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**THE CONSTRAINT NEGOTIATION PROCESS AMONG FEMALE HUNTERS: THE
ROLE OF SELF-EFFICACY, MOTIVATIONS, AND SOCIAL SUPPORT**

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and

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by

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ABSTRACT

The benefits of hunting for natural resource management are well documented in the literature. There has been a steady decline in hunting participation over the past decades and it is increasingly important for natural resource managers to develop innovative ways to recruit and retain hunters. One potential approach is by understanding females who have seen an upward trend in hunting participation. This study examined female hunters and factors that contribute to hunting participation including constraints, negotiation strategies, motivations, social support, and self-efficacy. Data for this study were collected using a mail survey of Oregon big game hunters. The first chapter provides an introduction and conceptual framework for the study. Results are then presented in three distinct chapters, and summarized in chapter 5.

Chapter 2 examines a typology of female hunters and how they differ across constraint and negotiation strategies. Four types of hunters emerged and included the less-engaged hunter, family oriented hunter, social-relax hunter, and the all around enthusiast hunter. Significant differences existed among the types of hunters on both constraints and negotiation strategies.

Chapter 3 compares male and female hunters across constraints, negotiation strategies, motivations, social support, and self efficacy. A series of tests were conducted to understand the relationship between key variables and hunting participation. There were limited differences between females and males. Results suggest constraints were not a predictor of participation. Additionally, motivations, social support, and self-efficacy had an indirect influence on hunting participation.

Chapter 4 focuses on expanding constraint theory by incorporating self-efficacy into the constraint negotiation process. Findings suggest constraints are fully mitigated by negotiation

strategies and are not a predictor of participation. Results indicate self-efficacy is a predictor of participation along with negotiation strategies and motivations.

Overall findings from the study indicate females are not as constrained in hunting as previously thought. Females have found ways to negotiate through constraints and are motivated to participate. Additionally, females are confident in their hunting and feel they have the social support from family and friends. Future research is needed to examine those females who are new to hunting or are thinking about starting the activity.

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Chapter 1

Introduction

Hunting participation in the United States is declining (Enck, Decker, & Brown, 2000; Poudyal, Cho, & Bowker, 2008). Hunting is essential for conservation, funding to management agencies, and in preserving culture. If hunting is to remain relevant, wildlife managers, conservation agencies, and natural resource researchers will need to find new ways to recruit and retain hunters. One potential group for recruitment, which has often been overlooked, is females (Mcfarlane, Watson, & Boxall, 2003). Women make-up over 50% of the United States population and yet only one out of every ten hunters is a female (Duda, 2001; U.S. Fish and Wildlife Service, 2005). To understand the extent to which women can play a role in hunting, it will be important to understand why women hunt, what constrains women from participating, and what benefits women receive from the activity. These factors can help resource managers and researchers develop programs to engage more women in hunting.

Although there is disagreement as to the extent to which hunting is declining, the fact is there are less new hunters and fewer days hunters spend in the field (Enck et al., 2000; Zinn, 2004). According to Enck et al. (2000) an indicator of hunting trends is the number of days spent hunting small game. Often new hunters and youth focus attention on small game because there are more days in the season and more opportunities to shoot. Statistics indicate there has been a 40% reduction in days out for small game (Enck et al., 2000). Enck et al. (2000) suggest this is due to fewer hunters and less youth involved in hunting.

Hunting has implications for conservation agencies that receive a large portion of their budget from license sales revenue (Mcfarlane et al., 2003; Poudyal et al., 2008). A reduction in license sales could mean a reduction in conservation efforts. Hunting also serves as a way to

manage game species. Deer populations, nuisance animals, and other game are managed to some degree by hunters' harvests. A reduction in hunters could mean an increase in human-game conflict, especially in rural-urban interfaces (Poudyal et al., 2008).

Often conservation funding and game management are the most discussed benefits of hunting. Organ and Fritzell (2000) suggest communicating cultural, economic, and recreational benefits of hunting to help gain attention of non-hunters. Hunters and hunting advocates have deep roots in American history and are part of the American culture. Hunters stood beside Theodore Roosevelt and Gifford Pinchot to form conservation legislation in the United States and hunters continue to be advocates for conservation (Organ & Fritzell, 2000). A decline in hunters may mean less political support for conservation activities in the US.

Hunting is a \$20 billion dollar industry comprised of license sales, transportation, equipment, guides, and accommodations. A decline in hunting would mean a loss in revenue for small businesses (guide services, mom and pop outfitters), large scale chains and specialty retailers (such as Cabela's, Bass Pro Shops, etc.), and loss in tourism to rural areas. Conservation agencies should continue to communicate the economic as well as social and recreation benefits to the broader public in order to gain support.

Given the importance of hunting, it is beneficial for conservation agencies to explore new ways to recruit and retain hunters. Women have seen steady participation rates in hunting (US Fish and Wildlife Service, 2006). This should be a hopeful sign to conservation agencies. In order to increase women in hunting, more research is needed on their experiences.

Current research on women and hunting has focused on constraining factors (Duda, 2001; Thomas & Peterson, 1993). According to Jackson (1997), constraints are "factors that are assumed by researchers and perceived or experienced by individuals to limit the formation of

leisure preferences and to inhibit or prohibit participation and enjoyment of leisure” (p. 461). Crawford and Godbey (1987) suggest constraints fall into three categories: intrapersonal, interpersonal, and structural. Intrapersonal constraints are psychological within the individual, interpersonal constraints interaction between individuals, and structural constraints intervene between preference and participation.

Several studies on women and hunting have examined constraints to participation. Findings from these studies suggest there is an intrapersonal constraint of fear which prevents women from participating (Duda, 2001, Thomas & Peterson, 1993). The interpersonal constraint of not having anyone to go with also was cited in several studies. Additionally, women have indicated no time to hunt and other obligations as reasons for not participating as often as they would like (Duda, 2001; Martin & Miller, 2008; National Wild Turkey Federation, 2005; Thomas & Peterson, 1993). Some structural constraints noted by Thomas and Peterson (1993) include not having appropriate fitting gear and lack of information.

The structural constraints facing females may be simpler to categorize and understand; however it is the interpersonal and intrapersonal constraints that are complex. Through the use of self-efficacy theory, insight can be gained about the intrapersonal constraints of females in hunting and what factors shape these constraints. Self-efficacy is a social-cognitive approach to understanding and explaining behaviors, specifically behaviors associated with beliefs held by the individual (Bandura, 1977). Individuals with high levels of efficacy will be more likely to cope with constraints, while those who have doubts may reduce participation in activities (Bandura, 1977). Self-efficacy is a way to gain deeper understanding about the personal fears and anxieties females may face when participating in hunting.

Another approach to understanding constraints to females in hunting is by examining social support. According to Cutrona (1980), social support is the benefits or assets that may be gained through interactions with others. Researchers have found that determinants of outdoor recreation participation are linked to social relationships and social groups (Field & O'Leary, 1973). In hunting activities, those who receive support for hunting continue to hunt in the future (Enck et al., 2000). This suggests social support may influence interpersonal constraints females have in hunting participation.

Constraints are often thought to limit participation in activities. However, in some instances constraints have not necessarily reduced leisure participation (Crawford & Godbey, 1993; Hubbard & Mannell, 2001; Jackson, 1997). The concept of constraint negotiation has been introduced as a way individuals continue or increase participation even in the face of constraints. The hunting literature has focused mainly on constraints that prevent participation in the activity. Constraint negotiation can extend previous research and provide insight into how females overcome constraints to hunting participation. An aspect of the constraint negotiation model which has been shown to be integral is an individual's motivation to participate in recreation activities (Hubbard & Mannell, 2001; Son, Mowen & Kerstetter, 2008). Women who are highly motivated to hunt may be more likely to overcome constraints through the use of negotiation strategies. By examining constraint negotiation and motivations, factors that theoretically impact participation can be addressed and used for future management strategies.

Given the need to increase the number of hunters in the United States, it will be important for natural resource managers and researchers to understand potential user groups that have had minimal participation in the past. Understanding the female's constraints to hunting may help increase the number of new hunting participants, help strengthen hunting programs, and aide in

the design of new hunting initiatives. A deeper understanding of self-efficacy, social support, and constraint negotiation is needed to provide insight in the larger issue of hunting participation.

Literature Review

Currently, only a handful of researchers have examined women and consumptive recreation. These researchers have focused on women who were involved with hunting related organizations or who are hunting license holders. Their results provide a foundation for understanding women who hunt as well as the constraints they face as females in a male dominated activity.

Constraints

Scholarship in leisure research has focused on understanding constraints of women's leisure participation. Shaw (1994) explains that women's leisure is neither inherently positive nor negative. Women can enjoy activities and be constrained by them as well. Certain activities may reinforce gender roles and ideologies, and women may feel constrained from doing the activities they truly desire (Henderson, 1996; Shaw, 1994). Hunting is an activity that has several layers of constraints for women that need to be explored.

One approach to understanding constraints in hunting is by using Crawford and Godbey's (1987) hierarchical model of constraints to leisure participation. Their hierarchical model demonstrates how "restraining forces" were not insurmountable; rather the constraints had influence over preferences and affected participation in activities. Crawford and Godbey (1987) labeled the components of the hierarchy as intrapersonal, interpersonal, and structural constraints.

Intrapersonal constraints are those internal psychological factors that prevent participation. Examples can include fear, stress, anxiety, and subjective evaluations of

appropriateness of leisure activities (Crawford & Godbey, 1987; Jones, 2007). Interpersonal constraints are the interactions and relationships between individuals which prevent or decrease participation in activities. Examples include not having someone to participate in an activity with and spousal relations (Crawford & Godbey, 1987). Structural constraints are factors which intervene between the leisure preference and participation. Examples include financial resources, work and school obligations, and available information (Crawford & Godbey, 1987).

Crawford, Jackson, and Godbey (1991) expanded the hierarchy by incorporating the three types of constraints into a sequential model. The model explains an individual's ability to overcome intrapersonal, interpersonal, and structural constraints. Crawford et al. (1991) supported Crawford and Godbey's (1987) notion that constraints are not insurmountable and suggested individuals may use strategies to negotiate through the constraints. The development of the constraints model allowed for applied research to explore the factors which may reduce participation for women in hunting activities.

Several researchers have examined constraints females face when participating in hunting. Thomas and Peterson (1993) conducted a workshop on constraints females encounter when participating in hunting and angling. A direct result of this workshop was the creation of the Becoming an Outdoors-Women program which has been adopted by many recreation resource agencies. A major constraint identified was fear of participating in the activity, which is an intrapersonal constraint. According to the authors, the fear was based in lack of training in the sport, fear of not fitting in, and fear of their own ability. Another intrapersonal constraint identified was social pressures from others who may believe hunting is a male only sport. Some of the interpersonal constraints identified were lack of female role models and not being raised in

a hunting or angling household. Of the structural constraints, lack of suitable equipment and lack of information ranked high for women.

Duda (2001) also examined constraints facing female hunters; the results were similar to Thomas and Peterson's (1993). Duda (2001) found the intrapersonal constraint of fear to be a factor limiting hunting participation for women. Some fears included perceptions of causing harm to animals, fear of poor behavior from other hunters, and fear of negative opinions by other hunters. An interpersonal constraint noted by Duda (2001) was not having a social support system to facilitate hunting for women and fear of hunting alone.

In 2005 the National Wild Turkey Federation's Women in the Outdoors conducted a study of women who participate in their programs along with a sample of women from the general population. The study examined women's outdoor recreation pursuits, constraints, benefits, and other outdoor recreation related variables. Of the constraints items, all women (members and non-members) indicated lack of time as the most constraining factor keeping them from hunting. All respondents indicated work obligations and family obligations as the greatest reason for not having enough time to hunt.

Results of a thesis by Jones (2007) indicated women who participate in the Becoming an Outdoors-Woman programs were less likely to feel constrained than those who did not participate. This suggests some constraints may be alleviated when there is a program to help women participate in hunting. Martin and Miller (2008) also examined participants in the Illinois Becoming an Outdoors-Woman program. Results indicated that having no one to go with was the most constraining factor to hunting participation. Other constraints included lack of time, need for more training, and development of skills. Additionally, the authors suggest

participation in a program like Becoming an Outdoors-Woman may help alleviate the constraints of lack of skills and not having someone to go with.

Self-Efficacy

A social-cognitive approach to understanding recreation constraints is through the use of Bandura's self-efficacy theory (Loucks-Atkinson & Mannell, 2007). Perceived self-efficacy can influence the effort used to overcome challenges or barriers (Bandura, 1977). According to Bandura (1986), "efficacy is theorized to influence motivation, effect, and consequently behavior" (in Loucks-Atkinson & Mannell, 2007, p.20). The amount of self-efficacy an individual has can affect his or her ability to overcome constraints, specifically intrapersonal constraints which may result in a reduction of recreation participation.

According to Bandura (1997), "efficacy is a generative capability in which cognitive, social, emotional, and behavioral sub skills must be organized and effectively orchestrated to serve innumerable purposes" (pp. 36-37). Bandura believes there is a certain set of sub skills an individual possesses and it is the ability to use those sub skills that helps determine ones self-efficacy. Self-efficacy is not concerned with how many skills an individual has; rather it deals with the ability to use those skills in stressful situations (Bandura, 1997).

There has been considerable attention on self-efficacy in the area of recreation and leisure studies. Articles have addressed issues related to physical activity and health (Loucks-Atkinson & Mannell; 2007; Rodgers & Sullivan, 2007); outdoor leadership (Propst & Koesler, 1998); and adventure education (Sibthorp, 2003). Although areas of recreation have been addressed, little attention has been given to self-efficacy and women and hunting (Jones, 2007).

In a study of physically active adults with fibromyalgia syndrome, constraints, negotiation, and self-efficacy were measured (Loucks-Atkinson & Mannell, 2007). Results

suggest those with high self-efficacy are more likely to overcome obstacles and participate in activities. Findings also suggest there is an interaction between constraint negotiation and self-efficacy, which determines an individual's ability to successfully overcome obstacles to leisure participation. "Individuals who were more confident in their ability to successfully use resources to overcome constraints had higher levels of motivation to participate" (Loucks-Atkinson & Mannell, 2007, p.33). This suggests individuals with high self-efficacy may participate more in recreation activities.

Jones (2007) examined women who participated in the program Becoming an Outdoors-Woman (BOW). Results indicate women who participate in BOW are more likely to have high self-efficacy and fewer perceived constraints than those who did not participate. Additionally, "women identified themselves as more avid consumers and participants of outdoor recreation than their non-attende counterparts" (Jones, 2006, p.81). Jones suggests BOW settings may help enrich and empower women in their outdoor recreation participation. Additionally, women who had high self-efficacy also had high participation in outdoor recreation activities.

There is support throughout the literature suggesting self-efficacy is linked to overcoming constraints and participation in activities. The same pattern may exist among females who engage in traditional male-dominated recreation activities such as hunting. Women who have high levels of self-efficacy may be more likely to overcome constraints and increase their participation in hunting.

Social Support

Females face different challenges than males when participating in recreation activities (Henderson, 1994; Shaw1994). Research indicates women may be constrained by their role as a caregiver within the family unit (Shaw, 1994). Gender roles within families can constrain

women from feeling they have the freedom or entitlement to participate in recreation and leisure activities (Shaw, 1994). Although it is documented that women are constrained by social groups like the family, these same social groups can enable recreation activities for women. The social support from families and friends can be a predictor of outdoor recreation participation behavior (Field & O'Leary, 1973), but it is unclear whether this level of support would predict participation in hunting.

The concept of social support has been used widely in the area of recreation and leisure. Often it has been used to examine physical activity and health (Brown et al., 2001; Hibler & Shinew, 2002); leisure involvement (Kyle & Chick, 2004; Voorhees, 2007); and outdoor recreation (Burch, 1969; Enck et al. 2000; Field & O'Leary, 1973; Voorhes, 2007). The results for these studies suggest the more social support individuals have, the more likely they are to participate in the activity.

Many researchers have examined social support; however, there are inconsistencies in definitions and measurement. According to Shumaker and Hill (1991), few people can agree on a definition of social support and the measures which are most suitable. Although there are inconsistencies, basic components of social support can be identified. According to Cohen and Syme (1985) there are two types of social support, structure and function. Structure is the network of people used to emotionally support the person and can include giving praise or words of encouragement. Function support are the resources provided by people and can include driving friends to recreation activities or teaching them skills. Both structure and function include aspects related to existence of support, amount of support used, and perceived adequacy of support (Shumaker & Hill, 1991). There is an interpersonal process associated with social support, which suggests an exchange between individuals.

Despite issues regarding definition and measurement, results continue to indicate individuals with social support networks are more likely to participate in recreation. Field and O’Leary’s (1973) early work on social groups suggests a determinant of outdoor recreation participation is linked to social relationships. The authors examined social groups in a water recreation setting and found different activities dictate the social composition of groups. Individuals who participated in beach and swimming activities were comprised of family groups, while fishing was mostly groups of friends. This suggests activities can influence the compositions of social groups and social support in outdoor recreation.

In a study by Brown et al. (2001) perceived constraints and social support for active leisure among mothers with children were examined to see if these women with children were able to find time for physically active leisure. Results indicated women who had some degree of social support were able to find time for themselves to be physically active (Brown et al., 2001). A majority of the support for active leisure was given by the partners in the relationship rather than other family and friends. Although this was true in a majority of the study population, less than half were able to identify tangible forms of the support from their partner. Findings suggest even though partners are providing encouragement, there is a difference in the type of support that is given to help overcome constraints.

There have been several studies which have examined social support in the activity of hunting. In a study conducted by Enck et al. (2000) results indicated there was both direct and indirect social support. Often, direct support was provided by opportunities to learn from each other and creating companionship to continue to hunt. Indirect methods of support include helping in scouting trips, visiting hunting camps, and eating game together.

Voorhees (2007) expanded on the concept of social support in hunting by conducting qualitative interviews with hunters. Results indicated that social support from hunting partners resulted in access to new hunting areas, motivation, and camaraderie. According to Voorhees (2007), there was direct support from hunters who indicated they would hunt less if it were not for their hunting partners. There was less evidence of indirect support influencing participation in hunting. Respondents did not feel they would decrease their participation if they could not share stories of their hunts or if they did not receive encouragement.

Voorhees (2007) also examined social support and hunting in a survey of hunters. Demographic variables, leisure involvement, and social support were used to predict hunting participation. There was less evidence for social support than in previous studies. Results indicated the interaction effect from social support and involvement predicted participation, but social support alone did not. Voorhees suggests social support may need to be examined with constraints to understand their combined affect on hunting participation.

The literature suggests social support has an influence on recreation participation. Shaw (1994) explains women may be constrained by factors associated with social groups, specifically the family. Although families can be constraining, Brown et al. (2001) suggest when support is given for women's participation in activities, they are more likely to participate. In addition research suggests females face different constraints than males when it comes to recreation participation (Shaw, 1994). Examining constraints and social support together may provide greater insight into what women need to continue or increase their participation in hunting.

Constraint Negotiation and Motivation

Considerable attention has been given to constraints research and the implications for recreation participation. Although constraints inhibit participation, they are not insurmountable.

According to Scott (1991) “leisure constraints are forces within people’s lives that must be successfully negotiated if leisure involvement is to occur” (p. 323). This suggests people may alter their behavior to maintain or increase their involvement in an activity. A component of the constraint negotiation process is the balance of constraints and motivation (Jackson, Crawford, & Godbey, 1993). Motivations are the proactive response to constraints which influence an individual’s ability to utilize negotiation strategies (Jackson et al., 1993). Jackson et al. (1993) refer to this as the “balance proposition” where participation is a complex process that involves motivation, constraints, and negotiation (Loucks-Atkinson & Mannell, 2007). It may not be possible to examine constraint negotiation without understanding motivations for leisure participation.

Jackson et al. (1993) expanded the hierarchical model of leisure constraints by suggesting there was a degree of participation rather than participation vs. non-participation. The authors explain participation is not just the absence of constraints, rather the ability to successfully negotiate through them. Additionally, individuals work through constraints using cognitive and behavioral strategies which facilitate leisure participation. Jackson et al. (1993) proposed a model for constraint negotiation which incorporates constraints and motivations in the negotiation process. This theoretical concept has informed research conducted on the constraint negotiation process.

Jackson and Rucks (1995) explored the concept of constraint negotiation to offer insight into what type of strategies are used to overcome constraints. The study was guided by ideas from Jackson et al. (1993) and helped in the formation of negotiation strategies. Results suggested negotiation strategies are both behavioral and cognitive. The behavioral strategies were most often used and resulted in several types of changes in behavior (i.e. time management,

skill acquisition, personal relationships). Cognitive strategies of “ignoring the problem” or “just putting up with it” were less used. The authors called for further review and scrutiny of the negotiation strategies proposed in the paper.

Hubbard and Mannell (2001) expanded previous research on the constraint negotiation process by testing models to understand the relationship between constraints, negotiation strategies, and motivation. Based on the research from Jackson and Rucks (1995), four negotiation strategy categories were developed including time management, skill acquisition, financial strategies, and interpersonal coordination. They also created a list of motivations was created to test in the constraint negotiation models. Hubbard and Mannell (2001) found the most support for the constraint-effects-mitigation model. This model indicates negotiation strategies mitigate the effects of constraints on overall leisure participation. This suggests even though an individual is faced with constraints, they are still may be able to overcome the perceived constraint and participate in leisure activities. Additional findings lend support for the role of motivation in the constraint negotiation process even though the effect was indirect.

Son, Mowen and Kerstetter (2008) extended Hubbard and Mannell’s (2001) work by partially replicating leisure constraint negotiation models. Their findings did not support Hubbard and Mannell’s effects-mitigation model; rather a dual channel model was supported where negotiation and constraints worked independently of each other to predict participation. Similarities between the two studies included the role of motivation in the constraint negotiation process, supporting Jackson et al.’s (1993) “balance proposition.” Son et al. (2008) found motivation was fully mediated by negotiation to predict participation. Both studies suggest motivation is an integral part of the constraint negotiation process, even if the effects are indirect.

Both Hubbard and Mannell (2001) and Son et al. (2008) suggest future research on leisure constraints and the negotiation process should focus on self-efficacy as an indicator of negotiation success. Loucks-Atkinson and Mannell (2007) examined the role of self-efficacy in the constraint negotiation process. Findings were similar to Hubbard and Mannell (2001) which suggest once constraints are encountered, then negotiation strategies are triggered. Loucks-Atkinson and Mannell (2007) found the negotiation efforts eliminated the negative effects of constraints on participation and suggested support for the role of motivation in the constraint negotiation process and for the “balance” proposition put forth by Jackson et al. (2007).

Additional findings support the use of self-efficacy in the constraint negotiation process. Loucks-Atkinson and Mannell (2007) labeled the term “efficacy-negotiation,” which is the confidence in one’s ability to successfully negotiate through constraints. Findings suggest the more confident individuals are in their ability to negotiate through constraints, the more likely they will be to participate in the activity. Loucks-Atkinson and Mannell (2007) recommend future studies continue to understand the role of negotiation-*efficacy* with different populations and leisure settings. Recommendations were made to examine how negotiation-*efficacy* differs based on the intrapersonal, interpersonal, and structural constraints.

Although there is growing evidence to support constraint negotiation, few studies have focused on the area of women and hunting. Examining the strategies women use to negotiate through constraints to hunting can help managers develop ways to facilitate participation in the future. Understanding constraints, constraint negotiation, and motivation together can provide deeper understanding of the challenges and facilitators women face when participating in hunting.

Hunting Participation

To gain a full understanding of women hunters, participation variables need to be examined along with constraints, negotiation, self-efficacy, social support, and motivations. Hunting participation is a complex variable to measure. Previous research on hunting used single item indicators of participation or relied solely on license sales to predict overall participation (McFarlane et al., 2003; Women in the Outdoors, 2005; U.S. Fish and Wildlife Service, 2006; Voorhees, 2007). Although single items indicators can be useful, they may not represent the extent of involvement in hunting. Concepts from recreation specialization may provide more detail about participation in hunting.

The idea of recreation specialization was presented by Bryan (1977) with the intention of providing a conceptual framework to understand the range of diversity between individuals participating in the same recreational activity. Miller and Graefe (2000) examined specialization in hunting to determine if there were differences in sub-activities based on equipment and game preferences. The authors used four dimensions of specialization including participation, skill, lifestyle, and equipment. Results indicated there were differences in level of specialization among the sub-groups.

Although single item participation variables are part of specialization, the concepts of the construct may target the broader issues related to overall hunting participation. Participation in hunting is more than just days in the field; it is also the preparation, skill development, and lifestyle choices that make up overall participation. Miller and Graefe's (2000) specialization index can be the foundation for understanding total hunting participation for women. Using specialization allows for a more comprehensive understanding of overall hunting participation and is a more reliable outcome variable than just using a single item indicator.

Justification to Examine Constructs

Although there have been several studies addressing the constraints women face in hunting, few studies have extended research to include other factors that may facilitate or reduce participation in the activity. Constraints need to be examined further and more detail is needed. By examining self-efficacy, social support, and the negotiation process, a broader understanding can be attained.

Hubbard and Mannell (2001) suggested incorporating self-efficacy into constraints and negotiation models. Both Loucks-Atkinson and Mannell (2007) and Jones (2007) integrated self-efficacy into their studies; however, self-efficacy was measured differently in both. In Jones' (2007) examination of women in outdoor programs, self-efficacy was measured on a 10-pt Likert scale. Respondents were asked if they felt capable, skilled, or challenged when they participated in outdoor activities. Although these are important feelings to address, they were not modeled after Bandura's (1997) scales of self-efficacy.

Loucks-Atkinson and Mannell (2007) followed Bandura's (1997) idea for measuring self-efficacy and used a "0" to "100" Likert scale. However, the authors did not measure self-efficacy, they measured an individual's self-efficacy in using negotiation strategies. They asked respondents to rate their certainty that they would use a negotiation strategy to overcome a constraint. Results offer a negotiation-efficacy rating rather than a measure of one's own self-efficacy about an activity.

Both studies addressed self-efficacy in the constraint and negotiation process; however, they did not address actual self-efficacy about a specific activity or experience. In this dissertation, I expand on the work of Jones (2007) and Loucks-Atkinson and Mannell (2007) and target self-efficacy about hunting participation. More insight can be gained by treating self-

efficacy and constraint negotiation as separate constructs and measuring them by following Bandura's (1997) approach.

Son et al. (2008) tested and expanded Hubbard and Mannell's (2001) constraint negotiation models. The authors found support for the use of motivation in the constraint negotiation process as an antecedent of negotiation. Loucks-Atkinson and Mannell (2007) also found support for the use of motivation in the constraint and negotiation-efficacy model. Both findings suggest motivation plays a role when understanding how individuals overcome constraints to leisure participation. I measured motivations in the constraint negotiation process to add to the growing support for using this construct in models.

