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Effect of Service Quality on Revisit Intention and Word-of-Mouth at the F-1 Chinese Grand Prix

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Abstract

This study aimed to examine the degree to which service quality attributes can predict spectators' revisit intention and word-of-mouth (WOM). A total of 551 spectators from a Formula One Chinese Grand Prix venue were selected to participate in a survey by using the convenience sampling method. Multiple regression analyses showed that service quality has a significant influence on behavioral intentions. Specifically, five of six service quality attributes (i.e., convenience, facilities, price, game experience, and promotion), had a significant effect on revisit intention, whereas four of six service quality attributes (i.e., convenience, facilities, game experience, and staff) had a significant effect on WOM.

This study could suggest sport event marketers to consider functional services including price, location, and designation of the stadium or service place in order to attract more sport audiences.

Key words: Formula One, revisit intention, service quality, word-of-mouth

Introduction

Need for the Study

Considering its high global television ratings and broad international media coverage, the Formula One (F1) Grand Prix is one of the most influential sporting events in the world (Kim, Byon, Yu, Zhang, & Kim, 2013). Accordingly, the F1 Chinese Grand Prix, which launched in Shanghai in 2004, has become one of the main annual international sporting events in China, effectively increasing Shanghai's reputation and attracting more global media attention. The high cost of hosting the F1 Grand Prix nevertheless creates a burden for host cities. According to the Formula Money Report (Formula Money Report, 2014), most cities hosting F-1 events have a difficult time earning a profit because the hosting fee alone is more than $568 million. Some host cities, such as Melbourne, have received substantial government funding to stage the F-1 Grand Prix, raising public questions about the value of hosting the event (Fairley, Tyler, Kellett, & D'Elia, 2011). As the only host city for F-1 events in China, Shanghai faces the same financial pressure caused by the high cost of the event, including the high hosting fees, high operation fees and high expenses of building the Shanghai International Circuit (Kim et al., 2013). Consequently, the Chinese Grand Prix has reported a nearly $30 million deficit every year (Xinhua, 2014).

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According to the literature, while behavioral intention (e.g., Revisit intention) represents a willingness of performing a certain activity, word-of-mouth (WOM) is a expression of a communication regarding products, services, or brand from consumers (Grewal, Krishnan, Baker, & Robin, 1988; Kwon, Trail, & James, 2007). In addition, WOM plays a significant role in decision making process with the growth of Internet platforms such as social media (Lang, & Hyde, 2013; Mangold & Faulds, 2009). Thus, analyzing the factors that affect spectators' behavioral intentions, such as revisit intention and WOM, will provide valuable data for marketers to establish practical marketing strategies that generate revenue. In addition, study of the F-1 Chinese Grand Prix will provide a better understanding of the Chinese sports market and spectators that possibly have unique characteristics with the Confucianism and Communism. Therefore, this study attempts to identify the effect of service quality on behavioral intentions in the context of the F-1 Chinese Grand Prix based on the previous studies indicating a positive relationship between service quality and behavioral intentions (Goldenberg, Libai, Moldovan, & Muller, 2007; Theodorakis & Alexandris, 2008).

Theoretical Review

Service Quality

One of the most important and widely studied factors in the marketing and service literature (Parasuraman, Zeithaml, & Malhotra, 2005), service quality is explained as the perceived level of excellence ascribed to a product or the degree to which actual service meets customer expectations (Parasuraman, Zeithaml, & Berry, 1988). In particular, researchers in sport management define service quality as interactions between consumers and organization and overall perceptions in the sporting circumstances such as seat available, layout, convenience, comfort, and information signs in a certain stadium (Brady & Cronin, 2001; Cronin & Taylor, 1992; Greenwell, Fink, & Pastore , 2002; Wakefield & Blodgett, 1996). Based upon the definitions, service quality comprises two significant dimensions including service that customers actually receive, such as the game result or athlete performance in a sports context (e.g., technical quality), and manner in which the service is delivered (functional quality) (Grönroos, 1984). For example, consumer's perceived services from personnel in a certain sport stadium could significantly influence their responses such as the development of positive emotions about the team as well as intention to purchase tickets for future decisions (Brady & Cronin, 2001; Cronin & Taylor, 1992; Wakefield & Blodgett, 1996). In addition, particular environment around seating space, functions, and technologies positively contributes consumers' evaluation, which directly influence overall perception as well as team involvement (Brady & Cronin, 2001; Kahle, Aiken, Dalakas, & Duncan, 2003). According to a research by Hill and Green (2000), they examined the relationships between consumers' perception of service quality and intention for future decisions to participate the game in future in rugby league stadiums. Finally, they indicated that consumers who received positive services through employees and product usages in the stadium circumstances positively drive consumers' emotions and a willingness of future behaviors (Hill & Green, 2000).

