

INVOLVEMENT:
THE INDIVIDUAL VERSUS TEAM SPORT EXPERIENCE

By

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To my mother, who taught me to care for others and honor God

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Abstract of Dissertation Presented to the Graduate School
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The purpose of this study was to compare and contrast the involvement profiles of individual and team sport athletes. Using social cognitive and social identity theories, the study explored the cognitive and affective processing traits of participant athletes, where cognitive processing was predicted to be higher for athletes competing in a team environment. Ultradistance runners were used as the individual sport study group, while rally auto racing participants were introduced as team sport athletes. This is a fruitful area for research as little academic research exists on interactive team relationships in motorsport. Zaichkowsky's 10-item unidimensional involvement scale, and Laurent and Kapferer's 15-item multidimensional scale, were used for involvement measures. Confirmatory factor analysis indicated that the unidimensional scale did not fit the single factor solution for either respondent group, but did hold construct validity when factored into cognitive and affective dimensions. The multidimensional scale retained its factor loadings for both individual and team sport data sets. The multidimensional scale proved to be a significant predictor of individual ultrarunning sport intent to participate, and rally team sport behavioral intent. The unidimensional scale held a statistically significant relationship to rally team sport intent to participate and individual ultrarunning behavioral intent. Contrary to the hypotheses tested, cognition was higher for

individual sport athletes over team sport athletes in unidimensional involvement scale data, and team sport athletes held a lower group identification score than individual sport athletes. However, in multidimensional scale testing, team athletes exhibited a lower affective response than individual sport athletes as predicted.

CHAPTER 1 INTRODUCTION

Sport as an entertainment product has become increasingly prominent in society. The fabled English football club Manchester United, a prominent global sports brand, touts more than 75 million fans (Hill & Vincent, 2006). Mega-events such as World Cup soccer headline major sports stadiums. In the United States professional football, collegiate sports and motorsports are packing venues across the nation.

Sport spending by marketers is also on the increase. One of the most common methods utilized to capitalize on sport is the sponsorship of athletes, events, teams, and facilities. U.S. sponsorship investment was projected to reach \$14.93 billion in 2007, an 11.7 percent increase over 2006. Sports sponsorship was targeted for an increase of 10.8 percent, and attracted \$9.9 billion (International Events Group, 2007). Television broadcast rights, Internet spending and equity investment in teams and facilities are also part of the new sport business model. Consulting firm Pricewaterhouse Coopers reports that spending related to large sporting events may boost revenues in the global market by 37 percent over the next five years to almost \$141 billion. U.S. spending is projected to reach \$69.1 billion by 2012 (Sport Business, 2008).

Gibson (1998) classified consumers who partake in sport in three distinct categories: those who watch sport events, visit sport related attractions, and those who participate. Many consumers have gone beyond the observation of sport and adhere to the credo of sport apparel manufacturer Nike and “Just Do It.” The National Center for Chronic Disease Prevention and Health Promotion states that approximately 15 percent of U.S. adults engage in weekly vigorous physical activity, and approximately 22 percent of adults engage in weekly sustained physical activity (Center for Disease Control, 2008).

Physical participation in sport occurs at different levels and in different environments. An example of a participant sport endeavor that offers individualism and independence is running. Running is on the increase among participants. In 2008, consumers spent \$3.16 billion on running products (Sporting Goods Manufacturers Association, 2009). And, a survey among American running clubs documented that 8.9 million runners competed in and finished road racing events in 2007 (Road Runners Club of America, 2008).

Some athletes pursue distances beyond the 26.2 mile marathon and complete solo 50-mile runs during the night, then return home at dawn to assume work and family responsibilities (Karnazes, 2006). The sport of long-distance running is independent in nature and seldom relies on interaction or camaraderie with others.

Most long-distance running competitors focus inward, with the individual competing to achieve his or her best performance against the race course. “During long races, you think about something for a while—sometimes it’s a passing thought or random insight, other times an attempt to work out problems—and then you move on. The thinking is not entirely linear. After a while, you accept this. After a while, you settle in. And then, the mind goes its own way—slowing down, wandering more freely, giving itself over to the body, and finally, ultimately, to the heart” (Toor, 2008, p. 8).

Another select group of active athletes participate in the more complex arena of team competition. This study will introduce the team aspect of motorsport. Little research has been conducted on motorsport involvement and the subject offers a fruitful area of exploration for the researcher.

Lipsky (1979) developed a framework for understanding motor racing in a sport context, through the impetus provided by the growing force of industrialism where teams and sports

contribute to the cohesion of an industrialized society. Professional motorsport is controlled on a worldwide basis by the Federation Internationale de l'Automobile (FIA). It is a multibillion dollar business that is comprised of diverse disciplines including go-karts, Formula 1 "open wheel" cars and closed (covered) wheel cars, such as NASCAR (Fuller & Myerscough, 2001).

Motorsports attracts a participant base from varying socioeconomic levels of society. The National Speedway Directory lists 929 racing facilities in 50 states, but omits drag racing facilities, which would nearly double the total number. Motorsport racing activity in the United States is representative of each state's size and population, is well distributed among the U.S. and is not restricted to regional interests (Barendse, 1983).

An example of motorsport athletes competing in a team context is rally car auto racing. Rally racing is a timed motorsport competition on routes that include public or private roads, many times in secluded rural areas. Drivers, with the assistance of a navigator, pilot modified production or specially built road-legal cars. The decision-making process is highly integrated with crew members who offer assistance at designated check points on the race course. On many occasions crew members repair damage to the car, which impacts the overall time and performance of the team.

The task of driving a rally car competitively is so complex that both the driver and navigator are necessary. Specific instructions pertaining to the course determine turns, terrain changes and the speeds required to stay on the proper pace throughout the event. Each member of a rally team can either contribute to, or minimize, anxiety or stress as part of racing competition (Roberts & Kundrat, 1978).

The focus in rally auto racing is on elapsed time and the overall finish against other teams. A "personal best" has little relevance in determining success. Eccles and Tenenbaum's

(2004) social-cognitive psychological approach supports the premise that team members perform differently than individuals. Eccles and Tenenbaum determined that team competitors must acquire additional knowledge about teamwork and communicate within the team group, which places an additional load on cognitive demand as part of team decision-making and coordination.

When competing in a sport under a team constraint, thoughts and actions are more group oriented. Social Identity Theory posits that identification with a collective group can have a powerful impact on behavior. Organizational behavior is defined when a psychological group is more than the sum of its interpersonal relationships. Social identification is a mechanism that allows individuals to conceive of and form loyalty to an organization (Ashforth & Mael, 1989). Social identity theory supports the premise that individuals and groups (teams) will use different decision-making processes.

In order to study and explore the traits of individual and team competitors, the measure of involvement proves valuable. In their 1991 study on recreation and tourist events, Dimanche, Havitz and Howard (1991) stated that “further work is needed to conceptualize and refine the understanding of the various dimensions purported to underlie the construct of involvement... [especially with] other populations and other activities...” (p. 63).

Involvement has been tested as an appropriate measure in sport participant research. For example, Havitz and Dimanche (1990) applied Laurent and Kapferer’s (1985) measurement scale to participants in an international track and field competition and confirmed both reliability and validity within the construct of leisure activities. Wiley, Shaw & Havitz (2000) examined the gender aspects of leisure involvement. Ajzen and Driver (1992) applied the theory of planned behavior to leisure intentions and included involvement in their model. McGehee, Yoon &

Cardenas (2003) utilized an adaptation of Zaichkowsky's (1994) 10-item semantic-differential scale in a study that measured involvement among recreational runners in North Carolina.

Sport scholars have operationalized involvement to measure the level of connectedness, yet little research exists that examines the validity of involvement scales in comparisons of individual and team sport. This study will explore the relationship between involvement and participation in individual (ultrarunning) and team (rally car racing) sport, utilizing Zaichkowsky's (1994) unidimensional 10-item scale and Havitz and Dimanche's (1990) sport adaptation of Laurent and Kapferer's 15-item multidimensional scale.

The construct validity of the Zaichkowsky and Laurent and Kapferer scales will be tested through confirmatory factor analysis. Regression analysis will determine if the scales are predictive of participation in each sport. A contribution will be made to the field of involvement study by exploring the construct of involvement within the individual versus team sport experience.

With an increasing magnitude of investment in sport, understanding participant involvement is beneficial to advertisers, sport managers and investment brokers. The indicators of involvement may serve as a predictor in building effective marketing and advertising campaigns. From an individual and team point of view, event promoters and product advertisers may gain greater insights into the predictors for event participation. Advertising campaigns targeting key involvement indicators may lead to increased event entries and higher sales for aftermarket products and services. Continuing study in the refinement of involvement models in sport presents fertile ground for academic research.

CHAPTER 2 LITERATURE REVIEW

History of Involvement Theory

The concept of involvement is broad in scope, having been applied to individuals, a mass medium, social issues, consumer products, brands, political elections, or interactions within these categories. The concept has intrigued academics, marketers and advertising experts for several decades.

The concept of involvement has gained increasing importance in the academic study of consumer response and mass communication. Salmon (1986) identified that involvement has been conceptualized as an individual state (the interest of an individual in a stimulus); as a response to a stimulus (consequences of a stimulus for an individual); and as a characteristic of a product, issue or situation (arouses concern in most or all individuals).

From its inception in post World War II research, scholars have extolled the value of involvement measures in studies that explored individual self-identity, the mass media, social issues and politics, products and brands. Involvement has reached such heightened perception that one researcher stated “involvement is the greatest thing since sliced bread” (Rothschild, 1984, p. 216).

The historical roots of involvement were articulated by Sherif and Cantril (1947) through their work in ego-involvement. Later work examined the persuasive effects of media on attitude change. Krugman (1965, 1966, 1971) took a cognitive approach to involvement and argued that contrary to popular belief, individuals held a low personal involvement with media.

Several theoretical approaches have been applied to involvement research. Ward (1965) used social judgment theory to examine ego-involvement as an antecedent to new racial attitudes. Other scholars approached involvement through the elaboration likelihood model of

persuasion, which refers to the likelihood that individuals will engage high involvement and issue-relevant thinking, rather than low involvement thinking where focus is on cues rather than message processing (Cacioppo & Petty, 1979; 1984).

Ray (1973) elaborated that different levels of involvement led to varying hierarchies of effects in consumers. He proposed that three components led to these effects: a cognitive component, an affective component, and a conative component (which referred to changes in behavioral intention or an actual change in behavior).

Zaichkowsky (1985) stated that involvement is defined as “a person’s perceived relevance of the object based on inherent needs, values and interests” (p. 342). She developed unidimensional scales to measure consumer involvement for both product categories and advertising, entitled the Personal Involvement Inventory (PII). Zaichkowsky stated theorists proposed that consumers actively search for information to make informed choices. She noted that for some decisions, consumers may not have active information processing, and may in fact exhibit low involvement (versus high involvement) consumer behavior. Under high involvement, an individual scrutinizes incoming information, while under low involvement, focuses on cues rather than the information presented.

While Zaichkowsky pursued a unidimensional construct with a single measure of perceived importance, Rothschild (1979) concluded that no single indicator of involvement was sufficient as a predictor. Laurent and Kapferer (1985) opted to follow Rothschild’s presupposition and developed a multidimensional scale that included five facets for involvement. Their involvement scale encompassed perceived importance, perceived risk of negative consequences, perceived risk and probability of making a mistake, symbolic sign value and hedonic value.

Laurent and Kapferer traced the genesis of product involvement to Sherif and Cantril's (1945) early work in the 1940's, which drove the definition of psychology of attitudes in relationship to standardized values, norms or other criteria of conduct through perceptual and judgmental processes. Later Sherif and Cantril (1947) incorporated the definition and measurement of ego involvement as applied to social attitudes and identifications. The two authors argued that attitudes are consistent with ego, and when attitudes are called for, an individual becomes personally involved in the situation. The ego involvement model states that there is a direct association between a person's attitude related to self-esteem or central values and that individual's ego involvement in the situation.

Funk, Ridinger & Moorman (2004) point to social judgment theory (Sherif & Hovland, 1961) as the precursor to involvement theory. Ward (1965) used social judgment theory and ego involvement to study racial attitudes. Similar work was later applied to consumer behavior research to better understand purchase behavior related to consumer goods.

Krugman's (1966) early research focused on the measurement of advertising involvement and is among the most frequently cited in advertising and consumer behavior research. In contrast to other scholars of his day, Krugman believed that involvement was measured between an individual's personal life and a stimulus, and was measured through the number of bridging experiences, connections, or personal references made per minute. Krugman determined that consumer involvement with advertising was highest when attention was directed at editorial content; that advertising consistent with editorial content maintained the highest involvement; magazine advertising tends to hold a higher involvement over television with high involvement products; involvement is less predictable with low involvement products, while high involvement products share a similar level of interest.

Ray (1973) elaborated on Krugman's work and suggested that behavioral intention was classified within cognitive, affective and conative (purposeful) components. Though this hierarchies of effects model has been adapted to classify possible change processes, it does not provide a conceptual definition of high or low involvement (Salmon, 1986).

Involvement as a Measureable Construct

Involvement literature indicates that there are varying and somewhat ambiguous views on the concept of involvement and the definition on how to operationalize and measure it. The development of measurement instruments for involvement spans several decades. During the past 40 years, at least 23 measures have been developed, incorporating nine manipulation checks. Scales are generally based on a semantic differential or Likert type formats. The number of items range from three to 33 with scale point ranging from five to seven (O'Cass, 2000).

Researchers have explored the involvement construct and have developed several applied measurements. Sherif and Cantril (1947) explored ego involvement as related to social attitudes. Sherif and Hovland (1961) studied involvement through social judgment theory. Krugman (1966, 1967) developed early research regarding the effect of involvement in advertising. Rothschild (1979) differentiated between situational involvement, such as purchase location; enduring involvement, which indicates an ongoing concern for the purchase situation; and response involvement, an indicator for the consequences related to the inner state of being involved. Bloch and Richins (1983) created a model for product importance, where enduring involvement prompted ongoing responses and situational involvement prompted task-related responses.

Lastovicka and Gardner (1979) asked subjects to evaluate 14 products and measured importance, commitment and affect. The analysis revealed low involvement, high involvement, and enthusiast products (that express the individual's hobby or special interest). Research has

conceptualized involvement as a multidimensional construct. Funk, Ridinger & Moorman (2004) point to the work of Laurent and Kapferer as highly influential, based on their conceptualization of involvement as a multidimensional construct. Laurent and Kapferer noted five antecedents for involvement that included perceived importance, perceived importance of negative consequences (risk), perceived probability of a poor purchase decision (risk probability), symbolic or sign value, and the hedonic value or pleasure provided. However, they concluded that an involvement profile should include the perceived importance of consequences in a mispurchase, the probability of a mispurchase, the hedonic (pleasure) value of a product and the perceived sign value of a product class. The research by Funk et al. indicated involvement does not in itself create expected differences in behavior. Individual measurement of the antecedents in the involvement profile led to a better defined view of behavioral outcome.

A key distinction in the semantics of involvement literature was presented by Traylor and Joseph (1984). Terminologies such as high involvement products, or low involvement mediums, were disputed in the sense that stimuli are not inherently involving or uninvolved. It was argued only consumers can be involved, not the products or mediums that are being used as stimuli. In an effort to create a general instrument to measure involvement, Traylor and Joseph tested a 22-item scale, reduced it to ten items, and then factored the results into a six item scale that tested reliability and validity. The scale was developed with an emphasis on the relationship of a product to the consumer.

Zaichkowsky's (1985) Personal Involvement Inventory (PII) was initially developed to test consumer involvement with products and was later adapted (1994) to measure advertising response. Zaichkowsky stated that involvement is defined as "a person's perceived relevance of the object based on inherent needs, values and interests" (p. 342). The PII was developed

utilizing four data sets with undergraduate students, two data sets with Master of Business Administration students, and two additional data sets with clerical and administrative staff members. Zaichkowsky stated that Likert scale items were problematic, based on a differentiation in response to frequently purchased goods versus durable goods. Her initial PII was developed using a 20-item semantic differential scale to measure product involvement; it was later tested for reliability and validity and was reduced to a 10-item scale for advertising measurement.