Son et al. (2008) suggest future research focus on contextualizing leisure constraint negotiation in relation to other social cognitive factors. The authors suggest examining social support as a way to understand more about the constraint negotiation process. Voorhees (2007) examined social support among hunters but findings were limited and did not indicate direct affirmation for social support on hunting participation. Voorhees (2007) suggests social support may be better understood when examined with leisure constraints. Although both Son et al. (2007) and Voorhees (2007) examined different constructs, both authors propose examining social support and constraints collectively.

Most research on women and hunting has examined constraints to participation. I extend previous research by incorporating constraint negotiation, motivations, self-efficacy, and social support. Previous research suggests self-efficacy, social support, and motivations may be helpful to understand constraints and the negotiation process. Extending previous research will expand researcher's and manager's understanding of women who participate in hunting and advance the theory on constraints and constraint negotiation.

Study Purpose and Overview

The purpose of this study was to understand female hunters and the constraint negotiation process. This study integrates the variables of constraints, negotiation strategies, self-efficacy, social support, and motivations to understand overall hunting participation. Specifically, this study:

- 1) Examined the different types of female hunters and how they differ on constraints and negotiation strategies;
- 2) Compared male and female hunting participation and the relationship between constraints, negotiation strategies, motivations, self-efficacy, and social support;
- 3) Explored the role of self-efficacy in the constraint negotiation process among males and females.

Data were collected using a 7-page mail back questionnaire that included questions about demographics, hunting season characteristics, and variables of interest. The questionnaire mailing followed a Dillman Total Design Method (2000) with four mailings over a period of 2 months in the summer of 2010. The mailings included a pre-survey letter, full survey mailing, reminder postcard, and second full survey mailing. Of the sample of 1500, 1350 of the addresses were deliverable and included both females and males. This resulted in a total of 392 completed surveys for a response rate of 30%.

All three study objectives were met using the data collected in this study. The following three chapters are designed to address the study objectives and to be stand-alone papers. Together, chapters 2-4 contribute to understanding female hunters and help advance constraint negotiation theory. Chapter two creates a typology of female hunters from Recreation

Experience Preference items (Manfredo, Driver, & Tarrant, 1996). The typologies are used to understand the different types of female hunters that exist and to examine differences across constraints and negotiation items. Chapter three compares male and female hunters to see if differences exist between genders. A series of structural equation models were used to understand the relationship between constraints, negotiation strategies, self-efficacy, social support, motivations, and hunting participation by gender. Chapter four contributes to the theoretical understanding of the constraint negotiation process by integrating the construct of self-efficacy and replicating research by Louks-Atkinson and Mannell (2007). The fifth chapter summarizes the overall study findings and provides theoretical and applied management implications.

Limitations

This study collected cross-sectional data at one point in time. Results could be unique to the specific year and may not accurately represent female hunters over time. Additionally, the longitudinal effect of constraints may not be observed and is often cited as a limitation to constraints research (Mannell, 2005). Research on constraints assumes individuals can determine the factors that influence participation. There may be other constraints that were not identified in the constructs. This study may not capture all social, cultural, and managerial issues that could prevent hunting.

The sample used for this study is also a limitation. This study examined big game hunters who lived in the state of Oregon and did not reflect small game or waterfowl hunters or out of state hunters. Research suggests new and beginning hunters enter the sport through small game (Organ & Fritzell, 2000). Our sample may not represent those new hunters that may be

facing the most constraints. Additionally, the sample was representative by gender and type of big game hunted. Other key variables like age were not accounted for and may yield different results for the variables of interest.

References

- Bandura, A. (2006). *Self-efficacy and Beliefs of Adolescents*. Charlotte, NC: Information Age Publishing.
- Bandura, A. (1997). *Exercise of Control*. Englewood Cliffs, NJ: Prentice-Hill.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Brown, P. R., Brown, W. J., Miller, Y. D., & Hansen, V. (2001). Perceived constraints and social support for active leisure among mothers with young children. *Leisure Sciences*, 23, 131-144.
- Bryan, H. (1977). Leisure value systems and recreational specialization: The case of trout fisherman. *Journal of Leisure Research*, 9(3), 174-187.
- Burch, W. R. Jr. (1969). The social circles of leisure: Competing explanation. *Journal of Leisure Research*, 1, 124-147.
- Covelli, E., Graefe, A, and Burns, R. (2007). A re-examination of constraints negotiation models for forest recreation. Book of Abstracts from the National Recreation and Park Association: 2007 Leisure Research Symposium (pp. 45). Indianapolis, IN.
- Choen, S., & Syme, S. L. (1985). *Social Support and Health*. New York: Academic.
- Crawford, D. W., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences*, 9, 119-127.
- Crutona, C. E. (1986). Behavioral manifestations of social support: A microanalytic investigation. *Journal of Personality and Social Psychology*, 51(1), 201-208.
- Daigle, J. J. (1997). *The sociocultural importance of fur trapping in six northeastern states*. Unpublished doctoral dissertation, University of Massachusetts, Amherst.

- Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York: NY: Wiley.
- Duda, M. D. (2001). The hunting mind: Women and hunting. *North American Hunter*, November, 35-37
- Enck, J. W., Decker, D. J., & Brown, T. L. (2000). Status of hunter recruitment and retention in the United States. *Wildlife Society Bulletin*, 28(4), 817-824.
- Field, D. R., & O'Leary, J. T. (1973). Social groups as a basis for assessing participation in selected water activities. *Journal of Leisure Research*, 5, 16-25.
- Henderson, K. A. (1996). One size doesn't fit all: the meanings of women's leisure. *Journal of Leisure Research*, 28(3), 139-154.
- Hibler, D. K., & Shinew, K. J. (2002). Interracial couples' experience of leisure: A social network approach. *Journal of Leisure Research*, 34(2), 135-156.
- Hubbard, J., & Mannell, R.C. (2001). Testing competing models of the leisure constraints negotiation process in a corporate employee recreation setting. *Leisure Sciences*, 23, 145-163.
- Hudson, S. (2000). The segmentation of potential tourists: Constraint differences between men and women. *Journal of Travel Research*, 38(4), 363-368.
- Jackson, E. L. (1997). In the eye of the beholder: A comment on Samdahl & Jekubovich (1997), "A critique of leisure constraints: Comparative analyses and understandings." *Journal of Leisure Research*, 29, 1-11.
- Jackson, E. L., & Rucks, V. C. (1995). Negotiation of constraints by junior-high and high-school students: An exploratory study. *Journal of Leisure Research*, 27, 85-105.
- Jackson, E. L., Crawford, D. W., & Godbey, G. (1993). Negotiation of leisure constraints. *Leisure Sciences*, 15, 1-11.

- Jones, J. J. (2007). *Impact of "Becoming and Outdoors-Woman" on self-efficacy, constraints and participation in outdoor recreation*. Unpublished master's thesis, Ohio University, Athens.
- Kyle, G. T., & Chick, G. E. (2004). Enduring leisure involvement: The importance of relationships. *Leisure Sciences*, 23, 243, 266.
- Loucks-Atkinson, A., & Mannell, R. (2007). Role of self-efficacy in the constraints negotiation process: The case of individuals with fibromyalgia syndrome. *Leisure Sciences*, 29(1), 19-36.
- Mannell, R. C. (2005). Advancing quantitative research on social cognitive theories of the constraint-negotiation process. In E. L. (Ed.), *Constraints to Leisure* (pp.261-275). State College, PA; Venture Publishing
- Martin, N., & Miller, C. A. (2008). Finding Artemis: Pathways for recruiting and constraints to retaining female hunters. Proceedings of the 2008 Northeastern Recreation Research Symposium (GTR-NRS-P-42, pp. 332-336) Bolton Landing, NY: Newton Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Manfredo, M. J., Driver, B. J., & Tarrant, M. A. (1996). Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. *Journal of Leisure Research*, 28(3), 188-213.
- Mcfarlane, B. L., Watson, D. O., & Boxall, P. C. (2003). Women hunters in Alberta, Canada: Girl power or guys in disguise? *Human Dimensions of Wildlife*, 8, 165-180.
- Miller, C. A., & Graefe, A. R. (2000). Degree and range of specialization across related hunting activities. *Leisure Sciences*, 22, 195-204.

- National Wild Turkey Federation, Women in the Outdoors. Women in the outdoors program: 2005 Survey Results.
- Organ, J. F., & Fritzell, E. K. (2000). Trends in consumptive recreation and the wildlife profession. *Wildlife Society Bulletin*, 28(4), 780-787.
- Poudyal, N., Cho, S. H., & Bowker, J. M. (2008). Demand for resident hunting in the Southeastern United States. *Human Dimensions of Wildlife*, 13, 158-174.
- Propst, D. B. & Koesler, R. A. (1998). Bandura goes outdoors: Role of self-efficacy in the outdoor leadership development process. *Leisure Sciences*, 20, 319-344.
- Rodgers, W. M., & Sullivan, M. J. (2001). Task, coping, and scheduling self-efficacy in relation to frequency of physical activity. *Journal of Applied Social Psychology*, 31(4), 741-753.
- Scott, D. (1991). The problematic nature of participation in contract bridge: A qualitative study of group-related constraints. *Leisure Sciences*, 13, 321-336
- Shaw, S. M. (1994). Gender, leisure, and constraint: Towards a framework for the analysis of women's leisure. *Journal of Leisure Research*, 26(1), 8.
- Shumaker, S. A., & Hill, D. R. (1991). Gender differences in social support and physical health. *Health Psychology*, 10(2), 102-111.
- Sibthorp, J. (2003). An empirical look at Walsh and Golins' adventure education process model: Relationships between antecedent factors, perceptions of characteristics of an adventure education experience, and changes in self-efficacy. *Journal of Leisure Research*, 35(1), 80-106.
- Son, J. S., Kerstetter, D. L., & Mowen, A. J. (2007). Testing alternative leisure constraint models: An extension of Hubbard and Mannell's Study. *Leisure Sciences*, 30, 198-216

Thomas, C. L., & Peterson, T. A. (1993). Becoming an outdoors-woman. *Women in Natural Resources*, 15(3), 16-21.

U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Voorhees, C. S. (2007). *A mixed-method examination of factors related to hunting participation*. Unpublished doctoral dissertation, The Pennsylvania State University, State College.

Zinn, H. C. (2003). Hunting and sociodemographic trends: Older hunters from Pennsylvania and Colorado. *Wildlife Society Bulletin*, 31(4), 1004-1014.

Zinn, H. C., Manfredo, M. J., & Barro, S. C. (2002). Patterns of wildlife value orientations in hunters' families. *Human Dimensions of Wildlife*, 7(3), 147-162.

Chapter 2

Understanding Hunting Constraints and Negotiation Strategies: A Typology of Female

Hunters

Abstract

There is limited research about females and hunting. This paper examines a typology of female hunters and the factors that constrain participation and how females negotiate through constraints. A survey of Oregon hunters was conducted in the summer of 2010 to understand hunting characteristics. A typology of female hunters was created from the sample using experience preference items in a cluster analysis. Four clusters were identified and included less-engaged hunters, family oriented hunters, social-relax hunters, and all around enthusiast hunters. Differences existed between the four groups on both constraints and negotiation strategies. The less-engaged hunter was the least likely to perceive constraints and the least likely to utilize constraint negotiation strategies. The family oriented hunter was the most likely to perceive constraints and the most likely to utilize strategies. These typologies demonstrate how managers can create strategies for recruitment and retention of female hunters.

Introduction

There is some discussion among researchers and wildlife agency managers about how to recruit and retain more hunting participants. Results from major studies indicate that hunting participation is declining in the U.S. (U.S. Fish and Wildlife Service, 2006). Although there is some disagreement about the extent of the decline, the basic fact is that there are fewer new hunters and hunters are spending fewer days afield (Enck, Decker, & Brown, 2000; Zinn, 2004). One group that has seen an increase in participation is women (U.S. Fish and Wildlife Service,

2006). Women are a potential group of hunters that could possibly help increase the number of hunters in the U.S. Understanding more about what constrains women from hunting and factors that may facilitate participation is crucial for understanding how to recruit and retain females.

In the past, social research on hunting has addressed issues with satisfaction in hunting experiences. Research indicates satisfaction is not just a product of game harvested; rather it is a result of multiple factors (Gigliotti, 2000; Hammitt, McDonald, & Patterson, 1990; Vaske, Fedler, & Graefe, 1986). Multiple satisfaction approaches to hunting allow for a more complete understanding of the hunting experiences. While it continues to be beneficial to study satisfaction, it is increasingly important to understand why people do not hunt and other factors that may be contributing to the decline in participation. Research on hunting constraints, as an issue affecting participation, has not been prominent in the extant literature. Constraints are factors that are perceived or experienced by individuals that may limit participation in certain leisure activities (Jackson, 1997). Constraints to hunting may be limiting recruitment and retention, and influencing the overall declining hunting population. In addition to constraints, it is also important to know how females negotiate through constraints. Negotiation strategies are changes in behavior and in cognition that help individuals overcome constraints (Jackson & Rucks, 1995). The use of negotiation strategies can help managers identify what females currently do to overcome constraints.

One potential approach to understanding female hunters is by creating a typology of these recreationists. Hunter typologies have been used in hunting research for several decades (Gigliotti, 2000; Manfredo & Larson, 1993; Schroeder, Fulton, & Lawrence, 2006). They provide a way to categorize hunters and understand hunting characteristics that allow for more informed decisions about management communications, policies, and actions. Typologies assist

agencies in creating tailored programs that meet the needs and wants of their hunting constituents (Schroeder et al., 2006). Typologies also help guide allocation of human and natural resources in the management of hunting areas. Additionally, they can help develop programs that aim at recruitment and retention of females.

Hunter Typologies

Early outdoor recreation research by Shafer (1969) found the “average camper” does not exist. Shafer’s work extends beyond camping and applies to other outdoor recreation activities including hunting. Since there is no “average” hunter, it is essential for resource managers and researchers to understand differences among users. Classifying hunters based on similar characteristics is a useful way to learn about user groups and different needs among them.

Manfredo and Larson (1993) examined wildlife viewers in Colorado by creating typologies based on preferred recreation experiences. The authors created classifications that would describe users and their desired recreation opportunities to help with the planning and management process. Typologies were created using preferred experience outcomes and resulted in four distinct types of wildlife users. Differences among the types tended to follow a pattern with Type 1 users seeking the most recreation experience benefits and Type 4 users seeking the least amount of recreation experience benefits. Other differences within the typology related to activity preference, information preferences, and constraints. Overall, the authors found support for using a typology to distinguish between wildlife viewers. Manfredo and Larson (1993) noted that typologies could help guide management to allocate resources properly. Balancing what is preferred by the user and what opportunities are offered can be a difficult process. Manfredo and Larson (1993) suggest typologies can provide some guidance in this area and improve the overall quality of experiences.

Typologies can also be used to understand satisfaction of hunters. Gigliotti (2000) examined hunters in South Dakota to understand how they differed on overall satisfaction. Traditionally, satisfaction has been equated to harvest success in the season; i.e., harvesting a buck indicates the hunters' satisfaction is high. Gigliotti (2000) and others suggest that satisfaction is a product of a variety of factors including crowding, game seen, years of experience, and other factors (Hammit et al., 1990; Vaske et al., 1986). Gigliotti (2000) suggests classifying hunters to understand the different factors that contribute to satisfaction.

Gigliotti (2000) classified hunters based on their reasons for hunting, resulting in seven classifications ranging from "nature hunters" to "meat" and "trophy hunters". Results suggested different types of hunters placed importance on different factors contributing to overall satisfaction. Game harvested was important among all user types; however, the degree of importance varied. Results also indicated that there were distinct differences between the user types in harvest success, years of hunting, and overall satisfaction. Findings from Gigliotti (2000) indicate that not all hunters are alike and each group of hunters has its own needs, wants, and expectations.

Hunter typologies have also been used to understand support and opposition for management actions. Schroeder et al. (2006) created a typology of waterfowl hunters in Minnesota to understand harvest regulations and how they affected hunter satisfaction. Their typology used experience preferences to segment hunters and the authors followed similar methods as Manfredo and Larson (1993). The authors found support for five types that ranged from "longtime hunters" to the "less-engaged hunter." The authors found differences among the different hunter types' views on certain management actions. For example, longtime waterfowl hunters were more supportive of restricting bag limits which indicates an overall ethic and

understanding of norms that drive harvest regulation. The authors contend that managers need to focus on experiences along with waterfowl production to understand satisfaction. Additionally, the differences among typologies should add support for classifying hunters to provide better experiences for waterfowl hunters.

Constraints and Negotiation Strategies

Constraints are becoming an increasingly important construct to understand for outdoor recreation and hunting. Constraints allow managers and researchers to understand limitations to participation and how they might affect overall satisfaction. Constraints are “factors that are assumed by researchers and perceived or experienced by individuals to limit the formation of leisure preferences and to inhibit or prohibit participation and enjoyment of leisure” (Jackson, 2000, p.62). When constraints are present, they can limit the formation of leisure preferences and may be a reason why it is hard to retain hunters.

Crawford, Jackson, and Godbey (1991) developed a hierarchical model of intrapersonal, interpersonal, and structural constraints. Intrapersonal constraints are factors within an individual that may prevent participation. Examples include lack of confidence in hunting, lack of skill, and feelings of being unwelcome in the activity. Interpersonal constraints are factors that exist between individuals and other groups. Examples include family obligations, not having people to hunt with, and people not accepting recreation choices. Structural constraints deal with the external environment and tend to be factors that natural resource managers can influence. Examples include lack of game, lack of hunting facilities, and time limitations (Crawford et al., 1991).

Constraints have been examined to understand how they influence females. Major findings indicate females face different constraints than males (Henderson, 1996; Shaw, 1994).

Early research by Thomas and Peterson (1993) examined females who participated in a workshop about hunting and fishing and found constraints on all levels of the hierarchical model (Crawford et al., 1991). Intrapersonal constraints like fear of fitting in and lack of training were identified. Females also indicated they did not have many female role models and social pressures kept them from participating. Additionally, lack of information and lack of suitable equipment ranked high among the structural constraints.

Other studies have addressed constraints for females in hunting and found similar results. Duda (2001) found fears of causing harm, negative opinions, and poor behavior from other hunters as major constraints. Other findings indicate that lack social support was also a constraining factor for females. Martin and Miller (2008) indicated the most constraining factor for females in Illinois was not having with a hunting companion. Other constraints included lack of skill and training and lack of time.

Negotiation strategies are often examined along with constraints. Research indicates constraints are not insurmountable obstacles and they can be negotiated through to increase participation (Scott, 1991). Negotiation strategies are ways individuals alter or change their behavior to maintain or increase participation in activities. Jackson and Rucks (1995) conducted research to determine what type of negotiation strategies are used most often to overcome constraints. The authors determined that individuals work through constraints both cognitively and behaviorally; behavioral strategies were more often used and consisted of changes in time management, acquiring new skills, management of finances, and creating and maintaining personal relationships.

The area of constraint negotiation has been growing and many researchers have sought to understand how negotiation relates to constraints (Hubbard & Mannell, 2000; Son, Kerstetter, &

Mowen, 2008; Wilhelm Stanis, Schneider & Russell, 2009). They have examined the constraint negotiation process and the effects on leisure participation. Few studies have sought to understand negotiation strategies in the context of hunting. Additionally, few studies have examined negotiation strategies across different typologies of users. This study builds on this literature by examining constraint items along with negotiation items to see how they differ across a female hunter typology.

Study Purpose

This paper examines the influence of constraints to hunting for females and how they successfully negotiate through them. To understand the diversity of female hunters, I created a hunter typology based on preferred recreation experiences. I then examined the typology and compared constraints and negotiation strategies across different types of female hunters. The typology was created using methods similar to Schroeder et al. (2006) and Manfredi and Larson (1993), and used the Recreation Experience Preference (REP) scale (Manfredi, Driver, & Tarrant, 1996). Using desired experiences for developing the typology allowed for the categorization of females based on why they hunt and the benefits they seek during their experience.

Research Questions

1. Based on Recreation Experience Preference items are there different types of female big game hunters?
2. Do different types of female hunters differ in their perceived constraints to hunting?
3. Do different types of female hunters differ in their use of constraint negotiation strategies?

Methods

Sampling

A population of big game hunters was surveyed in Oregon over the summer of 2010. Individuals included in the study had purchased a hunting license from the Oregon Department of Fish and Wildlife (ODFW) in the 2008 season and were over 18 years of age. A random sample of 1500 hunter names were drawn from the ODFW license records and split equally by gender in order to achieve an adequate number of female respondents. The sample was representative of the type of game hunted for males in Oregon. For females, the majority were deer hunters (70%) followed by elk (15%) and bear (15%) hunters. The sample for females was weighted heavier for deer to address the “guys in disguise” phenomenon where males use their female counterpart’s name to acquire additional big game tags (Mcfarlane, Watson, & Boxall, 2003). The data analyzed in this study was drawn solely from the female hunters.

Study design

The seven page survey, was pre-tested and designed in the spring of 2010 and included demographic questions, hunting season characteristics, and constructs such as satisfaction, constraints, motivations, and more. A mail back Dillman Total Design Method (2000) was used, which included four mailings over a period of two months in 2010. Included in the four mailings was a pre-survey letter, full survey mailing (with printed questionnaire, cover letter and prepaid reply envelope), reminder postcard, and second full survey mailing. Due to faulty addresses 1350 addresses out of 1500 were deemed deliverable. This ultimately resulted in a total of 392 usable surveys for a response rate of 30%.

Motivations were addressed using the Recreation Experience Preference (REP) scale by Driver et al (1996). The REP list is quite extensive and includes items that target motivations,

preferences, and benefits of recreation. For this study, 22 items were used that dealt specifically with hunting and outdoor recreation. Examples of items include: “to be in nature, to bring meat home to my family”, and “to get away from the regular routine.” The items were measured on a 1 to 5 scale, where 1 equaled “not at all important” and 5 equaled “extremely important.”

Constraints were measured using items derived from previous literature (Crawford & Godbey, 1987; Hudson, 2000; Hubbard & Mannell, 2001). Items were chosen to fit the activity of hunting, a total of 29 constraints items were picked, representing the areas of structural, interpersonal, and intrapersonal constraints. Examples of items include “lack of game, can’t afford to hunt and fear of harming someone.” Items were measured using a 1 to 5 scale, where 1 equaled “strongly disagree” and 5 equaled “strongly agree.”

Negotiation strategies were selected from previous research by Hubbard and Mannell (2001). Specific hunting related items were created and added to the list of items and resulted in a total of 19 items. Negotiation strategies included “I try to find people to hunt with, I fit my hunting around other commitments, and I budget money so I can hunt more.” Negotiation strategies were asked using a 1 to 5 scale, where 1 equaled “strongly disagree” and 5 equaled “strongly agree.”

Data analysis

A K-means cluster analysis was used to create a typology of female hunters based on their motivations (REP). According to Manfreda and Larson (1993), cluster analysis requires three critical decisions including variable selection, method of clustering, and the number of clusters to accept. I had 22 REP items to create clusters and chose to use all of the items. This deviates from what Manfreda and Larson (1993) and Schroeder et al. (2006) did in their typologies of hunters where they used five items to represent the activity subsets with the highest

variance. I began with a factor analysis to reduce the data into five factors or underlying dimensions. Exploratory factor analysis was used to reduce the data and determine domains within each construct. Reliability analysis was used to assess the factors and five new variables were created to represent the original 22 REP items. Cronbach's alpha was used to assess the internal reliability of each new variable, a value of .60 or higher considered to be acceptable (Cortina, 1993). The new variables then served as the input variables for the cluster analysis. Our second decision was to use K-means clustering using simple Euclidean distances (Schroder et al., 2006). Lastly, we accepted a four cluster solution based on interpretation of the clusters. Additionally, I was limited by sample size and felt five clusters created confusion and a small number of respondents in some clusters.

Once the clusters were determined, a series of descriptive statistics were used to compare the characteristics of each cluster. Variables like days in the field, type of hunting, and demographic items were used to understand differences in the typology. Analysis of variance was used to examine the differences in mean values between hunter types for constraints and negotiation strategies. The Levene's test of equality of variances was used to determine if variances differed significantly ($p < .05$). In this instance, the Tamhane's T2 post hoc test was used to test where the variances differed between groups. If no differences existed between variances, the Bonferroni post hoc test was used to determine the significant differences between group means.

Results

Respondent Characteristics

Forty four percent of the overall sample for this study was female. Of the female respondents, a majority lived in a rural setting (59%), followed by a town (19%), city (12%), or

suburb (9%). Most of the female respondents were married (71%) and self-identified with the race of white (91%). Female respondents had varying levels of education with 38% having a high school level or lower, 36% having some college, 20% completing college, and 4% having a graduate degree. Income levels also varied with 26% making \$39,999 or less annually, 40% making between \$40,000 and \$79,999 annually, and 16% making \$80,000 or more annually.

Recreation Experience Preference items

REP items were assessed to understand the reasons why females hunt (Table 2.1). Results indicate “to be outdoors” ($M=4.30$) and “to enjoy nature” ($M=4.23$) as major reasons for females to participate in hunting. Another important variable is “to bring meat home to my family” ($M=4.11$). The REP items were used to create typologies of experience types through factor analysis and reliability analysis. Results of the factor analysis yielded five REP dimensions including nature and relaxation, deer management, social reasons, for challenge and sport, and family reasons (Table 21). All the reliability alphas were assessed to be acceptable and ranged from .89 to .65. Reliability analysis indicated that all of the factors were acceptable

Table 2.1. Summary of Experience Preference items and reliability alphas for REP domains

Experience outcomes (n=195)	α	M	SD
Nature and relaxation	.89		
To be outdoors		4.30	.9247
To enjoy nature		4.23	1.026
To get away from the regular routine		3.78	1.150
For relaxation		3.78	1.216
To improve my health		3.11	1.258
To experience natural surroundings		3.88	1.187
To experience solitude		3.02	1.50
For mental health		2.94	1.46
Deer management	.88		
To control the number of game in the herd		2.40	1.292
To control the male to female deer ratio		2.26	1.282
To help control the spread of CWD		2.46	1.386

Social reasons	.82		
To be with my friends		3.51	1.330
To be with others who enjoy the same things as you		3.67	1.216
To do things with members of your group		3.22	1.373
For challenge and sport	.76		
To develop my skills		3.62	1.160
For physical exercise		3.56	1.21
To share my skill and knowledge with others		2.68	1.324
To harvest a trophy deer/elk		2.48	1.387
For challenge or sport		3.46	1.334
Family reasons	.65		
Bringing meat home for my family to eat		4.11	1.169
For family recreation		3.78	1.267
To bring my family closer together		3.40	1.425

Experience types

Based on the cluster analysis, four experience types were identified: Less-engaged hunter, family oriented hunter, social-nature hunter, and all around enthusiast hunter. Following is a description of each hunter type.

