

## Investigating Cognitive and Emotive Measures Affiliated with Advertising Extreme Sports: An Analysis of Emotion, Attitude, Sport Involvement, and Sport Participation Intention

---

Woo-Young Lee, Choong-Hoon Lim and Paul M. Pedersen

*The development of the media and technology has facilitated the proliferation of extreme sports (e.g., sensation-seeking sports such as rock wall climbing) across various communication platforms. For example, millions of fans annually consume extreme sports (e.g., the X-Games) either as spectators at a live event or as viewers of content produced across ESPN global distribution channels (e.g., television, Internet, smart phones). However, the extreme sports fans' attitude formation through advertising has not been thoroughly examined in the academic field. Thus, the purpose of current study is to investigate how the level of personal involvement in the extreme sport influences emotions (i.e., pleasure and arousal) evoked by extreme sports advertising (i.e., artificial wall climbing) and how it influences consequent cognitive reactions (i.e., attitudes and intentions). In order to test the hypotheses, data were drawn from a convenience sample of 250 undergraduates from a large university located in the Mideast region of the United States. The results indicated that arousal is a significant function of personal involvement in the sport. Furthermore, both pleasure and arousal have significant effects on participants' attitudes toward extreme sport advertising. The theoretical and practical implications of the results are discussed, along with future directions for research.*

**Keywords:** extreme sport, advertising, involvement, emotion

### Introduction

---

The number of citizens in the United States who have become interested in extreme sports (e.g., hang-gliding, rock climbing) has increased over the past few years, particularly with the emergence of artificial climbing as one of the hottest trends in the industry. The terms extreme sports, action sports, adventure sports, or risky sports are often used interchangeably and involve a multitude of divergent activities (Allman, Mittelstaedt, Martin, & Goldenberg, 2009; Brymer, Downey, & Gray, 2009). The one representative characteristic for extreme sports (or any of the other similar terms) is the high

level of inherent danger which involves speed, height, physical exertion, and stunning stunts. In Tomlinson's (2004) segmentation of extreme sports, there are three categories based on the place being taken: air, land, and water. The extreme sport of artificial wall climbing – the focus of this study's investigation – is categorized as one of 18 land extreme sports (e.g., mountain biking, snowboarding, street luge). Artificial climbing walls found at many urban leisure facilities provide dynamic emotional experiences to consumers who are seeking mental stimulation (e.g., arousal). In order to satisfy consumers' needs related to such sports, leisure service providers strive to appeal to their emotions by employing the different elements of the marketing mix (e.g., advertising) in an effort to induce subsequent patronage (Shoham, Rose, & Kahle, 1998).

Although a great number of marketing and advertising scholars have investigated effective advertising strategies for many different types

---

*Paul M. Pedersen the Department of Kinesiology, Indiana University, Bloomington, Indiana, USA, Woo-Young Lee the Department of Kinesiology, University of Central Missouri, Warrensburg, Missouri, USA, Choong-Hoon Lim Indiana University, Bloomington, Indiana, USA.*

of service offerings (e.g., Hill, Blodgett, Baer, & Wakefield, 2004), only a few studies have focused exclusively on sport-related service facilities. Furthermore, little is known about the psychological factors that influence the emotions evoked by advertising. Therefore, the current study examined the role of consumer's psychology such as personal involvement and attitudes on sport and leisure consumption. Because of the rise in sport services and the increase in sport participants, understanding the mechanisms associated with effective advertising strategies will build the body of knowledge in this area and will assist sport marketers in targeting current or potential extreme sport consumers.

## **Literature Review**

---

Product involvement is a theoretical construct that has often been examined by advertising scholars (e.g., Zaichkowsky, 1994). The essential characteristic of product involvement - according to Celsi and Olson (1988) - is the perceived personal relevance that it offers a consumer. Petty and Cacioppo (1981) are credited with the introduction of elaboration likelihood model (ELM) theory and argued that in an advertising environment, individuals use either central route or peripheral route to process information (e.g., ad message). The one of main factors that determines either central or peripheral route is individuals' level of involvement with the product or service. For example, when individuals are highly involved with the product or service being promoted, they are more likely to use central route that require a great deal of thought, and thus are likely to preponderate under conditions that promote high elaboration. On the other hand, when people are less involved with the product or service, they are likely to use peripheral route that does not involve elaboration of the message extensive cognitive processing. Furthermore, previous research by scholars such as McGrath and Mahood (2004) has postulated that a person's level of involvement with a product significantly impacts the emotional arousal evoked by a commercial associated with that particular product.

