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Global marketing of Formula One: Local variations and geocentric marketing mix

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Abstract

Formula One has gained worldwide popularity, yet its success does not necessarily trickle down to the hosting cities. This study attempts to apply the A-B-C-D paradigm of global consumer behaviour into sport marketing and identifies differences among fan's perception to marketing mixes and their intention to come back in three different hosting cities (i.e., Korea, China, and the US). Findings and discussion will help both researchers and practitioners to better comprehend and optimize their geocentric marketing strategies.

Key words: F1, Global marketing, Local variation, Marketing mix, Revisit intention

Introduction

Formula One (F1) World Championship has unique features as a global sporting event. Starting in 1950, nearly 900 F1 World Championship races have been held in 70 racetrack circuits across more than 30 nations. In 2017, races were hosted across 20 cities in the world starting from the first race in Melbourne, Australia to the last race in Abu Dhabi, United Arab Emirates. Accordingly, market entry into local venues, and also exit from venues, occur frequently in F1 events compared to other mega events. Indeed, global sporting events such as the F1 require insights from global marketing management to better service diverse sport consumers.

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From a marketing perspective, blending the set of marketing tools—the marketing mix—can be challenging as market conditions vary across the different venues. For instance, the economic access, physical access, and local variations can influence how the F1's marketing strategy is executed. Shedding light into these local conditions can help marketers to better plan an international marketing strategy when looking to enhance customer experience and their revisit intentions. In particular, local venues of F1 are facing different challenges of their own while the organizing body of F1 seems immune to the local variations.

While the F1's organizing body and teams continue to pursue and foster premier events (FOM, 2011; Smith, 2012), promoters of local venues are confronting many challenges including compatibility and profitability of the event. For instance, the Chinese Grand Prix has continued to lower ticket prices since 2010 because of their decrease in attendance (Stutchbury, 2011). In addition, the Korean

Grand Prix reported operational losses of $36.4 million in 2012 (Jung, 2012). Hence, for local promoters to meet their goals of hosting a F1 event (e.g., race in Austin, Texas expecting financial boosts of $300 million a year; Helman, 2012), studies based on a global managerial perspective is needed. For example, while the Chinese Grand Prix has adjusted to the market demand and continued to host the events, operational losses have cost the Korean Grand Prix to drop out from hosting the event. Certainly, strategic efforts to increase fan demand to attend to event is vital to hosting F1 races with so much at stake to the local organizers. In spite of the numerous studies on global sporting events (e.g., Porter, Fletcher, Dwyer, & Fredline, 2008; Solberg & Preuss, 2007), however, little attention has been directed to investigate local variations across sport markets through a global marketing perspective. Despite the fact that local venues of global sporting events are struggling with operational issues, a research agenda seeking for sustainable management in this area is not well recognized. Above all, discussion of systematic approaches based on theoretical paradigms for geocentric strategies of global sporting events is scarce.

In this study we apply the A-B-C-D paradigm (Raju, 1995) to global sporting events setting as means for strategic marketing and also investigate the local variations across countries (Kotabe & Helsen, 2008). The A-B-C-D paradigm is a framework providing a systematically way to implement an international strategy by specifying the four steps ruling the micro- and macro-economic factors. This paradigm can embrace the variations of each local market while holding on a comprehensive view point to the geocentric strategy of international sporting events. Thus, a Global Sporting Event Model (GSEM)—based on the A-B-C-D paradigm—is proposed and tested in this study. Applying this framework, the main objective of this article is to theoretically and empirically investigate local variations in the consumption of F1 across nations, Korea, China, and United States (US). Functions of GSEM and the corresponding procedures of this study are illustrated in Figure 1.

