

The Impact of Constraints on Motivation, Activity Attachment, and Skier Intentions to Continue

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Abstract

The present study examines the impact of constraints on motivation, activity attachment, and future behavior of recreational skiers. Two hundred and ninety four (N=294) recreational skiers participated in the study and completed questionnaires measuring leisure constraints, strength of motivation, activity attachment and behavioural intentions. A confirmatory factor analysis provided support for the nine-factor measurement model. The SEM analysis indicated negative relationships between constraints and motivation, and between constraints and activity attachment. Positive relationships were observed between motivation and activity attachment, as well as between motivation and future behavioural intentions. These results provide empirical support for the interaction of activity attachment with constraints and motivation. The theoretical implications of the results are discussed with reference to the negotiation of leisure constraints proposition.

*KEYWORDS: Leisure constraints, motivation, attitudes,
behavioral intentions*

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An important development in leisure constraints research has been the incorporation of leisure constraints data within decision-making models of leisure participation (Mannell & Iwasaki, 2005; Mannell & Loucks-Atkinson, 2005). The hierarchical model of leisure constraints (Crawford, Jackson, & Godbey, 1991) was developed based on the idea of constraints negotiation (Scott, 1991), which was formalized as "the negotiation proposition" by Jackson, Crawford, and Godbey (1993). According to this proposition, the outcome of an individual's negotiation of leisure constraints might be determined by the relative strength of motivation and its interaction with constraints. This negotiation proposition opened new directions for research and discussion among academics (Alexandris, Kouthouris, & Girgolas, 2007; Hubbard & Mannell, 2001; Son, Kerstetter, & Mowen, 2008; Son, Mowen, & Kerstetter 2008; Stalp, 2006; White, 2008). Negotiation has been particularly important because it addressed the limitations of simplified decision-making models that aimed to test bivariate relationships between constraints and behavioural outcomes of participation (Carroll & Alexandris, 1997).

This body of work created discussion on the role other psychological variables, such as attitudes and motivation, have with leisure constraints. Jackson et al. (1993) proposed that individuals with high levels of motivation and/or positive attitudes toward a leisure activity might successfully negotiate leisure constraints. Attitudes and motivation have been consistently shown in the literature to be important factors in an individual's decision making for leisure participation (Alexandris & Stodolska, 2004; Armitage & Conner, 1999; Bansal & Eiselt, 2004; Iso-Ahola, 1989; Kim & Chalip, 2004; Kyle, Absher, Hammitt, & Cavin, 2006). Although the role of motivation and its relationship with leisure constraints has been empirically supported in the literature (Alexandris, Tsorbatzoudis, & Grouios, 2002; Carroll & Alexandris, 1997; White, 2008), there has been very limited research on the role of attitudes towards leisure participation and their relationship with leisure constraints (Alexandris & Stodolska, 2004).

The current research introduces the construct of "activity attachment" (Funk & James, 2006) to the leisure constraints literature. As an attitudinal strength construct, activity attachment represents the functional, emotional, and symbolic meaning of a recreational activity that guides future behavior (Filo, Funk, & O'Brien, 2008). This study explores the influence that activity attachment has on the relationship between constraints and behavioral intentions. In proposing the hierarchical model of leisure constraints, Jackson et al. (1993) suggested that the interaction between and among motivation, attitudes, and constraints determines actual participation and subsequent aspects, such as loyalty, enjoyment, and commitment. In the current study, behavioral intentions are used as one of the variables of participants' loyalty (Zeithaml, Berry, & Parasuraman, 1996).

This exploration is warranted based on Jackson et al.'s (1993) discussion, regarding the proposed role of attitudes in constraints research. In addition, the weak direct relationships between constraints and behavioral outcomes of participation have been consistently reported in a majority of previous studies (e.g., Carroll & Alexandris, 1997; Kay & Jackson, 1991; Shaw, Bonen, & McCabe, 1991). To date, the relationships among constraints, activity attachment and behavioral intentions have not been empirically investigated.

Following Jackson et al.'s (1993) proposition, the role of motivation is also considered. Previous studies have provided empirical evidence for the relationships among motivation, constraints and participation (e.g., Alexandris et al., 2004; Son et al., 2008a, b; White, 2008; Wilhelm, Stanis, Schneider, & Russell, 2009). Motivation is widely accepted today as an important determinant of behavioral outcomes (Bansal & Eiselt, 2004; Iso-Ahola, 1989; Kyle et al., 2006; Vallerand & Losier, 1999), and has also been shown to interact with constraints (Alexandris et al., 2002; White, 2008). Subsequently, the objective of this study was to test the impact of constraints on motivation, activity attachment and intention to continue participation, in the context of recreational mountain skiing.

Literature Review

Leisure Constraints, Motivation and Behavioral Outcomes

Constraints have been defined as "the factors that are assumed by researchers and perceived by individuals to inhibit or prohibit participation and enjoyment in leisure" (Jackson, 1993, p. 273). Crawford and Godbey's (1987) conceptual classification of constraints into intrapersonal, interpersonal and structural is widely accepted. Intrapersonal are internal constraints, which are related to individual psychological states and attributes, interpersonal constraints result from interpersonal interaction, and structural constraints are external to the individual factors. These categories of constraints were incorporated by Crawford et al. (1991) within an individual's decision-making process, proposing that they are experienced hierarchically. Intrapersonal constraints, as the most proximal, were proposed to be the most powerful determinants of leisure participation. Structural constraints, on the other hand, as the most distal, given that they intervene between existing leisure preferences and activity participation, were proposed to be the least powerful constraints.

A contradictory finding of early constraint research was the weak relationships reported between perception of constraints and behavioural outcomes. This was an unexpected finding, since it challenged the assumption that more constraints will lead to reduced participation. Several studies (Shaw et al., 1991; Kay and Jackson, 1991; Backman, 1991; Alexandris & Carroll, 1997; and Raedeke & Burton, 1997) reported weak or non-relationships between constraints and participation. In an effort to explain the weak relationship between constraints and behavioural outcomes, Jackson et al. (1993) proposed that some individuals, although facing constraints, might use negotiation strategies to overcome perceived or actual constraints. This proposition was empirically supported by recent studies (e.g., Alexandris et al., 2007; Coble, Selin, & Erickson, 2003; Hubbard & Mannell, 2001; Livenwood & Stodoloska, 2004; Stalp, 2006).

The negotiation proposition by Jackson et al. (1993) proposed that the outcome of an individual's negotiation of leisure constraints might be determined by the relative strength of motivation and its interaction with constraints. A few studies (Alexandris et al., 2002; Alexandris et al., 2007; Hubbard & Mannell, 2001; Son, Kerstetter, & Mowen, 2008; Son, Mowen, & Kerstetter 2008; Stalp, 2006;

White, 2008) tested with quantitative data the relationships among motivation, constraints, and participation and reported relationships among these variables.

Hubbard and Mannell (2001) were among the first to use SEM in order to examine the interactions between constraints, motivation, negotiation, and participation. This research tested different theoretical models, building on hypothesized interactions between the above concepts. The results provided support for the constraint-effects-mitigation model, proposing that motivation interacts with negotiation, but it does not have a strong impact on participation. Alexandris et al. (2002) attributed this finding to the measurement of motivation, since a global measure, including two individual items (health and enjoyment motives), was used. Alexandris et al. (2007) later used a mediation analysis to test the relationships among negotiation, intrinsic motivation and behavioural intentions. The results provided support for the role of negotiation as a mediating variable between the relationships of motivation and intention. Similar results were revealed in the study of Son et al.'s (2008a), in which negotiation fully mediated the relationship between motivation and participation. It is worth noting that in this study negotiation also fully mediated the relationship between constraints and participation. Similar measurement scales and statistical analysis to Hubbard and Mannell (2001) were used but in a different context of park visitors in this study. The same authors (Son et al., 2008b), however, in a different study, in which the objective was to examine if, age and gender relates with constraints negotiation of active leisure, reported different results. In this study, negotiation was not shown to mediate the relationship between constraints and participation, while it was shown to partially mediate the relationship between motivation and participation. Direct relationships between motivation and participation were also reported in the studies of White (2008), Loucks-Atkinson and Mannell (2008), and Wilhelm Stanis, Schneider and Russell (2009).

