A Study on Cognitive-Affective Model of Sport Consumer Satisfaction in the Event of Taipei 101 Run-Up Race

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Abstract

This present study was designed to investigate the cognitive-affective model of sport consumer satisfaction using a periodically occurring sporting event in Taiwan. Literature suggested that affective responses can be either mediators or independent variables in the cognitive satisfaction model. In the current study, 366 usable questionnaires were collected with convenience sampling in the yearly held run-up race organized by the Marathon Organization in the City of Taipei, Taiwan in November 2007. Results revealed that the model with cognitive (disconfirmation) and affective elements (pleasure and arousal) as independent variables along with a direct relationship between disconfirmation and loyalty possessed the best model fit among the three proposed competitive models. Furthermore, disconfirmation and arousal played an important role in determining satisfaction while pleasure did not. Finally, managerial implications were provided based on this current study.

Introduction

Consumer satisfaction has been one of the most important determinants of company performance that attracts the most attention in services marketing literature (Caro & Garcia, 2007b). An increasing number of studies in sport management have focused on consumer satisfaction as well (Murray & Howat, 2002; Van Leeuwen, Quick & Daniel, 2002). Most of the studies, however, concentrated on the category of season-based sport events; more specifically, sport services or game attendance at sport centers or a stadium. Compared to season-based sport events, limited studies have been directed at periodic reoccurring sport events. Since season-based sport events are different from the periodic reoccurring sport events, research specifically investigating periodic reoccurring sport events is needed. Additionally, popular periodic reoccurring sport events, such as New York Marathon, generated 6 million dollars in terms of net profits in 2007 (Kaplan & Lefton, 2008). As a result, conducting research on periodic reoccurring sport events warrants sport management researcher’s attention from either a managerial or academic perspective.

Caro and Garcia (2007a; 2007b) investigated consumer satisfaction in a reoccurring popular long distance race in Spain based on the cognitive-affective model of consumer satisfaction. In Caro and Garcia’s study, a model building exercise, in which
three competitive models were evaluated, was performed in order to get a more thorough understanding of participant’s satisfaction process. However, Caro and Garcia’s study was an evaluation of the relationships among several relevant constructs associated with satisfaction in a single periodic reoccurring sport event in the European context. Analysis of the relationships among the relevant constructs regarding satisfaction in a periodic reoccurring sport event in Taiwan is still an untapped area. Moreover, Caro and Garcia addressed that replication is desirable to provide additional support to the final model they developed. Based upon the preceding reasoning, therefore, it warrants sport management researcher’s efforts to investigate the cognitive-affective model of participant’s satisfaction in a periodic reoccurring sport event in different contexts and settings.

According to the conceptualization of the satisfaction process presented by Mano and Oliver (1993), cognitive and affective elements are antecedents of satisfaction, and consumer loyalty is a consequence of satisfaction. As a result, the current study was designed to examine the cognitive-affective model of sport consumer satisfaction in the Taipei 101 Run-Up Race organized by the Marathon Organization in Taipei, Taiwan in November 2007. More specifically, the present study was undertaken to investigate the cognitive–affective satisfaction model from the three competing models derived from the literature and to explore the relationships among the constructs that form the satisfaction model.

Literature Review

Theoretical Background

Consumer satisfaction has been a popular research topic given its potential impact on behavioral intentions (Cronin, Brady, & Hult, 2000). The expectancy disconfirmation model proposed by Oliver (1980) was the most well-known conceptualization among all the models associated with satisfaction literature. The expectancy disconfirmation model suggested that satisfaction depends on a comparison between pre-purchase expectations (i.e., the expectations towards a product or service before purchase or consumption) and consumption outcomes (the actual experience towards a product or service after purchase or consumption). The comparison results in three possible outcomes: confirmation, positive disconfirmation, and negative disconfirmation. Confirmation refers to the
equality between pre-purchase expectations and consumption outcomes. Positive disconfirmation occurs when consumption outcomes outperform pre-purchase expectations while negative disconfirmation takes place when pre-purchase expectations are higher than consumption outcomes. Oliver noted that positive disconfirmation and confirmation would result in consumer satisfaction whereas negative disconfirmation leads to consumer dissatisfaction. This conceptualization focused mainly on the cognitive approach, which has dominated the satisfaction literature (i.e., most literature usually modeled satisfaction in a cognitive manner by utilizing the outcome of a comparison between expectations and perceived performance) (Wirtz & Bateson, 1999).