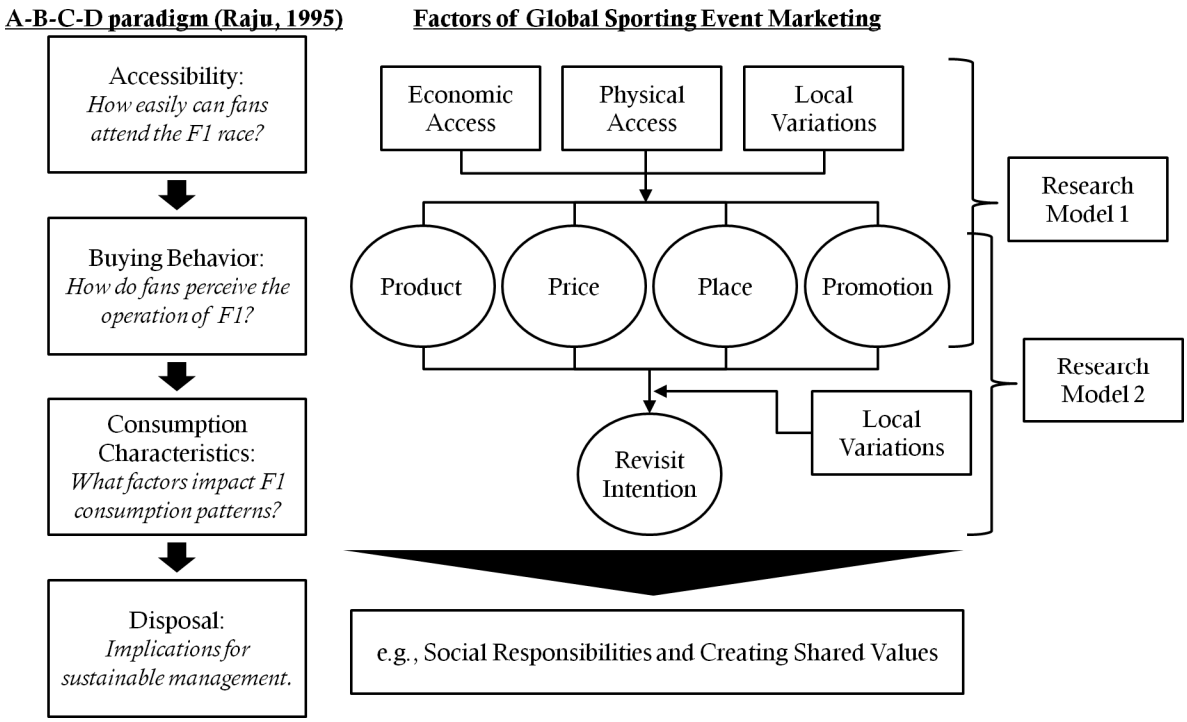

Figure 1. *The global sporting event model in the context of F1.*

Theoretical Background and Hypotheses

The A-B-C-D Paradigm

Raju (1995) introduced the A-B-C-D paradigm as a general framework for understanding global consumer behaviour. As shown in Figure 1, this paradigm identifies the 4 steps of global consumer behaviour: access; buying behaviour; consumption characteristics; and disposal. The four stages in this paradigm are universally applicable in the international context as it provides a structure for the study of consumer behaviour applicable to any global market. In addition, the hierarchical model encompassing all aspects from purchase to consumption provides a holistic viewpoint for marketers to diagnose strengths/weaknesses at any stage; further comparable across nations. Moreover, the cross-functional approach of the paradigm can be associated with multiple perspectives (e.g., micro/macro-economic factors) to each stage in its application. Borrowing the lens from the A-B-C-D paradigm to global sporting events, specifically, can offer means to systematically investigate global marketing processes and compare the local variations in each stage of this process. The conceptual framework of this study is in line with this notion of global marketing management and thus research hypotheses are generated by carrying on the extant literature of relevant theories. Purposely, in GSEM, we integrated the traditional marketing mix of product, price, place, and promotion (4Ps) with the A-B-C-D paradigm.

Relevant constructs in sport consumer behaviour are operationalized for each stage in GSEM. As shown in Figure 1, the four steps of accessibility, buying behaviour, consumption characteristics, and disposal is applied to the factors of global sporting event marketing. The research models are suggested to test the first two steps and the last two steps. Foremost, economic, physical, and local variations to the accessibility of F1 fans are considered as antecedents to the marketing mix variables. Next, how the variations in the marketing mix experience affects the revisiting intensions are considered in the model. It is expected that GSEM provide rich implications for global sport management based on this formation of structural understandings of global consumer behaviour.

Accessibility

The first stage in GSEM is accessibility. The main question to access is that, “can consumers obtain your product/service” (Raju, 1995, p. 39). That is, providing access to the product is the first step for global sport management. In this, economic access and physical access are considered as key factors of access. Ticket price and accessibility to venues can affect sport fans’ behaviours. Price, which is considered an economical access factor, is known to have a significant impact on consumers’ buying behaviour and profit level to the service provider (Han, Gupta, & Lehmann, 2001). It is important to find a balance between what the consumers are willing to pay and what the service providers needs to charge to turn the event or service to be financially successful. Understanding consumers’ willingness to purchase a product such as price threshold for a certain product or consumers’ attitude toward service price is an important element (Xia, Monroe, & Cox, 2004). In F1, ticket prices vary by locations. Some venues are well known by their rich history and astonishing views (e.g., Monaco Grand Prix) and some are located in or near big cities (e.g., US Grand Prix; Chinese Grand Prix), whereas some venues are located far apart from big cities in relatively rural areas (e.g., Korean Grand Prix; German Grand Prix at the Nürburgring). As aforementioned, accordingly, some venues boast rich history of F1 racing in their locations, while some venues are experiencing decrease in attendance critical to their sustainability of holding the races (Stutchbury, 2011).

Buying Behaviour

Buying behaviour is the second stage in GSEM. Buying behaviour questions: “how is the decision to buy made by consumers” (Raju, 1995, p. 39). Particularly, Raju pointed out that factor of buying behaviour encompasses perceptions,

attitudes, and consumer responses to a given product. When considering local variations, understanding differences in factors and patterns of consumption becomes essential. Reiterating, how consumers perceive and evaluate such service or product, and their patterns of behaviours influenced by these locally embedded perceptions are vital information for marketers. The marketing mix elements can be directly linked to the buying behaviour factors of a sporting event. For instance, marketing mix elements have been frequently utilized as measures of fans' perceptions, attitudes, and responses in the studies of sport management (e.g., Kang & James, 2004; Yoshida & James, 2010). Constantinides (2006) argues that the 4Ps of the marketing mix represent a framework for identifying market development, environmental changes surrounding the product location as well as the trends. The manageable aspects of the 4Ps are an attractive tool for marketers to influence consumers' buying patterns and final purchase decisions.