In contrast to these previous models, the study of Alexandris et al. (2002) used self-determination theory (Deci & Ryan, 1985) and the hierarchical model of intrinsic and extrinsic motivation (Vallerand & Losier, 1994) as a framework. Self-determination theory proposes a motivational sequence: social factors → psychological mediators → types of motivation → behavioural consequences. The authors of this study theoretically discussed why constraints should be placed first in a decision-making model and should influence motivation. Their results supported this argument and showed that constraints act as demotivating forces for individuals in their decision-making process to participate in leisure activities. Similar results were also reported by Pritchard, Funk, and Alexandris (2009) on sport spectators, which supported the moderating influence of constraints/no constraints on attitude formation and motivation.

In conclusion, the above studies provided evidence for the interaction between motivation, constraints, negotiation, and behavioural outcomes. However, due to their different methodologies, measurement scales, and statistical models used, it is difficult to make direct comparisons among the studies and generalise their findings. In order to further explore the interaction among constraints and motivation in relation to behavioural intentions, the following two hypotheses are offered:

HO1: Constraints will negatively influence Strength of Motivation

HO2: Strength of Motivation will positively influence Behavioural Intentions

Activity Attachment

Jackson et al. (1993) further suggest an individual's attitude toward an activity might be one of the factors that interact with both motivation and constraints to determine the outcome of the individual's negotiation of leisure constraints. Although theoretically proposed, this has received limited empirical support (Alexandris & Stodolska, 2004). In the present study, the construct of Activity Attachment as a collective measure of attitude strength is introduced in order to test its interaction with leisure constraints, motivation, and participants' behavioural intentions.

Attachment as a process represents a dynamic, emotionally complex internal process that creates a well-formed attitude toward recreational experiences (Funk & James, 2006). This process can explain how a meaningful relationship between an individual and objects develops (Beaton, Funk, & Alexandris, 2009). Previous literature suggests that attachment reflects a developmental progression created from social-structural and individual psychological processes (Csikszentmihalyi & Rochberg-Halton, 1981; Wallendorf, & Arnould, 1988). Within the context of leisure, the attachment process describes how a recreational sport elicits stronger attitudinal evaluations and becomes congruent with fundamental core values learned from sport experiences (Filo, Funk, & Obrien, 2008).

The conceptualization of attachment as possessing attitude strength properties allows for the integration of process and outcomes for the present study. Attitude formation and change occurs through formative cognitive and affective processing that manifest strength related properties (Krosnick & Petty, 1995). A number of attitude strength properties (centrality, importance, knowledge, affect, intensity) have been used in leisure and sport research to identify strategic factors for guiding public land use (Bright, 1997) and building patronage in professional sports (Gladden & Funk 2002).

Attachment also represents an outcome variable and has been examined within the context of material possessions, experiences, places, and recreational activities. Kleine and Baker (2004) suggest attachment as an outcome is a multi-faceted property that supports the relationship between an individual and a specific object that occurs through the person-object interaction. Arnould and Price (1993) refer to experience attachment as identity through self-expression during the performance of a recreational activity. Kyle and colleagues have examined place attachment (i.e., dependency and identification) in terms of the emotionally based social element, grounded in the social interactions that occur within groups at places of recreation and foster meaning for the place (Kyle, Absher, & Graefe, 2003; Kyle, Graefe, Manning, & Bacon, 2004; Kyle, Absher, Hammitt, & Cavin, 2006). Sport attachment represents a strong psychological connection that occurs when an individual assigns emotional, functional, and symbolic meaning to a leisure object (e.g., recreational sport, sport event, sport team; Beaton, Funk, & Alexandris, 2009; Filo, Funk, & Obrien, 2008; Funk & James, 2006). Filo, Funk, and Alexandris (2008) extended this approach illustrating the role of attachment in

mediating the relationship between consumer trust and loyalty to sport franchises and fitness centers. This study adopts the attitude strength perspective developed by Funk and James (2006) to investigate activity attachment.

Activity attachment as a collective strength property will also create strength-related outcomes of persistence, resistance, impact on cognition and predictive of behavior (Funk, Haugtvedt, & Howard, 2000; Krosnick & Petty, 1995). Persistence reflects the degree to which an individual's attachment toward a recreational object remains unchanged over an extended period of time (e.g., Petty, Haugtvedt, & Smith, 1995). Resistance represents an individual ability to withstand counter persuasive communication and alternative recreational activities based on the level of activity attachment (e.g., Petty & Cacioppo, 1986). Impact on cognition describes how the role of activity attachment on cognitive processing may fluctuate depending upon the type of cognitive thoughts (e.g., biases) produced at a given moment (e.g., Erber, Hodges, & Wilson, 1995).

Prior research suggests that the extent of cognitive processing will depend upon how internal and external forces influence information retrieval and determine how judgments and decisions are rendered (e.g., Petty et al., 1995). Hence, the decision to participate in the future recreational activities would depend on the evaluation of the interactive relationship between strength of motivation, perceived constraints and activity attachment. Activity attachment as a strong attitude would likely to play a predominate role in guiding future behaviour. However, motivational and constraint cues may influence activity attachment given the notion that attachment may fluctuate depending upon the type of cognitive thoughts produced at a given moment. In addition, the influence of motivation level and perceived constraints on activity attachment is likely to co-vary in opposite directions. This leads to our final three hypotheses:

HO3 Leisure Constraints will negatively influence Activity Attachment

HO4: Strength of Motivation will positively influence Activity Attachment

HO5: Activity Attachment will positively influence participants' Behavioral Intentions.

In summary, the current study explores the relationship between constraints and strength of motivation on participants' future behavioral intentions. The notion of activity attachment is introduced to explore how the functional, emotional and symbolic meaning attached to a recreational activity will influence these relationships. Five hypotheses were developed to test theoretical relationships. The next section discusses the methods used to collect data in a recreational skiing context to examine these hypotheses.

Method

Participants and Procedures

The data were collected at a ski resort located in northern Greece. The self-administered questionnaires were distributed in the cafeteria of the resort, where the conditions were appropriate for visitors to complete the questionnaires. Adults (more than 18 years old), who had participated in skiing activities during the days of data collection participated in the study. Recreational skiers were asked to fill

the questionnaires while entering in the cafeteria. The collection of the data took place over one weekend during February of 2008. The period of February is usually the peak period for skiing resorts in Greece, and only skiers visiting the resort during this time period were surveyed. Three hundred and fifty questionnaires were distributed, and two hundred and ninety four ($N=294$) were returned completed, resulting in a response rate of 84%. In terms of the demographic characteristics of the sample, 65% were males; the majority was married individuals (65%), while the mean age of the sample was 31 years old.

It should be noted that a convenience sampling method was employed, since this was the most effective to collect the data required to test the theoretical relationships. Since the study has a more academic than practitioner orientation, the sampling method and the sample size were judged to be appropriate to run the statistical analysis required and test the theoretical hypotheses developed. Considering, however, the sampling method (convenient) and the place that the data were collected (cafeteria of the resort), which does not guarantee representation of all recreational skiers using the resort, generalizations of the results should be made with cautious.