Jensen, Carlson & Tripp (1989) investigated involvement research by Bloch (1981), Lastovicka and Gardner (1979), Laurent and Kapferer (1985), Slama and Tashchian (1985), Traylor and Joseph (1984), and Zaichkowsky (1985). In order to test the dimensionality of involvement across multiple products, Jensen et al. utilized exploratory and confirmatory factor analysis for the variables related to Importance, Knowledge, Preference and Commitment. They summarized that involvement may be multidimensional between products and when collapsing across products. However, dimensions may not be congruent and will not allow for meaningful comparisons between products or situations.

Laurent and Kapferer (1985) noted the work of Houston and Rothschild (1977) who made a distinction between enduring and situational involvement. Rothschild (1979) stated that an individual may purchase low-priced brand alcohol based on low enduring involvement, but might employ high involvement with the purchase of a specific brand for an important guest.

Other scholars have identified psychological involvement as a state of motivation, arousal or interest with regard to a product, an activity or an object (Rothschild, 1984). Mitchell (1979) defined involvement as an internal variable that reflects the amount of arousal, interest or drive evoked by a particular stimuli or situation that mediates consumer behavior.

Traylor (1981) stated that product involvement involves the measurability of how a product is more or less central to an individual's life, personal attitudes, sense of identity, and relationship to the rest of the world. Traylor differentiated between brand and product involvement and stated that brand involvement may not vary directly based on whether the product involvement is high or low. Involvement with a product class and commitment to a brand is more often observed in a purchase context.

Involvement has also been defined as a state of mental readiness that influences the allocation of cognitive resources to a consumption object, decision or action (Park & Mittal, 1985). Andrews, Durvasula & Akhter (2001) suggested that involvement indicates a state of arousal with intensity, direction and persistence properties. In this model, the state of arousal determines how a consumer responds to stimuli, such as advertisements or products.

Involvement intensity is defined through the degree of arousal or preparedness the consumer generates, with respect to a goal-related object. This intensity refers to the arousal level and not the actual processing or behaviors that are exhibited through the involvement. Consumers utilize involvement to conceptualize through attention and processing strategies, personal and situational involvement, audience and process involvement, and enduring product involvement. Changes in cognitive responses and attitude change may be related to involvement, but an increase in these dependent variables does not always indicate that involvement has been positively manipulated.

Involvement and Advertising

Consumer involvement as it applies to products is now widely recognized as a major component and variable in advertising strategy (Laurent & Kapferer, 1985). Krugman (1966) stated that involvement was defined as "the factor of direct personal experience" (p. 583). Researchers have further defined involvement to refer to the relationship between a consumer

and a product. The premise of involvement is that certain products are more or less central to an individual's life, his/her attitudes, sense of identity, and relationship to the world (Traylor, 1981).

In her review of the construct of involvement, Zaichkowsky (1985) stated the focus of product involvement is based on how relevant or important the person perceives the product category. Three variables precede involvement: the characteristics of the individual, physical characteristics of the stimulus, and the varying situation under which the involvement is engaged. A conceptual view of product involvement focuses on the individual and stimulus of communication, as it relates to the importance of the product class, differences in product attributes, and preference to a particular brand. The two key factors that influence high and low involvement in product interaction are personal importance or relevance, and differentiation of alternatives.

O'Cass (2000) posited an alternative view and suggested that product importance and relevance are a subset in the construct of involvement. They are part of the mechanism, but do not constitute involvement alone or involvement per se. Advertising or purchase decisions may be deemed important and relevant by consumers, without an involvement in product. O'Cass posited that a more enduring approach will focus on products, purchase decisions, advertising and consumption.

Celsi and Olson (1988) created implications for marketers when he stated that levels of involvement can affect consumer attention and comprehension processes, with relevance identified as a primary indicator of the level of involvement. Relevance determines how salient the concept is perceived to be and how it supports the pursuit of achieving personal goals and values. Situational sources of personal relevance (SSPR) and intrinsic sources of personal relevance (ISPR) can be factored into the measurement of involvement with a message or

concept. These factors can contribute as a joint function to a felt involvement in attention and comprehension processes. Felt involvement is the “self-relevance of the goals and values that are activated in a situation and by the strength of their association with salient objects and actions in that situation” (p. 223).

Celsi’s research indicated that self-relevant knowledge, which is activated and experienced, leads consumers to devote more attention to advertisements and to exert more cognitive function over the advertising content. Motivated consumers, those with more felt involvement, devote more attention to relevant information. Such involvement influences the amount and focus of the processing effort, making consumers’ domain knowledge more influential. Automatic processes are overtaken by more controlled comprehension processes that enhance personal relevance, importance, interest and physiological arousal.

Within the advertising environment, engagement represents measurement of the contextual relevance within which the brand’s messages are framed; a subsidiary affect of engagement is the measurement of involvement. There is a mediating effect between message involvement and message believability. When a consumer engages a message, it has a strong influence on the level of involvement that subsequently occurs (Wang, 2006).

Involvement as a Construct for Sport Fans and Spectators

Select academic research has focused on sport fans and their involvement. Kerstetter and Kovich (1997) used involvement profile items from a scale devised by Havitz and Samdahl (1994) for a study of spectators at Division I Women’s Basketball events. Fisher and Wakefield (1998) measured the domain involvement of professional hockey fans with a 5-item adaptation of Zaichkowsky’s scale. Gwinner and Swanson (2003) continued to work in domain involvement and utilized a 3-item adaptation of Fisher and Wakefield’s scale to measure the response of fans at a NCAA Division 1 football game.

A pertinent extension of involvement in sport includes the study of sponsorship and its inherent value to advertisers. Pham (1992) measured the felt involvement of soccer fans by modifying Zaichkowsky's 20-item advertising scale, inserting short sentences within the original semantic differential word pairings. McDaniel (1999) studied the effects of advertising in sport events and included Zaichkowsky's 10-item product involvement inventory to measure product category and sporting event response.

Alternative research by sport academics brought forward new scales that attempt to measure fan motivation (Wann, 1995) and points of attachment (Trail et al., 2003). Wann developed his scale to measure "motivations in involvement" (p. 380), while Trail et al. (2003) devised the Motivation Scale for Sport Consumption (MSSC) and the Point of Attachment Index (PAI).

Kerstetter and Kovich (1997) continued the research of Dimanche, Havits & Howard (1991) and tested a women's basketball audience with a scale that included all five of Laurent and Kapferer's original factors. Once again, the IP scale demonstrated validity and reliability. The results revealed two facets of involvement – enjoyment (which included items related to importance and pleasure, considered to be synonymous in leisure based activity) and risk probability (items related to sign value). Self-expression and sign value are of high importance to individuals engaged in leisure based activities.

Shank and Beasley (1998) developed measurements that explored the psychological aspects of fan involvement. These measures included media habits, exercise habits as related to a specific sport and participation, and demographics. An eight item sports involvement inventory was utilized across a 7-point Likert scale. The inventory had respondents rank their interest in sports from boring to exciting (affective), interesting to uninteresting (affective),

valuable to worthless (cognitive), appealing to unappealing (affective), useless to useful (cognitive), not needed to needed (cognitive), irrelevant to relevant (cognitive), and important to unimportant (cognitive). The profile of the highly involved sports fan was young, single and male. Age, marital status, and income levels did not significantly affect involvement levels.

Capella (2001) identified emotion as a key measurement, where a team loss can bring emotional pain to an engaged sports fan. His Fan Behavior Questionnaire was based on a conglomeration of literature regarding sport spectator research and consisted of 31 items based on a 5-point Likert scale, with options ranging from “never” to “always.”

Funk, Ridinger & Moorman (2004) combined fan behavior and involvement literature to construct a Team Sports Involvement Model. It was developed to assess the relationships among 18 antecedents and four facets of involvement: attraction, risk, centrality and self-expression. A review of more than 50 sport involvement studies indicated that sport involvement, approached as a multidimensional construct, resulted in stronger content and face validity. Team sport involvement was defined as a psychological state of motivation, arousal or interest in a team and related activities.

Armstrong (2007) used a modified version of Traylor and Joseph’s (1984) six-item product scale to measure for involvement among fans at a minor league hockey game. Armstrong determined that symbolic communicative properties exist among sport consumption. First time spectators at a live sporting event were more likely to infer a meaning to other attendees based on the type of sport attended. Repeat attendees were more likely to construe symbolic meanings to those who regularly attended the minor league hockey games. “Symbolic interactionism” was seen as an individual’s involvement with a select sports group, and this interactionism affected sport consumption frequency. Factors influencing consumer attendance

were composition of the game audience, purchases made at game events, and general consumption of other leisure-related activities. There appeared to be a significant difference in the motivations of repeat and first time attendees. Repeat attendees viewed the event as more meaningful, a more symbolic self-expression, an identity-affirming activity, and give a higher symbolic meaning as part of the sport consumption experience. Thus, indicating that there is a symbolic communicative role in the social psyche of sport fans.

Other sport academics have created alternative multidimensional scales under the construct of motivations in involvement. The Sport Fan Motivation Scale (SFMS) was developed by Wann (1995). It measured eight dissimilar motives: eustress (desirable stress that can bring contentment), self-esteem, escape, entertainment, economic, aesthetic, group affiliation and family needs. These motives were divided into 38 items, which were incorporated into 8-point Likert-scale semantic differential questions. Wann initially developed and tested the SFMS through two individual studies, constructed a 23-item Likert scale measure, and later collaborated with Schrader and Wilson (1999) to expand on SFMS research, where a three-study project was developed.

Wann (1995) indicated that the highest levels of motivation were found on the entertainment subscale, while the lowest levels were found on the economic subscale; “fandom” was not related to economic and family motivation. Individuals with a preference for an “individual” sport reported higher levels of aesthetic motivation. These sports allow the fan to focus on the performance of a single individual, increasing the fan’s involvement in beauty, grace and artistic expression of the athlete.

Fans of team sports appear to report higher levels of eustress (desirable stress) and escape motivation (attractive to individuals seeking stimulation and diversion). Of particular interest is

the suggestion that sport fans appear to exhibit similar responses to that of athletes (i.e. anxiety, affect and biased predictions). Sport fans may be both intrinsically motivated (prioritizing enjoyment of sport over potential rewards and less upset about poor team or athlete performance) and extrinsically motivated (distracted by poor performance, which may hinder extrinsic rewards such as economic gain and self-esteem) (Wann, 1995).

An important differentiation between fans and spectators was identified by Sloan (1989) and Trail et al. (2003). Spectators merely watch and observe, while fans are enthusiastic devotees of a given diversion. To differentiate between these two respondent groups, a Point of Attachment Index (PAI) included seven subscales that focused on identification with players, coaches, the community, the sport, the university, the team, and the level of the sport (e.g. college versus professional). Each subscale was represented by three items, measured through a 7-point semantic differential questionnaire.

Conversely, Trail et al. created a Motivation Scale for Sport Consumption (MSSC) that measured motivation for achievement, aesthetics, drama, escape, knowledge, physical skills and social interaction. These motives were segmented into three categories, for successful teams (achievement), for unsuccessful teams (aesthetics, physical skill of the athletes, eustress/drama, and knowledge), and for both spectator and fan alike (escape and social interaction). Vicarious achievement was associated with team, coach, community or university. Aesthetic or dramatic qualities were associated with sport in general, or level of the sport. Social support and escape were associated with both spectators and fans.

Involvement Measures for Active Sport Participants

Early leisure research focused on the behavioral consequences of leisure involvement, as recreational activities and hobbies tend to stimulate a wide variety of participation types and levels. McIntyre (1989) incorporated Laurent and Kapferer's (1985) factors, to develop an

instrument to measure involvement in a recreation context at a beach camping setting in southeast Queensland, Australia. The factors utilized were importance, enjoyment (which corresponded with Laurent and Kapferer's factor called pleasure), and self-expression (which corresponded with Laurent and Kapferer's "sign"). Risk elements were not included, but centrality to lifestyle was added.

McIntyre's study indicated that attraction, self-expression and centrality best represented involvement in a recreational setting. Attraction refers to the perceived importance of an activity or product and pleasure (hedonic value) derived from participation or use. Self-expression represents the unspoken statement that purchase or participation conveys about the individual. Centrality encompasses interaction with friends and family, and the central role of an activity in an individual's life. McIntyre identified the three subscales as a predictor of enduring involvement, where centrality was a key indicator of involvement in a recreational setting.

Dimanche et al. (1991) introduced the Laurent and Kapferer involvement profile (IP) scale to the sport and leisure industry and tested its reliability and validity traits within recreation and tourism (Appendix A). Athletes in track and field competition were surveyed, and the Cronbach's Alpha reliability coefficients ranged from .80 to .96 within each of the five subscales within the IP. A factor analysis of the 15-item scale clustered into four subscales that were similar, but not identical, to the original Laurent and Kapferer subscales: sign, importance-pleasure, risk probability and risk consequence.

The Dimanche research led to a new definition for involvement in sport, which they defined as a "psychological state of motivation, arousal, or interest between an individual and recreational activities, tourist destinations, or related equipment in one point in time,

characterized by the perceptions of the following elements: importance, pleasure value, sign value, risk probability, and risk consequences” (p. 237-238).

Other scholars incorporated involvement indicators within research directed at leisure activities and recreation. Ajzen and Driver (1992) explored behavioral intention among college students who participated in beach activities, jogging, mountain climbing, boating and bicycling. The study included an involvement scale that included questions on how much time participants spent obtaining information about leisure travel destinations, how upset they would be if unable to participate in a given activity, how often they read publications related to their activity, and what they thought their skill level was as related to the activity. High involvement reflected positive attitudes toward the leisure activity, which was correlated with increased performance in the activity. Ajzen and Driver concluded that leisure sport participants evaluate an activity based on instrumental costs and benefits and the positive or negative feelings the activity engenders. Findings suggest that perceived cost may be offset by positive feelings, and negative effects may be offset by perceived benefits.

The complexity of the involvement construct within individual sport participants was demonstrated through a market segmentation study conducted by Kyle, Kerstetter & Guadagnolo (2002). Athletes competing in a 10-kilometer road race were studied as prototypical clusters based on involvement profiles and behavioral indicators. The authors used Laurent and Kapferer’s 15-item involvement scale and tested the dataset using confirmatory factor analysis. Goodness of fit statistics indicated that the five subscales in the instrument did not work within the model. A subsequent exploratory factor analysis was conducted. An oblique rotation indicated three factors. One, entitled “enjoyment” captured eight of the scale items. The second factor entitled “risk consequence” included three items. The third factor, “sign value,” captured

three items. One item measuring risk probability was deleted due to low item-to-total-correlation value. The clusters were reported, segmenting participants into enthusiast, performer and recreationist groupings. Enthusiasts were reported to be high involvement with heavy loadings on the sign value items. Performers measured high on enjoyment, risk consequence and sign value facets. Recreationists have low responses to enjoyment and sign value facets and associated low risk outcomes within their participation group. The study concluded in stating that the risk indicators in the scale might be refined to include risk of physical injury, failure of achieving personal goals, and performing poorly in front of peers.

McGehee, Yoon & Cardenas (2003) utilized Josiam, Smeaton & Clements (1999) adaptation of Zaichkowsky's 10-item unidimensional scale to measure involvement in recreational runners in North Carolina. The unidimensional scale was utilized based on ease of administration, abbreviated length, and the opportunity to replicate results to previous measurements of involvement, and to future studies. Zaichkowsky's premise that measurement is at the product level rather than the brand level was applied to survey questions. Travel to a non-descript road race was considered, rather than a particular named (brand) road race. Based on the fact the study was exploratory in nature, McGehee, Yoon & Cardenas argued that a unidimensional scale provided the best fit in the context of an under-studied group. A response bias was also eliminated, where the answers given by respondents did not reflect their true beliefs. Survey participants stated they lost interest in answering questions in a multi-dimensional scale, or said the questions were redundant.