Since the 1980's, researchers in the area of marketing (e.g., Gardner, 1985) have examined the emotional aspects of consumer behavior. Investigations - such as those by Holbrook and Batra (1987), Machleit and Eroglu (2000), and Steenkamp and Gielens (2003) - have found that advertisements, the retail environment, and the consumption of products and service can evoke emotions. For example, consumers' emotional responses have been used to investigate the influences of shopping experiences on their memories of the product (e.g., Coulter & Pinto, 1995; Janssens & De Pelsmacker, 2005; Stayman & Batra, 1991), on their decision-making processes (e.g., Chebat, Laroche, & Bandura, 1995; Mitchell & Olsen, 1981), and on their relationships to customer satisfaction (e.g., Bagozzi, Gopinath, & Nyer, 1999; Phillips & Baumgartner, 2002). Furthermore, emotional reactions can have an influence on attitudes toward advertisements (Dawson, Bloch, & Ridgway, 1990) and purchase intentions (Mehrabian & Russell, 1974).

Arousal theory suggests that every individual has a characteristic optimum stimulation level (OSL) or an optimum level of arousal (OLA) and those are one of major psychological motivations to be involved in risky behaviors (Raju, 1980; Zuckerman, 1988). This theory indicates that people try to seek or to reduce stimulation to maintain certain levels of arousal and thus, to pursue their pleasure (Steenkamp & Baumgartner, 1992; Zuckerman, 1979). For instance, Raju (1980) found that a high OLS person prefers ambiguous situations, risky situations, and innovative behaviors. Zuckerman (1988) also suggested that people seek out leisure experiences with the appropriate arousal potential. In the area of leisure and sport participation, Hirschman and Holbrook (1982) suggested that the sensory and emotive aspects of individuals' consumption experiences are crucial motivating factors affiliated with their leisure or sport involvement. Specifically, Arnould and Price (1993) argued that in high-risk sport participation (e.g., white water rafting) emotional arousal drives the participants' sport participation quests, drives the pleasure they receive from such participation, and drives the positive attitudes

they have toward such participation. Based on aforementioned literature, it is logical to deduce that 1) product involvement influences the emotional state evoked by advertisements and 2) the emotional state predicts attitudes toward the advertisements and thus, behavioral intentions. From this deductive logic, a model was hypothesized and tested in the current study by using a quasi-experimental research design.

## Method

---

Data were drawn from a convenience sample (n=224) of undergraduates enrolled at an institution of higher learning based in the United States. The subjects were students from a large university located in the Mideast region of the country. Participants' ages ranged from 18-to-41 years old. The mean age was 21.52, with a standard deviation of 2.93. Of the 224 participants, 67.9 % (n=152) were male and 32.1% (n = 72) were female. The majority of participants was Caucasian (n = 189, 84.4%), followed by Asian (n = 20, 8.9%) and AfricanAmerican (n = 8, 3.6%). A sizeable percentage, 46% (n = 103), reported having used an artificial climbing facility at least once. While there are numerous examples of extreme sports, the study used an artificial wall climbing facility to represent an advertisement (Ad) for extreme sport services. The Ad – created by an advertising agency to increase the realistic aspects – involved manipulations of a fictitious artificial wall climbing facility (i.e., Summit Wall Climbing Center). A fictitious site was used in order to minimize pre-existing knowledge due to prior exposure and familiarity and the Ad treatments were all in black-and-white in order to control for possible color effects. Data collection consisted of an initial phase (to gauge the reliability of the measurement instrument) and a final phase (to test the study's hypothesized model). Prior to the exposure to the advertisement manipulations, in an effort to ascertain antecedent variables, demographic factors as well as levels of sport involvement and interest were asked. In order to ascertain involvement and interest levels in wall climbing, the study employed Zaichowsky's (1994) Personal Involvement Inventory (PII). PII is suitable

measure of personal involvement, as it has often been used in other studies in advertising and media use.

After the Ad treatments, participants completed their cognitive and emotive responses related to their viewing the advertisements. The subjects' responses were ascertained through four measures. The first two measures were cognitive. Regarding the first cognitive measure (attitudes toward Ad [Aad]), the subjects' Aad was measured by a six-item semantic differential scale extracted from the Reaction Profile (RP) by Wells, Leavitt, and McConville (1971). The pairs included such items as dull/dynamic, unattractive/attractive, unappealing/appealing, bad/good, negative/positive, and not enjoyable/enjoyable on a 5-point scale and through the use of these semantic pairs the subjects were asked their overall attitude toward the tested advertisement. Regarding the second cognitive measure (future intentions [FI]), the subjects were asked to indicate a response concerning their planned involvement (or non-involvement) with the sport facility. Their responses were measured by a five-point semantic differential scale extracted from previous studies (e.g., Machleit & Wilson, 1988; MacKenzie, Lutz, & Belch, 1986) with items such as impossible/possible and unlikely/likely.