Focusing solely on the cognitive aspect, however, might be insufficient in explaining satisfaction. Recently, affective responses were included in the conceptualizations of consumer satisfaction in the services context due to their experiential nature (Wirtz, Doreen, & Khai, 2000). Oliver (1997) also suggested that consumer satisfaction should also be evaluated based on affective responses to a product stimulus in addition to cognitive reaction. Following this conceptualization approach, satisfaction was defined as “the consumer’s fulfillment response. It is a judgment that the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels under- or overfulfillment” (p. 13). Affective responses play a critical role in forming consumer satisfaction, especially in the service context as a result of its experiential characteristic (Wirtz et al., 2000). Therefore, the incorporation of affective responses in understanding consumer satisfaction in periodic reoccurring sport events should be reasonable since periodic reoccurring sport events fall into the service domain.

Proposed Competitive Models of Consumer Satisfaction

Russell’s model of affect (1980) was exploited to develop the arguments with regard to affective responses in forming consumer satisfaction primarily due to its good external validity (Wirtz, 1994). In Russell’s model, pleasantness/unpleasantness and arousal/quietude were shown to be the two primary orthogonal dimensions of affective responses that describe the internal affect state of individuals. Furthermore, Russell’s model captured the relationship between human and environment well, giving rise to the usefulness of this model in researching services (Russell & Pratt, 1980). As a
consequence, the arousal and pleasure dimensions were used to model the consumer satisfaction process because of the prior reasoning. So far, the cognitive (disconfirmation) and affective (pleasure and arousal) antecedents of consumer satisfaction have been outlined. The literature, however, suggests divergent perspectives on the relationships among cognitive antecedents, affective antecedents, and consumer satisfaction. More specifically, the role of the affective antecedents in forming consumer satisfaction varies from the available literature. Some researchers thought of affective antecedents as mediators between cognitive process and satisfaction (Wirtz & Bateson, 1999) whereas other researchers viewed them as independent variables between cognitive process and satisfaction (Oliver, 1993). The following were the descriptions regarding different views of affective antecedents.

Affective antecedents as mediators. According to Russell (1980), affective responses mediated the relationships among stimuli, cognitive process, and behavior. Similarly, affective responses as mediator variables between cognitive process (disconfirmation) and consumer satisfaction were found in the literature (Oliver, 1993; Oliver & Westbrook, 1993). Furthermore, Bagozzi, Gopinath, and Nyer (1999) noticed a direct relationship between disconfirmation and emotions based upon the cognitive theory of emotions, which conveys the notion that the cognitive activity that consumers perform to process the emotional situation will produce their emotional experiences. Therefore, the degree of the affective responses (pleasure and arousal) should increase as a function of the perceived disconfirmation, implying the affective responses mediate the relationship between cognitive evaluation (disconfirmation) and consumer satisfaction (Wirtz & Bateson, 1999). Also, Oliver (1997) proved that affective responses were the mediator variables between cognitive process and satisfaction. As a consequence, this perspective suggests that affective antecedents act as a mediator between cognitive evaluations (disconfirmation) and overall satisfaction (Oliver, 1993; Oliver & Westbrook, 1993).

Affective antecedents as independent variables. In contrast to the role as mediator variables, affective responses can also be regarded as independent variables along with cognitive evaluation in explaining consumer satisfaction (Liljander & Strandvik, 1997). Additionally, Oliver (1993) pointed out that disconfirmation and affective responses can
be different sources of satisfaction. He further addressed this idea utilizing attribution theory; for example, if a consumer understands that she or he is solely responsible for the purchase of a bad product, the consumers’ dissatisfaction would be aggravated by her or his guilt or sadness. Similarly, a runner could feel dissatisfaction if she or he thinks that a situational factor such as inclement weather could be the cause of her or his dissatisfaction, independently of their cognitive evaluation (Caro & Garcia, 2007b). Moreover, Jayanti (1996) found that affective responses added significant explanatory ability to the service satisfaction model in addition to the cognitive elements; namely, affective and cognitive elements were the significant antecedents of satisfaction. According to Mano and Oliver (1993), cognitive and affective elements are antecedents of satisfaction, and consumer loyalty is a consequence. Consequently, affective elements can explain consumer satisfaction in the form of independent variables.

**Affective antecedents as independent variables with a direct relationship between disconfirmation and loyalty.** Caro and Garcia (2007a; 2007b) found there was a positive relationship between disconfirmation and loyalty. Also, in Caro and Garcia’s study, the model of affective antecedents as independent variables with a direct relationship between disconfirmation and loyalty fit better than the model of affective antecedents either as mediators or independent variables. Thus, the model of affective antecedents as independent variables with a direct relationship between disconfirmation and loyalty was considered to be one of the competitive models in the present study.