The McGehee et al. (2003) study suggested that runners with a high level of involvement spent more money on running and travel to events and process advertisements more thoroughly than individuals with low involvement. It was posited event marketers should provide explicit

information for high involvement runners, but also serve medium involvement runners with highly accessible event information, as medium involvement runners will process information more passively.

Participation Measures for Active Sport Participants

In their study with ten-kilometer running participants, Kyle, et al. (2002) stated that conceptualizations in both social psychological and behavioral measures were important in examining involvement among sport athletes. Behavioral measures included annual participation in the number of running events and previous participation in the ten-kilometer running event used for data collection.

Behavioral characteristics were also measured and utilized in the McGehee, et al. (2003) research with North Carolina runners. Behavioral variables tested were frequency of participation, travel and expenditures on events. The test instrument included descriptive statistics to profile demographic information. Included were years as a running participant, years participating in running competition, number of days invested in running each week and number of miles run each week.

Ajzen and Driver (1992) investigated the application of the theory of planned behavior to leisure choice. To capture specific beliefs regarding leisure behavior, the authors collected data on intent to participate. Two items were used, one soliciting information on respondents' intended plan to engage in specific leisure activity in the next six months. The second item questioned the respondents' attempt to try and engage in the activity in the next six months.

Social Identity, Stress and Cognition in Sport

The solitude of the endurance runner allows for introspection and autonomy in decision making. An all-night 50 mile training run presents solitude and a reprieve from a normal interactive lifestyle (Karnazes, 2006). "It had been hours since I last had contact with humanity,

and the night air was silent and warm...I'd watched the signal indicator on my cell phone diminish to the point of no reception, severing my contact with the outside world...I was able to enjoy the tranquility of my surroundings in an otherwise frenetic life. At times I found myself mesmerized by the full moon illuminating the hillsides.” (p. 3-4).

The individual sport of endurance running heightens the affective indicators of involvement. Affect is the emotional and motivational constructs that contrast with cognitive processing such as emotion, mood, arousal, incentives, needs, motives, conditioning and reinforcement (Eagley & Chaiken, 1993). In endurance sport, long periods of time are spent alone, outside the confines of a performance based on the actions of other competitors or team members. Endurance running removes a competitor from interaction with humanity and sharpens the senses towards affective states, such as the tranquility of surroundings and attraction to the lure of a full moon (Karnazes, 2006).

Unlike the affective processing promulgated by individual sport, team sport introduces complex cognitive processing requirements through multiple interactions with team members. Eagley and Chaiken (1993) define cognitive involvement as a “stimulus-response link...mediated by a sequence of mental operations or cognitive processes (e.g., encoding, interpretation, storage, retrieval)” (p. 389).

The team sport experience in rally car competition is complex. A team driver, course navigator and mechanical support crew must coordinate their actions over a course that traverses hundreds of miles, over multiple days. Logistics and communications are paramount in a contest where several elapsed minutes can constitute the difference between victory and defeat. The team sport environment demands a multiplicity of decisions. Organizational stress, social

cognition and social identity are prevalent in the cognitive thought process in team sport and are predictors of a high cognition load in involvement processing.

Woodman and Hardy (2001) identified organizational stress in sport as the interaction between the individual and sport organization and the “individual’s cognitive appraisal of the situation within the work environment that is central to (this) organizational stress process” (p. 208). Woodman and Hardy’s study operationalized organizational stress to include team atmosphere, which included tension between athletes. New team members can experience heightened operational stress when attempting to integrate into a team that has been competing for a long period of time. One athlete interviewed as part of a qualitative survey stated, “it was just that our mind wasn’t on what we were supposed to be concentrating on...we were too busy thinking about things that were going on amongst ourselves...we weren’t focusing 100 percent” (p. 225). The subjective experiences of the individual are complicated by the broader organizational, social, political and cultural environment of team sport.

Social cognition within a team context incorporates coordination, communication and organization among team members to extend beyond the sum of the cognitive properties of the constituent members (Eccles & Tenenbaum, 2004). While knowledge and cognition clearly affect the individual performer, team performance must incorporate coordination, which introduces additional cognition requirements for team members. Rally car entrants share knowledge and teamwork through communication and an increased cognitive demand is required to achieve team coordination.

Cognitive stress in team sport is also magnified through a competitor’s social identity to the team. Social identity theory states that individuals tend to classify themselves and others into various social categories. According to Ashforth and Mael (1989), social classification

cognitively segments and orders the social environment, which allows the individual a systematic means of definition among the social group or team.

Perceived organizational prestige affects self-esteem and is related to organizational identification. The personal identity of the individual does not always find compatibility within the personalities of other team members. A rally car team may attempt integration of such identities, but it does not entirely resolve conflicts. Team competitors undergo a cognition process where they must order, separate or buffer their own identities from that of their teammates.

Turner (1982) stated that “social identity is the cognitive mechanism which makes group behavior possible” (p. 21). While individual competitors are free to compete within their own constraints, team competitors must adjust to an increased cognitive load to perform within the team construct.

Hypothesis and Research Questions

Zaichkowsky (1985) cited the previous research of Bloch and Richins (1983) in defining the antecedent factors of involvement as (1) the characteristics of the person, (2) the characteristics of the stimulus and (3) the characteristics of the situation. Zaichkowsky’s semantic-differential scale was designed to measure the state of involvement, unlike Laurent and Kapferer’s Likert-type scale, which measures the antecedents of involvement. The Zaichkowsky scale was successfully tested for content validity (range of meanings within a concept), reliability (stability of the scale over time), criterion-based validity (how the measures relate to external criterion) and construct validity (how a measure related to other variables in the scale within theoretical relationships).

Laurent and Kapferer (1985) based their conceptualization of involvement on a multidimensional construct, citing the work of Rothschild (1979) and stating that no single indicator of involvement could satisfactorily describe or explain, or predict the antecedents to, involvement. Laurent and Kapferer suggested that an involvement profile would more fully represent the relationship between a consumer and product category, and noted five antecedents for involvement: perceived importance, perceived sign value, perceived pleasure value, perceived risk of negative consequences and perceived risk of making a mistake.

This study will test (1) the dimensionality and internal reliability of the Zaichkowsky and Laurent and Kapferer scales within participatory sport at the individual and team levels, and (2) the relationship between involvement and participation within the individual and team sport experience.

Therefore,

H1: The Zaichkowsky scale will be unidimensional for individual and team sports.

H2: The Laurent and Kapferer scale will be multidimensional (perceived importance, perceived sign value, perceived pleasure value, perceived risk of negative consequences and perceived risk of making a mistake) for individual and team sports.

H3a: A relationship exists between the Zaichkowsky Scale and Intent to Participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H3b: A relationship exists between the Zaichkowsky Scale and Behavioral Participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H4a: A relationship exists between the Laurent and Kapferer Scale and Intent to Participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H4b: A relationship exists between the Laurent and Kapferer Scale and Behavioral Participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H5a: The Laurent and Kapferer Scale will be more predictive than the Zaichkowsky Scale for intent to participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H5b: The Laurent and Kapferer Scale will be more predictive than the Zaichkowsky Scale for behavioral participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

When Zaichkowsky initially factored her scale, it indicated one general factor that captured interesting, appealing, fascinating, exciting and involving. This general factor was associated with relevant emotions. A minor component captured important, relevant, valuable, means a lot and needed. This represented a rational or cognitive theme.

Zaichkowsky stated her scale represents cognitive and affective dimensions. The two components are not independent but may be useful in determining the type of involvement demonstrated by consumers responding to advertisements. The scale was projected to “easily relate across product categories and can be appropriate to other domains” (p. 342).

Zaichkowsky’s scale tests for the state of involvement without antecedent influence and also demonstrates validity across the affective and cognitive subscales.

Factor analysis of the data generated from the Laurent and Kapferer scale proved discriminant validity and indicated four specific factors: “Importance (the perceived importance of the product and the perceived importance of the consequences of a mispurchase)” (p. 44); the subjective probability of a mispurchase; the hedonic (pleasure) value of the product class; and the perceived sign value of the product class. It was determined that “no single facet alone catches the richness of the relationship between a consumer and a product class” (p. 45). The “think-feel dimension” (p. 52) of the scale was related to the weight of the sign and pleasure value subscales. When sign or pleasure subscales show a strong positive or negative response, respondents are operating in a higher affective mode.

A social-cognitive conceptual framework states that team members must participate in a high level of group communication and must cope with a higher cognitive demand. The demand

for higher cognition among team members may lessen the involvement in affective measures.

Social Identity Theory states social identification within a collective group is a conceptual cognitive construct and is not necessarily associated with affective states.

Therefore,

H6: Cognitive Experience for Team auto racing (Team sport) will be greater than Cognitive Experience for Ultrarunning (Individual Sport).

H7: Affective Experience for Ultrarunning (Individual sport) will be greater for than Affective Experience for Team auto racing (Team Sport).

H8: Group Identification for Team auto racing (Team Sport) will be greater than Group Identification for Ultrarunning (Individual sport).

CHAPTER THREE METHOD

Survey Analysis

Survey research is frequently used as a tool for data collection and analysis in the social sciences, and proves beneficial for descriptive, explanatory and exploratory studies. It has been deemed the best method of data collection when collecting data from a population too large for direct observation. Variables to be studied are operationalized through written survey questions, inclusive of descriptive statistics, behavioral characteristics, explanatory items and exploratory items. Standardized surveys are generally weak on validity, as respondents must conform to Likert scale or semantic differential questions, which are approximate indicators of the actual opinions. However, surveys generally hold a high degree of reliability, through a standardized stimulus that reduces variability and produces similar data throughout repeated observations. (Babbie, 2007).

New technologies have propagated opportunities for additional channels of survey research, specifically the use of the Internet for online surveys. One contingent of modern researchers contends that online surveys will replace traditional survey methods, such as personal interviews, mail surveys and telephone surveys. Others remain cautious, based on issues with the representativeness of online survey sample groups (Couper, 2001).

Online survey research allows for access to a broad database through email solicitation. It offers data collection within a short period of time and has low implementation costs. Respondents are afforded anonymity while the online interactive process eliminates interviewer error and bias (Sheehan & Hoy, 1999).

Certain populations are ideally suited for online survey research, particularly those who visit specific websites and those holding interests associated with a specific activity group.

Conversely, general population groups may be more difficult to analyze using online surveys, such as online polling for political elections (Wilson, 1999 in Babbie, 2007).

Survey Development

The questionnaire for this study was disseminated using a web-based survey tool. The survey contained an informed consent protocol, which was approved as part of the Institutional Review Board process. Respondents were required to prompt an acknowledgement of the informed consent protocol before proceeding to the survey.

Two questionnaires were developed for this study, one directed to endurance sport athletes and the other directed to motorsport athletes. Each survey was identical in design, with the exception of the introductory wording and wording specific to behavioral indicators where required. The surveys were divided into seven sections, which included a general introduction to the study (ultrarunning or rally car racing), Informed Consent Protocol language and opt-in option, intention to participate items, behavioral indicator items, demographic questions, multidimensional scale items and unidimensional scale items (see Appendix A and B).

Behavioral and Descriptive Statistics

Behavioral questions that incorporated years participating in the sport, level of commitment to the sport, intent to continue to participate in the sport, number of annual events the respondent participated in, the distance traveled to events and annual financial commitment to the sport. Three questions pertained to intent to participate in future events. Ten demographic questions captured information on age, gender, income, marital status, education, state of residence, distance traveled to events, print media usage related to the sport, Internet usage related to the sport and perceived skill level in the sport.

Unidimensional and Multidimensional Involvement Scales

Jamrozy, Backman & Backman (1996) conducted research on nature-based tourism and compared the application of multidimensional and unidimensional involvement scales. Their findings indicated that both scales were equally reliable and valid and were acceptable to measure the involvement construct in a leisure environment. In order to further contribute to the field of involvement within a leisure context, Jamrozy, Backman & Backman chose Zaichkowsky's Personal Involvement Inventory (PII) and Laurent and Kapferer's Involvement Profile (IP) in an effort to further explore each scale's multidimensionality.

Following forward and bringing an individual and team sport context to leisure activities, this study incorporated Havitz and Dimanche's (1990) adaptation of Laurent and Kapferer's multidimensional Involvement Profile (Appendix C), and Zaichkowsky's ten-item unidimensional Personal Involvement Inventory. Each of the 15 items in the Laurent and Kapferer scale were administered with a 5-point Likert-type response option, where 1 was coded to strongly disagree and 5 was coded to strongly agree. The Zaichkowsky scale utilized a 1 to 7 measurement on semantic differential word pairs. Some questions were reverse-scored (positive word to 7 and negative word to 1) and were manipulated in the Statistical Package for the Social Sciences (SPSS) prior to analysis.

Respondent Development

The study population is comprised through a non-probability sampling group of available subjects in the endurance sport (individual) and rally car (team) communities. Respondents were solicited through email databases provided by organizers for ultrarunning and rally car auto racing events. Sample groups characterized a broad spectrum of participants, from entry-level participants to accomplished athletes.

Ultrarunning, the sport of foot racing in events surpassing the traditional 26.2 mile marathon distance, has increased over 100 percent in the past 20 years. In 2007, 14,251 individuals competed in ultradistance events, amassing a total of 25,841 finishes; 29 percent of the entrants were females, and the median age was 42.8 years (Medinger, 2008).

Most ultrarunners perform continuously for more than four hours, to more than 24 hours and beyond when multi-day races are entered. Muscular degeneration does occur over these extended race distances, while mental and physiological exhaustion also comes into play. Ultrarunners must constantly monitor fluid intake, electrolyte levels and food consumption, while also monitoring emotional and cognitive decision-making abilities. The ultrarunning experience can be somewhat mystic. Jones (2005) conducted research that captured ultrarunners' experiences in endurance events that were 100 miles in distance and beyond. Jones identified a hypothetical mystical state of consciousness he termed "Absolute Unitary Being" (p. 40).

Unlike the solitary environment of the ultrarunner, the sport of rally car racing is built on team cooperation and overall finishing results. Rally car auto racing is a timed motorsport competition where cars perform to get from one place to another in the shortest possible time. Rallies are organized in stages, on routes that include public or private roads, many times in secluded rural areas. Several surfaces, such as tarmac or gravel, may be incorporated into the course. Special stages are included in the regular stage segments, where elapsed time through the special stage is cumulated to attain the total stage time. Liaison stages connect the overall course, but are not included in the overall time (rallycars.com).

Drivers, with the assistance of a navigator, pilot modified production or specially built road-legal cars. Reconnaissance of the rally course is allowed a week prior to an official event, to allow navigators and teams the opportunity to create notes for race day.

Rally races are extremely popular in Europe, South America and Asia, with an audience emerging in the United States. Major events in Europe regularly attract hundreds of thousands of fans, who line the borders of twisty mountain roads.

Respondent databases for endurance sport were provided by the editor of UltraRunning Magazine, the leading publication for ultrarunning endurance sport athletes. The promoter of the Umstead 100 mile endurance run, a premier event in North Carolina, also provided his database of entrants for this survey. The database for rally car auto racing was provided by Rally America, the U.S. sanctioning body for rally sport in North America.

Data Analysis (Hypotheses Testing)

H1: The Zaichkowsky scale will be unidimensional for individual and team sports.

H2: The Laurent and Kapferer scale will be multidimensional (perceived importance, perceived sign value, perceived pleasure value, perceived risk of negative consequences and perceived risk of making a mistake) for individual and team sports.

Hypotheses 1 and 2 will be tested for statistical significance using a confirmatory factor analysis (CFA), which explores patterns of relationships among variables. Structural equation modeling provides a confirmatory role, as the indicators are specified for each construct.

