

Demographic Predictors of Recreational Tennis Participants' Sport Commitment

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EXECUTIVE SUMMARY: Prior leisure research has focused on behavioral and psychological variables, such as involvement, loyalty, and commitment to understand sport and leisure behavior. With commitment, research has found that highly committed participants will be valuable consumers of their chosen activity through sustained participation, higher involvement, and increased loyalty to an activity. Expansion of this line of research has led to understanding how these variables, such as commitment, differ based on segmentation of key user groups, but little research has been conducted to understand what influences the commitment levels of recreational sport participants. The sport commitment model posits that there are six antecedents that predict commitment: enjoyment, involvement alternatives, involvement opportunities, personal investments, social constraints, and social support. This study sought to understand commitment of recreational tennis players based on the sport commitment model.

The purpose of this study was to understand the relationship between demographic segments (age, sex, income, and skill level) of community tennis association members on commitment and the theoretical antecedents founded in the sport commitment model. Members of community tennis associations completed a web-based questionnaire that assessed items related to the sport commitment model and demographic information. To investigate demographic differences based on the individual variables in the model, multivariate analysis was conducted with post-hoc tests to identify differences within the categories. Results found significant differences based on a participant's age for commitment, involvement alternatives, and social constraints. Enjoyment, personal investments, and social support significantly differed based on sex.

To understand differences in how the antecedent predictors differed in predicting commitment, a regression analysis was conducted. Results found enjoyment to be the strongest predictor of commitment across all demographic categories, but there were significant differences in the strength of predicting commitment based on the other antecedent variables.

The present results demonstrate that there are stable predictor variables of commitment within the model along with significant differences. Based on the present study results, sport commitment variables among various populations

should not be generalized across demographics. The findings also add to the leisure research by providing evidence that personal, social, and monetary-based variables directly contribute to commitment and suggest committed sport participants differ based on segmentation. Marketing implications suggest the importance of enjoyment and involvement opportunities for all market segments. Marketing efforts to younger and less skilled participants include tactics that emphasize the benefits of tennis compared to competing sports/activities and creating more social events. The findings also provide evidence that promotions to enhance time and monetary investment in the sport can increase player commitment.

KEYWORDS: segmentation, commitment, sport commitment model, tennis

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Participation in sport facilitates strong emotional value to consumers and therefore plays a significant role in their lives. If sport participation is a positive experience, individuals will continue to play and become more committed to maintaining their involvement. This continued participation is vital to many sports that depend on frequent participants to sustain the industry (Mullin, Hardy, & Sutton, 2000). In order to maintain its market share, the sport industry considers retention of current participants to be of great concern since future participation will likely result in future direct and indirect consumption of goods and services (Deaton, 1992). Sport researchers have sought to understand the psychological attraction a consumer has to a sport and differences based on demographics (James & Ridinger, 2002), sport type (James & Ross, 2004; Wann, Schrader, & Wilson, 1999), motivation or points of attachment (e.g., Funk, Mahony, & Ridinger, 2002; Robinson, Trail, Kwon, 2004; Trail & James, 2001; Zhang, Pease, Lam et al., 2001), and the developmental process that occurs due to continued participation (Funk & James, 2001; 2006). Sport administrators recognize that psychological processes associated with sport participation and the subsequent segmentation of the market associated with these processes may play a key role in developing marketing strategies (Green, 2003).

The sport and leisure literature has focused on participant behavior from two perspectives: motivation (e.g., Iso-Ahola, 1999; Milne & McDonald, 1999) and constraints (Jackson, 2005). In terms of motivation, stable factors arouse and direct an individual's behavior, which leads to adoption, persistence, and a resistance to change. Researchers suggest that constraints, on the other hand, inhibit the formation of leisure preference and/or prohibit the participation and enjoyment in recreation (Jackson, 2005). These perspectives, however, are not mutually exclusive. For example, low motivation may be considered a constraint to leisure participation; thus the awareness of such motivations and constraints are vital to understanding the decision-making

process of a consumer. This study will focus on a motivational perspective, commitment to a sport, which reflects choice, effort, and persistence (Weiss & Ferrer-Caja, 2002).

The concept of commitment is important in consumer behavior because, while it does not represent direct spending, theorists have suggested that it represents resistance to change (e.g., Crosby & Taylor, 1983; Haugtvedt & Petty, 1992; Funk & James, 2006). Resistance to change one's evaluation of a sport (e.g., tennis or golf) is thought to reflect consistency, withstanding of counter persuasive attempts (e.g., an alternate activity) and is predictive of behavior (e.g., participation frequency and purchase behavior) (Petty, Haugtvedt, & Smith, 1995).

In leisure research, psychological commitment has been extensively studied both directly and indirectly. For example, commitment and involvement have been investigated to understand the multifaceted concept of enduring involvement (e.g., Havitz & Dimanche, 1997; Havitz & Howard, 1995; McIntyre, 1989). While evidence points to commitment as part of enduring involvement, other research has suggested that these constructs are conceptually distinct. For example, leisure researchers (e.g., Gahwiler & Havitz, 1998; Iwasakai & Havitz, 1998; 2004; and Pritchard, Havitz, & Howard; 1999) have examined the relationship between enduring involvement and commitment, and findings indicate that the relationship between the two constructs are developmental. Havitz and Dimanche (1997) commented that the core difference between commitment and enduring involvement is based on specifically what is being studied. Commitment is measured at the brand level (e.g., the service providers or service offerings), while enduring involvement is measured on the product level (e.g., the specific activity under study).