Service Quality and Behavioral Intentions

According to Ajzen (1991), "intentions are assumed to capture the motivational factors that influence a behavior" (p. 182), and behavioral intentions are thus regarded as a reliable predictor of actual behavior (Ajzen, 1991). Prior research has identified a positive relationship between service quality and behavioral intentions (Crompton, MacKay, & Fesenmaier, 1991; Goldenberg et al., 2007; Kuo, Wu, Deng, 2009; Theodorakis & Alexandris, 2008; Wakefield & Blodgett, 1996; Woodside, Frey, Daly, 1989). For instance, Kuo

et al. (2009) found that customer satisfaction mediates the effect of service quality on repurchase intention. Analyzing consumers from two minor league baseball games and five major college football games, Wakefield and Blodgett (Wakefield & Blodgett, 1996) found that service quality has an indirect effect on behavioral intentions, as mediated by satisfaction. Among behavioral intentions, revisit intention in particular is considered an important factor associated with profit in various markets (Saha, 2009). Regarding the effect of service quality on revisit intention, Theodorakis and Alexandris (2008) found a direct effect of service quality on revisit intention by analyzing 242 spectators of football games in Super League Greece.

Service Quality and Word-of-Mouth

In addition to revisit intention, WOM is also considered an important factor associated with profit in various markets (Saha, 2009). Interpreted as the diffusion of information about products or services through customers (Saha, 2009), WOM is regarded as a reliable external source of information for customers (Saha, 2009). Previous studies have found a positive relationship between service quality and WOM. For example, in their study of Super League Greece spectators, Theodorakis and Alexandris (2008) also found that service quality has a direct effect on WOM. In addition, Kwon et al. (2013) found that service quality has a positive effect on WOM that is mediated by satisfaction in their study on the 2011 IAAF World Championship.

Research Objectives

Although many previous studies have identified the relationship between service quality and behavioral intentions, little research has focused on international sporting events in Asia, especially the F-1 Chinese Grand Prix. Moreover, spectator characteristics may differ between China and Western countries since China has a unique cultural background affected by traditional sports values such as anthropomorphism, cultivation, and monotony. Therefore, this study aimed to examine the degree to which service quality attributes can predict spectators' revisit intention and WOM. Specifically, the following research hypotheses were examined based on prior studies.

First, prior studies have identified a positive relationship between service quality and re-visit (re-purchase) intention (Baek, 2005; Lee & Lee, 2004; Oh, 2001; Park & Lee, 2004; Rho, 2004; Theodorakis & Alexandris, 2008). RH1: Positive evaluations of service quality in F-1 game in China could enhance the willingness of re-visit the game event.

Second, prior studies have identified a positive relationship between service quality and world-of-mouth (WOM) intention (Baek, 2005; Cho, 2002; Oh, 2001; Rho, 2004). RH2: Positive evaluations of service quality could enhance the level of consumers' world-of-mouth (WOM).

Methods

Participants

A total of 800 spectators from the F1 Chinese Grand Prix venue were invited to participate in a survey by using the convenience sampling method between April 15 and 17, 2010, in Shanghai. A total of 552 surveys were returned, a response rate of 69%. One survey was discarded owing to excessive missing values. Therefore, a total of 551 surveys were analyzed for this study. Of the research participants, men accounted for 57.0% (n = 314), and women accounted for 43.0% (n = 237). Most of the participants ranged in age from 21 to 30 years (58.6%; n = 323).

