints and its three types of constraints (intrapersonal, interpersonal, structural). The data gathered from 363 grade 12 students confirmed the existence of the three types of constraints and their hierarchical order. In separate analysis of the foregoing study, Raymore et al. (1994) examined self-esteem, gender, and socioeconomic status of adolescents in relation to perception of constraints on

starting a new leisure activity. The findings suggested gender differences in perception of intrapersonal and total constraints, and found socioeconomic status to be unrelated to the perception of interpersonal or structural constraints.

Constraints and Specific Types of Activities

The second approach presented an attempt to minimize the effect of activity characteristics on perception of constraints. Studies from this approach have focused on a specific array of activities that share some commonalities. For example, Shaw et al. (1991) focused on participation in physically active leisure only. Determination of activity domains were either predetermined before data collection, or formed afterward by collapsing a variety of specified activities into groups and/or domains of activities. Studies from both techniques, pre and post determined domains, and their constraints measurement follows.

Reasons for nonparticipation in nineteen outdoor recreation activities (predetermined to be one domain of activities) were examined by Romsa and Hoffman (1980), using secondary data which provided four reasons for nonparticipation (no facilities, no time, no funds, no interest). The researchers found that lack of time, money, and facilities were stressed by users as barriers, while lack of interest was suggested by nonusers as the main reason for non-involvement.

Five predetermined specific activity domains were used by McCarville and Smale (1983). They utilized secondary data

drawn from the (1989) Ontario Leisure Activity Participation Study. The analysis was based on 1,513 subjects who indicated that they were participating somewhat less or much less than they would like in any one of the activity domains. Respondents were provided with a list of ten possible constraints and asked whether or not (a dichotomous response) any of the constraints had made it difficult to participate at a desired level. The findings showed a uniformity in the reporting of constraints, regardless of the activity domain, and when all domains were considered together, satisfaction decreased significantly as the number of constraints increased.

Park usage was used as a single domain of activities by Scott and Munson (1994) in their study of perceived constraints to park usage among individuals with low incomes. General park usage, especially when the types of parks were unspecified, encompass a large number of varying activities, thus formulating a simple predetermined domain of activities. The findings showed income as the single best predictor of perceived constraints to park visitation.

Activities categorization, in another group of studies, often was determined after the collection of data, by collapsing a wide variety of specified activities into specific domains, thus "permitting the activity-based analysis to be carried out at a fairly high level of aggregation" (Iso-Ahola et al., 1994, p. 234). In most cases, respondents who express a desire for participation were asked to specify the

desired activity and to evaluate reasons for not being able to participate.

Two separate sets of secondary data with very similar questionnaire items were analyzed by Jackson (1983, 1993). The number of activities identified by respondents (69 and over 70 specific activities, respectively) were classified into nine categories in each study. The difference between the categorization in both studies was the result of some specific activities being mentioned sufficiency to allow for separate analysis. Hence, one activity may represent a single category. In his (1993) analysis, Jackson subjected the respondent's reasons for nonparticipation to four types of data manipulation (individual items, total constraints scores, factor analysis, and cluster analysis). Results from all sets of analysis indicated that "there are socioeconomic and activity based patterns in the reporting of constraints, but that this experience also cuts across conventionally recognized subgroups of society" (p. 146).

The number of categories used to classify activities mentioned by respondents lack consistency. For instance, while Jackson and Dunn (1988) and Jackson (1983, 1993) identified nine categories, Iso-Ahola et al. (1994) developed seven categories of activities started and ceased by respondents. To illustrate the inconsistency further, Jackson (1994) combined two Canadian data sets (General Recreation Surveys, administered in 1988 and 1992 by Alberta Recreation and Parks) and created five classification categories of desired

activities. One of the data sets (1988) has been classified by Jackson (1993) in an earlier study into nine categories. While the inconsistency might be the result of data combination, such differences should be minimized and fully explained. The results of Jackson's (1994) analysis indicated that "variations in constraints can be interpreted as the effect of a conjoint influence of age and preferred activities" (p. 47).

Constraints and a Single Activity

Unlike the previously mentioned studies, in which activities were specified categorically, the third approach focuses on constraints to participation in one or two specific activities. Studies from this approach examined constraints variations in a single activity such as pool (Chick & Roberts, 1989; Chick, Roberts & Romney, 1991); trail use (Bialeschki & Henderson, 1988); hunting (Wright & Goodale, 1991); contract bridge (Scott, 1991); and golf (Backman, 1991). In several studies, Backman and Crompton (1989, 1990), differentiated between continuers and discontinuers, and between active and passive discontinuers of two leisure activities (golf and tennis).

LEISURE CONSTRAINTS AND WOMEN

Empirical constraints studies that have examined the gender differences in the perception of constraints to leisure participation have indicated some differences in the level or degree of constraints perception. Many of the constraints are

socially and culturally imposed beliefs based on an individual's gender identity. "Many females have avoided the label of 'tomboy' by participating only in activities that were socially prescribed for their gender" (Kane, 1990, p. 52). Thus, gender may act as a constraint on participation directly or indirectly, by influencing the perception of other constraints, and is more salient for women than men. Most of the research on leisure constraints and women argue that women have less leisure and face more constraints than do men (Shaw, 1994).

Carrington et al. (1987) investigated gender inequalities in leisure, especially in recreational sports, among young people of south Asian descent residing in Northern City, United Kingdom. Fifty males and 64 females aged between 11 and 24 cited gender differences in leisure opportunities and behavior when they were interviewed. Researchers identified constraints on participation by asking respondents if they had a desire to take part in any additional activities, and if so, what inhibited them from doing so. Female interviewees were most constrained by parental approbation in extreme contrast to their male counterparts. Other constraints on participation evidenced in the study included lack of time, friends not interested, lack of expertise, and cultural inhibitions.

The leisure constraints literature contains, among other things, a distinctive type of research focusing only on women's leisure or lack of leisure. This area of research provided further insight into constraints by emphasizing some

constraints that are thought to be more prevalent among women than men or even specific for women, i.e. the ethic of care (Henderson & Allan, 1991). The following paragraphs illustrate the empirical constraints research focusing on women.

The attitudes toward physical education of freshmen and senior women at the University of Michigan was studied by Bell et al. (1953). The study indicated that 42% of 665 freshmen spent 3-5 hours per week on physical activities outside physical education classes, compared to 18% of 151 female seniors who spend the same amount of time. The main reasons given why female students did not spend more time on physical activities were study, extra-curricular activities, work, and lack of skills. It was concluded that outside of physical education class, freshmen spend more time on physical activities than seniors, and both groups engaged in individual sports activities more than group activities.

Barriers to women's recreation participation and their relationship to personality gender-role traits (masculine, feminine, androgyny, and undifferentiated) were investigated, among systematically selected female students (graduate and undergraduate) staff and faculty at a university in the southern part of the U.S. by Henderson et al. (1988). The results concur with factors of barriers found in previous studies, along with "the factors of family concerns, unawareness, decision making, and body image" (p. 78). Among the four gender-role traits groups, females with a stereotypic masculine personality perceived fewer barriers to recreation,

and those women who were undifferentiated perceived the greatest barriers to recreation.

Objective and subjective constraints on women's enjoyment of leisure was studied by Harrington et al. (1992). Twelve constraints categories were selected for the study, and each category was identified by one objective and one subjective item. Of the stratified sample of adult women in the province of Ontario, Canada, 22.3% (1,746) returned completed questionnaires. The findings indicated that "both objective and subjective aspects of constraints are important, and that what we tend to think of as concrete constraints (e.g., money) often also have a subjective component" (p. 209). Money was operationalized objectively by the item "I don't have enough money" and subjectively by the item "I should not spend money on myself." Time, responsibilities, and fatigue were the most frequently reported objective constraints by full-time employed women with children living at home. Women with no children who were not full-time workers reported self image, gender, and skills as the most common constraints for leisure enjoyment.

A sample of first year university students in two Sydney, Australia universities were the subjects of Wearing's (1992) qualitative study, Leisure and Women's Identity in Late Adolescence: Constraints and Opportunities. Wearing stated, "Constraints concerning gender identities were evident for all respondents, stemming often from discourses passed on through family members and other significant reference groups and

individuals" (p. 329). The five profiles of the study indicated that there is a relationship between leisure and gender identity which can vary within and across gender. The input into the "me" of self from the individual's cultural and social environment can either constrain or offer spaces for the resistance of the traditional male and female stereotypes. Therefore, leisure is an area of both opportunities and constraints created in part by social and cultural environments.

Leisure meaning and experience among Canadian labor force women (1,549 adult females in Ontario, Canada) and constraints to their enjoyment of leisure was examined by Harrington and Dawson (1995). Despite the study's focus on constraints to enjoyment, the identified categories of constraints are useful to constraints on participation, and of significance to any leisure constraints study.

The subjects' labor force participation was categorized into full time employed, part time workers, and homemakers not employed outside the home. The study indicated significant differences among these groups of women in their constraints to leisure enjoyment, woman part time workers appeared to "have it best." The study concluded that, from the three groups of women, "part time workers were less likely than either their full time counterparts or homemakers to report a variety of constraints to their leisure enjoyment" (p. 22).

Leisure constraints were examined from a gender based perspective by Jackson and Henderson (1995). In their

secondary analysis of data derived from two provincewide surveys of the general public of Alberta, Canada (9642 respondents), the between gender differences were found statistically significant on 10 of 15 specific constraints items. Women's scales were higher than men's on 8 of the 10 significant items. Specifically, these items were: too busy with family; difficult to find others; don't know where to participate; don't know where to learn; lack of transportation; no physical ability; not at ease in social situations; and physically unable to take part. These differences led the researchers to conclude that "women are overall more constrained in their leisure than men" (p. 47).

CONSTRAINTS ON PHYSICAL RECREATION PARTICIPATION

Within the leisure constraints literature, physical recreation activities have been treated as specific types of activities. Although the specification of activities may differ slightly among studies, the physical movement for recreative purposes is the common denominator. The prevalence of recreational sports activities, as signified by their popularity and strong demand, legitimized their grouping as specific types of recreation activities.

In an activity specific constraints conducted by Jackson (1983) sixty-nine activities were identified by nonparticipants who expressed preference for regular participation. Only four of these activities were mentioned sufficiently to allow for separate analysis, these activities

were tennis, racquetball/handball, downhill skiing, and golf, the remaining activities were classified into six groups. The 1240 respondents were asked for their perception of 15 reasons for not participating in desired activities. Findings of the study indicated that work commitments, overcrowding, lack of opportunity, and lack of partners were the most important barriers to participation in racquetball/handball, tennis, exercise oriented activities, and team sports.

Analyzing a portion of the 1988 General Recreation Survey, Alberta, Canada, Jackson (1993) analyzed data from 1891 individuals (46.8% of original respondents) who had indicated a desire to participate regularly in leisure or recreational activities which they did not take part in at the time of data collection. Each individual from the subsample had specified a single desired activity in response to an open-ended question. Over 70 desired activities were classified into nine categories, five of these categories were sport oriented activities and were desired by 57% of the subsample (who expressed a desire for new activities).

The grouping of recreational sports activities, as a specific type, was demonstrated in several studies. The participation in physical recreation activities of college educated males and females during the adult life cycle was examined by Unkel (1981). A cross sectional study was based on randomly selected 580 respondents, who had graduated with a bachelor degree in 1949, 1961, and 1973, none of them had majored in the field of health, physical education, or

recreation. Subjects were asked, via mail questionnaire, about the number of participation days in each of 30 physically active leisure pursuits during the 12 months preceding data collection. The results detected no significant differences between males and females on variety and intensity of participation in individual/dual sports, however, females participated at lower rates than males in team sports and outdoor activities. Participation in team sports declined with age more than participation in individual/dual sports or outdoor activities.

Boothby et al. (1981), using secondary data, investigated the reasons why people cease participation in sports activity. The subjects were randomly selected from the electoral register and drawn from two areas showing strong social and economic contrasts. From two areas located within the suburban areas of Stockton-on-Tees, England, 254 individuals (82%) agreed to take part in an in-depth interview which investigated the participants' leisure and recreational life histories, especially "their recruitment to, and exit from, active sports participation" (p. 5). Content analysis of 815 reported reasons for ceasing activity indicated that 33% of these reasons were derived from subjects who had no remaining sport activity. The six most important categories of reasons cited were loss of interest, lack of facility, unfitness and physical disability, leaving a youth organization, moving away from the area, and no time to spare. The investigator concluded that the reasons for ceasing activity seem to be asso-

ciated with two types of changes: changes in the physical ability of the individual participants, and changes in the individuals' relationships with his or her sporting environment.

The relationship between intervening constraints and participation in physical activities was examined by Shaw et al. (1991). The study utilized data from the Canada Fitness Survey, 1983, pertaining to 82% of the original sample which indicated preference for more participation in physical activities than their current level of participation. Results indicated an existence of gender differences in both lack of time constraints (because of work and because of other leisure activities) and lack of energy. The investigators, however, have cautioned such findings because of the problematic wording of constraints, which ignored the unpaid work. The findings of the study revealed an overall poor predictive ability of reported constraints with respect to participation, and indicated the importance of social structural variables as predictors of intervening constraints.

VARIABILITY OF CONSTRAINTS

Constraints on participation are not absolute, rather they vary according to the individual circumstances: "Constraints are dynamic -- their relative influence may ebb and flow as social, personal, or activity-based conditions change" (McCarville & Smale, 1993, p. 43). To fully understand variability of constraints, common sources of these con-

straints must be considered. In the constraints literature several authors have presented models related to the sources of some constraints.

A model of nonparticipation in public leisure services was developed by Goodbey (1985). The model summarizes, from an organizational perspective, the major reasons for nonuse of leisure services. Awareness of facility/service existence, the dominant constraint identified in the model, was used to subdivide nonparticipants into those who are unaware, those with little information, and those who are aware of their existence. According to the model, it is only after awareness that interest or lack of it may have an effect on participation, and it is only thereafter that other constraints come into play. Those who wish to participate but do not were further subdivided into those who are prevented from participation by reasons within control of the agency and those prevented by reasons not within the control of the agency (see Figure 2.1).

Iso-Ahola and Mannell (1985) presented a model of leisure constraints based upon types/locus of constraints (social-personal, social-cultural, and physical) and the stability /variability of constraints (temporary vs. permanent). The model provided six major categories of sources of constraints, three of them considered to be stable and permanent such as abilities, competencies, social norms, lack of money and

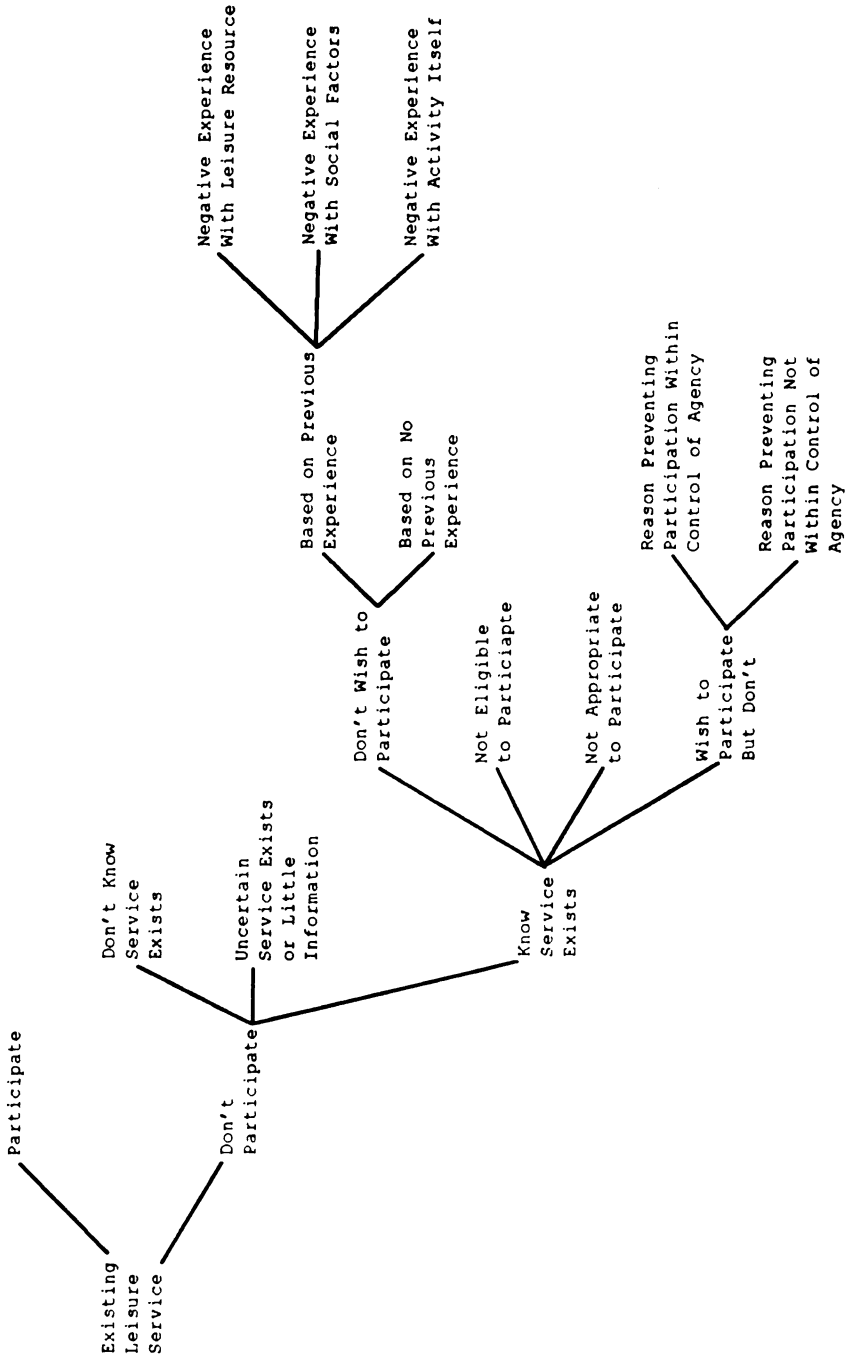


Figure 2.1 A model of nonparticipation in leisure services (Godbey, 1985, 4)

Stability/Permanence	Type/Locus: Social-Personal	Social-Cultural	Physical
Stable/ Permanent	Abilities, Competencies, Control	Social Norms, Roles, Obligations	Resources, Finances, Facilities
Variable/ Temporary	Attitudes, Motives, Needs	Social Interaction	Time

Figure 2.2 Conceptualization of sources of constraints on leisure (Iso-Ahola and Mannel, 1985, 115).

facilities. The other sources of constraints in comparison are variable and temporary, i.e. motive, attitudes, social interaction and time (see Figure 2.2).

The variability of leisure constraints have been closely examined from two perspectives. The first focused on constraints variability on daily basis, and the second perspective focused on constraints variability and change over a period of time.

The nature and variability of constraints on the physically active leisure of older adults' daily life was the objective of Mannel and Zuzanek's (1991) study. The experiential sampling method and alternative activity probe techniques and personal interviews were used to monitor constraints in the contexts of daily life of 92 older retired adults. The results of the analysis suggested that "in the context of daily life, there is a certain amount of

variability in the reasons perceived to be the causes of nonparticipation within individuals" (p. 345). There was no relationship found between day of the week and reported constraints, however, some of the reported constraints were found to be related to certain time of day. The researchers concluded the study by comparing the identified constraints to constraints reported on survey research, and indicated their similarities.

