

**Influence of Intrinsic and Extrinsic Motivations on Consumption Behavior of Formula One Event Spectators: The Case of Shanghai Grand Prix**

*Suk-kyu Kim, University of Georgia*

*Kevin Byon (Advisor), University of Georgia*

*Chong Kim, Hanyang University*

*Jae-gu Yu, Hanyang University*

*James J. Zhang (Advisor), University of Georgia*

**Marketing  
Abstract 2013-215**

**Saturday, June 1, 2013  
9:20 AM**

**Poster  
(Ballroom)**

Formula One Grand Prix has evolved into a global sport that generates over \$4 billion per year (Bliss, 2012). The popularity of this sport is well reflected in the viewership as the Formula One events are the most widely watched event with nearly 600 million unique viewers per year. While being a city that hosts a Formula One Grand Prix is a highly coveted commission, paying the hosting fees can be daunting burden. Race hosting fees alone generated \$568 million for Formula One in 2010. For the cities that host these Formula One events, it was reported that host cities had a difficult time to make a profit. For example, an agreement was reached for a Grand Prix event to be held in Shanghai, China in 2004. To host this race, the Shanghai International Circuit was built at a cost of \$450 million. The building cost, along with race hosting fees and operating costs, put Shanghai in such a financial pitfall that the deficit cannot make off by the city until 2014 (Blitz, 2012). This circumstance has been seen in other hosting cities.

Major income sources for a Grand Prix event host city are ticket sales (which typically range from \$100 to \$2,000) and sponsorship fees. To a great extent, sponsorship income is a function of the size of live and televised event audience. Enhancing spectator involvement would apparently be necessary to boost revenue generations in both of these areas (Mullin, Hardy, & Sutton, 2007; Pease & Zhang, 2001; Trail & James, 2010). It would be most constructive for the event managers and marketers of the Formula One host city to have an in-depth understanding of the dynamic nature of spectator motivation for attending a Formula One event. Recent empirical studies have found the evidence that the motivation is one of the most important concepts that influence spectator consumption (Funk, Beaton, & Alexandris, 2012; Pease & Zhang, 2001; Trail, Fink, & Anderson, 2003; Wann, 1995). A majority of previous studies have been conducted by primarily relying upon multi-attributes aspects of motivation (Funk, Mahony, & Ridinger, 2002; Lough & Kim, 2004), which resulted in (a) identifying a plethora of dimensions (nearly 50 motive dimensions; Trail & James, 2010), (b) explaining a small portion of variance (between 10-20%) in sport consumption, and (c) inconsistent findings of salient motivation factors. To address these limitations, Funk et al., (2012) recently conducted a theory-based study using the Self-Determination Theory (Deci & Ryan, 1985) as a theoretical framework to examine the extent to which motivation factors explain various sport consumption behaviors. As a result, they found that over 60% of the variance could be explained in game attendance, media usage, and licensed merchandise purchase; apparently, incorporating multiple consumption variables in the study provided a more robust understanding of sport consumption behavior. Following Funk et al.'s (2012) suggestion, the current study was designed to examine spectator motivation on two behavioral outcomes, repurchase intentions and word-of-mouth referrals for Formula One Shanghai races.

In this study, spectator motivation was operationalized to have intrinsic and extrinsic motivation as suggested by the Self-Determination Theory (Deci & Ryan, 1985). Intrinsic motivation is the driving forces that "treat consumption activity as an end in itself;" whereas, extrinsic motivation "treats engagement in an activity as a vehicle to obtain an instrumental outcome, which is a means to an end" (Funk et al., 2012, p. 359).