Recent studies have focused on commitment related to leisure participants at the brand level (Kyle, Mowen, Absher, & Havitz, 2006), where commitment was examined based on meanings associated with the setting and facilities along with trust in the service provider's management. Others have used commitment and involvement interchangeably to refer to a leisure activity participant's deep involvement in an activity (Havitz & Dimanche 1997; Iwasakai & Havitz, 1998; 2004; Kyle, Graefe, Manning, & Bacon, 2003; Park, 1996). Commitment has also been used to understand recreational specialization (Bryan 1977, 2000). Sport management researchers have also investigated commitment related to sport spectators and organizations. In particular, psychological commitment has been used as a construct to segment consumers based on loyalty (Kwon & Trail, 2003; Mahony, Madrigal, & Howard, 2000). In addition to spectators, organizational commitment has been studied to understand sport organizations, such as the NCAA (e.g., Cunningham & Sagas, 2004), and volunteerism (e.g., Costa, Chalip, Green, & Simes, 2006). The main gap in the sport management research is that there is little focus on the recreational sport participants who are both direct and indirect consumers of sport and leisure.

We suggest that while a deeper understanding and differentiation between the constructs is important, both theoretically and practically, there is still a lack of understanding of what leads to or precipitates involvement and subsequent commitment. Iwasaki and Havitz (1998; 2004) began to research this issue further by examining personal and social factors that relate to commitment, involvement, and resistance to change, but did not examine how these factors might influence levels of commitment. Also, it has been suggested that more research needs to be conducted on how the

aforementioned constructs differ based on psychological or demographic segmentation (Iwasaki & Havitz, 2004; Kyle et al., 2006).

It is clear that more committed participants will be more loyal to the sport and play an essential role in achieving organizational goals, including revenue generation (Iwasaki & Havitz; 2004). However, there is a gap in the literature with regard to the factors that influence or at least are related to commitment in recreational sport. The current study aimed to explain the correlates of recreational tennis participants' commitment through the sport commitment model (SCM: Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993), couched in the field of sport psychology.

The sport commitment model provides a theoretical framework for studying the motivational bases of continued, or persistent, sport participation. Sport commitment is defined as the "psychological state representing the desire and resolve to continue sport participation" (Scanlan, Carpenter, Schmidt, et al., 1993, p.6). Commitment reflects persistence and is at the core of motivation. When trying to understand why someone participates in an activity, one must understand the sources of motivation and the potential outcomes of the action.

The sport commitment model was chosen based on three important features (Scanlan and Simons, 1992): 1) sport commitment addresses *psychological* attachment to an activity, and does not involve estimations of the actual probability (e.g., intentions); 2) sport commitment is a product of both cognitive (e.g., knowledge, thinking) and affective (e.g., emotions) factors; and 3) the sport commitment model is able to distinguish differing predictors of participants who may report overall equal levels of commitment.

The sport commitment model (SCM) was adapted from social-exchange theory (Kelley & Thibaut; 1978; Thibaut & Kelley, 1959), Kelley's (1983) model of interpersonal relationships, and the investment model (Rusbult, 1988). The sport commitment model was formed based on overwhelming evidence that enjoyment, or fun, was found to be a primary participation motive in diverse athletic samples spanning age, ethnicity, gender, and sport types (Scanlan & Lewthwaite, 1986; Scanlan, Ravizza, & Stein, 1989; Scanlan, Stein, & Ravizza, 1989; Stein & Scanlan, 1992). With enjoyment as a central construct, Scanlan and Simons (1992) introduced a larger conceptual model of motivation termed *the sport commitment* model. Scanlan and her colleagues (Carpenter, Scanlan, Simons, & Lobel, 1993; Scanlan, Carpenter, Schmidt et al., 1993; Scanlan, Simons, Carpenter, Schmidt, & Keeler, 1993) chose to use the construct of commitment because in contrast to other approaches (e.g., The Theory of Planned Behavior; Ajzen, 1991) that focus on persistence, the commitment literature provides a more comprehensive and sport-relevant view of this behavior and its underlying psychological state.

There are six basic constructs in the original SCM: commitment, enjoyment, involvement alternatives, involvement opportunities, personal investments, and social constraints. Sport commitment is operationally defined as a psychological state representing the desire and resolve to continue sport participation in a particular program, specific sport, or sport in general (Scanlan, Simons, Carpenter, et al., 1993). The original sport commitment model was posited as having five direct antecedents that can increase or decrease sport commitment: sport enjoyment, involvement opportunities, personal investments, social constraints, and involvement opportunities.

Sport enjoyment is defined as a positive affective response to the sport experience that reflects generalized feelings such as pleasure, liking, and fun. Involvement alternatives are defined as the attractiveness of the most preferred alternative(s) to continued participation in the current endeavor. Personal investments reflect personal resources such as time, effort, and energy that would be lost if participation did not continue. Social constraints are the social expectations or norms that create feelings of obligation to remain in the activity. Involvement opportunities are the anticipated benefits that one receives through continued participation such as friendships, social interaction, skill mastery, and physical conditioning (Scanlan et al., 1993). An additional predictor of commitment revealed in more recent research grounded in the SCM is social support (Carpenter, 1993; Scanlan, Russell, Beals, & Scanlan, 2003; Scanlan, Russell, Wilson, & Scanlan, 2003). Social support reflects feelings of encouragement and support that a sport participant receives from significant others that may or may not also participate in the sport.