Variability of constraints over time was examined by Jackson and Witt (1994). The researchers have used secondary data from two surveys conducted four years apart (1988 and 1992), with the same population (Alberta, Canada). Respondents were asked "Is there any leisure or recreational activity that you don't take part in, but would like to start doing regularly?" (p. 324). Those who answered affirmatively were asked to specify the desired activity, and to evaluate the importance of 15 constraints items for not participating in the specified desired activity. The comparison of the two surveys' results indicated a high degree of similarity. The study concluded that "the majority of significant differences in item-means between 1988 and 1992 were accounted for by differences in the age and income structures of the two samples rather than by a real increase in the intensity of leisure constraints over the 4-year period" (p. 334).

Conclusion

Constraints literature, as a subfield of leisure studies, has demonstrated significant value for professionals as well

as practitioners. Although empirical findings have been made, a full understanding of constraints on participation is far from complete. In this chapter, empirical studies were presented in four sections. In the first, the reviewed literature showed three perspectives used to examine constraints on participation: leisure activities in general, specific type of activities, or a single activity. Gender as a constraining factor was presented in the second section, by empirical studies of constraints on women's leisure. The third section of the chapter was devoted to constraints on physical recreation participation. The significance of grouping physical activities, as a specific type of recreation activities, was presented followed by studies on physical recreation participation and constraints. In the last section, variability of constraints, several models of common sources of constraints were presented. While variability of constraints has not been extensively examined, several studies were cited to illustrate two aspects of variability, daily and over time.

It is conceivable that perceived constraints may vary within psychological, social, and environmental contexts. Thus, this study takes a contextual approach by focusing on three types of constraints (intrapersonal, interpersonal, and structural), and a specific type of activity -- recreational sports activities -- in a specific environment (the campus of Michigan State University). According to Jackson (1994) "controlling the type of activities adds to our understanding of the sociological and psychological underpinnings of the experience of constraints" (p. 48).

Chapter III

METHODOLOGY

Constraints to participation are often perceived by both participants (constraints to increase participation) and nonparticipants (constraints to start participation). This study intended to examine college students' perception of constraints to participation in recreational sports activities. Its main focus was to determine the perception of three (intrapersonal, interpersonal, structural) types of constraints on recreational sports participation among young adult male and female nonparticipants enrolled as students at Michigan State University.

This chapter presents the study procedures in seven sections: subjects and sampling frame, instrumentation, construction of the questionnaire, basis of questionnaire item development, pilot study, collection of data, and treatment of data.

Subjects and Sampling Framework

The population who was initially sampled for this study consisted of all MSU students enrolled in Spring Semester, 1995, and not majoring in Physical Education and Exercise Science (PEES). Students in PEES will be excluded from the study population because they are expected to perceive a low level of constraints due to educational involvement with

sports and other physical activities. Unkel's (1981) study of physical recreation participation of females and males during the adult lifecycle indicates that "respondents who had majored in the field of health, physical education, and recreation had significantly higher participation rates than persons who had majored in other fields" (p. 7).

Due to time and financial constraints of the author, along with a desire to keep sampling error to an acceptable level $\leq .05$, a stratified systematic random sample of 600 students was deemed appropriate for the following reasons. At a 95% level of confidence, tables of sampling error estimates (Babbie, 1992) recommends a sample size of 400. However, in a survey of the sports interests of MSU students by Stynes and Peterson (1978) a sample of 600 students was selected to obtain approximately 400 useable responses. A 65% response rate (373) was found to be closely representative of the MSU student population.

According to MSU's Office of the Registrar, 38,838 students were enrolled in Spring Semester 1995, (19,587 female and 18,251 male). Thus, stratification by student gender was needed. At MSU, student numbers are assigned arbitrarily to individuals upon acceptance for admission in the university, therefore, a sampling frame of student numbers was unbiased for systematic sampling, since it is free of periodicity. For each stratum (male or female) a systematic random sample was drawn. A systematic random sample is generally spread more uniformly over the entire population than a simple random sample, thus, it may provide more information about the population (Scheaffer et al. 1990). The size of sample for

Table 3.1. Total Number of Michigan State University Students Enrolled Spring Semester 1995.

Ed. class	Total	Percentage
Freshman	6411	16.9
Sophomore	6286	16.6
Junior	7631	20.3
Senior	8253	21.9
Graduate	6236	16.4
Others:		
Graduate professional	1375	3.6
Special (non-degree)	1646	4.3
Total	37838	100

each stratum was determined proportionately depending on the 1995 Spring Semester enrollment at Michigan State University.

The educational structure of Michigan State University students, the target population, is presented in Table 3.1. According to the enrollment highlights reported by the Office of the Registrar, the input cutoff of enrollment data was February 3, 1995, one quarter of the way into the semester.

Prior to the actual administration of the instrument, permission was sought from the University Committee on Research Involving Human Subjects (UCRIHS; see Appendix B). A written request was provided to the Registrar's Office of Michigan State University for the purpose of obtaining the described stratified systematic random sample of 600 students from the enrollment list for Spring Semester, 1995. A number, within the sampling interval, was randomly selected to start the systematic selection of the sample in each stratum. The sampling interval (approximately 66) = population size/sample

size. When subjects at the selection point were found to be enrolled in the Department of Physical Education and Exercise Science (PEES) the next subject at the same interval selection point was selected. The university data processing department, agreed to cooperate and drew the stratified sample and mailed the questionnaire and the subsequent follow-up letter to each subject.

Instrumentation

A self-administered questionnaire was developed for this study, given the unavailability of a predeveloped instrument for measuring constraints on participation in recreational sports activities. The questionnaire consisted of three sections (see Appendix C) and was designed so that all subjects were to respond to Section A, background questions. Based on their answers, respondents were instructed to reply to one of the other sections. Section B of the questionnaire was specified for individuals who were participating in recreational sports activities on a regular basis. Section C was specifically designed for those who did not participate in recreational sports activities (RSA).

Construction of the Questionnaire

A review of the existing literature on constraints and barriers to recreation and leisure involvement was the starting point, from which the questionnaire items pool were generated. This resulted in development of the questionnaire

examining the constraints on recreational sports participation. Investigation of the leisure constraints literature indicated that subjects who were faced with intrapersonal constraints "lack of interest" were eliminated in most studies, resulting in examination of only structural constraints. In this study all nonparticipants, from all interest levels, responded to the same set of constraint items. The questionnaire was divided into three sections:

Section A is composed of nine questions designed to provide general personal information about respondents and whether or not they are currently participating in recreational sports activities (RSA).

Section B is composed of 18 items, twelve of which are to be rated on a 5-point Likert scale format ranging from *strongly agree* to *strongly disagree*. These items explore the perception of constraints among the current participants who wish for more participation, but for whom participation was limited by a constraint or combination of constraints. The other five items in this section were designed to obtain information on participation, and duration per participation session. Two items were used to determine the satisfaction with current rate of participation and the desire for an increase in participation.

Section C is composed of 33 items. Thirty of these items were specifically developed in accordance with the hierarchical model of leisure constraints (Crawford et al., 1991), to reflect the three types of constraints (intra-

personal, interpersonal, and structural) among the nonparticipants. These 30 items were constructed on a 5-point Likert scale format ranging from *strongly agree* to *strongly disagree*. The other two items in this section were designed to obtain some information about the individual's past experiences with and interest in physical recreation participation. A copy of the questionnaire is provided in Appendix C.

Questionnaire Item Development

Section A of the questionnaire was designed to obtain personal information about the study sample, specifically, the subject's age, gender, marital status, number of children, area of study, level of education (graduate vs. levels of undergraduate), place of residence (on-campus vs. off-campus), and participation in RSA or lack of it.

The selection of gender as an independent variable in this study, was based on the belief that equal opportunity movements and legislation have not significantly equalized the pattern of participation in RSA by both sexes. The activities offered to men and women by recreation agencies typically reflect the traditional notions of "appropriate" gender roles (Shaw, 1994). People are vulnerable to gender-role conformity (i.e., as a result of social norms) which produce constraints on individuals' participation in RSA. According to Kane (1990) "Many young girls and women continue to be physically, socially, and psychologically constrained in their

opportunities to fully explore physical recreation experiences" (p. 52).

Marital status and number of children, in the family might have a major influence on an individual's perception of constraints and time management. Similar influence is suspected from individual race/ethnic background.

Education, as an independent variable, was divided into graduate level (Masters and Ph.D. students) and four levels of undergraduate study. The reason for its inclusion was its influence on human behavior in general, and its suspected impact on perception of constraints. Freshmen may perceive different constraints than seniors; therefore, the undergraduate level was further subdivided by class.

Place of residence may have an impact on the perception of some constraints, e.g., lack of transportation, especially for those who reside off campus. Thus, place of residence was treated as a confounding variable.

The last item (9) in Section A of the questionnaire divides the sample into two groups based on participation in RSA or lack of it. Constraints on recreational sports participation act as inhibitors for the nonparticipants and as a restraint for the participants. Thus, respondents were instructed to answer either Section B or Section C of the questionnaire based on their response to item 9. Section B was designed for those who participate regularly in RSA, and Section C was for the nonparticipants.

Section B was constructed specifically for individuals who were participating in RSA at the time of completing the questionnaire. This section consisted of 18 items. Items B1, B2, B3, and B4 collected information on participation patterns, and subjects were asked to respond with the type of RSA they were participating in and the average length of time (duration) per participation session. Frequency of participation measurement presents a serious concern for response error as a result of respondents' recall. Anderson and Kanters (1988) investigated the accuracy of self-reported recreation participation, as compared to actual participation records, among members of a YMCA and a municipal golf course. Their findings indicated an overestimation of frequency of participation by more than 100 percent for both agency's members. In this study, recall error was reduced by asking for average weekly participation.

To minimize the effect of seasonal climate (winter) on the reporting of average participation, subjects in this study were asked in item B3 to report their average frequency of participation per week during the two semesters preceding their receipt of the questionnaire. No response categories for this item were provided; subjects were asked to fill in the exact number of times they participated per week. Collectively, the three items (B1, B3, B4) provided a reasonable estimate assessment of level of participation, an independent variable for the subsample of current participants.

Questions B5 and B6 measured the subject's satisfaction with their current level of participation and their desire for an increase in participation rate. The presence or absence of constraints was determined by asking Do you wish to increase your participation in RSA more than you do now? (survey questions will appear in italic type in this description). A yes or no response was sought. The use of the desire for additional participation, as a segmentation criterion of current participants, is similar in format and content to items used in previous constraints studies (e.g., Wright & Goodale, 1991; Shaw et al., 1991).

Constraints limiting participation (intervening constraints) to a lower than desired level were measured by items B7-B18. These items were selected to broadly reflect the general constraints found in the constraints literature. The compiled items were stated as reasons for not being able to increase participation and were to be rated on a 5-point likert scale format ranging from strongly agree to strongly disagree.

In items B7 and B8 lack of time as a constraint, was seen as a product of home, work, school obligations or other leisure activities. This variable is used regularly in other constraints studies (e.g., McGuire, 1984; Shaw et al., 1991). Underlying the time constraints variable in this study was the fact that women are usually more constrained than men, especially in regard to family and household obligations

(Shaw, 1994). Thus, school, work, and family obligations were treated as one reason for lack of time.

Low energy, item B9, implied that an individual may feel too tired, as a result of leisure participation or other exhausting obligations, for an increase in rate of participation to occur. Low energy is a constraint on participation that has been used in leisure constraints studies (e.g., Kay & Jackson, 1991; McGuire, 1984). This item was very significant for RSA, where many activities demand a high level of energy by all participants (with the exception of some kinds of individual RSA).

Participation may be limited to specific types of activities by the individual's own skills. Thus, lack of necessary skills (item B10) limits the range of activities in which a person may participate (e.g., Shaw et al., 1991; Kay and Jackson, 1991). Further, in many RSA the need for appropriate skill level is determined by the skills of other participants, especially in team and club activities.

Health problems (item B11) and fear of injury (item B12) are reasons for limiting or inhibiting participation. For instance, participants may be limited by their protection against re-injury or concerned about injury prevention. Health problems (including injury and handicap) have appeared as a constraint on participation in the constraints literature. In this study, injury is an item of significance for RSA, thus, similar to the Canada Fitness Survey (Shaw et al., 1991), injury was treated as a single constraint item.

Lack of co-participants (item B13) represents a major constraint for an increase in participation level. Many physical activities require more than one participant, thus, increase in participation depends upon availability of co-participants. Further, a lack of co-participants may have deferred participation in some desired activities while influencing participation in current activities. The item has been utilized in the 1988 General Recreation Survey in Alberta, Canada (Jackson, 1993) and in the Ontario Leisure Activity Participation Study (McCarville & Smale, 1993).

Unavailability of facilities (item B14) and *facilities are too crowded* (item B15) can limit individual participation and have been used in most constraints studies. Many RSA facilities incorporate a time schedule for the provision of specific activities (i.e., operation of multifunction facility, court, or field) and for the accommodation of different groups of participants, especially where facilities are used cooperatively among separate departments (i.e., at Michigan State University, some facilities accommodate three departments: Intramural sports and recreation services, Physical Education and Exercise Science, and the Athletic Department). In some cases, facilities for some desired activities may not exist at all in the area.

Social/cultural norms restrict my participation (item B16) and *additional activities are not appropriate for my gender* (item B17) are constraints on participation that stem from social and cultural values. The inappropriateness of some

recreational sports activities is taught as part of the gender role socialization process, therefore, gender might be perceived as a source of constraints, particularly as it relates to physical activities which conform to traditional stereotypes of being either feminine or masculine activities. Similar items have been used by Henderson et al. (1988) and by Harrington et al. (1992) whose studies have indicated that some activities were perceived by women to be primarily for men.

Lack of money (item B18), the last item of constraints on more participation, has often been used in constraints research. It is a constraining item in the sense that most recreational sports activities (RSA) require some expenditure of money on special equipment and/or fees. The significance of this item, though, depends on activities selected. In addition, given the Michigan State University participation policy, financial constraints might be less problematic to this study population.

To assure the inclusion of all appropriate constraints to increased participation, Section B was concluded with an open space for additional constraints. Item B19 gave respondents the opportunity to describe the most compelling reason for not increasing level of participation if it was not among the reasons included in the questionnaire.

Section C of the questionnaire was designed for current nonparticipants. The generic nature of this group requires division into subgroups that are distinct from one another

(Wright & Goodale, 1991). The review of nonparticipation and constraints literature identified two ways to subdivide the nonparticipants: previous experience and interest in participation. Jackson and Dunn (1988) used previous experience or lack of it to create two groups of nonparticipants; those who have participated but ceased participation and those who never participated. Interest, on the other hand, was used by Searle and Jackson (1985a) to subcategorize nonparticipants into two groups; those who did not desire to participate in additional activities and those who did.

In this questionnaire, both segmentation criterion were used: previous experience or lack of it, indicated by item C1, and the presence or absence of interest in participation, detected by item C2. Previous experience was treated as a categorical variable, thus, a dichotomous response (yes or no) for individual experiences with RSA during high school years, college years and MSU years were sought. Interest, as an independent variable, was measured by two items (C2 and C3). Respondents who expressed an interest in participation were further asked to specify the RSA in which they were most interested. A primary reason for the specificity was the possible influence of some activities on the perception of constraints among some groups of nonparticipants.

Items C4-C33 represented the compiled list of constraints variables. The listed items were selected and organized in accordance with the hierarchical model of leisure constraints.

That is, each type of leisure constraint specified by the model (intrapersonal, interpersonal, and structural constraint) was operationalized by nine constraints statements. Each statement was to be rated on a 5-point Likert scale format ranging from strongly agree to strongly disagree.

Intrapersonal constraints, a dependent variable, was measured by items C4-C13. The basis for inclusion of items was as follows: shyness (item C4) was included as a barrier to participation in the Alberta Recreational and Parks survey (Jackson, 1983; Searle & Jackson, 1985a). It has also been used as an intrapersonal constraint on starting a new leisure activity by Raymore et al. (1993). Shyness was identified by researchers as a social and psychological leisure constraint (Lee & Halberg, 1989).

Related to shyness are items C5, I feel uncomfortable, and item C6, participation makes me self conscious. Both were used as subjective constraints related to one's perception of self and body image (Harrington et al., 1992; Henderson et al., 1993; Raymore et al. (1993).

My friends don't like RSA (item C7) and social/cultural norms restrict me from participating (item C8) are related to individual social environment and directly affect the preference for participation. The content of these items has been used as a barrier to recreation for women (Henderson et al., 1988) and as a constraint on leisure participation in general (McGuire, 1984).

Available activities are inappropriate for my gender (item C9) is related to the preceding item of social and cultural norms restrictions. Some activities seem to be wrongfully labeled on a gender basis. For instance, selected activities such as dance and some aerobic activities are often thought of as feminine, and football is often seen as an activity for men. Although this type of labeling may be becoming less salient in the U.S., it may still be perceived as a determining factor in activity selection among respondents of conservative origins. A similar constraint item was used by Harrington et al. (1992) as a gender typing constraint.

Item C10, *lack of physical abilities* has been utilized in many constraints studies. Its inclusion as an intrapersonal constraint stems from the fact that physical inability is a determinant of individual preference for participation in RSA.

Item C11 *I just don't have the will to participate*, item C12 *I did not enjoy RSA in past experiences*, and item C13 *I do not need RSA*, are related to the individual's experience with and interest in RSA. The contents of these items has been utilized by Henderson et al. (1988) and were loaded to an interest factor. The commonality among intrapersonal constraints statements (C4-C13) was the plausible impact on individual preferences for RSA. In other words, preferences are formed on the absence of or following successful negotiation of intrapersonal constraints (Raymore et al., 1993).

Interpersonal constraints, a dependent variable, was measured by items C14-C22 collectively. Items were selected as follows: items C14, *inappropriate social environment*, C15, *activities are dominated by specific gender*, and C16, *activities don't meet family and friends' expectations*, are all influences on participation resulting from interpersonal interaction with the social and cultural environment. These items are related directly to gender-role conformity and are similar in content to those utilized by Henderson et al. (1988).

No one to participate with (item C17), and *friends cannot be persuaded to participate* (item C18) indicate a lack of coparticipants which may inhibit participation, but not the preference for participation in RSA. Similar items have appeared in leisure constraints literature (e.g., McGuire, 1984; Kay & Jackson, 1991; Jackson, 1983, 1993; Henderson et al., 1988; McCarville and Smale, 1993).

My friends are always too busy to participate with me (item C19) is a constraint on participation, especially to those who hesitate to participate alone, and will only participate in the company of friends. The content of this item has been utilized by Raymore et al. (1993) and Harrington et al. (1992).

Fear of violence (item C20) is a reason for non-participation which may not affect the preference, rather the actual participation in a particular activity. It is an appropriate constraining factor for women (Shaw, 1994) and for

men, especially in competitive RSA where aggressive behavior occurs. Item C21, my friends' lack of proper skills, may constrain participation in nonindividual activities (i.e., dual or team activities). Raymore et al. (1993) have used a similar item as an interpersonal constraint.

Lack of family and friends' support (item C22) as a reason for nonparticipation is related to item C16, family and friends' expectations. Lack of support results in a low level of motivation and a reluctance to participation, and implies difficulty in planning and decision making, while expectations tend to be shaped by cultural and social values.

Structural constraints, which intervene between the preference for RSA and the actual participation, were measured by items C23-C33. Items C23, facilities are too crowded, and C24, lack of proper transportation are similar to items used in Canadian surveys (Jackson, 1983, 1993). Crowded facilities may inhibit participation in a particular activity, resulting in substitution for the intended activity or cancellation, but it does not affect the preference. Lack of transportation (item C24) and parking availability/convenience (item C-25) are of particular importance to off-campus residents.

Lack of time because of work, school, and family obligations (item C26) and lack of time because of other leisure activities (item C27) were used to segment the more general reason for nonparticipation, lack of time. Obligations (work, school, family) were treated as one reason for scarcity of time. Both items appeared in constraints studies (e.g., Shaw et al., 1991; McGuire, 1984). Item C28 inability to

manage personal time, is a constraint on participation as found in constraints studies (e.g. Mannal & Zuzanek, 1991).