Three statistical tests within CFA were chosen to determine the validity of the Zaichkowsky and Laurent and Kapferer scales, as applied to individual and team sport respondents. A test for goodness-of-fit (GFI) of the proposed factor solution will determine how covariances and correlations of the observed model are predicted by the estimated model. (Hair, Anderson, Tatham & Black, 1998). GFI offers an advantage in model testing in that it is not affected by sample size. A test for the maximum likelihood fitting function (FF) was the basis

for a Chi square test statistic, and χ^2/df . Chi square and χ^2/df (also known as relative χ^2) are two indexes frequently used in CFA. The third test was the root-mean-square residual (RMR), which is bounded by 0 and 1. The test examines the square root of the mean of the squared residuals in the observed and expected elements of the models (Marsh, Balla & McDonald, 1988).

H3a: A relationship exists between the Zaichkowsky Scale and Intent to Participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H3b: A relationship exists between the Zaichkowsky Scale and Behavioral Participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H4a: A relationship exists between the Laurent and Kapferer Scale and Intent to Participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H4b: A relationship exists between the Laurent and Kapferer Scale and Behavioral Participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

Hypotheses 3 and 4 will be tested regarding the contribution each involvement scale makes as related to participation among individual and team sport athletes. Multiple regression analysis will be used, which allows researchers to determine if a dependent variable is affected simultaneously by several independent variables (Babbie, 2007). A correlation coefficient (R) will indicate the correlation between variables and the positive and negative associations between participation and involvement.

H5a: The Laurent and Kapferer Scale will be more predictive than the Zaichkowsky Scale for intent to participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

H5b: The Laurent and Kapferer Scale will be more predictive than the Zaichkowsky Scale for behavioral participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport).

Hypothesis 5 will be tested using Fisher's z test for independent correlation coefficients, which is a transformation of correlation coefficients to a normally distributed variable. Fisher's z test is used to compare sample and means to determine if there is a significant difference between independent groups. The Fisher test is most used when two sample groups have one

variable in common (Meng, Rosenthal & Rubin, 1992). In this study the common variables among individual and team sport groups are participation intent and behavioral participation.

H6: Cognitive Experience for Team auto racing (Team sport) will be greater than Cognitive Experience for Ultrarunning (Individual Sport).

H7: Affective Experience for Ultrarunning (Individual sport) will be greater for than Affective Experience for Team auto racing (Team Sport).

H8: Group Identification for Team auto racing (Team Sport) will be greater than Group Identification for Ultrarunning (Individual sport).

Hypotheses 6, 7 and 8 will be tested with one-way analysis of variance (ANOVA), where it can be determined if the observed variance of the data sets have statistical significance as related to a common dependent variable. The ANOVA test allows for examination of group means, with those variables in each scale that represent cognitive processing, affective processing and the antecedent for group affiliation (the sign value subscale in the Laurent and Kapferer scale).

CHAPTER FOUR RESULTS

Main Study Results

Participant Analysis

Data were collected from two sample groups for this study. The individual sport sample, comprised of ultrarunning endurance sport athletes, consisted of 424 usable responses. This sample was captured from a distribution to 2400 athletes (2000 in the *UltraRunning* magazine email database and 400 in the Umstead 100 Mile Endurance Run database), which constitutes a 17.7% response rate.

Participant age for individual athletes ranged from 20-79 years, $M=46.74$, $Mdn=46.00$, $SD=10.72$. 71% ($N=301$) were male and 27.4% ($N=116$) were female, with 1.7% ($N=7$) not reporting their gender (Table 4.1). The proportion of female competitors was similar to that of the general ultrarunning population, which is 29.4 percent (Medinger, 2008). The most frequently reported level of competition was Intermediate ($N=178$) followed by Accomplished ($N=131$).

The team sport sample, comprised of rally car auto racing teams, consisted of 291 useable responses. This sample was captured from a distribution to 850 online participants who are members of Rally America, the U.S. sport sanctioning body for rally auto racing, and constituted a 34.2% response rate.

Participant age for team sport athletes ranged from 16-67 years, $M=37.88$, $Mdn=36.00$, $SD=11.09$. 85.9% ($N=250$) were male and 12.4% ($N=36$) were female, with 1.7% ($N=5$) not reporting their age (Table 4.1). The most frequently reported position on the team was driver ($N=144$) followed by navigator ($N=93$).

Table 4-1. Descriptive indicators for individual and team sport athletes

	Individual sport	Team sport
Mean age	46.74	37.88
Male %	71.00	85.90
Female %	27.40	12.40
Years competing (M)	7.98	9.35

Dependent Variable: Participation

This study measured participation in two ways. One was an “intention” measure and the other was a “behavioral” measure. The items used to measure “intent to participate” were (1) “It is my intention to participate in a rally car (ultrarunning) event in the next year” and (2) “In the next year I plan to participate in a rally car (ultrarunning) event.” (K. Kaplanidou, personal communication, June 10, 2008). The items used endpoints strongly disagree and strongly agree within a 5-point scale. The mean scores for intention were 4.64 for ultrarunning athletes and 4.35 for rally car racers (Table 4-2). The Cronbach’s Alpha for participation indicators in the individual (ultrarunning) sport data was .89. The Cronbach’s Alpha for the participation indicators in the team (rally) sport data was .86.

Two items related to behavioral participation were incorporated into the study. Team rally participants were asked to input the average number of hours committed to rally cars each week and the average number of days committed to rally cars each week. Hours per week were divided by the days per week to create an average hours per day variable. Ultrarunning individual sport participants were asked to input the average number of miles run each week and the average number of days running each week. Miles run per week was divided by average number of days run each week to create an average miles per day variable.

The mean scores for behavioral participation were 9.82 (miles per day) for ultrarunning athletes and 5.34 (hours per day committed) for rally car racers (Table 4-2). Correlations

between the two items identified for behavioral characteristics were statistically significant for both ultrarunning and rally car data.

Table 4-2. Mean and standard deviations for group participation variables

	Intent		Behavior	
	M	SD	M	SD
Ultrarunning	4.64	1.02	9.8	3.78
Rally car racing	4.35	1.27	5.3	4.09

Independent Variable: Laurent and Kapferer Involvement Scale

A consumer involvement profile (CIP) developed by Laurent and Kapferer (1985) and later adapted to leisure activity (Havitz & Dimanche, 1996) was used to incorporate a multidimensional facet. The 5-point, 15-item scale used the endpoints of strongly disagree and strongly agree. The antecedents of involvement, each represented as a 3-item subscale, are perceived importance, perceived consequence of risk, perceived probability of risk, symbolic or sign value and hedonic pleasure (Appendix C).

Reliability was tested to determine internal consistency within subscales. The multidimensionality of a scale can also affect Alpha. Cortina (1993) posited that if a scale has one common factor, Alpha represents the strength of that factor. However, literature does not provide a clear understanding of the extent to which Alpha is affected by dimensionality. Schmitt (1996) stated that Cronbach's Alpha was an understatement of reliability, defined as the communality of items when multidimensionality is present.

Cronbach's Alpha was tested for the five subscales within the multidimensional scale for individual sport (ultrarunning) athletes (Table 4.3). The 3 subscale items representing importance had a Cronbach's Alpha of .64, with inter-item correlations ranging from $r=.33$ to $r=.50$. The 3 subscale items representing pleasure had a Cronbach's Alpha of .64, with inter-item correlations ranging from $r=.35$ to $r=.41$. The 3 subscale items representing risk

consequence had a Cronbach's Alpha of .68, with inter-item correlations ranging from $r=.35$ to $r=.55$. The 3 subscale items representing risk probability had a Cronbach's Alpha of .52, with inter-item correlations ranging from $r=.25$ to $r=.37$. The 3 subscale items representing sign value had a Cronbach's Alpha of .60, with inter-item correlations ranging from $r=.24$ to $r=.68$.

Cronbach's Alpha was tested for the five subscales within the multidimensional scale for team sport (rally car) athletes (Table 4.3). The 3 subscale items representing importance had a Cronbach's Alpha of .90, with inter-item correlations ranging from $r=.68$ to $r=.88$. The 3 subscale items representing pleasure had a Cronbach's Alpha of .95, with inter-item correlations ranging from $r=.81$ to $r=.95$.

Kapferer and Laurent (1993) believed it was mandatory to include the antecedent of risk in the development of the CIP scale and to make a distinction between risk probability and risk consequence. However, the authors found that risk probability was the least related to the remaining four subscales. Kapferer and Laurent believed that risk probability should not be removed from the scale, as it represented the input of others, decision making and information gathering.

Kyle, Graefe, Manning & Bacon (2003) stated that when the Laurent and Kapferer scale is applied to leisure activity, the subscales of risk probability and risk consequence have performed least consistently. In the team sport context of rally, the 3 subscale items representing risk consequence had a Cronbach's Alpha of .69, with inter-item correlations ranging from $r=.31$ to $r=.55$. The 3 subscale items representing risk probability had a Cronbach's Alpha of .66, with inter-item correlations ranging from $r=.16$ to $r=.86$. The 3 subscale items representing sign value had a Cronbach's Alpha of .70, with inter-item correlations ranging from $r=.22$ to $r=.81$.

Table 4-3. Reliability testing for Laurent & Kapferer subscales on individual and team sport data

Items tested	Alpha ultrarunning	Alpha rally car	# of items
importance	0.64	0.90	3
pleasure	0.64	0.95	3
risk consequence	0.68	0.69	3
risk probability	0.53	0.66	3
sign value	0.60	0.70	3

Independent Variable: Zaichkowsky Involvement Scale

The internal consistency of the Zaichkowsky scale was tested through reliability analysis. The 10 semantic differential items in the Zaichkowsky scale (1994) were tested. Items comprised in the scale were: important-unimportant, boring-interesting, relevant-irrelevant, exciting-unexciting, means nothing-means a lot to me, appealing-unappealing, fascinating-mundane, worthless-valuable, involving-uninvolving, not needed-needed. The Cronbach’s Alpha for these ten items was .89 for the individual sport data and .85 for the team sport data. Inter-item correlations ranged between $r=.22$ to $r=.71$ for individual sport respondents and $r=.16$ to $r=.67$ for team sport respondents (Table 4.4). Cronbach’s Alpha would not be increased by deleting any of the scale items.

Table 4-4. Reliability testing for the Zaichkowsky scale on individual and team sport data

Items tested	Alpha ultrarunning	Alpha rally car	# of items
Zaichkowsky scale	0.89	0.85	10

Hypothesis 1: Dimensionality of the Zaichkowsky Scale

To test the hypothesis that the Zaichkowsky scale will remain unidimensional and the Laurent and Kapferer scale would remain multidimensional, confirmatory factor analysis was employed to test goodness of fit within both the individual and team sport environments.

Confirmatory factor analysis explores patterns of relationships among variables. Structural equation modeling provides a confirmatory role, as the indicators are specified for each construct.

Hypothesis 1a stated that the Zaichkowsky scale will be unidimensional for individual (endurance running) sports. The single factor solution was not appropriate and the hypothesis was rejected (Figure 4.1) for individual sport athletes ($\chi^2=437.53$, $df=37$, $RMR=.17$, $GFI=.78$).

Hypothesis 1b stated that the Zaichkowsky scale will be unidimensional for team (rally car) sports. The single factor solution was not appropriate and the hypothesis was rejected (Figure 4.2) for team sport athletes ($\chi^2=369.06$; $df=37$, $RMR=.18$, $GFI=.73$).

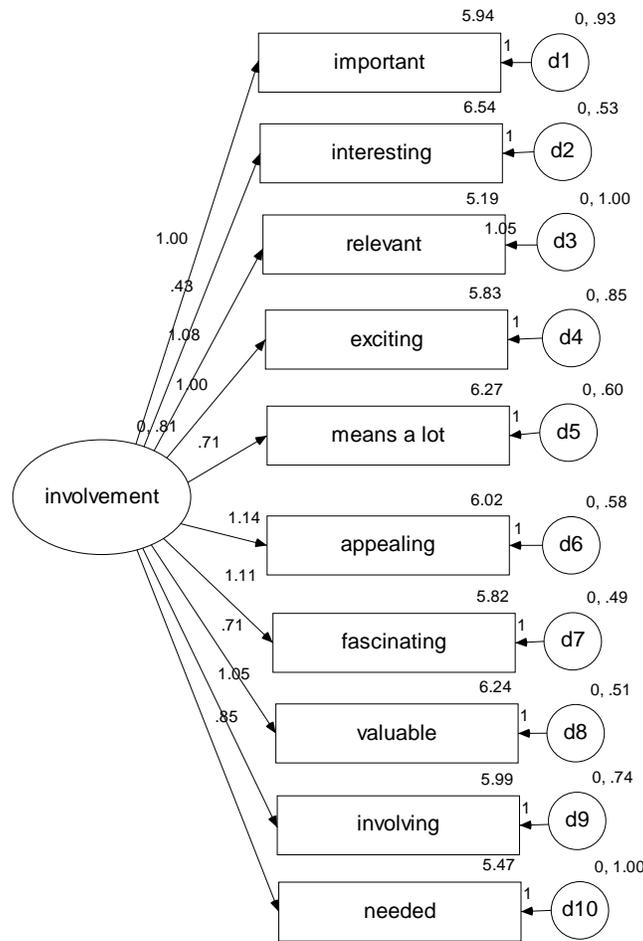


Figure 4-1. Individual sport unidimensional scale model

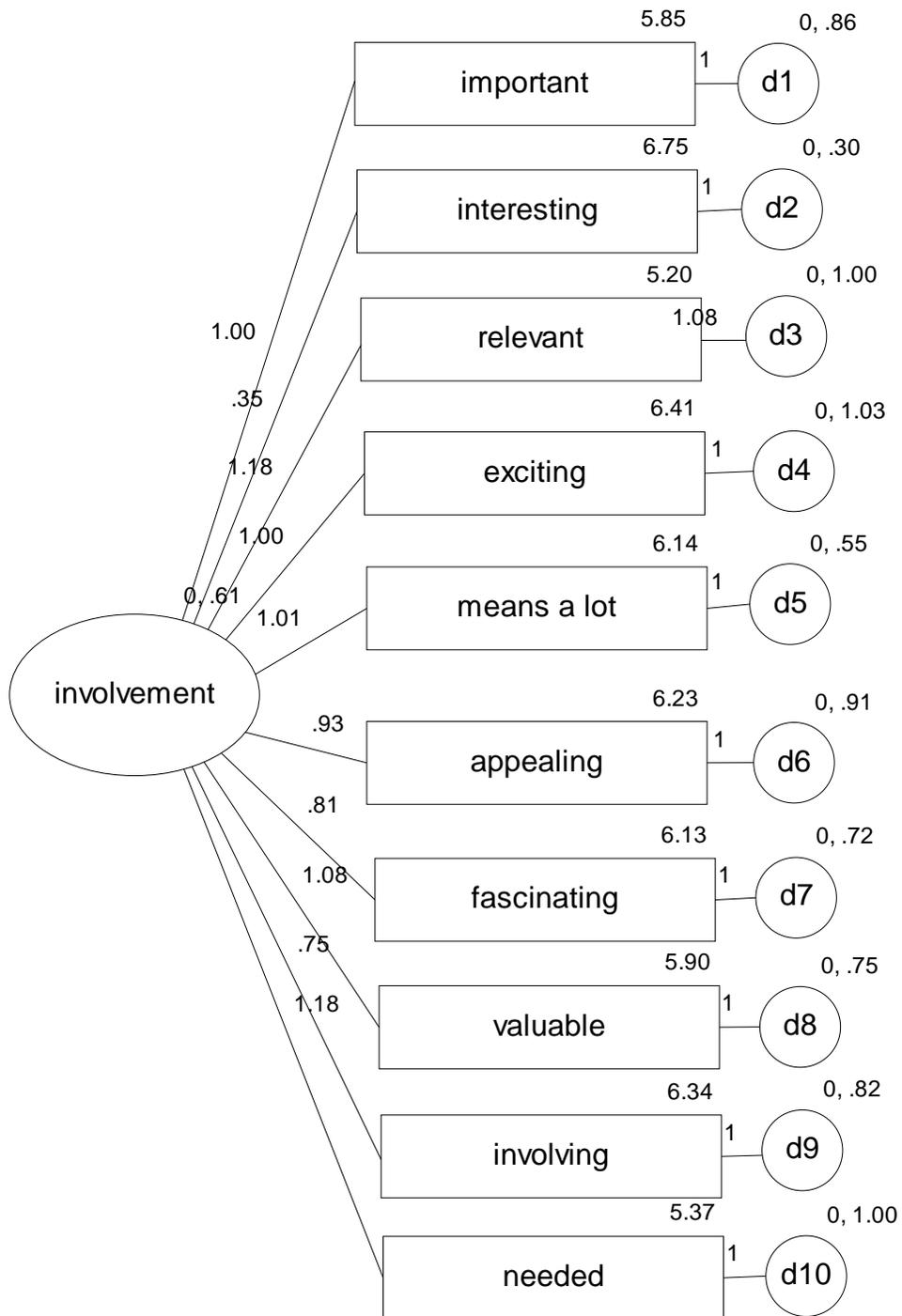


Figure 4-2. Team sport unidimensional scale model

The unidimensional scale was not confirmed as a one factor solution and exploratory factor analysis was utilized to explore the dimensions of the ten items within the Zaichkowsky scale. While the item “interesting” was confounded, the remainder of the results indicated that

affectively-processed involvement items relevant, exciting, appealing, fascinating and involving loaded onto Factor 1, while cognitive items important, means a lot, valuable and needed loaded onto Factor 2 (Table 4-5).