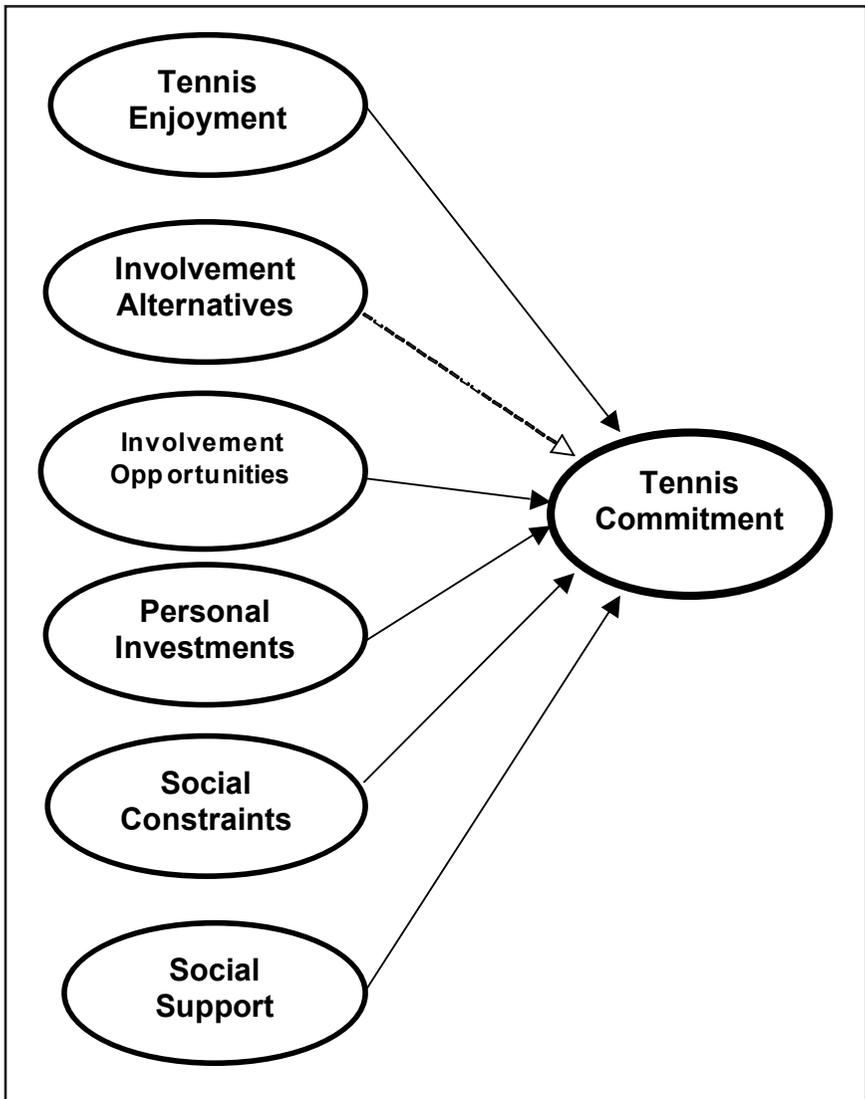
Overall, sport enjoyment, personal investments, social constraints, involvement opportunities, and social support are hypothesized to be positive antecedents of sport commitment, while involvement alternatives are posited as a negative antecedent of sport commitment (see Figure 1 for a depiction of the model).

Researchers have tested the original sport commitment model and expanded/modified versions in varied domains such as exercise and fitness commitment (Alexandris, Zahariadis, Tsorbatzoudis, & Grouios, 2002), occupational intention to quit among referees (Van Yperen, 1998), coaching commitment and turnover (Raedeke, Warren, & Granzky, 2002), athlete burnout (Raedeke, 1997), competitive youth sport (Carpenter, Scanlan et al., 1993; Scanlan, Carpenter et al., 1993; Weiss, Kimmel, & Smith, 2001), and elite athlete commitment (Scanlan et al., 2003). Each of the antecedents has been found to significantly influence sport commitment, but sport enjoyment and involvement opportunities have consistently emerged as the strongest predictors of increased commitment in sport-related research.

Administrators and marketers recognize that not all participants are the same with respect to their interests and needs and, as a result, divide (or segment) potential clients into identifiable groups who share similar characteristics and exhibit common behaviors (Kotler, 1993). Segmentation allows marketers to then identify potential target marketing and customize marketing strategies to these groups. Segmentation has been common in research related to recreational and tourist involvement (Dallen, 2007; Dimanche, Havitz, & Howard, 1993; Havitz, Dimanche, & Bogle, 1994; Kyle, Kerstetter, Guadagnolo, 2002; McIntyre & Pigram, 1992) where consumer involvement profiles have been identified based on behavioral and socio-psychological measures. Differences have also been reported by comparing demographics on behaviors such as specialization, motivation, and involvement (Hvenegaard, 2002; Schroeder, Fulton, Currie, & Goeman, 2006; Sutton, 2006). While the variables included to make these segmentation profiles included attitudes, motivations, and commitment, there has been less research related to commitment-specific segmentation.

Siegenthaler and Lam (1992) investigated adult tennis players and found that age and gender predicted commitment while skill level did not. In their study, no post hoc analysis was conducted to understand how groups differed. Currently, there is little research focused specifically on demographic variance in the SCM. Previous research

Figure 1. The Sport Commitment Model with the addition of social support.



