International Journal of Motorsport Management

Volume 1 | Issue 1 Article 1

10-17-2011

Involvement and Rally Car Racing: The Significance of Importance, Sign Value and Pleasure in Motorsport Marketing

Thomas S. Mueller
Appalachian State University, muellerts@appstate.edu

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Abstract
Financial scrutiny in motorsport has led to competition among events for both fans and competitors. The study of involvement proves beneficial to sport managers who need effective communication that attracts athletes and teams. This study utilized confirmatory factor analysis and regression analysis to examine the relationship between involvement and participation among rally car teams. Social cognitive and social identity theories state a higher cognition is needed to perform successfully within team dynamics; the cognitive dimension of involvement proved to be a significant predictor of a rally racer's behaviorial participation. The affective dimensions of pleasure and sign value were significant predictors of a rally athlete's intention to participate.

Keywords
Involvement, motorsport, rallycar, social identity, social cognition

ABSTRACT

Financial scrutiny in motorsport has led to competition among events for both fans and competitors. The study of involvement proves beneficial to sport managers who need effective communication to attract athletes and teams. This study utilized confirmatory factor analysis and regression analysis to examine the relationship between involvement and participation among rally car auto teams. Social cognitive and social identity theories state a higher cognition is needed to perform successfully within team dynamics; cognitive involvement proved to be a significant predictor of a rally racer's intent to participate. The relationship between the dimension "importance" and behavioral intention was also significant.

INTRODUCTION

Sport as an entertainment product has become increasingly prominent in society. 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). Television broadcast rights, Internet spending and equity investment in teams and facilities are part of the new sport business model. From a marketing communications perspective, the emphasis on business in sport has resulted in increased sponsorship spending. In the U.S., for example, sport sponsorship spending for 2009 was $11.28 billion, indicating a mere one percent decline within a market that saw a 7.8 percent decrease in media spending (IEG, 2010). The top five sports advertisers spend over $700 million each year on messaging to sport enthusiasts.

As the business of sport grows financially and also broadens its scope among consumers, the field of sport communication is both essential and relevant for today's media communicators. While some aspects of the sport communication model, such as personal communication, are shared with a traditional mass communication model, other dimensions such as electronic and visual sport communication demonstrate specific technological advances in mass media. Sociological, sociocultural, political and legal elements are also relevant to sport within both traditional and emerging, i.e. social, media application (Pedersen, Miloch & Laucella, 2007).

Understanding the antecedents to participation among participant athletes is essential to the overall sport communication process. Sport managers need to craft messages that attract participation in events. Advertisers related to events must connect with participants in order to sell related products and services. And, participants choosing among a cluttered event landscape want the most pertinent communication based on their involvement characteristics.

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. A popular form of participant sport is motorsport competition. 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. Research has indicated that motorsport athletes possess a higher level of speed, muscle strength and endurance than a physically active non-motorsport control group (Backman, et al., 2005).

An example of motorsport athletes competing in a team context is rally car auto racing. 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 cognitive load in involvement processing. Rally sport is a timed motorsport competition where the objective is to get from one point to another in the shortest possible time. 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, 2011).

Each member of a rally team can either contribute to, or minimize, anxiety or stress as part of racing competition (Roberts & Kundrat, 1978). 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 focus in rally auto racing is on elapsed time and the overall finish against other teams. Personal performance has little relevance in determining success.

In order to study and explore participation among team competitors, the measure of involvement proves valuable. In their 1991 study on recreation and tourist events, Dimanche, Havitz and Howard 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). Sport scholars have operationalized involvement to measure the level of connectedness, yet little research exists that examines involvement as a predictor of participation in motorsport.

In his Hierarchy of Effects model, Ray (1973) posited 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 is defined as a change in behavioral intention or an actual change in behavior. This study will test the relationship of involvement with intention and behavioral participation among rally car athletes.

Involvement has also been tested as an appropriate measure in sport participant research. Havitz and Dimanche (1990) applied Laurent and Kapferer's (1985) measurement scale to participants in international track and field competition and confirmed both reliability and validity within the construct of leisure activities. Laurent and Kapferer 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 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.

H1: The Laurent and Kapferer scale will remain multidimensional (perceived importance, perceived sign value, perceived pleasure value, perceived risk of negative consequences and perceived risk of making a mistake) within rally car team athlete profiles.

H2: A significant relationship will exist between the Laurent and Kapferer Scale and intent to participate in rally car athletes.

H3: A significant relationship will exist between the Laurent and Kapferer Scale and behavioral participation in rally car athletes.