Less-engaged hunter- The less-engaged hunter reported low values across all of the experience outcome variables (Table 2.2). This type spent on average 13 days afield in 2009. The less-engaged hunter was similar to other types with regards to age. Many tended to hunt with rifles (81%) and under 12% hunted with shotgun, bow, or muzzleloader. This group also spent little time preparing for the hunting season, with an average of 19 days prepping each year (Table 2.3).

Family oriented hunter- The family oriented hunter attached the most importance to the family and social reasons and were relatively less interested in relaxation and nature. This type was less interested in deer management and challenge or sport (Table 2.2). This group tended to hunt the fewest days averaging around 12 per year. Similar to all the groups, the average age

was 50 years old. In the family oriented group, 80% hunted with a rifle and 21% hunted with a bow. This type tended to spend a lot of time preparing for hunting, with an average of 26 days (Table 2.3).

Social-relaxed hunter- In the social-relax type, hunters are there primarily to relax and enjoy nature (Table 2.2). Although this group was interested in social reasons, they also thrived on hunting for challenge and sport. This type tended to spend many days afield, with close to 18 days hunting per year. Over 90% hunted with rifles and 11% hunted with bows and shotguns. This type spent an average of 18 days prepping for the hunting season (Table 2.3).

All around enthusiast- This hunter rated all categories of experience outcomes high and enjoys all aspects of hunting. It is important to note that this is the only category that rated deer management high among the experience outcomes (Table 2.2). This type spent an average of 14 days hunting per season. This group followed a similar age characteristics of the other typologies with the average age being 51. A majority hunted with rifles (89%), while 12 % hunted with bows and shotguns. This group spent an average or 21 days preparing for the hunting season (Table 2.3).

Table 2.2. Final typology created from Recreation Experience Preference domains

Experience outcomes	Experience types (clusters)			
	Less-engaged n=33	Family oriented n=53	Social-relaxed n=51	All around enthusiast n=56
Relaxation and nature	2.28	3.57	3.80	4.38
Deer management	1.56	1.77	2.01	3.80
Social reasons	1.92	3.83	3.14	4.32
For challenge and sport	2.02	2.72	3.35	4.07
Family reasons	2.64	4.28	3.14	4.54

Table 2.3. Descriptive variables by typology

Mean value	Less-engaged	Family oriented	Social-relaxed	All around enthusiast
Days hunted in field	13.38	12.22	17.58	13.83
Days preparing for hunting	19.00	25.68	17.98	20.75
Age	51.34	49.78	52.26	51.27
Type of hunting equipment (percentages indicating “yes”)				
Rifle	80.8%	80.4%	90.9%	89.1%
Shot gun	7.7	10.9	11.4	12.7
Bow	11.5	21.7	11.4	12.5
Muzzle loader	0	2.2	2.9	3.6

Hunter Constraints and Negotiation Strategies

Overall, females did not report high levels of constraints. The family oriented group tended to report the highest levels of constraints across all items. Only five of the hunting constraints significantly differed across the experience types (Table 2.4). The group that tended to stand out the most was the family oriented hunters. In the structural domain, “inadequate hunting areas” was significantly different between the less-engaged hunter and the family oriented hunter ($F=2.877$, $p<.05$). In other words, the less-engaged hunter was less likely ($M=2.00$) than the family oriented hunter ($M=2.73$) to perceive there were not enough hunting areas. The item “sites are closed when I want to visit” revealed similar relationship, with the family oriented hunter reporting a higher mean ($M=2.62$) than the less engaged hunter ($M=1.79$) ($F=3.426$, $p<.05$).

Differences were also documented in the interpersonal and intrapersonal domains. The constraint item “health of someone I like to hunt with” was significant ($F=4.722$, $p<.01$) with the family oriented hunter more likely to report this constraint than any other type. The items “fear of crime” ($F=3.264$, $p<.05$) and “fear I might harm someone in the field” ($F=3.228$, $p<.05$) were also significant. Similar to the other constraint items, the family oriented type tended to report a significantly higher mean.

Table 2.4. Analysis of variance table for constraint items by hunter typology

Constraints	Less-engaged	Family oriented	Social relaxed	All around enthusiast	F-value
Structural constraints					
Lack of game	2.98	3.49	3.08	3.29	.174
Sites are too crowded	2.19	2.73	2.41	2.76	.993
Complex rules and regulation	2.35	2.66	2.03	2.61	2.602
Inadequate hunting areas ¹	2.00 ^a	2.73 ^b	2.34 ^{ab}	2.54 ^{ab}	2.877*
Can't afford to hunt	2.30	2.54	1.94	2.15	2.307
Sites are closed when I want to visit ¹	1.79 ^a	2.62 ^b	2.00 ^{ab}	2.12 ^{ab}	3.426*
Conflict with other users	1.47	2.05	1.76	1.85	1.787
Lack of transportation	1.27	1.74	1.45	1.40	1.578
Lack of training facilities	1.29	1.53	1.26	1.26	.558
Sites are too far away	1.70	2.06	1.66	1.85	.713
Lack of time	2.29	2.70	2.38	2.39	.382
Childcare needs	1.22	1.44	1.39	1.40	.717
Lack of information	1.36	1.62	1.48	1.53	.271
Interpersonal constraints					
I don't feel like other hunters accept me	1.17	1.36	1.13	1.21	.959
People don't accept my outdoor preferences	1.38	1.72	1.44	1.37	1.116
Family responsibilities	1.92	2.21	2.12	1.85	1.046
Health of someone I like to hunt with ¹	1.58 ^a	2.26 ^b	1.76 ^{ab}	1.60 ^{ab}	4.722**
Lack of hunting partners	1.71	1.87	1.64	1.61	1.761
Intrapersonal constraints					
Lack of skill	1.41	1.64	1.40	1.40	1.152
Fear of crime ¹	1.19 ^a	1.71 ^b	1.42 ^{ab}	1.39 ^{ab}	3.264*
Poor physical health	1.60	1.82	1.68	1.49	2.215
I have more important things to do	1.84	1.60	1.69	1.52	1.005
Fear I might harm someone in the field ¹	1.11 ^{ab}	1.44 ^a	1.29 ^{ab}	1.10 ^b	3.228*
Fear of outdoors	1.07	1.27	1.07	1.63	1.361
Fear I might injure myself	1.14	1.43	1.22	1.20	1.240
I like to do other things	1.57	1.53	1.43	1.57	1.575
Fear of getting lost in the woods	1.38	1.65	1.28	1.46	1.276
I don't like to do things outdoors	1.14	1.24	1.13	1.07	1.575
Unwelcome feelings from rangers	1.30	1.63	1.31	1.32	2.694

¹ Significant at p<.05 based on Tamhane's T2 method

*p< .05 **p< .01

Female hunters reported a high use of negotiation strategies (Table 2.5). Many of the strategies with high mean values were in the time management domain, with specific items in the other domains standing out. Across the hunter typology, 12 negotiation strategies differed significantly among groups. For example, there were three significant items in the time management domain. The item “I try to plan ahead so I can hunt” was significant with the less-engaged hunter significantly less likely to use the strategy than any other type ($F=9.144$, $p<.001$). The items “I try to fit my commitment around others” ($F=11.39$, $p<.001$) and “I set aside time for hunting” ($F=4.096$, $p<.01$) showed the same pattern. The family oriented type reported using the negotiation strategies more than the less-engaged hunter.

In the interpersonal domain, there were three significant item variations. The item “I try to meet with people with similar interests” was significantly more likely to be used by the family oriented hunter than any other group ($F=8.286$, $p<.001$). The item “I try to find people to hunt with” also differed by hunter type. The family oriented hunters ($M=4.07$) and all around enthusiasts ($M=4.01$) were more likely to use these strategies than the less-engaged hunters ($M=3.25$) and the social-relaxed hunters ($M=3.14$) ($F=6.657$, $p<.001$). “I arrange rides to and from hunting locations for myself” was also significant, with the family oriented type ($M=4.07$) reporting a significantly higher mean than the less-engaged hunter ($M=3.06$) ($F=2.971$, $p<.05$).

All three items in the financial resources domain were significant and followed a similar relationship within the typology. For the items “I try to budget my money so I can hunt more” ($F=5.970$, $p<.01$) and “I save money so I can hunt more” were significant ($F=4.271$, $p<.01$), the family oriented hunter was significantly more likely to use the strategies than the less-engaged hunter. The item “I try to cut back spending in areas so I can hunt” was utilized the most by the

family oriented type (M=3.51) and differed significantly in mean values from the less-engaged hunters (M=2.29) and the social relax hunters (M=2.70) (F=6.158, p<.01).

In the skill acquisition domain, there were three significant items. The less-engaged hunter was significantly less likely to use the strategy “I hunt regardless of injury or poor health” than any other type (F=6.497, p<.001). The item “I try to improve my skills” was significantly more likely to be a strategy for the family oriented type than the three other types. The all around enthusiast (M=4.23) also reported a significantly higher mean than the less-engaged hunter (M=3.48) (F=14.11, p<.001). The item “I hunt with people who have more skills so I can learn from them” was significantly different between the less-engaged hunter (M=2.96) and the family oriented hunter (M=3.84) (F=3.595, p<.05).

Table 2.5. Analysis of variance table for negotiation strategy items by hunter typology

Negotiation strategies	Less-engaged	Family oriented	Social relaxed	All around enthusiast	F-value
Time management strategies					
I try to plan ahead so I can hunt ¹	3.80 ^a	4.70 ^b	4.41 ^b	4.55 ^b	9.144***
I set aside time for hunting activities ¹	3.54 ^a	4.65 ^b	4.09 ^{ab}	4.47 ^b	11.39***
I try to fit my hunting around my other commitments ²	3.22 ^a	4.18 ^b	3.70 ^{ab}	3.84 ^{ab}	4.096**
I hunt close to home	3.77	3.87	3.92	3.37	2.093
Sometimes I do an activity that is more convenient instead of hunting	2.54	2.07	2.24	1.96	1.572
I hunt when the field is less crowded	3.37	4.12	3.80	3.86	2.617
Interpersonal strategies					
I try to meet people with similar hunting interests ²	2.54 ^a	3.85 ^b	2.97 ^a	3.20 ^a	8.286***
I try to find people to hunt with ²	3.25 ^a	4.07 ^b	3.14 ^a	4.01 ^b	6.657***
I arrange rides to and from hunting locations for myself ²	3.06 ^a	4.07 ^b	3.52 ^{ab}	3.66 ^{ab}	2.971*
I participate in hunting with people of the same gender	2.22	2.40	2.29	2.54	.460
I hunt with people my own age	3.10	3.51	2.87	3.22	2.174

I hunt with people who are more knowledgeable about hunting	3.06	3.87	3.36	3.44	2.628
I join hunting organizations to meet people	1.32	1.62	1.46	1.52	.672
Financial resource strategies					
I try to budget my money so I can hunt more ²	2.87 ^a	4.00 ^b	3.34 ^{ab}	3.45 ^{ab}	5.970 ^{**}
I cut back spending in areas so I can hunt ²	2.29 ^a	3.51 ^b	2.70 ^a	2.94 ^{ab}	6.158 ^{**}
I save money so I can hunt more ²	2.93 ^a	3.88 ^b	3.21 ^{ab}	3.65 ^{ab}	4.271 ^{**}
Skill acquisition strategies					
I hunt regardless of injury or poor health ²	2.32 ^a	3.68 ^b	3.34 ^b	3.18 ^b	6.497 ^{***}
I try to improve my hunting skills ¹	3.48 ^a	4.74 ^b	4.00 ^{ab}	4.23 ^b	14.11 ^{***}
I hunt with people who have more skills so I can learn from them ²	2.96 ^a	3.84 ^b	3.51 ^{ab}	3.30 ^{ab}	3.595 [*]
I take classes to improve my hunting skills	1.38	1.84	1.85	1.71	1.650

¹Means with different superscripts are significant at $p < .05$ based on Tamhane's T2 method

²Means with different superscripts are significant at $p < .05$ based on Bonferroni method

* $p < .05$ ** $p < .01$ *** $p < .001$

Discussion

There is considerable research on satisfaction of hunters; however little research has been conducted on the major constraints that face female hunters and even less on how these women overcome their constraints to hunting. Understanding constraints and how they differ for hunter types can help managers find ways to recruit and retain hunters. A typology of female hunters was created and examined for this study. The hunter types were based on previous research where REP items were used to understand recreation benefits and outcomes (Manfredo & Larson, 1993; Shroeder et al., 2006). This study of female hunters differed slightly from previous research by using a complete set of REP items, instead of just five items with the largest variance. Overall, the results indicated that there are four types of female hunters in Oregon.

Initially, five experience outcome factors or dimensions were used to create the four clusters types of hunters; less-engaged hunters, family oriented hunters, social-relaxed hunters, and all around enthusiast hunters. The less-engaged hunter tended to report low mean values on all the experience outcomes. This type of hunter is consistent with previous research where authors found support for the “occasionalist” (Bryan, 1977; Manfredo & Larson, 1993) or the less-engaged hunter (Schroeder et al., 2006). Bryan (1977) was the first to identify the “occasionalist” in hunter specialization, while other studies have identified the less-engaged hunter in other hunter typologies (Schroeder et al., 2006; Manfredo & Larson, 1993). This group of hunters spent a lower amount of days hunting than other groups. The less-engaged hunter will most likely drop out of the activity and not continue to hunt in the future (Hautaluoma & Brown, 1979). However, this group had the lowest amount of females hunters associated with it and managers should consider this when developing management strategies. Further, this type was often significantly different in response to constraint and negotiation strategies than the other typologies. In general, the less engaged hunter reported low constraints and low use of negotiation strategies. However, for the items “I have more important things to do and I like to do other things”, the less-engaged hunter reported higher scores than other hunter types. This may indicate the less-engaged hunter may have other leisure preferences than hunting or may have just tried hunting for a single season.

The family oriented hunter was also a distinct group of users. This type reported a high mean value for the REP items associated with family reasons for hunting, including the items, “for family recreation, to bring family closer together”, and “to bring meat home to my family.” This group also reported relatively high values for social reasons and relaxation and nature. This indicates the family oriented hunter is interested in hunting for family/social reasons and to get

outside and enjoy nature. This type was less interested in sport and challenge or factors associated with deer management. This type was often significantly different on the constraint and negotiation strategies compared to the less-engaged hunter. In general the family oriented hunters tended to report the highest constraint levels and were the most likely to utilize negotiation strategies. This suggests this type has many constraints, but is willing to find ways to work through them in order to participate more frequently in hunting. This group was the most likely to plan for hunting, meet people with similar interests, budget money, and try to improve skills. This group seems likely to continue to hunt in the future and managers should give consideration to how they can accommodate the needs of this type of hunter.

The social-relaxed hunter reported relatively high scores on socialization, family reasons, and relaxation and nature. In addition, this type had a relatively high mean value for challenge and sport. Although this group is interested in the challenge of hunting, they also see hunting as a way to be in nature, relax, and spend time with family and friends. This type tended to report constraint and negotiation strategy values below the family oriented hunter but above the less-engaged hunter. This group was somewhat constrained and reported relatively high use of negotiation strategies. Since this group is high on challenge and sport along with social reasons, it may be important for managers to provide experiences that allow for these competing outcomes.

The all around enthusiast reported high mean values on all of the experience outcomes including deer management. This type of hunter is loyal to the activity and enjoys all aspects of hunting. They are there to be with family and friends, to enjoy nature, for the challenge, and to help manage deer populations. This group reported values similar to the social-relaxed hunter on

constraint items. The all around enthusiast was relatively likely to use many negotiation strategies and often reported similar results as the family oriented hunter.

Management Implications

This paper focused solely on female hunters to understand the different types that exist among women hunters. Given the nature of the hunting population, there is a need to better understand female hunters. While the general hunting population continues to decline or stay stagnant, female hunters are on the rise (U.S. Fish and Wildlife Service, 2006). It is increasingly important to understand new ways to recruit and retain hunters and females may be potential group to target. Mcfarlane et al. (2003) indicate females tend to make recreation decisions for their families. Managers may want to consider females to engage the family in hunting. Understanding the different types of female hunters that exist can help managers make informed decisions about marketing hunting and creating engagement programs.

The family oriented hunter is one type to consider when developing marketing strategies and programs for hunting. This type is interested in spending time with family and bringing their families closer together. Additionally, the family oriented hunter perceives the most constraints and utilizes negotiation strategies. Knowing this, managers can examine ways to reduce the number of constraints and create ways to facilitate hunting. Managers can focus on structural constraints that stand out and find ways to alleviate those for females (i.e. complex rules and regulations). Additionally, managers can use this data to allocate resources that are focused on family hunting. Creating family oriented areas and developing family focused programming may help alleviate constraints for females. Agencies could institute family oriented hunting days that are separate from the regular seasons. Another example could be the development of family

friendly hunting areas that are sectioned off from regular game management areas that have increased safety and regulations.

It is important to point out that the most constraining items for female hunters were structural. These are factors that managers have some control over and should consider finding ways to alleviate. For example, since all types reported high means for “complex rules and regulations”, this factor may be preventing others from participating in the sport and reducing the amount of hunting for those currently participating. Additionally, examination is needed of constraints items to see how they influence overall participation of hunting.

Typologies can be beneficial in developing programs and strategies to increase hunting participation (Schroeder et al., 2006). However, there is some concern over the ability to use typologies to implement management actions (Schroeder et al., 2006). Typologies are meant to help guide current and future management actions and to make incremental changes for the future. It is unrealistic to expect natural resource management agencies to instantly develop, for example, family focused programming; this takes financing and time. However, there may be simple changes that can be made without huge financial or time commitments. For example, children focused hunting programming might be opened up to the family unit and marketing of hunting could go beyond sportsman magazines and include family oriented publications.

Future Research

In the future, researchers interested in studying female hunters should consider exploring other variables of interest such as satisfaction and involvement in the sport. Studies of satisfaction are popular with natural resource managers and, along with constraints, can provide guidance on how to improve hunting experiences. Understanding both behavioral and psychological involvement in hunting can indicate which hunter types are more likely to

continue participating and help managers focus their recruitment and retention efforts. Future research should also consider comparing female typologies with male typologies to see if differences exist. This would create a holistic understanding of hunter types and why people may be constrained from participating.

This data is a starting point to understand differences among female hunters. Additional research is needed to understand what types of programs can help with recruitment and retention. Future research should consider females who currently hunt and those who are either just beginning or have an interest in hunting. By understanding these groups, managers can create strategies for engaging more females in the activity. Females may be an integral component to hunting participation in the future and all skill and experience levels of females should be understood.

References

- Bryan, H. (1977). Leisure value systems and recreational specialization: The case of trout fisherman. *Journal of Leisure Research*, 9, 174-187.
- Crawford, D. W., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences*, 9, 119-127.
- Cortina, J. M. (1993). What is alpha coefficient? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98-104.
- Crawford, D. W., Jackson, E. L., & Godbey, G. (1991). A hierarchical model of leisure constraints. *Leisure Sciences*, 13, 309-320.
- Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York: NY: Wiley.
- Duda, M. D. (2001). The hunting mind: Women and hunting. *North American Hunter*, November, 35-37.
- Enck, J. W., Decker, D. J., & Brown, T. L. (2000). Status of hunter recruitment and retention in the United States. *Wildlife Society Bulletin*, 28(4), 817-824.
- Gigliotti, L. M. (2000). A classification scheme to better understand satisfaction of Black Hills deer hunters: The role of harvest success. *Human Dimensions of Wildlife*, 5, 32-51.
- Hammit, W. E., McDonald, C. D., & Patterson, M. E. (1990). Determinants of multiple satisfaction for deer hunting. *Wildlife Society Bulletin*, 18, 331-337.
- Hautaluoma, J. & Brown, P. J. (1979). Attributes of the deer hunting experience: A cluster analytic-study. *Journal of Leisure Research*, 10, 271-187.
- Henderson, K. A. (1996). One size doesn't fit all: the meanings of women's leisure. *Journal of Leisure Research*, 28(3), 139-154.

- Hubbard, J., & Mannell, R.C. (2001). Testing competing models of the leisure constraints negotiation process in a corporate employee recreation setting. *Leisure Sciences*, 23, 145-163.
- Hudson, S. (2000). The segmentation of potential tourists: Constraint differences between men and women. *Journal of Travel Research*, 38(4), 363-368.
- Jackson, E. L., & Rucks, V. C. (1995). Negotiation of constraints by junior-high and high-school students: An exploratory study. *Journal of Leisure Research*, 27, 85-105.
- Martin, N., & Miller, C. A. (2008). Finding Artemis: Pathways for recruiting and constraints to retaining female hunters. Proceedings of the 2008 Northeastern Recreation Research Symposium (GTR-NRS-P-42, pp. 332-336) Bolton Landing, NY: Newton Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Manfredo, M. J., Driver, B. J., & Tarrant, M. A. (1996). Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. *Journal of Leisure Research*, 28(3), 188-213.
- Manfredo, M. J. & Larson, R. A. (1993). Managing for wildlife viewing recreation experiences: An application in Colorado. *Wildlife Society Bulletin*, 21, 226-236.
- Mcfarlane, B. L., Watson, D. O., & Boxall, P. C. (2003). Women hunters in Alberta, Canada: Girl power or guys in disguise? *Human Dimensions of Wildlife*, 8, 165-180.
- Miller, C. A., & Graefe, A. R. (2000). Degree and range of specialization across related hunting activities. *Leisure Sciences*, 22, 195-204.
- Schroeder, S. A., Fulton, D. C., & Lawrence, J. S. (2006). Managing for preferred hunting experiences: A typology of Minnesota waterfowl hunters. *Wildlife Society Bulletin*, 34 (2), 380-387.

- Scott, D. (1991). The problematic nature of participation in contract bridge: A qualitative study of group-related constraints. *Leisure Sciences, 13*, 321-336
- Shafer, E. L. (1969). The average camper who doesn't exist. United States Department of Agriculture Forest Service Research Paper, NE-142. Northeastern Forest Experiment Station, Upper Darby, Pennsylvania, USA.
- Shaw, S. M. (1994). Gender, leisure, and constraint: Towards a framework for the analysis of women's leisure. *Journal of Leisure Research, 26*(1), 8.
- Son, J. S., Kerstetter, D. L., & Mowen, A. J. (2007). Testing alternative leisure constraint models: An extension of Hubbard and Mannell's Study. *Leisure Sciences, 30*, 198-216
- Thomas, C. L., & Peterson, T. A. (1993). Becoming an outdoors-woman. *Women in Natural Resources, 15*(3), 16-21.
- U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.
- Vaske, J. J., Fedler, A. J., & Graefe, A. R. (1986). Multiple determinants of satisfaction from a specific waterfowl hunting trip. *Leisure Sciences, 8*, 149-166.
- Voorhees, C. S. (2007). *A mixed-method examination of factors related to hunting participation*. Unpublished doctoral dissertation, The Pennsylvania State University, State College.
- Wilhem Stanis, S. A., Schneider, I. E., & Russell, K. C. (2009). Leisure time physical activity of par visitors: Retesting constraint models in adoption and maintenance stages. *Leisure Sciences, 31*, 287-304.

Zinn, H. C. (2003). Hunting and sociodemographic trends: Older hunters from Pennsylvania and Colorado. *Wildlife Society Bulletin*, 31(4), 1004-1014.

Chapter 3

Understanding the Differences between Male and Female Hunting Participation: An Examination of Constraints, Negotiation Strategies, Motivations, Social Support, and Self-efficacy

Abstract

There has been a decline in hunting participation across the U.S. Natural resource managers are examining ways to increase participation and have taken a more active interest in understanding females' role in hunting. There is limited research about the factors that constrain people from hunting as often as they would like. This study examines females' and males' constraints to hunting participation and the strategies that they use to successfully negotiate through constraints. Self-efficacy and social support variables are added to the constraint negotiation theory to understand factors related to hunting. A mail-back questionnaire of Oregon hunters was used to collect data during the summer of 2010. Of the hunters sampled, 56% were male and 44% were female. Results indicated that hunters did face constraints to hunting and that they utilized negotiation strategies in response to constraints. There were few differences that existed between the male and female models, which suggest the factors affecting participation are not that different across the sexes. Analysis revealed that hunters were successful in using negotiation strategies which mitigated the effects of constraints. In addition, self-efficacy and social support played a significant role in hunting participation. Implications of these findings suggest managers should use multiple strategies for recruitment and retention of hunters.

Introduction

There is concern among natural resource managers about declining participation in hunting (Enck, Decker, & Brown, 2000; U.S. Fish and Wildlife Service, 2006; Zinn, 2004). There is some disagreement about the extent to which hunting is declining; however, there is evidence to suggest there has been a continuous decline over the past 20 years and fewer days spent hunting afield (Enck, Decker, & Brown, 2000; U.S. Fish and Wildlife Service, 2006; Zinn, 2004). As a result of less participation, natural resource management agencies are experiencing a decline in revenues generated by license sales (McFarlane, Watson, & Boxall, 2003; Poudyal, Cho, & Bowker, 2008). For states that are dependent on license sales to generate operating budgets, this could pose a serious threat. Additionally, hunters provide assistance with game management. Fewer hunters will have an effect on the management of nuisance animals and human-wildlife conflicts (Poudyal et al., 2008). Hunting has traditionally been dominated by males with females participating in hunting at a much lower rate (Thomas & Peterson, 1993; U.S. Fish and Wildlife Service, 2006). McFarlane et al. (2003) suggest “most wildlife agencies have not given serious consideration to women as potential hunters or the role women play in recruitment and retention” (p. 166). Analyzed by gender, male hunting participation has been steadily declining, while female participation has been increasing (U.S. Fish and Wildlife Service, 2006). This suggests gender differences need to be identified to understand how natural resource managers can continue to market hunting to males and develop new strategies for women.

Since the early 1990s, researchers have been interested in the major factors limiting female participation in hunting related activities. Thomas and Peterson (1993) pioneered efforts to understand what limits or prevents women from participating. Results of early work on

women and hunting resulted in the Becoming an Outdoors Woman Program and other women centered programs which offer workshops on outdoor skills and development, including workshops related to hunting. Women who currently participate or who support others in hunting can be an influential force in engaging more female hunters. Women have significant influence on the types of recreational activities their families participate in and determine which activities are appropriate for their children (McFarlane et al., 2003). Although these women's outdoor programs fill an important niche, there is still a lot unknown about women and hunting; specifically, the intrapersonal, interpersonal, and structural factors that influence overall hunting participation.

In addition to understanding females in the activity, it is also important to understand the factors that may prevent males from hunting. It is known that males and females experience leisure and recreation in different contexts (Henderson, Hodges, & Kivel, 2002). Understanding what those differences may be for hunting could help managers create more effective recruitment strategies and help them to more accurately attract both males and females. It is not enough to just study females in hunting, it is also important to understand their male counterparts and the influence they play in recruitment and retention.