Product

Consumption of spectator sport can be characterized as hedonic and vicarious, as emotions and cognitions derived by watching success/failure performed by an athlete delivers pleasures of mind to fans (Madrigal & Dalakas, 2008; Trail & James, 2001). Accordingly, F1 races are well known by its exhilaration and excitement offered at the scene (Formula 1, 2003). Focusing on the tendency of spectators' vicarious concentration to the product, i.e., flow (Csikszentmihalyi, 1990), intensiveness of their absorption, being apart from self-consciousness, and feeling altered from time represents how much a fan is immersed in a sport. Empirical evidence from Madrigal's (2006) study support this notion since measures of a fans' flow to a sporting event had the highest correlation with criterion-related concurrent variables such as hedonic response and motives. Moreover, when considering other marketing elements (price, place, promotion) within the multidimensionality of buying behaviour factors, operationalizing the aspects centred to the product itself can be imperative. Thus, characterized by the exhilaration and excitement of F1, the fans' immersion to the product and engagement to the experience captures fans distinguished perceptions, attitudes, and responses as a factor of their buying behaviours.

Price

Through the application of dynamic pricing in sports (Lin, 2006), perceived price fairness can derive positive/negative perception, attitudes, and behavioural response of a fan (Xia et al., 2004). Generally sport events can be divided into two product categories, core service and peripheral services that support the core product (Mullin, Hardy, & Sutton, 2007). Spectators' perceived value that they relate with the price of admission and service for the peripheral services within the venue has been identified as a mediating variable that affect service quality and sport consumers' behaviour (Byon, Zhang, & Baker, 2013). Depending on the perceived value that price helps to set in consumers' minds, their perceptions, attitudes and behavioural outcomes are being affected. Price sensitivity has been linked to complaining behaviour and word of mouth commutation (Zeithaml, Berry, & Parasuraman, 1996). Reichheld and Sasser (1990) argued that customers are willing to pay a higher price if they are satisfied with the service quality.

Place

Spectators' service experience about the convenience of sport facility significantly influences their satisfaction and behavioural intentions (Byon, Zhang, & Connaughton, 2010; Yoshida & James, 2010). For instance, the convenience of experiencing the F1 races can depend on efficiencies of the layout and direction signs at a racetrack. That is, how fans experience the race by their activity at the place of the event effects their perceptions, attitudes, and associated responses. Researchers (e.g., Ross, 2007; Wakefield & Sloan, 1995) have identified "sportscape", which can be defined as the stadium design and layout that affects the delivery of the core product, to have a direct impact on spectators' satisfaction level and intentions to return in the future. This emphasizes the importance of the connection between the F1 races and periphery elements of F1 such as restrooms,

parking, concession stands, and ticketing services.

Promotion

A key objective of all sporting events is to increase game attendance and provide necessary information and entertainment opportunity at the event so spectators can have a memorable experience. As mentioned, spectator sports' core product (e.g., F1 races) possesses unique characteristics such as the race being unpredictable, perishable, and uncontrollable (Mullin et al., 2007). Yet, promotion offers marketers opportunities to provide steady and controllable elements to offset or cross-promote the uncontrollable elements in spectatorship (McDonald & Rasher, 2000). Marketers acknowledge that trials or hands-on experience is often the prelude to adoption and many sport equipment providers or events offer various trial opportunities such as equipment demonstration in a risk free environment (Fullerton & Merz, 2008). It also helps sport service providers to build positive rapport with its consumers.

Consumption Characteristics

The third stage in GSEM is consumption characteristics. Consumption characteristics questions: "what factors impact consumption patterns" (Raju, 1995, p. 39). That is, differences in the patterns of consumption behaviour such as cultural orientation towards product versus service consumptions must be considered in global marketing. Spectators behavioural intentions, such as repeat purchase, is a multi-dimensional concept that includes elements such as spreading positive word of mouth to others, willingness to pay a premium for its service or product, or simply repeat their purchase. On the other hand it could result in complaining or discontinuation of service. The goal of sport event marketing is to build and sustain volume for the event. The exchange of the service occurs from the interaction between event spectators and the provider. To achieve a positive relationship, the provider offers a series of activities that they think will satisfy the needs of the spectator. In the case of F1, various marketing mixes are utilized to achieve this goal. However how each spectator meets their needs and continues their involvement with the event will differ by the consumption characteristics of the host country.

For example, Mooij (2009) identified that collective cultures such as Korea and China prefer complex visual images and more verbal communications that are implicit in nature while individualist cultures such as US prefer simple visual images and more communications that provide more information. How different host countries differ in response to F1's consistent marketing mixes across nations can provide sport event marketers with valuable information to better geocentrically revise service items to increase spectators' positive behavioural intentions in the future.

Disposal

The final stage in GSEM is disposal. Disposal questions: "what are the implications of product disposal" (Raju, p. 39). For example, resale, recycling, and remanufacturing in business process and social responsibility and environmental implications of the product/service are considered in this phase.