Social identity and social cognition theories have supported the relevance of cognition within the construct of team participation. Therefore,

H4: The cognitive dimensions of the Laurent and Kapferer scale will be greater predictors of participation than will the affective dimensions of the scale.

COGNITION AND TEAMS

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).

Eccles and Tenenbaum's (2004) social-cognitive psychological approach supports the premise that team members perform differently than individual competitors, and rely on cognition to perform. 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.

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.

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. Eccles and Tenenbaum (2004) 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. 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. While knowledge and cognition clearly affect the individual performer, team performance must incorporate coordination, which introduces additional cognition requirements for team members.

Cognitive stress in team sport is also magnified through a competitor's social identity to the team. 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. Social identity theory states individuals tend to classify themselves and others into various social categories, and that social identification within a collective group is a conceptual cognitive construct and is not necessarily associated with affective states. 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). Team competitors must adjust to an increased cognitive load to perform within the team construct.

METHODS

Respondents for this study were attained through a population sample of members from Rally America, the U.S. sanctioning body for rally auto racing. Respondents characterized a broad spectrum of participants, from entry-level racers to accomplished competitors. The rally car survey was distributed by email to 850 motorsport athletes. The sample consisted of 271 useable responses, which constituted a 31.8% response rate.

This study measured participation in two ways. One was an "intention" measure and the other was a "behavioral" measure. The items used to measure "intention" were "In the next year, how likely is it that you will participate in a rally car event?" with "It is my intention to

participate in a rally car event in the next year" and "In the next year I plan to participate in a rally car event." (K. Kaplanidou, personal communication, June 10, 2008). The items used endpoints strongly disagree and strongly agree within a 5-point scale.

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 the behavioral participation indicator of average hours per day.

The questionnaire for this study was disseminated using a web-based survey tool. The survey was divided into seven sections, which included a general introduction to the rally car racing, informed consent protocol and opt-in option, intention to participate items, behavioral indicator items, demographic items and multidimensional scale items. 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.

Participant age for rally car 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 (Table 1). The most frequently reported position on the team was driver (N=144) followed by navigator (N=93).

Table 1. Descriptive indicators for rally car athletes

Mean age	37.88
Male %	85.9
Female %	12.4
Average hours per week	9.79
Average days per week	1.93
Number of events 2008	4.82
Years competing	9.35

RESULTS

H1 stated that the Laurent and Kapferer scale would retain its multidimensional construct within the rally car population. The scale was tested using 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 Laurent and Kapferer scale. A test for goodness-of-fit (GFI) of the proposed factor solution determined how covariances and correlations of the observed model are predicted by the estimated model (Hair, et al., 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 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).

The five dimension solution was appropriate (Figure 1) for data related to rally team athletes (χ^2=208.12; df = 80; CMIN/DF = 2.60; RMR=.07, GFI=.90). H1 was supported.