Several studies have examined women and hunting and provide a foundation for further examination of the topic (Duda, 2001; Jones, 2007; Martin & Miller, 2008; McFarlane et al., 2003; Thomas & Peterson, 1993; National Wild Turkey Federation, 2005;). A majority of the research conducted is descriptive in nature, discussing constraints to participation and motivations for hunting. There is a need for a more detailed analysis to examine all potential factors that may influence women's decision to hunt. To accomplish this, it is essential to examine female and male hunters simultaneously. This paper will address the major constraints

limiting participation and how women and men successfully negotiate through them.

Additionally, this paper will address issues related to social support in hunting and individuals' self-efficacy as it relates to hunting.

Literature Review

Women's leisure and recreation experiences have been a focus for researchers for nearly three decades. It has expanded our understanding of leisure and its meanings for girls and women and continues to advance cultural, theoretical, and methodological perspectives (Henderson, Hodges, & Kivel, 2002). This growth has positioned researchers to move past descriptive comparisons of gender and toward a theoretical understanding of the factors contributing to women's leisure (Henderson et al., 2002). Constraints theory is one approach to developing a deeper understanding of women's leisure and can provide insight about what prevents women from participating in hunting more often and how managers can alleviate those constraints to retain female hunters.

Constraints theory is a growing area of leisure research with many studies examining how constraints affect overall participation. Constraints limit the formation of leisure preferences and reduce participation and enjoyment of the recreation activity (Jackson, 1997). Crawford and Godbey (1987) suggest there are three types of constraints: intrapersonal, interpersonal, and structural. Intrapersonal and interpersonal constraints are antecedents as they tend to frame recreation interests and preferences (Henderson, Stankler, & Taylor, 1988). Intrapersonal constraints are individual psychological attributes, such as perceptions of abilities and fears that help form leisure preferences. Interpersonal constraints are social forces, such as lack of leisure companions that influence leisure choices. Structural constraints are external

factors that occur after leisure preferences have already been formed. Examples of structural constraints are lack of time and not enough information about recreation opportunities (Crawford & Godbey, 1987).

Although constraints can limit participation, individuals find ways to successfully negotiate through them and still enjoy their leisure experiences (Jackson, 2000; Jackson, Crawford, & Godbey, 1993; Scott, 1991). Negotiation strategies have been conceptualized as being cognitive and behavioral (Jackson & Rucks, 1995). Hubbard and Mannell (2001) examined constraints and negotiation strategies relative to participation in physical activity. The authors compared competing models to determine the relationship between constraints, negotiation, motivations, and participation. There is some debate over the constraint negotiation process and additional variables that influence the process (Jackson et al, 1993; Son, Kerstetter, & Mowen, 2008). Several authors have found evidence for motivations in the process (Son et al., 2008; Wilhelm Stanis et al., 2009) and others have suggested the constraint negotiation process is linked to self-efficacy and social support (Son et al., 2008; Voorhees, 2007).

Females and hunting

Researchers have examined several societal trends potentially contributing to the decline in hunting participation. They link age and place of residence as predictors of hunting participation (Boxall, Watson, & McFarlane, 2001; Zinn, 2004). Boxall et al. (2001) found that as the U.S. population ages and moves toward urban areas, there are fewer people to recruit for hunting in rural areas. Others suggest that age and residence are not the best predictors of hunting participation. Miller and Vaske (2003) found support for the use of psychological predictors like constraints as key determinants of hunting participation. They explain that

hunting participation is a multidimensional issue and future studies should consider examining several variables including constraints and social networks.

A handful of researchers have specifically examined constraints to females in hunting and hunting related activities. Although these studies provide a foundation, they lack a complete examination of the relationship between constraint-negotiation. Early research conducted by Thomas and Peterson (1993) found fear was a factor preventing women from participating in hunting related activities. Results indicate fears were from a lack of training in the activity, fear of not fitting in, and a fear of their own abilities. Duda (2001) found similar results for women, citing fears of causing harm to animals, fear of negative opinions from others, and fear of poor behaviors from others as major factors limiting hunting participation. These types of constraints can be thought of as intrapersonal constraints.

Some of the interpersonal constraints found by Thomas and Peterson (1993) include lack of female role models and not having been raised in a hunting household. Duda (2001) noted women believed there was not a social support system to facilitate hunting. In addition, Martin and Miller (2008) identified lack of hunting partners as the most constraining factor for female hunters in a study of the Illinois Becoming an Outdoors-Woman program. Structural constraints identified in previous research include a need for more training and skill development, lack of suitable equipment, and lack of information (Martin & Miller, 2008; Thomas & Peterson, 1993). Current research on constraints, females, and hunting provides insight on other factors that may be part of the constraint process, specifically, negotiation strategies, motivations, self-efficacy and social support.

Constraint-negotiation, Self-efficacy, and Social support

Constraints do not completely limit or prevent recreation; rather they are factors individuals are able to negotiate through. Determining which negotiation strategies females' use is an important aspect of understanding hunting participation. Research on negotiation strategies has focused on individuals in a variety of leisure settings to understand the relationship between constraints, negotiation strategies, and participation (Hubbard & Mannell, 2001; Jackson & Rucks, 1995; Son et al., 2008; Wilhelm Stanis et al., 2009). Results from select studies suggest motivations are a key component of the constraint negotiation process (Covelli et al., 2007; Hubbard & Mannell, 2001; Son et al., 2008; Wilhelm Stanis et al., 2009). Jackson, Crawford, and Godbey (1993) suggest motivations are a proactive response to constraints and allow for utilization of negotiation strategies. The coordination of motivation, constraints, and negotiation is referred to as the "balance proposition" (Jackson et al., 1993). Several studies have tested the role of motivations in the constraint negotiation process and found that motivations are a key component of predicting participation in leisure activities (Covelli et al., 2007; Hubbard & Mannell, 2001; Son et al., 2008; Wilhelm Stanis et al., 2009).

There is limited research about the constraint negotiation process and female hunting participation; however, several studies have examined constraint negotiation in outdoor recreation and park settings. Wilhelm Stanis et al. (2009) and Son et al. (2008) examined the constraint negotiation process for park users with the outcome variable of leisure time physical activity (LTPA). Both studies tested constraint negotiation models proposed by Hubbard and Mannell (2001). Son et al. (2008) found both constraints and negotiation influence LTPA and motivations were fully mediated by negotiation strategies. Wilhelm Stanis et al. (2009) also tested models proposed by Hubbard and Mannell (2001) and found support for the constraints-

effects-mitigation model where constraints, negotiation strategies, and motivations are predictors of participation. Results indicate the data was a good fit to the model; however the authors suggest using caution when interpreting the influence of constraints on LTPA. Wilhelm Stanis et al. (2009) recommend exploring the relationship between constraints and participation in further detail. Despite minor inconsistencies in constraint negotiation testing, all findings suggest motivations are an integral aspect for predicting participation.

Recent studies link self-efficacy to the constraint negotiation process. According to Bandura (1997), self-efficacy is one's ability to use cognitive, social, emotional, and behavioral sub-skills to overcome stressful situations. An individual's perceived efficacy is the ability to overcome challenges and problems (Bandura, 1982; Loucks-Atkinson & Mannell, 2009). Thus, self-efficacy may be linked to one's ability to utilize negotiation strategies.

Loucks-Atkinson and Mannell (2009) examined self-efficacy in the constraint negotiation process. Self-efficacy was used to determine confidence in using negotiation strategies to overcome constraints. The authors found evidence for "negotiation-efficacy," with more confident individuals having a greater ability to overcome constraints. The authors call for more examination of negotiation-efficacy with other populations, various leisure activities, and differences such as gender.

Self-efficacy was examined in a study of females in Becoming an Outdoors Woman programs that focus on hunting and outdoor related skills (Jones, 2007). Study results suggest women who have higher self-efficacy show higher participation in outdoor activities. Additionally, results indicate there is a connection between self-efficacy and overcoming constraints to participation.

Loucks-Atkinson and Mannell (2009) and Jones (2007) lend support for testing self-efficacy in a hunting setting. Both studies advanced understanding of self-efficacy in leisure; however, there was not consistency in measuring self-efficacy. Loucks-Atkinson and Mannell (2009) linked self-efficacy to specific negotiation strategies to measure individuals' efficacy in using the strategy. The authors followed Bandura's approach with similarly worded questions and measures and had participants rate their efficacy on a 0-100 scale. Jones (2007) measured self-efficacy by having participants indicate their agreement to feelings of skill, capability, challenge, and others on a 10 point Likert scale. More work is needed on how to appropriately measure self-efficacy and to expand on Loucks-Atkinson and Mannell (2009) and Jones (2007) work.

Along with self-efficacy, there is some evidence regarding social support in the constraint negotiation process. Research indicates females face different challenges than males that may contribute to perceived constraints in leisure activities (Henderson 1996; Shaw, 1994). Shaw (1994) suggests women are sometimes constrained by social groups like families and gender roles that may limit perceived freedom to participate in leisure activities. Although social groups can be constraining, they can also be viewed as positive influences on females' leisure (Shaw, 1994). Also, positive support from friends and family can be a predictor of participation behavior (Field & O'Leary, 1973).

Social support has been examined from many perspectives and has been used in leisure research in a variety of settings and situations including physical activity (Brown, Brown, Miller & Hansen, 2001; Hibler & Shiner, 2002); leisure involvement (Kyle & Chick, 2004; Voorhees, 2007); and outdoor recreation (Burch, 1969; Enck et al. 2000; Field & O'Leary, 1973; Voorhees,

2007). Overall, results tend to suggest individuals with stronger support networks are more likely to participate in leisure and recreation activities.

Several studies have examined social support in hunting. Enck et al. (2000) were interested in understanding hunter recruitment and retention and suggest social support for hunting happens directly and indirectly. Direct supports are opportunities for learning from others and creating companionship to continue to hunt. Indirect hunting social support includes help with scouting trips, visiting hunting camps, and eating game together. In addition, Enck et al. (2000) believe the factors influencing hunting participation are a result of social and cultural constraints rather than regulatory or access constraints.

Voorhees (2007) also examined social support in hunting by conducting interviews and surveys with hunters. Results from the interviews found evidence of direct support from others including access to new hunting areas, camaraderie, and motivation. There was evidence on the role of indirect social support in hunting participation. Lack of sharing hunting stories and encouragement from other hunters were not factors limiting hunting participation. Results from Voorhees (2007) quantitative study found slightly different results. Social support was only a significant predictor of hunting participation when examined as an interaction effect with leisure involvement and not by itself. Voorhees (2007) suggested future studies on social support and hunting should include the examination of constraints.

Previous research has investigated constraints, negotiation, and motivations to predict participation in leisure and recreation activities. Additionally, limited studies have begun to expand our knowledge of the role of self-efficacy and constraint negotiation. However, there is still much unknown about self-efficacy in the constraint negotiation process and future research is needed to understand how it is most effectively measured and how it relates to participation.

Further, there is little research on social support in the constraint negotiation process. Due to hunting being a predominantly male activity, understanding females' perceptions of social support and self-efficacy is important if the goal is to attract more diverse participants to the activity.

Research Objectives

The purpose of this study was to compare hunting participation between males and females. I compared constraints, negotiation strategies, self-efficacy, social support, and motivations and tested for differences between male and female hunters. I also compared two models of constraint negotiation to understand the differences between male and female hunters participation. Both models take into account the paths that could contribute to the interrelatedness of constraints, negotiation strategies, self-efficacy, social support, and motivations and, their subsequent effect on participation. I believe testing these models will be relevant beyond hunting and could help inform gender differences in outdoor recreation along with understanding the effect of self-efficacy and social support in the constraint negotiation process.

Research Questions

1. Are there differences between male and female ratings of constraints, negotiations strategies, self-efficacy, social support, and motivations?
2. Are self-efficacy and social support positively related to negotiation strategies?
3. Are self-efficacy and social support negatively related to constraints?
4. Does the constraint negotiation process differ for males and females and what are the effects on participation?

Methods

Study Participants

The sample for this study was taken from Oregon Department of Fish and Wildlife 2008 hunting license sales records. A sample of 1500 names, split equally by gender, was pulled for this survey. The sample of males was representative of the type of game hunted in Oregon with 50% deer licenses, 25% elk licenses, and 25% bear licenses. For females, a majority of the sample were deer hunters (70%) followed by elk (15%) and bear (15%) to ensure the sample was targeting female hunters and not “guys in disguise.” According to McFarlane et al. (2003), some women purchase hunting licenses for their partner’s use. There are females that participate in elk and bear hunting; however, some suggest new or inexperienced hunters tend to focus on small game and progress into deer (Organ & Fritzell, 2000).

Data Collection

Survey instruments were designed and pre-tested in spring, 2010. A seven-page mail back questionnaire was used and included questions about demographics and hunting season characteristics. The questionnaire mailing followed a Dillman Total Design Method (2000) with four mailings over a period of 2 months in the summer of 2010. The mailings included a pre-survey letter, full survey mailing, reminder postcard, and second full survey mailing. Of the sample of 1500, 1350 of the addresses were deliverable. This resulted in a total of 392 completed surveys for a response rate of 30%. The questionnaire consisted of several sections including measures of constraints, negotiation, motivation, self-efficacy, social support, and hunting participation.

Leisure constraints items were drawn from previous literature and represented the three theoretically important domains (i.e. intrapersonal, interpersonal, and structural) (Crawford &

Godbey, 1987; Hubbard & Mannell, 2001; Hudson, 2000). Consistent with previous work, constraints items included time, social relationships, financial, and other constraints. Since this study was unique to hunting, several items were added to capture hunting related structural constraints, such as lack of game and complex rules and regulations. Additionally, hunting-related interpersonal and intrapersonal constraints were added; examples include fear of harming someone else and lack of hunting partners. A total of 29 constraints items were measured using a 1 to 5 scale, where 1 equaled “strongly disagree” and 5 equaled “strongly agree.”

Negotiation strategies were assessed based on by Hubbard and Mannell (2001). A total of 19 items fit into four categories including interpersonal coordination, time management, financial management, and skill acquisition. Similar to the constraint items, several hunting related negotiation strategies were added to the categories. Examples include “I try to find people to hunt with” and “I try to fit my hunting around other commitments.” The negotiation items were asked using a 1 to 5 scale, where 1 equaled “strongly disagree” and 5 equaled “strongly agree.”

Motivations were measured with Recreation Experience Preference (REP) items (Manfredo, Driver, & Tarrant 1996). The REP scale is extensive and includes items which may not be suitable for outdoor recreation and hunting. A selection of 22 items was used in this study to target hunters’ motivations. The items were measured on a 1 to 5 scale, where 1 equaled “not at all important” and 5 equaled “extremely important.”

Although self-efficacy has been measured in leisure and outdoor recreation settings, limited research has examined self-efficacy in hunting. Self-efficacy items for this study were modeled closely after Bandura (2006, 1977) and Loucks-Atkinson and Mannell (2007). Items addressed self-efficacy by asking respondents to indicate their confidence in hunting including

skill development, fears of hunting, and social support in hunting. Examples of items include “I can learn the skills necessary to hunt alone” and “I am capable of setting aside my fears so I can hunt.” The ten items were measured using a self-rating, where 0 equaled “not confident” and 100 equaled “very confident.”

Social support items were modeled after Voorhees (2007) which were patterned closely after Daigle (1997) and Cutrona (1986). Items examined personal relationships in hunting including family and friends and their support as it relates to skill development and support for the individual in the activity. Examples of items include “I have plenty of family who enjoy hearing about my hunting experiences” and “my hunting partners are there to assist me when I need them in the field.” A total of 13 items were measured on a 1 to 5 scale, where 1 equaled “strongly disagree” and 5 equaled “strongly agree.”

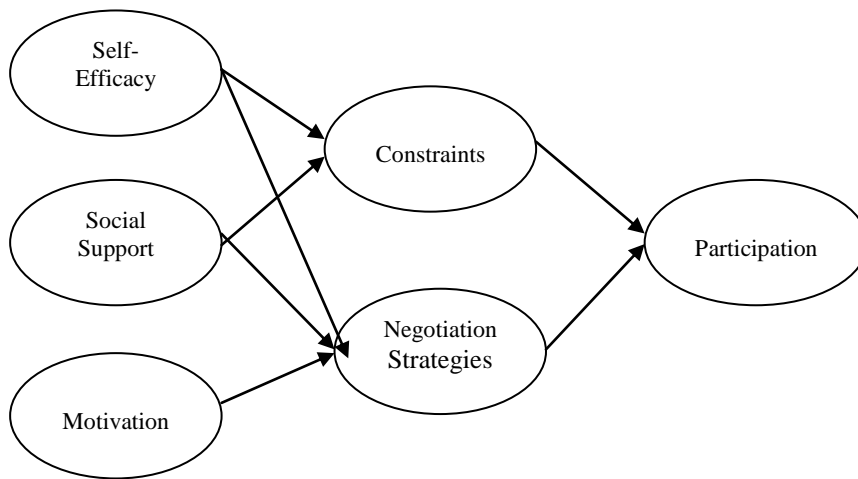
Participation in hunting was measured using 2 items, number of days hunted in Oregon and number of days spent preparing for hunting. Hunting participation can be a complex variable to measure and can include a variety of different variables (Miller & Graefe, 2000). Since a majority of the sample hunted in Oregon, it was important to capture days hunted within the state. Additionally, days preparing to hunt (scouting, preparing gears, looking at maps) show a commitment to the activity and can be seen as a form of participation.

Data Analysis

Questionnaire data were entered, cleaned, and analyzed using SPSS 18. Descriptive statistics were used to generate a profile of the sample of respondents and variables of interest. Exploratory factor analysis was used to help reduce the data and determine specific domains within each construct. Cronbach’s alpha was computed for each factor to assess the internal reliability, with a value of .60 or higher considered to be acceptable (Cortina, 1993).

Leisure constraints, negotiation strategies, motivations, social support, and self-efficacy dimensions were analyzed using LISREL 8.8. The latent construct for constraints was made up of the structural, fear, knowledge/skill, and interpersonal domains. The negotiation strategy latent construct was created from the financial, skill and learning, and personal domains. The motivation latent construct included 4 domains representing nature and relaxation, hunting, skill and exercise, and social. The latent construct for social support included the domains of hunting assistance and confidence while the self-efficacy latent construct is comprised of the skill, support, and fear confidence domains. Lastly, the ultimate dependent variable of hunting participation included two items to create a latent construct. (Figure 3.1)

Figure 3.1. Proposed constraint negotiation model



The domains for each construct were analyzed through confirmatory factor analysis to determine goodness of fit. Data were then analyzed to determine which variables predicted hunting participation. Model fit was determined using three fit indices: RHO statistic (Tucker-Lewis Index, Non-Normed Fit Index), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). For the Rho statistic and the CFI, values of .90 or higher are

acceptable and values of .95 or higher are considered good (Bentler, 1990; Bentler & Bonett, 1980). For the RMSEA, values between .08 and .05 are considered acceptable fit and a value of .05 or less is considered good fit (Browne & Clark, 1993).

Results

Respondents

In the sample of hunters, 56% were male and 44% were female. The majority of the respondents were married (72%) and primarily identified themselves as white/Caucasian (94%). A majority of the respondents considered themselves from a rural area (55%) with lower percentages from suburbs (12%) and cities (14%). The education levels of the respondents varied with 35% having a high school degree or lower, 37% having some college education, and 25% having a college degree or higher. Of the respondents, 41% indicated their income was between \$40,000-\$79,999, while 24% had an income of less than \$40,000, and 25% had an income of \$80,000 or more.

On average, participants hunted close to 16 days in Oregon and less than one day outside the state. A majority of the days hunted involved hunting with rifles ($M=10$) followed by bows ($M=3$). Respondents spent an average of 26 days preparing for the hunting season, which included activities such as scouting, mapping hunting locations, and shopping for gear. Respondents reported on average they belonged to less than one hunting organization.

Constraints

Using exploratory factor analysis, the constraints items were reduced into four domains including structural, knowledge and skills, interpersonal and fear (Table 3.1). The structural, fear, and knowledge and skills domains all had acceptable internal reliability ($\alpha=.81$, $\alpha=.86$,

$\alpha=.78$), while the interpersonal domain showed a marginal value of $\alpha=.61$. This lower value is not surprising given the diverse nature of the constraints items. In addition, other studies have reported low internal reliability values for constraints items (Hubbard & Mannell, 2001).

Overall, respondents reported low levels of constraints, with only one constraint item (lack of game) showing a mean above three. Results indicated that the most constraining factors to hunting participation were structural constraints (Table 3.1). Both males and females reported similar results for the structural constraints and there were no significant differences in means. Of the structural constraints, “lack of game” was the most constraining for males and females reporting the same mean ($M=3.2$). This was followed by “sites are too crowded” with males ($M=2.6$) indicating it was slightly more constraining than females ($M=2.5$). Other structural constraints were “complex rules and regulations” and “inadequate hunting areas” with males reporting a slightly higher mean than females. Other structural constraints included “can’t afford to hunt” with females ($M=2.3$) reporting a slightly higher constraint than males ($M=2.2$).

In the personal domain the most constraining factor was “lack of time” with females ($M=2.6$) indicating it was more of a factor than males ($M=2.3$). This was followed by “family responsibilities” with males and females indicating it was a constraint at a similar level ($M=2.0$). Across all the items in the personal domain, none of the items were statistically significant by gender.

In the fear domain, there were statistical differences between males and females on two of the items. Females ($M=1.2$) indicated they more likely to be constrained by “fear of the outdoors” than males ($M=1.0$) ($t=-2.62$, $p<.01$). Additionally, the item “fear I might harm someone in the field” showed significant differences with males ($M=1.1$) indicating it was less of a constraint than females ($M=1.3$) ($t=-2.09$, $p<.05$).

In the knowledge and skill domain, there were two items that showed statistical significance between males and females. The item “fear of getting lost in the woods” was more constraining for females ($M=1.7$) than for males ($M=1.2$) ($t=-4.25$, $p<.001$). Similarly, the item “lack of skill” was more constraining for females ($M=1.6$) than for males ($M=1.3$) (-2.30 , $p<.05$).

Table 3.1. Male and female comparison of mean scores and domain alphas for constraints

Constraints	Male	Female	T-test
Structural $\alpha=.81$			
Lack of game	3.2	3.2	-.203
Sites are too crowded	2.6	2.5	.793
Complex rules and regulation	2.5	2.4	.893
Inadequate hunting areas	2.5	2.3	1.10
Can't afford to hunt	2.2	2.3	-.631
Sites are closed when I want to visit	2.1	2.1	.098
Conflict with other users	1.7	1.8	-.589
Fear $\alpha=.86$			
Fear of crime	1.4	1.4	-.453
Fear I might harm someone in the field	1.1	1.3	-2.09*
Fear of outdoors	1.0	1.2	-2.62**
Fear I might injure myself	1.2	1.2	-.387
Knowledge and skill $\alpha=.78$			
Fear of getting lost in the woods	1.2	1.7	-4.25***
Lack of skill	1.3	1.6	-2.30*
Lack of information	1.4	1.5	-.549
Personal $\alpha=.61$			
Lack of time	2.3	2.6	-1.58
Family responsibilities	2.0	2.0	.076
Health of someone I like to hunt with	1.7	1.9	-1.43
Lack of hunting partners	1.6	1.8	-1.51

* $p<.05$ ** $p<.01$ *** $p<.001$

Negotiation Strategies

The exploratory factor analysis yielded three negotiation strategy domains. Two of the domains, personal strategies and financial strategies, were assessed to have good internal

reliability with alpha values above .70 (Table 3.2). The domain, skill and learning strategies, had a slightly lower internal reliability ($\alpha=.62$).

The negotiation strategies respondents rated the highest were in the personal strategies domain (Table 3.2). The items “I try to plan ahead so I can hunt”, “I set aside time for hunting activities” and “I try to improve my hunting skills” were all rated the highest, with males and females reporting similar scores ($M > 4.0$). There were two significantly different items for males and females in the skill and learning domain. Females ($M=3.6$) were more likely than males ($M=2.9$) to indicate they used the strategy “I hunt with people who are more knowledgeable than me” ($t=-4.90, p<.001$). The item “I hunt with people who have more skills so I can learn from them” was more often used by males ($M=3.9$) than females ($M=3.5$) ($t=-4.39, p<.001$).

Table 3.2. Male and female comparison of mean scores and domain alphas for negotiation strategies

Negotiation Strategies	Male	Female	T-test
Personal strategies $\alpha=.72$			
I try to plan ahead so I can hunt	4.4	4.4	.752
I set aside time for hunting activities	4.2	4.3	.951
I try to improve my hunting skills	4.2	4.2	.259
I try to fit my hunting around my other commitments	3.8	3.8	.236
I arrange rides to and from hunting locations for myself	3.6	3.6	-.436
I hunt regardless of injury or poor health	3.3	3.2	1.20
I try to meet people with similar hunting interests	3.2	3.1	.104
Skill and learning strategies $\alpha=.62$			
I try to find people to hunt with	3.6	3.7	-.873
I hunt with people who are more knowledgeable about hunting than me	2.9	3.6	-4.90***
I hunt with people who have more skills so I can learn from them	3.9	3.5	-4.39***
I hunt with people my own age	3.0	3.2	-1.85
Financial strategies $\alpha=.82$			
I save money so I can hunt more	3.5	3.5	.526
I try to budget my money so I can hunt more	3.4	3.5	-.565
I cut back spending in areas so I can hunt	2.7	2.9	-1.26

* $p < .05$ ** $p < .01$ *** $p < .001$

Motivations

The exploratory factor analysis for motivations resulted in four domains. The four domains of nature and relaxation, hunting related, skill and exercise, and social had acceptable internal reliability, with all alpha values above .70 (Table 3.3).

Respondents reported the highest motivations for hunting in the nature and relaxation domain (Table 3.3). The items “to be outdoors” ($M=4.3$) and “to enjoy nature” ($M=4.2$) were the top reasons for hunting participation, with females and males reporting the same value. There were two significantly different items among males and females in this domain. The items “to experience solitude” ($t=2.16, p<.05$) and “for mental health” ($t=1.96, p<.05$) differed significantly, with males ($M=3.2$) reporting higher means than females ($M=2.9$).

In the hunting related domain, the item “bring meat home to my family” was a statistically significant top rated motivation for females ($M=4.1$) compared to males ($M=3.5$) ($t=5.53, p<.001$). Other statistically significant items were in the skill and exercise domain, with females ($M=3.6$) indicating “to develop skills” was more of a reason to hunt than males ($M=3.3$) ($t=-2.53, p<.01$). The item “to share my skills and knowledge with others” was rated higher among males ($M=2.9$) than females ($M=2.5$).