Instrument

Items measuring service quality were adopted and

developed from Kwon, Kim, and Park (2013). Kwon et al. (2013) proposed six dimensions of service quality for an international sporting event based on prior studies (Lee, 2009; Ormiston et al., 1998; Parasuraman et al., 1988). Kwon et al.'s study (2013) indicated that the items measuring these dimensions have acceptable reliability according to Schuessler (1971), with Cronbach's alpha values greater than .60. Thus, following Kwon et al. (2013), this study measured service quality based on six dimensions: convenience, facilities, price, game experience, promotion, and staff. Six items measuring revisit intention and WOM were adopted from Choi, Kim, and Kwon (2011). Previous studies (Choi et al., 2011) have shown that these items have acceptable reliability, with Cronbach's alpha values ranging from .77 to .92. All the items in the survey were measured on 5-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). These items were reviewed for content validity by scholars with expertise in spectator sports—the F-1 Chinese Grand Prix in particular—before they were adopted for the current study. All the items were developed in English and translated into Chinese, and back-translation was employed based on Brislin's suggestion (1990). The original scales in Korean were first translated into English and then re-translated into Chinese by a native Chinese researcher who is fluent in English. To ensure the accuracy and equivalence of the translation, the translated version was then converted back into English and in turn re-translated into Korean. This process ensured that there were no discrepancies between the two versions. Descriptive statistics for variables is presented in <Table 1>.

Data Analysis

The data were analyzed in SPSS version 20.0 for Windows. Exploratory factor analysis was conducted to ensure the validity of the current data set, and multiple regression analyses were performed to assess the effect of service quality on revisit intention and WOM.

Results

Exploratory Factor Analysis

The kurtosis and skewness of all of the items were assessed, and no extreme value exceeding 3.0 was found (Kline, 2010). A principal component analysis (PCA) was conducted on the 26 items of the service quality scale with orthogonal rotation (varimax). The items that clustered on the same components suggested 6 sub-factors: promotion, staff, price, convenience, game experience, and facilities. Four items had factor loadings less than .40 or loaded incorrectly; however, these items were retained because prior studies have suggested that they are theoretically relevant to their respective constructs (Kwon et al., 2013; Ormiston et al., 1998). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .89, which is well above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity, χ^2 (325) = 5884.796, $p < .001$, indicated that correlations between items were sufficiently large for PCA. In addition, Cronbach's alpha ranged from .69 to .87, indicating acceptable reliability given the values greater than .60 (Schuessler, 1971). The three items comprising revisit intention were combined to form a single index assessing the degree of revisit intention (α = .819). Similarly, the three items comprising WOM were combined to form a single index assessing degree of WOM (α = .839). The items of revisit intention and WOM were reviewed by five professionals in the field of sports and management to ensure the construct validity. Summary of exploratory factor analysis is presented in <Table 2>. In addition, interfactor correlation matrix is presented in <Table 3>.

Effect of Service Quality on Behavioral Intentions

The results of multiple regression indicated that service quality had a significant influence on behavioral intentions <Table 4>. Specifically, five of the six service quality attributes had a significant effect on revisit intention:

Table 1.