Solid lines represent proposed positive relationships and broken lines represent negative relationships.

has validated the SCM with examinations of the model in particular sports or activities but few have explored demographic differences in the same sport due to low sample size and homogeneous subjects. Studies that looked at differences in the model include Carpenter, Scanlan, et al. (1993), who found no significant interaction effects based on age and gender in an adolescent sample of athletes, and Carpenter and Coleman (1998), who tested the model on non-American and non-elite athletes and found no differences between cultures or skill levels. Most recently, Weiss & Weiss (2007) investigated

variance of the sport commitment model with competitive female gymnasts (ages 8–18) based on age and competitive level. This study was the most comprehensive to date and used a relatively large sample size ($N = 304$) for comparisons. Weiss and Weiss found that the predictors of commitment were significantly different based on the developmental age of the participants. One important finding relative to age was the importance of social constraints for the younger gymnasts and perceived costs (negative factors related to continued participation) being a significant predictor for all age groups. When comparing competitive level, the results indicated that higher-level gymnasts had fewer significant predictors of commitment compared to lower-level gymnasts. For example, commitment was predicted by six antecedents (personal investments, perceived costs, coach social support, and social constraints by coach, best friend, and teammates) for the lower-level participants and only two antecedents for higher-level participants (personal investments and teammate social constraints). This study was the first to show specific differences in the SCM based on age and competitive level, but focused on youth participants.

It is logical that the invariance found by Weiss and Weiss (2007) is not unique to youth sport. Based on the literature related to sport commitment, there is a need for further understanding of commitment and the antecedents of commitment with adult sport participants. Differences based on psychological and demographic characteristics will help segment the adult tennis participant market and provide insight into marketing strategies for tennis to help with efforts to increase commitment of their participants. Therefore, the purpose of this study was to test the relationship between demographic segments (age, sex, income, and skill level) of tennis commitment and the theoretical antecedents included in the sport commitment model.

Method

Participants and Procedure

The study focused specifically on the sport of tennis. Adult recreational tennis players ($N = 537$; 247 male and 290 female) were recruited from community tennis associations in the Intermountain region of the United States. Participants ranged in age from 19–84 (M age = 47.5 years, $SD = 11.6$). The participants' skill level based on the United States Tennis Association rating system National Tennis Rating Program (NTRP) ranged from 2.5 - the lowest level in league play, to 5.5 - the highest level in league play. The participants' average household income was a categorical variable.

Recruitment of the participants followed the guidelines and the approval of the Human Subjects Review board at the researchers' university. Four community tennis association presidents sent an e-mail invitation to their membership. Community tennis associations are common in the U.S. and provide a variety of benefits to members, such as league play, tournaments, socials, and challenge ladders for a minimal annual fee (\$20 U.S.). Tennis associations communicate with their membership either through traditional mail, a website, or e-mail. Association presidents sent an e-mail invitation with an explanation of the purpose of the study, the web-link to access the survey, the password, mention of an incentive (drawing for a free tennis racket), and a deadline to complete the survey. A reminder e-mail with the same information was sent one week before the deadline. A total of 1,662 e-mail invitations were sent out and a total of 442 invitations were undeliverable due to invalid e-mail addresses. Over a one-month data-

collection time frame, a total of 531 questionnaires (44%) were completed. In a second sampling method, the link for the questionnaire and a description of the study were included in a monthly community tennis association newsletter. A total of 468 potential participants received the newsletter and a total of 16 questionnaires were completed (4%) for a total sample size of 547.

Instrument

Demographic data. Demographic variables were chosen based on categories that are used to understand the tennis population in the United States. The Tennis Industry Association reports the average age, gender and income of the tennis playing population as well as trends related to these demographics each year in their U.S. Tennis Participation report.

Participant's age was left open-ended and later categorized. Age categories (19-34, 35-44; 45-54; and 55-65) were created based on classifications used in marketing research to differentiate developmental consumer-related categories (Russell, Verrill, & Lane, 1988; Schiffman & Kunak, 2000) in addition to Canadian (Statistics Canada) and United States (U.S. Census) classifications of lifecycles. While all the participants fall into what is considered the adult life cycle, this cycle is further divided by marketers (14 and under, then 15-24, 25-34; 35-44, etc.). The category representing ages 19-34 represents participants in the young adult cycle, 35 – 44 and 45-54 represents two adult cycles, and 55 and older fall under the senior adult cycle.

Income was categorized into three levels (\$60,000 or less, \$60,001 to \$100,000, and \$100,001 and above). This classification system is in accord with categories used to compare incomes of U.S. households in 2005 U.S. Census Economic Survey Data (U. S. Census Bureau, 2006) with differentiation between those that made \$60,000 or more by the Drum Major Institute for Public Policy (Drum Major Institute, n.d.).

Tennis skill level was categorized based on the United States Tennis Association National Tennis Rating Program (NTRP), which is a self-report system for competitive league play. Participants in this study ranged from lowest level of 3.0 (fairly consistent when hitting medium-paced shots, but are not comfortable with all strokes and lack execution when trying for directional control, depth, or power) to the highest 5.0 (good shot anticipation and frequently has an outstanding shot or exceptional consistency around which a game may be structured) (USTA, n.d.). NTRP levels are used as a standard for competitive play in the U.S. and previously been used in research related to commitment invariance/variance (Siegenthaler & Lam, 1992).

Sport commitment variables. Questions related to the sport commitment model were based on items generated in the model development (Scanlan, Simons et al., 1993), specific to tennis players (Weiss et al., 2001) and in relation to adult participants (Alexandris et al., 2002). Six questions assessed the player's commitment to continue playing tennis (e.g., How dedicated are you to tennis?). All other sport commitment model constructs were represented with four items.