The second two measures were emotional in nature and were extracted from Mehrabian and Russell's (1974) the Pleasure-Arousal-Dominance (PAD) scale. Among other measures of emotion, the current study utilized the PAD as it is known to be a good measure in experiential consumption such as sport participation (Holbrook, Chestnut, Oliva, & Greenleaf, 1984). While the creators of the PAD postulated that there are three orthogonal emotional responses (pleasure, arousal, and dominance) to social and physical environments, later research suggested that the most influential dimensions were pleasure and arousal. This is particularly the case in advertising research, as detailed by Donovan, Rossiter, Marcolyn, and Nesdale (1982) and Sweeney and Wyber (2002). Thus, in accordance with previous research, for the emotional measures in this study only the

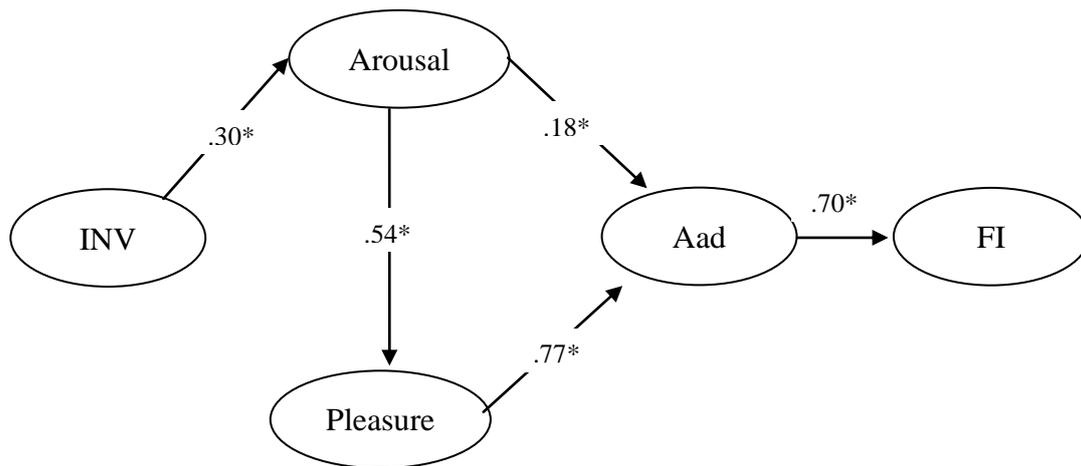
pleasure and arousal dimensions were used (Havlena& Holbrook, 1986). Regarding the first emotional measure (pleasure [P]), the subjects' pleasure was measured by their responses to four-paired antonyms such as annoyed/pleased, unhappy/happy, etc. Regarding the second emotional measure (arousal [A]), the subjects' arousal was measured by their responses to four-paired antonyms such as relaxed/stimulated, calm/excited, etc. With all of the eight pairs used, the subjects responded to the scales with scores of one to five (e.g., maximal displeasure to maximal pleasure).

**Results**

A confirmatory factor analysis (CFA) was applied to test the measurement model. The CFA was applied with the statistical software (i.e., AMOS 16) and used structural equation modeling (SEM) analysis. With the exception of four items, all loadings of the indicators for each construct were significant ( $p = .05$ ) and greater than Kline's (2005) suggested value of .60. In testing the reliability of the measures,

Cronbach's  $\alpha$  ranged from .79 for the pleasure measure to .89 for the attitude and intention measures and composite reliability scores ranged from .61 for the pleasure measure to .90 for the intention measure. The average variance extracted ranged from .42 for the involvement measure to .74 for the intention measure. The CFA results revealed an adequate fit based on the calculations associated with the chi-square per degree of freedom ratio ( $\chi^2/df$  ratio =  $475.83/237 = 2.01$ ), the comparative fit index (CFI = .92), and the root mean square error of approximation (RMSEA = .064). Furthermore, the model fit of the SEM test was found to be acceptable (i.e.,  $\chi^2/df$  ratio =  $506.08/243 = 2.08$ ; CFI = .92; and RMSEA = .066). In terms of the proposed model, all six coefficients were significant (please refer to Figure 1 for more detailed information). Overall, product involvement significantly influenced arousal (path coefficient = .30), which then influenced pleasure (path coefficient = .54). The attitudes toward the advertisements were determined by arousal (.18) and pleasure (.77). Finally, the attitude influenced intention (.70).