	Items	M	SD
CON1	Reservation is convenient for watching the game.	3.61	.83
CON2	The stadium has enough convenient rest space.	3.48	.91
CON3	The stadium seat is comfortable.	3.16	.87
CON4	The approach (distance, traffic time) description below is convenient in the stadium.	3.44	.98
CON5	The stadium parking facility is convenient.	3.32	.88
CON6	It's convenient getting the use rule which relates in condition or the data of player information.	3.18	1.03
FAC1	It's spatially well-equipped for Non-smoker.	3.23	.96
FAC2	Food & Beverage facilities are well-equipped.	3.21	.99
FAC3	The facilities (toilet/convenient store etc,) are well-equipped.	3.50	1.03
FAC4	The facility level and atmosphere of the stadium are satisfied.	3.60	.89
FAC5	The facility for the family is well-equipped.	3.06	.86
PRI1	The fare for the watching game is suitable.	3.00	.99
PRI2	There is a discount system to watch the game.	2.90	1.00
PRI3	The facilities fee of the stadium is suitable.	2.85	.93
GAE1	The Game is dynamic.	4.01	.87
GAE2	It is driven me to the game.	4.10	.87
GAE3	The game makes me excited.	4.16	.87
GAE4	The game releases the stress.	3.86	.99
PRO1	There are various events besides games.	3.40	.95
PRO2	Provides many use information from the stadium.	3.28	.86
PRO3	There are various programs on the stadium.	3.18	.98
PRO4	It is satisfied in Public Relations about F1 Shanghai Grand Prix.	3.33	.86
PRO5	Provides sufficient information from F1 Grand Prix progress headquarters home page.	3.34	.92
STA1	The stadium volunteer worker is kind.	3.43	.95
STA2	The volunteer worker works respects a spectator bias.	3.44	.93
STA3	The stadium volunteer worker is equipping a professional knowledge.	3.33	.99
REV1	I will revisit to watch F1 Grand Prix even if it costs more.	2.95	1.03
REV2	I will revisit to watch F1 Grand Prix even if it takes more time.	3.24	1.03
REV3	I will revisit to watch F1 Grand Prix even if it's inconveniently located.	3.29	1.02
WOM1	I evaluate affirmatively for F1 Grand Prix.	3.77	.90
WOM2	I recommend F1 Grand Prix for Colleagues, relatives.	3.93	.84
WOM3	I do have an intention to inform other people for the good impression on F1 Grand Prix.	4.07	.86

CON = Convenience, FAC = Facilities, PRI = Price, GAE = Game experience, PRO = Promotion, STA = Staff, REV = Revisit intention, WOM = Word-of-mouth intention

Table 2.

Items	* Rotated Factor Loadings						α	Eigenvalues	variance
	1	2	3	4	5	6			
CON1	.09	.08	.04	.05	.64	.24	.82	3.23	12.44
CON2	.20	-.03	.04	.05	.69	.30			
CON3	.20	.31	.04	.07	.61	-.16			
CON4	-.04	.28	.08	.22	.45	-.17			
CON5	.09	.34	.05	.31	.45	-.14			
CON6	.26	.29	.20	.16	.33	.14			
FAC1	-.03	.44	.08	.33	.23	.06	.87	2.83	10.89
FAC2	.26	.25	.09	.35	.23	.33			
FAC3	.20	.14	.14	.09	.08	.76			
FAC4	.26	.22	.27	.11	.05	.65			
FAC5	.07	.40	.02	.34	.18	.28			
PRI1	.07	.11	.09	.79	.06	.08	.82	2.76	10.64
PRI2	.22	.14	.13	.77	.08	.10			
PRI3	.17	.13	.00	.72	.13	.03			
GAE1	.10	.05	.63	.17	.04	.33	.76	2.51	9.68
GAE2	.18	.01	.81	.04	.13	.22			
GAE3	.09	.08	.86	.03	.10	.03			
GAE4	.19	.19	.76	.05	-.03	-.05			
PRO1	.72	.05	.27	.16	.15	.05	.69	2.19	8.45
PRO2	.71	.09	.08	.15	.27	.11			
PRO3	.74	.13	.09	.18	.13	.16			
PRO4	.67	.33	.10	.10	.03	.18			
PRO5	.60	.33	.15	.02	.00	.12			
STA1	.36	.67	.11	.10	.19	.11	.70	1.79	6.91
STA2	.28	.76	.16	.12	.17	.13			
STA3	.30	.73	.07	.15	.08	.16			

*Rotated Factor Loadings 1 = Promotion, 2 = Staff, 3 = Game experience, 4 = Price, 5 = Convenience, 6 = Facilities

Table 3.