Revised Hypothesis 1a stated that the Zaichkowsky scale will be two-dimensional for individual (endurance running) sport. A retest was conducted utilizing confirmatory factor analysis to test for cognitive and affective dimensions within the unidimensional scale (Figure 4-3).

Table 4-5. Varimax rotation exploratory factor analysis for individual sport athletes

	Factor 1	Factor 2
Important	.25	.73
Interesting	.48	.25
Relevant	.61	.39
Exciting	.85	.18
Means a lot	.29	.78
Appealing	.85	.21
Fascinating	.83	.26
Valuable	.43	.65
Involving	.76	.24
Needed	.13	.85

The scale performed as two factors and provided a solution for data related to individual sport athletes ($\chi^2=208.63$, $df=35$, $RMR=.10$, $GFI=.91$). The two factor solution was accepted as modified for Hypothesis 1a.

Revised Hypothesis 1b stated that the Zaichkowsky scale will be two-dimensional for team (rally car) sport. A retest was conducted utilizing confirmatory factor analysis to test for cognitive and affective dimensions within the unidimensional scale (Figure 4-4). The scale performed as two factors and provided a solution for data related to team sport athletes ($\chi^2=120.75$; $df=35$, $RMR=.09$, $GFI=.92$). The two factor solution was accepted as modified for Hypothesis 1b.

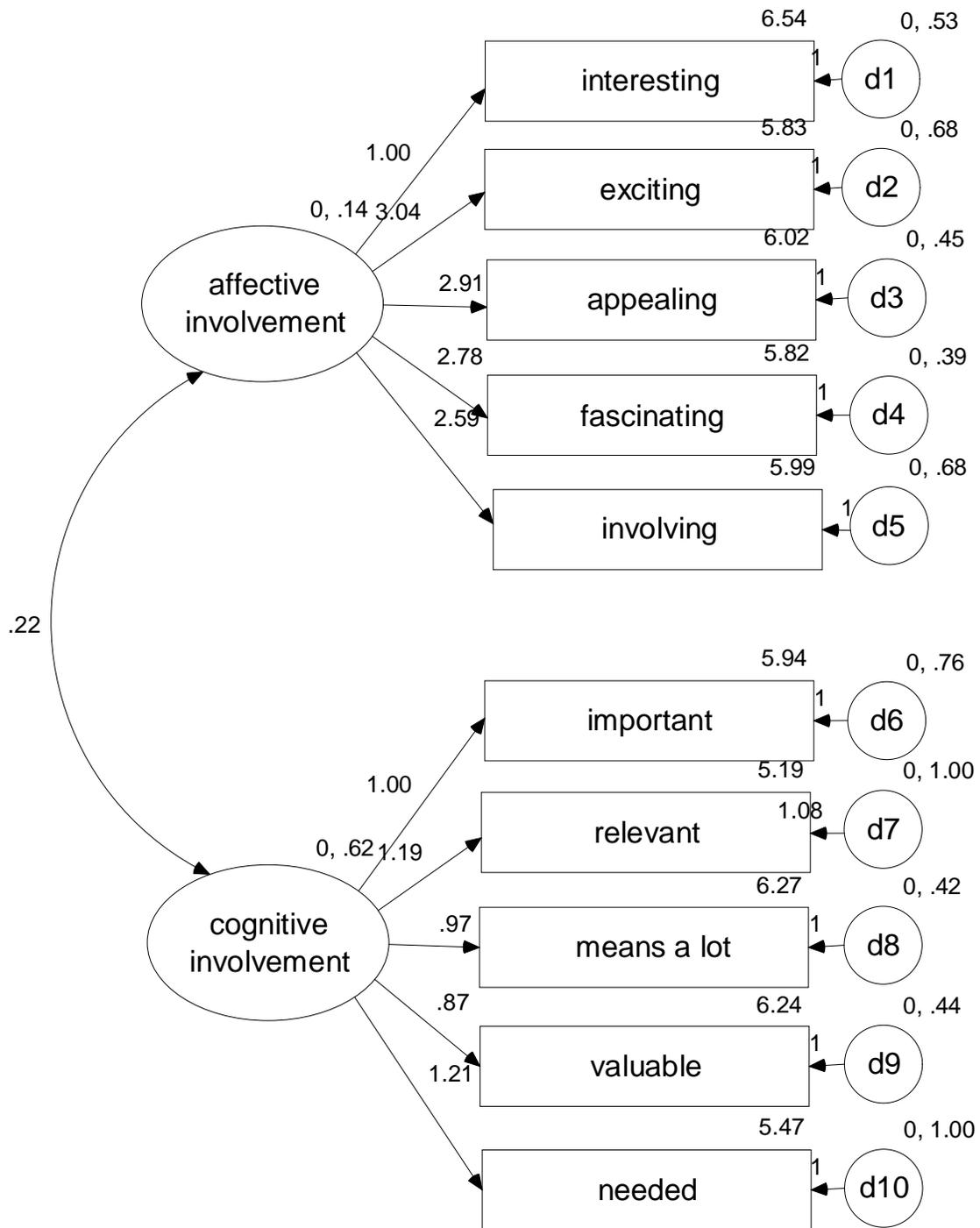


Figure 4-3. Individual sport model modified with cognitive and affective subscales

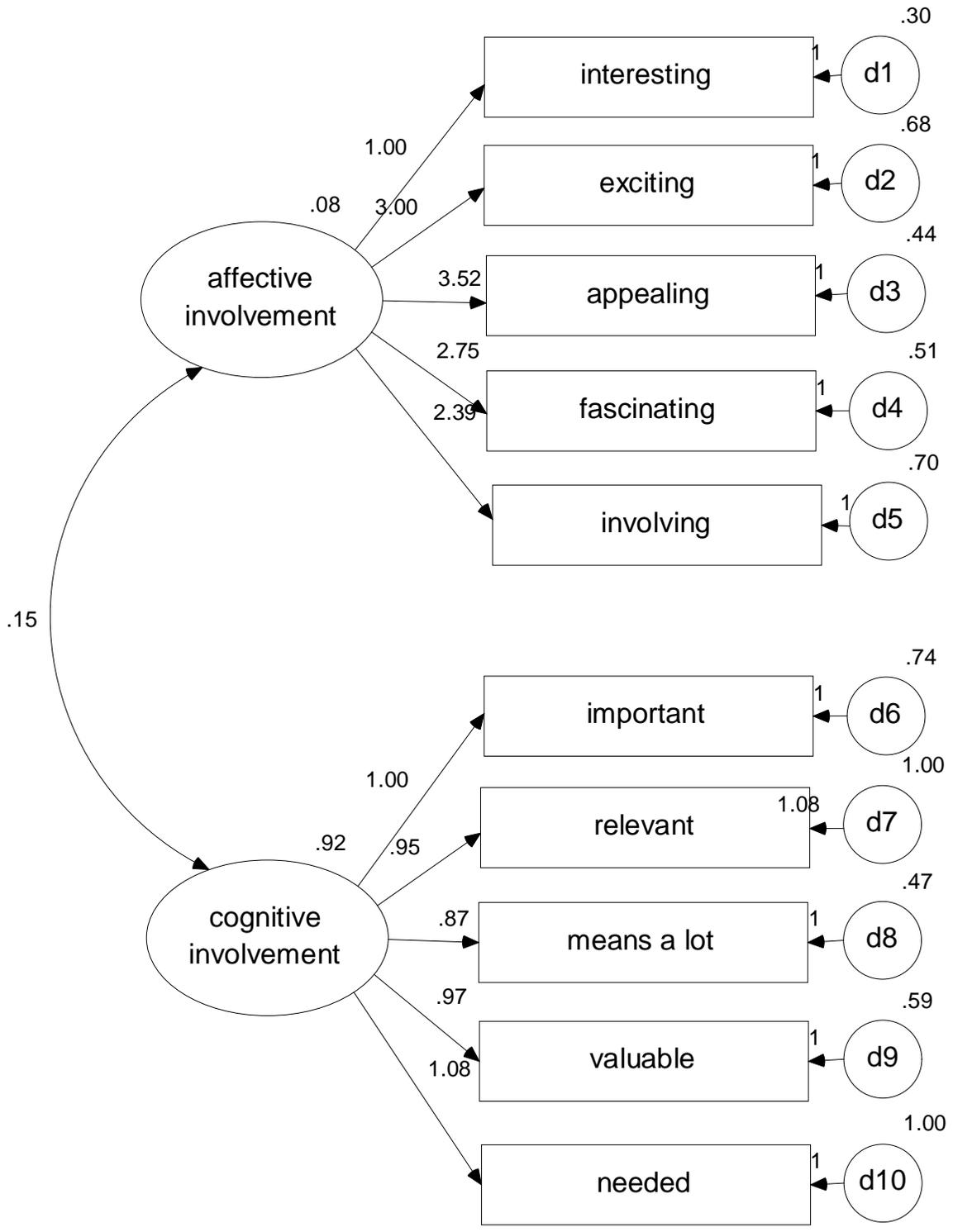


Figure 4-4. Team sport model modified with cognitive and affective subscales

Retesting Reliability for the Two Factor Zaichkowsky Scale

The two factor solution representing cognitive and affective subscales within the Zaichkowsky scale was tested for internal consistency within the separate dimensions. The affective subscale tested for individual athletes presented a Cronbach's Alpha of .86, with inter-item correlations ranging from $r=.29$ to $r=.71$. Alpha could be improved to .89 with the removal of "interesting" from the subscale. The cognitive subscale for individual athletes presented a Cronbach's Alpha of .81, with inter-item correlations ranging from $r=.39$ to $r=.57$. The deletion of items within the 5-item subscale would not have improved the alpha score (Table 4.6).

The affective subscale tested for team athletes presented a Cronbach's Alpha of .82, with inter-item correlations ranging from $r=.31$ to $r=.67$. A small increase to an alpha of .83 could be achieved by removing the "interesting" item from the subscale. The cognitive subscale tested for team sport athletes presented a Cronbach's Alpha of .84 with inter-item correlations ranging from $r=.43$ to $r=.59$. The deletion of items within the 5-item subscale would not have improved the alpha score.

Table 4-6. Reliability testing for the Zaichkowsky scale on cognitive and affective dimensions

Items tested	Alpha		# of items
	ultrarunning	Alpha rally car	
affective	0.86	0.82	5
cognitive	0.81	0.84	5

Hypothesis 2: Dimensionality of the Laurent and Kapferer Scale

Hypothesis 2a stated that the Laurent and Kapferer scale will be multidimensional within the scales intended for individual (ultrarunning) athletes. A goodness of fit test indicated that the five-factor solution indicated was appropriate (Figure 4-5) for data related to individual sport ($\chi^2=2608.93$, $df=80$, $RMR=.04$, $GFI=.94$). Hypothesis 2a was supported and accepted.

Hypothesis 2b stated that the Laurent and Kapferer scale will be multidimensional within the scales intended for team (rally car) athletes. A goodness of fit test indicated that the five-factor solution was appropriate (Figure 4-6) for data related to team sport ($\chi^2=1544.38$; $df=80$, $RMR=.07$, $GFI=.90$). Hypothesis 2b was supported and accepted.