Enjoyment items assessed the players' positive affective responses to playing tennis (e.g., Do you enjoy playing tennis?) Involvement alternative items asked the respondent to think about alternative activities that they would do during the times they usually play tennis (Weiss et al., 2001) and then presented to the respondent with the alternate activities in mind and their feeling toward them compared to their tennis

participation (e.g., How interesting do you think these activities would be?). Involvement opportunity items assessed the opportunities that a participant receives that are unique to his/her participation in the sport (e.g., Would you miss being considered a 'tennis player' if you stopped playing?). Personal investment items assessed the resources that have been put into tennis that one would lose by discontinuing participation (e.g., How much time do you put into your tennis participation?). Social constraints items asked participants to respond to pressures that create a feeling of obligation to continue tennis participation (e.g., I feel that it is necessary to play tennis to be with my friends.). Social support items related to the support a player feels he receives from significant others (e.g., People say things to make me feel good about playing.). Responses were based on a 5-point Likert-type scale with rating options depending on the question (e.g., "not at all dedicated" to "very much dedicated"; "not at all" to "very much"; "not at all interesting" to "very interesting"; "none" to "a lot"; "not at all difficult" to "very difficult"; "never" to "almost always"). Acceptable validity and reliability has been established for variables of the sport commitment model in previous sport commitment research conducted with samples of adult fitness participants (Alexandris et al., 2002) and multiple youth sport participants (Scanlan, Carpenter, Schmidt et al., 1993; Weiss et al., 2001) that used similar items and wording.

Data Analysis

Data analysis closely matched the analysis done by Weiss and Weiss (2007), who looked at age and competitive level differences in the SCM with youth and adolescent competitive gymnasts. Preliminary analysis included scale reliabilities, descriptive statistics, and correlations among the variables. An analysis of variance tested the demographic groupings with each of the variables that comprise the sport commitment model. Due to multiple analyses, alpha was adjusted to $p < .004$ (.05 / 13) to protect against Type 1 errors. Follow-up univariate F ($p < .05$) and discriminant function coefficients (.30 criterion) were examined to determine which dependent variable differentiated within the demographic groups. Student-Newman-Keuls post hoc tests were conducted to determine which sport commitment model variables differed within the categories.

To examine SCM differences based on demographic categories, simultaneous multiple regression analysis was conducted for each group in each category. In the event of a significant relationship, regression coefficients (beta weights) were examined to identify which determinants were important contributors, and effect sizes (R^2) were reported to signify strength of the relationship.

Results

Descriptive, Reliabilities, and Correlations among Variables

Item totals were calculated for each of the variables and averaged for further analysis. Scale means, standard deviations, and internal consistency, calculated as Cronbach's alpha for each of the sport commitment variables according to each demographic variable are reported in Table 1. All reliability values were acceptable, demonstrating alphas $> .70$. Correlations between the variables indicated no multicollinearity with the highest correlation being .67 (enjoyment and commitment).

Table 1. Means, Standard Deviations and Internal Consistency for Each SCM Construct According to Demographic Variables

Demographic Variable	N	Commitment		Enjoyment		Involve Altern.		Involve Opps		Personal Invest		Social Constraints		Social Support	
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Age															
19 – 34 years	75	3.71 ^a	.47	4.59	.54	2.49 ^a	.49	3.08	.59	3.07	.49	1.99 ^a	.35	3.18	.77
35 – 44 years	116	3.73 ^a	.46	4.6	.53	2.47 ^a	.45	2.98	.63	3.09	.47	1.81 ^b	.33	3.20	.72
45 – 54 years	190	3.86 ^b	.39	4.67	.38	2.34 ^b	.39	3.07	.64	3.18	.43	1.84 ^b	.39	3.34	.74
55 and older	153	3.86 ^b	.39	4.66	.42	2.32 ^b	.42	2.91	.64	3.23	.45	1.82 ^b	.33	3.30	.68
Gender															
Female	292	3.80	.46	4.58 ^a	.47	2.34	.43	2.72	.54	3.09 ^a	.46	1.85	.36	3.38 ^a	.74
Male	247	3.51	.71	4.31 ^b	.71	2.44	.44	3.11	.77	2.89 ^b	.55	1.9	.36	3.93 ^b	.73
Income (SES)															
\$60,000 or less	115	3.81	.48	4.62	.58	2.44	.53	2.62	.54	3.01	.50	1.87	.35	3.22	.69
\$60,000 to \$100,000	160	3.85	.42	4.66	.44	2.39	.39	2.62	.50	3.20	.46	1.88	.40	3.27	.76
\$100,001 and up	244	3.80	.40	4.65	.41	2.35	.41	2.65	.55	3.19	.44	1.82	.34	3.31	.70
Skill Level															
(NTRP)															
3.0	119	3.78	.39	4.67	.39	2.31	.40	2.65	.54	3.10	.45	1.86	.33	3.25	0.69
3.5	198	3.83	.41	4.67	.41	2.40	.44	2.56	.49	3.21	.43	1.83	.34	3.30	0.73
4.0	101	3.82	.42	4.62	.43	2.41	.42	2.70	.52	3.12	.44	1.85	.35	3.37	0.77
4.5 and above	97	3.95	.37	4.74	.47	2.42	.42	2.50	.51	3.30	.46	1.81	.33	3.23	0.61
Internal Consistency (α)		0.85		0.83		0.71		0.74		0.71		0.72		0.74	

Note. M = mean; SD = standard deviation
^{a, b, c} Denote groups that were significantly different from each other

Table 2. Beta Coefficients and Regression R² on the Sport Commitment Model Determinants of Commitment for Each Demographic Category