Item C29, I do not know what is available is a barrier to participation, but not preference, similar to item C30, inappropriate activity scheduling. Michigan State University facilities for RSA are shared by different departments and different groups, necessitating time scheduling of facilities usage. Thus, the time when facilities are available may not be appropriate for everyone. Both items have appeared in leisure constraints literature (e.g., Henderson et al., 1988; Kay & Jackson, 1991; Harrington et al., 1992).

Perception of one's physical fitness and body image can be a constraining factor on participation, especially in competitive recreational sports activities. Items C31, current conduct of RSA is too competitive for me, and C32, fear of failure, are constraints related to individual perception of physical fitness and skills. Similar items have been utilized by Henderson et al. (1988), Harrington et al. (1992), and Jackson (1983, 1994). Financial constraints are operationalized by item C33, I do not have money for needed equipment/fees. Such a constraint appeared in the majority of leisure constraints studies examined.

To assure the inclusion of all possible reasons for nonparticipation in RSA, item C34 concluded this section. It asked respondents to write any reason for not participating in RSA that best described their situation, and did not appear among the reasons provided in Section C.

Pilot Study

A pilot study of the developed instrument was conducted with a sample of one hundred seventeen students enrolled in the university. The selection of the pilot study subjects was based on education level. To approximately represent the full range of the study population, students enrolled in four different classes were selected. With the assistance and cooperation of selected faculty members from the department of Park, Recreation, and Tourism Resources, three undergraduate classes (200 and 300 level) and one graduate class (800 level) were used for pilot study administration.

The 117 pilot study respondents consisted of 50.4 percent participants and 49.6 nonparticipants in recreational sports activities. Constraints items, included in the questionnaire (Section C) for the nonparticipants, were selected in accordance with the conceptual understanding of the hierarchical model of leisure constraints (Crawford et al. 1991). That is, each constraints type was operationalized by a number of items or reasons for not participating in recreational sports activities. Thus, each type was treated as a subscale and all of them together as a total constraints scale. The results of the pilot study analysis produced a reliability coefficient of 0.935 for the total scale, for the subscales the reliability coefficients were 0.861 for intrapersonal, 0.887 for interpersonal, and 0.786 for structural subscale.

Based upon the pilot study results, the questionnaire instrument was slightly revised by an addition of three constraints items. Lack of money was added to the constraints on more participation (Section B of questionnaire, see Appendix C). The inability to manage personal time and parking availability and convenience were added to the nonparticipants constraints scale (Section C of questionnaire). Specifically, these items were considered to be part of the structural constraints subscale.

Collection of Data

Following the pilot study and instrument revision, the final copy of the questionnaire was professionally printed on 8½ x 14 inch sheets of paper. The layout of the survey instrument was specially designed to fit two pages on both sides, and allowed for folding the instrument to form a booklet. The questionnaire booklets accompanied by a letter of transmittal and self addressed first class stamped envelopes were placed in another envelope, and submitted to the data processing unit at Michigan State University.

Due to strict confidentiality imposed by university regulations, the sample selection and the actual mailing of the instrument and follow-up letters were conducted by the Michigan State University data processing department personnel, in accordance to the study sample selection guidelines. The researcher was not allowed to receive a list

of selected sample members' names or addresses, therefore, there was no way of identifying nonrespondents.

The letter of transmittal (see Appendix C) introduced the study to the randomly selected students and explained the purpose and usefulness of the study. It expressed the importance of the respondents' reply to the questionnaire and assured total confidentiality and anonymity in any report of this or any other study. The letter also indicated the usefulness of the study and provided assistance if needed for the completion of the questionnaire.

The mailing of the questionnaires was sponsored by the department of Intramural Sports and Recreative Services, Michigan State University. All questionnaires were sent bulk rate on April 14, 1995. Two questionnaires were returned undelivered by the post office, indicating incorrect addresses. On April 21, 1995, one week following the actual mailing of the instrument, a follow-up letter was submitted to the data processing department and mailed thereafter, bulk rate, to all sample members. The follow-up letter (see Appendix D) offered thanks to subjects who had already responded to the survey instrument, and reminded those who had not yet responded of the importance and need for such information. In the letter, extra copies of the instrument were offered as a replacement for lost or misplaced copies. The extra copies were made available if needed by mail or on-site pick up from the Office of Intramural Sports and Recreative Services Administration.

Treatment of the Data

The purpose of this study was to determine how perceived constraints (intrapersonal, interpersonal, structural) influenced recreational sports participation among young adult male and female nonparticipants enrolled as students at Michigan State University. This study was also designed to explore the perception of constraints influenced individuals' desire for more participation in recreational sports activities.

Based on the objectives of this study the data pertaining to nonparticipants was extensively analyzed. The study sample was divided on the basis of participation into two groups; subjects were asked if they were, during the time of this study, participating in RSA or not (item 9). The analysis of data was divided into four sections. The first section provided specific descriptive data of the respondents' characteristics. These data were used to compare the sample to the population by means of frequencies and percentage tables. Since some characteristics of the population were available, determination of sample representativeness was possible.

The first section of the analysis also provided general descriptive data about the two subsamples, nonparticipants and participants in RSA, consisting of bivariate and multivariate tables (Babbie, 1992). Interest in participation among the nonparticpants was used as a classification variable; similarly treated was the satisfaction among the participants, thus, they were presented in a frequency and percentage table.

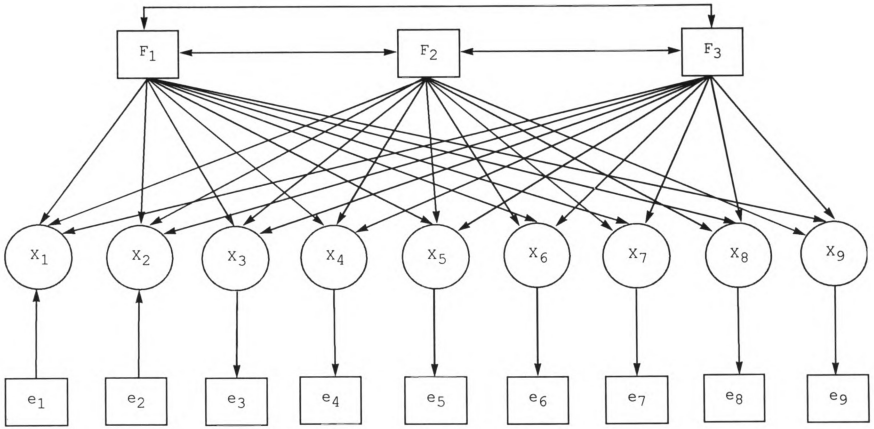
The second section of data analysis presented the confirmatory factor analysis. Given the constraints theory, the confirmatory factor analysis was used to examine the structure of the constraint items and determine if the factors reflect the three types of constraints as specified (intrapersonal, interpersonal, structural). The three types of constraints cannot be directly observed, they reflect individual perception of specific constraints items (observed variables). Variables that cannot be measured directly are often referred to as constructs, factors, or latent variables. Factor analysis is a statistical procedure commonly used to uncover the underlying constructs or latent variables within a data set (Long, 1983).

Factor analysis consists of two statistical techniques: Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Figure 3.1 illustrates an exploratory factor model. As shown by the arrows, in the exploratory factor analysis there is no structure specification of the relationships among the variables in the model, the factors (latent variables) and observed variables. All observed variables in the EFA are affected by all factors. Although the EFA technique is often used to detect sources of variation and covariation in observed variables and, thus, for data reduction and dimensional analysis, it has some major limitations. For instance, the technique is based on specific assumptions regardless of the substantial appropriateness, also, the unspecification of relationship structure among

variables in the model. Due to its limitations, there is a high possibility for the exploratory factor analysis to produce uninterpretable and meaningless factors (Long, 1983; Jöreskog & Sörbom, 1989).

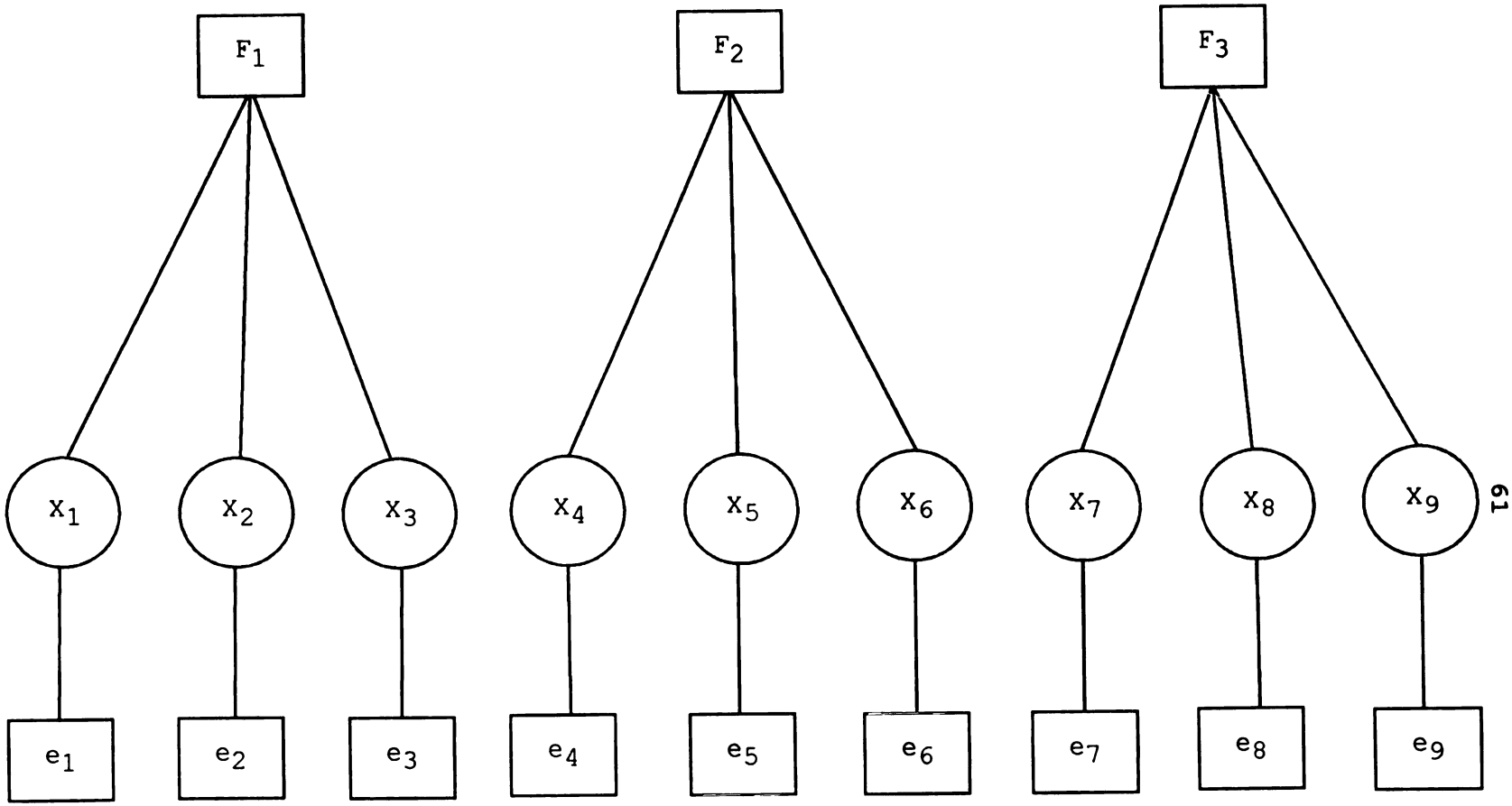
The confirmatory factor analysis technique (CFA) has overcome many of the limitations associated with factor analysis. Figure 3.2 illustrates the structure of the relationship between factors and observed variables in a confirmatory factor analysis. As shown, observed variables in CFA are affected by only some of the factors, where in EFA they are affected by all factors. In the confirmatory factor analysis the researcher, based on a priori information, constructs a model assumed to describe the data, by imposing specific constraints before the analysis i.e., a priori determination of which observed variables are affected by which factors. Statistical tests can, then, be performed to provide unique estimates of factor loadings and to determine the data consistency with the specified model, that is, whether the data fit the model or not.

In this study, the existence of the three types of constraints (intrapersonal, interpersonal, structural) was examined by performing a confirmatory factor analysis, using the Lisrel 7.2 program (Jöreskog & Sörbom, 1989). The flexibility of the CFA technique allows for specification of where an item should load, an item can load on one factor only. Thus, the three constraint types represent three factors in the model, and each observed variable, based on theoretical



F = factor
X = observed variable
e = error

Figure 3.1 An exploratory factor model



F = factor
X = observed variable
e = error

Figure 3.2 A confirmatory factor model

information, was instructed to load on one of the factors (constraints types). Evaluation of the data consistency with the model, model fit, was determined based upon the chi-squared goodness-of-fit value, the goodness-of-fit index, and the root-mean-square residual given by the Lisrel program.

The first confirmatory factor analysis run showed an unfit model. Thus, model modifications (free and/or eliminate some of the observed variables) were conducted and tested by CFA in an effort to fit a model with an appropriate number of observed variables representing each construct. The modifications resulted in a weak model fit with twenty four variables. The fit was determined unsatisfactory based on the goodness of fit index measure. Further evaluative procedures with alternative models were carried out with sample size limitation taken into account. A satisfactory fit was achieved with eleven observed variables, however, the constructs were weakly representee and not clearly intact. Thus, it was decided that it would be better to use all scale items in further analysis.

As shown in the data analysis procedure chart, Figure 3.3, if the original model had fitted the data (accepted), the hierarchical relationship assumptioon would have been tested by adopting Raymore et al.'s (1993) hierarchical test procedure as follows: to create high and low groups on each type of constraint, median split of summed subscale scores would have been performed. Eight possible conditions of constraints would have been identified in which subjects could be

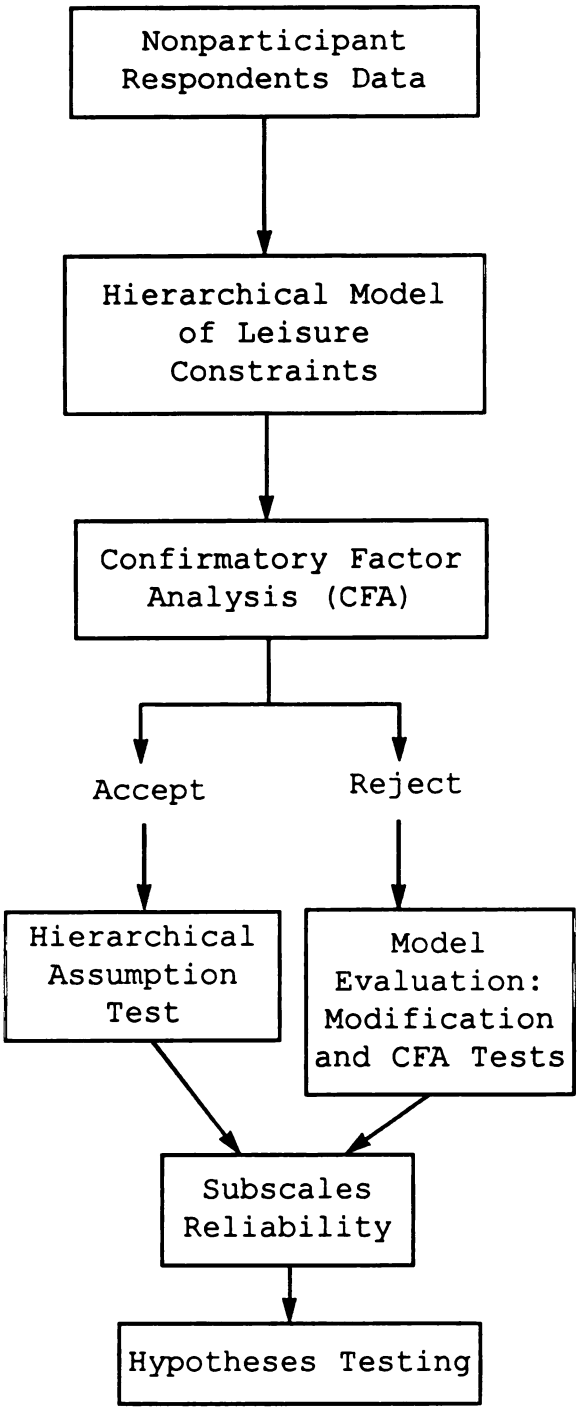


Figure 3.3 Nonparticipant data analysis procedure.

grouped (see Table 3.2). The number of subjects on each condition would have been determined by a three-dimensional cross-tabulation. The subject distribution on each condition would have been examined by a series of simultaneous Z tests to determine if any distribution was different than expected from the assumption of independence among the three types of constraints.

Based upon the hierarchical model assumption, that is, "fewer subjects advance as their position along the hierarchy increases," the nature of the hierarchy would have been established by classifying subjects according to their perception of constraints. Thus, from Table 3.2 four possible classes are expected to exist that would have supported the hierarchical hypothesis. Class (1) comprised of subjects who score high in intrapersonal constraints regardless of their scores in interpersonal or structural constraints (condition

Table 3.2. Possible High and Low Conditions of Intrapersonal, Interpersonal, and Structural Constraints.

Conditions	Intrapersonal	Interpersonal	Structural
1	low	low	low
2	low	low	high
3	low	high	low
4	low	high	high
5	high	low	low
6	high	low	high
7	high	high	low
8	high	high	high

5, 6, 7, 8 in Table 3.2). Class (2) consists of subjects who are low in intrapersonal and high in interpersonal constraints regardless of their scored in structural constraints (condition 3 and 4 in Table 3.2). Class (3) include subjects who score low in intrapersonal and interpersonal constraints and high in structural constraints (condition 2 in Table 3.2). Class (4) though unlikely to exist since the subjects are nonparticipants, consist of subjects who score low on each of the constraint types (condition 1 in Table 3.2).

The four possible classes would have been compared to each other: class 1 vs. class 2, class 1 vs. class 3, class 1 vs. class 4, class 2 vs class 3, class 2 vs. class 4, class 3 vs. class 4. The hierarchical relationship would have been established if the number of subjects in the first comparison class were more than the number of subjects in the second comparison class within each comparison. That is, the number of subjects is highest in class (1) followed by class 2, class 3, and class 4 which contain the smallest number of subjects. A final step would have been the application of a binomial test for hierarchical dependency (Guay & McCabe, 1988). The test computes expected values using the distribution of the population and provides a probability of subjects going against the predicted hierarchy model.

The third section of the data analysis presented the multidimensional scale used to measure the perception of constraints among the nonparticipants, and the hypotheses testing. A covariance matrix for the multi-item scales was

used to determine the variance of the scale and its reliability by computing alpha values. The reason for its selection over correlation matrix was that the data entries are unstandardized (DeVellis, 1991). Following these steps, descriptive statistics (mean and standard deviation) were presented for each type of constraint and its corresponding statement.

The three types of constraints were operationalized as follows. Intrapersonal type of constraints was measured by the following items:

1 - I am too shy to participate.
2 - I feel uncomfortable about participating.
3 - Participation makes me self conscious.
4 - My friends don't like recreational sports activities.
5 - Social and cultural norms restrict me from participation.
6 - Available activities are inappropriate for my gender.
7 - Lack of physical abilities.
8 - I just don't have the will to participate.
9 - In the past I didn't enjoy recreational sports activities experiences.
10 - I don't need recreational sports activities.

Interpersonal type of constraints was measured by these items:

1 - Inappropriate social environment.

2 - Activities are dominated by specific gender.

3 - Activities do not meet family and/or friends' expectations.

4 - No one to participate with.

5 - Friends can't be persuaded to participate.

6 - My friends are always too busy to participate with me.

7 - Fear of violence.