Organizers of major events around the world are factoring the environment into their planning. Mega events such as the Olympics, NFL, and F1 produce massive amount of carbon emission and they try to work with local organizations to offset the environmental risk factors to become more socially responsible (Falt, 2006). For example, although Formula One is a lavish sport where no expense is spared, the F1 organization is working closely with the Fédération Internationale de l'Automobile (FIA) to reduce carbon emission of the sports. FIA is working to involve more hybrid technology and utilizes KERS (Kinetic Energy Recovery System) as green methods of speed enhancement, which helps to use less fuel and reduce carbon emission (Spurgeon, 2010). F1's official tire sponsor Pirelli is recycling used tires during the event to generate new raw materials for other tires or generate power. Further, as means to foster and share the created values, the relationships and cooperation among FIA, promoters, teams, and local venues should mutually benefit to the competitive advantage of the global F1 product as well as meeting the corporate social responsi-

bility (CSR) of each organization (Porter & Kramer, 2011).

Testing the GSEM

Local variation has always been an imperative topic when discussing international marketing (Kotabe & Helsen, 2008; Mooij, 2009). For instance, cross-cultural examination is a common method (Dawar et al., 1996; Hofstede, 1984) and balancing between standardization and localization is still a relevant issue marketers are facing (Ferle, Edwards, & Lee, 2008). In the current study, two research models are proposed by applying the issue of local variation into the A-B-C-D paradigm in the context of global sporting event marketing. Hence, effects of local variation is proposed into two research models of the GSEM framework.

To test the GSEM, we developed two research models according to Raju's (1995) A-B-C-D paradigm by proposing the first model elucidating the effects of accessibility on buying behaviour factors and the second model explicating the effect of buying behaviour factors on consumption characteristics (see Figure 1). The universal model was applied in three countries (Korea; China; US) for detection and comparisons of local variations. The first research model focused on how accessibility can effect fan's perception of buying behaviour factors, along with local variations of those perceptions across nations. Economic access and physical access were speculated to influence people's perceptions, attitudes, and responses towards the 4P such as experience of race performance, price-quality relationship, infrastructures, and promotions of the event. In the second research model, each element of the 4P's effect on revisit intention and differences in relationships across each nation was postulated. That is, the model tested and compared which elements more influenced behaviour intentions across the three nations.

To this end, hypotheses are generated to examine the local variations across the emerging markets of F1—Korea, China, and US—on (1) perceptions of buying behaviour factors (i.e., 4P marketing activities), along with the influence of economic and physical accessibilities; and (2) effects of the buying behaviour factors formulating consumption patterns of F1 fans. In the GSEM, research model 1 is proposed based on the first research question: How does variations in accessibility affect fans' buying behaviour? The research model 2 is proposed based on the second research question: How does local variations on buying behaviour affect consumption characteristics of revisit intentions? Specifically, we hypothesized that perceptions of the buying behaviours will differ across nationalities (H1) and consumer accessibility (H2) based on the first model; and that buying behaviours will influence revisit intentions (H3) and these effects will vary based on nationalities (H4) based on the second model. Hypotheses 1 and 2 were examined in the first research model, and Hypotheses 3 and 4 were tested in the second research model. The main hypotheses are listed in below:

H1. Perceptions of the buying behaviour factors will differ across nationalities.
H2. Perceptions of the buying behaviour factors will differ by consumer's accessibility.
H3. Perceptions of the buying behaviour factors will influence consumer's revisit intention.
H4. Effects of the perceptions of the buying behaviour factors on revisit intention will vary across nationalities.

The variables were chosen based on the GSEM framework. Economic access, physical access, and difference across nations (i.e., local variation) were used to measure the first step, accessibility. The 4Ps of marketing was used to measure consumers' general attitude toward marketing which is the second step, buying behaviour. Relationships between the first two steps are tested in the first research model. The effects of buying behaviour on revisit intention was examined in the second research model to find the factors impacting consumption patterns which is the third step, consumption characteristics. The implications leading to discourse of the fourth step, disposal, was discussed in the discussion section. Accordingly, results of the two statistical models and discussion of the findings are provided in the following sections of this article.

Methods

Participants and Procedures

Spectators attending the F1 Korean Grand Prix, Chinese Grand Prix, and US Grand Prix participated in the survey. These venues were chosen to represent the local variations in emerging markets. The Korean Grand Prix was launched in 2010 at a newly built racetrack in Yeongam, South Korea; the US Grand Prix was launched in 2012 at a newly built racetrack in Austin, Texas. The Chinese Grand Prix has been held at the Shanghai International Circuit since 2004. A face-to-face self-administered mode was utilized at each venue during the time the F1 events were held (Shanghai, 13-15 April; Yeongam, 12-14 October; Austin, 16-18 November, 2012). A convenient sample was drawn from the three venues. Local graduate students were trained to interview the participants at the race tracks. A total of 1200 questionnaires were distributed and 980 were collected (response rate 81.67%). After data screening, 958 usable questionnaires were obtained (231 Korean, 498 Chinese, 229 American; 355 women, 595 men, M_{age} = 32.73 years, SD = 11.03, age range: 15-71 years). Considering the sample to parameter ratio (Jackson, 2003), 958 participants were deemed usable for the study.

