World Association for Sport Management Series

MARKETING ANALYSIS IN SPORT BUSINESS

GLOBAL PERSPECTIVES

Edited by Kevin K. Byon, Brian H. Yim, and James J. Zhang

ROUTLEDGE

Marketing Analysis in Sport Business

This book explores sport marketing analytics, an essential and crucially important aspect of contemporary sport business. Successful sport marketing begins and ends with the consumer, so understanding the consumer experience is critical. *Marketing Analysis in Sport Business* demonstrates how rigorous analytical procedures are the key to developing effective, evidence-based marketing practices that reflect real consumer needs.

Presenting cutting-edge case studies of sport marketing analytics in action, the book explores topics such as digital communications, social media, digital ticketing, event marketing, the economic impact of COVID-19, developing sport brands, and conducting research with athletes and event participants. Written by a team of authors from 15 countries, including Australia, China, France, Iran, Italy, Japan, Mexico, New Zealand, Serbia, South Korea, Spain, Taiwan, the United Kingdom, the United States, and Venezuela, the book offers insight from a variety of cultural contexts and new perspectives on the global sport industry.

Marketing Analysis in Sport Business is illuminating reading for any advanced student, researcher or professional working in sport business and management, sport development, marketing, strategic management, or international business.

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About This Book

The co-editors of this book have selected research papers relevant to the topical issues. In addition to this introduction chapter, this book contains a total of 14 chapters. The chapters are contributed by a total of 43 scholars representing 15 countries or territories around the world, including Australia, China, France, Iran, Italy, Japan, Mexico, New Zealand, Serbia, South Korea, Spain, Taiwan, United Kingdom, United States of America, and Venezuela. Co-Editors Kevin K. Byon, Brian H. Yim, and James J. Zhang would like to take this opportunity to thank these eminent scholars for their remarkable contributions to the completion of this book project. This book is commissioned by the WASM Executive Board, representing this organization's leadership and commitment to develop, summarize, synthesize, and analyze knowledge that help enhance global sport industry. It covers a range of key sport marketing analysis issues in both global and local settings. The book combines scholarly output derived from diverse inquiry protocols, such as review of literature, documentary analysis, qualitative research, and quantitative investigations.

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Chapter 1

Sport Marketing Analyses

An Introduction

Kevin K. Byon, Brian H. Yim, Hyunseok Song, and James J. Zhang

Introduction

As sport leagues, teams, and events have been integral to many communities' cultural and economic foundations, the sport industry has experienced rapid growth and has become one of the largest industries in North America. The estimated size of the sport business industry in North America has risen sharply in recent years, from $213 billion at the end of the 1990s to approximately $540 billion in 2018 (Plunkett Research, 2018). Despite the Great Recession occurred in 2007, the sport industry has continued to grow at a rapid pace, having more than doubled over the last two decades. Also, the sport industry has realized similar growth trends throughout other regions of the world estimating the global sport industry size as $1.3 trillion in 2018 (Plunkett Research, 2018; Zhang et al., 2017).

Due to the complexity of today's sport business environment, the traditional entrepreneurship to operate the sport organization or understanding to deal with sport consumers is no longer sufficient to meet the needs of the market. Instead of relying on practical experience, hunch, and extant knowledge, both sport managers and marketers should engage in understanding contemporary scholarship to allow them to bring cutting-edge information and solutions to formal professional preparations. By doing so, the sport marketers' analytical and problem-solving skills improve, which further lends credence to the notion of evidence-based sport management scholarship (Kim et al., 2021; Zhang, 2015).

This chapter is designed to introduce concepts and applications pertaining to traditional and emerging sport marketing analyses and analytical methods to help sport marketers better understand research process, traditional, and contemporary data analytics that are utilized in global sport industry. The ensuing sections address the following: (a) needs for sport marketing analyses, (b) traditional sport marketing analytics, and (c) digital technology for sport analytics.