8 - My friends' lack of proper skills.

9 - Lack of family and/or friends' support.

The structural type of constraints was measured by the following items:

1 - Facilities are too crowded.

2 - Lack of transportation.

3 - Parking availability/convenience.

4 - Lack of time because of work, school, family obligations.

5 - Lack of time because of other leisure activities.

6 - Inability to manage personal time.

7 - I do not know what is available.

8 - Inappropriate activity scheduling.

9 - Current conduct of recreational sports activities is too competitive for me.

10 - Fear of failure.

11 - I don't have money for needed equipment/fees.

Hypothesis Testing

Hypothesis 1. Respondents who perceive a high level of intrapersonal constraints perceive a lower level of interpersonal and structural constraints than those who perceive low intrapersonal constraints.

To test this hypothesis a mean split was conducted to divide respondents into two groups. Based upon their mean score on the intrapersonal constraints subscale, respondents were placed in a high or low intrapersonal constraint group. The two groups then were compared on their mean perception of interpersonal and structural constraints by means of one way ANOVA.

Hypothesis 2. Nonparticipants who express a high level of interest in regular RSA participation perceive a lower level of intrapersonal constraints than those who possess low level of interest.

Nonparticipants' interest in regular participation in recreational sports activities, at least twice a week, was measured by a five-point rating scale, ranging from "not interested at all" to "extremely interested." The effect of level of interest on perception of intrapersonal constraints was examined by a one way ANOVA.

Hypothesis 3. Male nonparticipants express a lower level of interest in recreational sports participation than female nonparticipants.

Male and female respondents were compared on their reported interest by a one-way analysis of variance. As mentioned in the second hypothesis, interest in regular participation in RSA was measured by a single item, "How interested are you in participating regularly (at least twice a week) in a recreational sports activity of your choice?", with a five point rating response.

Hypothesis 4. Female nonparticipants perceive higher level of constraints on recreational sports participation than male nonparticipants.

This hypothesis could have been tested on the basis of total constraints scores, but such a procedure may obscure some significant differences on specific types of constraints. Thus, three subhypotheses were formulated for each type of constraint as follows:

Subhypothesis A. Females perceive more intrapersonal constraints than males.

Subhypothesis B. Females perceive more interpersonal constraints than males.

Subhypothesis C. Females perceive more structural constraints than males.

These subhypotheses were tested by analysis of variance.

Hypothesis 5. Nonparticipants who had past experiences with regular RSA participation perceive a lower level of each type of constraint (intrapersonal, interpersonal, structural) than those who had no past RSA participation experiences.

Nonparticipant respondents were asked it they had participated regularly in recreational sports activities voluntarily during the time they spent attending high school and Michigan State University. Responses were dichotomous for both schools (yes or no answers). Thus, to test the fifth hypothesis, an index of past experiences with RSA was developed creating the following four groups of nonparticipants.

Group 1 - No experience, respondents who have never participated in RSA.

Group 2 - Past experience, respondents who have participated during high school years only.

Group 3 - Recent experience, respondents who have participated during Michigan State University years only.

Group 4 - Continuous experience, respondents who have participated during attendance at both their high school and here at Michigan State University.

One-way analysis of variance was utilized to compare the groups in relationship to their perception of each type of constraints on RSA participation.

The fourth section of the data analysis chapter provides an exploratory analysis of the perception of constraints by

individuals seeking more participation above their current regular participation (Section B of the questionnaire). Constraints related to more participation were measured by a five-point rating scale on the following items:

- Lack of time because of school, work, or family obligations.
- Lack of time because of other leisure activities.
- Low energy.
- Lack of necessary skills.
- Health problems.
- Fear of injury.
- Lack of co-participants.
- Facilities are not available.
- Facilities are too crowded.
- Social/cultural norms restrict my participation.
- Additional activities are not appropriate for my gender.
- Lack of money.

Differences on perception of these intervening constraints items, based upon gender, level of participation intensity, and satisfaction with current rate of participation, were examined by one-way analysis of variance and t-tests for independent samples. Participation level was operationalized by the number of times the individual participated per week in a recreational sport activity and by

the reported average length of time spent in the activity per participation session. Satisfaction with current rate of participation was measured on a seven-point rating scale ranging from "very unsatisfied" to "very satisfied." The satisfaction variable was treated as a dependent variable and used for group comparison based on participation level (number of times per week and average length of time per participation session), and reported desire for more participation.

Chapter IV

ANALYSIS AND RESULTS

The results of the data analysis and interpretations of the findings are presented in this chapter. The purpose of this study was to determine how perceived constraints (intrapersonal, interpersonal, structural) influenced recreational sports participation among young adult male and female nonparticipants enrolled as students at Michigan State University. This study was also designed to explore the perception of constraints influencing individuals' desire for more participation in recreational sports activities.

This chapter is divided into four major sections. The first section, a descriptive analysis, consists of sample representativeness and descriptive information of all study respondents, participants and nonparticipants, followed by information pertaining to the two groups (participants and nonparticipants) separately. The second section of the analysis provides the confirmatory factor analysis to examine the possible existence of the three types, or subcategories, of constraints. The third section presents the hypothesis testing. T-tests for independent samples and analysis of variance were utilized to test the hypotheses. Furthermore, the relationship between interest and perception of

constraints were investigated and reported in the last part of this section. The fourth section presents an analysis of constraints on increased participation among participants in RSA.

Section 1: Descriptive Analysis

The subsequent analysis was based on 240 responses out of 600 mailed questionnaires, two were undeliverable due to an incorrect address and 243 were returned, yielding a response rate of 40.5 percent. Three responses were omitted from the analysis due to incomplete item responses. Data were inspected and stored in a computer file, using SPSS 6.0 for Windows, and further inspected for detectable coding errors.

The low response rate might be related to the fact that the questionnaires were mailed out in the last month of the 1995 Spring Semester. Although tests were not occurring at the time the sample received the questionnaire, this was still a very busy time for the study population.

Representativeness of the Study Sample

The target population for this study consisted of Michigan State University students enrolled for the 1995 Spring Semester (37,838 students). To determine representativeness of the study sample, simple percentage comparisons were made between the sample and population demographic information made available by the Office of the Registrar. Since the sampling stratification was based upon the gender ratio of the students, the distribution of gender within each education level was used to determine how well the sample represented the population as shown in Table 4.1. It appears that the sample over represented women by approxi-

Table 4.1. Sample Representation of Michigan State University Students Based upon Gender Within Education Levels.

Educational Level	Gender	Total	Population %	Sample %
All	Men	18251	48.2	43.7
	Women	19587	51.8	56.25
Graduate	Men	3225	8.5	15.0
	Women	3011	7.95	13.3
Undergraduate	Men	13649	36.1	28.8
	Women	14932	39.5	42.9
Other*		3021	8.0	--

*i.e., graduate professional, lifelong education.

mately 4.5 percent. However, when education level was considered along with gender, the percentage of the representation varied by groups. As the table shows, women were overrepresented regardless of education level. Men on the other hand were underestimated, particularly the undergraduate male students, who were underrepresented by 7.3 percent.

Further comparison was based on age. Respondent's age was categorized in accordance with the university classification of students' age to two groups using the age of 24 years for classification. As Table 4.2 shows, with a difference of less than 0.5 percent, in terms of age, the sample seems to represent the population well.

Table 4.2. Sample Representation of Michigan State University Students Based upon Age Groups in Accordance with University Classification.

Age category	Percent of population	Percent of sample
Students over age 24	26.6	27.1
Students 24 years old or younger	73.4	72.9

Table 4.3. Sample Representation of Michigan State University Students Based upon Education Class.

Education class	Percent of population	Percent of sample
Freshman	16.9	19.6
Sophomore	16.6	12.5
Junior	20.3	16.3
Senior	21.9	23.3
Graduate	16.4	28.3
Others:	3.6	--
Graduate professional Special (nondegree)	4.3	No respondents
Total	100.0	100.0

A final look at the representation of the sample was based on students' class level. Table 4.3 shows a percentage comparison between the study population and respondents in each education class. As shown in the table, graduate professionals were not differentiated from graduate students in this study. Thus, the corresponding percentage was not calculated. Similarly, the empty cell corresponding to special (nondegree) education class was the result of lack of questionnaire specification. Hence, there was no missing data

to give an indication of such class. The sample's largest discrepancy was approximately 4.0 percent for graduate and junior class students.

Descriptive Information of All Respondents

The age of the 240 respondents, ranged from 18 to 50 years old with a majority being young adults. As indicated in Table 4.4, a high percentage of respondents were 19, 20, and 21 years old (14.2%, 14.6%, and 13.3% respectively). Two age categories were created to comprise the age range of older subjects. As the table shows, 12.1 percent were 25-29 years old and 15.0 percent were age 30 or older.

Overwhelmingly, the majority of respondents, 90 percent, were American citizens and 79.6 percent were single (have not been married). Further, 89.6 percent have no children.

Table 4.4. Frequency and Percentage of Michigan State University Student Respondents Based upon Age.

Age (years)	Frequency	Percent
18	19	7.9
19	34	14.2
20	35	14.6
21	32	13.3
22	23	9.6
23	19	7.9
24	13	5.4
25-29	29	12.1
30 or older	36	15.0
Total	240	100.0

Table 4.5. Frequencies and Percentages of Michigan State University Student Respondents Based upon Gender.

Gender	Frequency	Percent
Female	135	56.3
Male	105	43.7
Total	240	100.0

As illustrated in Table 4.5, more females responded to the questionnaires than males, with 135 (56.3 percent) being female, compared to 105 (43.8 percent) being male.

Table 4.6. Gender Distribution of Michigan State University Student Respondents Based upon Education Class.

Education class	Female		Male		
	Frequency	Percent	Frequency	Percent	
Freshman	33	13.8	14	5.8	
Sophomore	18	7.5	12	5.0	
Junior	20	8.3	19	7.9	
Senior	32	13.3	24	10.0	
Graduate	32	13.3	36	15.0	Total
Total	135	56.3	105	43.7	240 100%

Table 4.6 gives a direct indication of respondents' gender distribution within education classes. From this table, it is apparent that the majority of freshman respondents were female (13.8 percent), compared to 5.8 percent male. In all other education classes, gender was fairly evenly distributed (no variation greater that 3.3 percent).

Table 4.7. Frequency and Percentage of Michigan State University Student Respondents Based upon Place of Residence.

Place of residence	Frequency	Percent
On-campus	99	41.25
Off-campus	141	58.75
Total	240	100.0

Table 4.7 presents frequency and percentage of the respondents' places of residency. More than half of the respondents (58.75 percent) reside off-campus, and 41.25 percent live on campus.

Table 4.8. Frequency and Percentage of Michigan State University Student Respondents Based upon Participation or Nonparticipation in Recreational Sports Activities.

Respondents	Frequency	Percent
Participants	96	40.0
Nonparticipants	144	60.0
Total	240	100.00

Respondents were asked if they have participated in recreational sports activities (minimum twice a week) for three or more months, during the preceding two semesters (Fall 1994 and Spring 1995). The frequency and percentage of respondents' participation in recreational sports activities is presented in Table 4.8. Forty percent of respondents participated regularly, two or more times a week, while 60 percent did not participate on a regular basis. The infor-

mation disclosed by the table should be interpreted with caution. Because the criteria used to identify participants stresses continuity of participation, for at least twice a week for three months, it is possible that the number of nonparticipants may have been overestimated as a result of including infrequent participants.

Descriptive Information of Participants

Of those respondents who participated regularly in recreational sports activities (RSA), 40 percent of total respondents, 49.0 percent were female and 51.0 percent were male. Members of this subgroup were asked about the number of activities they participated in. As shown in Table 4.9, the number of activities ranged from one activity up to six activities, and the majority of participants clustered around a smaller set of activities (one to three activities). While 30.2 percent of respondent participated in only one activity, 26.0 percent participated in three different activities.

Table 4.10 indicates the respondents' place of participation. The overwhelming majority, 77.1 percent, participated in on-campus facilities, while 15.6 percent used some off-campus facilities. As shown by the table, 7.3 percent of the participant group participated in both places (on- and off-campus). It should be noted here that 63.5 percent of the subgroup live off-campus.

Table 4.9. Frequency and Percentage of Participant Respondents Based upon the Number of Activities Participated in During Fall and Spring Semesters (1994 and 1995 respectively).

Number of activities	Frequency	Percent
One activity	29	30.2
Two activities	30	31.3
Three activities	25	26.0
Four activities	9	9.4
Five activities	1	1.0
Six activities	1	1.0
Missing	1	1.0
Total	96	100.0

Table 4.10. Frequency and Percentage of Participants' Place of Participation.

Place of participation	Frequency	Percent
On-campus	74	77.1
Off-campus	15	15.6
Both places	7	7.3
Total	96	100.0

The number of times per week respondents participated in recreational sports activities is illustrated in Table 4.11. Four individuals who explicitly indicated that they were participating once or twice a week were included, although this may indicate an inconsistency with the criteria used to identify participants (at least twice a week). The majority participated two and three times a week (35.4 and 41.7 percent respectively). While 22.9 percent participated four or more times a week.

Table 4.11. Frequency and Percentage of Weekly Participation.

Weekly participation	Frequency	Percent
Two times or less	34	35.4
Three times	40	41.7
Four times or more	22	22.9
Total	96	100.00

Table 4.12 demonstrates the time spent per participation session. Initial responses ranged from 30 minutes up to 6 hours with minimal frequencies at both ends. Thus, time spent was categorized into three different time spans, which allow for time-based aggregated analysis. As the table shows, 47.9 percent of the participants spend between 30 minutes and one hour per participation session, and 40.6 percent spend from one hour and fifteen minutes up to two hours. The final category represents 11.5 percent of respondents who spend two and a half hours or more per participation session.

Table 4.12. Frequency and Percentage of Time Spent per Participation Session.

Time per session	Frequency	Percent
30 minutes to one hour	46	47.9
75 minutes to two hours	39	40.6
Two and a half hours or more	11	11.5
Total	96	100.0

Table 4.13. Frequency and Percentage of Participants Satisfaction Level with Participation Rate.

Satisfaction level	Frequency	Percent
Very unsatisfied	2	2.1
Dissatisfied	4	4.2
Somewhat dissatisfied	13	13.5
Neutral	3	3.1
Somewhat satisfied	29	30.2
Satisfied	33	34.4
Very satisfied	12	12.5
Total	96	100.0

Respondents' satisfaction with their participation rate is presented in Table 4.13. The overwhelming majority were satisfied, with 30.2 percent somewhat satisfied, 34.4 percent satisfied, and 12.5 percent being very satisfied. On the other hand, only 2.1 percent were very unsatisfied, 4.2 percent dissatisfied, and 13.5 percent were somewhat dissatisfied with rate of participation (frequency and duration).

Participant respondents were further divided into two separate groups based upon whether or not they wished to increase their participation rate. Table 4.14 presents respondents' desire for participation. Out of the 96 participants, 76 (79.2 percent) respondents wished for an increase in participation, and 20 (20.8 percent) did not desire a change in their participation rate.

Table 4.14. Frequency and Percentage of Participants Desire for Increased Participation.

Wish for increase	Frequency	Percent
Yes	76	79.2
No	20	20.8
Total	96	100.0

Respondents who wished for an increase in their participation rate were further asked to indicate their level of agreement/disagreement with twelve reasons for not being able to meet their individual desire for an increase in participation. Since the interest in this particular part of the study is on agreement or disagreement, the five point Likert scale was collapsed to three points of values. As shown, Table 4.15 demonstrates the frequency and percent of responses for each item. Lack of time because of obligations (school, work, family) was the most important reason for 90.8 percent of the subgroup of participants. Lack of time because of other leisure activities was the only other item in which agreement surpassed disagreement, with 43.4 percent versus 36.8 percent respectively. As the table shows, more than one fourth of regular participants expressed their agreement, as a reason for not increasing participation, with low energy (25%), lack of co-participants (31.6%), and crowded facilities (27.6%).

Table 4.15. Frequency and Percentage of Participants Rating of Constraints (on More Participation) Items.*

Items	Agree		Neutral		Disagree		Missing	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Lack of time because of obligations	69	90.8	3	3.9	4	5.3	--	--
Lack of time because of other leisure activities	33	43.4	15	19.7	28	36.8	--	--
Low energy	19	25.0	18	23.7	39	51.3	--	--
Lack of necessary skills	5	6.6	6	7.9	64	84.2	1	1.3
Health problems	4	5.3	3	3.9	68	89.5	1	1.3
Fear of injury	2	2.6	2	2.6	71	93.4	1	1.3
Lack of co-participants	24	31.6	15	19.7	36	47.4	1	1.3
Facilities are not available	9	11.8	15	19.7	51	67.1	1	1.3
Facilities are too crowded	21	27.6	17	22.4	37	48.7	1	1.3
Social/ cultural norms	3	3.9	2	2.6	70	92.1	1	1.3
Additional activities are not appropriate for my gender	1	1.3	6	7.9	68	89.5	1	1.3
Lack of money	13	17.1	11	14.5	51	67.1	1	1.3

*The above items are from Section B in the questionnaire (number 7-18).

Descriptive Information of the Nonparticipant Respondents

Respondents who were not participating in recreational sports activities during the time of the survey accounted for 144 subjects, or 60 percent of all respondents. This subgroup (referred to as nonparticipants hereafter) consisted of 61.1 percent female and 38.9 percent male, 88.2 percent American citizens, and 55.6 percent were residing off-campus.

To provide a summary of the nonparticipant group distribution among education classes, Table 4.16 presents a frequency and percentage comparison of participant and nonparticipant respondents grouped by education class. As the table shows, in all education class levels, except for juniors, the number of nonparticipants exceeded the participants. Among senior student respondents 67.9 percent did not take part in recreational sports activities. Similarly, 63.2 percent of all graduate respondents did not participate. Only among junior student respondents more than half, 56.4 percent, participated regularly in recreational sports activities.

Nonparticipants were asked about their past participation behavior, especially during the time spent in high school, and Michigan State University. Table 4.17 presents the frequency of past actions (participation versus nonparticipation) of the nonparticipants during these two stages of their education. As shown in the table, participation seems to decrease as individuals move to a higher stage of education. Seventy-six

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Table 4.16. Frequency and Percentage Comparison of Michigan State University Student Respondents (Participants and Nonparticipants) Based upon Education Class.

Education Class	Participants Freq.	Pct.	Nonparticipants Freq.	Pct.	Total Freq.	Pct.
Graduate	25	36.8	43	63.2	68	28.3
Freshman	19	40.4	28	59.6	47	19.6
Sophomore	12	40.0	18	60.0	30	12.5
Junior	22	56.4	17	43.6	39	16.3
Senior	18	32.1	38	67.9	56	23.3
Total	96	40.0	144	60.0	240	100.0

Table 4.17. Frequency and Percentage of Nonparticipants' Past Experiences with Recreational Sports Activities.

Participation during:	Participants Freq.	Percent	Nonparticipants Freq.	Percent
High school years	110	76.4	34	23.6
Michigan State University years	37	25.7	107	74.3

point four percent of the nonparticipants have participated in recreational sports activities during their high school years, while only 25.7 percent were participants during their MSU years.

Nonparticipants' desire for participation in RSA was solicited by asking respondents: Are there any recreational sports activities that you would like to participate in/start doing regularly? As shown in Table 4.18 the overwhelming majority (73.6 percent) responded affirmatively, leaving only 26.4 percent who had no desire for participation.

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Table 4.18. Frequency and Percentage of Nonparticipants' Desire for Participation in RSA.

Desire for a RSA	Frequency	Percent
Yes	106	73.6
No	38	26.4
Total	144	100.0

Respondents were further asked to indicate their level of interest in participating in a RSA regularly (at least twice a week). Table 4.19 presents the frequency and percentage of responses for each level of interest. As demonstrated in the last three categories of interest, the majority of the nonparticipants, 78.4 percent, were interested in regular participation.