Instrumentation

Psychometric scales were adopted to measure fans' experience of product, price, promotion, place, revisit intentions. Measures of immersion to product (3 items) were adopted from the fan dimension scale (Madrigal, 2006); sensitivity to price (3 items) and appraisal of promotion (3 items) from the scales of market demand variables (Byon et al., 2010); and convenience of the place (3 items) from the service experience scales (Yoshida & James, 2010) were used. Madrigal developed the scales for immersive product experience as part of his multidimensional scale of sporting event consumption. Byon et al. developed the scales of market demand variable to cover the various factors in the sport fan market. Yoshida and James developed the scale of place convenience to assess the sporting venue service experience. To measure the behavioural intentions, RI (3 items) were adopted from the scales used by Maxham (2001) in which he applied the scale as an outcome variable to service experience. Two professors and one post-doctorate researcher of sport management selected three items from each scale considering how the operationalizes items fit to the current GSEM framework, examining its content validity. When appropriate, minor alterations were made to the scales in order to make it applicable to the F1 event. For instance, instead of: "I get so into the action that I lose touch with what is happening" (Madrigal, 2006, p. 277), the question was changed to: "I get so into watching F1 that I lose touch with what is happening." Singular items were used to measure consumers' economic accessibility (M = 3.91, SD = .89), "purchasing F1 tickets were easy"; and physical accessibility (M = 3.17, SD = 1.07), "the F1 venue was easy to access". All items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). All scales were originally designed in English, thus the questionnaire was carefully translated into Korean and Chinese via multiple translators, which were bilingual. In this, questionnaires were independently translated into another language each by two translators, and then back-translated to English by two other translators. After this step, the questionnaires were shared with all translators and the items were discussed to reach unanimous agreement of the translation for both literal and symbolic meanings (Douglas & Craig, 2007).

Data Analysis

Prior to testing the hypotheses, measurement model of all constructs were examined to evaluate the psychometric properties of the measures. Average variance extracted (AVE) values were computed to evaluate convergent validity, and squared factor correlations were compared with AVE values to evaluate discriminant validity (Fornell & Larcker, 1981). When a construct's squared multiple correlation exceeded any corresponding AVE value, more rigorous examination

of discriminant validity was assessed by comparing a model constraining the correlation of factors to one with the freely estimated model by a chi-square test (Anderson & Gerbing, 1988; Bagozzi & Yi, 1988). Multiple fit indices were evaluated to account for measurement errors on the data fit of the covariance-variance matrixes associated with the measurement model (Hu & Bentler, 1999). For this purpose, goodness of fit was evaluated by indices of Comparative Fit Index (CFI), Standardized Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA). Robust maximum likelihood estimation was performed in all analyses using Mplus 6.0 (Muthén & Muthén, 2010); alpha level was set at .05.

Data analysis for hypotheses testing consisted of examining the two research models. First, a multiple indicators multiple cause (MIMIC) confirmatory factor analysis (CFA) model was examined to test the invariance of factor means of the 4Ps by regressing two dummy variables of nationality (i.e., Chinese; American), economic accessibility, and physical accessibility. That is, population heterogeneity was detected by significant relationships between the covariates to the factor (i.e., factor means); and differential item functioning (DIF) were detected by the direct relationships between the covariates and factor indicators. The MIMIC CFA was used because it is more powerful than a multiple-group CFA, especially, when the item characteristics of measure may have different functions across heterogeneous populations (Finch, 2005). However, a MIMIC model cannot detect moderation effects of path coefficients; thus the moderations in structural relationships were examined using a conservative method: Second, a multiple-group structural equation modelling (SEM) was conducted to test the moderation effects of nationality on the paths of the 4P marketing mix factors on RI. In this, series of chi-square tests were performed to ensure metric invariance (i.e., the measurement structure of factor loadings were representing the constructs equally); and to test moderating effects by comparing nested models, i.e., 4 models constraining each direct (moderated) path with the metric invariant model. For all χ^2 difference tests, the adjusted (ΔS-B) χ^2 difference test was adopted using the formula from Satorra and Bentler (2001).

Results

The measurement model consisting of all constructs indicated a good fit (S-B $\chi^2 = 292.024$, $df = 80$, scaling correction factor [c] = 1.067, CFI =. 962, SRMR =. 036, RMSEA =. 053). Convergent validity was supported as all factor loadings were significant ($p<.001$) and AVE values were above .50 (ranging from .51 for price to .69 for RI). For the evidence of discriminant validity, all AVE values were bigger than the squared factor correlations (ranging from .29 for product with price to .74 for place with promotion), except for place compared to the correlation between place and promotion (AVE =. 52; $\phi^2 =$. 54). Accordingly, a constrained model imposing a perfect correlation between place and promotion was compared with the unconstrained model, which indicated a significant difference (ΔS-Bχ^2 (1) = 131.556; $p < .001$) supporting the discriminative validity. Hence, as the psychometric properties were satisfying, further analyses were conducted to test the hypotheses. Detailed results of the measurement model and factor correlations are reported in Table 1 and Table 2, respectively.

MIMIC CFA Results

The initial MIMIC CFA model indicated a satisfactory fit (S-B$\chi^2 = 346.158$, $df = 80$, c = 1.058, CFI = .945, SRMR = .036, RMSEA =. 059). However, significant modification indices associated with nationality, implying DIF, were reported. First, the second item of price, “Various discount opportunities are available”, showed different item function across all nationalities.