Needs for Sport Marketing Analyses

As indicated by the sport industry report (Plunkett Research, 2018), sport industry is becoming increasingly dynamic and comprehensive as the research problems are becoming more complicated. To effectively and efficiently deal with this

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global phenomenon, sport marketers must be equipped with relevant analytical, methodological, and theoretical knowledge. The sport marketing research implies careful and systematic means of solving problems that often emerge within the sport industry. High-quality research should involve rigorous systematic procedures to (a) identify problems, (b) search and comprehend related literature, (c) develop research questions/hypotheses, (d) determine research design and tools, (e) collating data based on the target population, (f) analyze and interpret the data, and (g) translate the results into actionable strategies through effective communication (Andrews et al., 2020; Byon & Zhang, 2019).

Effective sport marketing begins and ends with the consumer; therefore, understanding the consumer experience is critical to strategic marketing design. Good sport marketers seek answers to the following questions: (a) who the target sport consumers are, (b) where they live, work, travel, and consume the sport product, (c) where, when, and how they become exposed to the sport product, (d) how and why they consume the sport product, (e) how they perceive the sport product, (f) their level of satisfaction with the sport product, and (g) what their future sport consumption behavior will be (Johnson et al., 2019; Mullin et al., 2007). A tool for answering these important questions is marketing research: "the process or set of processes that links the consumers, customers, and end users to the market through information – information used to identify and define marketing opportunities and problems; generate, refine, and evaluate marketing actions; monitor marketing performance; and improve understanding of marketing as a process" (Shank & Lyberger, 2015, p. 98). In line with this definition, sport marketing research is the systematic process of collecting, analyzing, and reporting sport market data to make strategic sport marketing decisions (Shank & Lyberger, 2015).

In order to understand sport consumers, sport organizations gather information systematically and continuously. Instead of taking a reactive approach, sport marketers proactively collect consumer information (e.g., demographic, psychographic, and product/service usage) to stay relevant in today's highly competitive and rapidly changing sport entertainment marketplace. A data-based marketing (DBM) system is a comprehensive system that integrates all data files in a centralized system and enables sport marketers and organizations to retrieve target consumer data that is useful in marketing decision-making, sales and marketing activities, and presentations and proposals. DBM systems can be internal (e.g., season ticket holder list) or external (e.g., regional demographic information) via secondary data (e.g., information collected by a government department) or primary data (e.g., fan survey) (Geurin et al., 2018; Mullin et al., 2007).

Traditional Sport Marketing Analytics

The types of data collected depend on the marketing research design, typically one of three primary types: (a) exploratory, (b) descriptive (survey), and (c) causal (experimental).

Exploratory Design

Researchers conduct an exploratory study (e.g., phenomenology, focus groups, and case study) when they need to increase their comprehension of a problem that is not yet clearly defined. Using an exploratory study, researchers can finely tune a broad problem into specific problem statements and develop potential hypotheses (Shank & Lyberger, 2015). Therefore, an exploratory study is most effective during the initial stages of researching a new problem or concept. Exploratory research includes several techniques: secondary data analysis, pilot studies, experience interviews, and case studies. Secondary data, which are data already collected but related to the research question (Shank & Lyberger, 2015), include several types: (a) government reports and documents (e.g., Bureau of the Census of the U.S. Department of Commerce, The Statistical Abstract of the United States, Chambers of Commerce, Small Business Administration), (b) standardized sports marketing information studies (e.g., ESPN Sports Poll, Sports Business Research Network), (c) trade and industry associations (e.g., American Marketing Association, European Association for Sport Management, Institute of Sport and Recreation Management, National Sporting Goods Association, North American Society for Sport Management, Sport Marketing Association, World Association for Sport Management), and (d) books, journals, and periodicals (e.g., *Sport Marketing textbooks*, *European Sport Management Quarterly*, *International Journal of Sports Marketing and Sponsorship*, *Journal of Sport Management*, *Sport Marketing Quarterly*).

An example of an exploratory study can be found in Yim et al. (2020a), who explored millennial sport fans' consumption traits and categorization of the generation by reviewing 22 studies published in academic journals. They found that Markert's (2004) generational cohort approach was the most appropriate categorization for millennial sport fan studies and identified several consumption traits that the millennial consumers showed: (a) community-driven; (b) peer pressure-influenced; (c) emotional; (d) making their voices heard; and (e) technology-driven. To explore the relationship spectator sport and population health, Inoue et al. (2015) conducted a scoping study by reviewing 135 published sources. Although the results derived from scoping review are preliminary in nature, information gained to understand the phenomena of interest is comprehensive. Oftentimes, the knowledge from exploratory and qualitative methods can be served as foundation and precursor to more systematic and qualitative inquiries such as meta-analysis.