Instrument

Recreational skiers were given a self-report questionnaire that included multi-attribute assessments of Constraints, Strength of Motivation, Activity Attachment, and Future Intentions. Constraints were measured with an adapted version of Alexandris and Carroll's (1997) leisure constraint scale. Four dimensions of constraints were utilized: Time, Psychological, Enjoyment and Social. Using seven-point Likert-type scales, anchored with "Very much important" to "Not important at all," skiers evaluated 12 statements as limiting factors on their participation. These dimensions have been revealed in previous studies conducted in Greece to effectively measure constraints facing recreational skiers (Alexandris et al., 2007). Psychological and enjoyment are intrapersonal constraints, while social are interpersonal constraints. Finally, time can be considered as external structural constraints or internal intrapersonal constraints, depending on an individual's perceptions (Alexandris & Carroll, 1997).

Strength of Motivation represents the intensity of motivation and was measured with the six-item Strength of Motivation Scale, developed by Carroll and Alexandris (1997). Strength of motivation represents a personal moderator that determines the intensity of a person's attitude toward engaging in a specific activity. This scale was developed by Carroll and Alexandris (2007), based on five signs of motivation measurement, as proposed by Cattell and Child (1975): (a) guilt sensitivity (expression of guilt feelings of non-participation), (b) persistence (continuation in work of interest in face of difficulty), (c) defensive fluency (listing good consequences of courses of action), (d) preference (readiness to admit preferences of a course of action), and (e) activity: time spent on course of action. The scale has demonstrated validity in a number of studies (e.g., Carroll & Alexandris, 1997; Cho, 2004; Funk & Bruun, 2007; Iwasaki & Havitz, 2004). A seven-point Likert-type scale ranging from Always True (7) to Never True (1) was used.

It should be noted that the measurement of motivation in leisure research still lacks standardization. Previous studies have used different approaches, such as the extrinsic and intrinsic motivation categorisation (e.g., Frederick & Ryan, 1993; Iwasaki & Mannell, 1999), the measurement of pull and push factors (Crompton & McKay, 1997; Hanquin & Lam, 1999; Baloglou & Uysal, 1996), and "the experience" approach, with the use of the Recreation Experience Preference Scale (Manfredo, Driver, & Tarant, 1996).

Activity Attachment was measured using three attitude strength properties: (a) knowledge (functional meaning), (b) importance (symbolic meaning), and (c) affect (emotional meaning) (Funk & James, 2006; Gladden & Funk, 2002). Each attitude dimension was measured with three items on seven-point Likert scales ranging from strongly disagree to strongly agree. The nine items were combined to create a composite score to assess Activity Attachment (e.g., Filo et al., 2008; Funk & James, 2006). Intention to Continue Participation was measured with three items: "I intend to go skiing over the next month," "I am determined to go skiing over the next month," and "I will try to go skiing over the next month." Similar items have been used in previous studies (e.g., Alexandris & Stodolska, 2004; Armitage & Conner, 1999; Smith & Biddle, 1999). A seven-point Likert-type scale ranging from very much likely to unlikely was used.

Analysis

A two-stage procedure using Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) was used to evaluate the relationships between constructs of interest (Hair, Black, Babin, Anderson, & Tatham, 2006; Gerbing & Anderson, 1988). The first stage used CFA to establish the validity of the measurement model by testing the discrete nature and consistency of 29 observed variables and nine first-order latent variables: Strength of Motivation, Intention to Continue Skiing, Activity Attachment Dimension of Functional Meaning, Symbolic Meaning, Emotional Meaning, and Constraint to Skiing Dimension of Enjoyment Constraint, Psychological Constraint, Socialization Constraint, and Time Constraint. See Table 1.

Confirmatory factor analysis with AMOS 6.0 (Arbuckle, 2005) examined the measurement model details. Data were first examined to test assumption of normality and presence of outliers using Kolmogorov-Smirnov statistic and kurtosis and skewness. There were no missing data points and variables were normally distributed. The measurement model utilized maximum likelihood estimation to examine the relationships between the 29 observed variables and nine first-order latent variables: five items representing SOM, three items representing ICS, three items representing FKM, three items representing SYM, and three items representing EMM, three items representing ENC, three items representing PSC, three items representing SOC, and three items representing TMC. Maximum likelihood estimation was used because it provides estimations that have the greatest chance of reproducing the observed data (Hair et al., 2006).

The second stage used SEM to examine nomological relationships (e.g., Iwasaki & Havitz, 2004) between four latent constructs such that Constraints to Skiing is directly related to Strength of Motivation and Activity Attachment. Subsequently,

Table 1

Confirmatory Factor Analysis Results for Measurement Model Step 1 (N = 294)

Dimension	Factor Loadings(λ)
Strength of Motivation (SOM)	$\alpha = .85$
• I regret when I am unable to participate in skiing	.72
• Even when participating is inconvenient I still try to participate.	.67
• I feel that participation in skiing is vitally important to me.	.88
• I am really interested in participating in skiing.	.81
• I feel that spending time for skiing is more worthwhile than spending time for other leisure activities.	.73
Activity Attachment (AA)	
<i>Functional Meaning (FKM)</i>	$\alpha = .90$
• I possess a great deal of knowledge about skiing.	.85
• Compared to other sports, I consider myself an expert on skiing.	.93
• If I were to list everything I know about skiing, the list would be quite long.	.92
<i>Symbolic Meaning (SYM)</i>	$\alpha = .89$
• My friends have a positive impression of me if they know that I ski.	.94
• Others think well of me if they know I'm a skier.	.97
• Being a skier helps me project a good image to others.	.71
<i>Emotional Meaning (EMM)</i>	$\alpha = .92$
• Skiing is important to me	.91
• Compared to other leisure activities, skiing is very important to me.	.83
• Being a skier is very important to me.	.94
Constraints to Skiing (CS)	
<i>Time (TMC)</i>	$\alpha = .75$
• I do not have time because of my work commitments.	.53
• I do not have time because of my family commitments.	.70
• I do not have time because of my social commitments.	.86
<i>Psychological (PSC)</i>	$\alpha = .78$
• I am not skilled enough	.82
• I am not fit enough	.64
• I am not confident	.80
<i>Enjoyment (EJC)</i>	$\alpha = .84$
• I do not have fun when I go skiing.	.89
• I do not like skiing very much.	.84
• I do not like the physical environment / facilities	.69
<i>Socialization (SOC)</i>	$\alpha = .78$
• I do not have friends to go with.	.86
• My friends do not like skiing.	.75
• My family does not like skiing	.36
Intention to Continue Skiing (ICS)	$\alpha = .86$
• I intend to go skiing over the next month	.91
• I am determined to go skiing over the next month	.95
• I will try to go skiing over the next month	.85

Strength of Motivation has both a direct relationship to Intention to Skiing and an indirect relationship through Activity Attachment. See Figure 1.