Second, the second item of promotion, “There are many hands-on experience activities provide at the event”, showed different item function by the US dummy variable. Third, the second item of product, “I feel as if time is standing still because I’m so focused on the race”, showed different item function by the US dummy variable. The final MIMIC CFA model fit was significantly improved (S-B$\chi^2 = 186.535$, $df = 76$, c = 1.067, CFI =. 977, SRMR = .025, RMSEA =. 039; ΔS-Bχ^2 (4) = 188.503, $p <$. 001). After regressing the nationality covariates to these items (US dummy variable on

Table 1. *Factor Loadings (λ), Reliability Coefficients (ρ), and Average Variance Extracted Values (AVE)*

Factors and items	λ	SE	ρ	AVE
Product			.85	.66
1. I get so into watching F1 that I lose touch with what is happening.	.68	.02		
2. I feel as if time is standing still because I'm so focused on the race.	.89	.01		
3. I am so "zoned into" the race that I lose sense of time.	.85	.01		
Price			.75	.51
4. The prices of the F1 tickets are reasonable.	.73	.02		
5. Various discount opportunities are available.	.72	.02		
6. Prices for using the amenities are reasonable.	.68	.02		
Place			.76	.52
7. Signs at this racetrack help me know where I am going.	.77	.02		
8. The racetrack layout makes it easy to get to the restrooms.	.72	.02		
9. Signs at racetrack give clear directions of where things are located.	.66	.02		
Promotion			.81	.58
10. Much useful information is provided at the F1 event.	.74	.02		
11. There are many hands-on experience activities at the event.	.79	.02		
12. Advertisements of the F1 race are appealing.	.76	.02		
Revisit Intentions (RI)			.87	.69
13. I intend to revisit this F1 race next year.	.75	.02		
14. I will continue to follow this F1 race for delightful experience.	.89	.01		
15. How likely are you to purchase your next F1 ticket for this venue?	.85	.01		

Table 2. *Factor Correlations (ϕ)*

	1	2	3	4	5
1. Product	1				
2. Price	.29	1			
3. Place	.51	.59	1		
4. Promotion	.43	.60	.74	1	
5. Revisit Intentions (RI)	.44	.40	.44	.35	1

item 2 of price, $\beta = -.30$, $p < .001$; China dummy variable on item 2 of price, $\beta = -.13$, $p < .001$; US dummy variable on item 2 of promotion, $\beta = -.19$, $p < .001$; US dummy variable on item 2 of product, $\beta = -.16$, $p < .001$), there were no significant modification indices from the covariates to items. These results imply that spectators perceive these items differently across nations. This may be due to the difference in the social norms about the perception of each item and/or the actual difference in the provided service of such item—local variations. Path coefficients from US dummy variable were all positively significant to the 4P elements ($\gamma = .49$ on product, $p < .001$; $\gamma = .25$ on price, $p < .001$; $\gamma = .68$ on place, $p < .001$; $\gamma = .53$ on promotion, $p < .001$), indicating that Americans had higher factor scores of the marketing mix elements compared to Koreans. Path coefficients from China dummy variable also were all positively significant to the 4P elements ($\gamma = .24$ on product, $p < .001$; $\gamma = .32$ on price, $p < .001$; $\gamma = .43$ on place, $p < .001$; $\gamma = .48$ on promotion, $p < .001$), indicating that Chinese had higher factor scores of the marketing mix compared to Koreans. Additional comparison between US and China, indicated that Americans had higher factor scores of the

marketing mix elements compared to Chinese except price ($\gamma = .29$ on product, $p < .001$; $\gamma = -.03$ on price, $p = .55$; $\gamma = .32$ on place, $p < .001$; $\gamma = .13$ on promotion, $p < .001$). Among other covariates, economic accessibility had significant effects on all factor means ($\gamma = .17$ on product, $p < .001$; $\gamma = .20$ on price, $p < .001$; $\gamma = .22$ on place, $p < .001$; $\gamma = .20$ on promotion, $p < .001$), while physical accessibility had significant effects on all factor means except product ($\gamma = .04$ on product, $p = .22$; $\gamma = .24$ on price, $p < .001$; $\gamma = .22$ on place, $p < .001$; $\gamma = .10$ on promotion, $p < .01$).

Overall, Korean fans perceived to have more opportunities for discounted tickets, were more immersed to the race, and experienced more hands-on promotions. However, despite the marketing efforts, overall evaluation of the marketing activity (factor means) of the event was highest among American, next, Chinese, and then Korean. Economic access and physical access influenced all factor means except the effect of physical access on product. Thus, hypotheses 1 and 2 were accepted, with three additional localized (DIF) items. Results of the final MIMIC CFA model are represented in Figure 2.