In the social domain there were three statistically significant items. Females ($M=3.8$) rated “for family recreation” a higher reason for hunting than males ($M=3.4$) ($t=-3.27, p<.01$). A similar relationship exists for the item “to bring my family closer together,” with females ($M=3.5$) indicating it was more of a reason than males ($M=2.9$) ($t=-3.78, P<.001$). The final significant difference for the motivation items was “to be with friends,” where males ($M=3.7$) indicated it was a stronger motivation than females ($M=3.4$) ($t=1.96, p<.05$).

Table 3.3. Male and female comparison of mean scores and domain alphas for motivations

Motivation	Male	Female	T-test
Nature and relaxation $\alpha=.90$			
To be outdoors	4.3	4.3	-.093
To enjoy nature	4.2	4.2	.636
To get away from the regular routine	4.0	3.8	1.82
For relaxation	3.9	3.8	1.20
To improve my health	3.0	3.0	.297
To experience natural surroundings	3.8	3.8	-.403
To experience solitude	3.2	2.9	2.16*
For mental health	3.2	2.9	1.96*
Hunting related $\alpha=.78$			
Bringing meat home for my family to eat	3.5	4.1	-5.53***
To harvest a trophy deer/elk	2.7	2.4	1.62
To help control the spread of diseases/CWD	2.4	2.4	.088
To help control the number of game in the herd	2.4	2.4	.070
To help control male to female deer ratio in the herd	2.2	2.2	-.4.8
Skill and exercise $\alpha=.72$			
To develop my skills	3.3	3.6	-2.53**
For physical exercise	3.3	3.5	-1.59
To share my skill and knowledge with others	2.9	2.5	2.78**
Social $\alpha=.84$			
For family recreation	3.4	3.8	-3.27**
To be with others who enjoy the same things as you	3.6	3.6	-.549
To bring my family closer together	2.9	3.5	-3.78***
To be with my friends	3.7	3.4	1.96*
To do things with members of your group	3.2	3.2	.047

*p< .05 **p< .01 ***p< .001

Social Support

The social support factor analysis yielded two domains. The domains, assistance with hunting and confidence from others, both had strong internal reliability with alpha values above .80 (Table 3.4).

Results from analysis indicate respondents in general felt supported in their hunting (Table 3.4). Females tended to report higher values than males in the assistance from others

domain. The highest rated item for females ($M=4.1$) and males ($M=3.9$) in this domain was “my hunting partners are there to assist me when I need them in the field”. The item “I have family members who help with harvesting game” was stronger for females ($M=4.1$) than males ($M=3.6$) and statistically different ($t=-3.57, p<.01$). The item “I have plenty of family members who assist me in hunting” was also significantly different for males ($M=3.5$) and females ($M=4.0$) ($t=-4.01, p<.001$). Lastly, the item “I have people in my life who teach me skills about hunting” also followed a similar relationship to the other items in this domain, with females ($M=3.9$) reporting a higher mean than males ($M=3.2$) ($t=-4.84, p<.001$).

In the confidence from others domain, males tended to report higher means than females. However, there was only one significant difference between males and females in this domain. Males ($M=4.3$) indicated more agreement than females ($M=4.0$) with the item “My family thinks I am a competent hunter” ($t=2.17, p<.05$).

Table 3.4. Male and female comparison of mean scores and domain alphas for social support

Social support	Male	Female	T-test
Assistance with hunting $\alpha=.84$			
My hunting partners are there to assist me when I need them in the field	3.9	4.1	-1.75
I have family members who help with harvesting of game	3.6	4.1	-3.57**
I have plenty of family members who assist me in hunting	3.5	4.0	-4.01***
I have people in my life who teach me skills about hunting	3.2	3.9	-4.84***
Confidence from others $\alpha=.81$			
I have friends who believe I am a capable hunter	4.2	4.1	1.27
My family thinks I am a competent hunter	4.3	4.0	2.17*
I have friends who enjoy hearing about my hunting experience	3.9	3.7	1.16
I have plenty of friends who want to hunt the same game/seasons as I do	3.9	3.9	1.20
I have friends who give me information about where to hunt	3.6	3.5	.722

* $p<.05$ ** $p<.01$ *** $p<.001$

Self-efficacy

The self-efficacy exploratory factor analysis found three domains: skill confidence, support confidence, and fear confidence all had acceptable internal reliability values above .70 (Table 3.5).

Overall, respondents reported high self-efficacy in hunting (Table 3.5). In the skill confidence domain, there were three significant or variations. The item “I have confidence in my hunting skills” was rated higher by males ($M=96.1$) than females ($M=87.1$) ($t=5.73$, $p<.001$). Males ($M=94.6$) also reported higher means than females ($M=84.0$) for the item “I can learn the skills necessary to hunt independently” ($t=4.38$, $p<.001$). A similar pattern existed for the item “I feel the skills I have are developed enough to hunt alone” with males ($M=94.0$) reporting higher means than females ($M=75.1$) ($t=7.22$, $p<.001$).

In the support confidence domain there were two significant items and males tended to report slightly higher means than females. The item “I am able to keep hunting friends” was stronger for males ($M=91.4$) than females ($M=86.5$) ($t=2.29$, $p<.05$). The other significant item was “I am capable of finding ways to meet other people who hunt” with females ($M=81.0$) reporting a lower mean than males ($M=86.2$) ($t=2.11$, $p<.05$).

In the fear confidence domain there were three significant items and males tended to report higher means than females. Males ($M=97.1$) were more likely than females ($M=91.3$) to agree with the item “I am able to hunt regardless of others opinions about me” ($t=4.48$, $p<.001$). A similar relationship exists for the item “I am capable of setting aside my fears so I can hunt,” with males ($M=96.0$) reporting stronger confidence than females ($M=88.7$) ($t=4.57$, $p<.001$). Lastly, females ($M=75.9$) expressed less confidence than males ($M=94.0$) with the item “I am able to overcome my fears of hunting alone” ($t=6.10$, $p<.001$).

Table 3.5. Male and female comparison of mean scores and domain alphas for constraints, negotiation strategies, motivations, social support, and self-efficacy

Self-efficacy	Male	Female	T-test
Skill confidence $\alpha=.76$			
If I want to learn more hunting skills I know who to ask	92.7	91.8	-1.27
I have confidence in my hunting skills	96.1	87.1	5.73***
I can learn the skills necessary to hunt independently	94.6	84.0	4.38***
I feel the skills I have are developed enough to hunt alone	94.0	75.1	7.22***
Support confidence $\alpha=.79$			
I am able to keep hunting friends	91.4	86.5	2.29*
I am confident in my ability to develop friendships with other hunters	89.3	86.2	1.61
I am capable of finding ways to meet other people who hunt	86.2	81.0	2.11*
Fear confidence $\alpha=.75$			
I am able to hunt regardless of others opinions about me	97.1	91.3	4.48***
I am capable of setting aside my fears so I can hunt	96.0	88.7	4.57***
I am able to overcome my fears of hunting alone	94.0	75.9	6.10***

* $p < .05$ ** $p < .01$ *** $p < .001$

Model analysis

A proposed model of the relationship between social support, self-efficacy, motivations, negotiation strategies, constraints, and participation was tested. The model hypothesized that social support, self-efficacy, and motivations are predictors of negotiation strategies and self-efficacy and social support are predictors of constraints. Additionally, it is proposed that negotiation strategies and constraints are predictors of overall hunting participation (Figure 3.1).

The full model was tested for males and females and modification indices suggested there were several relationships had correlated error terms. These modifications were made to the full model and provided a fit of the data (Table 3.6) with adequate results for the goodness of fit tests for males (RMSEA=.070, IFI=.94, CFI=.94, Rho=.92) and females (RMSEA=.049, IFI=.94,

CFI=.94, Rho=.93). Several of the structural paths were significant at the .05 level for both males (Figure 3.2) and females (Figure 3.3). However, three of the hypothesized paths were not significant in either the male and female models: the relationships from self-efficacy to negotiation strategies, social support to constraints, and constraints to participation.

Table 3.6. Summary of constraint negotiation models with fit indices

Model	$X^2(df)$	X^2/df	Rho	CFI	IFI	RMSEA
Female Full	239.4(128)	1.86	.93	.94	.94	.079
Female Reduced	191.6(123)	1.55	.95	.96	.96	.060
Male Full	247.7(117)	2.11	.92	.94	.94	.070
Male Reduced	243.5(120)	2.02	.92	.94	.94	.068

The latent construct, constraints, was removed from the model as it did not predict participation for either gender. In addition, a path from self-efficacy to social support was added. Results indicated the path from self-efficacy to social support was significant at the .05 level; however, the path between self-efficacy and negotiation was not significant and consequently was removed from both models. This resulted in an acceptable fitting model with reasonable fit statistics for males (RMSEA=.068, IFI=.94, CFI=.94, Rho=.92). Females had a slightly better fitting model than males, with several fit statistics strengthening with the reduced model (RMSEA=.060, IFI=.96, CFI=.96, Rho=.95).

Figure 3.2. Full constraint negotiation model for males with standardized path coefficients (Note: solid lines are significant $p < .05$; dotted lines are nonsignificant)

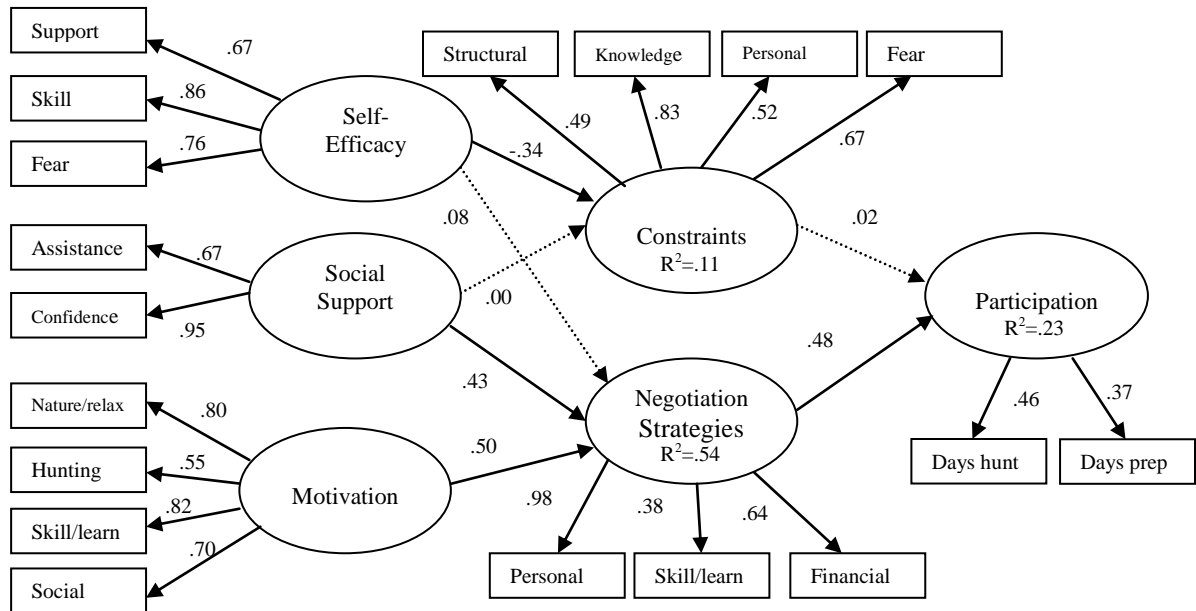
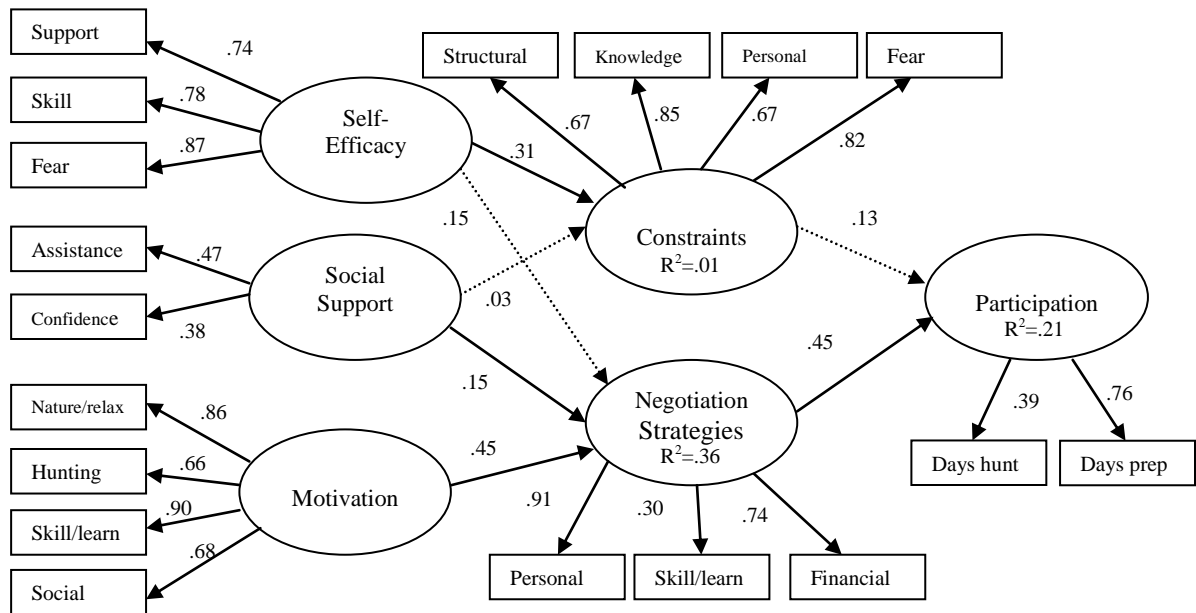


Figure 3.3. Full constraint negotiation model for females with standardized path coefficients (Note: solid lines are significant $p < .05$; dotted lines are nonsignificant)



The reduced model provided better fit to the data with all of the structural paths significant for males and females (Table 3.6). For males, the path between self-efficacy and social support was positive ($\beta=.32$) and accounted for 10% of the variance in social support (Figure 3.4). Both motivation ($\beta=.49$) and social support ($\beta=.41$) were fully mediated by negotiation strategies and showed positive relationships. Further, there was a positive relationship between negotiation strategies ($\beta=.47$) and hunting participation. The model explained a reasonable amount of variance in negotiation strategies ($R^2=.46$) and overall participation ($R^2=.22$).

For the reduced female model, the path between self-efficacy and social support was positive ($\beta=.45$) and accounted for 20% of the variance in social support (Figure 3.5). Both motivation ($\beta=.46$) and social support ($\beta=.23$) were fully mediated by negotiation strategies and showed positive relationships and accounted for 29% of the variance. Additionally, there was a positive relationship between negotiation strategies ($\beta=.49$) and hunting participation with 20% of the variance explained.

Figure 3.4. Final constraint negotiation model for males with standardized path coefficients (Note: all path values are significant $p<.05$)

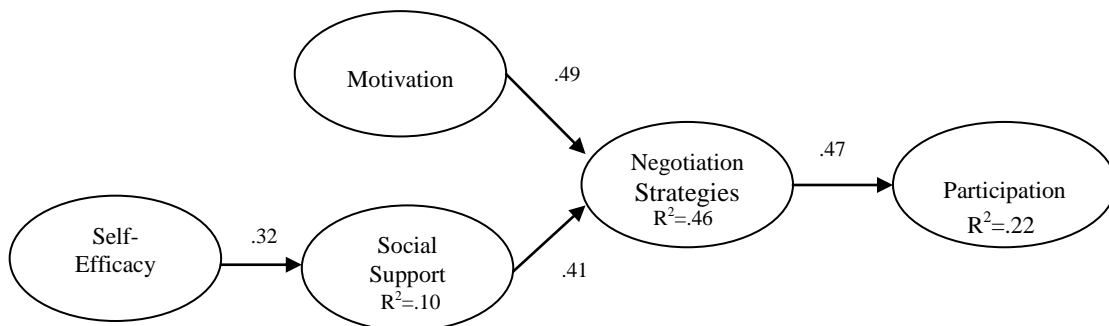
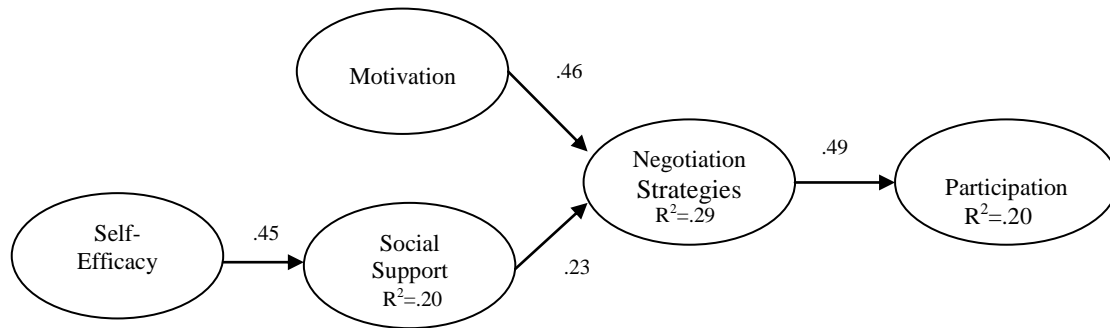


Figure 3.5. Final constraint negation model for females with standardized path coefficients (Note: all path values are significant $p < .05$)



Discussion and Conclusions

Descriptive results indicate females who participate in hunting are not as constrained as originally thought. To a large degree, males appear to face constraints as females. For both males and females, structural factors like “lack of game” “sites are too crowded”, and “complex rules and regulations” were the most constraining reasons for not participating in hunting. Other structural constraints related to hunting management were also somewhat important. This suggests that management factors may be contributing to a decline in hunting participation.

An interesting finding is the low mean score for the constraint item, “lack of time.” Other studies on constraints generally report time as the major constraint for decreasing participation (Covelli et al., 2007; Miller & Vaske, 2003; Shaw, 1994). This indicates hunters perceive they have the time to hunt, but other factors are constraining them. The item “family responsibilities” was not rated as high as expected. Females have often cited family responsibilities as a major factor preventing them from participating in leisure activities (Shaw, 1994). This finding may indicate women hunters perceive hunting as a family activity. Women tended to rank motivations related to family among the highest. Females viewed “bringing meat home” and “being with family” as motivating factors. Males ranked “family responsibilities” the

same as females; however, they were not as motivated as women to hunt for family reasons or to bring meat home to the family.

Other studies on females and hunting suggest fear associated with hunting can be a constraint (Duda, 2001; Thomas & Peterson, 1993). However, findings from this study indicate fears were not constraints. Thomas and Peterson (1993) suggest women have fears surrounding confidence in training and their skills in the field. However, the self-efficacy ratings from females in this study showed they are not constrained by skills and training. In fact, one of the highest rated self-efficacy items was related to confidence in skills. In addition, the constraint item “lack of skill” was relatively low compared to the other items. Fears about causing harm and fears about being in the woods alone were addressed in this study, with results suggesting these fears were not a constraining factor. Being in the woods was a major motivator for female hunting participation.

When fears for females were compared to males, there were several significant differences. Females were significantly different from males for items related to “fears of being outdoors and getting lost in the woods.” This suggests, even though they are not a major factor, such fears might be a contributing constraint to why females do not participate as often as males in hunting. A similar relationship exists for items related to skill and harming others in the field. Skill and safety may be areas that prevent females from participating in hunting as often as desired.

Previous studies on women and hunting have reported lack of social support as a major constraint (Duda, 2001; Martin & Miller, 2008; Thomas & Peterson, 1993). However, our results indicate women felt supported in hunting. Duda (2001) and Martin and Miller (2008) both identified lack of social support and lack of hunting partners as major factors preventing women

from participating; however, results from the social support scales suggest women do feel supported from their family and friends. In addition, most women felt they had a network of people to assist them when they needed help in the field or needed to learn new skills.

Males had similar results as females for social support. It appears that males also feel supported in their hunting activities. This is similar to findings by Voorhees (2007) where hunters felt they were supported in their activity. There were some social support items that were significantly different for males and females. It is interesting to note, males reported lower means than females in the assistance with hunting domain. Males reported a significantly lower score for “families helping harvest game and families assisting in hunting.” This suggests males perceive they do not have help from their families during hunting seasons. This may be an area natural resource managers can help with by offering family focused programs for families with hunters.

It appears females in this study have figured out how to successfully negotiate through constraints to hunting. Women were most likely to use strategies related to time management and planning ahead to facilitate hunting. This indicates females in this sample are good at juggling responsibilities in order to hunt as often as they would like. Additionally, females indicated they try to improve their skills and learn from others to increase their hunting participation. Women seem to be successfully negotiating through skill related constraints in hunting. Additionally, women report using strategies related to finding people to hunt with to overcome the constraint of lack of hunting partners.

Males were about as likely as females to successfully negotiate through constraints. There were two items in the negotiation strategies that were significantly different for males and females. Males were significantly more likely “to hunt with people who have more skills than

them” in order to learn more, while females were significantly more likely to hunt with “people who were more knowledgeable than them about hunting.” These findings are interesting in that males sought hunting partners with skills and females sought hunter partners with knowledge. This may be due to females being newer than males at the sport and wanting to build their knowledge and figuring they can refine their skills as they progress. In addition, males who have hunted for a longer period of time may have the knowledge and want to build their skill levels.

Results from the structural equation analysis provide interesting findings. It was hypothesized that constraints would be a significant factor predicting hunting participation; however, they were not. This may be due to the nature of the sample. Females in this study were chosen through license sales and may have already overcome their constraints to participation. These results are consistent with previous studies that have examined individuals who were already participating in recreation. Wilhelm Stanis et al. (2009) found the relationship between constraints, LTPA, and negotiation strategies were not statistically significant, however removing constraints reduced the model fit so the authors kept constraints in the model. Similar issues were identified by Covelli et al. (2007), where constraints were not significant predictors of participation. In this instance, constraints were dropped from the model to improve fit and resulted in motivations being fully mediated by negotiation strategies to predict outdoor recreation participation. The authors suggest this may be due to recreationists already having successfully negotiated through constraints.

Self-efficacy was not related to negotiation strategies as originally hypothesized, while the relationship between self-efficacy and social support was confirmed. This suggests individuals with high self-efficacy are more likely to feel they are supported in hunting. This may be due to the women in this study are already confident in themselves and their hunting

skills, which results in their ability to make hunting friends and gain support from their family. These findings are not consistent with previous studies where negotiation strategies were linked to self-efficacy (Loucks-Atkinson & Mannell, 2007). This could be an issue related to measurement of the constructs. Loucks-Atkinson and Mannell (2007) linked self-efficacy directly to specific negotiation strategies and found support for the idea of negotiation-efficacy. This study sought to separate the constructs of negotiation and self-efficacy to measure other potential relationships. Results demonstrate self-efficacy is not linked directly to negotiation strategies and there may be intervening variables like social support.

There has been some question over the role of social support and hunting participation. Voorhees (2007) found mixed results for the relationship between social support and hunting participation in the quantitative and qualitative parts of the study. Findings from this study indicate social support does contribute to overall hunting participation through its influence on negotiation strategies. This adds to the existing literature and indicates females who had more social support were more likely to employ negotiation strategies which in turn contributed to overall participation.

Although there were differences between models, it is important to note the similarities between males and females. Even though there were differences in the bivariate comparisons, the paths in both models were generally the same. Differences between path coefficients and variances were small and indicate similar factors contribute to overall hunting participation for both males and females. Results demonstrate that both males and females face similar issues when hunting and concepts such as social support and self-efficacy could yield insights in the effort to increase participation among the general hunting population.

Future Implications

Natural resource managers who are interested in increasing hunting participation can use these findings to support future recruitment efforts. Finding ways to build confidence in skills and knowledge of hunting may be a good approach for increasing self-efficacy for females. Managers can focus efforts on providing training opportunities and information sessions to new female hunters. Social support adds to females' abilities to negotiate through constraints. Managers can continue to provide places and opportunities where females can meet other hunters to help them gain an understanding of the sport and increase new hunters' perceptions of support.

Currently, there are several organizations that provide women-centered programs for hunting related activities. However, this may not be enough to attract new female hunters. Females in this sample identified family as a motivator to hunting. Managers may need to consider providing family-focused programming to attract new hunters. Providing opportunities where all family members are allowed to participate may be more attractive than just female focused or youth focused. This idea is also supported by males feeling less support than females from families in assistance to hunting. Males may also benefit from having family focused programming and being able to receive the assistance they need to be successful at hunting. Additionally, bringing meat home to the family motivated females to a greater degree than males. Providing programs on how to harvest game for sustenance, care for game in the field, and creative ways of cooking game may be beneficial for both males and females. Managers need to be creative with how to market and advertise to recruit hunters. Marketing hunting as a way to sustain families' nutrition and cohesion may be a successful way to increase hunting.

Managers should continue to examine those structural constraints related to resource management. Perceived lack of game stood out equally for both genders as the major constraint.

This was followed by issues with feeling crowded, inadequate hunting areas, and complex rules and regulations. These are factors that managers can help mitigate in the future. Strategies like increased outreach from managers to the hunting population may help foster discussion of these factors and ways to reduce them in the future.

Future studies on females and hunting should target new members to the sport and women who may be considering joining. This sample included women who have already successfully negotiated through their constraints. To truly understand what prevents women from participating, it will be imperative to ask these questions to the women who are thinking about hunting in the future and those who just started. Future studies should work closely with natural resource managers and hunter safety educators to identify those women who are just breaking into the sport. There is still a lot unknown about how to recruit and retain female hunters. However, this study provides a step towards a general understanding of what influences participation for those who do hunt.

This study provides support for the use of self-efficacy and social support in the constraint negotiation process. This paper was unique in that it focused on females in an activity that is traditionally male dominated. Other studies that focus on specific demographic groups like females, ethnic minorities, and persons with disabilities should consider using self-efficacy and social support to understand leisure participation and the constraint negotiation process.

References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.
- Bandura, A. (1997). *Exercise of Control*. Englewood Cliffs, NJ: Prentice-Hill.
- Bandura, A. (2006). *Self-efficacy and Beliefs of Adolescents*. Charlotte, NC: Information Age Publishing.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238-246.
- Bentler, P. M. & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588-606.
- Boxall, P. C., Watson, D. O., & McFarlane, B. L. (2001). Some aspects of the anatomy of Alberta's hunting decline. 1990-1997. *Human Dimensions of Wildlife*, 6, 97-114.
- Brown, P. R., Brown, W. J., Miller, Y. D., & Hansen, V. (2001). Perceived constraints and social support for active leisure among mothers with young children. *Leisure Sciences*, 23, 131-144.
- Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.) *Testing structural equation models*. (pp.136-162) Newbury Park, CA: Sage.
- Burch, W. R. Jr. (1969). The social circles of leisure: Competing explanation. *Journal of Leisure Research*, 1, 124-147.
- Covelli, E., Graefe, A, and Burns, R. (2007). A re-examination of constraints negotiation models for forest recreation. Book of Abstracts from the National Recreation and Park Association: 2007 Leisure Research Symposium (pp. 45). Indianapolis, IN.