**Hypothesized Directions among the Constructs**

After the role that affective antecedents play has been clarified, the focus now was shifted to the hypothesized directions among the constructs associated with consumer satisfaction. The following were the descriptions for the relationships between relevant constructs in the current study.

**Satisfaction and loyalty.** Literature has shown that consumer satisfaction is a positive determinant of consumer’s loyalty towards a product or service (Cronin et al., 2000; Murray & Howat, 2002). Additionally, customer satisfaction has been proven to be a key determinant of future behavior intentions (Murray & Howat).

**Disconfirmation and satisfaction.** Consumers evaluate their consumption experience and make comparisons between the perceived outcome and some prior
standard, which drives their satisfaction judgment (Caro & Garcia, 2007b). As a result, a positive disconfirmation would result in consumer satisfaction. Several researchers have empirically proved this relationship (Spreng & Chiou, 2002; Wirtz & Bateson, 1999).

**Affective antecedents and satisfaction.** Researchers have noted that affective responses associated with the consumption experience are important determinants of satisfaction (Erevelles, 1998; Jayanti, 1996; Matilla & Wirtz, 2000). Elements that improve the consumer's affective state would lead to a higher level of consumer satisfaction (Caro & Garcia, 2007b). Several studies have also shown that a positive relationship existed between affective responses and satisfaction (Erevelles; Jayanti; Matilla & Wirtz).

**Disconfirmation and affective antecedents.** The degree of pleasure and arousal increases as a function of the perceived disconfirmation (Wirtz & Bateson, 1999). Researchers have empirically demonstrated this relationship (Oliver, 1997; Wirtz & Bateson).
Figure 1: The Proposed Competitive Models

Note: Model 1 regards “Pleasure” and “Arousal” as mediators between “Disconfirmation” and “Satisfaction”; Model 2 treats “Pleasure” and “Arousal” as independent variables for “Satisfaction”; Model 3 adds a direct path from “Disconfirmation” to “Loyalty” based on Model 2.
Methods

Data Collection

The sample was collected from a population of approximately 1,600 participants in the Taipei 101 Run-Up Race held in Taipei, Taiwan in November 2007. Four hundred self-administered questionnaires were distributed where all the participants received their participation certificates after finishing the race. The researchers set up a booth and asked participants to complete a questionnaire regarding their satisfaction towards this event. A total of 366 valid questionnaires were collected with a response rate of 91%. Two hundred and fifteen respondents were male while 151 respondents were female.

Measures

Satisfaction. Measures concerning satisfaction were developed based upon previous studies using a five-point Likert scale ranging from 1 for strongly disagree to 5 for strongly agree (Westbrook, 1987; Westbrook & Oliver, 1981). There were four items for satisfaction including “I am satisfied with my participation in this event;” “My choice to attend this event was a wise one;” “I have really enjoyed participating this event;” and “I don’t regret having attended this event.”

Loyalty. Items associated with loyalty were modified from a study by Zeithaml, Berry and Parasuraman (1996) using a five-point Likert scale ranging from 1 for strongly disagree to 5 for strongly agree. There were four items for loyalty including “I will tell my friends or family my satisfaction with this event;” “I will probably attend this event next year;” “I would recommend this event to my friend;” and “The probability of attending this event next year is high.”

Disconfirmation. Measures with regard to disconfirmation were modified from Oliver (1980), Churchill and Surprenant (1982), and Caro and Garcia (2007ab) using five-point Likert scale ranging from 1 for strongly disagree to 5 for strongly agree. The following three items were the measures for disconfirmation: “Overall, my experience in this event was better than I thought,” “Overall, my expectations about this event were better than I thought,” and “Overall, this event was better than I thought.”

Emotions (pleasure and arousal). Measures regarding emotions were modified from Russell (1980) utilizing a five-point semantic differential scale. Among the measures for emotions, four items measured pleasure while the other four measured
arousal (Caro & Garcia, 2007a; Caro & Garcia, 2007b). The items about pleasure included “Participating in this event made me pleased/angry,” “Participating in this event made me happy/unhappy,” “Participating in this event made me glad/sad,” and “Participating in this event made me amused/bored.” On the other hand, the items about arousal included “Participating in this event made me hopeful/disillusioned,” “Participating in this event made me excited/clam,” “Participating in this event made me active/passive,” and “Participating in this event made me lively/down.” For example, for the item of “Participating in this event made me pleased/angry,” a score of 1 indicated “participating in this event was pleasing” while a score of 5 indicated “participating in this event made me angry.” The same rationale applied to the rest of the items above. Reverse coding was utilized to transform data into higher scores representing more positive emotions.