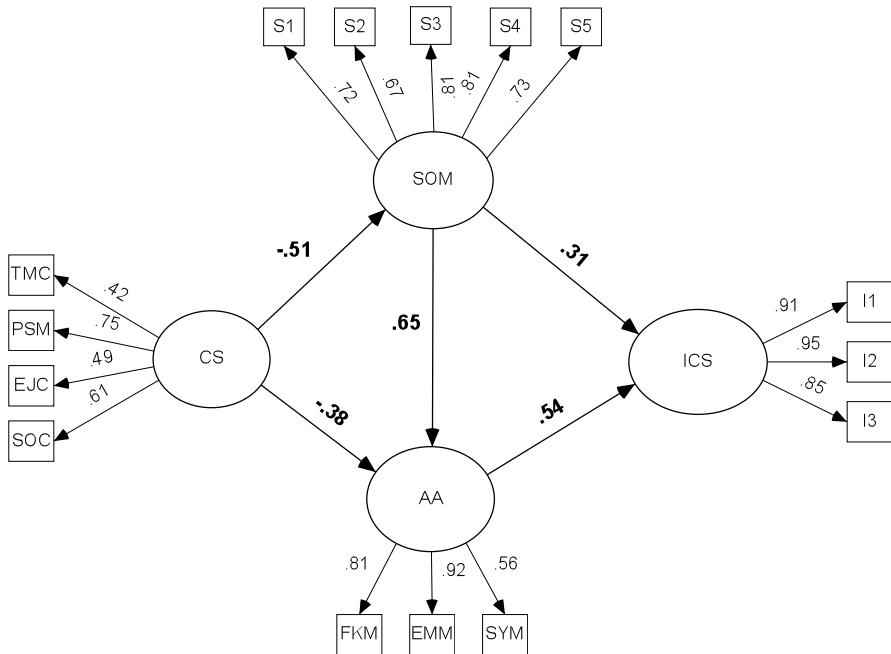


Figure 1. Role of Activity Attachment in Skier Continuance

Note:

CS = Constraint to Skiing

SOM = Strength of Motivation

AA = Activity Attachment

ICS = Intention to Continuing Skiing

Fit indexes were used to evaluate whether the data collected fit the proposed measurement and structural models in Stages 1 and 2 above. Fit indices allow for a hypothesized model to be retained or rejected by determining whether particular paths in the model are significant (Netemeyer, Bearden, & Sharma, 2003). The selection of fit indices remains the subject of ongoing debate but most researchers advocate selecting at least one index from each of the three classifications: absolute fit, incremental fit, and parsimony of fit (Hair et al., 2006; Jaccard & Wan, 1996; Klein, 2005). Four indexes were selected: χ^2/df , Root Mean Squared Error of Approximation (RMSEA), Standardised Root Mean Squared Residual (SMRM), and Tucker-Lewis Coefficient (TLI) to provide a diversity of information. To test the internal validity of the measurement model, standardized factor loadings for each item, Cronbach alphas, and average variance extracted estimates were examined. In addition, squared multiple correlations and correlations between constructs were used to establish discriminant validity of the constructs.

The final analysis employed a nested model comparison to examine Activity Attachment in greater detail. Although not a primary objective of the study, this analysis was undertaken to explore whether Activity Attachment serves as a mediator variable between ICS and SOM. The assessment of mediation used a three-step procedure (e.g., Barron & Kenny, 1986; Hair et al., 2006). In Step 1, the path from SOM→ICS is tested to establish significance and determine the strength of the relationship (i.e., beta weight). In Step 2, the paths SOM→AA→ICS and SOM→ICS are simultaneously tested to establish significance and determine the strength of the relationship between each construct. In Step 3, the beta weight from SOM→ICS in Step 1 is compared to the beta weight of SOM→ICS in Step 2. If the beta weight is reduced to the point of non-significance ($p > .05$), full mediation is supported. If the beta weight is reduced but still significant, partial mediation exists.

Results

Stage 1: Measurement Model Details

Overall, the fit indices indicated that the hypothesised nine-factor model was acceptable. The χ^2/df is a normed chi-square index and examines the absolute and parsimonious fit of the model. The likelihood-ratio χ^2 value of 603.47 with 341 degrees was 1.78 to 1, signifying an adequate fit and below the 3-to-1 ratio recommendation (Tabachnick & Fidell, 2007). The RMSEA is an absolute fit index related to the sample size and represents the discrepancy between the measurement model and the population matrix adjusted for the degree of freedom. The RMSEA value of .05 was below the prescribed range for acceptable fit of .08 or less and below the desirable level of acceptance of .06 or less (Browne & Cudeck, 1993; Hu & Bentler, 1999). The SRMR is also an absolute fit index to compare the average residual derived from a comparison between the hypothesized model and the covariance matrix but is not dependent upon a normal distribution, which increases its capability (Byrne, 2001). The SMRM value of .04 was below the acceptable range of .08 or less and close-fitting model of .06 or less (Browne & Cudeck, 1993; Hu & Bentler, 1999). The TLI is an incremental fit index to compare the proposed model with a null model in which stipulates the co-variances between the items are assumed to be zero. The TLI value of .95 was above the minimum accepted benchmark of .90 or greater and in line with close-fitting model of .95 (Bentler, 1990; Hu & Bentler, 1999).

Parameter estimates were also used to further evaluate the proposed measurement model. Table 1 presents the individual item reliabilities in the form of standardized factor loadings for the nine first-order latent factors. All factor loadings were significant ($p < .05$) on their respective construct. Factor loadings equal to .70 or greater are desirable (Hair et al., 2006) but a number of loadings at higher levels may also suggest redundancy and loadings that range between .50 and .90 are reasonable (Bagozzi & Yi, 1988; Netemeyer et al., 2004). Only one item for SOC (.36), "My family does not like skiing," had a construct below .50, suggesting it may be a marginal measure of socialization.

The Squared Multiple Correlation (SMC) of each standardized factor loading is a diagnostic that indicates parameter fit in terms of variance explained and values above the .50 threshold (Bagozzi & Yi, 1988) are desirable. The SMC can be calculated by squaring the standardized factor loadings for each item used to measure a specific construct in Table 1. With the exception of one item for each of the following constructs: SOM "Even when participating is inconvenient I still try to participate," TMC "I do not have time because of my work commitments," PSC "I am not fit enough," EJC "I do not like the physical environment/facilities," and SOC "My family does not like skiing," the rest of the loadings were above the .50 threshold. The implications of these marginal SMC loadings suggest these items could be deleted from the analysis. However, robust alphas for each construct supported their inclusion as a stable estimate was in hand. For example, the internal consistency measures reported in Table 1 (i.e., alpha) for each construct are above recommended cut-off of .70 and range from $\alpha = .75$ to $\alpha = .92$ (Nunnally & Bernstein, 1994).

Table 2 presents the means, standard deviations, correlations, and average variance extracted (AVE) for the nine constructs. The means for each construct ranged from $M = 3.06$ for FKM to $M = 6.01$ for EJC. The AVE is calculated from the SMC estimates and provides an additional measure of internal consistency as well as discriminant validity. The AVE is the average of the squared standardized factor loading for each item used to measure a specific construct and should exceed .50 for existing scales (Hair et al., 2006) and .45 for newly developed scales (Netemeyer et al., 2003). The results presented in Table 2 indicate that the construct items extracted over 50% of the variance in each latent factor and meet this recommendation (See AVE in Table 2). The only exception was for the construct of SOC with and (AVE = .48). These results indicate that on average over 70% of the variance in the nine constructs was accounted for by the 29 scale items.

Inspection of the correlation matrix in Table 2 reveals moderate theoretically consistent correlations between each of the nine constructs. An additional test incorporated this information along with the AVE to assess the distinctiveness of each construct (Fornell & Larkner, 1981). This test revealed the AVE for each specific construct exceeded the squared correlation between it and any other construct. These results provide evidence for each construct's discriminant validity such that more of the construct was explained by the items that measured the construct than could be explained by its correlation to other constructs.