Variables	1	2	3	4	5	6	7	8
1. Convenience	1							
2. Facilities	.52	1						
3. Fare	.43	.49	1					
4. Watch	.28	.40	.25	1				
5. Promotion	.48	.56	.39	.42	1			
6. Staff	.52	.55	.42	.33	.58	1		
7. Intention to revisit	.30	.37	.36	.39	.20	.26	1	
8. WOM	.34	.45	.24	.59	.38	.38	.48	1
M	3.36	3.32	2.91	4.03	3.31	3.40	3.16	3.92
SD	.58	.64	.81	.73	.71	.86	.88	.76

All correlations are significant at $p < .01$.

Table 4. Multiple Regression Results for Service Quality Predicting Behavioral Intentions

Dependent	Independent	SE	Coefficient (β)	t-stat
Revisit Intention	(Constant)			1.22
	Convenience	.07	.10	2.31*
	Facilities	.07	.16	3.19**
	Price	.04	.22	5.01***
	Game Experience	.05	.30	7.23***
	Promotion	.06	-.16	-3.27**
	Staff	.05	.02	.39
	$R = .515$, $R^2 = .265$, Adjusted $R^2 = .257$, $F = 32.767$, $p = .000$, Durbin-Watson = 2.045			
WOM	(Constant)			3.67***
	Convenience	.05	.09	2.17*
	Facilities	.05	.18	3.93***
	Price	.03	-.05	-1.32
	Game Experience	.03	.47	12.79***
	Promotion	.04	.00	.20
	Staff	.04	.09	2.01*
	$R = .648$, $R^2 = .420$, Adjusted $R^2 = .413$, $F = 65.553$, $p = .000$, Durbin-Watson = 2.052			

*** p <. 001, ** p < .01, * p < .05

convenience, facilities, price, game experience, and promotion. Approximately 26% of the variance in revisit intention was explained by these service quality attributes. In addition, four of the six service quality attributes had a significant effect on WOM: convenience, facilities, game experience, and staff. Approximately 41% of the variance in WOM was explained by these service quality attributes.

Discussion

This study examined the degree to which service quality attributes predict spectators' revisit intention and WOM in the context of the F-1 Chinese Grand Prix. First, convenience had a significant effect on both revisit intention and WOM. This result supports Seiders, Voss, Grewal, and Godfrey's finding (2005) that convenience has a significant effect on customer intentions. According to these authors, convenience facilitates customers' ability to fulfill their intentions by saving them time and effort through the use of the service. In contrast, Theodorakis and Alexandris (2008) found that access, a similar term to convenience, does not significantly affect either revisit intention or WOM. As Theodorakis and Alexandris (2008) stated, the unique characteristics of the spectator must be considered, since they analyzed spectators of Greek football games.

Facilities had a significant relationship with both revisit intention and WOM. Theodorakis and Alexandris (2008) observed a significant effect of tangibles (e.g., the visual appeal or cleanliness of the stadium) on WOM but not revisit intention. The divergent findings between this study and Theodorakis and Alexandris's study (2008) may relate to the different characteristics of the spectators. For example, because F-1 Chinese Grand Prix is an international sporting event, it may attract spectators of various nationalities and cultures. By

contrast, Theodorakis and Alexandris (2008) analyzed spectators of Greek football games, who are likely only Greek. In particular, this study also revealed that cultural differences might moderate the effect of service quality on the behavioral intention. It is because the orientation of traditional sport value would differently influence their behaviors. For example, while a value of sport in China is more focused on anthropomorphic, cultivative, moralized, and monotony, whereas, the values in Western is emphasized in excitement, powerful, and multifarious (Ke-xing, 2005).

Price was positively related to revisit intention. This result supports the study by Jiang and Rosenbloom (2005), which revealed that price perception has a positive effect on online shopping customers' intention to return. Nevertheless, among the six service attributes, price was associated with the lowest level of service quality despite the efforts of the F-1 organizer.

The game experience significantly predicted both revisit intention and WOM. In analyzing 316 fans from four college basketball games, Kelly and Turley (2001) proposed that the most important service attribute for spectators is the game experience. In this study, based on its standardized coefficient, the game experience was also the most important factor among the six different service quality attributes that predicted behavioral intentions.