SEM Results

Prior to testing the moderation effects of the multiple-group SEM, factorial model and metric invariance model were examined to check the equality of factor structures across samples. Foremost, the model fit of the SEM for each sample showed a good fit. Factorial SEM for three groups (S-B$\chi^2 = 475.695$, $df = 240$, c = 1.040, CFI = .954, SRMR = .049, RMSEA = .055) and partial metric invariance model (S-Bχ^2=489.090, df=254, c=1.051, CFI=.954, SRMR = .055, RMSEA = .054) with the three DIF items freely estimated fit the data well, having no statistically significant difference (ΔS-Bχ^2 (14) = 15.58, $p > .05$). That is, the metric measurements of factor structures were equal with three DIF items freely estimated and thus the moderation effects on path coefficients were able to be compared, across nations.

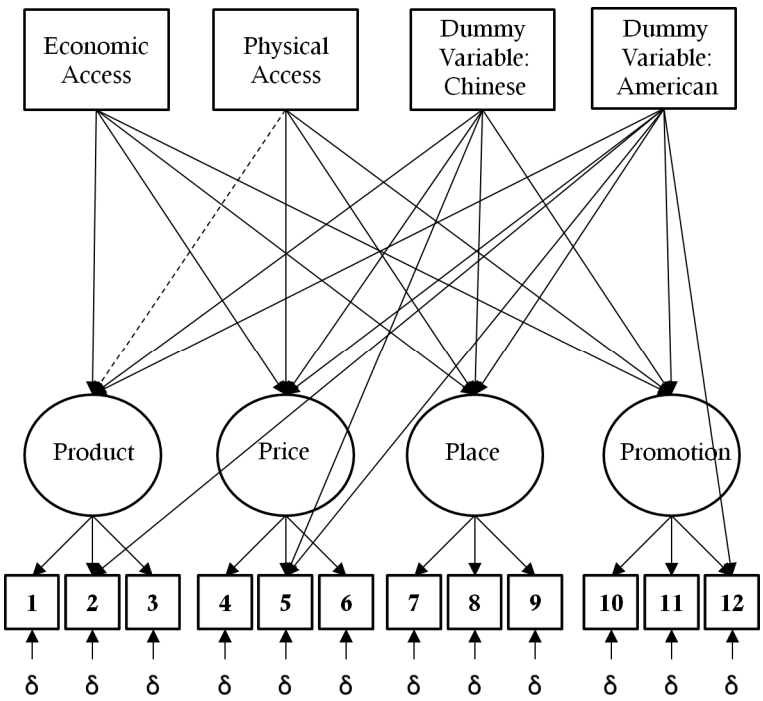

Figure 2. *Illustration of the final MIMIC Model. Solid lines indicate significant effects; broken line indicated nonsignificant effect. Numbers in the reflecting items indicate identical questionnaires numbers in Table 1. All latent variables are correlated with each other (ps < .001)*

A detailed result of the SEM model is illustrated in Table 3. Results of the nested models constraining each moderated path is reported in this paragraph while the paths of each separated test are marked in Table 3 also. Moderation effects by nationality were significant on two paths: Koreans had higher magnitudes on effects of place on RI (ΔS-Bχ^2 (1) = 6.21; $p < .05$) and Americans had higher magnitudes on effects of promotion on RI (ΔS-Bχ^2 (1) = 19.70; $p < .001$). Perception of the racetrack facilities significantly influenced RI for Koreans while this effect was not prominent for Chinese and Americans. Perception of the promotions significantly influenced RI for Americans while this effect was not prominent for Korean and Chinese. Perception of the product was significant for Korean and Chinese but not the Americans, however, the difference of effect across nations were minimal (ΔS-Bχ^2 (1) = .34; $p > .05$). Partial correlated coefficients from price to RI were non-significant.

Table 3. *Standardized Path Coefficients on Revisit Intention across Nations*

	γ	SE	t
Korean (n = 231)			
Product	.35	.06	5.50***
Price	.10	.10	.98
Place†	.28	.11	2.67**
Promotion	-.07	.10	-.71
Chinese (n = 498)			
Product	.26	.07	3.68***
Price	-.02	.24	-.10
Place	.84	.45	1.90
Promotion	-.46	.27	-1.74
American (n = 229)			
Product	.13	.07	1.83
Price	.18	.09	1.92
Place	.10	.09	1.05
Promotion†	.26	.10	2.54*

Note. Results are from partial metric invariance model imposing 3 DIF items freely estimated. Significant moderation effects are denoted with dagger marks where each nested model was tested by constrained path.
*$p < .05$. **$p < .01$. ***$p < .001$. † significant moderation effect compared to other nationalities

Discussion

The current research emphasizes the importance of incorporating local variations within the marketing mixes to help develop loyal fans and provide sustainable operation of the F1 event in its hosting cities. Overall, Americans had the highest perception on F1's marketing activities followed by Chinese and Koreans. Economic and physical accessibility influenced all 4P elements, except the immersion to the product (i.e., F1 race) was not affected by physical accessibility. While controlling for all other variables, product and place had significant influence in Korea; only product had a significant influence in China; and only promotion had a significant influence in US.