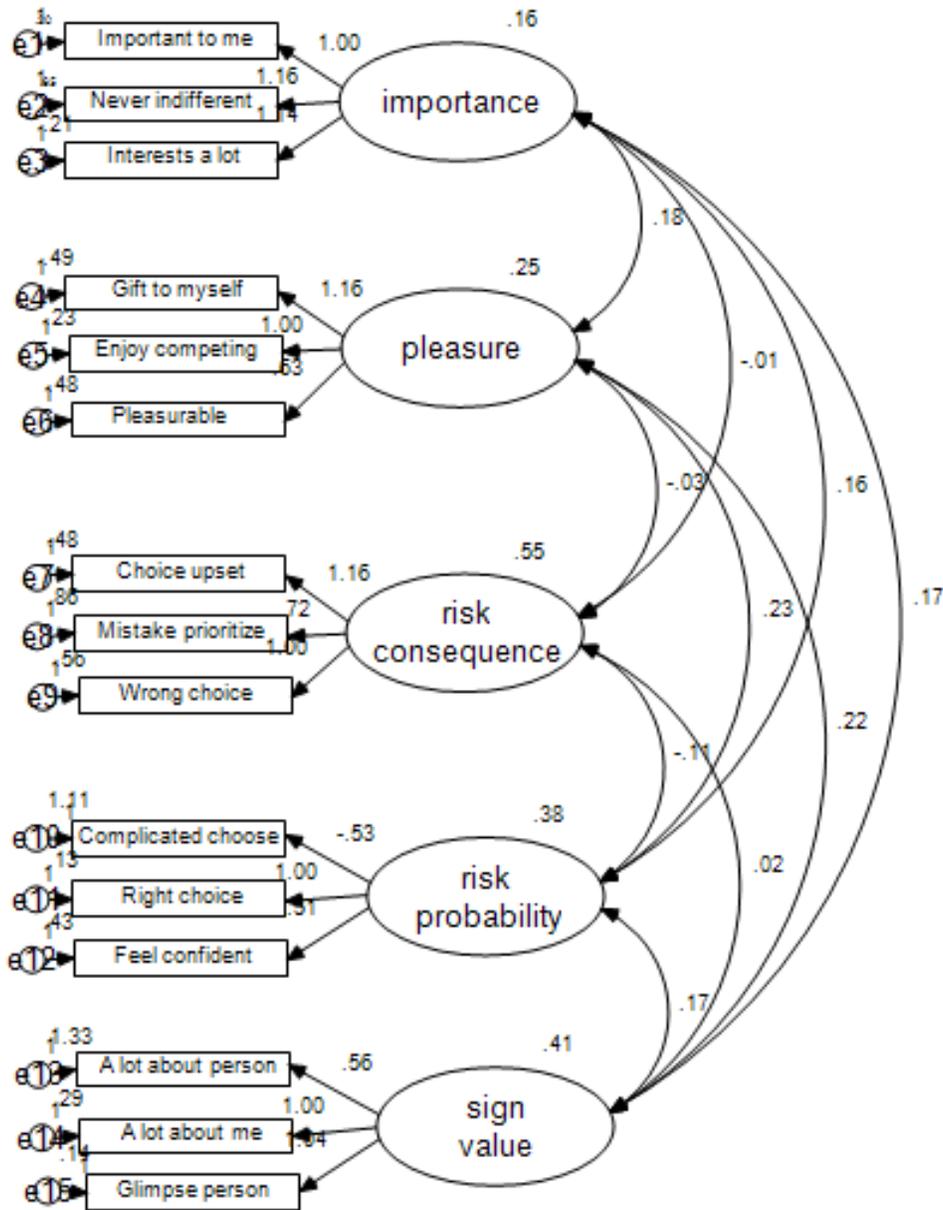


Figure 4-5. Individual sport multidimensional scale model

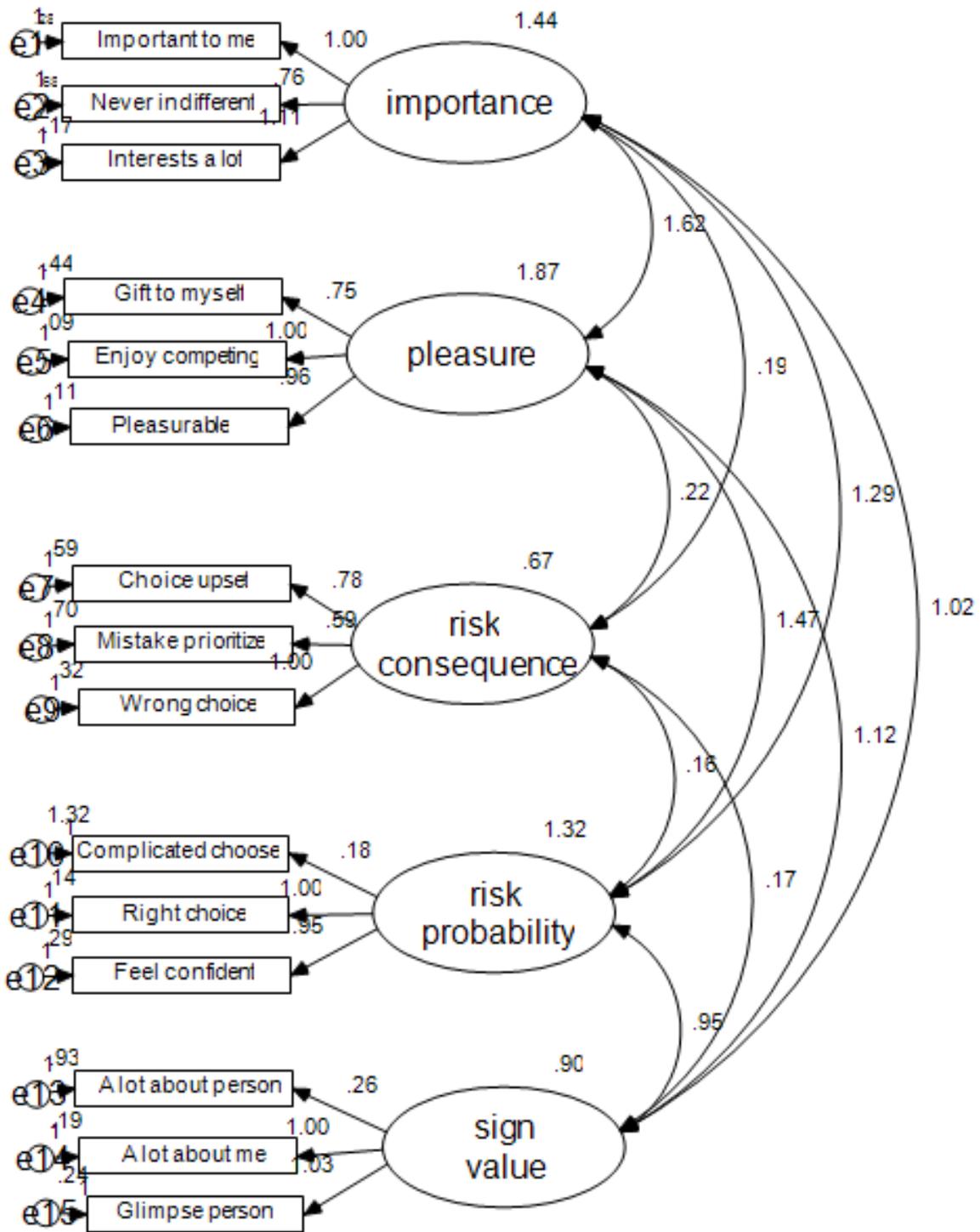


Figure 4-6. Team sport multidimensional scale model

Hypothesis 3a: Relationship between the Zaichkowsky Scale and Intent to Participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Multiple regressions with the two Zaichkowsky scales (cognitive and affective) as independent variables and intent to participate as the dependent variable were used to test this hypothesis for ultrarunning and team auto racing.

The hypothesis was not supported for ultrarunning. The multiple regression was not significant ($R = .11$, $F = 2.65$, $p = .07$). The hypothesis was supported for team auto racing ($R = .19$, $F = 5.31$, $p = .007$) (Table 4-7). Between the cognitive and affective dimensions, only the cognitive had a significant standardized coefficient (.21).

Table 4-7. Regression of Zaichkowsky cognitive and affective subscales on intent/plan to participate for team sport athletes

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.79	1.22		6.38	.00
	cognitive	.53	.16	.21	3.25	.00
	affective	-.33	.20	-.11	-1.62	.11

Dependent: Intent to Participate. Independent: Zaichkowsky Cognitive and Affective
 $R = .19$, $F = 5.31$, $p = .007$, $n = 281$

Hypothesis 3b: Relationship between Zaichkowsky Scale and Behavioral Participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Multiple regressions with the two Zaichkowsky scales (cognitive and affective) as independent variables and behavioral participation (miles run per day for ultrarunning and hours per day invested in auto racing) as the dependent variable were used to test this hypothesis for ultrarunning and team auto racing.

This hypothesis was partially supported. The multiple regression for ultrarunning miles run per day as the dependent variable and Zaichkowsky's cognitive and affective dimensions as independent variables was significant ($R = .13$, $F = 3.31$, $p = .04$) (Table 4-8). The regression for auto racing ($R = .11$, $F = 1.28$, $p = .28$) was not significant.

Table 4-8. Regression of Zaichkowsky cognitive and affective subscales on behavioral participation for individual sport athletes

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.58	1.31		5.02	.00
	cognitive	.07	.25	.08	.26	.79
	affective	.48	.27	.12	1.78	.08

Dependent: Average miles/day. Independent: Zaichkowsky Cognitive and Affective
 $R = .13$, $F = 3.31$, $p = .04$, $n = 401$

Hypothesis 4a: Relationship between Laurent and Kapferer Scale and Intent to Participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Multiple regressions with the five Laurent and Kapferer subscales as independent variables and intent to participate as the dependent variable were used to test this hypothesis for ultrarunning and team auto racing.

This hypothesis was partially supported. The hypothesis was supported for ultrarunning. The multiple regression was significant ($R = .19$, $F = 2.91$, $p = .01$) (Table 4-9). Among the five dimensions of the Laurent and Kapferer scale, only “pleasure” was significant with a .18 regression coefficient. Neither “Importance,” “Risk Consequence,” “Risk Probability,” nor “Sign Value” contributed significantly to intent to participate in ultrarunning. The hypothesis for team auto racing was not supported. The regression ($R = .19$, $F = 1.96$, $p = .09$) was not significant.

Table 4-9. Regression of Laurent & Kapferer multidimensional subscales on intent/plan to participate for individual sport athletes

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.40	.54		6.24	.00
	importance	.03	.11	.01	.24	.81
	pleasure	.26	.10	.16	2.61	.009
	risk consequence	-.04	.06	-.03	-.68	.49
	risk probability	.18	.12	.08	1.56	.12
	sign value	-.15	.08	-.11	-1.92	.05

Dependent: Intent to Participate. Independent: Sign Value, Risk Probability, Risk Consequence, Pleasure, Importance R = .19, F = 2.91, p=.01, n = 400

Hypothesis 4b: Relationship between Laurent and Kapferer Scale and Behavioral Participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Multiple regressions with the five Laurent and Kapferer subscales as independent variables and behavioral participation (miles run per day for ultrarunning and hours per day invested in auto racing) as the dependent variable were used to test this hypothesis for ultrarunning and team auto racing.

This hypothesis was partially supported. The hypothesis was supported for rally car racing. The multiple regression was significant (R = .24, F = 2.61, p=.03. (Table 4-10). Among the five dimensions of the Laurent and Kapferer scale, only “importance” was significant with a .24 regression coefficient (Table 4-7). Neither “Pleasure,” “Risk Consequence,” “Risk Probability,” nor “Sign Value” contributed significantly to intent to participate in ultrarunning. The hypothesis for individual running was not supported. The regression (R = .14, F = 1.48, p = .20) was not significant.

Table 4-10. Regression of Laurent and Kapferer multidimensional subscales on behavioral participation for team sport athletes

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.44	1.61		0.89	0.37
importance	1.03	0.51	0.24	2.04	0.04
pleasure	0.22	0.49	0.07	0.44	0.66
risk consequence	0.19	0.35	0.04	0.56	0.58
risk probability	0.07	0.54	0.02	0.13	0.9
sign value	-0.64	0.52	-0.13	-1.25	0.21

Dependent: Hour/day average. Independent: Sign Value, Risk Probability, Risk Consequence, Pleasure, Importance R = .24, F = 2.1, p=.03, n = 261

Hypothesis 5a: Laurent and Kapferer Scale will be more predictive than the Zaichkowsky Scale for intent to participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Hypothesis 5a was tested using Fisher’s z test for independent correlation coefficients (R). The hypothesis was not supported. The one-tailed Z critical score required for a directional comparison requires a 1.65 z score. Comparisons between the regressions of the Zaichkowsky subscales and the Laurent and Kapferer subscales, to the dependent variable of intent, had no statistical significance for either ultrarunners (z = 1.16) or rally car athletes (z = .00) (Table 4-11).

Hypothesis 5b: Laurent and Kapferer Scale will be more predictive than the Zaichkowsky Scale for behavioral participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Hypothesis 5b was not supported. Comparisons between the regressions of the Zaichkowsky subscales and the Laurent and Kapferer subscales, to the dependent variable of behavior, had no statistical significance for either ultrarunners (z = 1.20) or rally car athletes (z = 1.41) (Table 4-11).

Table 4-11. Fisher’s z test of independent R’s for Zaichkowsky and Laurent and Kapferer scales

	Rally Car					Ultrarunning				
	Zaichkowsky		L&K		z	Zaichkowsky		L&K		z
	R	n	R	n		R	n	R	n	
Intent	0.19	281	0.2	278	0.00	0.11	404	0.19	400	1.16
Behavior	Zaichkowsky		L&K		z	Zaichkowsky		L&K		z
	R	n	R	n		R	n	R	n	
	0.11	225	0.2	222	1.41	0.13	401	0.14	396	1.20

Hypothesis 6: Cognitive Experience for Team auto racing (Team sport) will be greater than Cognitive Experience for Ultrarunning (Individual Sport)

This hypothesis was not supported. While the results of the analysis of variance to test this hypothesis provided evidence of a statistically significant difference between groups (F 1,700 = 6.92, p = .01), the difference was not as predicted. The results were opposite to what was

hypothesized. Within the Zaichkowsky cognitive test, the average cognitive experience score for individual ultrarunning was 5.84, which was significantly greater than the team auto racing average score of 5.65. The effect size, using eta squared, was .01. The Laurent and Kapferer test also determined a result opposite to what was hypothesized. Though statistically significant ($F_{1, 698} = 180.20, p = .00$) ultrarunners held a cognitive mean of 3.63, which proved higher than the rally car average of 3.03.

Hypothesis 7: Affective Experience for Ultrarunning (Individual Sport) will be greater than Affective Experience for Team auto racing (Team Sport).

This hypothesis was partially supported. While the results of the analysis of variance to test this hypothesis provided evidence of a statistically significant difference between groups ($F_{1, 693} = 18.28, p = .00$ for the unidimensional affective items and $F_{1, 698} = 188.55, p = .00$ for the multidimensional affective items), the difference was not as predicted. The unidimensional affective experience score for rally car participants was 6.35, which was significantly greater than the individual running score of 6.05. However, under multidimensional affective measures, ultrarunners held a significantly greater mean score with 4.14 over the rally car racing mean score of 3.34. The effect size (using eta squared) for the multidimensional affective items was strong at .21. The effect size (using eta squared) for the unidimensional affective items was .02.

Hypothesis 8: Group Identification for Team auto racing (Team Sport) will be greater than Group Identification for Ultrarunning (Individual sport).

This hypothesis was not supported. While the results of the analysis of variance to test this hypothesis provided evidence of a significant difference between groups ($F_{1, 705} = 155.52, p = .00$), the difference was not as predicted. The results were opposite to what was hypothesized. The average group identity score for rally car team athletes was 3.14, which was significantly less than the ultrarunning individual average score of 3.87. The effect size, using eta squared, was .18.

Table 4-12. ANOVA comparisons for cognitive, affective and group response

	Mean individual	Std. deviation individual	Mean team	Std. deviation team	eta squared	F	df	Sig.
Zaichkowsky cognitive	5.84	0.92	5.65	1.02	0.01	6.92	700	.01
Laurent & Kapferer cognitive	3.63	0.4	3.03	0.78	0.21	146.4	388	.00
Zaichkowsky affective	6.05	0.97	6.35	0.81	0.03	19.45	672	.00
Laurent & Kapferer affective	4.14	0.57	3.34	0.98	0.21	156.25	413	.00
Laurent & Kapferer group ID	3.87	0.72	3.14	0.83	0.18	147.87	560	.00

CHAPTER 5 DISCUSSION

Sport event organizers, sponsors, product marketers and media are striving to find new and competitive alternatives for communicating with participant sport athletes. A cluttered marketing environment has necessitated the need for targeted messaging that speaks to each athlete's most compelling rationale for participating in specific sport events and buying products and services related to those events. This study was designed to compare and contrast the involvement characteristics of two diverse sport participant groups, individual and team sport athletes. Predictors of participation, cognitive and affective responses, and the power of group identity were identified as key learning points in this research.

Two traditional and academically tested involvement scales were utilized in this study. The Zaichkowsky involvement scale utilized semantic differential word pairs and was designed to measure a sum involvement score within a single factor solution. Zaichkowsky developed a 20-item product involvement scale in 1985, and then made a revision to the scale in 1994, reducing the scale to 10-items when she addressed involvement as tool to measure the response to advertising and the effectiveness of the advertising message. Laurent and Kapferer's multidimensional involvement measure focused on the antecedents to involvement through a 15-item scale, which incorporated five subscales. The scale was initially devised in 1985 through qualitative research conducted with female, stay-at-home respondents and their involvement response to various home and cosmetic products.

The unidimensionality of the Zaichkowsky scale, and the multidimensionality of the Laurent and Kapferer scale, were tested for both individual and team sport respondents through confirmatory factor analysis. Tests were conducted in the Statistical Package for the Social

Sciences (SPSS) with Analysis of Moment Structures (AMOS) software using structural equation modeling.

Multiple regressions were utilized to test the relationship of each scale to participation scores for individual and team sport athletes. The participation indicators of intent, and the likelihood item, were used as separate dependent variables. The cognitive subscale and affective subscale in the unidimensional scale and five antecedent subscales in the multidimensional scale served as independent variables.

Social cognition and social identity theories were used as a theoretical foundation to predict a higher cognitive measure in team sport athletes, a higher affective measure in individual sport athletes, and a higher measure of sign value (group identity) in team sport athletes.

Cognitive, affective and group identification components of the scales were extracted to perform an analysis of variance (ANOVA) between the individual and team sport data groups. A deeper understanding of the predisposition to either cognition or emotion for participants, as well as a group's need to strive for social identity, will prove advantageous to communicators who are developing advertising and marketing initiatives related to active sport participants.

This discussion will evaluate each hypothesis based on study results and offer potential explanations, as well as implications, for advertising and communications managers. Other comments will include limitations within the study and suggestions for future research that will benefit the sport communication industry.