Table 4.19. Frequency and Percentage of Nonparticipants' Interest in Regular Participation.

Level of interest	Frequency	Percent
Not interested at all	6	4.2
Not very interested	24	16.7
Somewhat interested	46	31.9
Very interested	53	36.8
Extremely interested	14	9.7
Missing	1	.7

Section 2: Confirmatory Factor Analysis

This section of the data analysis was based on data gathered from the nonparticipants subsample. The study's main purpose and hypotheses were formulated for nonparticipants in RSA respondents. The purpose was to determine the perception of three related types (subcategories) of constraints on recreational sports activities participation (intrapersonal, interpersonal, structural). Before perception of these constraint dimensions can be assessed, a verification of their existence should be attempted first. To provide evidence of the existence of these types of constraints a confirmatory factor analysis (CFA) was performed using the Lisrel 7.2 program (Jöreskog & Sörbom, 1989) contained within with SPSS 6.0. The maximum likelihood method (ML) was used for parameter estimation (i.e., factor loadings and factor to factor correlation).

The model specified in this study consisted of three latent variables (factors) and thirty observed variables. Based upon the theoretical bases of this study, the observed variables were specified in advance as to what factor each variable was expected to load on, i.e. each variable was placed in one factor only. The factors and the number of their items were specified as follows: ten variables for the intrapersonal factor, nine items for the interpersonal factor, and eleven for the structural factor. The specific variables for each factor are shown in Table 4.20 where factors represent the constraints subscales.

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Table 4.20. Confirmatory Factor Analysis -- Factor Loading.

Constraints items	Intra-personal	Inter-personal	Struc-tural
Shy	.858	.000	.000
Uncomfortable	.929	.000	.000
Self conscious	.912	.000	.000
Friends do not like RSA	.343	.000	.000
Social/cultural restriction	.252	.000	.000
Inappropriate for my gender	.305	.000	.000
Physical inability	.492	.000	.000
No will to participate	.360	.000	.000
Did not enjoy RSA in the past	.471	.000	.000
Do not need RSA	.241	.000	.000
Inappropriate social environment	.000	.617	.000
Activities dominated by specific gender	.000	.449	.000
Family & friends' expectations	.000	.627	.000
No one to participate with	.000	.587	.000
Friends cannot be persuaded	.000	.583	.000
Friends are too busy to participate	.000	.606	.000
Fear of violence	.000	.540	.000
Friends' lack of proper skills	.000	.604	.000
Lack of support	.000	.763	.000
Facilities are too crowded	.000	.000	.224
Lack of transportation	.000	.000	.357
Parking availability	.000	.000	.145
No time because of obligations	.000	.000	.037
No time because of other leisure activities	.000	.000	.125
Time management problem	.000	.000	.235
Lack of information	.000	.000	.440
Inappropriate activity scheduling	.000	.000	.364
RSA conduct is too competitive	.000	.000	.721
Fear of failure	.000	.000	.752
Lack of money	.000	.000	.507

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Table 4.21. Factors Intercorrelation.

Factors	(1) Intrapersonal	(2) Interpersonal	(3) Structural
(1) Intrapersonal	1.000		
(2) Interpersonal	.544	1.000	
(3) Structural	.761	.877	1.000

From the first confirmatory factor analyses (CFA) run, the results shown in Table 4.20 for factor loadings and Table 4.21 for factor to factor correlation should be evaluated only after a determination of how the model fit the data. The Lisrel program provides a chi-square value along with several indices for model evaluation. In this particular run of CFA, the total coefficient of determination for the observed variables was 0.993. This value indicated how well the observed variables jointly serve as a measurement instrument for the three latent variables together. The overall goodness-of-fit chi-squared value was 1181.38 ($p = .000$) with 402 degrees of freedom. Typically, the ratio of the chi-square test statistics to the model's degrees of freedom is used as an evaluating criterion for the fit of the model. According to Tanaka (1987), the value of the ratio for a well-fitting model is expected to be 1.0 or better. Other researchers (e.g., Raymore et al., 1993) have compared the chi-square value with double the degrees of freedom. Both evaluating criteria suggested that the model seems to be untenable. Further, the goodness-of-fit index was .606, this value also suggested an

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unacceptable model since it was less than .9. Similar results can be drawn from the root-mean-square residual which was .130.

There was no particular reason to explain why the model did not fit the data. However, possible contributors were sample size and violation of the normality assumption. The sample size appropriateness in most statistical tests (e.g., regression) is determined on the basis of the ratio of number of subjects to the number of variables. Further, in the context of latent variable models (e.g., structural equation models), Tanaka (1987) has stated that "sample-size appropriateness is tied to the ratio of the number of subjects to the number of parameters estimated" (p. 137).

The question of sample size appropriateness and its possible effect on obtained results is problematic. The Lisrel program provides error messages (e.g. matrix singular or matrix not positive definite) if the sample size is not sufficient for covariance matrix estimate. However, if the covariance matrix can be estimated, determination of sample size effect is more difficult.

Based on the ratio of number of subjects to the number of observed variables, the size of this study nonparticipant respondents was comparable to sample sizes used for exploratory factor analysis (e.g., McGuire, 1984 had used a sample of 125 to factor analyze 30 constraint items; Henderson et al., 1988 have used 294 respondents to factor analyzed 55 constraints). On the other hand, the nonparticipants sample size was questionable for latent variable model estimation.

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Gebring and Anderson (1985) looked at the effect of sample size on latent variable structural equation models and suggested that robust estimates could be reasonably obtained in samples smaller than 200. Furthermore, Tanaka (1987) indicated that statistical estimates of two factors. Six variable models were degraded in a sample of 100.

The other possibility was a violation of the assumption of multivariate normality, made in the maximum likelihood estimation of parameters, which can lead to an incorrect decision about the model, i.e., reject a correct model. However, this possibility seems unlikely in the present situation. According to Jöreskog and Sörbom (1989), the fit function for maximum likelihood "may be used to compute parameter estimated even if distribution of the observed variables deviates from normality" (p. 21). An attempt was made to rule out the possibility of normality assumption violation by using the weighted least-square method (WLS). When the observed variables are ordinal, as in this case, the developers of the Lisrel program (Jöreskog & Sörbom) have recommended the use of polychoric and polyserial correlation estimates, obtained by the PRELIS program, and that the matrix of such correlations be analyzed by the WLS. The implementation of this recommendation was not possible due to the required large sample size to achieve reasonable precision of estimates.

Given the questionability of the nonparticipant sample size appropriateness, several explanatory attempts were made to fit the model and to aid in results interpretation. Since

the model did not fit the data, a second run of CFA was conducted with an attempt to modify and fit the model. The second run was accomplished by instructing the Lisrel program 7.2 to automatically modify the model, that is to free some items to load on any one of the factors. This run resulted in twelve model modifications before an acceptable fit was achieved. The problem with such a procedure was that modifications were made without any consideration of the original model's theoretical bases and previous findings. Thus, evaluation of the second CFA run results showed theoretical inconsistency. For example, lack of support, which was considered as an interpersonal item, was freed and loaded on the structural factor. Generally, the results of the second CFA run were unacceptable due to modification creating inconsistency with the study theoretical bases.

Given the aforementioned results of the CFA runs, an attempt was made to explore the consequences of observed variables reduction on the model fit. This was accomplished by configuring the Lisrel program to provide a maximum modification index for each CFA run. The index shows which item if freed (allowed to load on another factor) would provide the largest modification on the chi-square value. This approach allowed the investigator to minimize conceptual inconsistency by deleting items that are incompatible with the study's theoretical bases. Thus, each item the program selected for modification was evaluated for conceptual compatibility with suggested factor, an item was either moved to the new factor or deleted from any further analysis. A

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series of CFA runs, each presenting a slight relaxation of the model, were conducted before an acceptable fit was achieved. With twenty four observed items, the CFA results showed a chi-square value with 249 degrees of freedom = 467.14 (P=.000), goodness of fit index = .792, root mean square = .085, and a total coefficient of determination for all observed variables = .997. These results indicate weak acceptance of the model fit because the goodness of fit index is less than .9. The model, however, consisted of six items for intrapersonal construct, eight items for interpersonal construct, and ten items for the structural construct, as shown along with factor loadings in Table 4.22. The modifications made for model fit achievement are presented in Table 4.23.

Table 4.22. Confirmatory Factor Analysis of 24 Items -- Factor Loadings

Constraint items	Intra-personal	Inter-personal	Struc-tural
Shy	.869		
Uncomfortable	.927		
Self conscious	.920		
No will to participate	.347		
Did not enjoy RSA in the past	.457		
Fear of failure	.744		
Inappropriate social environment		.806	
Activities are dominated by specific gender		.635	
Family and friends' expectations		.755	
Fear of violence		.627	
Friend's lack of proper skills		.475	
Inappropriate for my gender		.733	
Social/cultural restrictions		.655	
Friends do not like RSA		.489	
Facilities are too crowded			.405
Lack of transportation			.464
Parking availability			.392
No time because of obligations			.305
No time because of other leisure activities			.209
Time management problems			.406
Lack of information			.597
Inappropriate activity scheduling			.540
Lack of money			.604
No one to participate with			.607

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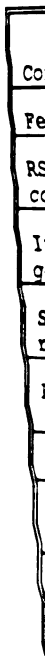

Table 4.23. Program-generated CFA Model Modifications

Constraint items	Original construct	Suggested modification	Decision
Fear of failure	Structural	Intrapersonal	Moved
RSA conduct too competitive	Structural	Intrapersonal	Moved
Inappropriate for my gender	Intrapersonal	Interpersonal	Moved
Social/cultural restrictions	Intrapersonal	Interpersonal	Moved
RSA conduct too competitive	Structural	Interpersonal	Deleted
Friends don't like RSA	Intrapersonal	Interpersonal	Moved
No one to participate with	Interpersonal	Structural	Moved
Friends can't be persuaded	Interpersonal	Structural	Deleted
Friends are too busy to participate	Intrapersonal	Structural	Deleted
Physical inability	Intrapersonal	Interpersonal	Deleted
Lack of family/friends support	Interpersonal	Structural	Deleted
Don't need RSA	Intrapersonal	Interpersonal	Deleted

Further explorations, following the same procedure, were conducted to improve the fit of the model. The program suggested maximum modification index was used for model modification guidance until a construct misrepresentation occurred. That was when the modification would have left the intrapersonal constraints construct with one observed variable only, which indicates a final model. This model consisted of eleven observed variables, shown in Table 4.24 along with factor loading, for the three constructs: two items for the intrapersonal constraint, four items for the interpersonal

Table 4.24. Confirmatory Factor Analysis of 11 Items -- Factor Loading

Constraint items	Intrapersonal	Interpersonal	Structural
Shy	.887		
Self conscious	.931		
Inappropriate social environment		.820	
Activities are dominated by specific gender		.669	
Fear of violence		.590	
Friends do not like RSA		.452	
Facilities are too crowded			.411
Lack of transportation			.456
Lack of information			.640
Lack of money			.582
No one to participate with			.600

constraints, and five items for the structural constraints. The results of CFA for this model provided the best obtainable statistical fit from this data. These results showed a chi-square value with 41 degrees of freedom = 52.53 (P=.107), goodness of fit index = .939, root mean square residual = .046, and a total coefficient of determination for all observed variables = .939. While these overall fit measures indicate a statistically acceptable model, conceptually the model was questionable due to construct weak representation and modification effectiveness. The intrapersonal construct was represented by two items only, shyness and self conscious,

as shown in Table 4.24. In regard to model modification effectiveness, it was noticed that some of the modifications (i.e., an observed item elimination) have minimal impact on chi-square value that was close to observed differences in the number of degrees of freedom (before and after modification). This observation indicates that the improvement in the model fit, caused by a modification, is obtained by capitalizing on chance (Jöreskog and Sörbom, 1989).

Given the results of these modifications, a decision had to be made about the appropriateness of using the modified model for hypotheses testing. In other words, was the number of observed variables included in the fitted model representative of the general conceptual understanding of each constraint types? Since the model included unrepresentative number of observed variables for each constraint types, it was deemed unacceptable, theoretically and conceptually, to use these variables for hypotheses testing. An alternative method of analysis was the use of all observed variables as they were grouped conceptually to each constraint types in the instrument, formulating three subscales of constraints on recreational sports activities participation.

Section 3: Hypotheses Testing

A multidimensional scale, consisting of thirty items, was used to measure the perception of constraints among the nonparticipants (respondents who were not participating in recreational sports activities during the months preceding receipt of the questionnaire). The scale encompasses thirty items intended to measure the three types of constraints (intrapersonal, interpersonal, structural). The reliability coefficients of the scale and its subscales were as follows: total scale alpha = .8937, intrapersonal subscale alpha = .8325, interpersonal scale alpha = .8263, and structural subscale alpha = .7196.

The mean and standard deviation of each item and their subscale identification are provided in Table 4.25. The table shows the grand mean of 2.3938 (SD = .5290) for the complete scale, and the means and standard deviations for each subscale as follows: a mean of 2.0521 (SD = .6505) for the intrapersonal, a mean of 2.1929 (SD = .5864) for the interpersonal, and a mean of 2.8655 (SD = .5864) for the structural subscale. From the results presented in Table 4.25, five items were positively rated indicating a perception of high constraints. The respondents' most perceived constraining items were "no time because of obligations," with a mean of 4.230 and SD = .936, followed by "parking availability," with a mean of 3.222 (SD = 1.371), "lack of information" with a mean of 3.180 (SD = 1.211), "lack of time because of other leisure

Table 4.25. Mean and Standard Deviation for Constraint Items by Subscales.

Constraint type	M	SD
Intrapersonal	2.0521*	.6505*
Shy	2.208	1.152
Uncomfortable	2.285	1.186
Self conscious	2.382	1.218
Friends do not like RSA	2.014	.953
Social/cultural restriction	1.493	.689
Inappropriate for my gender	1.583	.753
Physical inability	1.958	1.057
No will to participate	2.542	1.158
Did not enjoy RSA in the past	2.042	1.037
Don't need RSA	2.014	.953
Interpersonal	2.1929*	.6483*
Inappropriate social environment	1.854	.885
Activities are dominated by one gender	1.993	1.048
Family and friends' expectations	1.729	.829
No one to participate with	3.014	1.240
Friends can't be persuaded	2.715	1.101
Friends are too busy to participate	2.812	1.146
Fear of violence	1.583	.789
Friends' lack of proper skills	2.021	.978
Lack of support	2.014	.908
Structural	2.8655*	.5864*
Facilities are too crowded	2.854	1.115
Lack of transportation	2.333	1.182
Parking convenience	3.222	1.371
No time/obligations	4.230	.936
No time/other leisure activities	3.160	1.175
Time management problem	2.625	1.134
Lack of information	3.180	1.211
Inappropriate activity scheduling	2.847	1.117
RSA conduct is too competitive	2.354	1.067
Fear of failure	2.000	1.010
Lack of money	2.715	1.204
Total items (scale)	2.3938*	.5290*

Note: Item scores were based on five point likert scale: 5 = strongly agree; 4 = agree; 3 = neutral; 2 = disagree; 1 = strongly disagree.
* Grand mean.

activities" with a mean of 3.160 (SD = 1.175), and "no one to participate with," with a mean of 3.014 (SD = 1.240).

Table 4.25 also shows the items least perceived by respondents as constraining factors. The lowest rated items were "social and cultural restrictions," with a mean of 1.493 (SD = .689), followed by "inappropriate for my gender" and "fear of violence," both with means of 1.583 and SD = .753 and .789 respectively.

Hypothesis 1. Respondents who perceive a high level of intrapersonal constraints perceive a lower level of interpersonal and structural constraints than those who perceive low intrapersonal constraints.

Based upon individuals' average scores on the intrapersonal constraints subscale, respondents were divided into two groups, below and above the subscale grand mean (2.052), in other words performing a grand mean split. One-way analysis of variance was used to examine the two groups for differences in the perception of interpersonal and structural constraints. A summary of the analysis of variance is presented in Table 4.26. The results indicated a statistically significant difference between the groups, in both types of constraints, interpersonal ($F_{(1,142)}$=45.6939, P=.0000) and structural ($F_{(1,142)}$=27.5640, P=.0000). From the mean column in Table 4.26, the groups mean scores differences appeared to be the opposite to the direction specified in the hypothesis. This finding suggested that respondents who perceived a high

Table 4.26. One-way Analysis of Variance for Levels of Intrapersonal Constraints with Perception of Interpersonal and Structural Constraints

Constraints type/Groups *	N	Mean	SD	F ratio (1,142)	F prob.
Interpersonal					
Group 1	74	1.8829	.5792	45.6939	.0000
Group 2	70	2.5206	.5514		
Total	144	2.1929	.6483		
Structural					
Group 1	74	2.6364	.6004	27.5640	.0000
Group 2	70	3.1077	.4641		
Total	144	2.8655	.5864		

*Group 1 = Respondents who scored lower than the grand mean (2.052) of intrapersonal subscale.
Group 2 = Respondents who scored higher than the grand mean of intrapersonal subscale.

level of intrapersonal constraints perceived a high level of interpersonal and structural constraints too. Based upon these results, the first proposed hypothesis was rejected.

Hypothesis 2. Nonparticipants who express a high level of interest in regular participation perceive a lower level of intrapersonal constraints than those with a low level of interest.

Respondents' level of interest was solicited by asking the question "How interested are you in participating regularly (at least twice a week) in recreational sports activities?" The five point response scale, possible answers, was used to form five groups of the nonparticipants. A one-way

analysis of variance test was used to compare the groups' mean perception of intrapersonal constraints. The results, shown in Table 4.27, indicated differences between some of the groups ($F_{(4,138)}$=2.4205, P=.0513) that were not statistically significant at .05 level, but very close. Thus, a multiple comparison test, Student-Newman-Keuls, with .05 level of significance was conducted. The comparison results indicated significant mean difference between the extremely interested group (mean=1.6357) and the somewhat interested group (mean=2.1978). These findings suggested a significant difference that is not between the two extreme groups, therefore, the second hypothesis was rejected with a cautionary notice. It is arguable that the two "not interested" categories constitute lack of interest, rather than low level of interest, thus, the hypothesis may have some merit. To account for the effect of cell size, responses were

Table 4.27. One-way Analysis of Variance for Intrapersonal Constraints with Levels of Interest in Regular Participation

Groups	N	Mean	SD	F ratio (4,138)	F prob.
Not interested at all	6	2.1333	1.0985	2.4205	.0513
Not very interested	24	2.1625	.5999		
Somewhat interested	46	2.1978	.6777		
Very interested	53	1.9925	.5961		
Extremely interested	14	1.6357	.4308		
Total	143	2.0580	.6489		

regrouped into three categories (not interested, somewhat interested, and very interested) and retested. Similar results were obtained ($F_{2,142}$=3.063, P=.049).

To further examine the effect of interest on perception of intrapersonal constraints, respondents desire for participation in RSA was treated as an indicator of interest. Based on the respondents' reply to the question "Are there any RSA that you would like to participate in/start doing regularly?" those who answered affirmatively, 106, were compared to subjects who answered negatively, 38, on their intrapersonal constraints scores. Table 4.28 shows the t-test statistics for equality of means between the two groups. The data showed no significant mean difference between the two groups on their perception of intrapersonal constraints (p = .414). The results suggested no significant difference between the two groups in their perception of intrapersonal constraints, the rejection of the second proposed hypothesis was further supported.

Table 4.28. T-test for Independent Samples of Participation Desires by Intrapersonal Constraints.

Group	N	Mean	S.D.	S.E. of Mean	t-value	2-tail sig.
Group 1	106	2.025	.619	.060	.82	.414
Group 2	38	2.126	.734	.119		
Mean difference		-.101				

Group 1 = Respondents who would like to participate.
Group 2 = Respondents who would not like to participate.
Degrees of freedom = 142

Hypothesis 3. Male nonparticipants express a lower level of interest in recreational sports participation than female nonparticipants.