**Assessment of the Measures**

All the measures in the current study were evaluated by examining the normality assumption using criteria proposed by Kline (1998). All the measures met the normality assumption. Reliability of the measures were examined with Cronbach’s Alpha. The results revealed that all the constructs possessed satisfactory alphas with satisfaction (0.93), loyalty (0.99), disconfirmation (0.97), pleasure (0.98), arousal (0.93), and motivation (0.89), respectively.

A confirmatory factor analysis with the covariance matrix as input via LISREL 8.51 was conducted in order to acquire a robust evaluation of the quality of the measures (Joreskog & Sorbom, 2001). Multiple fit indices should be used to assess a model’s goodness-of-fit, including the Chi-square value and the associated degree of freedom, Goodness of Fit Index (GFI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI) (Hair, Black, Babin, Anderson, & Tatham, 2006). The primary drawback of the Chi-square value was its susceptibility to the sample size (i.e., as the sample size increases, Chi-square values tended to be significant even if the differences of the matrices are identical) (Hair et al.). As a result, researchers would utilize other fit indices to examine the model fit. The values of GFI, CFI, NFI, NNFI greater than 0.90 were considered good; the value of RMSEA below 0.10 was considered acceptable (Hair et al.).
results of confirmatory factor analysis indicated an adequate close fit of the measures with Chi-square value of 520.06 (d.f.=125), GFI of 0.90, RMSEA of 0.08, CFI of 0.98, NFI of 0.97, and NNFI of 0.97. All items loaded on their respective hypothesized constructs showed highly significant t-values and the parameters were 10 to 20 times as large as the standard errors (Anderson & Gerbing, 1998), indicating the measures possessed convergent validity. The discriminant validity was supported by the evidence that the variance-extracted estimates were higher than the corresponding squared correlation estimates (Hair et al.). Consequently, the quality of the measures in the present study was acceptable and satisfactory.

Results

Analyses of Competitive Models

There were three competitive models in the current study: the first model treated the emotions as mediators; the second model viewed the emotions as independent factors; the third model considered the emotions as independent factors with a direct relationship between disconfirmation and loyalty. A chi-square difference test was performed to evaluate the competitive nested models (Anderson & Gerbing, 1998). The results showed that Model 2 had a better fit than Model 1 ($\Delta \chi^2$: 241.18; df: 1; $p<.001$); Model 3 fit better than Model 2 ($\Delta \chi^2$: 18.80; df: 1; $p<.001$). The results implied that considering the emotions as independent factors provided better explanation in satisfaction and loyalty than viewing emotions as mediators. Additionally, the model of emotions as independent factors with a direct relationship between disconfirmation and loyalty revealed a better fit than the model with the emotions as independent factors only. As a result, Model 3 was the best fit among the three competitive ones. Although the GFI for Model 3 was below 0.90, all other fit indices led to the conclusion that the fit of the proposed models under study was acceptable. Therefore, the overall model fit for Model 3 can be considered acceptable.
Table 1: Results of the Proposed Competitive Models

<table>
<thead>
<tr>
<th>Models</th>
<th>$\chi^2 (df)$</th>
<th>$\chi^2 (\Delta df)$</th>
<th>$p$</th>
<th>NFI</th>
<th>NNFI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>GFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>861.78 (146)</td>
<td></td>
<td></td>
<td>0.95</td>
<td>0.95</td>
<td>0.96</td>
<td>0.10</td>
<td>0.83</td>
</tr>
<tr>
<td>Model 2</td>
<td>620.60 (145)</td>
<td>241.18 (1)</td>
<td>&lt;0.001</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>0.09</td>
<td>0.86</td>
</tr>
<tr>
<td>Model 3</td>
<td>601.80 (144)</td>
<td>18.80 (1)</td>
<td>&lt;0.001</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>0.08</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Examination of Structural Path Coefficients

All but one of the structural path coefficients were significant and in the expected directions. The estimate between satisfaction and loyalty was 0.38 with t-value of 6.32; the estimate between arousal and satisfaction was 0.13 with t-value of 2.65; the estimate between disconfirmation and satisfaction was 0.44 with t-value of 13.25; the estimate between disconfirmation and loyalty was 0.18 with t-value of 3.84. The only exception was the estimate between pleasure and satisfaction with a nonsignificant t-value of 1.86. Table 2 presents the estimates of the best model among the competitive ones.