- Cortina, J. M. (1993). What is alpha coefficient? An examination of theory and applications. *Journal of Applied Psychology, 78*(1), 98-104.
- Crawford, D. W., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences, 9*, 119-127.
- Crutona, C. E. (1986). Behavioral manifestations of social support: A microanalytic investigation. *Journal of Personality and Social Psychology, 51*(1), 201-208.
- Daigle, J. J. (1997). *The sociocultural importance of fur trapping in six northeastern states*. Unpublished doctoral dissertation, University of Massachusetts, Amherst.
- Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York: NY: Wiley.
- Duda, M. D. (2001). The hunting mind: Women and hunting. *North American Hunter*, November, 35-37.
- Enck, J. W., Decker, D. J., & Brown, T. L. (2000). Status of hunter recruitment and retention in the United States. *Wildlife Society Bulletin, 28*(4), 817-824.
- Field, D. R., & O'Leary, J. T. (1973). Social groups as a basis for assessing participation in selected water activities. *Journal of Leisure Research, 5*, 16-25.
- Henderson, K. A. (1996). One size doesn't fit all: the meanings of women's leisure. *Journal of Leisure Research, 28*(3), 139-154.
- Henderson, K. A., Stankler, D., Taylor, G. (1988). The relationship between barriers to recreation and gender-role personality traits for women. *Journal of Leisure Research, 20*, 69-80.
- Henderson, K. A., Hodges, S., & Kivel, B. D. (2002). Context and dialogue in research on women and leisure. *Journal of Leisure Research, 34*(3), 253-271.

- Hibler, D. K., & Shinew, K. J. (2002). Interracial couples' experience of leisure: A social network approach. *Journal of Leisure Research*, 34(2), 135-156.
- Hubbard, J., & Mannell, R.C. (2001). Testing competing models of the leisure constraints negotiation process in a corporate employee recreation setting. *Leisure Sciences*, 23, 145-163.
- Hudson, S. (2000). The segmentation of potential tourists: Constraint differences between men and women. *Journal of Travel Research*, 38(4), 363-368.
- Jackson, E. L. (1997). In the eye of the beholder: A comment on Samdahl & Jekubovich (1997), "A critique of leisure constraints: Comparative analyses and understandings." *Journal of Leisure Research*, 29, 1-11.
- Jackson, E. L., & Rucks, V. C. (1995). Negotiation of constraints by junior-high and high-school students: An exploratory study. *Journal of Leisure Research*, 27, 85-105.
- Jackson, E. L., Crawford, D. W., & Godbey, G. (1993). Negotiation of leisure constraints. *Leisure Sciences*, 15, 1-11.
- Jones, J. J. (2007). *Impact of "Becoming and Outdoors-Woman" on self-efficacy, constraints and participation in outdoor recreation*. Unpublished master's thesis, Ohio University, Athens.
- Kyle, G. T., & Chick, G. E. (2004). Enduring leisure involvement: The importance of relationships. *Leisure Sciences*, 23, 243, 266.
- Loucks-Atkinson, A., & Mannell, R. (2007). Role of self-efficacy in the constraints negotiation process: The case of individuals with fibromyalgia syndrome. *Leisure Sciences*, 29(1), 19-36.
- Martin, N., & Miller, C. A. (2008). Finding Artemis: Pathways for recruiting and constraints to retaining female hunters. Proceedings of the 2008 Northeastern Recreation Research

- Symposium (GTR-NRS-P-42, pp. 332-336) Bolton Landing, NY: Newton Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Manfredo, M. J., Driver, B. J., & Tarrant, M. A. (1996). Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. *Journal of Leisure Research*, 28(3), 188-213.
- Mcfarlane, B. L., Watson, D. O., & Boxall, P. C. (2003). Women hunters in Alberta, Canada: Girl power or guys in disguise? *Human Dimensions of Wildlife*, 8, 165-180.
- Miller, C. A., & Graefe, A. R. (2000). Degree and range of specialization across related hunting activities. *Leisure Sciences*, 22, 195-204.
- National Wild Turkey Federation, Women in the Outdoors. Women in the outdoors program: 2005 Survey Results.
- Organ, J. F., & Fritzell, E. K. (2000). Trends in consumptive recreation and the wildlife profession. *Wildlife Society Bulletin*, 28(4), 780-787.
- Poudyal, N., Cho, S. H., & Bowker, J. M. (2008). Demand for resident hunting in the Southeastern United States. *Human Dimensions of Wildlife*, 13, 158-174.
- Scott, D. (1991). The problematic nature of participation in contract bridge: A qualitative study of group-related constraints. *Leisure Sciences*, 13, 321-336
- Shaw, S. M. (1994). Gender, leisure, and constraint: Towards a framework for the analysis of women's leisure. *Journal of Leisure Research*, 26(1), 8.
- Son, J. S., Kerstetter, D. L., & Mowen, A. J. (2007). Testing alternative leisure constraint models: An extension of Hubbard and Mannell's Study. *Leisure Sciences*, 30, 198-216
- Thomas, C. L., & Peterson, T. A. (1993). Becoming an outdoors-woman. *Women in Natural Resources*, 15(3), 16-21.

U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce,
U.S. Census Bureau. 2006 National Survey of Fishing, Hunting, and Wildlife-Associated
Recreation.

Voorhees, C. S. (2007). *A mixed-method examination of factors related to hunting participation*. Unpublished doctoral dissertation, The Pennsylvania State University, State College.

Wilhem Stanis, S. A., Schneider, I. E., & Russell, K. C. (2009). Leisure time physical activity of par visitors: Retesting constraint models in adoption and maintenance stages. *Leisure Sciences, 31*, 287-304.

Zinn, H. C. (2003). Hunting and sociodemographic trends: Older hunters from Pennsylvania and Colorado. *Wildlife Society Bulletin, 31*(4), 1004-1014.

Chapter 4

Testing Models of Self-Efficacy in the Constraint Negotiation Process: A Re-Examination of Loucks-Atkinson and Mannell's Study

Abstract

The purpose of this study was to test four models of self-efficacy in the constraint negotiation process proposed by Loucks-Atkinson and Mannell (2007). A sample of hunters was used to compare and test the relationships between constraints, negotiation strategies, motivations, self-efficacy, and hunting participation. Findings suggest a final model where constraints are not significant predictors of hunting participation. Consistent with Loucks-Atkinson and Mannell (2007), self-efficacy was determined to be a significant variable predicting participation. Implications of including self-efficacy in the constraint negotiation process are discussed.

Introduction

Over the past decade, there has been growth in the amount of research focused on negotiation strategies in the leisure constraint process (Covelli, Graefe, & Burns, 2007; Hubbard & Mannell, 2001; Loucks-Atkinson & Mannell, 2007; Son, Kerstetter, & Mowen, 2008; Wilhelm Stanis, Schneider, & Russell, 2009). These studies add to our understanding of why constraints do not completely prevent or reduce recreation participation (Hubbard & Mannell, 2001). Researchers have attempted to add to our knowledge by testing the relationship between constraints, negotiation strategies, motivations and participation in a variety of leisure settings (Hubbard & Mannell, 2001; Son et. al., 2008; Wilhelm Stanis et al., 2009). Results from these

studies are divergent and suggest that leisure settings and populations may contribute to differences in findings. Several researchers have suggested that constraint negotiation needs further development and should be explored (Hubbard & Mannell, 2001; Jackson, 2000).

Previous studies on constraint negotiation have been limited in the variables they examine. Most studies focus solely on the relationship between constraints, negotiation strategies, and motivations and their influence on participation; however, evidence from Loucks-Atkinson and Mannell (2007) suggests self-efficacy may be a contributing factor. Self-efficacy is closely linked with constraints and often determines an individual's ability to overcome barriers and challenges (Bandura, 1977). Loucks-Atkinson and Mannell (2007) found support for the concept of negotiation-efficacy, which is an individual's ability to utilize negotiation strategies to overcome constraints. This lends support for integrating self-efficacy into the constraint negotiation process.

This study extends the previous work and tests four models of constraint negotiation to understand the influence of self-efficacy. It differs from Loucks-Atkinson and Mannell (2007) by examining constraint negotiation in an outdoor recreation setting and with a focus on the activity of hunting. In addition, this paper uses a measure of self-efficacy based on the work of Bandura (1977) with items directly related to hunting. Unlike Loucks-Atkinson and Mannell (2007), this paper does not create an efficacy negotiation variable; instead it retains self-efficacy as a separate construct. Keeping self-efficacy separate allows for a deeper understanding of the construct and how it might relate to other variables.

Background

Constraints

There has been considerable research conducted on constraints and how they influence individuals in their recreation and leisure pursuits. Constraints research provides insight into factors limiting participation in recreation and leisure. Constraints are “factors that are assumed by researchers and/or perceived or experienced by individuals to limit the formation of leisure preferences and/or inhibit or prohibit participation and enjoyment in leisure” (Jackson, 2000, p.62). Essentially, constraints are obstacles that individuals face that can reduce participation in activities and have the ability to decrease satisfaction. Earlier research by Crawford and Godbey (1987) identified three types of leisure constraints including intrapersonal, interpersonal, and structural constraints.

Intrapersonal constraints are internal, psychological factors that prevent individuals from recreating. Examples include fear of doing certain activities alone and perceptions of poor skills. Interpersonal constraints are social factors that exist between the individual and friends, families, and others. These types of constraints may occur due to lack of acceptance of leisure preferences by friends and family or not having anyone to participate in leisure activities with. Structural constraints are external factors that disrupt an individual’s ability to participate in activities. Examples include not having enough money or lack of transportation (Crawford & Godbey, 1987; Wilhelm Stanis et al., 2009). All three of these types of constraints have the ability to prevent or limit recreation for individuals.

Although there is a considerable body of research on constraints to recreation, few studies have examined constraints to outdoor recreation and even fewer have focused on hunting. Earlier work by Thomas and Peterson (1993) examined women in hunting related activities. The

authors found women were constrained by several factors including intrapersonal, interpersonal, and structural constraints. Major intrapersonal constraints included fear of hunting and outdoor activities. The fear was rooted in their own ability to do the activity, fear of their skill level, and fear of not fitting in. In addition, the authors identified social pressures as intrapersonal constraints caused by hunting traditionally being a male dominated sport. Interpersonal constraints were centered on lack of female role models and not being raised in a household that valued hunting and related activities. The structural constraints Thomas and Peterson (1993) identified were related to not have enough information or the proper equipment to participate in hunting.

Thomas and Peterson (1993) led the way for other researchers to begin to examine constraints for females in hunting related activities. Duda (2001) had consistent findings with Thomas and Peterson (1993) and identified fears as a major constraint. Duda (2001) added to the list of fears by including causing harm to animals and fear of poor behavior and opinions from other hunters. Duda (2001) also identified the interpersonal constraint of not having a social support system to facilitate hunting for women. Martin and Miller (2008) added to interpersonal constraints by identifying lack of hunting partners as a major factor contributing to lack of participation and they also found lack of training for skill development was a major structural constraint.

Negotiation Strategies and Motivation

Along with understanding constraints, it is also important to understand factors that facilitate participation like negotiation strategies and motivations. Constraints are not insurmountable obstacles; rather they are factors that can be negotiated through (Jackson, 2000; Jackson, Crawford, & Godbey, 1993; Scott, 1991). By using negotiation strategies, individuals

can alleviate constraints to increase participation in leisure activities. In addition, individuals' motivations are a proactive response to constraints and influence the ability to utilize negotiation strategies (Jackson et al., 1993).

Early work by Jackson et al. (1993) expanded constraints theory and explained that varying degrees of constraints did not always result in non-participation. In these cases, negotiation strategies were used to mitigate the presence of constraints in order to increase participation. Jackson et al. (1993) viewed negotiation strategies as both cognitive and behavioral ways individuals overcome constraints. Further research by Jackson and Rucks (1995) found individuals were more likely to employ behavioral negotiation strategies than cognitive strategies. Examples of major behavioral strategies include setting aside time, improving skills, and developing personal relationships.

Motivations are central to understanding why individuals engage in recreation activities and to explain leisure behavior (Manfredo, Driver, & Tarrant, 1996). Jackson et al. (1993) introduced the concept of motivations into the constraint negotiation model as the "balance proposition" and suggest motivations are essential for implementing negotiation strategies. Although motivations have been proposed as part of the constraint negotiation process, it was not until recently that researchers incorporated motivations into models.

Recent studies have included motivations in constraint negotiation models; however there are some differences as to how motivations have been operationalized. Hubbard and Mannell (2001) incorporated motivations by using two items asking individuals about participating in leisure for "pleasure or enjoyment" and for "good health." Son et al. (2008) were somewhat consistent with Hubbard and Mannell (2001); however, they modified the language of the items to fit elderly adults and physical activity. Loucks-Atkinson and Mannell (2007) expanded on the

two item motivation statements and included nine items focused on intrinsic (i.e. personal satisfaction), extrinsic (i.e. to obtain a desirable outcome), and introjected motivations (i.e. good for oneself).

Another way to understand motivations is through the Recreation Experience Preference (REP) scale (Manfredo et al., 1996). The REP construct was developed within the context of motivation theory and focuses on the psychological outcomes that individuals seek. By understanding the experience the individual is trying to achieve, antecedents to leisure can be better understood (Manfredo et al., 1996). The list of REP items is extensive and has been used in the context of outdoor recreation to explain the constraint negotiation process (Wilhelm Stanis et al., 2009).

Research combining constraints, negotiation strategies, and motivations has seen a growth over the past 15 years, with Hubbard and Mannell (2001) initiating this research by linking the constructs and examining how they affect overall leisure participation. Their paper operationalized the idea of negotiation strategies into four categories including time management, financial strategies, skill acquisition, and interpersonal coordination. Time management strategies include setting aside time or substituting activities while financial strategies are focused on budgeting money. Skill acquisition can be taking a class or learning from others and interpersonal coordination can be meeting new people.

Hubbard and Mannell (2001) examined the relationship between constraints, negotiation strategies, and motivations to see how they influenced leisure participation in a corporate recreation setting. The authors tested a series of models to determine the best fitting relationship between the variables of interest. Ultimately, they found support for a constraints-effect-mitigation model where motivations were mediated by negotiation strategies to predict

participation and constraints influenced the use of negotiation strategies and participation. They indicate the presence of constraints triggers the use of negotiation strategies and these mitigate the effects of constraints on overall participation (Hubbard & Mannell, 2001).

Other studies have replicated Hubbard & Mannell (2001) by testing the relationship between constraints, negotiation strategies, and motivations. Son et al. (2008) examined Hubbard and Mannell's models by examining older adults' physical activity in a park setting. Results indicate consistent findings, with motivations fully *mediated* by negotiation strategies to predict physical activity. Unlike Hubbard and Mannell (2001), Son et al. (2008) did not support negotiation strategies *moderating* the effects of constraints on participation. They found strong support for the role of motivation in the constraint negotiation process and suggest motivations are a vital part of successful negotiation of constraints.

Wilhelm Stanis et al. (2009) also extended research on the relationship between constraints, negotiation, and motivations. Their paper examined park users through on-site intercept surveys and examined users' participation in physical activity. Results were both similar and divergent from Hubbard and Mannell (2001) and Son et al. (2008). Wilhelm Stanis et al. (2009) found support for the role of motivation in the process, with motivations partially mediated by negotiation to predict physical activity. The effects of constraints on participation and negotiation were not significant, although constraints were retained in the model to maintain goodness of fit. The authors acknowledge the role of constraints may be "tenuous" and should be examined further. This result was similar to Covelli et al. (2007), who found constraints were not a significant predictor of participation among recreation users at a National Forest. In this study the authors dropped constraints completely from the model. The authors suggest that this

may be due to respondents having already successfully negotiated through constraints since they were surveyed at a recreation area.

Recent research on constraint negotiation suggests future examinations of models should include other relevant factors that may contribute to participation such as self-efficacy (Hubbard & Mannell, 2001; Son et al., 2008; Wilhelm Stanis et al., 2009). This paper considers the role of self-efficacy as a component in the constraint negotiation process. Self-efficacy theory is a social-cognitive approach to understanding individuals' confidence and ability to cope in stressful situations (Bandura, 1977). Bandura (1997) suggests individuals possess a set of sub skills and one's ability to use those skills determines self-efficacy.

Self-efficacy and Constraint Negotiation

Bandura (1977, 1986) indicates self-efficacy can influence choice in activity, effort and motivation to participate, and ultimately influences overall behavior. Earlier work by Jackson et al. (1993) suggests individuals anticipate their ability to negotiate through constraints and this may affect success in participation of leisure activities. This idea was later developed by Loucks-Atkinson and Mannell (2007), who suggested self-efficacy has the potential to influence an individual's ability to use negotiation strategies to overcome constraints.

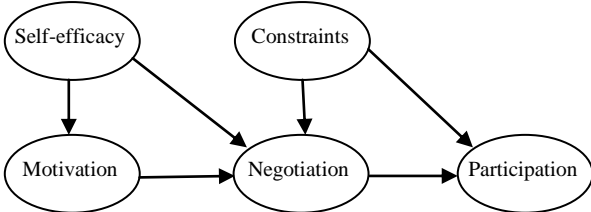
Loucks-Atkinson and Mannell (2007) examined the role of self-efficacy in the constraint negotiation process with individuals affected by Fibromyalgia Syndrome. A negotiation-efficacy scale was created that measured individuals' confidence in employing negotiation strategies. Each respondent used a 10-100 scale and self-reported their confidence in using the strategy. The authors proposed four models to test the relationships between negotiation-efficacy, negotiation strategies, motivations, constraints, and participation (Figure 4.1). Model 1 hypothesized constraints would negatively influence participation and have a positive influence

on negotiation strategies and negotiation strategies would have a positive influence on participation. Both motivations levels and negotiation-efficacy would have a positive influence on negotiation strategies and negotiation efficacy would positively influence levels of motivation. The additional three models followed a similar basic model with additional paths included. Model 2 includes a path from motivations to participation and Model 3 includes a path from negotiation-efficacy to constraints. Model 4 is a combination of all the models and adds the paths from motivation to participation and negotiation-efficacy and constraints. All four models were tested to determine which model had the best fit to the data (Figure 4.1).

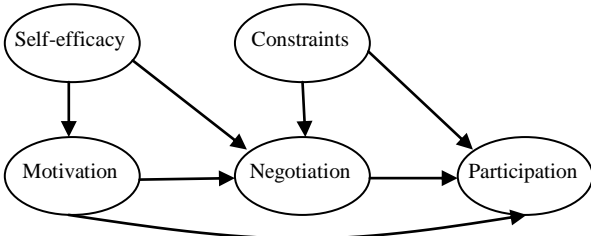
Overall, Loucks-Atkinson and Mannell (2007) found support for the use of efficacy-negotiation in their models. The authors determined model 2 was the best fitting model. Negotiation-efficacy had a direct positive relationship with negotiation strategies but not with overall participation. Additionally, there was a positive relationship between negotiation-efficacy and motivations, motivations and negotiation, and motivation and participation. Findings suggest that individuals with higher efficacy were more likely to use resources to overcome constraints and were more motivated than those with less confidence (Loucks-Atkinson & Mannell, 2007).

Figure 4.1. Four models of constraint negotiation with self-efficacy adapted from Loucks-Atkinson & Mannell (2007)

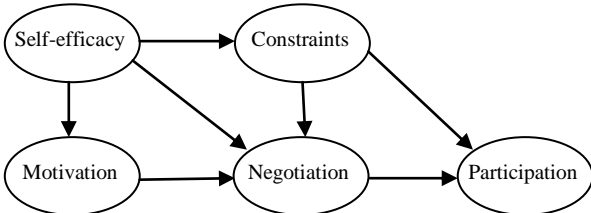
Model 1



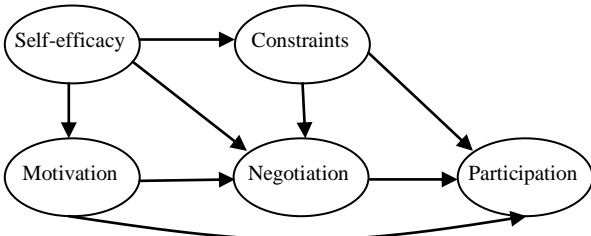
Model 2



Model 3



Model 4



Research objectives and research questions

The purpose of this study was to extend the work of Loucks-Atkinson and Mannell (2007) by examining self-efficacy in the constraint negotiation process in an outdoor recreation context, specifically hunting. Self-efficacy can play an important role in developing confidence with hunting skills, finding people to hunt with, and fears associated with hunting. I believe self-efficacy has implications beyond people with fibromyalgia and could be a useful construct for understating other leisure groups. By re-testing the four models proposed by Loucks-Atkinson and Mannell (2007) we can see how self-efficacy relates to outdoor recreation.

This study expanded the negotiation-efficacy measure of Loucks-Atkinson and Mannell (2007) by creating self-efficacy items associated with hunting. I was interested in understanding confidence in using negotiation strategies. I decided to treat self-efficacy as an individual construct instead of linking it with negotiation strategies. There is limited research about self-efficacy and hunting and I want to determine if this measure provides a valid representation of hunting confidence.

Research Questions

This study tested three research questions:

1. Does this data corroborate findings from previous research where self-efficacy is related to the constraint negotiation process?
2. Is self-efficacy in hunting positively related to motivation and negotiation strategies?
3. Is self-efficacy a predictor of overall hunting participation?

Methods

Respondents and Procedure

A sample of 1,500 Oregon hunters was randomly drawn from the 2008 database of hunting license sales provided by the Oregon Department of Fish and Wildlife. To ensure an adequate number of females and males, the sample was split equally by gender. There was some concern about whether a large enough number of women would respond to the survey. McFarlane, Watson, and Boxall (2003) indicate that some women purchase license sales for their partner's hunting use. To try to mitigate this, a larger sample of female deer license holders was drawn. Organ and Fritzell (2000) suggest that new and inexperienced hunters progress from small game into deer hunting. This sample assumes that females may be less experienced than their male counterparts; thus, the sample was designed with 70% of the female sample having purchased a deer license, with elk and bear licenses each allocated 15%. The sample of males was representative of the type of game hunted in Oregon (50% deer, 25% elk, and 25% bear licenses).

After the survey was designed in the spring of 2010, a pre-test was conducted to help with clarity of questions and resulted in a final survey. The survey included demographic questions, hunting season characteristics, and items and constructs that relate to the constraint negotiation process. Data collection followed a Dillman Total Design Method (2000) with a pre-letter notification, full survey mailing, a reminder postcard, and a final full survey mailing. The mailings were conducted over a 2 month period in the summer of 2010. Of the original 1,500 names pulled for the sample, 1,350 of the addresses were deliverable. A total of 392 completed surveys were received, resulting in a response rate of 29%.

Constraints items were patterned closely after previous research and included intrapersonal, interpersonal, and structural constraints (Crawford, et al., 1991; Hubbard & Mannell, 2001; Hudson, 2000). A total of 29 constraints items were used to assess the major reasons for not hunting as often as the respondent would like. Items were consistent with previous studies that assessed social, time, financial, and managerial constraints. Additional hunting related constraints were also added and included structural items like “rules and regulations are too complex” and “hunting areas are too crowded.” Some of the intrapersonal and interpersonal hunting constraints included “fear I might harm someone in the field” and “lack of skill and lack of hunting partners.” All constraints items were measured using a 1 to 5 scale, where 1 equaled “strongly disagree” and 5 equaled “strongly agree.”

Based on the work of Hubbard and Mannell (2001), 19 items were used to assess how individuals negotiate through constraints. Items included behavioral strategies in the categories of interpersonal coordination, time management, financial management and skill acquisition. Several of the negotiation strategies were tailored to fit the activity of hunting. Items were assessed using a 1 to 5 scale, where 1 equaled “strongly disagree” and 5 equaled “strongly agree.” Examples of items include “I try to find people to hunt with” and “I save money so I can hunt more.”

Motivation items were based on the Recreation Experience Preference (REP) scale (Manfredo, et al., 1996). This differs from Loucks-Atkinson and Mannell (2009) who used nine items focused on intrinsic, extrinsic, and introjected motivations. This study is consistent with Wilhelm Stanis et al. (2009) who utilized the REP scale in their study of park users. The REP scale is quite extensive and lists over 300 potential motivations for participation. For this study, 22 items were used that targeted the degree that individuals cited connection with nature,

relaxation, health, social, and familial motivations as reasons for their hunting participation. Items were measured using a 1 to 5 scale, where 1 equaled “not at all important” and 5 equaled “extremely important.”

Self-efficacy items were modeled after the work of Bandura (2006, 1977) and Loucks-Atkinson and Mannell (2007). Self-efficacy has been examined in the outdoor recreation literature; however, limited research has applied the construct to hunting. It is important to distinguish self-efficacy, a judgment of capability, and self-esteem, a judgment of self-worth when creating self-efficacy items (Bandura, 2006). Self-efficacy items are generally phrased in “can do” terms rather than “will do” terms and often refer to one’s ability to execute behaviors (Bandura, 2006). The creation of good self-efficacy items depends heavily on the conceptual understanding of the activity and how well the items relate to the activity.

For this study a set of 10 self-efficacy items was developed that addressed individuals’ confidence in social support, skills, and fears of hunting. These areas were determined from the hunting literature and are likely to be constraints to participation. A sample of self-efficacy items includes “I am able to overcome fears of hunting alone” and “If I want to learn more hunting skills I know who to ask.” Respondents were asked to rate their confidence in these items using a scale of 0 to 100 (see Bandura, 2006).

Measuring hunting participation can be a difficult task. Miller and Graefe (2000) suggested measuring hunting participation with multiple items. For this analysis hunting was measured using two items: number of days spent hunting in Oregon and number of days spent preparing for hunting throughout the year. Days preparing for hunting targets commitment to the activity and suggests that preparing is an integral part of hunting.

Data Analysis

After the questionnaire data were entered and cleaned, analysis were performed using SPSS 18 and Lisrel 8.8. A profile of the respondents and variables of interest was examined using descriptive statistics. To reduce the data, exploratory factor analysis was conducted to determine appropriate domains for items within each construct. Reliability analysis was conducted to determine if the scaled items had acceptable Cronbach's Alpha of .70 or higher (Cortina, 1993). The constraints construct resulted in four domains categorized as structural, knowledge/skill, personal, and fear. The negotiation items resulted in the domains of financial, skill and learning, and personal. Motivations were comprised of the domains of relaxation, hunting, skill and exercise, and social. The self-efficacy items resulted in three domains of skill confidence, support confidence, and fear confidence. The latent construct of participation was created using two items including "days hunted in Oregon" and "days spent preparing for hunting season." The Cronbach's Alpha was low for the participation construct and may be due to only having two items. We retained it in the model because it provided good fit with the data.