As guides for future study and large-scale research, pilot studies are small-scale research conducted using small sample of data (Connelly, 2008). Pilot studies are quite commonly used in sport marketing research for following benefits: (a) it can provide researchers ideas and insights that have not been identified before, (b) enables preliminary testing of the hypotheses, (c) provide chance to evaluate the usefulness of the data, (d) reduce unanticipated problems, and (e) try out several measures and the select the measures that produce the clearest results

for the main study. For example, Yim et al. (2020b) conducted focus group interviews (18 interviewees in 3 sessions) as a pilot study to explore Millennial sport fans' consumption behaviors and to develop a measurement scale for a large-scale study. The focus group study enabled to examine millennial sport fans' consumption traits to compare with previously identified millennial consumption traits. The focus group interview results confirmed four out of five millennial fans' consumption traits found in the previous literature and discovered two new traits (rational choice and desire to be comfortable), which provided new insights that the researchers did not identify through literature review. To examine the effect of experiential marketing on behavioral intention in a festival with a specific sport event, Yazıcı et al. (2017) used measurement scales developed in the United States. The usefulness of the measures in Turkish culture was confirmed in their pilot study where they collected a survey data to test the validity and reliability of the scales. After confirming the usefulness of the scales though pilot study, they used the scales in their main study.

Case study is another useful method widely used in exploratory research (Rowley, 2002). When there is no single set of outcomes of the research question, a (exploratory) case study is useful to inform the direction of a larger quantitative study because even with a single case, researchers can collect deep level data (Seaton & Schwier, 2014). Case study research method is defined as "as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (Yin, 1984, p. 23). According to Eisenhardt (1989), case studies are well suited for new areas of research since they can examine deep and rich qualitative data, and for fresh perspectives on well-established areas by providing cases that contract established ideas or theories. In the area of sport marketing, Hyatt (2007), via the use of a well-designed case study of National Hockey League's Hartford Whalers, examined the effects of team relocation on the fandom of the loyal left-behind fans. Through the case study, the author could shed light on the experiences of left-behind fans, which was the new phenomenon in sport consumer behavior literature.

Descriptive (Survey) Design

Researchers use a descriptive research design when the problem is more clearly defined and the primary objective is to describe the characteristics of target market groups (Shank & Lyberger, 2015). This approach also allows scholars to examine the relationships or correlations among variables (Byon & Zhang, 2019). The primary purpose of a descriptive research is to measure who, where, how much, and how often sport marketing stakeholders (e.g., sport consumers, sport organizations, employee, event organizers, sponsors, etc.) engage in certain consumption behaviors; the most common data collection technique in descriptive research is the survey (Shank & Lyberger, 2015).

Two types of data collection methods often used in survey design are cross-sectional study and longitudinal study. In a cross-sectional study, researchers collect data at a single point in time while in a longitudinal study, researchers perform multiple data collections (more than three points in time) over time. There are several advantages of cross-sectional research design that its data provide a snapshot of the characteristics of a particular group and it is relatively inexpensive and convenient research design to collect data. Although results from cross -sectional data cannot establish cause and effect, they can reveal correlations among variables. Cross-sectional research design is one of the most used research designs in sport marketing research area. Some concerns about the validity of cross-sectional studies are the common method bias (CMB) and lack of causal inference (CI) (Rindfleisch et al., 2008). Three data collection strategies are suggested to reduce the threat of CMB and enhance CI: (a) employing multiple respondents, (b) gathering multiple types of data, or (c) collecting data over multiple periods (Rindfleisch et al., 2008). To avoid the CMB stem from obtaining a predictor an outcome from the same source at the same time point, Kim and Byon (2018) employed a dyadic method to collect the data from two sources in two data collections when they examined the mutually beneficial relationship between employees and consumers in a fitness center. Cross-cultural studies, where data are collected multiple times in multiple locations, in sport marketing revealed that many human needs and psychological constructs are universal such as team identification, satisfaction, and perceived service quality (Lee & Kang, 2015; Yoshida & Heere, 2015; Yoshida & James, 2010), which enhances the external validity.