Variable	Age			Gender		Income		Rating (NTRP)					
	19-34	35-44	45-54	55 +	Female	Male	\$60,000 or less	\$60,001 - \$100,000	\$100,001 and over	3.0 or less	3.5	4.0	4.5 +
Enjoyment	.655*	.469*	.394*	.456*	.476*	.483*	.413*	.406*	.547*	.458*	.446*	.379*	.511*
Inv. Alternatives	.005	-.090	-.054	-.030	-.015	-.114*	-.098	-.132*	.041	-.008	-.034	-.101	-.207*
Inv. Opportunities	.238*	.280*	.261*	.200*	.251*	.233*	.273*	.304*	.236*	.262*	.223*	.149*	.213*
Personal Investments	.176*	.106	.219*	.228*	.170*	.225*	.284*	.129*	.161*	.115	.254*	.285*	.104
Social Constraints	.103	-.033	.059	-.019	.012	.057	.075	-.002	.006	-.018	.007	-.034	.104
Social Support	-.010	.176*	.079	.091	.110*	.087*	.115	.179*	.012	.136*	.090	.130	.089
R ²	.691	.614	.514	.489	.528	.635	.650	.615	.517	.524	.514	.503	.645

Note. * $p \leq .05$

Analysis of Variance

The analysis of variance tested the demographic groupings with each of the variables that comprise the sport commitment model. The results found no significant differences ($p < .004$) based on income or skill level; significant differences were found for age and gender (Table 1).

Age. Significant differences with age were found with commitment ($p = .003$), involvement alternatives ($p = .004$), and social constraints ($p = .003$). The youngest tennis players (ages 34 and under and 35 -44) reported significantly lower commitment levels than the two older age groups (ages 45-54 and 55 and up). The opposite was found for involvement alternatives, a detractor of commitment, where the two youngest age groups reported the lure of alternate activities significantly higher than the two older age groups. The youngest age group cited higher social constraints significantly more than the three other older age groups.

Sex. Significant differences were found between females and males for enjoyment ($p = .004$), personal investments ($p < .001$), and social support ($p < .001$). Females reported higher sport enjoyment and personal investments compared to males, while males reported higher social support for tennis.

Regression Analysis

A simultaneous regression analysis was conducted to determine the relationship between the predictors and sport commitment for each demographic category (see Table 2 for results; see Table 1 for depiction of predictors on commitment). When comparing the regression for each demographic variable, enjoyment was the strongest predictor of commitment across all demographic categories but other predictors statistically differed in their relative strength.

Age. A significant relationship emerged for all age groups: 19 -34 years; $F(6, 68) = 25.30, p < .001$; 35 - 44 years; $F(6, 109) = 28.86, p < .001$; 45 - 54; $F(6, 183) = 32.31, p < .001$; 55 and over; $F(6, 146) = 23.32, p < .001$). For the youngest age group, a strong relationship, $R = .83$, emerged between the determinants and commitment, with the antecedent variables explaining 69% of the variance in sport commitment. In the regression equation, beta weights suggested that enjoyment ($\beta = .66$), involvement opportunities ($\beta = .24$), and personal investments ($\beta = .18$) were significant predictors of commitment. The predictors were similar for all other age groups reporting enjoyment, involvement opportunities and personal investments as significant predictors of commitment, with the exception of the 35-44 year olds (Table 2). For this age group, a strong relationship $R = .73$, emerged with the predictor explaining 61% of commitment. The main difference was that social support ($\beta = .18$) was a significant predictor (non-significant for other age groups) and personal investments was a non-significant predictor (significant for the other age groups).

Sex. A significant relationship emerged for males and females: females; $F(6, 285) = 53.22, p < .001$; males; $F(6, 240) = 69.49, p < .001$. The strength of the predictors was similar for both male and female participants. Enjoyment, involvement opportunities, personal investment, and social support were significant contributors to commitment for both groups. The only deviation was found with involvement alternatives, which were non-significant for females, but a significant detractor ($\beta = -.14$) of commitment for males. For males and females, a strong relationship ($R = .73$ for females; $R = .80$

for males) emerged and explained a large portion of commitment (52% for female and 64% for males).

Income. A significant relationship emerged for all income groups: \$60,000 or less; $F(6, 108) = 11.90, p < .001$; \$60,001 - \$100,000; $F(6, 153) = 40.81, p < .001$; \$100,001 or more; $F(6, 237) = 42.99, p < .001$). The strongest relationship was found for the \$60,000 or less age group ($R = .81$; 65% of variance) with the middle-income group also showing a strong relationship ($R = .79$; 65% of variance) and the highest income having the weakest relationship ($R = .72$; 52% of the variance). Commitment was significantly predicted by enjoyment, involvement opportunities and personal investments by the \$60,000 or less and \$100,001 or more categories. The middle-income grouping showed the only variation with all determinants indicating social support ($\beta = .18$) and involvement alternatives ($\beta = -.13$) as additional significant predictors.

Skill Level. The strongest relationship was found for the highest rated players ($R = .80$; 65% of the variance), while other levels showed strong relationships with correlation coefficients between .71 - .72 and variance between 50% - 52%. The lowest level differed from other categories based on social support being a significant predictor ($\beta = .14$). The 3.5 and 4.0 levels were invariant, with involvement opportunities and personal investments being the only significant predictors in addition to enjoyment. The advanced skill level category participants cited involvement opportunities as a significant predictor and was the only category that indicated involvement alternatives as a significant detractor of commitment ($\beta = -.21$).

Discussion

The purpose of this study was to examine demographic differences of sport commitment and the antecedents of commitment based on the sport commitment model. The current findings provide insight both theoretically and for practitioners. Involvement-related research has found no significant relationships between involvement and sex (Havitz & Howard, 1995; Kerstetter & Kovich, 1997; Siegenthaler & Lam, 1992), income (Havitz et al., 1994; Kerstetter & Kovich, 1997; Madrigal, Havitz, Howard, 1992), and education (Madrigal et al., 1992). Research related to differences in the sport commitment model in early stages of model development (e.g., Carpenter & Coleman, 1998; Carpenter, Scanlan et al., 1993) found gender, skill, level, and culture invariant in the model. The current findings, along with Weiss & Weiss (2007), have begun to find variance with how the predictors explain sport commitment in addition to variance within the individual variables.