Stage 2: Structural Model Details

The second stage employed Structural Equation Modelling as an advanced multivariate statistical technique to simultaneously tests hypothesized theoretical relationships between latent constructs. SEM involves the simultaneous evaluation of two models (a) measurement model (from Stage 1) and (b) a proposed structural model of the relationship between constructs (Lei & Wu, 2007). The measurement model first used summary factor scores to create the latent variable Constraints to Skiing (CS) and Activity Attachment (AA). The latent variable CS was created from factors scores from the following four constructs: TMC, PSM, EJC and SOC. The latent variable AA was created from SYM, EMM, and FKM constructs. Measurements for

Table 2

Initial Measurement Correlations for Measurement Model Step 1 (N = 294)

	SOM	EMM	FKM	SYM	SOC	EJC	PSC	TMC	ICS	M	SD
SOM	.58									3.71	.99
EMM	.71	.80								3.44	1.13
FKM	.60	.73	.81							3.06	1.21
SYM	.40	.54	.41	.77						3.18	1.15
SOC	-.17	-.27	-.35	-.19	.48					4.84	1.74
EJC	-.24	-.29	-.22	-.20	.29	.66				6.01	1.51
PSC	-.39	-.51	-.66	-.20	.37	.34	.57			4.85	1.77
TMC	-.09	-.18	-.17	-.09	.26	.28	.26	.50		4.80	1.69
ICS	.69	.70	.59	.46	-.21	-.27	-.42	-.13	.82	4.76	1.61

Note: Average variance extracted (AVE) estimates in bold on the diagonal.

latent variables SOM and ICS were identical as in Stage 1 previously discussed. See Table 3 for measurement model details. The proposed structural model (See Figure 1) specified the following relationships to simultaneously test the five hypotheses: CS would influence SOM (HO1) and AA (HO3); SOM would contribute to both AA (HO4) and ICS (HO2); and AA would contribute to ICS (HO5).

Table 3 presents the internal consistency measures for each construct and ranged from $\alpha = .66$ to $\alpha = .86$. The reliability of the constraint factor (CS) used in the model is marginal at .66 (i.e., $< .70$), but does maintain a theoretically consistent four-factor view (TC, PC, EC, SC) that creates a nomological constraint factor. Table 4 presents the means, standard deviations, correlations and average variance extracted for the four constructs. The means for each construct ranged from $M = 3.71$ for SOM to $M = 4.76$ for ISC. The correlation matrix reveals strong correlations between the four nomological constructs. In response, another test of discriminate validity was conducted to assess the distinctiveness of each construct (i.e., Fornell & Larkner, 1981). The results reveal that each construct's AVE was greater than the squared correlation between other constructs. This supports that each of the four constructs are unique and distinct.

The four fit indices previously used to evaluate the measurement model in Stage 1 were selected to evaluate how well both the new specified measurement and structural model fit the data in Step 2: χ^2/df , RMSEA, SMRM, and TLI. The likelihood-ratio χ^2 value of 185.09 with 84 degrees was 2.20 to 1, RMSEA = .06, SMRM = .04, and TLI = .96. The analysis of fit indices revealed the measurement and structural model in Stage 2 provided an acceptable fit for the data collected.

The standardized regression coefficients reported in Table 3 and Figure 1 are all significant ($p < .05$) for the measurement model and revealed that PSC (.75), SOC (.59), TMC (.42), and EJC (.49) were predictive of CS. For the construct AA,

Table 3

Confirmatory Factor Analysis Results for Measurement Model Step 2 (N = 294)

Dimension	Factor Loadings (λ)
Strength of Motivation (SOM)	$\alpha = .85$
• I regret when I am unable to participate in skiing	.72
• Even when participating is inconvenient I still try to participate.	.67
• I feel that participation in skiing is vitally important to me.	.88
• I am really interested in participating in skiing.	.81
• I feel that spending time for skiing is more worthwhile than spending time for other leisure activities.	.73
Constraints to Skiing (CS)	$\alpha = .66$
• Time (TMC)	.42
• Psychological (PSM)	.75
• Enjoyment (EJC)	.49
• Socialization (SOC)	.61
Activity Attachment (AA)	$\alpha = .79$
• Functional Meaning (FKM)	.81
• Symbolic Meaning (SYM)	.56
• Emotional Meaning (EMM)	.92
Intention to Continue Skiing (ICS)	$\alpha = .86$
• I intend to go skiing over the next month	.91
• I am determined to go skiing over the next month	.95
• I will try to go skiing over the next month	.85

Table 4

Correlations and Construct Descriptives for Structural Model (N = 294)

	SOM	CS	AA	ICS	M	SD
SOM	.58				3.71	.99
CS	-.51	.34			5.13	1.15
AA	.74	-.50	.60		4.34	1.07
ICS	.69	-.37	.76	.82	4.76	1.61

Note: Average variance extracted (AVE) estimates in bold on the diagonal.

FKM (.81), EMM (.92), and SYM (.56) were predictive. Results of the structural model are reported as standardized regression weights in Figure 1. All paths in Figure 1 are significant $p < .05$. These results indicate that CS ($b = -.51$) explained 25% of the variance in SOM. CS ($b = -.38$) and SOM ($b = .65$) jointly explained 82% of the variance in AA. Both SOM ($b = .31$) and AA ($b = .54$) explained 64% of the variance in ICS.

The final analysis employed nested model comparisons to examine the relationship between both AA and SOM in regards to ICS. The rationale for this analysis is the possibility that AA as an attitude strength measure might mediate the connection between SOM and ICS. Figure 1 served as the baseline model to compare the performance of an alternative rival model. This nested alternative specified a direct path between SOM and ICS without AA intervening as a mediating variable (i.e., no path between SOM and AA). The SEM results for the alternative model ($\chi^2 = 198.24$, $df = 85$, $p < .01$) supported a significant SOM \rightarrow ICS link ($b = .65$) $p < .05$ (RMSEA = .06, SMRM = .04, and TLI = .96). However, the final assessment of mediation used the previously described three-step procedure to compare the baseline model and the alternative models (e.g., Barron & Kenny, 1986; Hair et al., 2006). The results revealed that the direct path between SOM and ICS in the alternative model ($b = .65$) was significant but the beta estimate changed to ($b = .31$) with the introduction of AA as a mediator. Since the direct path between SOM and ICS remained significant but the beta estimate decreased (from $b = .65$ to $b = .31$), partial mediation exist. In addition, nested model comparisons using chi square differences indicated that the model depicted in Figure 1 provided a significantly better fit for the data than the alternative model ($\chi^2 \Delta 13.15$, $df=1$, $p < .01$). Overall, the results suggest AA plays a partial mediating role between SOM and ICS.

Discussion

The present study examined the impact of constraints on motivation, activity attachment, and behavioural intentions. The examination was guided by Jackson et al.'s (1993) proposition regarding the incorporation of motivation and attitudes within leisure constraints research. Overall, five hypotheses were tested that suggest constraints and motivation would influence activity attachment, which in turn would influence behavioural intentions. The analysis revealed some clear patterns of results.

The construct validity and reliability of measures to examine constraints, activity attachment, strength of motivation, and behavioural intentions was established. However, the limitations of the sampling method should be considered. The construct validity of the scales was supported with the confirmatory factor analysis, while the reliability analysis indicated that all the dimensions had good internal consistency, and were conceptually clear. The results provide initial support for a short version of the leisure constraints scale (Alexandris & Carroll, 1997); including 12 items to measure four dimensions (time, psychological, social, and enjoyment). Activity Attachment was measured with a composite of a three-dimensional structure (functional, symbolic, and emotional), developed by Funk

and James (2006) in the context of spectator sport, and recently used in the context of leisure and recreation (Filo et al., 2008).

The results of the SEM also provided support for a proposed structural model to examine five hypotheses. The fit of the data was acceptable, while significant relationships among constraints, motivation, attachment and behavioural intentions were revealed. This evidence provided support for the five hypotheses.