Adopting a systematic random sampling procedure, spectators (N = 632) attending three Formula One races held in Shanghai responded to a survey form; of those, 60 were discarded due to having excessive missing values, resulting in 572 participants included in data analyses. The survey form contained three sections to assess spectator motivation, consumption behavior, and background information. The Spectator Motivation Scale (SMS, Pease & Zhang, 2001) was adopted, which had 19 items under four dimensions (i.e., Entertainment (4 items), Achievement Seeking (7 items), Catharsis (4 items), and Salubrious Effect (4 items)). Adopting the SMS were based on the following two considerations: (a) with appropriate modification, the scale contains motivation items that are

## 2013 North American Society for Sport Management Conference (NASSM 2013)

relevant to Formula One races and (b) the dimensions in SMS are of intrinsic and extrinsic motivations characteristics that are consistent with the concept of the Self-Determination Theory. To further illustrate, items within Achievement Seeking and Catharsis factors represent intrinsic motivation, and items representing Entertainment and Salubrious Effects reflect extrinsic motivation. Three items of Repurchase Intentions were adapted from Han and Ryu (2009) and three items measuring Word-of-Mouth referrals were adapted from the indications of two previous studies (i.e., Lee, Lee, & Lee, 2005; Zeithaml, Berry, & Parasuraman, 1996). Additionally, demographic information variables were included in the survey form, solely for sample description purpose.

Procedures in the SPSS 20.0 were utilized to calculate descriptive statistics and examine normality of variables. A confirmatory factor analysis (CFA) was conducted to examine psychometric properties of the measures, and a structural equation modeling (SEM) was employed to investigate the relationships between the spectator motivation and consumption behavior factors. To examine the overall model fit, several fit indexes were utilized, including  $\chi^2$ ,  $\chi^2/df$ , CFI, RMSEA, and SRMR. Two tests of reliability were employed that included composite reliability (CR) and average variance extracted (AVE). The thresholds of .70 and .50 values were adopted to determine CR and AVE, respectively (Bagozzi & Yi, 1988; Fornell & Larcker, 1981). Convergent validity was evaluated via factor loadings, and discriminant validity was tested via the Fornell and Larcker's (1981) method, which compare squared correlation between any of two latent constructs with their AVE values. Upon the confirmation of the measurement model, a SEM was conducted to examine the relationship that intrinsic and extrinsic motivations had with sport consumption behavior variables. The same fit index criteria were employed to examine the structural model as with the measurement model.

The CFA revealed that overall measurement model fit to the data well ( $\chi^2 = 535.04$ ,  $p < .001$ ,  $\chi^2/df = 3.67$ , CFI = .94, RMSEA = .068, 90% CI = .062-.075, and SRMR = .053). All of the values of CR (from .83 to .91) and AVE (from .56 to .61) were well above the recommended cut-off criteria, indicating that the items within the measurement model were reliable. All factor loadings were statistically significant ( $p < .001$ ) and were greater than the suggested standard of .707 (Anderson & Gerbing, 1988), ranging from .74 to .82 and indicating a good convergent validity. For discriminant validity, it was found that none of the squared correlation was greater than any of the AVE value in the measurement model, which was a good evidence for discriminant validity. Overall model fit for the structural model showed good data fit ( $\chi^2 = 1010.27$ ,  $p < .001$ ,  $\chi^2/df = 3.55$ , CFI = .92, RMSEA = .067, 90% CI = .062-.071, and SRMR = .079). Based on the SEM results, Salubrious Effect ( $\beta = .17$ ,  $p < .001$ ) and Achievement Seeking ( $\beta = .44$ ,  $p < .001$ ) were found to be positively related Repurchase Intentions. The two motivation dimensions explained a total of 23% variance in Repurchase Intentions. The SEM further revealed that Entertainment ( $\beta = .22$ ,  $p < .001$ ), Achievement Seeking ( $\beta = .33$ ,  $p < .001$ ), and Catharsis ( $\beta = .15$ ,  $p < .001$ ) were positively associated with Word-of-Mouth referrals. The combined three dimensions accounted for 33% of the variance in Word-of-Mouth referrals.

Overall, the findings of the current study lend support to the general notion that motivation is an important predictor of sport consumption behavior (Funk et al., 2012; Pease & Zhang, 2001; Trail et al. 2003). Through this study, this speculation was extended to the spectators of the Formula One races. By extending the applicability of the Self-Determination Theory to a mega sport event, this investigation and its research findings also represented an important effort for theory testing. Event managers and marketers of Formula One host cities need to pay particular attention to the intrinsic and extrinsic motivation factors that were identified in this study, and develop effective promotional procedures to elevate and maintain a high level of spectator motivations, in order to generate adequate return-on-investment for hosting the event.