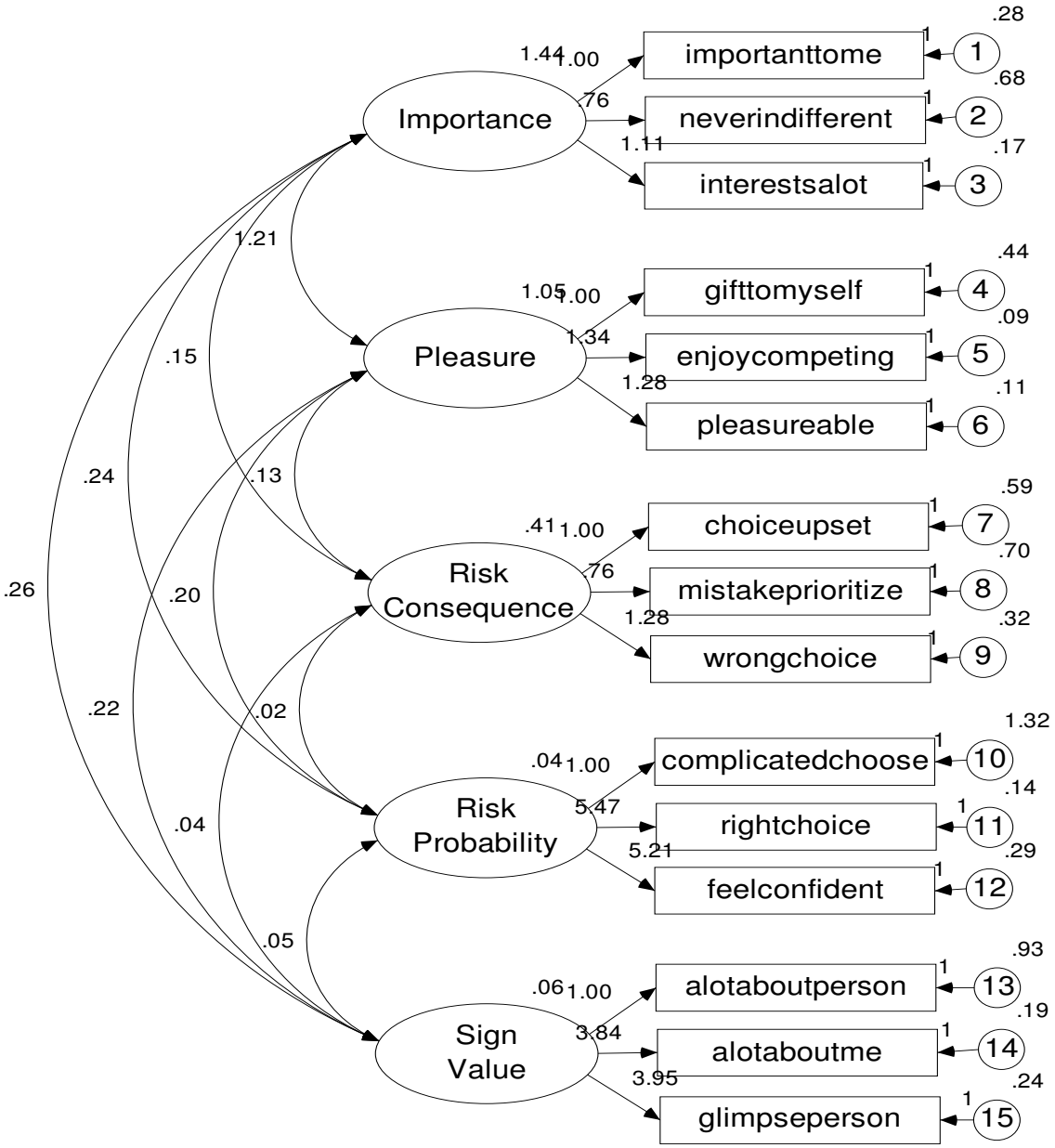

Figure 1. Confirmatory fit of rally data to Laurent and Kapferer's five dimension involvement scale

H2 stated that a significant relationship would exist between involvement as measured through the Laurent and Kapferer scale and intent to participate. Standard multiple regression was used to assess the ability of the dimensions of involvement (Importance, Risk Probability, Risk Consequence, Sign Value and Pleasure) to predict intention to participate (the grand mean

of the three intention items). The regression (R^2 = .04, F = 2.91, p = .01) was significant (Table 2). In the final model, two involvement dimensions made significant unique contribution to the prediction of intent to participate. "Sign value" held a standardized coefficient of .11 (p = .05) and "Pleasure" held a standardized coefficient of .16 (p = .00). H2 was supported.

Table 2. Regression of Laurent and Kapferer subscales on intention to participate

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.40	.55		6.24	.00
	importance	.02	.11	.02	.24	.81
	pleasure	.26	.10	.16	2.61	.00
	risk consequence	-.04	.06	-.03	-.68	.50
	risk probability	.18	.18	.08	1.56	.12
	sign value	-.15	.08	.08	-1.92	.05

Dependent: Grand mean of participation items. Independent: Sign Value, Risk Probability, Risk Consequence, Pleasure, Importance R = .19, F = 2.91, p=.01, n = 261

H3 stated that a significant relationship would exist between involvement as measured through the Laurent and Kapferer scale and behavioral participation. Multiple regressions were used to test for a relationship between the five Laurent and Kapferer subscales as independent variables and behavioral participation (average hours per day invested in auto racing) as the dependent variable. The multiple regression was significant (R = .24, F = 2.61, p=.03) (Table 3). The final model indicated that "importance" was the unique significant predictor of behavior, with a standardized coefficient of .24 (p = .04). H3 was supported.

Table 3. Regression of Laurent and Kapferer subscales on behavioral participation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.44	1.61		.89	.37
	importance	1.03	.51	.24	2.04	.04
	pleasure	.22	.49	.07	.44	.66
	risk consequence	.19	.35	.04	.56	.58
	risk probability	.07	.54	.02	.13	.9
	sign value	-.64	.52	-.13	-1.25	.21

Dependent: Hour/day average. Independent: Sign Value, Risk Probability, Risk Consequence, Pleasure, Importance R = .24, F = 2.61, p=.03, n = 261

Based on social cognition and social identity theories, H4 posited that the cognitive dimensions of the Laurent and Kapferer scale would be greater predictors of participation than would the affective dimensions. Laurent and Kapferer (1985) identified sign value and pleasure as affective, stating that when one of these facets is present, consumers engage in decisions based on feeling. The affective dimensions of sign value and pleasure were significant predictors of rally team intention to participate, while the cognitive dimension of importance was the significant predictor of behavioral participation (Table 4). H4 was partially supported.