The latent constructs of constraints, negotiation strategies, motivations, and self-efficacy were assessed for fit using confirmatory factor analysis in LISREL. Data were then analyzed to test the models proposed by Loucks-Atkinson and Mannell (2007) to predict participation in hunting. Model fit was determined using several fit indicates: RHO statistic, Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). The RHO statistic (Tucker-Lewis Index, Non-Normed Fit Index) is considered to be acceptable if a value of .90 or higher is achieved (Bentler & Bonett, 1980). A value of .92 or greater is considered acceptable for the CFI (Bentler, 1990), and for the RMSEA a value below .08 is considered to be acceptable (Browne & Clark, 1993).

Results

Respondent Characteristics

Of the 392 respondents, 56% were male and 44% were female. Just over half the sample indicated they lived in a rural area (55%) followed by towns (19%), cities (14%) and suburbs (12%). A majority of the respondents indicated they were married (72%) and reported they were white/Caucasian (94%). Nearly a third (35%) of the sample indicated they had a high school degree or lower, 37% indicated some college education, and 25% had a college degree or higher. Household income varied with 41% of respondents indicating they made between \$40,000 and \$79,999, 25% had an income of \$80,000 or more, and 24% had an income of \$40,000 or less.

Descriptive Information

Means, standard deviations, and reliability statistics for each of the variables used for model testing are presented in Table 4.1. All but two of the 14 subscales met the stated criteria for internal reliability (personal constraints, $\alpha=.61$; skill and learning strategies, $\alpha=.62$). Both subscales with low reliability were retained in the model. This is consistent with other research where low Alphas were retained and indicated adequate consistency in the overall measure.

Of the respondents who hunted in Oregon in the past year ($n=325$), an average of 16 days were spent hunting afield. This includes days spent hunting big game like deer, bear, and elk and with different firearms and bows. Respondents indicated they spent an average of 26 days preparing for hunting. Preparations include scouting hunting locations, organizing and shopping for gear, discussing the hunting season with partners, among others.

Respondents indicated low to moderate constraints to hunting ($M=1.81$). Structural factors were the most constraining ($M=2.43$) followed by personal constraints ($M=2.02$).

Respondents employed a moderate level of negotiation strategies ($M=3.47$). All three domains were nearly equal with individual strategies being employed slightly more than the others ($M=3.75$). Respondents reported moderate levels of motivation to hunt. The most motivating reasons to hunt were for nature and relaxation ($M=3.69$) followed by social reasons ($M=3.40$). The least motivating reasons were hunting related factors ($M=2.71$). Overall, respondents reported high ratings of self-efficacy, with the highest level in fear confidence ($M=91.4$). This was followed by skill confidence ($M=89.4$) and support confidence ($M=87.1$).

Table 4.1. Descriptive statistics for participation, constraints, negotiation strategies, motivations, and self-efficacy

Variables	<i>M</i>	<i>SD</i>	<i>N</i>	Alpha (α)
Participation	--	--	--	.34
Days hunted in OR	15.63	12.5	325	--
Days preparing for hunting	26.10	58.27	371	--
Constraints	1.82	.66	377	.76
Structural	2.43	.96	375	.81
Fear	1.27	.57	372	.86
Knowledge and skill	1.48	.77	372	.78
Personal	2.02	.87	375	.61
Negotiation	3.47	.73	370	.66
Individual strategies	3.75	.79	370	.72
Skill and learning strategies	3.30	.88	370	.62
Financial strategies	3.30	1.13	370	.82
Motivation	3.28	.78	381	.83
Nature and relaxation	3.69	.88	380	.90
Hunting related	2.71	.95	380	.78
Skill and exercise	3.24	.98	378	.72
Social	3.40	.99	381	.84
Self-efficacy	89.3	12.6	366	.82
Skill confidence	89.4	13.3	366	.76
Support confidence	87.1	16.7	366	.79
Fear confidence	91.4	14.1	365	.75

Evaluating Self-Efficacy in the Constraint Negotiation Process

The subscales within each of the constructs were used to create the latent constructs of constraints, negotiation strategies, motivation and self-efficacy. These latent constructs were then used to test the models proposed by Loucks-Atkinson and Mannell (2007).

The four models proposed by Loucks-Atkinson and Mannell (2007) were tested and compared for fit (Table 4.2). Testing began with Model 1 as the baseline model, which provided minimal fit to the data. Several modification indices were suggested to help reduce the chi-square value. Modifications allow certain error terms to correlate in order to help improve overall model fit. Three variables within the latent construct of motivation were allowed to correlate. The respecified Model 1 provided better fit to the data and resulted in an adequately fitting model (RMSEA=.083, CFI=.93, NNFI=.91). Not all the paths for model 1 were significant. Constraints were not a significant predictor of participation ($\beta=-.06$) or negotiation strategies ($\beta=.03$). All the other paths in Model 1 were significant at $p<.05$. Both self-efficacy ($\beta=.14$) and motivations ($\beta=.55$) contributed to 37% of the variance for negotiation strategies. Negotiation strategies ($\beta=.49$) significantly predicted participation and resulted in 24% of the variance explained (Table 4.3).

Table 4.2. Goodness of Fit statistics for models

Model	$X^2(df)$	X^2/df	NNFI	CFI	RMSEA
1	329.1(94)	3.5	.91	.93	.083
2	329.1(93)	3.5	.91	.93	.084
3	329.2(94)	3.5	.91	.93	.083
4	329.1(93)	3.5	.91	.93	.084
Final model	300.4(95)	3.1	.92	.94	.075

Model 2 differed from Model 1 slightly and resulted in a similar model fit (RMSEA=.084, CFI=.93, NNFI=.91). Model 2 added a path from motivation to participation but

was determined to be not significant. The overall variance and path strength did not have any notable differences between them.

Model 3 added a path from self-efficacy to constraints that was significant ($\beta=-.25$, $p<.05$). Although this path was significant, it did not have any effect on the model fit or the variance explained. Model 4 included the path from motivation to participation and self-efficacy to constraints. The findings were similar to the other three models with similar fits statistics and variances explained.

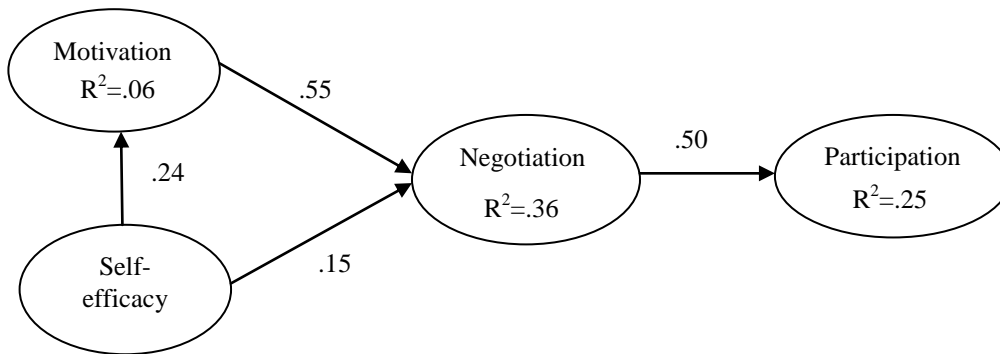
Since constraints were not a significant predictor of participation, the construct was removed from the model to see if it improved fit (Figure 4.2). The reduced model resulted in a slightly better fitting model with all paths significant (RMSEA=.075, CFI=.94, NNFI=.92). The path from self-efficacy to motivation was significant ($\beta=.24$) and accounted for 6% of the variance. The paths from self-efficacy ($\beta=.15$) and motivation ($\beta=.55$) to negotiation strategies were both significant and 36% of the variance was explained. Negotiation strategies ($\beta=.50$) significantly predicted participation and explained 25% of the variance.

Table 4.3. Standardized Path Coefficients and R² values

Path	Model 1 Path value	Model 2 Path value	Model 3 Path value	Model 4 Path value	Final model Path value
Participation from:	R ² =.24	R ² =.24	R ² =.24	R ² =.24	R ² =.25
Constraints	-.06	-.06	-.06	-.06	--
Negotiation	.49*	.51*	.49	.51*	.50*
Motivation	--	.02	--	.01	--
Negotiation from:	R ² =.37	R ² =.37	R ² =.37	R ² =.37	R ² =.36
Constraints	.03	.03	.03	.03	--
Motivation	.55*	.55*	.55*	.55*	.55*
Self-efficacy	.14*	.14*	.14*	.14*	.15*
Motivation from:	R ² =.05	R ² =.05	R ² =.05	R ² =.05	R ² =.06
Self-efficacy	.23*	.23*	.23*	.23*	.24*
Constraints from:			R ² =.06	R ² =.06	
Self-efficacy	--	--	-.25*	-.25*	--

*p< .05

Figure 4.2. Standardized path coefficients for final model with self-efficacy, motivations, negotiation strategies, and participation (Note: all path values are significant $p < .05$)



Discussion

Respondents reported low levels of constraints to hunting participation and relatively high use of negotiation strategies. Motivations were at a moderate level, while self-efficacy was high for this sample of hunters. This study examined the relationships between these variables and how they influenced overall hunting participation by extending the work of Loucks-Atkinson and Mannell (2007).

Self-efficacy Model Comparisons

Study findings did not support the four models proposed by Loucks-Atkinson and Mannell of self-efficacy in the constraint negotiation process. The models replicated from Loucks-Atkinson and Mannell (2007) had acceptable fit to the data; however, in all four models, constraints were not a predictor of participation which is divergent from Loucks-Atkinson and Mannell's (2007) findings. Loucks-Atkinson and Mannell (2007) retained constraints in Models 1 and 3, but constraints were not significant in Models 2 and 4. Other studies have had similar findings with regards to constraints. Wilhelm Stanis et al. (2009) found constraints were not a significant predictor of leisure time physical activity; however, the authors retained constraints to

achieve better model fit. Covelli et al. (2007) found constraints were not a significant predictor of forest recreation participation and consequently dropped constraints completely from the model.

Findings from this study and others suggest that individuals can successfully negotiate through constraints to the point where they no longer have a negative effect on overall participation. Hubbard and Mannell (2001) and Loucks-Atkinson and Mannell (2007) suggest when constraints are faced, higher levels of negotiation strategies may be employed to mitigate the effects on participation. Hubbard and Mannell (2001) reference two opposing forces when there are constraints, the negative effects on participation and the facilitatory influence from the use of negotiation strategies. Hunters in this study may have adopted negotiation strategies, which in turn may have eliminated the effect of constraints on participation.

Other factors that may contribute to this finding may be due to the nature of the sample. This study examined individuals who have already participated in hunting and not new hunters or those who have stopped participating for personal reasons. Findings suggest structural constraints related to deer management influence participation the most and not factors like lack of time or skill. This suggests that respondents were already committed to hunting and may have employed negotiation strategies to find locations where structural constraints were not as much of a factor.

The role of motivations and their influence on negotiation strategies is consistent with other findings (Loucks-Atkinson and Mannell, 2007; Son et al., 2008; Wilhelm Stanis et al., 2009). The relationship between motivations and participation was fully mediated by negotiation strategies. This suggests motivations are an integral part in understanding the facilitation of negotiation strategies. The more motivated an individual is across the REP scales

represented, the more likely he or she is to utilize negotiation strategies. Assessing motivations along with constraints and negotiation strategies is useful in understanding participation and future studies should continue to include motivations with constraints and negotiation strategies.

Role of Self-efficacy

Self-efficacy was used in this study to help understand hunter confidence in their ability to successfully use negotiation strategies and in turn how those strategies affect recreation participation. Self-efficacy had a direct, positive relationship with negotiation strategies. This suggests confident individuals are more likely to use negotiation strategies to overcome constraints. Self-efficacy had a positive effect on motivations. Bandura (1986) suggests self-efficacy can influence motivations and in turn affect behavior; however self-efficacy was not a direct predictor of participation, but was fully mediated by negotiation strategies.

Results indicate that measuring self-efficacy was effective in understanding hunter participation and was a significant predictor of motivations and negotiation strategies. This suggests hunters with higher self-efficacy are more motivated and have the confidence to use negotiation strategies to overcome constraints to hunting. This finding is consistent with Loucks-Atkinson and Mannell (2007) where negotiation-efficacy was an important predictor in the constraint-negotiation process.

An interesting finding that is somewhat consistent with Loucks-Atkinson and Mannell (2007) is the effect of self-efficacy on constraints. In Model 3, Loucks-Atkinson and Mannell (2007) found self-efficacy was a significant predictor of constraints, but in Model 4 the same path was not significant. In this study, the path from self-efficacy to constraints for both Model 3 and Model 4 was significant. This suggests that self-efficacy also influences perceptions of constraints. Those with higher self-efficacy are more likely to perceive lower constraints to

hunting. The extent of this relationship is unknown and should be examined in future studies of self-efficacy and constraints.

Study Limitations

The hunter population sampled for this study is a potential limitation as they represented hunters who had purchased an Oregon hunting license. To more clearly understand those factors contributing to hunting constraints, a sample of new hunters or hunters who have not participated in the activity for more than one season may need to be examined. Findings may differ for new hunters who may recently have overcome constraints to start participating. It would also be useful to understand hunters who have stopped hunting as this may add additional insight into the constraints process.

This study examined big game hunters and not those who participate in small game. This is an important point as Organ and Fritzell (2000) found that many hunters begin by hunting small game. By exclusively studying big game hunters, we may capture the opinions and perspectives of those who have overcome constraints associated with being new in the sport. Small game hunters may face more constraints or perceive constraints as being higher than those in big game.

For this study, a measure of self-efficacy was created using the work of Bandura (2006) and Loucks-Atkinson and Mannell (2007). This study differed from Loucks-Atkinson and Mannell (2007) by how self-efficacy was measured. They used a measure of efficacy that was linked to the negotiation strategy; however in this study of hunters, self-efficacy was treated as a separate construct. Although we feel confident in this measure, there may be other items of self-efficacy that could have been used. Future research on self-efficacy should continue to refine the measures used in this study. Additionally, future studies of hunting self-efficacy should expand

beyond skill, support, and fear confidence variables. Factors related to structural constraints should be considered.

Implications and Future Research

Results suggest self-efficacy plays a role in an individual's ability to negotiate through constraints and participate in hunting. Given this connection between self-efficacy and participation, it may be important for managers to find ways to build confidence in hunting. This could be done through programs, trainings, and skill development. Many agencies already have programs that teach hunting skills and could be used as a starting point for future confidence building programs.

Results can also be used to inform managers about major constraints and how individuals overcome those constraints. The most constraining factors were structural and mostly pertained to management issues. Programs that address those management perceptions may help reduce the constraint for participants. For example, managers could provide information sessions that discuss game populations and how they manage species in order to address concerns of lack of game. Results provide evidence that hunters are finding ways to overcome constraints. Bringing hunters together to share ideas about how to negotiate could strengthen confidence in other hunters who are overwhelmed by constraints. Providing examples and stories of successful negotiation could be a powerful tool to encourage people to hunt.

There is some question about the effects of constraints on participation and the role of negotiation strategies. In this study, constraints were dropped from the model completely and negotiation strategies were the dominant factors influencing participation. Future research should examine constraints with non-participants and participants to see if differences do in fact exist. Those who already participate in hunting may not face the same challenges as those who

are just starting. Future studies on hunting constraints should consider examining new hunters, small game hunters, and hunters who have may have stopped participating along with current hunters. This will add insight to the differences in constraints and the overall effect on participation.

There is evidence that age may be an important factor influencing the constraint negotiation process (Son et al., 2008). Currently, the hunting population in the United States is declining (U.S. Fish and Wildlife Service, 2006) and this may have an influence on hunting constraints. Those hunters who are older may face different constraints than those who are young. Young hunters may not have grown up in a hunting household, where skill development and hunting knowledge is passed down. Older hunters may face issues related to health and being able to get to hunting locations or having the physical ability to harvest deer. This study did not factor age into the sampling design. Future studies should consider sampling younger hunters to see if differences exist.

Gender should also be examined in future studies. Evidence suggests hunting experiences are different for females and males (McFarlane et al., 2003). Researchers should consider examining the constraint negotiation process and self-efficacy for females who currently hunt and those who are just entering into the activity. In addition, self-efficacy should be examined for males and females to understand how their confidence levels differ.

Future studies should also re-examine self-efficacy in the constraint negotiation process. Expanding measures of self-efficacy, improving scales, and refining current scales can greatly influence the role of self-efficacy on participation. Self-efficacy should also be examined in other contexts. Aside from Loucks-Atkinson and Mannell (2007), few studies exist that examine self-efficacy in the constraint negotiation process. In addition, researchers should consider

examining other outdoor recreation populations and other leisure contexts to understand differences.

References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Bandura, A. (2006). *Self-efficacy and Beliefs of Adolescents*. Charlotte, NC: Information Age Publishing.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238-246.
- Bentler, P. M. & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588-606.
- Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.) *Testing structural equation models*. (pp.136-162) Newbury Park, CA: Sage.
- Covelli, E., Graefe, A, and Burns, R. (2007). A re-examination of constraints negotiation models for forest recreation. Book of Abstracts from the National Recreation and Park Association: 2007 Leisure Research Symposium (pp. 45). Indianapolis, IN.
- Cortina, J. M. (1993). What is alpha coefficient? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98-104.
- Crawford, D. W., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences*, 9, 119-127.
- Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York: NY: Wiley.

- Duda, M. D. (2001). The hunting mind: Women and hunting. *North American Hunter*, November, 35-37.
- Hubbard, J., & Mannell, R.C. (2001). Testing competing models of the leisure constraints negotiation process in a corporate employee recreation setting. *Leisure Sciences*, 23, 145-163.
- Hudson, S. (2000). The segmentation of potential tourists: Constraint differences between men and women. *Journal of Travel Research*, 38(4), 363-368.
- Jackson, E. L. (1997). In the eye of the beholder: A comment on Samdahl & Jekubovich (1997), "A critique of leisure constraints: Comparative analyses and understandings." *Journal of Leisure Research*, 29, 1-11.
- Jackson, E. L., & Rucks, V. C. (1995). Negotiation of constraints by junior-high and high-school students: An exploratory study. *Journal of Leisure Research*, 27, 85-105.
- Jackson, E. L., Crawford, D. W., & Godbey, G. (1993). Negotiation of leisure constraints. *Leisure Sciences*, 15, 1-11.
- Loucks-Atkinson, A., & Mannell, R. (2007). Role of self-efficacy in the constraints negotiation process: The case of individuals with fibromyalgia syndrome. *Leisure Sciences*, 29(1), 19-36.
- Martin, N., & Miller, C. A. (2008). Finding Artemis: Pathways for recruiting and constraints to retaining female hunters. Proceedings of the 2008 Northeastern Recreation Research Symposium (GTR-NRS-P-42, pp. 332-336) Bolton Landing, NY: Newton Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Manfredo, M. J., Driver, B. J., & Tarrant, M. A. (1996). Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. *Journal of Leisure Research*, 28(3), 188-213.

- Mcfarlane, B. L., Watson, D. O., & Boxall, P. C. (2003). Women hunters in Alberta, Canada: Girl power or guys in disguise? *Human Dimensions of Wildlife*, 8, 165-180.
- Organ, J. F., & Fritzell, E. K. (2000). Trends in consumptive recreation and the wildlife profession. *Wildlife Society Bulletin*, 28(4), 780-787.
- Scott, D. (1991). The problematic nature of participation in contract bridge: A qualitative study of group-related constraints. *Leisure Sciences*, 13, 321-336
- Son, J. S., Kerstetter, D. L., & Mowen, A. J. (2007). Testing alternative leisure constraint models: An extension of Hubbard and Mannell's Study. *Leisure Sciences*, 30, 198-216
- Thomas, C. L., & Peterson, T. A. (1993). Becoming and outdoors-woman. *Women in Natural Resources*, 15(3), 16-21.
- Wilhem Stanis, S. A., Schneider, I. E., & Russell, K. C. (2009). Leisure time physical activity of par visitors: Retesting constraint models in adoption and maintenance stages. *Leisure Sciences*, 31, 287-304.

Chapter 5

Summary

I examined constraints and negotiation strategies to hunting and focused primarily on females in the activity. The purpose was to 1) examine the different types of female hunters and how they differ on constraints and negotiation strategies; 2) compare males' and females' hunting participation and the relationship between constraints, negotiation strategies, motivations, self-efficacy, and social support; and 3) explore the role of self-efficacy in the constraint negotiation process. These findings have implications for advancing theory on constraint negotiation and can be applied to understanding management of hunting.

Theoretical Implications

My dissertation contributes to the ongoing effort to understand the constraint negotiation process. Previous research has examined the relationships between constraints, negotiation strategies, motivations, and participation (Covelli, Graefe, & Burns, 2007; Hubbard & Mannell, 2001; Loucks-Atkinson & Mannell, 2007; Son, Kerstetter, & Mowen, 2008; Wilhelm Stanis, Schneider, & Russell, 2009). This study extended previous research by examining the constraint negotiation process in the context of hunting with an emphasis on females. Overall findings indicate female hunters are not as constrained as originally thought. Results confirm females are finding ways to successfully negotiate through constraints to participate in hunting. Results indicate constraint negotiation is relevant to different types of female hunters, male and female, and for the general hunting population.

Findings from this study extend previous knowledge of hunter typologies by focusing solely on females and constraints and negotiation strategies. Past research focused on the

general hunting population and emphasized satisfaction with hunting. Adding to this, findings from this study support the notion that female hunter typologies exist and are related to perceived constraints and negotiation strategies. My female hunter typology is consistent with findings from other studies that suggest not all hunters are alike (Gigliotti, 2000; Manfredo & Larson, 1993; Schroeder, Fulton, & Lawrence, 2006). Four diverse types of female hunters were found, which is somewhat consistent with previous findings. The less-engaged hunter, all around enthusiast, and the social-nature hunters have been represented similarly in previous literature (Schroeder et al., 2006). The fourth type, the family oriented hunter is unique to this sample and may provide insight into differences between female and male hunters and how they perceive the role of families in hunting. This study lends support for future use of typologies as a way to understand users within an activity.

Structural equation modeling was used to understand the relationship among constraints, negotiation strategies, motivation, social support, self-efficacy, and overall hunting participation. A comparison of males and females was conducted to understand how the variables of interest differed by gender. When compared, males and females faced similar constraints to hunting. The major constraints faced by both groups were structural constraints related to management of hunting. The differences that did exist were with fear of hunting items where females reported higher values than males. This is consistent with previous research that suggests females may have fears associated with hunting (Thomas & Peterson, 1993; Duda, 2001). It is important to note that although the values were higher for females, they were not high in the larger scale of constraint items. The finding suggests that females who currently participate in hunting may not be as constrained by fears as previously thought.

Results from the male and female comparison highlight the use of social support and self-efficacy in the constraint negotiation process. Previous research by Voorhees (2007) suggests social support may be linked to hunting participation. Findings from this study argue that social support is fully mediated by negotiation strategies to influence overall hunting participation. Both males and females are influenced to some degree by social support in the negotiation process. It is important to note, males had a stronger relationship between social support and negotiation strategies than females. Social support may not be a direct predictor of hunting participations; however, may influence participation indirectly.

This dissertation integrated self-efficacy theory into the constraint negotiation process. Self-efficacy emerged as an overall predictor of hunting participation in the male and female comparison. The construct was fully mediated by social support to predict negotiation strategies. Findings argue that hunters with a strong sense of self-efficacy are more likely to feel supported in hunting and in turn utilize negotiation strategies to overcome constraints.

Self-efficacy was also examined without the variable of social support to understand the relationship in the constraint negotiation process. This dissertation extended the work of Loucks-Atkinson and Mannell (2007) by re-examining competing models of constraint negotiation with self-efficacy with the full sample of hunters. Self-efficacy was related to the constraint negotiation process and positively influenced the use of negotiation strategies. This is consistent with Loucks-Atkinson and Mannell (2007) where the variable of negotiation-efficacy was found to significantly predict negotiation strategies. Unlike Loucks-Atkinson and Mannell (2007), however, this study examined self-efficacy as a construct independent from negotiation strategies. Findings support using self-efficacy as an independent construct. Self-efficacy can

add insight and explanation into those intrapersonal constraints and help broaden understanding of the constraint negotiation process.

A significant finding from this study is the role of constraints in hunting participation. Although constraints were faced, they did not predict overall hunting participation. This is somewhat divergent from previous findings where constraints negatively influenced participation (Hubbard & Mannell, 2001; Loucks-Atkinson & Mannell, 2007; Son et al., 2008). However, there is growing evidence to suggest constraints of current recreation participants may not influence overall participation (Covelli et al., 2007; Wilhelm Stanis et al., 2009). This study argues constraints are triggering the use of negotiation strategies that overpower the negative effects on participation. Hubbard and Mannell (2001) point to opposing forces of constraints and negotiation strategies, where constraints limit recreation and negotiation strategies act as facilitators. In this instance, the sampled hunters knew how to mitigate the effects of constraints and were able to find ways to successfully negotiate through them.

Management Implications

Study results provide insight for the management of hunting participation. By understanding constraints, managers can help facilitate hunting experiences enjoyed by females. It is important to note, females and males faced similar constraints and the most constraining factors for both groups were in the structural domain. Items in the structural domain were mostly related to management factors like “complex rules and regulations” and “lack of game.” For females, this finding is differs somewhat from previous research. Other researchers found factors like lack of time, fears associated with hunting, and lack of skills as being constraints for females (Duda, 2001; Martin & Miller, 2008; Thomas & Peterson, 1993). Findings from my

study are divergent from other research on females and leisure where time is often cited as a top constraint (Shaw, 1994). This suggests females may have overcome constraints associated with fears, skill development, and time. Intrapersonal and interpersonal constraints may have been there in the past, but females may have found ways to negotiate through them. There should be some concern regarding the structural constraints. Even if the structural constraint do not exist, the perception is there among hunters. Given this perception, managers should consider developing strategies to help alleviate those structural constraints.

Previous research has identified social support as a major constraint to females' participation in hunting (Duda, 2001; Martin & Miller, 2008; Thomas & Peterson, 1993). Findings from this study suggest females felt supported in hunting. Females felt they had a network of family and friends to help them in the field and to support them in the activity. This is encouraging and suggests females who do hunt have positive perceptions of the role of females in the activity. These findings may be helpful for recruiting new female hunters. Having positive examples of social support can be helpful.

Other constraints identified in previous research include fears associated with hunting (Duda, 2001; Thomas & Peterson, 1993). Results indicate constraints associated with fears were not major factors preventing participation. Females did not perceive fears associated with harming others, being in the woods, or lack of skills as major constraints. An examination of self-efficacy revealed females are confident in their hunting skills and abilities. This suggests females who do hunt are confident and are not fearful of the activity.