Gender mean differences on expressed level of interest in RSA participation was measured by analysis of variance. The results, shown in Table 4.29, indicated no significant interest differences between male and female nonparticipants, although from the interest mean scores, male respondents seem to have expressed a higher interest in regular participation than the female. Based on this result, the third proposed hypothesis was rejected.

Hypothesis 4. Female nonparticipants perceive a higher level of constraints on recreational sports participation than male nonparticipants.

This hypothesis could have been examined on the basis of total constraints. However to better understand the relationship, three subhypotheses were formulated for each constraint type.

Table 4.29. One-way Analysis of Variance for Levels of Interest in Participation with Gender

Group	N	Mean	SD	F ration (1,141)	F prob.
Female	87	3.2069	.9781	2.5948	.1095
Male	56	3.4821	1.0268		
Total	143	3.3147	1.0030		

Subhypothesis A. Females perceive more intrapersonal constraints than males.

Subhypothesis B. Females perceive more interpersonal constraints than males.

Subhypothesis C. Females perceive more structural constraints than males.

Gender differences in the mean perception of each type of constraints (intrapersonal, interpersonal, structural) were examined by analysis of variance. Summary of the analysis is presented in Table 4.30. The results indicated no significant gender differences (P=.7770; P=.3536; P=.3809) on perception of each constraints type, respectively, thus, the fourth hypothesis was rejected.

Table 4.30. One-way Analysis of Variance for Each Type of Constraint with Gender

Constraints types	Groups	N	Mean	SD	F ratio (1,142)	F prob.
Intrapersonal	Female	88	2.0398	.6626	.0805	.7770
	Male	56	2.0714	.6367		
	Total	144	2.0521	.6505		
Interpersonal	Female	88	2.1528	.6347	.8660	.3536
	Male	56	2.2560	.6700		
	Total	144	2.1929	.6483		
Structural	Female	88	2.8998	.5919	.7725	.3809
	Male	56	2.8116	.5788		
	Total	144	2.8655	.5864		

Hypothesis 5. Nonparticipants who had past experiences with regular RSA participation perceive a lower level of each type of constraints (intrapersonal, interpersonal, structural) than those who had no past RSA experiences.

Past experiences with recreational sports activities was measured by the presence or absence of individual participation during their attendance of high school and Michigan State University (MSU). From the dichotomous responses (yes or no), that were sought for each school separately, an index of responses created four groups with various levels of past experiences: no experience at all, past experience (high school participation), recent experience (MSU participation only), and continuous experience (participation in both schools). One-way analysis of variance was utilized to examine the differences between the groups' mean perception of each type of constraints.

The results of the analysis, summarized in Table 4.31, indicated significant differences, between some of the groups, on the perception of intrapersonal constraints ($F_{(3,140)}$=4.2178, P=.0069). To determine which pairs of groups have significant mean differences, a Student-Newman-Keuls multiple comparison test, with .050 significant level was conducted. The comparison results indicated significant mean differences between the no experience at all group (mean=2.3552) and two other groups, the continuous experience group (mean=1.7812) and the past experience group (mean=2.0526). Visual examination of the mean scores showed that the recent

experience group (mean=2.0200) did not differ significantly from the no experience at all group, yet, has a lower mean score than the past experience group.

The analysis results, shown in Table 4.31 also indicated no significant mean differences between the groups on perception of both interpersonal constraints (F=.5536) and structural constraints (F=.5850). These results provided only

Table 4.31. One-way Analysis of Variance for RSA Past Experiences with Perception of Constraints Types

Constraints type/ Past experiences	N	Mean	SD	F ratio (3,140)	F prob.
Intrapersonal				4.2178	.0069
No experience	29	2.3552	.6890		
Past experience	78	2.0526	.6038		
Recent experience	5	2.0200	1.0159		
Continuous experience	32	1.7812	.5682		
Total	144	2.0521	.6505		
Interpersonal				.5536	.6465
No experience	29	2.2414	.6251		
Past experience	78	2.2265	.6116		
Recent experience	5	2.2222	1.3005		
Continuous experience	32	2.0625	.6448		
Total	144	2.1929	.6483		
Structural				.5850	.6258
No experience	29	2.8621	.5077		
Past experience	78	2.9137	.5781		
Recent experience	5	2.8727	1.1089		
Continuous experience	32	2.7500	.5873		
Total	144	2.8655	.5864		

partial support for the hypothesis, based upon mean perception of intrapersonal constraints. Therefore, the fifth proposed hypothesis was rejected.

The results obtained from the second and fifth hypotheses suggested at least a moderate association between the respondents' perception of intrapersonal constraints and their level of interest and past experiences with recreational sports activities participation. To examine these potential relationships further, a Pearson correlation coefficient was conducted. The results of the correlation test, as shown in Table 4.32, indicated weak, but statistically significant, negative relationships between the perception of intrapersonal constraints and the two variables: interest in participation (r=-.2025, P=.015) and past experience (r=-.2750. P=.001). Interest in participation was significantly correlated with past experiences with recreational sports participation. These correlations supported this study previous results.

Table 4.32. Pearson Correlation Coefficients for Intrapersonal Constraints and Selected Variables

	Intrapersonal	Interest	Past experience
Intrapersonal	1.000 (144)*		
Interest	-.2025 (143) P=.015	1.00 (143)*	
Past experience	-.2750 (144) P=.001	.2815 (143) P=.001	1.000 (144)*

(Coefficient/[cases]/2-tailed significance)
*=Coefficient cannot be computed.

Section 4. Analysis of Constraints on More Participation

This section of the data analysis was included in this study for exploratory purposes. First, to explore differences on perception of constraints for more participation based upon gender, participation level, and satisfaction with current rate of participation. Second, to examine the unstated basic assumption underlying some constraints research, that there is a negative relationship between perception of constraints and participation level. This assumption according to Shaw et al. (1991) "applies most clearly to situations where people have already expressed a desire for participation or a desire for increased levels of participation" (p. 287).

Data for this section were collected from seventy-six regular participants in recreational sports activities who have expressed a desire for an increase in participation rate. Respondents were asked "If you wish to increase your participation, what keeps you from doing so?" Possible responses consisted of twelve reasons (Section B of questionnaire) rated on a five point Likert scale format, strongly disagree/strongly agree. These constraints have been labeled by Shaw et al. (1991) as "intervening," since their influence occurs only after a preference has been established. The collected data from this group of respondents, also provided information on individuals' satisfaction with participation rate and their participation level as measured by frequency (number of participation sessions per week) and duration (time length per participation session).

To examine gender differences on their perception of intervening constraints, t-tests for independent samples were used for each item separately and all together collectively. Table 4.33 presents gender mean scores and the t-test results. Four constraints items showed significant differences between the sexes. From the mean scores in these items, females appeared to perceive more constraints than male respondents. As shown in the table, significant differences occurred with the following items: low energy, lack of coparticipants, social and cultural norms restrict my participation, additional activities are not appropriate for my gender, and the mean perception of all items together. All constraints on more participation items, except for crowded facilities, were perceived higher by female than male respondents. Other gender differences were detected on participation pattern, that is the rate of participation. As presented in Table 4.34, a statistically significant gender differences were found on reported number of activities participated in and the average time spent per participation session. Male respondents participate in more recreational sports activities and spend more time per participation session, than do female respondents. Based upon the age of participants, only one constraint item, lack of time because of other leisure activities appeared to constrain young adults (24 years old and under) more than adults (over 24 years old). Table 4.35 provides mean scores of the two age groups and the t-test results.

Table 4.33. Summary of t-test for Independent Samples of Gender by Constraints Perception.+

Constraints items	Mean male	Mean female	t-value	2-tail signif.
No time because of obligations	4.395	4.500	.57	N.S.*
No time because of other leisure activities	2.947	3.105	.59	N.S.
Low energy	2.342	2.868	2.00	.049
No skills	1.605	1.919	1.58	N.S.
Health problems	1.4211	1.676	1.29	N.S.
Fear of injury	1.289	1.514	1.44	N.S.
Lack of co-participants	2.421	3.027	2.14	.036
No facilities	2.211	2.243	.14	N.S.
Crowded facilities	2.789	2.595	-.73	N.S.
Social norms	1.263	1.757	2.79	.008
Additional activities not appropriate	1.211	1.730	3.11	.003
Lack of money	1.921	2.432	1.89	N.S.
Items together	2.151	2.439	3.02	.003

*Not significant at .05 level. 1 = Strongly disagree; 5 = strongly agree.
+N=76; Male=38, Female=38.

Table 4.34. Summary of t-test for Gender Participation Rate Differences.

Participation rate*	Mean Score Male	Mean Score Female	t-value	2-tail signif.
Frequency	2.898	3.362	1.63	.107
Duration	1.796	1.468	2.41	.018
Quantity	2.271	1.872	2.40	.018

*Frequency = reported average number of participation per week.
Duration = average time spent per participation session.
Quantity = reported number of activities participated in.

Table 4.35. Summary of t-test of Lack of Time Because of Other Leisure Activities.

Age	N	Mean	SD	SE	t-value	Signif.*
24 years old or under	60	3.233	1.079	.139	3.21	.002
Over 24 years old	16	2.250	1.125	.281		

*2-tail significance.

To examine for possible perceived constraint effect on participation level, the two variables, number of participation sessions per week and time length per participation session, were used separately to group respondents for comparison. Tables 4.11 and 4.12 provided the categorization of frequency and duration of participation.

One-way analysis of variance was utilized to examine the effects of each intervening constraints item on the number of participation sessions per week (frequency). The results indicated a significant effect on weekly participation of only two constraint items: health problem and additional activities appropriateness. The data presented in Table 4.36 show significant differences on health problem among the three groups of participation frequency. To determine which groups differ from each other, a post hoc comparison test was conducted using Scheffe's test with .05 level of significance. The results indicated that respondents who participate three times a week perceived health problem, as a constraint to increase participation rate, significantly higher than those who participated two times a week.

Table 4.37 presents the results of one way ANOVA test for the perception of additional activities appropriateness among the weekly participation frequency groups. The data show significant differences among the groups regarding their rating on "additional activities are not appropriate for my

Table 4.36. Summary of One-way Analysis of Variance for Weekly Participation Frequency Groups and Their Perception of Health Problems Constraint.

Participation per week	N	Mean	SD	SE	F	P
Two times or less*	27	1.185	.396	.973	5.794	.0046
Three times	31	1.903	1.076	.193		
Four times or more	17	1.471	.717	.174		
Total	75	1.547	.859	.099		

* Four respondents participate less frequently than twice a week.

gender" as a constraining factor for an increase in participation rate (p = .0453). Post hoc comparison between groups means was conducted using Student-Newman-Keuls test with .05 level of significance. The results indicated significant mean differences between the two times per week participants and those who participate more than four times a week. While this finding may suggest a linear relationship between partcipation frequency and the perception of appropriateness of additional activities, further analysis was needed. Since this intervening constraint item was found significant for gender differences (see Table 4.33, p. 110), two-way analysis of variance for perception of additional activities appropriateness by participation frequency and gender was utilized. The results indicated a significant main effect of gender only, which suggests that contrary to results presented in Table 4.37, the variation on perception of this intervening constraint was not a result of frequency of participation; rather it was most likely the result of gender differences.

Table 4.37. Summary for One-way Analysis of Variance for Weekly Participation Frequency Groups and Their Perception of Appropriateness of Additional Activities.

Participation per week	N	Mean	SD	SE	F	P
Two times or less	27	1.185	.396	.076	3.232	.045
Three times	31	1.581	.719	.129		
Four times or more	17	1.706	1.105	.268		
Total	75	1.467	.759	.087		

The participant respondents were further examined by one-way ANOVA for differences on reported satisfaction with participation rate. Respondents were asked "how satisfied are you with your current rate of participation in recreational sports activities?" Seven possible ratings were provided from (1) very unsatisfied to (7) very satisfied.

Table 4.38 shows the groups' mean satisfaction level as well as the mean for all participants. It should be noted here that the table incorporates the "do not wish for increase in participation" respondents. The data indicated an effect of weekly participation level on satisfaction with rate of participation. As shown, there are significant differences among the groups ($p = .0098$). Scheffe's test, with .05 significance level, indicated significant difference between the two time participants and the four or more times per week participants. The latter reported a higher level of satisfaction.

Table 4.38. Summary for One-way Analysis of Variance for Weekly Participation Frequency Groups and Their Satisfaction with Rate of Participation.

Participation per week	N*	Mean	SD	SE	F	P
Two times	34	4.618	1.633	.280	4.864	.009
Three times	40	5.075	1.457	.230		
Four or more	22	5.818	.795	.169		
Total	96	5.083	1.463	.149		

*All participants in RSA.

Satisfaction with rate of participation was used to compare those who wish for more participation and those who do not. The results of a t-test, shown in Table 4.39, indicate a statistically significant difference, meaning that participants who do not wish for an increase in participation rate were more satisfied with participation rate than those who wish for an increase in rate of participation.

The perception of each intervening constraint and the reported satisfaction with participation rate showed no significant effect on time spent per participation session (duration) and the number of activities participated in.

Table 4.39. Summary of t-test for Independent Samples of Interest in More Participation by Satisfaction Level.

Interest in increase in participation rate	N	Mean	SD	SE	t-value	Signif.
Yes	76	4.763	1.46	.167	-4.60	.000
No	20	6.300	.571	.128		

Chapter V

FINDINGS, CONCLUSION AND RECOMMENDATIONS FOR FURTHER STUDY

This study puts an emphasis on an important aspect of the nonacademic life of university students, that is the utilization of recreational services offered on campus. The increased awareness of the beneficial effects of physical activities on well-being, combined with available facilities and equal participation opportunities, provided an appropriate environment to explore and examine constraining factors that might inhibit or limit students' participation in recreational sports activities. The understanding of these constraining factors is of significance, practically for the provision of recreative services, and theoretically for constraints research. The purpose of the study was to determine the perception of three types (interpersonal, intrapersonal, structural) or subcategories of constraints on recreational sports activities participation among young adult nonparticipants enrolled as students at Michigan State University. This chapter concludes the study by presenting an interpretation of findings, along with recommendations for further research.

Findings

This study sample of Michigan State University students indicated that 60 percent of respondents were not participating in recreational sports activities regularly (at least twice a week for three or more months). The proportion of respondents participating in RSA, 40 percent, is consistent with Stynes and Peterson's (1978) findings. In their study of MSU students' interest in sports participation, they found forty-three percent of respondents participate in sports activities on campus regularly (at least twice a week). These findings, roughly, indicates stability over time of recreational sports participation pattern at Michigan State University.

The frequency of nonparticipants' past participation in recreational sports activities decreased, as education level increased, from 76.4 percent during high school to 25.7 percent during Michigan State University attendance. This decrease in past experiences with recreational sports activities among the nonparticipants is more likely to be the result of perceived constraints. While not everyone is expected to participate in RSA, the majority of the nonparticipant respondents (73.6 percent) expressed a desire for starting regular participation in RSA. This finding was reinforced by the expressed level of interest, in which interested nonparticipants accounted for 78.4 percent of the group. Although interest may not be an accurate measure of latent demand or expected participation, these findings provide strong indication of constraints extent among the

nonparticipant respondents. According to Stynes and Peterson (1978), "Interest will generally exceed overt participation as participation is constrained by time, economic, physical, social, and environmental factors" (p. 18).

The nonparticipants respondents were asked to respond to a multidimensional constraints scale consisting of thirty items corresponding to the three types of constraints (interpersonal, intrapersonal, structural). The calculated reliability coefficient of the total constraints scale and each subscale were as follows: .894 for total scale; .833 for intrapersonal; .826 for interpersonal; and .719 for structural subscale. From the descriptive statistics (means and standard deviations) for the three subscales and their corresponding items, structural constraints subscale was found to be perceived the highest by nonparticipants, particularly the items lack of time because of obligations and other leisure activities, lack of information, and parking availability and convenience. No one to participate with and no will to participate were the most highly rated interpersonal and intrapersonal constraints items respectively (see Table 4.25). The presentation of nonparticipants' mean scores on all subscales and each constraint item separately is of practical implications for service providers. Alleviation of highly perceived constraints might be within management's reach. As shown by the table, the mean perception of constraints was highest for the structural constraint subscale, this might be a result of being more salient and concrete than intrapersonal

or interpersonal constraints which tend to be difficult to identify due to their relation to individual subjective evaluation and psychological state (Raymore et al., 1993).

This study has attempted to examine the applicability of Crawford et al.'s (1991) hierarchical model of leisure constraints to nonparticipation in recreational sports activities (RSA). Considerations were given to three types (subcategories) of constraints on participation, as defined in the hierarchical model (interpersonal, intrapersonal, structural).

The specified model consisted of three latent variables (factors) and 30 observed variables. The result of the first confirmatory factor analysis run showed inconsistency between the data and the specified model, the data did not fit the model. Effort was made to fit the model to the data. The purpose of this procedure was to determine the existence of the three constraints types by fitting a model of three latent variables (factors) representing constraints types (intrapersonal, interpersonal, and structural). In the second attempt, automatic model modifications were made until a statistically acceptable fit was achieved. However, the program made model modifications were found to be conceptually unacceptable. An alternative approach, to fit the model to the data, was to evaluate the program suggested modifications, individually, for conceptual appropriateness, and either allow for variable relaxation (to load on another construct) or delete the suggested variable. Following this procedure, five

variables were relaxed (moved to suggested construct) and six variables were eliminated before an acceptable model fit (based upon chi-square values) was achieved with twenty four observed variables. The achievement of a model fit with three latent variables, resembling the three types of constraints, and twenty four observed variables provided support for the specified dimensions of constraints.

To improve the model fit the modification procedure was continued. The best model fit was found with eleven items, two intrapersonal, four interpersonal, and five structural constraints items. While the confirmatory factor analysis results, obtained from this data, supported the existence of the three types of constraints, they showed a model with instability and inconsistency (i.e., an item was moved several times from one construct to another back and forth), which might be attributed to the sample size of nonparticipants.

Although no attempt was made to determine the dimensionality of observed constraints items by means of exploratory factor analysis, the results obtained from the confirmatory factor analysis runs suggested a possible existence of more than three dimensions, factors, of constraints on recreational sports participation among nonparticipants. Variables that were subtracted from the original model, through the process of fitting the model, are more likely to belong to one or more dimensions of constraints that were not included in the study. However, in light of the limited sample size, this finding may be suspect. While these

results contradict Raymore et al.'s (1993) findings, such findings are consistent with a number of reported constraints dimensions from previous research. Most constraint studies that have utilized exploratory factor analysis have reported five or more dimensions of constraints (e.g. McGuire, 1984; Backman, 1991; Jackson, 1993 &1994; Henderson, Stalnaker & Taylor, 1988; Wright & Goodale, 1991). The aforementioned results suggest that constraints do not always work in a clearly defined dimensions or categories, and that the hierarchical model of leisure constraints (Crawford et al., 1991) should be examined further in other settings and with other samples.

The confirmatory factor analysis results demonstrated an improvement of model fit as the number of observed variables decreased. But in the end, since no appropriate model fit was achieved that was stable and with an acceptable number of observed variables for each factor, a modified hierarchical model categorization of constraints was not obtained. Therefore, it was decided to use all of the original items, as prespecified, and a priori test them in an item analysis. Constraints items were categorized conceptually into the three original types of constraints, in accordance with Crawford et al.'s (1991) hierarchical model of leisure constraints. The results of the item analysis suggested the subscales could be used for hypotheses testing. The study hypotheses were

formulated for the nonparticipants in recreational sports activities.