Table 4. Standardized coefficients of involvement dimensions for rally car athlete intention and behavior (* significant dimension)

	Intention	Behavior
Importance	.02	**.24***
Pleasure	**.16***	.07
Risk consequence	-.03	.04

Risk probability	.08	.02
Sign value	**.08***	-.13

DISCUSSION

Sport organizers, sponsors, product marketers and media communicators are striving to find new and competitive alternatives for communicating with motorsport athletes. A weakened economy and reduction in sponsorship revenues has forced athletes to make selective choices regarding their level of competition and number of events. This highly scrutinized marketplace demands targeted messaging that attracts racers to specific sport events and influences them to buy products and services related to those events. A deeper understanding of the facets of involvement proves advantageous.

This study indicates the cognitive dimension of importance is the unique significant indicator of rally car athletes' behavioral participation. The importance dimension, as operationalized by Laurent and Kapferer, capture "important to me," "never leaves me indifferent" and "interests me a lot." When utilized in a sport marketing application, rally car competitors would respond well to messaging that highlighted the elite nature of an event, the memorable characteristics of the event, or unique facts about the race that frame the magnitude of the event. Sport marketing professionals might also construct messages that reflect the importance of an event based on a projected number of fans and sponsors in attendance, relevance of the event based on heritage and history of the facility, value of the competition based on caliber of drivers and teams, promotion of high profile sponsors affiliated with the race, and the need to participate based on the event's points-paying affiliation to a regional or national championship.

Involvement related to the Laurent and Kapferer scale was also related to intention to participate. Contrary to theoretical hypothesizing, the affective dimensions of pleasure and sign value were the most significant predictors. Laurent and Kapferer operationalized sign value through three items that captured a respondent's perceptions of others in the sport and also of themselves as an integral part of the sport. Strong affective messaging to influence behavior might include associations with high profile drivers, the promotion of well structured sanctioning body operations, and camaraderie among competitors and special awards that will recognize top performers in each event.

The dimension of pleasure is defined as "giving a gift to myself" and the enjoyment of competition. Rally car entrants may be influenced by messaging that touts pre and post race activities, special incentives offered through the event, such as incentive apparel, and specifics related to course terrain, such as low sections on logging roads through lush forests. Imagery of pristine conditions for rally car racing will also engage the heightened affective senses associated with pleasure.

Tech-savvy competitors might best connect to messaging through facts about importance, relevance and value of rally car events in Facebook fan clubs or on Twitter feeds, two communication channels that can frame importance in a social media context.

LIMITATIONS

Choosing rally car athletes as representative of motorsport presented limitations. The sample group is composed of a unique cadre of competitors. Though too prevalent to be dismissed as a viable choice for research, the dynamics of rally racing are distinctive. Success is based on the performance of the driver as assisted by the navigator, while other forms of motorsport rely on the independence of the driver apart from team support. One similar example

of motorsport competition is offshore powerboat racing, where the boat's driver is assisted by a throttle and trim operator.

Though theory suggests that athletes within organizations must have cognitive interaction to be successful, cognition did not prove to be an exclusive predictor of participation. This unique motorsport may hold limited external validity. The ability to generalize to the larger population of motorsport including sprint cars, drag racing, powerboats, motorcycles, snowmobiles, all-terrain vehicles (ATVs), stock cars (NASCAR) and open-wheel cars (Formula One and IndyCar machines) may prove limited.

FUTURE DIRECTION

A study of additional associations between involvement and behavioral indicators may be practical for future applications. For example, the study of involvement and its relationship to sponsor affiliation would allow for specific predictors of sponsor awareness and product sales. Regressions testing the relationship between involvement and media usage would also prove to be advantageous to event promoters and sponsors.

The complexity of team sport allows for profiling related to specific internal and external team roles. Data extrapolated for drivers in a motorsports sample group could be compared to crew members, team marketing personnel, team transportation officials, and team members in a management capacity. Involvement scores for team individuals within specified roles may produce alternative involvement predictors as related to dependent variables.

An opportunity exists to expand the study of participant motorsport to other study groups, where the potential for external validity will allow for generalization to other sport communities. A viable area of study would be sample groups from senior motorsport leagues. A study of involvement regressions controlling for the influence of age would prove enlightening.

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