Evaluation of the Hypotheses

Hypothesis 1: Dimensionality of the Zaichkowsky Scale

This hypothesis was not supported. Analysis showed the scale was two dimensional, not one. The resultant two dimensional Zaichkowsky scale represented the cognitive and affective

dimensions of the Zaichkowsky scale as previously discussed in the literature, e.g. Zaichkowsky, 1995 and Salmon, 1986. These results support the use of the Zaichkowsky scale in studies on involvement in individual endurance sport and motorsport teams but as a two-dimension model, not as a one-dimensional model.

Hypothesis 2: Dimensionality of the Laurent and Kapferer Scale

This hypothesis was supported. Analysis showed the scale retained its five-factor structure and confirmed the multidimensionality of the Laurent and Kapferer Scale. This multidimensional model is appropriate for use in the study of individual endurance sport and motorsport team involvement.

Hypothesis 3a: Relationship between the Zaichkowsky Scale and Intent to Participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

This hypothesis was partially supported. The two-dimension Zaichkowsky scale produced a significant relationship for intent to participate in team sports but not for individual sports (Table 5-1). While the lack of variance in the dependent variable may partially explain the lack of a relationship for ultrarunning, the lack of variance did not adversely affect team auto racing.

This suggests that the Zaichkowsky scale is not appropriate in measuring involvement in studies focused on intent to participate in individual sports, e.g., ultrarunning. At the same time, only the cognitive dimension of the Zaichkowsky scale was related to intent to participate in team auto racing suggesting that use of the affective dimension may not be appropriate as a measure of involvement in studies focusing on intent to participate.

Hypothesis 3b: Relationship between the Zaichkowsky Scale and Behavioral Participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

This hypothesis was partially supported. The two-dimension Zaichkowsky scale produced a significant relationship for individual running sport, but not for team auto sport (Table 5-1).

These regressions suggest that the two-dimension Zaichkowsky scale is appropriate in measuring

behavioral participation in individual sport, but is not appropriate for team sport. Within the individual sport regression, only the affective component was related to behavioral participation suggesting that the use of cognitive dimension may not be appropriate as a measure for involvement as related to behavioral participation.

Hypothesis 4a: Relationship between Laurent and Kapferer Scale and Intent to Participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Hypothesis 4a was partially supported. The multidimensional scale held a statistically significant relationship with intent to participate among individual ultrarunning sport athletes, but no significant relationship existed with team sport athletes (Table 5-1). These regressions suggest that the Laurent and Kapferer scale is appropriate to measure for intent to participate in individual sport, but not for team sport. Only the “pleasure” subscale proved to be significant within the individual sport regression, suggesting that the dimensions of sign value, importance, risk consequence and risk probability may not be appropriate as a measure of involvement as related to intent to participate.

Hypothesis 4b: Relationship between Laurent and Kapferer Scale and Behavioral Participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Hypothesis 4b was partially supported. The multidimensional scale held a statistically significant relationship with behavioral participation among rally car team sport participants, but did not test as significant for ultrarunning individual sport athletes (Table 5-1). These regressions suggest that the Laurent and Kapferer scale proves appropriate to measure behavioral participation in team sport, but not for individual sport. Only the “importance” subscale proved significant within the team sport regression, suggesting that the dimensions of pleasure, sign value, risk consequence and risk probability may not prove appropriate as a measure of involvement as related to behavioral participation.

Table 5-1. Involvement regressions for intention and behavior

	Intent		Behavior	
	Ultra	Rally	Ultra	Rally
Zaichkowsky	NS	SIG	SIG	NS
Cognitive		0.21	0.12	
Affective		-0.11	0.02	
Laurent & Kapferer	SIG	NS	NS	SIG
Importance	0.04			.24
Pleasure	0.18			.07
Risk consequence	-0.02			.04
Risk probability	0.09			.02
Sign value	-0.1			-.13

Hypothesis 5a: Laurent and Kapferer Scale will be more predictive than the Zaichkowsky Scale for intent to participate in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Hypothesis 5a was not supported. Fisher's Z test for independent R's showed no differential predictive validity between the Laurent and Kapferer scale, and the Zaichkowsky scale, regarding intention to participate. This suggests that the greater multidimensionality of the Laurent and Kapferer scale is not a benefit in predicting intention to participate. The two factor Zaichkowsky scale is equally appropriate for testing within the individual endurance sport and team motorsport communities, in those instances where regressions prove to be statistically significant.

Hypothesis 5b: Laurent and Kapferer Scale will be more predictive than the Zaichkowsky Scale for behavioral participation in (1) Ultrarunning (Individual sport) and (2) Team auto racing (Team sport)

Hypothesis 5b was not supported. Fisher's z test for independent R's showed no differential predictive validity between the Laurent and Kapferer scale, and the Zaichkowsky scale, regarding behavioral participation. This suggests that the greater multidimensionality of the Laurent and Kapferer scale is not a benefit in predicting intention to participate. The two

factor Zaichkowsky scale is equally appropriate for testing within the individual endurance sport and team motorsport communities in those instances where regressions prove to be statistically significant.

Hypothesis 6: Cognitive Experience for Team auto racing (Team sport) will be greater than Cognitive Experience for Ultrarunning (Individual Sport)

Hypothesis 6 was not supported. Ultrarunning individual sport athletes had a greater cognitive experience than did team auto racing athletes. Social cognitive theory and social identity theory posit that cognitive activity is higher within groups, organizations and teams. This study suggests that cognitive processing among individual sport athletes is developed through the definition of “event” as the group or team. Ultrarunning athletes may take a broader view of their involvement among other competitors, the terrain and event logistics. The complexities presented may be as great, or greater, than those experienced by team sport athletes. The perspective of individual athlete to event will be a fruitful area for future research.

Hypothesis 7: Affective Experience for Ultrarunning (Individual sport) will be greater than Affective Experience for Team auto racing (Team Sport).

Hypothesis 7 was partially supported. Analysis of variance for individual and team sport groups was significant when testing for both the affective dimension of the Zaichkowsky scale and the affective subscales of the Laurent and Kapferer scale. Ultrarunners held a higher affective mean score over rally car racers within the Laurent and Kapferer affective measures, but ultrarunners held a lower affective mean score than rally car racers within the Zaichkowsky affective measures. Since the Laurent and Kapferer analysis test held a strong effect size (representing the influence of the independent variable), the affective dimensions of that multidimensional scale prove most appropriate for testing affective processing within individual sport participant research.

Hypothesis 8: Group Identification for Team auto racing (Team Sport) will be greater than Group Identification for Ultrarunning (Individual sport)

Hypothesis 8 was not supported. Analysis of variance between individual and team sport groups was significant, but the group identification was not as predicted. The group identity mean score was lower for team sport athletes than for individual sport athletes. Despite a strong effect size, the Laurent and Kapferer subscale of sign value may not prove to be an adequate measure for group identity. Sign value items within the multidimensional scale were the only indicators available to test for group identity within the sample groups. Sign value subscale items are related to “tells a lot” about the participant, and about other participants in the same sport group. The mental processing, or affective response, to these subscale items may be varied in nature, or only partially applicable to a sport setting.

Implications and Limitations

General

The study and comparison of individual and team sport athletes raises questions about the application of results to advertising initiatives for sport and event communicators. The unidimensional scale did not retain a single factor solution and exploratory factor analysis led to the confirmation of cognitive and affective subscales within the scale. Factors represent cognitive and affective dimensions that can be used to understand athlete involvement beyond the sum score currently used within the unidimensional scale.

The multidimensional involvement scale was supported with a five factor solution as intended, within both study groups. Further examination of respondent scores within subscales would determine how practitioners might approach messaging within the multidimensional construct. For example, respondents who scored exceptionally high on the importance subscale

would be influenced by messaging that focused on the prestige and accolades associated with a specific event.

Involvement dimensions within the multidimensional and unidimensional scales were hypothesized to be predictors of participation for individual and team sport athletes.

Involvement and participation scores for both study groups were exceptionally high with little variation, which created results opposed to the predictions. Hypotheses were only partially supported in each regression test between involvement and participation.

Though it did not support the hypotheses, individual sport athletes demonstrated higher cognition and group identification scores. This study would indicate that individual sport athletes may find a “team” relationship with other participants at the event. Though the association among group athletes would not be as formal or defined, participant sport athletes may identify themselves among an alliance of individuals who share the same passions and sport lifestyles.

Practical Implications

This study would lead marketers to utilize a blended cognitive and affective marketing approach for individual sport athletes. Cognition, as operationalized by Zaichkowsky and Laurent and Kapferer, represents important and relevance with a response based on risk approximation. Messaging related to this definition of cognition would prove valid for influencing athletes within an endurance sport audience. Individual sport athletes also responded with a higher mean to Laurent and Kapferer’s affective measures, which incorporate sign value and pleasure. Examples of endurance sports that would respond to this form of sport communication are cycling, running, kayak racing, mountaineering, cross country skiing, distance swimming, triathlons and adventure racing.

Individual sport athletes will connect to information presented on the magnitude of the event (importance) and possible advantages to participation, such as the prominence of the event among top competitors (relevance). A description of event terrain (risk probability and consequence), available food and fluids on the course, would also prove to be appropriate.

Individual athletes also scored a higher mean for group identity than did team sport athletes. Advertising featuring the elements of sign value (the symbolic value of the association) would promote a sense of community for this specified group. A predominant group identity among individual athletes would suggest that advertising should exemplify a positive association with the fraternity of athletes competing in the event. Advertising messages could imply that athletes who identify with participation in the event will experience increased well-being and higher satisfaction. Success can be identified as a positive shared experience with other competitors.

The prediction that team sport athletes will use more cognition within the involvement experience was not supported. According to the results of this study, practitioners marketing to team sport athletes should consider affective messaging as indicated within the Zaichkowsky scale, while group affiliation can be minimized.

Predominant dimensions within the regressions of unidimensional and multidimensional scales as predictors of participation would give indications of how to form communication messages. Rally car team responded well to cognition and importance. Ultrarunning individual athletes had a strong respond to pleasure. Athletes that scored high on the pleasure subscale might be influenced by advertising that promoted the amenities, and post-event party, available at a specific sport event. Athletes that scored high on the importance subscale would respond

well to messaging that highlighted the elite nature of an event, or the long-standing tradition of an event as part of a national championship series.

The fascination and excitement that participants related to in motorsport would be appropriate for the higher affective scores for rally car athletes. The appeal of motor racing could be messaged through visual stimulation featuring speed and color. Affective processing with the Zaichkowsky scale also incorporates “interesting.” Images depicting the technology side of the sport could produce an emotional attraction that would be relevant to rally car participants. Examples of motorsports that would respond to this form of sport communication are sprint cars, drag racing, powerboats, motorcycles, stock cars and open-wheel cars (Formula One and Indy Racing League machines).

Limitations

Many of the hypotheses developed for this study were not supported, or were partially supported. It should be noted that sample groups represented a unique cadre of competitors within the individual and team sport communities, which may curtail external validity and the ability to generalize to a larger population. Ultradistance runners, defined by the nature of their sport, must be highly committed in order to participate. The rigors of training and preparation are exceptional and may account for high involvement and participation scores and lack of variance among the sample group (Figures 5-2 and 5-3). Unlike a golfer who may play the game once a month yet claim to be involved, ultrarunners define active sport by adhering to an almost daily routine of exercise and related fitness activities.

Though individual in nature, ultrarunning athletes compete in a complex environment over long distances and times. The need to cognitively process issues such as food intake, injury or dehydration could account for a cognitive response in what might otherwise be an affective setting.

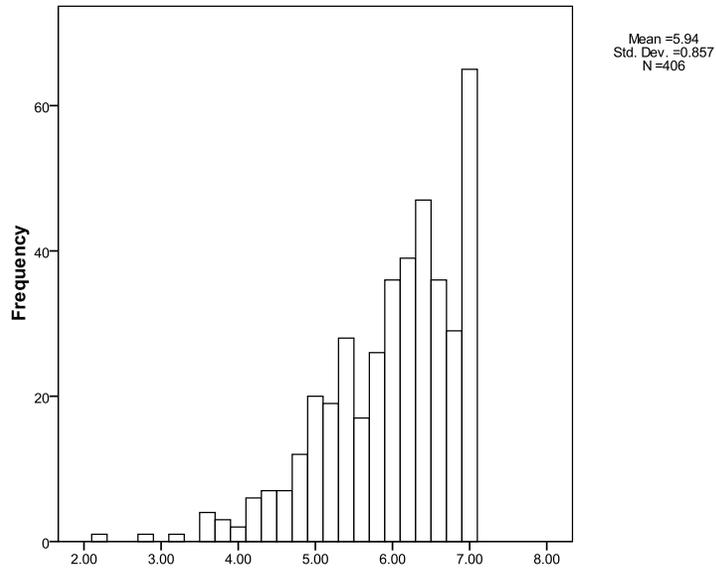


Figure 5-1. Ultrarunning individual sport involvement (Zaichkowsky scale)

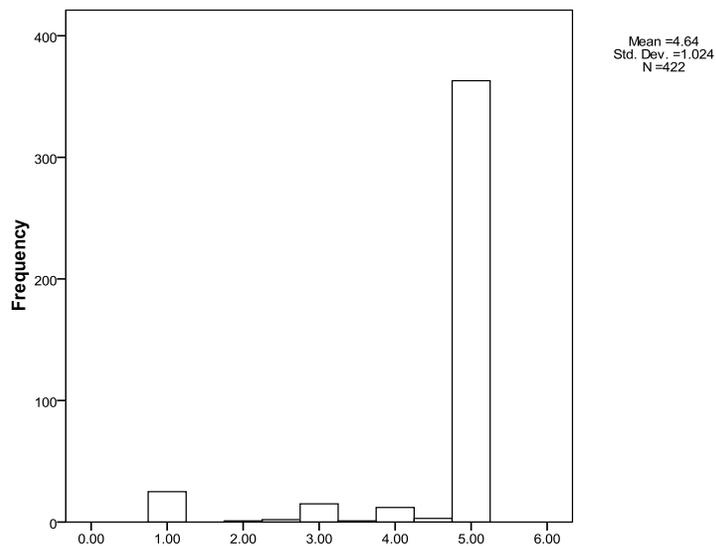


Figure 5-2. Ultrarunning individual sport intent to participate

Choosing motorsport athletes for a team sport sample group also presented limitations. Though too prevalent to be dismissed as a viable choice for research, the dynamics of motorsport are distinctive. Success is based on the performance of each team contributor, where fractions of a second incurred during a racing pit stop can be the difference between winning an event and

falling from contention. Though theory suggests that athletes within organizations must have a cognitive interaction to be successful, affective involvement may be heightened within the team motorsport context based on the performance of the driver. An individual component exists within the team sport context.

Future Research

The testing and application of modified involvement scales, designed specifically for participant sport athletes, could prove beneficial in future research. Scholars in fields related to sport have developed scales for sport fans, but for the most part precluded specific scale items for participant athletes. Scales used in this study were developed for product involvement and advertising response and have limited applicability to the participant sport experience.

The interrelationship of the Zaichkowsky and Laurent and Kapferer scales also presents a future opportunity for research. Significant correlations exist between the involvement dimensions of the scales for ultrarunning athletes (Table 5-2). The strongest positive correlation, $r = .65$, $n = 406$, $p = .00$ was represented by the affective and cognitive dimensions within the Zaichkowsky scale. The pleasure and importance subscales, $r = .54$, $n = 416$, $p = .00$, within the Laurent and Kapferer scale, and

Table 5-2. Correlation matrix for involvement dimensions

Variable	importance	pleasure	risk consequence	risk probability	sign value	affective	cognitive
importance	-	.54*	-0.03	.35*	.43*	.35*	.47*
pleasure	.54*	-	-0.07	.27*	.43*	.42*	.39*
risk consequence	-0.02	-0.07	-	0.07	0.06	-.152*	-.12
risk probability	.35*	.27*	0.07	-	.24*	0.07	.13*
sign value	.43*	.43*	0.06	.24*	-	.20*	.42*
affective	.35*	.42*	-.15	0.07	.20*	-	.65*
cognitive	.47*	.40*	-.12	.13*	.42*	.65*	-

*. Correlation is significant at the 0.01 level (2-tailed).

importance and cognition dimensions between the two scales, $r = .47$, $n = 411$, $p = .00$ also held a medium to large effect size.