Interestingly, promotion was negatively related to revisit intention. Prior studies have reported a negative effect of promotion (Mela, Gupta, & Lehmann, 1997; Mela, Jedidi, & Bowman, 1998; Papatla & Krishnamurthi, 1996). According to these studies, excessive use of promotion is negatively related to brand loyalty and baseline sales for a brand, and it can increase price sensitivity. These prior findings may explain the results obtained in this study. Nevertheless, further research is needed to identify the negative effect of promotion.

Finally, staff was significantly related to WOM. This result supports the study by Theodorakis and Alexandris (2008), who revealed a significant effect of personnel on revisit intention and WOM. In the sports context, the staff composes the service providers on game day who assist spectators in finding their seats and serve various roles around the stadium (Theodorakis & Alexandris, 2008). Following a previous study (Theodorakis & Alexandris, 2008), this study assessed personnel based on customers' evaluations of the attitudes and behavior of personnel in face-to-face interactions, as these evaluations affect customers' future intention to revisit the event. Nevertheless, in this study, staff was not significantly related to revisit intention. The divergent findings between this study and the study by Theodorakis and Alexandris (2008) could be explained by differences in spectator characteristics, as discussed above.

The following practical implications can be derived from the results of this study. According to the present study, the most influential factor affecting spectators' revisit intention is the game experience, followed by price, facilities, and convenience. However, according to Grönroos (1984), while consumers' overall perception of service quality is evaluated by two major areas including technical and functional services, marketers are more accessible to manage environmental services (e.g., functional) than actual performance of the product (e.g., technical). Therefore, the importance of other service quality attributes that can be adjusted by marketers, such as facilities, staff, price, or convenience, must be emphasized.

In terms of price, the F-1 Chinese Grand Prix in Shanghai categorized event packages at 9 different levels, ranging from 200 Chinese yuan ($33.05) to 3,280 Chinese yuan ($541.91), so that spectators could select the individually most affordable tickets. In addition, spectators pay only 80 yuan ($13.22) to watch Friday's race. The price selection thus seems broad and reasonable. Nevertheless, the F-1 Grand Prix is an international sporting event with spectators of diverse nationalities from over the world. Indeed, 42.6% of the participants in this study were not residents of Shanghai. Thus, F-1 organizers must consider the different values

of a certain sport in the country when they set prices because consumers' perception of and satisfaction with prices may vary.

Regarding convenience, Shanghai International Circuit is located farther from the city center than the venues in other hosting cities, and the availability of convenient public transportation, such as subways or buses, is insufficient. Thus, spectators must drive their own vehicles, take taxis, or ride shuttle buses. This situation has not been changed since 2004, the first year of the F-1 Chinese Grand Prix. Therefore, organizers of the F-1 Chinese Grand Prix need to devote effort to increasing spectator convenience.

Conclusion

In conclusion, this study examined the effect of service quality attributes on behavioral intentions in one of the largest international sporting events, the F-1 Chinese Grand Prix. The results of multiple regression indicated that service quality has a significant influence on behavioral intentions. Five of the six service quality attributes had a significant effect on revisit intention (i.e., convenience, facilities, price, game experience, and promotion), whereas four of the six service quality attributes has a significant effect on WOM (i.e., convenience, facilities, game experience, and staff). Interestingly, promotion was negatively related to revisit intention. Marketers could emphasized to establish more effective marketing strategies by targeting various service quality attributes. Moreover, further research could use the results of this study to examine cultural differences in international sporting event across countries.

Several directions for future research are possible. Additional demographic information must be considered. For example, spectators' past experience of attending a game may affect the extent to which they identify with the event or drivers and may thus moderate the relationship between service quality and behavioral intentions. Therefore, the moderation effect of various demographic variables, such as gender or age, could be examined in future research. In particular, this study did not include spectators' nationality. Because the F-1 Grand Prix is an international sporting event that attracts global attention, a large number of spectators at the F-1 Chinese Grand Prix come from outside China. Owing to cultural differences, spectators' satisfaction with service quality attributes and expectations regarding the event could vary between Chinese spectators and other spectators. Thus, future studies should examine cultural differences based on spectators' nationality.

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