The present results demonstrate that there are stable predictor variables within the model, even when segmented across sociodemographic characteristics. Weiss and Weiss (2007) found that enjoyment emerged as the strongest predictor of commitment based on age and competitive level. The current study has also found enjoyment and involvement opportunities to be significant predictors for each group in every demographic category. The regression results reveal that enjoyment and involvement opportunities were strong predictors of commitment and accounted for a major portion of the variance for each demographic category. The findings of enjoyment as a strong contributor to commitment are consistent with previous research (Carpenter,

Scanlan et al., 1993; Weiss et al., 2001). The consistent strength of the enjoyment and involvement opportunities relationship to commitment adds to existing research with adult fitness participants (Alexandris et al., 2002) and elite athletes (Scanlan, Russell, Beals, & Scanlan, 2003). Both constructs are reflected in the intrinsic aspects of the sport; enjoyment being the hedonic (e.g., pleasure) outcome of participation, and involvement opportunities the unique experiences and aspects of the sport. The antecedent predictors of commitment that were differentiated based on demographic categories were personal investments, involvement alternatives, and social support.

Age

The present study indicates that the two youngest age groups reported lower commitment. Age-related differences have been found in commitment with older tennis players who indicated higher commitment levels (Siegenthaler & Lam, 1992). One explanation may be that older participants have played tennis longer (higher involvement), and this has allowed them more time to develop deep-rooted commitment. It has been shown that as a participant becomes involved, more enduring aspects of participation subsequently become stronger such as loyalty or commitment (Hvenegaard, 2002). Sport commitment model research (Carpenter & Coleman, 1998) found that with elite youth athletes, commitment increases with age but, in both measurement periods, the subjects were adolescents. Sport and leisure related literature supports the findings such as Moode, Wiggins, and Broughton (1998), who found that older adults were more committed to physical activity and Wheaton (2000), who found that older recreational windsurfers were more committed to the sport and subculture identity than their younger counterparts. The findings run contrary to research with competitive runners, whose commitment decreased with the age of the participant (Horton & Mack, 2000), suggesting the results may be activity dependent.

The two youngest groups also reported significantly higher involvement alternatives. To assess involvement alternatives, this study asked participants to rate an activity that they would do during the times they usually play tennis. Younger participants, who may have a wider leisure repertoire, view these alternatives with more value than older participants. Weiss and Weiss (2007) also found that these model variables differ based on developmental age for gymnasts during childhood to middle and late adolescence. Specifically, older gymnasts viewed higher perceived costs, which predicted lowered commitment. While the current research did not include identical variables to Weiss and Weiss's study due to different study contexts (e.g., parental constraints or teammate constraints), perceived costs (e.g., inability to play other sports) may be related to involvement alternatives that were included in the current study. The younger tennis players in this study viewed alternative activities higher than older participants indicating that the lure of another activity might lower commitment in tennis. The older participants who, once committed to tennis and have played the sport over many years, rate the opportunity to play tennis higher than viable alternatives. The findings indicate that tennis may be competing among other activities with younger market segments more so than older market segments.

The youngest age group reported significantly more social constraints for their tennis participation than older age groups. This social pull toward the sport may be useful for tennis administrators in marketing and programming to younger players.

The inclusion of programming to introduce players to other players through social events and opportunities for continued social relationships may be a key tactic for increasing commitment with younger segments.

The regression results also show that the variables in the model explain less variance of commitment as age increases. The results may be explained by the complexity of antecedents and actual construct. The findings indicate that the predictors of the model, which explained a significantly large portion of the variance of commitment (49%) with the oldest age group, may change based on developmental age, or that additional contributors that predict commitment with older participants are not part of the sport commitment model. The results are consistent with findings in leisure research relating to enduring involvement, or in the relationship between involvement, commitment, and loyalty (Iwasaki & Havitz, 2004).

Gender

Males and females report no significant differences based on sport commitment, which furthers the findings of Siegenthaler and Lam (1992), who found no gender differentiation with adult tennis players. Females reported significantly higher levels of enjoyment and personal investments, while males reported higher levels of social support. This finding may be due to the sport of tennis itself. In 2005, 48% of all recreational tennis participants were female and participation was at an all-time high of 54% females in 2004 (National Sporting Good Association, 2006). One explanation for tennis' popularity among females is that tennis is viewed as a gender-neutral sport (Csizma, Wittig, & Schurr, 1988; Matteo, 1986; Salminen, 1990). Another explanation can be based on the recreational competitive sports offered to women. While there are a multitude of leisure activities (jogging, aerobics, swimming, etc.), there are few with the strong programming, organizational structure, and competitive nature of tennis. Other sport outlets (e.g., softball) with desired complexity and structure may still favor male participants, and this may be indicative based on the regression results that show involvement alternatives as a significant predictor of lowered commitment for the males while non-significant for females.