The first proposed hypothesis involved a comparison between nonparticipants who scored below the intrapersonal subscale average (subscale grand mean) and those who scored above it, on the basis of their perception of the other two types of constraints (interpersonal and structural). The analysis of variance results indicated a statistically significant difference, in perception of interpersonal and structural constraints, that were opposite to the direction specified in the hypothesis. Respondents who perceived a high level of intrapersonal constraints, appeared to have perceived a high level of interpersonal and structural constraints too. Thus, the proposed hypothesis was rejected. These findings tend to contradict the hierarchical model's assumption of subjects' advancement along the hierarchy positions, particularly the assertion that subjects who are high in intrapersonal constraints would not be high in interpersonal constraints. Considering the characteristics of respondents included in this part of the analysis (nonparticipants), these findings support Raymore et al.'s (1993) contention that high perception of intrapersonal, interpersonal and structural constraints "represents a highly likely condition of constraints that occurs early in the hierarchy" (p. 110).

The second hypothesis examined the effect of the perception of intrapersonal constraints on interest in regular

RSA participation. The analysis of variance result indicated significant differences on the perception of intrapersonal constraints between extremely interested and somewhat interested nonparticipant respondents. The fact that those who had no interest did not vary significantly from interested respondents suggests that at least a portion of lack of interest respondents were affected by intrapersonal constraints. The perception of intrapersonal constraints was reexamined in relation to respondents' desire for participation or lack of it. The result indicated no significant differences between the two groups' mean perception of intrapersonal constraints. These findings are incongruent with Jackson's (1988) contention that lack of interest may be a reason for nonparticipation but it is not a constraint on participation because it implies an absence of a goal or objective. The notion of a goal, according to Jackson (1988) "assumes a desire or basic level of interest" (p. 210). The obtained findings support Raymore et al.'s (1993) contention that lack of interest is a result of individuals' failure to negotiate intrapersonal constraints. Similarly, Jackson's (1990) suggestion that lack of interest response may be symptomatic of barriers.

The third and fourth hypotheses involved gender comparison on expressed level of interest in regular RSA participation and on the perception of constraints types, intrapersonal, interpersonal and structural. The results of analysis of variance, for both hypotheses, indicated no

significant differences between male and female nonparticipants. While these results are not congruent with other research findings that suggest women perceive more constraints than men (e.g., Jackson and Henderson, 1995; Raymore et. al, 1994), they are not comparable to item based constraints research. The obtained findings, of no gender differences, for interest and perception of constraints are believed to be a direct result of the equal opportunity provided by the Intramural Sports and Recreative Services Department, Michigan State University.

The fifth hypothesis tested the effect of past participation on perception of the three constraints types. Nonparticipants were divided into four groups based upon their past participation in recreational sports activities during high school and Michigan State University attendance. One-way analysis of variance results indicated that those who had participated in high school only (past experience group) and those who have participated in RSA during attendance of both schools (continuous experience group) significantly perceived lower intrapersonal constraints than those who have no past participation. No significant differences were found between the groups on perception of interpersonal and structural constraints. This finding is a direct indication of past experience significance on modulating intrapersonal constraints. Thus, lack of past experiences appeared to be associated with intrapersonal constraints. This may be more salient if perception of constraints to participation is

examined in relation to a specific activity, preferably an experience based activity.

The results of the second and fifth hypotheses suggested a relationship between the perception of intrapersonal constraints, level of interest in participation, and past experiences with recreational sports participation. A Pearson correlation coefficient of these variables indicated a significant relationship between interest and past experience, and both variables were significantly correlated negatively with perception of intrapersonal constraints. These results are consistent with findings reported by Wright and Goodale (1991).

Respondents who participated regularly in RSA, 40 percent of total respondents, consisted of 51 percent male and 49 percent female. While 63.5 percent of participants reside off campus, the majority of the subgroup (77.1 percent) primarily use on-campus facilities for participation. From the analysis, it was found that more than three quarters of the subgroup were satisfied with their rate of participation, however, an overwhelming majority of participants (79.2 percent) desired more participation. Respondents who desired an increase in participation rate were asked to rate twelve reasons (intervening constraints) for not being able to increase participation and meet individual desire. Two intervening constraint items, lack of time because of obligations and because of other leisure activities, were highly rated by most respondents (see Table 4.15).

Section four of the data analysis chapter was devoted to an exploratory analysis of constraints on more participation among participants in RSA (intervening constraints). Differences in perception of twelve constraints items, based upon gender, age, participation level, and satisfaction with participation rate, were explored. A t-test result indicated a statistically significant gender difference on mean perception of total constraints (all 12 items together). Further examination was conducted at the univariate level (each item separately) to determine which items contributed significantly to gender differences. Four items were found to be significant, indicating higher mean perception by female participants. One of the items, low energy, was perceived as a constraining factor for more participation, by females more than male participants. This finding is consistent with other research findings (e.g. Harrington & Dawson, 1995; Shaw et al., 1991). Lack of a coparticipant was the other significant constraint item for female participants. This result is consistent with McCarville and Smale's (1993) findings. Female participants perceived social and cultural norms, and the inappropriateness of additional activities significantly more than male respondents. Statistically significant gender differences were found on the number of activities participated in and the time length per participation session, male respondents participated in more activities and for longer time per session than female participants.

The relationship between the perception of intervening constraints and participation level has been assumed to be negative. The results of this study indicated no influence of intervening constraints on frequency of participation, length of participation session, and number of activities participated in. These findings are congruent with those of Kay and Jackson (1991) and Shaw et al. (1991). This suggests that perception of intervening constraints among participants in recreational sports activities may not necessarily lead to a decrease in participation level. Although participants' loyalty to a specific activity was not measured, the results support the assertion that participants with high commitment are constrained from participating in a wide range of activities as a result of focused interest and invested resources on specific activities (Buchanan, 1985; Backman and Crampton, 1991). The effect of participation frequency on individual satisfaction with participation rate was found to be significant. From the comparison results, those who participated four or more times per week reported a statistically significant higher level of satisfaction than those who participated two times a week.

Participants who did not wish to increase their rate of participation reported satisfaction levels significantly higher than participants who wished for rate increase in participation. This finding is supportive of McCarville and Smale's (1991) findings. It suggests that participants can

achieve a satisfactory participation rate in RSA, which means a perception of minimal or no constraints on participation.

Conclusions

This study has attempted to examine the perception of constraints that inhibit and limit participation in recreational sports activities among Michigan State University students. Based upon the findings and within the limitations of this study, the following conclusions are offered for two groups of respondents, participants in RSA and nonparticipants. Overall, more than half of MSU students do not participate in RSA regularly. This lack of participation is not the primary result of dislike or lack of interest, rather, it is a consequence of perceived constraints. Even the participants are constrained from increasing participation rate to desired levels.

In regard to the nonparticipants subgroup and perception of constraints, an important finding of this study is the supportive evidence of intrapersonal constraints affecting individual preferences and desires. The overwhelming majority of nonparticipants expressed their interest and desire to start participating in a RSA, but for various reasons (constraints) they did not. Most of previous constraints research has assumed, though implicitly, that constraints have no effect on those who do not have a desire for participation, thus, only intervening (structural) constraints were examined among one group of nonparticipants. In contrast to such

research, this study incorporated the nonparticipants who expressed lack of desire to start participation along with the normally investigated group of nonparticipants who have a desire for participation. Levels of interest in participation was solicited from both desire groups. This study showed that nonparticipants who expressed no desire for participation did not differ significantly from those who had a desire on perception of intrapersonal constraints. However, intrapersonal constraints accounted for variations in levels of interest to start regular participation. Significant differences were found between high and low expressed levels of interest groups. This finding suggests that lack of interest responses (not interested nonparticipant respondents), unlike lack of desire, is a genuine reason for not participating, but it is not a constraint on participation. In this study a number of nonparticipants who expressed no desire for regular participation expressed an interest in participation. These findings provide supportive evidence for the existence of intrapersonal constraints that account for variations in the interest for participation. It therefore advances a strong call for widening the focus of constraints research investigations to all subgroups of nonparticipants. These types of constraints, which affect preferences rather than participation directly, might be more salient when an activity or group of activities are specified. Generality of the activity investigated may produce an

underestimation of people constrained intrapersonally (have no desire or weak interest).

One of the results of this study permits some insight into the provision of equal athletic opportunity for both sexes. Gender of the nonparticipants, in contrast to participatns, shows no significant effect on students' perception of intrapersonal, interpersonal, or structural constraints. In fact, no gender differences were found on perception of any constraint item or the level of interest for participation. This finding is explainable by the university compliance with Title IX of the U.S.A. Education Amendments. When gender differences on perception of constraints were examined in relation to interest in participation, differences were detected among only individuals who are not interested at all in RSA participation. Females appeared to perceive a higher level of intrapersonal and interpersonal constraints than the not interested at all male students. Interest was measured in this study by a single item, still it appeared to be very important item for constraints investigations. Clearly, there is a need for further examination of interest and its interactions with other variables including gender.

Another important finding is related to nonparticipants' past experiences with recreational sports activities during high school and Michigan State University attendance. Respondents who did not participate in RSA during high school years perceived intrapersonal constraints significantly higher than those who participated. Those who did not participate in

recreational sports activities during their attendance of both school perceived a higher level of intrapersonal constraints and a lower level of interest than those who participated in both schools or high school only. These findings showed that segmentation of nonparticipants into groups defined by past experiences was supported by the observed differences in perception on intrapersonal constraints. Among the three types of constraints, interest is significantly correlated with only intrapersonal constraints negatively. Collectively, these findings suggest that intrapersonal constraints, which influence preference and interest in participation negatively, are interwoven and deeply rooted to early age participation. Obviously, not all the nonparticipants are constrained, thus, lack of desire (in dichotomous responses) is not a precise characteristic of unconstrained nonparticipants if interest level is not integrated into the investigation.

The second part of this study conclusion is based on the subsample of participants in RSA, those individuals who were participating in RSA regularly. The majority of this group wished to increase their current participation rate, but the influence of some intervening constraints have kept them from achieving desired rate. From the exploratory analysis of this group, one of the major findings is related to gender differences. Females perceived constraints on more participation higher than male respondents and participated in less activities for shorter periods of time. This finding shows how perceived constraints directly or indirectly

function to reduce some aspects of participation in RSA. Clearly, further empirical research is needed to examine constraints in relation to the specific activities participated in, with a reliable measurement of participation intensity. In this study a major coincidental finding is related to the perception of constraints. Gender differences were found among participants (on perception of constraints to increased participation) and not among nonparticipants (on perception of cosntraints to start regular participation). Three of the constraints to increased participation items, in which gender differences were observed, closely resembled constraint to start participation items (for the nonparticipants), that did not show gender differences. This finding supports Crawford et al.'s (1991) contention that the hierarchical model is relevant even after participation has taken place. This observation is also consistent with Kay and Jackson's (1991) findings, that participation exposes the individual to constraints that are reflective of activity characteristics.

An important finding related to participants is based on reported satisfaction with personal participation rate. Although satisfaction was measured by a single item, the results suggested that the higher the weekly participation frequency the higher the satisfaction. Furthermore, participants in RSA who did not express a desire for increased participation reported satisfaction significantly higher than those who desired an increase. This finding indicates a

perception of the ultimate stage of unconstrained participation, and suggests that satisfaction with personal participation is an important integral component for the evaluation of constraints on participation.

Study Implications

An important outcome of this study, that has both theoretical and practical implications, is the validation of intrapersonal constraints existence and their relation to levels of interest. Thus, previous leisure constraints research, that has eliminated individuals who lack a desire for participation, has made an incomplete contribution to the existing constraints knowledge. It is this overlooked segment of the population who may be most influenced by constraints, mainly intrapersonal constraints which affect the individual behavior by eliminating or modifying his or her desire for starting participation. Thus, factors which explain variations in perception of such constraints needs to be further investigated (e.g., interest, past participation, current involvement, etc.).

Another implication is related to the "intervening" constraints, which have been defined in the literature as constraints that intervene between preference and actual participation. In this study, two different situations for intervening constraints existence were identified. First, among the nonparticipants who expressed a desire for starting participation (structural constraints). Second, among the

participants who desired an increase in participation rate. Clearly, the preferences are distinctive in each situation (starting vs. increasing), however the constraint item perceived might be the same, as demonstrated in this study, e.g. lack of co-participants. As a result, this overlapping definition and conceptual inconsistency, which might have contributed to the fragmentation of constraints research and items included, should be clarified to sharpen the theoretical and practical understanding of constraints and their role.

Recommendations for Future Research

Methodological and practical research approaches to overcome this study's limitations and improve its findings are recommended in the following paragraphs for potential future research.

A major part of this study questionnaire was developed in accordance to Crawford et al.'s (1991) model, and applied to nonparticipants in recreational sports activities. The confirmatory factor analysis results showed the data did not fit the model, suggesting an inapplicability of the model to nonparticipants in RSA. However, this finding is questionable due to sample size. It is, therefore, highly recommended that the model be further examined with proper size of constrained individuals and with other types of activities. Studies of constraints on future participation, in which respondents are asked for preferred activities they don't take part in but would like to, should be minimized. Such an approach does not

account for differences in interest and attitudes if only preferred activities are included.

A priority of future constraints research should be to provide a comprehensive instrument for measuring constraints on participation. Such an effort is warranted by the existing variabilities and inconsistencies of reported dimensions of constraints. Future research studies, designed for instrument development, should utilize a triangulation of research methods, if a more complete understanding of constraints and their effects on participation is to be gained. A qualitative approach is relevant for identifying different types of constraints, which may not have been used in previous studies, and their impacts on behavioral outcome. A quantitative approach, on the other hand, is appropriate for unrecognized or unanticipated constraints or barriers.

This study's findings indicate that a group of nonparticipants in recreational sports activities has expressed no desire for starting participation, yet some have expressed interest in participation. This group seems to be influenced negatively by some intrapersonal constraints items, mainly attitudinal. An important aspect for future research to consider would be first, a validation of this finding and second, an examination of differences within the group. Are they homogeneous? Are all of them genuinely not interested in this type of activity? Several variables that might be of significance for within group variations include attitudes toward the activities, past participation, and current leisure

involvement, if any. These variables should be measured in details along with other potential intrapersonal constraints.

In the present study, participants in RSA who expressed no desire for increase in participation apparently were very satisfied with their rate of participation. It was assumed that this group consists of unconstrained individual participants. A future study may consider examining the possibility of perceived constraints on participation in desired (different) activity or activities. Further consideration should be given to the level of current and past participation pattern, i.e. activities type, participation intensity, and satisfaction.

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APPENDICES

APPENDIX A
Michigan State University Program Statement

MICHIGAN STATE
UNIVERSITY

PROGRAM STATEMENT

DESCRIPTION OF THE INTRAMURAL SPORTS AND RECREATIVE SERVICES DEPARTMENT

The Intramural Sports and Recreative Services Department conducts and supervises a safe, comprehensive sport and leisure activity program in keeping with sound educational principles. The programs include competitive, recreative, fitness and Sports Clubs activity designed to provide all members of the University community the opportunity to participate in a wide variety of individual, dual and team sport activities encompassing all levels of skill.

MAJOR FUNCTIONS/PROGRAM

The department functions within the Student Affairs and Services Division. The Director of Intramural Sports and Recreative Services administers the department with the assistance of nine professional staff, three secretarial and three support staff, and 300-400 student employees. The staff is responsible for conducting programs in 21 team and 8 individual sports, 44 Sports Clubs, and the scheduling, supervision and maintenance of five major building facilities, (including 4 pools) and the preparation, scheduling and maintenance of 45 acres of sports areas including, softball, touch football, soccer, rugby, ultimate frisbee fields and exercise stations.

1. Statement of Overall Goals

   a. To provide experiences to students that will contribute to their development of leisure and recreative skills for immediate and lifelong use.

   b. To provide a setting that will encourage participants from all backgrounds to interact in enjoyable recreative situations.

   c. To maintain safe and properly supervised recreative facilities and activities.

   d. To conduct the various recreative programs in keeping with University philosophy, sound educational practice and in a manner which will contribute to the development of sound values including respect for the rights of others.

   e. To continually improve and increase the recreative facilities available to all students, faculty and staff.

   f. To provide recreative programming that fits the needs of Michigan State's students, faculty and staff while being constantly aware of national sport and activity trends which may influence the types of programs offered.

IM
SPORTS FOR ALL
DIVISION OF
STUDENT
AFFAIRS
AND SERVICES
Intramural Sports
and
Recreative Services
Michigan State University
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East Lansing, Michigan
48824-1026
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INTRAMURAL SPORTS AND RECREATIVE SERVICES
INFORMAL DROP-IN PROGRAM

PURPOSE AND OBJECTIVES

The informal drop-in program is designed to meet the needs of individuals who desire to participate and work-out on their own, according to their own personal schedule preference. The Intramural Sports and Recreative Services Department is dedicated to serving the campus clientele which considers sport a relevant daily, bi-weekly or weekly physical and emotional outlet for recreation, pleasure and maintenance of one's health and fitness levels, or just relaxation. Participation for these individuals involves minimal organization or formal structure. Court reservations, fitness and dance rooms, length swimming, and challenge courts for pick-up games on a drop-in basis are the backbone of the informal participations at the Intramural Recreative Sports-Circle, Intramural Recreative Sports-West and Intramural Recreative Sports-East facilities.

SCOPE

Students, faculty, staff and families are all eligible for the informal drop-in programs, facilities and services during a variety of times. Locker facilities, towel services, steam room, sauna, pool, gymnasiums and exercise fitness rooms are additional services provided for families as well as students. Team activities such as volleyball, basketball, and badminton are popular as are the individual sports of swimming, weight lifting, racquetball, fitness work-outs, aerobics, and dancing. Families are included in scheduling with hours provided for family swim and gym times.

ACTIVITIES

These facilities, which include various fields and outdoor courts, center around the intramural buildings. These centers were designed to serve a multitude of interest, from organized team competition to relaxing plunges into the large pool and sunbathing on its decks. The 165-foot pool has a "L" area with a diving tower. The 121-foot indoor pool has a movable bulkhead that allows the holding of three separate recreational or class activities simultaneously. There is also a pool in Intramural Recreative Sports-Circle with sun deck facilities.

In its 4 gymnasium areas available to students, the Intramural Recreative Sports-West offers 8 basketball courts 8 tennis courts, 4 volleyball courts and 8 badminton courts. The large Sports Arena bleachers and press box seat approximately 2,000 persons. Elsewhere in the building are 12 racquetball courts, 4 squash courts, steam rooms and fitness rooms with exercise machines for individual workouts, and areas for wrestling, archery, weight lifting and martial arts.

The Intramural Sports-East welcomes all students and encourages handicapper participation with its barrier-free design. Its facilities include 4 basketball courts, 4 volleyball courts, 6 badminton courts, 8 racquetball courts (with permanent wallyball hooks installed in the walls), 2 squash courts, an air-conditioned exercise fitness room and a multi-purpose room. In addition, a four-

lane running track with banked corners and cushioned durathon surface is located above the basketball courts.

Other recreative facilities are Intramural Recreative Sports-Circle. Demonstration Hall and Jenison Fieldhouse. Intramural Recreative Sports-Circle has 5 volleyball courts, 5 badminton courts, 5 basketball courts, a fitness room with exercise bicycles and weight machines, 2 dance studios and a sauna and steam room. The Demonstration Hall arena multi-purpose surface provides, soccer and roller skating areas. Jenison Fieldhouse contains 2 tartan-surfaced basketball courts, 7 half courts, a running track, 7 racquetball and 2 basketball courts.