Figure 1. The proposed model.



Note: Aad = Attitude toward advertisement; FI = Future intention.

**Discussion, Conclusions, and Recommendations**

The purpose of this study was to examine the mechanisms of advertising strategies for participation in extreme sports. This research investigated how the level of personal

involvement influenced emotions evoked by extreme sports advertisements and consequent cognitive reactions. Through the use of three factors (i.e., involvement, emotion, cognition), the study provides an integrated model for advertising in extreme sports. The results of the study provide a deeper understanding of how consumers generate positive attitudes toward advertisements of certain sport facilities and how those advertisements may influence patronage intentions.

There are both theoretical and practical conclusions and implications based on the findings of this study. For instance, the results show that participants' involvement in a sport product is a significant predictor of emotions produced by exposure to an advertisement related to that sport product. The findings of the study also reveal that arousal and pleasure have a significant impact on attitudes and patronage intentions. Overall, pleasure – which had the greatest effect on attitudes toward the advertisements – played a significant role as a partial mediator between attitudes and arousal. One of many practical aspects associated with the results of this study is that sport marketers should take an emotional advertising strategy for their extreme sport facilities. Such a strategy – targeted at certain consumers or potential consumers (e.g., those who are sensation seeking) – could introduce these individuals to experiences (e.g., rock climbing) that had been previously unavailable or of which individuals were not aware.

The current study is grounded in existing advertising and marketing research in terms of its research objectives and the use of psychometrically sound measures. However, as with most social science research, this study has certain limitations. For example, in terms of generalizability, the study was conducted with a sample of college students from one region of the United States. Thus, the results of the study may not be generalizable to college students in other regions or countries. It is recommended that future studies use a non-college sample for better generalizability. Additional future recommendations regarding this study involve the need for further verification of its findings. It may be reasonable to assume that consumers'

cognitive and emotional responses to advertising vary depending on the type of product or service. In addition, the current study focused on the advertising for extreme sport which also requires the physical power and skills. Thus, the study results may differ if older consumers had been included. It may be fruitful for a future study to include age and gender factor in the data analysis. To determine if the findings hold, other dependent measures (e.g., recall) and the testing of different extreme sports services, advertising appeals, visual images, or media platforms (e.g., advertising on television) are merited and highly recommended.

## References

---

- Allman, T.L., Mittelstaedt, R.D., Martin, B., & Goldenberg, M. (2009). Exploring the motivations of BASE jumpers: Extreme sport enthusiasts. *Journal of Sport & Tourism*, 14(4), 229-247.
- Arnould, E.J., & Price, L.P. (1993). River magic: Extraordinary experience and the extended service encounter. *Journal of Consumer Research*, 20(2), 24-45.
- Bagozzi, R.P., Gopinath, M., & Nyer, P.U. (1999). The role of emotion in marketing. *Journal of the Academy of Marketing Science*, 27(2), 184-206.
- Brymer, E., Downey, G., & Gray, T. (2009). Extreme sports as a precursor to environmental sustainability. *Journal of Sport & Tourism*, 14(2), 193-204.
- Celsi, R., & Olson, J. (1988). The role of involvement in attention and comprehension processes. *Journal of Consumer Research*, 15(4), 210-224.
- Chebat, J., Laroche, M., & Bandura, D. (1995). Affect and memory in advertising: An empirical study of the compensatory processes. *Journal of Social Psychology*, 135(4), 425-437.