That females are finding ways to negotiate through constraints is a positive finding from this study. They are finding ways to manage time, plan ahead, and juggle responsibilities like family in order to hunt more often, and females have found ways to develop skills and

knowledge related to hunting and to find hunting partners. This confirms Scott's (1991) idea that constraints are not insurmountable obstacles. These findings can be useful to managers who are interested in developing strategies to alleviate hunting constraints for females. Continuing programs such as *Becoming an Outdoors Woman* can help females develop hunting partners and skills to make them confident in the field.

Beyond simply investigating female hunters, I also wanted to understand different types of hunters. Findings identified four types of hunters which broaden understanding of females in hunting. As in previous research, there are varying degrees of hunter involvement and participation (Gigliotti, 2000; Manfredi & Larson, 1993; Schroeder, et al., 2006). Perhaps the most interesting finding from the hunter typologies is the family oriented hunter. This type of female indicated they hunted for family reasons like "bringing meat home to my family" and "to be with family." This type was unique in that they tended to perceive the most constraints, but also indicated they were the most likely to use negotiation strategies. This group is worth considering when developing strategies to recruit and retain hunters.

Hunter recruitment and retention is becoming a focus of many natural resource agencies. Findings from my study can help managers develop strategies to recruit and retain females. A finding consistent throughout this dissertation is the connection between female hunters and families. Family reasons for hunting were ranked high by females. In addition, a family oriented group emerged from the hunter typology. McFarlane, Watson, and Boxall (2003) suggest females often make decisions regarding family recreation choices. Given the findings from this study, it may be beneficial to position hunting as a family activity and this suggests managers may need to expand their recruitment activities to include family focused programs to attract new hunters.

Directions for future research

Results and implications from this study provide direction for future research on females and hunting. More research is needed on females who are just breaking into the activity or who have recently stopped participating. This sample of hunters examined those who currently participate and who have been successful at overcoming constraints to hunting. To truly understand who and what prevents females from hunting as often as they would like, more research is needed about those on the periphery of the activity. Understanding the constraints females face when they are breaking into the activity may help managers develop specific strategies to retain those hunters. Further, by understanding the reasons why females stop hunting it may be possible to develop outreach programs and responses to ameliorate some of these constraints allowing these hunters to stay involved in the sport. Research on these groups may lend itself to qualitative research methods where in-depth interviews and analysis would enrich our understanding.

Additional research is needed on the role of families in enabling or supporting hunting. Results indicate some females are hunting for family reasons. Given the cultural importance of hunting (Organ & Fritzell, 2000) and its importance as a game animal management tool (Pouydal, Cho, & Bowker, 2008), natural resource agencies may want to develop new ways to position hunting. Research on the importance of hunting being a family activity may be needed to develop improved marketing strategies. Positioning hunting as a family activity may help recruit female hunters and their children.

The role of constraints in this study was not significant. Although constraints were identified in some instances as being reasons for non participation, they were ultimately not significant at predicting participation. In previous research, the role of constraints has been

inconsistent, with some researchers indicating constraints are impacting participation (Hubbard & Mannell, 2001; Loucks-Atkinson & Mannell, 2007; Son et al., 2008) while other researchers suggest they are not significant predictors of participation (Covelli et al., 2007; Wilhelm Stanis et al., 2009). Future investigations on constraint negotiation should continue to examine the role of constraints as they relate to motivations, negotiation strategies, and participation. Future research is needed to help clarify differences in these relationships.

Other areas of constraints research to examine include participants versus non-participants. I assumed females are constrained in hunting and results indicated females were not that constrained; however, females may have previously been constrained and understanding those previous constraints may benefit recruitment and retention. More research is needed to understand differences in participation between participants and non participants. Specifically, researchers may want to consider re-wording constraints constructs and measures to reflect what may have previously constrained female hunters. Future studies in this area may lend themselves to qualitative methods where in-depth analysis may discover insights.

This study incorporated self-efficacy into the constraint negotiation process for female hunters. Findings suggest self-efficacy is part of the constraint negotiation process and confirm results by Loucks-Atkinson and Mannell (2007). Although there is support for self-efficacy, additional research is needed in this area. Future studies should consider developing and refining self-efficacy items for improved reliability and validity. Additional studies on self-efficacy in the constraint negotiation process should be conducted for other recreation activities and populations. This study examined a specific activity and population; results may be different for various age groups, settings, and activity types.

Social support emerged as an indirect predictor of participation. Voorhees (2007) suggested social support was an aspect of hunter participation; however, results indicated social support was not a strong predictor of participation. This study suggests social support should be considered in the context of constraint negotiation to understand its influence on participation. Future studies should re-examine the role of social support in hunting as an indirect predictor. Additionally, social support may be best understood as it relates to constraints and facilitators to hunting participation. Having adequate support could alleviate constraints and families and friends could aid in the use of negotiation strategies to participate.

Conclusions

This examination of female hunters helps expand theoretical understanding of constraint negotiation research by incorporating motivations, self-efficacy, and social support. The results challenge our understanding of constraints for female hunters and suggest constraints may be insignificant when successful negotiation occurs. The results also provide insight for managers to move beyond traditional methods of recruitment and retention strategies. Natural resource managers may need to re-position hunting to make it attractive to females and families. Hunting is valuable for conservation funding, game management, and is an important cultural activity. Further research in this area is needed to sustain hunting and future efforts should continue to examine females.

References

- Covelli, E., Graefe, A, and Burns, R. (2007). A re-examination of constraints negotiation models for forest recreation. Book of Abstracts from the National Recreation and Park Association: 2007 Leisure Research Symposium (pp. 45). Indianapolis, IN.
- Duda, M. D. (2001). The hunting mind: Women and hunting. *North American Hunter*, November, 35-37.
- Gigliotti, L. M. (2000). A classification scheme to better understand satisfaction of Black Hills deer hunters: The role of harvest success. *Human Dimensions of Wildlife*, 5, 32-51.
- Hubbard, J., & Mannell, R.C. (2001). Testing competing models of the leisure constraints negotiation process in a corporate employee recreation setting. *Leisure Sciences*, 23, 145-163.
- Loucks-Atkinson, A., & Mannell, R. (2007). Role of self-efficacy in the constraints negotiation process: The case of individuals with fibromyalgia syndrome. *Leisure Sciences*, 29(1), 19-36.
- Martin, N., & Miller, C. A. (2008). Finding Artemis: Pathways for recruiting and constraints to retaining female hunters. Proceedings of the 2008 Northeastern Recreation Research Symposium (GTR-NRS-P-42, pp. 332-336) Bolton Landing, NY: Newton Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Manfredo, M. J. & Larson, R. A. (1993). Managing for wildlife viewing recreation experiences: An application in Colorado. *Wildlife Society Bulletin*, 21, 226-236.
- Mcfarlane, B. L., Watson, D. O., & Boxall, P. C. (2003). Women hunters in Alberta, Canada: Girl power or guys in disguise? *Human Dimensions of Wildlife*, 8, 165-180.
- Organ, J. F., & Fritzell, E. K. (2000). Trends in consumptive recreation and the wildlife profession. *Wildlife Society Bulletin*, 28(4), 780-787.

- Poudyal, N., Cho, S. H., & Bowker, J. M. (2008). Demand for resident hunting in the Southeastern United States. *Human Dimensions of Wildlife, 13*, 158-174.
- Scott, D. (1991). The problematic nature of participation in contract bridge: A qualitative study of group-related constraints. *Leisure Sciences, 13*, 321-336
- Schroeder, S. A., Fulton, D. C., & Lawrence, J. S. (2006). Managing for preferred hunting experiences: A typology of Minnesota waterfowl hunters. *Wildlife Society Bulletin, 34* (2), 380-387.
- Son, J. S., Kerstetter, D. L., & Mowen, A. J. (2007). Testing alternative leisure constraint models: An extension of Hubbard and Mannell's Study. *Leisure Sciences, 30*, 198-216
- Thomas, C. L., & Peterson, T. A. (1993). Becoming an outdoors-woman. *Women in Natural Resources, 15*(3), 16-21.
- Voorhees, C. S. (2007). *A mixed-method examination of factors related to hunting participation*. Unpublished doctoral dissertation, The Pennsylvania State University, State College.
- Wilhem Stanis, S. A., Schneider, I. E., & Russell, K. C. (2009). Leisure time physical activity of par visitors: Retesting constraint models in adoption and maintenance stages. *Leisure Sciences, 31*, 287-304.

Appendix A
Questionnaire Communications

University/Department Letterhead
Date

Name/Address

Dear John/Jane Doe:

The USDA Forest Service and The Pennsylvania State University are cooperating to conduct research on the opinions and hunting experiences of Oregon residents. Managers are concerned about the decreasing hunting population in Oregon and want to understand the reasons preventing people from hunting. Hunters are an important part of conservation. Feedback from you will help resource managers provide the type of experiences you are looking for in the field.

In about one week you will receive our hunting participation questionnaire. We are writing to you in advance because we have found that many people like to know ahead of time that they will be contacted to participate in a survey. Your opinion is important to us. To get an accurate understanding of Oregon hunters' participation, we need to hear from as many Oregon hunters as possible. This includes those who hunted any type of game, for any number of days, at any location.

Your participation in this survey is voluntary, but very important. You have been carefully selected as part of a random sample that represents Oregon hunters. You do not have to answer any question that you do not want to answer. Rest assured that your answers will remain completely confidential. Only aggregated results will be reported and you will not be identified in any way with your answers. Once the study is complete, all names and addresses will be destroyed. We WILL NOT sell or distribute your name and address to any other party. The survey should take approximately 15 to 20 minutes to complete. You will receive a survey in the mail and we will ask you to return it in a postage paid envelope.

We appreciate and value your time and opinion. Completion and return of the survey is considered your implied consent to participate in this study. If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact us at the number listed below.

Sincerely,



Elizabeth Covelli
814-865-1851
eac231@psu.edu



Dr. Alan Graefe
814-865-1851
gyu@psu.edu

University/Department Letterhead

Date

Name/Address

Dear John/Jane Doe:

Recently we sent you a letter inviting you to participate in a research study being conducted by Penn State University and the USDA Forest Service. Managers are concerned about the decreasing hunting population in Oregon and want to understand the reasons preventing people from hunting. Your responses will help resource managers to better meet your hunting interests. Please take a few minutes today to complete the survey and return it to us. You may send your survey back in the enclosed postage-paid envelope.

Your participation in this survey is voluntary, but very important. You have been carefully selected as part of a random sample that represents Oregon hunters. You do not have to answer any question that you do not want to answer. Rest assured your answers will remain completely confidential. Only aggregated results will be reported and you will not be identified in any way with your answers. Once the study is complete, all names and addresses will be destroyed. We WILL NOT sell or distribute your name and address to any other party. The survey should take approximately 15 to 20 minutes to complete.

Completion and return of the survey is considered your implied consent to participate in this study. You can choose not to answer certain questions or you can stop taking the survey at any time. You must be 18 years of age or older to complete the survey. Please keep this form for your records. If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact us at the number listed below.

The state of Oregon will greatly benefit from hearing about your hunting experiences, insights, and opinions. For this reason, we greatly appreciate your participation in this study.

Sincerely,



Elizabeth Covelli
814-865-1851
eac231@psu.edu



Dr. Alan Graefe
814-865-1851
gyu@psu.edu

Dear Oregon Hunter:

We recently sent you a questionnaire as part of a study of Oregon residents and their hunting participation

. If you have already completed and returned the survey, please accept our sincere thanks. If you have not yet responded, please consider doing so right away. If the results are to accurately represent Oregon hunters, it is very important that your response be included in the study.

Thanks again for your help and cooperation.

Sincerely,



Elizabeth Covelli



Dr. Alan Graefe

University/Department Letterhead

Date

Name/Address

Dear John/Jane Doe:

Recently we sent you a questionnaire about your hunting participation and experiences. If you have already completed your questionnaire, we thank you for your prompt response. If you have not completed the survey, will you please take the time to do so today? It should take only 15-20 minutes of your time.


We are writing to you again because of the significance each questionnaire has to the usefulness of this research study. Your answers are very important because they represent the views of many Oregon hunters who were not included in the study. Remember, all responses will be summarized and handled in strict confidentiality. The survey is completely voluntary and there is no obligation for you to participate. But this is your opportunity to help shape the future of hunting planning and management in Oregon.

A copy of the questionnaire and reply envelope are enclosed in case you did not receive or have misplaced the original materials we sent you. Once you have completed the survey, just drop the envelope in any mailbox; you need not add any postage.

Completion and return of the survey is considered your implied consent to participate in this study. You can choose not to answer certain questions or you can stop taking the survey at any time. You must be 18 years of age or older to complete the survey. Please keep this form for your records. If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact me at the number listed above.

Your cooperation is greatly appreciated.

Sincerely,



Elizabeth Covelli
814-865-1851
eac231@psu.edu



Dr. Alan Graefe
814-865-1851
gyu@psu.edu

Appendix B
Questionnaire

Oregon Hunter Survey

2010



About the 2010 Oregon Hunter Survey

Your responses to this survey will help natural resource managers better meet your hunting needs and interests. Your participation is voluntary, but very important. Your answers will remain completely confidential. If you wish to comment or provide additional information, please use the margins or a separate sheet of paper.

Filling Out The Questionnaire

For each item in the questionnaire, please choose the answer that is most true for you. Please use the stamped and addressed envelope to return the questionnaire. If you have any questions about the survey or lose track of the postage-paid return envelope, you can contact Elizabeth Covelli or Dr. Alan Graefe at Penn State University:

Elizabeth Covelli
The Pennsylvania State University
801 Donald H. Ford Building
University Park, PA 16802
814-865-1851

Dr. Alan Graefe
The Pennsylvania State University
801 Donald H. Ford Building
University Park, PA 16802
814-865-1851

Your help is greatly appreciated!



Section 1: Please start by answering some questions about your hunting participation

Did you participate in hunting during the 2009 hunting season?

No

Yes

(If no, skip to)

If yes, how many days in Oregon _____ days

How many days in a different state or country _____ days

How would you rate the overall quality of your 2009 hunting experience in Oregon?

Poor

Fair

Good

Very Good

Excellent

If you answered poor or fair, why? _____

During the 2009 Oregon hunting season how many days did you spend hunting with the following weapons?

Rifle: number of days _____

Bow/crossbow: number of days _____

Shotgun: number of days _____

Muzzleloader: number of days _____

How many of each game species below did you harvest during the 2009 hunting season?

Number of bucks harvested _____

Number of does harvested _____

Number of bull elk harvested _____

Number of cow elk harvested _____

Number of bears harvested _____

When was the last season you hunted in Oregon? _____

How many years have you been hunting? Number of years: _____

Approximately, how many days did you usually prepare for the hunting season? Please consider days scouting for game, organizing gear, examining maps of areas, practicing shooting, etc. Number of days _____

How many hunting organizations do you belong to? Please consider national, state, and local clubs and organizations. Number of hunting organizations _____

How would you rate your knowledge and skills as a hunter?

Knowledge of hunting: Poor

Fair

Good

Very Good

Excellent

Hunting skills: Poor

Fair

Good

Very Good

Excellent

How much money do you spend on hunting equipment in a typical year? Dollars \$ _____

Did you use a commercial outfitter/guide for any of your hunting trips during 2009? _____ Yes _____ No

If yes, how would you rate the services you received and how can guide services be improved?

Section 2: Reasons for hunting

Here is a list of possible reasons why people hunt in Oregon. Please indicate how important each item is to you as a reason for hunting in Oregon.

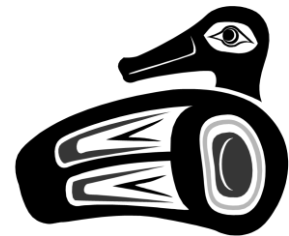
REASON	Not at all Important	Somewhat Important	Moderately Important	Very Important	Extremely Important
To be outdoors	1	2	3	4	5
For family recreation	1	2	3	4	5
For relaxation	1	2	3	4	5
To get away from the regular routine	1	2	3	4	5
For physical exercise	1	2	3	4	5
To develop my skills	1	2	3	4	5
To enjoy nature	1	2	3	4	5
To be with my friends	1	2	3	4	5
Bringing meat home for my family to eat	1	2	3	4	5
For the challenge or sport	1	2	3	4	5
To improve my health	1	2	3	4	5
To experience solitude	1	2	3	4	5
To help control the number of game in the herd	1	2	3	4	5
To experience natural surroundings	1	2	3	4	5
To bring my family closer together	1	2	3	4	5
To harvest a trophy deer/elk	1	2	3	4	5
To do things with members of your group	1	2	3	4	5
To help control male to female deer ratio in the herd	1	2	3	4	5
For mental health	1	2	3	4	5
To share my skill and knowledge with others	1	2	3	4	5
To be with others who enjoy the same things as you do	1	2	3	4	5
To help control the spread of diseases/CWD	1	2	3	4	5



Section 3: Satisfaction with your hunting experience

Please read the following statements and think about your most recent hunting season in Oregon. Please indicate how strongly you agree or disagree.

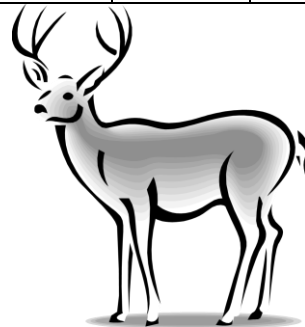
	Strongly disagree ←-----→ Strongly agree				
I thoroughly enjoyed my hunting season	1	2	3	4	5
This hunting season was less enjoyable than I expected	1	2	3	4	5
I cannot imagine a better hunting season than this one	1	2	3	4	5
I do not want to have any more hunting seasons like this one	1	2	3	4	5
I was disappointed with some aspects of the hunting season	1	2	3	4	5
I succeeded harvesting the types of game I hoped to	1	2	3	4	5
I succeeded harvesting the numbers of game I hoped to	1	2	3	4	5
Weather conditions were ideal	1	2	3	4	5
The landscape in my hunting area is very attractive	1	2	3	4	5
The natural environment in my hunting area was in poor condition	1	2	3	4	5
Access areas and parking were readily available	1	2	3	4	5
Services like meals, lodging, and tackle shops were easy to find	1	2	3	4	5
Facilities in the area were poorly maintained	1	2	3	4	5
Road and trail conditions were excellent	1	2	3	4	5
Informational signs and directions were not adequate	1	2	3	4	5
Accurate, easy-to-use maps for the area were readily available	1	2	3	4	5
The behavior of other people nearby bothered me	1	2	3	4	5
There were too many other people nearby	1	2	3	4	5



Section 4: Factors that may decrease hunting participation

Please look at the list below and indicate the extent to which these reasons prevented you from hunting as often as you would like in OR during 2009 season.

	Not an important reason ←-----→ Very important reason				
Lack of transportation	1	2	3	4	5
Health of someone I like to hunt with	1	2	3	4	5
Fear of crime	1	2	3	4	5
Lack of training facilities	1	2	3	4	5
Sites are closed when I want to visit	1	2	3	4	5
Inadequate hunting areas	1	2	3	4	5
Lack of hunting partners	1	2	3	4	5
Lack of skill	1	2	3	4	5
Conflict with other users	1	2	3	4	5
Fear of getting lost in the woods	1	2	3	4	5
Complex rules and regulation	1	2	3	4	5
Sites are too crowded	1	2	3	4	5
Lack of game	1	2	3	4	5
People don't accept my outdoor recreation preferences	1	2	3	4	5
Poor physical health	1	2	3	4	5
Sites are far away	1	2	3	4	5
Fear of outdoors	1	2	3	4	5
I don't feel that other hunters accept me	1	2	3	4	5
Lack of time	1	2	3	4	5
Lack of information	1	2	3	4	5
Can't afford to hunt	1	2	3	4	5
I have more important things to do	1	2	3	4	5
Childcare needs					
Like to do other things for recreation					
Don't like to do things in outdoors	1	2	3	4	5
Unwelcome feeling from rangers/staff	1	2	3	4	5
Fear I might injure myself	1	2	3	4	5
Family responsibilities	1	2	3	4	5
Fear I might harm someone in the field	1	2	3	4	5



Section 5: Hunting support and confidence in skills

For each statement below, please indicate your level of agreement from (1) strongly disagree to (5) strongly agree

	Strongly disagree ←-----→ Strongly agree				
	1	2	3	4	5
My family members don't enjoy hearing about my hunting experiences	1	2	3	4	5
I don't have friends who can help me while I hunt	1	2	3	4	5
I have people in my life who teach me skills about hunting	1	2	3	4	5
I have friends who believe I am a capable hunter	1	2	3	4	5
I have plenty of friends who want to hunt the same game/seasons as I do	1	2	3	4	5
I have family members who help with harvesting of game	1	2	3	4	5
I have friends who give me information about where to hunt	1	2	3	4	5
I don't have hunting partners who want to hunt the same places I do	1	2	3	4	5
My hunting partners are there to assist me when I need them in the field					
I have plenty of friends who enjoy hearing about my hunting experiences	1	2	3	4	5
My family thinks I am a competent hunter	1	2	3	4	5
I have plenty of family members who assist me in hunting	1	2	3	4	5
My hunting partners lack confidence in my hunting abilities	1	2	3	4	5

Please rate how certain you are in the statements below by recording a number from 0 to 100 using the scale given.

0 10 20 30 40 50 60 70 80 90 100
 Not Confident Moderately Confident Very Confident

	Confidence (0-100)
I can learn the skills necessary to hunt independently	
I am able to keep hunting friends	
I am able to overcome my fears of hunting alone	
I feel the skills I have are developed enough to hunt alone	
I am confident in my ability to develop friendships with other hunters	
I am capable of setting aside my fears so I can hunt	
If I want to learn more hunting skills I know who to ask	
I am capable of finding ways to meet other people who hunt	
I am able to hunt regardless of others opinions about me	
I have confidence in my hunting skills	

Section 6: Strategies to increase hunting participation

For each statement below, please indicate your level of agreement from (1) strongly disagree to (5) strongly agree

	Strongly disagree ←-----→ Strongly agree				
I try to plan ahead so I can hunt	1	2	3	4	5
I try to find people to hunt with	1	2	3	4	5
I set aside time for hunting activities	1	2	3	4	5
I arrange rides to and from hunting locations for myself	1	2	3	4	5
I save money so I can hunt more	1	2	3	4	5
I try to improve my hunting skills	1	2	3	4	5
I hunt close to home	1	2	3	4	5
I try to meet people with similar hunting interests	1	2	3	4	5
I try to budget my money so I can hunt more	1	2	3	4	5
I hunt regardless of injury or poor health	1	2	3	4	5
I try to fit my hunting around my other commitments	1	2	3	4	5
I hunt with people my own age	1	2	3	4	5
I cut back spending in area so I can hunt	1	2	3	4	5
I take classes to improve my hunting skills	1	2	3	4	5
Sometimes I will do an activity that is more convenient instead of hunting	1	2	3	4	5
I participate in hunting with people of the same gender	1	2	3	4	5
I hunt with people who have more skills so I can learn from them	1	2	3	4	5
I try to hunt when it is less crowded in the field	1	2	3	4	5
I hunt with people who are more knowledgeable about hunting than me	1	2	3	4	5
I join hunting organizations to meet people	1	2	3	4	5

Below is a list of statements about your involvement in hunting. For each statement below, please indicate your level of agreement from (1) strongly disagree to (5) strongly agree

	Strongly disagree ←-----→ Strongly agree				
Hunting determines much of my lifestyle	1	2	3	4	5
Hunting is one of the most important activities in my life	1	2	3	4	5
I plan my vacation around hunting	1	2	3	4	5
I would rather go hunting than participate in any other recreation activity	1	2	3	4	5
I only hunt when I can go with others	1	2	3	4	5

Section 7: Demographic questions

How would you describe where you live? City Suburb Town Rural Area

What is the highest grade of school you have completed? (please check one)

- Grade school Some college College graduate
 High school graduate/ GED equivalent Post graduate

What is your current marital status? (please check one)

- Married Divorced/separated Widowed
 Living with partner Never married

Including yourself, how many people live in your household? _____ number of people in household

Gender: Male Female

In what year were you born? _____

Do you, or anyone in your household, have a physical disability that affects your ability to participate in outdoor recreation?

- Yes, I have a disability Yes, someone in my household has a disability No one in my household has a disability

If yes, what accommodations could be made to improve your ability to engage in hunting activities?

Which of the following categories best describes your race and/or ethnic background? (check all that apply)

- White American Indian or Alaskan Native Black or African American
 Asian Native Hawaiian or other Pacific Islander Other _____

Are you Hispanic or Latino? Yes No

Into which income group would you say your household falls? (Please check one)

- Less than \$10,000 \$40,000 to \$59,999 \$100,000 to \$119,999
 \$10,000 to \$19,999 \$60,000 to \$79,999 \$120,000 to \$139,999
 \$20,000 to \$39,999 \$80,000 to \$99,999 \$140,000 or more
 Refused/ don't know

**Thank you for completing the questionnaire.
Please return this survey in the postage-paid envelope provided.**

Vita
Elizabeth Anna Covelli

Education

The Pennsylvania State University, University Park, PA

Ph.D., Recreation, Parks, and Tourism Management with dual degree in Human Dimensions of Natural Resources and the Environment (August 2011)

West Virginia University, Morgantown, WV

M.S., Recreation, Parks, and Tourism Resources (August, 2006)

Southern Connecticut State University, New Haven, CT

B.S., Recreation and Leisure Studies (January 2004)

B.A. Relational Communication (January 2004)

Professional Experience

Assistant Professor, University of Montana, College of Forestry and Conservation, Department of Society and Conservation. August 2010-present

Publications

Graefe, A., Mowen, A., Covelli, E., & Trauntvein, N. (2011). Recreation participation and conservation attitudes: Differences between mail and online respondents in a mixed-mode survey. *Human Dimensions of Wildlife*, 16, 183-199.

Burns, R., Covelli, E., and Graefe, A. (2008). Chapter 11: Outdoor recreation and nontraditional users: Results of focus group interviews with racial and ethnic minorities. In: Recreation Visitor Research: Studies of Diversity. General Technical Report-PSW-210. (pp.123-137).

Recent Professional Presentations

Covelli, E. & Graefe, A. (2011). A Typology of Big Game Hunters: Understanding how Constraints to Hunting Influence Experiences. The 17th International Symposium on Society and Resource Management. Madison, WI. (paper presentation) June 5th-8th

Covelli, E & Graefe, A. (2011). Understanding Artemis and Orion: An examination of male and female hunting participation. The 23rd Northeastern Recreation Research Symposium (NERR). Bolton Landing, NY. (paper presentation) April 10-12th.

Covelli, E. & Graefe, A. (2010). A Preliminary Examination of Female Hunters and Constraining Factors to Participation. The Pathways to Success Conference: Integrating Human Dimensions into Fish and Wildlife Management Estes Park, CO. (paper presentation) Sept. 27th-Oct. 1st.