Outdoor facilities also include 40 tennis courts (10 lighted), 2 lighted platform paddle tennis courts, 10 lighted touch football-softball fields, a lighted soccer field and unlighted softball fields. There are also many outdoor basketball courts and sand volleyball courts located in and around residence halls and other living units. The Ralph Young track may be used for practice and jogging. Cross Country Skiing is available through clinics and equipment check-out at the IM East Facility during winter term. The Intramural Sports and Recreative Services Department also has devised a campus jogging map available at the two offices. Both a campus jogging fitness trail and a physically challenged fitness area are available on campus.

INTRAMURAL SPORTS AND RECREATIVE SERVICES
INTRAMURAL (COMPETITIVE) PROGRAM STATEMENT

PURPOSE AND OBJECTIVES

Within the total concept of opportunity for formal and informal recreational participation for the entire campus community, the intramural program provides a variety of opportunities and experiences for students, faculty and staff interaction in dynamic sport situations. Recreational and competitive sports are available for all: skilled, less skilled, physically challenged and participants from all backgrounds and nationalities. The intramural sports staff also promotes a formal setting for developing leadership qualities in students. Opportunities for initiating and organizing their own competitive experiences as well as work experiences for student officials and student supervisors are provided for MSU's student community that enhance the ongoing educational process.

SCOPE

The intramural program is designed to provide the MSU community with the opportunity to engage in a large number and variety of individual, dual and team sports activities encompassing a wide range of skill levels. Individual and dual sports are offered each term for students, faculty and staff and are open to both men and women desiring personal involvement with sport on a non-varsity level. In addition to men's and women's competition, co-recreational activities offer a unique quality of joint participation in sport which promotes enjoyment of activity and fosters comradery between men and women within a competitive sport program.

A variety of leagues including fraternity, sorority, residence halls and independent and the availability of play-off or non-playoff leagues add to the multiplicity of choices afforded the MSU student in the IM sport program.

The intramural professional staff schedules and coordinates the use of many facilities, playing fields and equipment necessary for successfully administrating 29 team and individual sports involving approximately 2375 teams and 30,000 participations. Facilities involved in programming include the IM Sports-Circle, IM-Sports West, and IM Sports-East Buildings, Demonstration Hall, Jenison Fieldhouse, Munn Ice Arena, 10 lighted outdoor fields, indoor track and 40 outdoor tennis courts.

ACTIVITIES

Fall term competitive activities for students include Touch Football, Volleyball, Floor Hockey, Soccer, Ultimate Frisbee, Badminton, Table Tennis, Tennis and Racquetball. Winter term finds Basketball, Innertube Water Polo, Team Table Tennis, Swim Meets, Indoor Soccer, Wallyball and Wrestling. Spring term sports include Softball, Volleyball, Ice Hockey, Indoor Soccer, Tennis, Golf, and Track and Field. Summer term activities are Softball, Sand Volleyball, Tennis, Golf and 3 on 3 Basketball.

RECREATIONAL TRENDS AND ISSUES

As the society and world confronts and grapples with an ever changing array of issues so too does the world of sport and recreation deal with changing interests, behaviors and circumstances. The Intramural Sports and Recreative Services staff keeps constantly aware of national recreational trends as well as MSU's internal priorities and is continually evaluating programs and procedures in order to keep abreast with students' informal and competitive needs and desires. Several issues have been identified recently by the staff and are receiving particular emphasis at this time. Other areas of concern are continually being monitored and on-going attention delivered.

Recreational programming has kept up with and reflects the change of diversity campus wide. A relatively new yet ongoing focus has been to provide activities for the physically challenged and international campus populations. The department is committed to expanding our capabilities to serve the physically challenged, and through the efforts of our newly hired Intramural Coordinator we have seen increased opportunity and programming for our physically challenged participants. The International Friendship Games encourage recreational participation, competition and interaction between all students, majority and minority, and particularly focus on our diverse international populations. Additionally, increased informal times have been designated for badminton, volleyball, table tennis and soccer in order to meet the needs of MSU's community.

Intramural Sports continue to be extremely popular with a large segment of students; however, fitness and safety issues have become important to students as well. Through evaluation and discussion the Intramural Department has responded to these shifts in needs and desires by: increasing informal time as well as equipment for the weight and exercise fitness rooms; developing "early bird" sessions for aerobics and water aerobics; implementing a Self Defense for Women program for all MSU community members; installing an alarmed security system at the IM Sports West; adding emergency telephone and other security measures in the women's locker room and student monitors to the IM Sports Circle building.

Computer programs have expanded the capabilities of team scheduling. We are continually striving to provide the best possible schedules to the participant enhancing participation, while at the same time reducing staff time devoted to scheduling tasks during a very hectic week. Increased computer use has also allowed more efficient payroll and equipment management procedures for the entire staff.

Alcohol and drug abuse is another issue that concerns staff, particularly those dealing with the competitive sport programs. Discussions regarding this issue are held at team managers meetings and officials clinics with follow-up on the fields and courts by our sport supervisors and professional staff.

Value education is an issue that is also an important priority. The competitive arena provides an excellent setting for students to realize the responsibility for individual actions, to develop an appreciation for commonality of purpose while accepting difference in interests and skills and to express "good sportsmanship" on and off the field. These are all departmental goals which are discussed and stressed at team managers meetings, by officials and supervisors on the field and by staff at one-to-one sessions. The Intramural Sports and Recreative Services staff attends to the need of every student to have the opportunity to compete in a safe, fair and enjoyable environment in which each person is encouraged to participate to the best of his/her ability.

SPORTS CLUB PROGRAM

PURPOSE AND OBJECTIVES

The Intramural Sports and Recreative Services staff is dedicated in spirit and intent to the responsibility of serving all students, faculty and staff. The Intramural Sports and Recreative Services Department, being service oriented, strives to provide a wide range of varied activities that are safe, healthy and stimulating, and open to all in an atmosphere that is warm and friendly.

SCOPE

In a number of instances students have interest or skill in sports not included in the Intercollegiate Athletic Program at Michigan State University. When possible, this interest may be assisted by the utilization of fields, rooms or areas. To aid those students with initiative, interest, or skill in the various sports, the department attempts to provide the assistance noted, and in some cases, it is possible to provide limited funds, equipment or other facilities in conjunction with efforts and funds by the student groups themselves.

ACTIVITIES

Some forty clubs involving over five thousand individuals (students, faculty and staff) have been established both on and off campus. Skilled students and faculty share their sports expertise and experiences with other students who have had little or no exposure to the various activities ranging from sailing to karate. Club members have the opportunity to receive instruction from beginner levels to instruction for highly competitive, perfected levels. Participation in the clubs requires that the members act and relate as adult persons, exercise decisions, and be able to develop honest and mature relationships. The club participation can be a purely recreative experience in motive or an experience in perfecting a sports skill which enables the participants to compete in State, Regional or National competitions.

Individual participants have qualified and participated in the Pan American and Olympic games from such clubs as Crew, Judo, Weight Lifting, and Cycling. These are tremendous achievements, but yet the greatest contribution of our Sports Club Program is the help and opportunities given to students so they can learn and establish lifelong skills and interests.

SPORTS CLUBS:

Alpine Ski Team
Aikido Yoshinki
American Tae Kwan Do
Archery
Badminton
Body Building
Bowling
Creative Anachronism
Crew (men)
Crew (women)
Cycling
Fencing (women)
Frisbee (men)
Frisbee (women)
Green Splash
Gymnastics
Japan Karate
Judo
Kendo
Kung Fu & Tai Chi
MSU Karate
Orchesis
Original Okinawa Karate
Outing
Paddleball
Pom-Pon (MSU Motion)
Promenaders
Rugby (men)
Rugby (women)
Sailing
Scuba
Snowboard Club
Soaring Club
Spartan Ski Club
Tae Kwondo Karate
Tai Chi
Tang Soo Do Moo Duk Kwan Karate
Volleyball
Water Polo
Water Ski
Weightlifting
Yoga

ACTIVITIES RECEIVING PARTICULAR EMPHASIS

The Sports Club Program is available to both men and women students. During the past few years, sports participation by women students has increased significantly, particularly in sports which traditionally had been dominated by men. The Women's Crew Team is involved in competitions throughout the Midwest, while the Pom Pon Team (MSU Motion) competes in National competitions. Women students are involved in teaching and coaching sports skills, competing in national and regional meets and the organization and administration of clubs.

The program provides opportunities for all minority, all majority, and all handicapper students regardless of their skill level or knowledge of the sport. In the Clubs Sports experience, students have the opportunities to realize potential and talents, while they try to perfect and enjoy them.

The Sports Club Office is located in room 231 Intramural Sports-West. Students, faculty and staff are welcome to come in and obtain further information about the various clubs.

EXERCISE/FITNESS PROGRAM STATEMENT

PURPOSE

All intramural facilities, programs and services are dedicated to the promotion of a healthy fitness lifestyle for all students, faculty and staff in the MSU community. Daily workout sessions make it possible for an individual to begin, continue and reach excellence in maintaining their desired level of fitness. Each person can select their preferred fitness activity from the innumerable offerings such as: fitness assessment, recommended muscle group exercises which emphasize strength, endurance, flexibility and cardio-respiratory fitness.

SCOPE

In each intramural building (East, West, Circle and Jenison) facilities for fitness education and workouts are available. Participants have the opportunity to take advantage of the following programs/facilities:

Exercise/Fitness Program

- In the Circle, West and East buildings (7 days a week) the various programs feature Nautilus, free weights, stationary bikes, rowing machines, climbing and stepping machines, recumbant exercise bikes and stretching mats. The variety in equipment provides a first class workout for all participants.
- These programs provide drop-in opportunities as well as beginner classes.

Water Aerobics

- Available for a nominal fee and has limited enrollment, classes are generally structured as a formal workout which includes a warm-up, aerobic workout, and cool-down.
- Benefits of program are less stress on ankles and knees.

Aerobic Workouts (Land)

- Workout sessions are scheduled five days a week - early bird, noon hour and 5:00 p.m. These workouts are drop-in and very well attended. Each participant has the chance for optimum workout flexibility, muscular endurance and cardiovascular fitness. Each session includes high and low impact aerobics.

Lap Swimming

- Daily pool schedules permit length swimming as a major fitness activity. Length swimmers can daily achieve their cardio-respiratory fitness. Each swimmer can determine their own minimum/maximum distance and speed. Many swimmers belong to the American Red Cross Swim and Stay Fit Club.

Running

- Runners have indoor and outdoor areas for their distance and lap running. Individual runners testify to the value of running and cardio-respiratory fitness.

Locations

- Circle Pool
- Room 118 of Intramural Sports Circle
- West IM Pool Indoor and Outdoor
- West IM Free Weight Room - Room 152
- Jenison Fieldhouse Pool
- Intramural Sports East Building

Intramural Sports programs and services for fitness acknowledges the support and cooperation of Physical Education and Exercise Science and Olin Health Center in promoting physical fitness in the campus community.

APPENDIX B

UCRIHS Approval Letter

MICHIGAN STATE
UNIVERSITY

January 19, 1995

TO: Ahmad Alfadhil
P.O. Box 4165
E. Lansing, MI 48826

RE: IRB#: 95-009
TITLE: COLLEGE STUDENTS' PERCEPTION OF CONSTRAINTS TO PARTICIPATION IN RECREATIONAL SPORTS ACTIVITIES
REVISION REQUESTED: N/A
CATEGORY: 1-C
APPROVAL DATE: 01/19/95

The University Committee on Research Involving Human Subjects'(UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project including any revision listed above.

RENEWAL: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/ CHANGES: Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517)355-2180 or FAX (517)336-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:pjm

cc: James Bristor

OFFICE OF
RESEARCH
AND
GRADUATE
STUDIES

University Committee on Research Involving Human Subjects (UCRIHS)
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APPENDIX C

Constraints on Participation in Recreational Sports Activities Questionnaire

Constraints on Participation in Recreational Sports Activities Questionnaire

YOUR PARTICIPATION IN THIS STUDY IS GREATLY APPRECIATED!

Ahmad AlFadhil
Ph.D. Candidate, Michigan State University
Department of Park, Recreation, and Tourism Resources

Dear Colleague,

Physical recreation services are being offered in our community (Michigan State University) and the surrounding area for the purpose of providing an equal opportunity for men and women to participate voluntarily in desired recreational sports activities. Unfortunately, very little information is available regarding the factors preventing people from participating. In order for planners and providers to create greater opportunities for all to participate, it is necessary to determine what factors inhibit or limit participation in recreational sports activities.

You have been randomly selected from currently enrolled MSU students to voluntarily participate in this survey. Your response is extremely important regardless of whether or not you are currently participating in recreational sports activities. Your accurate completion and return of this questionnaire is greatly appreciated.

As a participant in this study, you are assured that all information you provide will be kept in strictest confidence and that you shall remain anonymous in any report of the study findings. If you have any concerns or questions regarding this study, please contact the investigator by writing to the return address on the envelope or by calling 517-336-9998.

Thank you for your participation. If you have participated in the pilot study, please write "Pilot" on the front cover.

Ahmad AlFadhil
Ph.D. candidate, Michigan State University
Department of Park, Recreation and Tourism Resources

After completing this questionnaire, please return it in the enclosed self-addressed stamped envelope to: Ahmad AlFadhil, 201 IM Sports West, Michigan State University, East Lansing, Michigan 48824.

Constraints on Participation Questionnaire
Section A: Background Questions

Questions in this section provide general personal information which is used to describe the study sample and to analyze and interpret the data. Please mark an X or fill in the appropriate space provided.

1. Gender _____ A. Female _____ B. Male

2. Age ____ years

3. What is your marital status?
   _____ single
   _____ married
   _____ separated
   _____ divorced
   _____ other, please specify _____

4. How many children do you have?
   _____ No children
   _____ One child
   _____ Two children
   _____ Three or more children

5. Major _____ Undecided _____

6. Education level: _____ A. Graduate
   _____ B. Undergraduate: _____ 1. Freshman
   _____ 2. Sophomore
   _____ 3. Junior
   _____ 4. Senior

7. Place of residence: _____ A. On-campus
   _____ B. Off-campus

8. Are you an American citizen? _____ Yes _____ No

9. Recreational sports activities consist of any cooperative/competitive physical activities and exercises participated in voluntarily, such as informal, intramural, extramural, and sport clubs activities provided by the Department of Intramural Sports and Recreative Services at MSU, such as aerobics, swimming, weightlifting, etc.

   Over the last two semesters (Fall 1994 and Spring 1995) did you participate regularly (at least twice a week) for a period of three or more months in a recreational sports activity?

   YES _____ NO _____

Please respond to questions in Section B, pages 2 & 3

Please respond to questions in Section C, page 4, 5 & 6

Please respond to this section only if you have participated regularly (at least twice a week) for a period of three or more months in a recreational sports activity.

Section B

1. What recreational sports activities (RSA) did you participate in most often during the last two semesters? Please list.

   _____

   _____

2. Where do you usually participate? _____ on campus _____ off campus

3. How many times per week did you participate in recreational sports activities during last semester? _____

4. On average, how much time do you spend per participation session? (Hours/minutes) _____

5. How satisfied are you with your current rate of participation in recreational sports activities? Please circle one:

Very Satisfied	Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	Very Unsatisfied

6. Do you wish to increase your participation more than you do now:

   YES _____ NO _____ (if no, thank you for participating. Please mail the questionnaire to the return address)

If you wish to increase your participation what keeps you from doing so? Please indicate your agreement or disagreement (SA = strongly agree, A = agree, N = neutral, D = disagree, and SD = strongly disagree) with each reason by placing and X in the appropriate box:

Some of the reasons that keep me from increasing my participation are:	SA	A	N	D	SD
7. Lack of time because of school, work, or family obligations					
8. Lack of time because of other leisure activities					
9. Low energy					
10. Lack of necessary skills					
11. Health problems					
12. Fear of injury					
13. Lack of co-participants					
14. Facilities are not available					
15. Facilities are too crowded					
16. Social/cultural norms restrict my participation					
17. Additional activities are not appropriate for my gender					
18. Lack of money					

19. None of the above reasons best describe why I am not able to increase my participation. The reason I don't increase my participation in physical recreation activities is:

_____

_____

_____

_____

THANK YOU FOR TAKING THE TIME AND EFFORT TO PARTICIPATE. PLEASE MAIL THE QUESTIONNAIRE TO THE RETURN ADDRESS (LISTED ON THE TRANSMITTAL LETTER) IN THE STAMPED SELF-ADDRESSED ENVELOPE.

Please respond to this section only if you did not participate regularly (at least twice a week) for a period of three or more months over the last two semesters (Fall 1994 and Spring 1995).

Section C

Please read the following questions and mark the appropriate answer by placing an X in the space provided.

1. Have you ever participated on a regular basis in recreational sports activities voluntarily during your

   A. High school years YES _____ NO _____
   B. College years YES _____ NO _____
   C. MSU years YES _____ NO _____

2. Are there any recreational sports activities that you would like to participate in/start doing regularly?

   YES _____ NO _____

   If YES please specify these activities:

   _____

   _____

3. How interested are you in participating regularly (at least twice a week) in a recreational sport activity of your choice? Please circle one:

Extremely interested	Very interested	Somewhat interested	Not very interested	Not interested at all

Now read the following statements and indicate your agreement or disagreement (SA = strongly agree, A = agree, N = neutral, D = disagree, and SD = strongly disagree) by placing an X in the appropriate box.

Some of my reasons for not participating in recreational sports activities are:	SA	A	N	D	SD
4. I am too shy to participate					
5. I feel uncomfortable about participating					
6. Participation makes me self conscious					
7. My friends don't like recreational sports activities					
8. Social/cultural norms restrict me from participating					
9. Available activities are inappropriate for my gender					
10. Lack of physical abilities					
11. I just don't have the will to participate					
12. In the past I didn't enjoy recreational sports activities experiences					
13. I don't need recreational sports activities					
14. Inappropriate social environment					
15. Activities are dominated by specific gender					
16. Activities do not meet family and/or friends' expectations					
17. No one to participate with					
18. Friends can't be persuaded to participate					
19. My friends are always too busy to participate with me					
20. Fear of violence					
21. My friends' lack of proper skills					

(SA = strongly agree, A = agree, N = neutral, D = disagree, and SD = strongly disagree)

Some of my reasons for not participating in recreational sports activities are:	SA	A	N	D	SD
22. Lack of family and/or friends' support					
23. Facilities are too crowded					
24. Lack of transportation					
25. Parking availability/convenience					
26. Lack of time because of work, school, family obligations					
27. Lack of time because of other leisure activities					
28. Inability to manage personal time					
29. I do not know what is available					
30. Inappropriate activity scheduling					
31. Current conduct of recreational sports activities is too competitive for me					
32. Fear of failure					
33. I don't have money for needed equipment/fees					

34. None of the above reasons best describe why I don't participate in recreational sports activities. The reason I don't participate in RSA is:

_____

_____

_____

THANK YOU FOR TAKING THE TIME AND EFFORT TO PARTICIPATE. PLEASE MAIL THE QUESTIONNAIRE TO THE RETURN ADDRESS (LISTED ON THE TRANSMITTAL LETTER) IN THE STAMPED SELF-ADDRESSED ENVELOPE.

APPENDIX D

Follow Up Letter

Follow Up Letter

Dear Colleague:

Several days ago you were sent a survey questionnaire on MSU students' perception of constraints on participation in recreational sports activities. The survey represents an important aspect of non-academic life at MSU, and your completion and return of the questionnaire is extremely important to this study. If you have already returned the questionnaire, please accept our thanks and good luck in your studies. However, if you have not done so yet, please take a few minutes to complete and mail the questionnaire? Your cooperation is essential for this research. If for some reason you did not receive a copy, have misplaced or lost it, please feel free to call 336-9998 and one will be mailed to you. You can pick up a copy from Room 201 IM Sports West, MSU if you prefer. Your cooperation is highly encouraged and very much appreciated. Thank you.

Sincerely,

Ahmad Alfadhil
Ph.D. candidate, Michigan State University
Department of Park, Recreation and Tourism Resources