Hypotheses Support

The results indicate a negative relationship between constraints and motivation, supporting Hypothesis 1. Constraints explained 25% of the variance in motivation, which confirms Jackson et al.'s (1993) proposition, and previous studies (Alexandris et al., 2002; Carroll & Alexandris, 1997), which report direct links between constraints and motivation. The role of constraints as a formative factor that inversely influences strength of motivation suggests an individual's prior experience and knowledge of the activity is important in determining the intensity level of motivation toward that activity. This directionality suggests that the more constraints that must be negotiated, the less likely the individual will be motivated (e.g., skiing has too many obstacles). Alternatively, if constraints have been negotiated successfully in the past (e.g., self-efficacy), then the intensity of motivation will be higher.

The relationship between constraints and motivation can be interpreted with the context of the self-determination theory (Deci & Ryan, 1985; Vallerand & Losier, 1999). Self-determination theory proposes a motivational sequence: social factors → psychological mediators → types of motivation → behavioural consequences. Alexandris et al. (2002) suggested that constraints can act as social and psychological antecedents of motivation. The results of this study support the influence of social-psychological constraints on strength of motivation and activity attachment, which in turn were shown to influence behavioural intentions.

The results also confirmed the Hypothesis 2, regarding the positive relationship between strength of motivation and intention to continue skiing. The role of motivation in leisure and exercise behaviour is well documented (Iso-Ahola, 1989). According to Vallerand & Losier (1999), motivation leads to positive cognitive, affective, and behavioural consequences. Memory, learning, concentration, and attention have been given as examples of cognitive consequences. Affective outcomes include interest, satisfaction, mood, and anxiety. Finally, behavioral consequences are related to behavioral intentions, persistence of task, intensity, and performance (Vallerand & Losier, 1999). This study used only behavioural intentions as the dependent variable, and provided evidence for their direct link with motivation. The study of the affective consequences of motivation and their relation to the perception of constraints is an issue for future research; to date it has not been examined in the leisure literature. Jackson et al. (1993) also proposed that constraints can influence subsequent aspects of behaviour, such as fun and enjoyment.

The data also supported Hypotheses 3 and 4. Results of the SEM in Figure 1 indicated that constraints had a negative relationship with activity attachment ($b = -.38$). In contrast, strength of motivation ($b = .65$) had a positive relationship

with activity attachment. Jointly, both constraints and strength of motivation explained 82% of the variance in activity attachment. As previously noted, research has shown that motivation is associated with positive emotions, greater persistence, and increased sport satisfaction (Funk & Bruun, 2007; Iso-Ahola, 1989; Pelletier, Fortier, Vallerand, et al., 1995). Our data propose that individuals who express a high desire to participate in a specific activity (high intensity of motivation) are more likely to develop higher levels of emotional, functional, and symbolic meaning with the activity (e.g., Filo et al., 2008). This result supports Funk and James (2006) proposition that motivation in the form of benefits and needs obtained via sport participation contributes to the development of sport attachment. On the other hand, as hypothesized, constraints were shown to negatively influence activity attachment which, for the first time, provides empirical support for the interaction between constraints and attitude variables (Jackson et al., 1993), such as activity attachment.

As previously discussed, activity attachment is a variable not previously used in leisure constraints research, but has recently been noted (Beaton & Funk, 2008; Beaton et al., 2009; Filo et al., 2008). Attachment describes the point in a developmental progression when the activity has taken on more personalized meaning with attitudes and behavior patterns becoming more stable and predictable (Beaton & Funk, 2008). Funk and James (2006) defined attachment as a process that occurs when an individual assigns emotional, functional, and symbolic meanings to ideas, thoughts, and images related to an object (e.g., recreational activity). These results suggest constraints play a role in this attitude formation in terms of the emotional, functional and symbolic meaning attached to a leisure activity.

Attitude formation and change is based on personal experience and external forces such as media and the social environment that influence decision making (Shiffman & Kanuk, 2007). In this regard, activity attachment operates as a strength barometer indicating the degree of attitude formation toward a recreational activity and operates as both an output and input in the decision-making process (Funk & James, 2006). Activity attachment as an output is influenced by external factors and internal processes including motivation, perception, learning, memory, and personality that contribute to the level of activity-related knowledge (Bettman, Johnson, & Payne, 1991). This knowledge level is used as an input to evaluate new, consistent, and conflicting information about the activity and plays an important role in decisions regarding future participation (Abelson & Levi, 1985). Hence, activity attachment can be influenced by prior participation, motivation, and perceived and actual constraints and subsequently influence future participation and behavioural intentions (Shiffman & Kanuk, 2007). This study indicates that perceived constraints can add to our understanding attitude formation.

Although the link between constraints and attachment was established in this study, future research should examine the influence of specific types of constraints on specific facets of attachment. Following the hierarchical model of leisure constraints (Crawford et al., 1991), intrapersonal constraints such as individual /psychological, and enjoyment, might be the most important determinants of

the development of activity attachment. However, it could also be argued that specific types of constraints would influence differently the facets of attachment. For example, intrapersonal constraints will influence mainly the functional and emotional dimensions of attachment; the interpersonal constraints will influence the symbolic dimension, while the role of structural constraints, which were not examined in details in this study, needs to be determined. Future research is required towards this direction.

Finally, the last hypothesis was supported, as the relationship between Activity Attachment ($b = .54$) and intention to continue skiing was positively related and significant. This information indicates that individuals who place more emotional, functional, and symbolic meaning on an activity (e.g., stronger attitudinal evaluations) are more likely to express positive future behavioural intentions (Kang, 2002). It should be noted that strength of motivation expresses both direct and indirect (through its influence on activity attachment) relationships with intentions. This evidence compliments prior attachment research that reports higher levels of attachment explains both repeat purchase behaviour and attitudinal loyalty and supports attachment mediation role in the link between motivation and allegiance (Filo et al., 2008; Funk & James, 2006).

Overall, the negotiation proposition (Jackson et al., 1993) can be used for interpreting the results. The study was based on the hierarchical model of leisure constraints (Crawford et al., 1991) and the negotiation proposition developed by Jackson et al. (1993). Although direct measures of negotiation strategies were not used, theoretical implications and interpretations of results regarding the role of negotiation can be drawn.

In the majority of the studies (Alexandris et al., 2007; Loucks-Atkinson & Hubbard, 2007; Son et al., 2008a,b; White, 2008; Wilhelm Stanis et al., 2009) motivation was positively linked with the development of negotiation strategies. Since no direct relationship between constraints and behavioural intentions was observed in this study, the negotiation proposition is indirectly supported. Despite the perception of leisure constraints, some individuals participate in leisure activities and they also express the intention to continue participating. As proposed, evidence was provided for attitude strength, as measured with the activity attachment variable, as one of the key factors for the successful negotiation of leisure constraints. This is also supported by the partial mediation of activity attachment in the relationship between motivation and behavioural intention. This finding represents a new addition to constraint research, since previous research (Alexandris et al., 2002) has established only direct links between motivation and behavioural intentions.

Conclusions, Study Limitations, and Future Research

The present study contributes to the existing literature by providing empirical support for the value of the attitude strength perspective in leisure constraint research. For the first time, both motivation and activity attachment, which is an attitude strength construct, were examined in a single model in relation to leisure constraints and were shown to have significant relationships. The activity

attachment variable, introduced in leisure constraint research, was shown to be a key variable that can further advance our understanding of constraints negotiation. Future research, however, is required in a number of directions.

First, the relationship between measured intentions and actual behaviour is an issue that needs further consideration. Intention does not always predict actual behaviour, which limits the applicability of this research to problems commonly encountered by practitioners (Godin, 1994). Testing an expanded model that includes measures of the actual behaviour, such as participation rates, commitment to participation, loyalty to specific programs, is a task that has important implication both from theoretical and practical standpoint.