The difference in perceptions to marketing activities clearly supports the need to recognize local variations in global sport management. The MIMIC model demonstrated that differences exist in fans perception across nations. This result indicates that market penetration to the Korean market will be more difficult compared to the China and US markets due to its remote location and unfamiliarity with motorsports. In other words, the marketing activities and its delivery are not meeting the perceived needs of the Korean spectators. Detection of DIF items for Koreans also supports this result as, despite Korean fans' immersion to the race, more exposure to discounted tickets and hands-on promotions did not positively carry over to Korean spectators' perception of the overall event. Since the motorsport industry is trivial in Korea, and by comparing the economic size of the entire sport industries and its consumption cultures, it can be inferred that physical distance and psychological attachment constrains Korean fan behaviours, while American fan behaviours can be reflected as casual consumption enjoying the atmosphere of the event. Jung (2012) also identified that Korean fans and local promoters are not ready to sustain this mega event in the long run if the current scheme of operation and fans' awareness continues to exist. So strategies to leverage the involvement of consumers must be accompanied to prepare for the backlash by honeymoon effects.

The comparing three nations have different size and history of motorsports and its local consumption culture and behaviours are quite different. The US is known as one of the largest markets of motorsport (e.g., NASCAR) while the motorsport industry is in a developing stage in China and Korea. Also, F1 circuits are located near big cities for the US and Chinese Grand prix, whereas the Korean Grand Prix is located in a rural area. Further, insufficient infrastructure of hotels and amenities were previously pointed out as barriers for the consumption of F1 (Holt, 2010) in the case of Korea. When considering the relatively small dispersion of factor correlations of the marketing activity factors with revisit intention (ranging from .35 to .44; see Table 2), the partially-correlated path coefficients controlling for other variables showed severe differences in its relationships with the outcome variable (see Table 3). This cross-sectional diagnosis of consumption patterns implies that different strategies are necessary in utilizing the geocentric marketing mix for each market.

The product factor showed a significant effect on revisit intention in Korea and China, whereas the actual perceptions of all 4P factors were the highest in US. With comparison among the researched countries, results indicate that the development stage of each country's motorsport industry along with its fans' awareness of the sports might have an impact on the selection of marketing activates and their intention to return.

To incorporate the current state of spectators' awareness of the F1 and offer appropriate marketing activities, we suggest the use of embedding polysemic structures when interacting with spectators. Consumers in the US are familiar with the race element but could benefit from the promotions to make their visit more worthwhile. Management in China and Korea should focus on providing people with more information regarding the F1 to get more familiar with the event and provide information regarding what to expect during the event and provide historic background regarding the races. The use of polysemic structures within the venue and promotions can benefit the F1 races by incorporating multiple narratives (i.e., story-telling of the F1 event and its significance being held at each country), embedded genres (i.e., use of festival elements that fans feel familiar with the race) and layered symbols (i.e., colour scheme of the banners inside the venue, award ceremony) with the promotion of the event (Chalip, 1992).

Korea and China have rich cultural background and the US has a long race history that F1 can use to their advantage. The use of polysemic structures offers the opportunity to involve each country's enriched culture within the promotion of the F1 race. This will help the Korean and Chinese fans to be more familiar with the event and give them a sense of home so they can feel more comfortable and get more immerse at the races. And for the US it could mean fans being part of its country's rich race history.

With the use of the A-B-C-D paradigm and incorporation of the marketing mix, the global sporting event model (GSEM) provides a comprehensive framework to help F1 to prioritize the marketing mixes based on the host country's development stage and embed geocentric elements to help host city fans to get more involved with the F1. While fans in the Far East Asian countries were perceived the product itself attracting their visit to the venue, American fans were more attracted by the promotional aspects. Also, Korean fans were appealed by the attractions of the venue itself. The findings from this research can benefit the organization of F1 to better localize their F1 races and provide a framework for effective and efficient marketing of the events. For example, racing has not been a popular form of entertainment in Korea and, hence, the product and venue had to be appealing for consumers seeking for variety. However, racing has a in the United States and thus promotional offers were appealing. On the other hand, Chinese fans focused on the entertainment value of the product itself. Furthermore, future studies can examine why the Korean Grand Prix was discontinued while the other venues are still hosting the event. One explanation might be that the pleasure of variety seeking faded as the product and place was not appealing anymore compared to alternative leisure activities. In addition, the promotional aspect in the United States can be further elaborated by separating public relations from promotion (i.e., adopting a 5P perspective).

Another suggestion would be to develop a scale specific

to the GSEM framework. Even though the scales used in this study were adopted and adjusted for content validity, there is a disconnection between the original purpose of the scales and the four aspects of the A-B-C-D paradigm. For instance, the items used to measure consumers' general attitude toward the F1 Product narrowly measured the immersive aspect of the experience; and items measuring Place focused on the convenience aspect of the venue experience. Also, general perceptions of Price and Promotion may neglect the multidimensional aspect of the variables; and we only looked at the Revisit intentions in examining the step three consumption patterns. This leaves many gaps in capturing the explanatory power of the GSEM model and also leaves the connection between the variables and the framework to be limited. For example, visitors' cognitive involvement to the technology of F1 and emotional attachment to the venue might play an important role in the model and other behavioural patterns could be revealed when tracking actual consumption patterns. We suggest future researchers to develop scales custom to the GSEM framework and further assess the model for external validity. Nonetheless, for sustainable management of the new markets of F1, each stage of the A-B-C-D paradigm demand ongoing endeavours of strategic implementation to create loyal fans. We further hope that this model be tested in other sporting events in multiple settings and provide a comprehensive tool for event and marketing strategy development.

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