Income

Sport participation is positively associated with household income (Farrell & Shields, 2002) and tennis research has consistently shown that the average income of a tennis player (\$70,000) is greater than the overall U.S. population (TIA; 2005; 2006). While no significant differences between the income categories and the sport commitment model variables emerged in this study, there were differences in how the variables explained levels of commitment for each income category. Enjoyment, involvement opportunities, and personal investments were significant predictors of commitment with all groups indicating that there is potentially a strong link related to the time and effort put into participation as well as the money invested in continued participation. For example, with the lowest income category, the beta weight for personal investments was the second strongest predictor of commitment compared to all demographic groupings. This finding is not surprising given that personal investments in tennis can be substantial due to a long learning curve, expansive equipment, and memberships. The results show that while this investment may detract potential

players from continuing to play, it also serves as a significant attractor to continued commitment for those who invest time and money in the sport. For the players who make this investment and have lower incomes, the commitment due to the investment may play an important role in retention.

One unique finding is that the \$60,001 to \$100,000 category (upper-middle class) was the only category to have commitment significantly explained by social support and involvement alternatives. This group may be unique in that commitment is based partly based on social distinction, of which tennis is associated with affluence. For this upper-middle class group, their participation and social approval may be important reflections of their economic and social status. Additionally the amount of variance explained by these predictor variables lessened as income increased.

Skill Level

While there were no significant differences based on skill level with the individual antecedent variables, the regression results revealed some unique characteristics. The finding that commitment does not differ according to skill level supports the finding of Siegenthaler and Lam (1992), but regression findings offer some marketing implications. First, lower skill level participants cited social support as a significant predictor of commitment while higher levels did not. This establishes some support for tennis administrators and marketers to encourage social connections with introductory players at the lower skill levels. Some example marketing tactics would be to offer incentives to encourage friends to play the game or create social offerings as part of the learning process. For example, many tennis facilities will offer socials for new players to meet and play in a non-competitive environment. The USTA may incorporate a social for new players as part of their Tennis Welcome Center campaigns. Based on the present study findings, the more program administrators can help to promote a social climate for beginners, the more they will be committed to continuation.

The second major finding related to skill level is that higher levels reported involvement opportunities as the only significant predictor, in addition to enjoyment, of increased commitment. This finding is related to previous results of research in recreational specialization (Bryan, 2000) where participants that are less involved have been found to exhibit a variety of general motivations for participation, while those highly involved exhibit more specific motivations. The regression results are consistent with this line, indicating that the only two positive predictors account for more variance in commitment than at lower skill levels.

Limitations

The present study was intended to further sport commitment model research by examining demographic differences. While the purpose of this study was to investigate recreational adult tennis players, the sample in this study more accurately reflects a competitive recreational sample. Because the participants were recruited through community tennis association e-mail lists and newsletters, most people join these associations to have the opportunity to play in a league that offers competitive play. Therefore, the model may not be generalizable to adult tennis players beyond the population of competitive recreational community tennis participants. This study is also limited to the demographic groupings studied. While the demographic groups were

made based on previous marketing research, the groups are arbitrary. For example, with income, participants with incomes of \$99,000 were grouped with participants with incomes of \$61,000 instead of those who make over \$100,000. Skill levels were self-reported, and the only time that a player's rating is verified is if he competes in a state playoff or tournament. Therefore, findings should be interpreted according to these limitations.

Marketing Implications

Despite the limitations, the results provide some initial practical implications for tennis administrators. First, committed tennis players are playing primarily for the enjoyment of the game and the unique aspects that separate tennis from other sports. Much of the adult programming offered to players is based on competition and less on intrinsic aspects. The results provide evidence that programming that focuses more on the fun of the game may be more beneficial than more tournaments or league play.

Within the market segments, the findings show that some of the least committed players are young and less skilled. Programming that touts the benefits of tennis compared to viable alternative sports may increase commitment with younger players. One example is the offering of "Cardio Tennis" which is a program that gives the player a total-body workout, includes music, and helps with basic skill development with tennis drills. This program may keep players that are lured to more exercise/fitness activity in tennis while helping them improve at the same time. Additionally social events such as tennis-themed socials that include tennis, appetizers, and drinks can be offered to younger market segments. These events will not only help them make more friends that play tennis (e.g., increase social constraints), but increase commitment to the sport.

The results also show that a key to commitment is getting players to make both a time and monetary investment in the sport. Cognizant of this finding, administrators may offer packages to players that combine tennis equipment with tennis services. Some examples may include a substantial discount on a racket when they sign up for a summer lesson program, or discounts on league fees when they have signed up for other tennis programming. Another example may be a consumer-loyalty program such as a punch card that can be used to tennis merchandise based on the number of lessons they have taken.

Conclusions

Based on the present study results, sport commitment variables among various populations *should not* be generalized across demographic characteristics. The findings add to the leisure research by providing evidence as to personal, social, and monetary-based variables that directly relate to commitment. The current findings, in conjunction with previous literature specific to commitment (e.g., Iwasaki & Havitz; 1998; 2004), add to the expanding line of research on commitment in sport. Segmentation based on the sport commitment model lends to marketing strategies, which were premature in previous commitment research (Iwasaki & Havitz, 2004). Understanding the predictors of sport commitment among recreational tennis participants has a number of important implications, namely that recreational tennis participants are the dominant

focus of marketing efforts related to the tennis industry and they comprise one of the largest groups of adult sport participants worldwide (TIA, 2007). While this study provides researchers with a new understanding of the variance in the sport commitment model variables, future research should continue to examine demographic invariance with additional variables (e.g., race/ethnicity), sport types (e.g., golf or hockey), and populations (e.g., disabled or retired). For example, black males have been found to be involved in sport significantly more than other races when controlling for age, income, education, and geographic region (Spreitzer & Snyder, 1990). Further segmentation and a deeper examination of the relationship between psychological and behavioral variables such as involvement and loyalty may offer clarity in comprehending the inner-workings of the sport commitment model and its relationship to marketing strategies and tactics.

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