Second, while constraints and activity attachment were defined and measured as multi-dimensions constructs in the present study, latent variables were used in the structural model. This was necessary in order to provide statistically valid results, considering the number of interactions examined in relation to the sample of the study. Subsequently, specific information on the relationships between and among the different dimensions of leisure constraints and attachment were not provided. Such an analysis would have been very useful in testing the hierarchy of effects of leisure constraints on activity attachment and motivation, and in relation to behavioural intentions.

Third, the placement of motivation within an individual's decision-making model for leisure participation is an issue that should be noted. Based on self-determination theory (Deci & Ryan, 1985), in the current study, constraints were placed first in the decision-making model and were shown to directly influence motivation. These results cannot be directly compared with previous models (e.g., Hubbard & Mannell, 2001; Son et al., 2008a), due to the different placement of motivation in the proposed decision-making models. The use of the strength of motivation variable in the proposed model, which measures the intensity of motivation, and not an individual's motives or needs, also represents a new addition to the literature. Strength of motivation represents a personal moderator that determines the intensity of a person's attitude toward engaging in a specific activity. Previous studies had used either global (e.g., Hubbard & Mannell, 2001) or multi-dimensional measures (e.g., Son et al., 2008a, b, White, 2008; Wilhelm, Stanis et al., 2009) of personal needs and motivations. Future studies, could make a more detailed examination of the relationship between motivation and types of constraints. The current study did not test any hierarchy of leisure constraints (e.g., intrapersonal interpersonal structural motivation), and this issue requires further research.

As previously noted, the current research used the theory of the negotiation proposition (Jackson et al., 1993) in order to build the model. However, negotiation strategies were not specifically measured. Recent studies (Alexandris et al., 2007; Loucks-Atkinson & Hubbard, 2007; Son et al., 2008a,b; White, 2008; Wilhelm Stanis et al., 2009) have made significant contributions toward understanding the operation of leisure constraints in relation to the negotiation strategies. However, the actual "placement" of the negotiation construct within a decision-making model is still not clear. Further research is required toward this direction, by also incorporating attitudes within the model. Another challenge that remains is the

conceptualisation and measurement of negotiations. In a recent study, Alexandris et al. (2007) proposed a multi-dimensional scale of negotiations, which needs further establishment in order to be universally applicable.

A final note about the current study relates to its sample and the context used. The sample size was limited and focused to one only skiing centre. Although this was appropriate to statistically test theoretical relationships and models, it does limit generalisations and subsequent applications should be made with caution. Furthermore, a single activity (recreational skiing) was examined; this activity has specific characteristics and requirements for participation (Alexandris et al., 2007) and results may be confined to similar recreational activities. Overall, the results should be verified in more leisure and recreation experience and different samples, if a valid constraint model is to be established.

References

- Abelson, R. P., & Levi, A. (1985). Decision making and decision theory. *Handbook of social psychology: Theory and method* (Vol. 1, pp. 231-309).
- Alexandris, K., & Carroll, B. (1997). An analysis of leisure constraints based on different recreational sport participation levels: Results from a study in Greece. *Leisure Sciences*, 19, 1-15.
- Alexandris, K., Kouthouris, C., & Girgolas, G. (2007). Investigating the relationships among motivation, negotiation and intention to continuing participation: A study in recreational alpine skiing. *Journal of Leisure Research*, 39, (4), 648-668.
- Alexandris, K., Tsorbatzoudis, C., & Grouios, G. (2002). Perceived constraints on recreational participation: Investigating their relationship with intrinsic motivation, extrinsic motivation and amotivation. *Journal of Leisure Research*, 34, 233-252.
- Alexandris, K., & Stodolska, M. (2004). The influence of perceived constraints on the attitudes towards recreational sport participation. *Leisure and Society*, 27, 197-217.
- Arbuckle, J. L. (2005). *AMOS 6.0 user's guide*. Chicago: Amos Development Corporation.
- Armitage, C., & Conner, M. (1999). The theory of planned behavior: Assessment of predictive validity and "perceived control." *British Journal of Social Psychology*, 38, 35-54.
- Arnould, E. J., & Price, L. L. (1993). River Magic: Extraordinary experience and the extended service encounter. *Journal of Consumer Research*, 20 (June), 24-45.
- Backman, S. J. (1991). Exploring the relationship between perceived constraints and loyalty. *Journal of Leisure Research*, 23, 332-344.
- Bagozzi, R. P. & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16, 74-94.
- Baloglu, S., & Uysal, M. (1996). Market segments of push and pull motivations: a canonical correlation approach. *International Journal of Contemporary Hospitality Management*, 8, 32-38.
- Bansal, H., & Eiselt, H. A. (2004). Exploratory research of tourist motivations and planning. *Tourism Management*, 25, (3), 387-396.
- Beaton, A. A., & Funk, D. C. (2008). An evaluation of theoretical frameworks for studying physically active leisure. *Leisure Sciences*, 30, 1-18.
- Beaton, A. A. & Funk, D. C., & Alexandris, K. (2009). Operationalizing a theory of participation in physically active leisure. *Journal of Leisure Research*, 41, 177-203.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.

- Bettman, J. R., Johnson, E. J., & Payne, J. W. (1991). Consumer decision making. In T. S. Robertson & H.H. Kassarian (Eds.), *Handbook of consumer behavior* (pp. 281-315). Upper Saddle River, NJ: Prentice-Hall.
- Bright, A. D. (1997). Attitude-Strength and support of recreation management strategies. *Journal of Leisure Research*, 29, 369-379.
- 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). Beverly Hills, CA: Sage.
- Byrne, B. M. (2001). *Structural equation modelling with AMOS: Basic concepts, applications and programming*. New Jersey: Lawrence Erlbaum Associates.
- Cho, M. H. (2004). The strength of motivation and physical activity level during leisure time among youth in South Korea. *Youth and Society*, 35 (4), 480-494.
- Carroll, B., & Alexandris, K. (1997). Perception of constraints and strength of motivation: Their relation to recreational sport participation. *Journal of Leisure Research*, 29, 279-299.
- Cattell, R., & Child, D. (1975). *Motivation and dynamic structure*. NY: John Wiley and Sons.
- Csikszentmihalyi, M., & Rochberg-Halton, E. (1981). *The meaning of things: Domestic symbols and the self*. Cambridge: Cambridge University Press.
- Coble, T., Selin, S., & Erickson, B. (2003). Hiking alone: Understanding fear, negotiation strategies and leisure experiences. *Journal of Leisure Research*, 35, 1-22.
- Crompton, J., & McKay, S. L. (1997). Motives of visitors attending festival events. *Annals of Tourism Research*, 24, 425-439.
- Crawford, D., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences*, 9, 119-127.
- Crawford, D., Jackson, E., & Godbey, G. (1991). A hierarchical model of leisure constraints. *Leisure Sciences*, 13, 309-320.
- Deci, L., & Ryan, M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Erber, M. W., Hodges, S. D., & Wilson, T. D. (1995). Attitude strength, attitude stability, and the effects of analysing reasons. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 433-454). Mahwah, NJ: Lawrence Erlbaum Associates.
- Filo, K., Funk, D.C., & Alexandris, K. (2008). Exploring the impact of brand trust on the relationship between brand associations and brand loyalty in sport and fitness. *International Journal of Sport Management and Marketing*, 3, 39-57.
- Filo, K., Funk, D. C., & O'Brien, D. (2008). It's really not about the bike: Exploring attraction and attachment to the events of the Lance Armstrong Foundation. *Journal of Sport Management*, 22, 501-525.
- Fornell, C., & Larkner, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, 39-50.
- Funk, D.C., & Bruun T. (2007). The Role of socio-psychological and culture-education motives in marketing international sport tourism: A cross-cultural perspective. *Tourism Management*, 28, 806-819.
- Funk, D. C., Haugtvedt, C. P., & Howard, D. R. (2000). Contemporary attitude theory in sport: Theoretical considerations and implications. *Sport Management Review*, 3(2), 124-144.
- Funk, D. C., & James, J. (2006). Consumer loyalty: the meaning of attachment in the development of sport team allegiance. *Journal of Sport Management*, 20, 189-217.
- Gerbing, D. W., & Anderson, J. C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research*, 25(2), 186-192.
- Gladden J., & Funk, D. (2002). Developing an understanding of brand association in team sport: Empirical evidence from consumers of professional sport. *Journal of Sport Management*, 16, 54-81.