Table 2: Structural Path Coefficients

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Estimate</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>satisfaction $\rightarrow$ loyalty</td>
<td>0.38*</td>
<td>6.32</td>
</tr>
<tr>
<td>arousal $\rightarrow$ satisfaction</td>
<td>0.13*</td>
<td>2.65</td>
</tr>
<tr>
<td>disconfirmation $\rightarrow$ satisfaction</td>
<td>0.44*</td>
<td>13.25</td>
</tr>
<tr>
<td>disconfirmation $\rightarrow$ loyalty</td>
<td>0.18*</td>
<td>3.84</td>
</tr>
<tr>
<td>pleasure $\rightarrow$ satisfaction</td>
<td>0.09</td>
<td>1.86</td>
</tr>
</tbody>
</table>

* indicates the estimate was significant and in the expected direction
The present study reexamined the cognitive-affective model of sport consumer satisfaction in the context of a periodic reoccurring event in Taipei, Taiwan. Several issues warranted attention. First, the conceptualization of the model proposed by Caro and Garcia (2007b) in which the affective responses were independent variables with a direct relationship between disconfirmation and loyalty was confirmed by the current study. To elaborate, three competitive models were proposed to describe the formation of sport consumer satisfaction. Two of the three proposed models, including one with the affective responses as mediators between disconfirmation and satisfaction and one with the affective responses as independent variables, were developed from Caro and Garcia’s empirical investigation adding the direct relationship between disconfirmation and loyalty (2007b). After comparing the fit of the models, the current study demonstrated that the model with the affective responses as independent variables in conjunction with a direct relationship between disconfirmation and loyalty revealed the best model fit among the three proposed models. The conceptualization of affective responses as independent variables in explaining consumer satisfaction was also in line with Westbrook’s work (1987).

Second, all but one of the structural path coefficients were in the expected directions and statistically significant. A nonsignificant effect of pleasure on satisfaction was found in the current study, which is similar to Caro and Garcia’s findings (2007a; 2007b). All of the other proposed relationships were confirmed, which was also in line
with Caro and Garcia’s work. More specifically, arousal and disconfirmation have a positive impact on satisfaction; satisfaction exerts a positive influence on loyalty; disconfirmation possessed a weak positive impact on loyalty. However, the magnitude of the relationship between disconfirmation and satisfaction was stronger than that between arousal and satisfaction, which contradicted Caro and Garcia’s work. The inconsistency in magnitude of the relationship between arousal and satisfaction may be attributed to omission of certain antecedents such as perceived quality (Caro & Garcia). Overall, the cognitive-affective model of sport consumer satisfaction was confirmed in the context of Taiwan by the sporting event of Taipei 101 Run-Up Race.

Third, knowing the relationships among the variables associated with satisfaction as well as loyalty towards a periodic reoccurring sport event enables sport marketers to develop marketing strategies. To illustrate, marketing implication can be extracted from the positive relationship between arousal and satisfaction. Conveying the elements of excitement, activeness, and surprise of this particular sport event to consumers may be a good strategy in raising consumer satisfaction (Caro & Garcia, 2007a; 2007b), which in turn results in increasing loyalty towards the sport event. Moreover, cognitive (disconfirmation) and affective factor (arousal) resulted in sport customer satisfaction, implying that sport event managers not only should make efforts to offer a high quality service in order to obtain a more favorable disconfirmation of expectations, but also increase the emotions (arousal) of runners during the race. Therefore, sport event managers can arrange their employees to encourage and support the runners at all times (Caro & Garcia, 2007a). In addition, disconfirmation had a positive influence on loyalty. Event managers should pay close attention to improve the quality of the event in order to raise participant’s disconfirmation. Furthermore, thoroughly examining communication strategy to avoid negative disconfirmation is important as well (Caro & Garcia, 2007a). Consequently, the results from the current study provide sport managers with marketing implications to better satisfy their consumers.

Finally, in the current study, the cognitive-affective model of sport consumer satisfaction with a direct relationship between disconfirmation and loyalty proposed by Caro and Garcia (2007a; 2007b) was confirmed in a periodic reoccurring sport event in the context of Taiwan. On the other hand, all the relationships among the variables in
Caro and Garcia’s work were confirmed except the variation in the magnitude of the relationship among disconfirmation, arousal, and satisfaction. The current study validated the cognitive-affective model of sport consumer satisfaction proposed by Caro and Garcia, revealing that the replication of the model was confirmed in the context other than the European case. Additionally, the current study collected a larger sample size to test the model based on Caro and Garcia’s suggestions. Namely, the suggestions of replication and larger sample size were fulfilled. Thus, further investigation on this conceptualization should incorporate expectation and perceived quality (Oliver, 1993; Wirtz & Bateson, 1999) in order to better explain consumer satisfaction.
References