Qualitative research with participant athletes could provide a fruitful area of exploration and would serve as a foundation for scale development. Trends identified within qualitative interviews might indicate antecedents' specific to sport involvement, which would be useful in creating items within multidimensional subscales. Other existing scale items could also be incorporated and tested. For example, the integration of job burnout scale items (Maslach & Jackson, 1981) could be incorporated and tested in a refined sport involvement scale.

A study of other associations or relationships between involvement and behavioral indicators may be practical for future applications. An example would be the study of involvement and its correlation to related sponsors associated with events. The dependent variable of sponsor awareness might offer a greater variation in response and present a higher opportunity for statistical significance with involvement measures. Regressions testing the relationship between involvement and media usage would also prove to be advantageous to event promoters and sponsors.

The complexities of team sports would allow for profiling related to specific team roles. Data extrapolated for drivers in a motorsports sample group could be compared to the involvement scores of crew chiefs and other support personnel. Similarly, scores related to team captains in soccer, or pitchers in baseball, could also be extracted and studied for differences in involvement indicators over other members of the team. The cognitive and affective scores of specific team individuals may also vary over the role of each participant and the responsibility of the participant within the sport or team framework.

An opportunity exists to expand the study of individual and team sports to other study groups, where the potential for external validity will allow for generalization to other sport communities. Individual sports to be considered might be billiards, golf, or recreational fishing, where psychological and intellectual skills may be as predominant as physical ability. Team sports to be considered can include soccer and recreational softball. Another viable area of study for team sport research would be sample respondent groups from senior sports leagues. A study of involvement and the influence of age would prove enlightening.

APPENDIX A
INDIVIDUAL SPORT INVOLVEMENT SURVEY

The Inner Mind of Ultrarunning Athletes

Little is known about the behavioral aspects related to ultrarunning. The sport focuses on the physical side of athletic training, where injuries and dietary supplements dominate journalism and research. But unique to ultra endurance sport is the psychological component, allowing the mind to drive individuals forward in events that can take anywhere from 12 to 30 hours to compete; beyond that barrier are 5, 10 and even 30 day ultradistance races, where sleep deprivation and fatigue wreak havoc with the human body.

What is the mental and emotional composition of this stout group of adventurers, and what motivates them to compete?

The primary purpose of this study is to develop a measurement tool to benchmark the level of involvement in ultrarunning athletes, and then determine which antecedents are most prevalent in forming behavioral intentions towards attending ultrarunning events.

The sport is attracting a broad range of adventuresome athletes, and an enhanced understanding of the behaviors associated with ultrarunning will assist event organizers, personal coaches, and the media in communicating with this elite niche of competitors.

Informed Consent Protocol

Title: "Antecedents to behavior for ultrarunning athletes."

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study: The purpose of this study is to examine the behaviors of ultrarunning athletes, and determine the key indicators of involvement in ultra racing events.

What you will be asked to do in the study:

We have several questions we wish to answer regarding ultrarunning. We would like you to respond as completely as possible.

Time required:

Approximately 10 minutes

Risks and Benefits: There are no risks or benefits associated with this study.

Compensation:

There is no compensation associated with this study.

Confidentiality:

Your identity will remain anonymous. No names or other identifying information obtained will be associated with data or IP addresses, or emails will be saved.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Whom to contact if you have questions about the study:

Tom Mueller, PhD student, Department of Advertising, 2039-D Weimer Hall Gainesville, FL 32611, 352-273-1640.

Whom to contact about your rights as a research participant in the study:

IRB02 Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; phone 352-392-0433.

Please acknowledge the informed consent above by checking the appropriate box:

I agree.

I do not agree. I will not participate in this study.

How many years have you been ultrarunning? _____

What is the average number of miles you run each week? _____

What is the average number of days you run each week? _____

I have competed in a 50K (or longer) ultrarunning event in the past year.

Yes

No

How many ultrarunning events did you enter and participate in throughout 2007? _____

In the past year, approximately how much have you spent (travel, entry fees, equipment, etc.) participating in ultrarunning events? _____

Please check the appropriate boxes regarding the ultrarunning events you have participated in during the past year.

- 50K
- 50 mile
- 100K
- 100 mile
- 12-hour
- 24-hour
- Multi-day

How many miles did you travel (one way) to your last ultrarunning event? _____

In the next year, how likely is it that you will participate in an ultrarunning event?

- Very likely
- Somewhat likely
- Neutral
- Somewhat unlikely
- Very unlikely

It is my intention to participate in an ultrarunning event in the next year.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

In the next year I plan to participate in an ultrarunning event.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

What is your age (in years)? _____

Gender

- Male Female

What is your annual gross income? _____

What state do you reside in? _____

What is your highest level of education?

- High School
- College Degree
- Graduate Degree
- Doctorate

What is your marital status?

- Single
- Married
- Divorced
- Widowed
- Separated
- Cohabiting

Optimum nutrition is an essential component for successful ultrarunning event participation.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

How upset would you be if you were unable to participate in ultrarunning events?

- Not upset
- Somewhat upset
- Moderately upset
- Noticeably upset
- Extremely upset

How often do you read magazines devoted to ultrarunning?

- Never
- Seldom
- Sometimes
- Regularly
- Constantly

How often do you browse web sites devoted to ultrarunning?

- Never
- Seldom
- Sometimes
- Regularly
- Constantly

How do you perceive your skill level in ultrarunning?

- Very low
- Beginner
- Intermediate
- Accomplished runner
- Very high

Please consider the following statements, and choose the response that best depicts your opinion regarding the sport of ultrarunning.

When choosing to compete in ultrarunning events from among other activities I always feel confident that I will make the right choice.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Ultrarunning is important to me.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Ultrarunning never leaves me indifferent.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Competing in ultrarunning events gives a glimpse of the type of person I am.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Ultrarunning interests me a lot.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

When I compete in an ultrarunning event it is like giving a gift to myself.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

I really enjoy competing in ultrarunning events.

- Strongly disagree
- Somewhat disagree

- Neutral
- Somewhat agree
- Strongly agree

Whenever I compete in ultrarunning events I am confident that it is the right activity choice.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Being an ultrarunner tells a lot about me.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Competing in ultrarunning events is pleasurable.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

I get annoyed if I participate in an ultrarunning event, and it proved to be the wrong event choice.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

When I mistakenly prioritize an ultrarunning event from among other activities, it really matters to me.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

I can tell a lot about a person by whether or not they are ultrarunners.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

If, after I have competed in an ultrarunning event, my choice proved to be poor, I would be upset.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

It is complicated to choose ultrarunning events over other activities.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Please relate your experience with participation in ultrarunning events to the pairs of words below. Please check the number in each pair that best describes your opinion.

Participating in ultrarunning events is:

- 1. important 2 3 4 5 6 7. unimportant
- 1. boring 2 3 4 5 6 7. interesting
- 1. relevant 2 3 4 5 6 7. irrelevant
- 1. exciting 2 3 4 5 6 7. unexciting
- 1. means nothing 2 3 4 5 6 7. means a lot to me
- 1. appealing 2 3 4 5 6 7. unappealing
- 1. fascinating 2 3 4 5 6 7. mundane
- 1. worthless 2 3 4 5 6 7. valuable
- 1. involving 2 3 4 5 6 7. uninvolving
- 1. not needed 2 3 4 5 6 7. needed

Thank you for your participation. Click the "submit" button below and you are finished!

APPENDIX B
TEAM SPORT INVOLVEMENT SURVEY

The Inner Mind of Team Members in Rally Car Racing

Little is known about what makes rally car teams “tick” on a psychological level. The sport focuses on the performance of teams at regional and national rally car events. But unique to rally car competition is the relationships among team members over multiple days and across varying terrain and distances.

The primary purpose of this study is to measure the level of involvement among rally car team members and to determine what causes rally car enthusiasts to participate in rally car events.

Rally car racing is attracting a broad range of individuals. A more complete understanding of behaviors associated with rally car competition will assist event organizers, Rally America and the media in communicating and promoting the sport.

Informed Consent Protocol

Title: “Antecedents to behavior for rally car team athletes.”

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:

The purpose of this study is to examine the behaviors of rally car team athletes, and determine the key indicators of involvement in rally car racing events.

What you will be asked to do in the study:

We have several questions we wish to answer regarding rally car racing. We would like you to respond as completely as possible.

Time required:

Approximately 10 minutes

Risks and Benefits:

There are no risks or benefits associated with this study.

Compensation:

There is no compensation associated with this study.

Confidentiality:

Your identity will remain anonymous. No names or other identifying information obtained will be associated with data or IP addresses, or emails will be saved.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Whom to contact if you have questions about the study:

Tom Mueller, PhD candidate, Department of Advertising, 2039-D Weimer Hall Gainesville, FL 32611, 352-273-1640.

Whom to contact about your rights as a research participant in the study:

IRB02 Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; phone 352-392-0433.

Please acknowledge the informed consent above by checking the appropriate box:

I agree.

I do not agree. I will not participate in this study.

How many years have you been rally car racing?

What is the average number of hours you commit to rally cars each week?

What is the average number of days you commit to rally cars each week?

I have been on a team that competed in at least one (1) rally car event in the past year.

Yes

No

Which of the following best describes how you participate in rally car racing? Choose one response only.

driver

navigator

mechanic

fabricator

marketing

sponsorship

media relations

team coordinator

event volunteer

sanctioning body official

Other: _____

How many rally car events did you participate in throughout 2008?

In the past year, approximately how much have you spent (travel, entry fees, equipment, etc.) participating in rally car events ?

Please check the appropriate boxes regarding the rally car events you have participated in during the past year.

- Regional rally events
- National rally events
- Rallycross
- TSD rallies
- Rally Sprints
- Superspecial style events (i.e. X Games)
- Hill Climbs

How many miles did you travel (one way) to your last rally car event?

In the next year, how likely is it that you will participate in a rally car event?

- Very likely
- Somewhat likely
- Neutral
- Somewhat unlikely
- Very unlikely

It is my intention to participate in a rally car event in the next year.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

In the next year I plan to participate in a rally car event.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

What is your age (in years)?

Gender

- Male Female

What is your annual gross income?

What state do you reside in?

What is your highest level of education?

- High School
- College Degree
- Graduate Degree
- Doctorate

What is your marital status?

- Single
- Married
- Divorced
- Widowed
- Separated
- Cohabiting

Optimum nutrition and physical training is an essential component for successful rally car event participation.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

How upset would you be if you were unable to participate in rally car events?

- Not upset
- Somewhat upset
- Moderately upset
- Noticeably upset
- Extremely upset

How often do you read magazines devoted to rally cars?

- Never
- Seldom
- Sometimes
- Regularly
- Constantly

How often do you browse web sites devoted to rally cars?

- Never
- Seldom
- Sometimes
- Regularly
- Constantly

How do you perceive your skill level in rally car team participation?

- Very low
- Beginner
- Intermediate
- Accomplished
- Very high

Please consider the following statements, and choose the response that best depicts your opinion regarding the sport of rally car racing.

When choosing to compete in rally car events from among other activities I always feel confident that I will make the right choice.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Rally car racing is important to me.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Rally car racing never leaves me indifferent.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Competing in rally car racing events gives a glimpse of the type of person I am.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Rally car racing interests me a lot.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

When I compete in a rally car racing event it is like giving a gift to myself.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

I really enjoy competing in rally car racing events.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Whenever I compete in rally car racing events I am confident that it is the right activity choice.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Being part of a rally car racing team tells a lot about me.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Competing in rally car racing events is pleasurable.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

I get annoyed if I participate in a rally car racing event, and it proved to be the wrong event choice.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

When I mistakenly prioritize a rally car racing event from among other activities, it really matters to me.

- Strongly disagree

- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

I can tell a lot about a person by whether or not they are part of a rally car racing team.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

If, after I have competed in a rally car racing event, my choice proved to be poor, I would be upset.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

It is complicated to choose rally car racing events over other activities.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

Please relate your experience with participation in rally car racing events to the pairs of words below. Please check the number in each pair that best describes your opinion.

Participating in rally car racing events is:

1. important 2 3 4 5 6 7. unimportant

1. boring 2 3 4 5 6 7. interesting

1. relevant 2 3 4 5 6 7. irrelevant

1. exciting 2 3 4 5 6 7. unexciting

1. means nothing 2 3 4 5 6 7. means a lot to me

1. appealing 2 3 4 5 6 7. unappealing

1. fascinating 2 3 4 5 6 7. mundane

1. worthless 2 3 4 5 6 7. valuable

1. involving 2 3 4 5 6 7. uninvolving

1. not needed 2 3 4 5 6 7. needed

Thank you for your participation. Click the "submit" button below and you are finished!

APPENDIX C
 HAVITZ AND DIMANCHE'S ADAPTATION OF LAURENT AND KAPFERER'S
 INVOLVEMENT PROFILE (IP) SCALE (AS APPLIED TO ULTRARUNNING
 PARTICIPATION)*

Component	Item
Importance 1:	Ultrarunning is important to me.
Importance 2:	Ultrarunning never leaves me indifferent.
Importance 3:	Ultrarunning interests me a lot.
Pleasure 1:	When I compete in an ultrarunning event it is like giving a gift to myself.
Pleasure 2:	I really enjoy competing in ultrarunning events.
Pleasure 3:	Competing in ultrarunning events is pleasurable.
Risk consequence 1:	I get annoyed if I participate in an ultrarunning event, and it proved to be the wrong event choice.
Risk consequence 2:	When I mistakenly prioritize an ultrarunning event from among other activities, it really matters to me.
Risk consequence 3:	If, after I have competed in an ultrarunning event, my choice proved to be poor, I would be upset.
Risk probability 1:	It is complicated to choose ultrarunning events over other activities.
Risk probability 2:	Whenever I compete in ultrarunning events I am confident that it is the right activity choice.
Risk probability 3:	When choosing to compete in ultrarunning events from among other activities I always feel confident that I will make the right choice.
Sign Value 1:	I can tell a lot about a person by whether or not they are ultrarunners.
Sign value 2:	Being an ultrarunner tells a lot about me.
Sign value 3:	Competing in ultrarunning events gives a glimpse of the type of person I am.

* items were randomly ordered throughout the second and final portion of the online survey. From Kerstetter and Kovich (1997).

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BIOGRAPHICAL SKETCH

Thomas S. Mueller was born in Milwaukee, Wisconsin. He was a graduate of Wausau West High School in Wausau, Wisconsin. He began his undergraduate education at the University of Wisconsin, Marathon Campus and completed his B.A. degree in journalism at the University of Wisconsin – Eau Claire.

Tom was highly interested in motorcycles and began his career as an associate editor at Cycle News East, a weekly tabloid newspaper in Atlanta, Georgia. He went on to form a publicity firm and contracted special events marketing with the Wrangler Brand and its promotions in NASCAR, Supercross motorcycle racing and professional rodeo. Tom later became marketing director for Mercury Marine's high performance division, then became executive director for the American Motorcyclist Association's professional racing subsidiary.

Tom returned to his entrepreneurial roots and created Sport Management, Inc., the agency he would own and operate for the next eight years. During that time Tom returned to academics and earned a MBA from Otterbein College in Westerville, Ohio. He would move on to become an account supervisor for Wasserman Media Group, where he managed the Nationwide Insurance mobile interactive tour and the Rally America motorsports account, where Tom integrated auto racing into the 2006 ESPN Summer X Games.

Tom began his Ph.D. program in the College of Journalism and Communications at the University of Florida in August, 2006. He was awarded the 2009 Outstanding Student Teaching Award and participated in the mass communications study abroad program in 2007, 2008 and 2009. After completing his Ph.D. program in 2009, Tom relocated to Boone, North Carolina, where he is an assistant professor in the Department of Communication at Appalachian State University.