- Godin, G. (1994). Theories of reasoned action and planned behavior: Usefulness for exercise promotion. *Medicine and Science in Sports and Exercise*, 26, 1391-1394.
- Hanquin, Z. Q., & Lam, T. (1999). An analysis of mainland Chinese visitors' motivation to visit Hong Kong. *Tourism Management*, 20, 587-594.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. C., (2006). *Multivariate data analysis with readings* (6th ed). New Jersey: Prentice Hall.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*; 6: 1-56.
- Hubbard, J., & Mannell, R. (2001). Testing competing models of the leisure constraint negotiation process in a corporate employee recreation setting. *Leisure Sciences*, 23(3), 145-163.
- Iso-Ahola, S. (1989). Motivation for leisure. In E.L. Jackson & T. L. Burton (Eds.), *Understanding leisure and recreation: Mapping the past, charting the future* (pp. 247-279). State College, PA: Venture Publishing
- Iwasaki Y., & Havitz, M. E., (2004). Examining relationships between leisure involvement, psychological commitment and loyalty to a recreation agency. *Journal of Leisure Research*, 36, 45-72.
- Jaccard, K., & Wan, C. K. (1996). *LISREL approaches to interaction effects in multiple regression*. Thousand Oaks: Sage.
- Jackson, E., Crawford, D., & Godbey, G. (1993). Negotiation of leisure constraints. *Leisure Sciences*, 15, 1-11.
- Kang, J. (2002). A structural model of image-based and utilitarian decision-making processes for participant sport consumption. *Journal of Sport Management*, 16, 173-189.
- Kay, T., & Jackson, G. (1991). Leisure despite constraint: The impact of leisure constraints on leisure participation. *Journal of Leisure Research*, 23, 301-313.
- Kim, N. S., & Chalip, L., (2004). Why travel to the FIFA World Cup? Effects of motives, background, interest, and constraints. *Tourism Management*, 25, 6, 695-707.
- Kleine, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: The Guildford Press.
- Kleine, S. S., & Baker, S. M. (2004). An integrative review of material possession attachment. *Academy of Marketing Science Review*, 2004, 1-35.
- Krosnick, J. A., & Petty, R. E. (1995). Attitude strength: An overview. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences*, (pp. 1-24). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Kyle, G., Absher, J., & Graefe, A. (2003). The moderating role of place attachment on the relationship between attitudes toward fees and spending preferences. *Leisure Sciences*, 25, 33-50.
- Kyle, G., Absher, J., Hammitt, W., & Cavin, J. (2006). An examination of the motivation-involvement relationship. *Leisure Sciences*, 28, 467-585.
- Kyle, G., Graefe, A., Manning, R., & Bacon, J. (2004). Predictors of behavioural loyalty among hikers along the Appalachian Trail. *Leisure Sciences*, 26, 99-118.
- Livenwood, J., & Stodoloska, M. (2004). The effects of discrimination and constraints negotiation on leisure behavior of American Muslims in the Post-September 11 America, *Journal of Leisure Research*, 36, 183-208.
- Loucks-Atkinson, A., & Mannell, R. C. (2007). Role of self-efficacy in the constraints negotiation process: The case of individuals with Fibromyalgia syndrome. *Leisure Sciences*, 29, 19-36.
- Manfredo, M., Driver, B., & Tarrant, M. (1996). Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. *Journal of Leisure Research*, 28 (3), 188-213.

- Mannell, R., & Loucks-Atkinson, A. (2005). Why don't people do what's "good" for them? Crossfertilization among the psychologies of non-participation in leisure, health and exercise behaviours. In Jackson, E. (Ed.), *Constraints to leisure* (pp.221-232). Pennsylvania: Venture Publishing.
- Mannell, R., & Iwasaki, Y. (2005). Advancing quantitative research on social cognitive theories of the constraint-negotiation process. In Jackson, E. (Ed.), *Constraints to leisure* (pp. 261-278). Pennsylvania: Venture Publishing.
- Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*. Thousand Oaks: Sage.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.
- Pelletier, L., Fortier, M., Vallerand, R., Tuson, K., Briere, N., & Blais, M. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The sport motivation scale (SMS). *Journal of Sport and Exercise Psychology*, 17, 35-53.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology*, (Vol. 19, pp. 123-205). San Diego, CA: Academic Press.
- Petty, R. E., Haugtvedt, C. P., & Smith, S. M. (1995). Elaboration as a determinant of attitude strength: Creating attitudes that are persistent, resistant, and predictive of behaviour. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences*, (pp. 93-130). Mahwah, NJ: Lawrence Erlbaum Associates.
- Pritchard, M., Funk, D., & Alexandris, K., (2009). Barriers to repeat patronage: the impact of constraints on spectators. *European Journal of Marketing*, 43, 169-188.
- Raedeke, T. D., & Burton, D. (1997). Personal investment perspective on leisure-time physical activity participation: Role of incentives, program compatibility, and constraints. *Leisure Sciences*, 19, 201-228.
- 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., Bonen, A., & McCabe, J. (1991). Do more constraints mean less leisure? Examining the relationship between constraints and participation. *Journal of Leisure Research*, 23, 286-300.
- Shiffman, L., & Kanuk, L. (2000). *Consumer behavior*. London: Prentice Hall.
- Smith, A., & Biddle, S. (1999). Attitudes and exercise adherence: Test of the theories of reasoned action and planned behavior. *Journal of Sport Sciences*, 17, 269-281.
- Son, J., Mowen, A., & Kerstetter, D. (2008a). Testing Alternative Leisure Constraint Negotiation Models: An Extension of Hubbard and Mannell's Study. *Leisure Sciences*, 30, 198-216.
- Son, J., Kerstetter, D., & Mowen, A. (2008b). Do Age and Gender Matter in the Constraint Negotiation of Physically Active Leisure? *Journal of Leisure Research*, 40, 267-289.
- Stalp, M. (2006). Negotiating Time and Space for Serious Leisure: Quilting in the Modern U.S. Home. *Journal of Leisure Research*, 38 (1), 104-113.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson.
- Vallerand, R., & Losier, G. (1994). Self-determined motivation and sportsmanship orientations: An assessment of their temporal relationship. *Journal of Sport and Exercise Psychology*, 16, 229-245.
- Vallerand, R., & Losier, G. (1999). An integrative analysis of intrinsic and extrinsic motivation in sport. *Journal of Applied Sport Psychology*, 11, 142-169.
- Wallendorf, M., & Arnould, E. J. (1988). "My favorite things": A cross-cultural inquiry into object attachment, possessiveness, and social linkage. *Journal of Consumer Research*, 14, 531-547.

-
- White, D. (2008). A structural model of leisure constraints negotiation. *Leisure Sciences*, 30, 342-359.
- Wilhelm Stanis, S., Schneider, I., & Russell, K. (2009). Leisure time physical activity of part visitors: Retesting constraint models in adoption and maintenance stages. *Leisure Sciences*, 31, 287-304.
- Zeithaml, V., Berry, L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60, 31-46.