- Coulter, R.H., & Pinto, M.B. (1995). Guilt appeals in advertising: What are their effects? *Journal of Applied Psychology*, 80(6), 697-705.
- Dawson, S., Bloch, P.H., & Ridgway, N.M. (1990). Shopping motives, emotional states, and retail outcomes. *Journal of Retailing*, 66(4), 408-428.
- Donovan, R.J., Rossiter, J.R., Marcolyn, G., & Nesdale, A. (1997). Store atmosphere and purchasing behavior. *Journal of Retailing*, 70(3), 283-294.
- Gardner, P. (1985). Mood states and consumer behavior: A critical review. *Journal of Consumer Research*, 12(3), 281-300.
- Havlena, W.J., & Holbrook, M.B. (1986). [The varieties of consumption experience: Comparing two typologies of emotion in consumer behavior](#). *Journal of Consumer Research*, 13(3), 394-405.
- Hill, D.J., Blodgett, J., Baer, R., & Wakefield, K.L. (2004). [An investigation of visualization and documentation strategies in services advertising](#). *Journal of Service Research*, 7(2), 155-166.
- Hirschman, E.C., & Holbrook, M.B. (1982). [Hedonic consumption: Emerging concepts, methods and propositions](#). *Journal of Marketing*, 46(3), 92-101.
- Holbrook, M.B. & Batra, R. (1987). [Assessing the role of emotions as mediators of consumer responses to advertising](#). *Journal of Consumer Research*, 14(3), 404-420.
- Holbrook, M. B., Chestnut, R. W., Oliva, T. A., & Greenleaf, E. A. (1984). Play as a consumption experience: The roles of emotions, performance, and personality in the enjoyment of games. *Journal of Consumer Research*, 11, 728-739.
- Janssens, W., & De Pelsmacker, P. (2005). Advertising for new and existing brands: The impact of media context and type of advertisement. *Journal of Marketing Communications*, 11(2), 113-128.
- Kline, R.B. (2005). Principles and practices of structural equation modeling (2nd ed.). New York: Guilford.
- Machleit K., & Eroglu, S. (2000). Describing and measuring emotional response to shopping experience. *Journal of Business Research*, 49, 101-111.
- Machleit, K.A. & Wilson, R.D. (1988). Emotional feelings and attitudes toward advertisement: The role of brand familiarity and repetition. *Journal of Advertising*, 17(3), 27-35.
- MacKenzie, S.T., Lutz, R.J., & Belch, G.E. (1986). The role of attitude the ad as a mediator of advertising effectiveness: A test of competing explanations. *Journal of Marketing Research*, 23, 130-143.
- McGrath, J., & Mahood, C. (2004). The impact of arousing programming and product involvement on advertising effectiveness. *Journal of Current Issues & Research in Advertising*, 26(2), 41-52.
- Mehrabian, A., & Russell, J.A. (1974). The basic emotional impact of environments, *Perceptual and Motor Skills*, 38(1), 283-301.
- Mitchell, A., & Olson, J. (1981). Are product attribute beliefs the only mediator of advertising effects on brand attitude? *Journal of Marketing Research* 18, 318-332.
- Petty, R.E., & Cacioppo, J.T. (1986). Communication and persuasion: Central and peripheral routes to attitude change. New York: Springer-Verlag.
- Phillips D., & Baumgartner, H. (2002). The role of consumption emotions in the satisfaction response. *Journal of Consumer Psychology*, 12(3), 243-252.
- Raju, P.S. (1980). Optimum stimulation level: Its relationship to personality, demographics,

- and exploratory behavior. *Journal of Consumer Research*, 7(3), 272-282.
- Shoham, A., Gregory, M.R., & Kahle, L.R. (1998). Marketing of risky sports: From intention to action. *Journal of the Academy of Marketing Science*, 26(4), 307-321.
- Stayman, D., & Batra, R. (1991). Encoding retrieval of ad affect in memory. *Journal of Marketing Research*, 28, 232-239.
- Steenkamp, J. E., & Baumgartner, H. (1992). The role of optimum stimulation level in exploratory consumer behavior. *Journal of Consumer Research*, 19(3), 434-448.
- Steenkamp, J.E., & Gielens, K. (2003). [Consumer and market drivers of the trial probability of new consumer packaged goods.](#) *Journal of Consumer Research*, 30(3), 368-384.
- Sweeney, J.C., & Wyber, F. (2002). [The role of cognitions and emotions in the music-approach-avoidance behavior relationship.](#) *Journal of Services Marketing*, 16(1) 51-70.
- Tomlinson, J. (2004). *Extreme sports: In search of the ultimate thrill*. Ontario, Canada: Firefly.
- Wells, W.D., Leavitt, C., & McConville, M. (1971). A reaction profile for TV commercials. *Journal of Advertising Research*, 11(6), 11-17.
- Zaichkowsky, J.L. (1994). [The personal involvement inventory: Reduction, revision, and application to advertising.](#) *Journal of Advertising*, 23(4), 59-70.
- Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Lawrence Erlbaum.
- Zuckerman, M. (1988). *Behavior and biology: Research on sensation seeking and reactions to the media*. Hillsdale, NJ: Lawrence Erlbaum.