Although abovementioned ways can minimize CMB and CI, researchers recommend longitudinal study as a better solution to these problems (Jap & Anderson 2004; Ostroff et al., 2002). By conducting a longitudinal study, scholars repeatedly collect data from the same individuals at different points in time to examine changes. According to Ployhart and Vandenberg's (2010) definition, a longitudinal research is "a research emphasizing the study of change and containing at minimum three repeated observations (although more than three is better) on at least one of the substantive constructs of interest" (p. 97). The advantages of a longitudinal research design are the possibility of measuring cause and effect and monitoring changes of a variable (e.g., consumer decision-making) over time (Cutler, 1979). Some disadvantages of this research design are as follows: respondents can be conditioned, potential dropout bias, and collinearity issue by asking same questions between times. Kunkel et al. (2016) used a longitudinal research design to examine the development and stability of consumer's team brand associations and their influence on team loyalty of a new sport team in its early development stage. They collected the survey data in three points in time over a 19-month period from new elite-level Australian football team fans by using newsletters including the survey links. Latent growth modeling showed that consumers' brand association changes over time as they get more experience with the team. Furthermore, a cross-legged panel model revealed that brand associations cause consumer loyalty.

Katz et al. (2021) examined the evolution of sport fan ties and friendship ties on Division III campuses in their longitudinal network study. A freshman orientation group was recruited and their network data regarding fan ties, friendship ties, and team identification were collected over the course of two academic years (four points in times in four semesters) using the network questionnaire. They used the simulation investigation for empirical network analysis for the examination of the longitudinal network data and found that sport played a significant role in promoting friendships among new students and influenced student success and retention. Sato et al. (2015) also used a longitudinal research design to examine whether a distance running event can cause participants' life satisfaction. They used a panel data (who participated in a marathon event) to collect data from four points in times over a five-month period. Latent growth modeling analysis was used to analyze the longitudinal data and found that the runners' life satisfaction peaked immediately after the marathon event before receding.

Strictly speaking, it may not be a longitudinal analysis as there have been several studies in sport marketing that collected data from two points of time which still enabled to see the difference over time. Zhang et al. (2020) conducted a pre-post study using panel data to examine the changes in relationships among event impacts, satisfaction, and host city residents' behavioral intentions (i.e., support intention and word-of-mouth) before and after a major sporting event, Nanjing Youth Olympic Games. Data were collected in two time points (three months before and three months after the event) from the panel (i.e., residents in Nanjing city) and researchers matched the data using email address to ensure that the same respondents were surveyed both times. Structural equation modeling (SEM) invariance tests were conducted to examine the pre- and post-behavioral intentions and revealed that the residents' assessment regarding sport event changed over the six-month period. Another pre- and post-study example is Lock et al.'s (2014) study where they collected data using two online questionnaire instruments from two time points over a one-year period to examine the longitudinal stability of, and interrelationships between, the dimensions of team identification (i.e., affect, behavioral involvement, cognitive awareness, private evaluation, and public evaluation) of a new Australian Rules football team. They used the Gold Cost Suns fan database to identify the fans and collected panel data in two time points over 12 months. Since they collected the data only in two time points, a cross-legged panel model was used to examine the change over time. They found that each dimension showed relative stability over time and also found that public and private evaluation in Time 1 has a positive relationship with behavioral involvement in Time 2.

Experimental Design

The importance of making CIs is hard to overemphasize. Experimental research design is a method of data collection design to observe the consequences of very specific actions or stimuli to test hypotheses under controlled conditions

(Blackstone, 2014). Using experimental research, scholars can identify cause-and-effect relationships by manipulating one or more independent variables while holding other variables constant and measuring the impact on dependent variables (Byon & Zhang, 2019; Shank & Lyberger, 2015). Experimental research includes two broad types: (a) true experimental design and (b) quasi-experimental design. The major difference between the two designs is random assignment. True experimental design includes "more than one purposively created group, common measured outcome(s), and random assignment" (Gribbons & Herman, 1997, p. 1). The individual background variables (e.g., sex, ethnicity, etc.) cannot be purposively manipulated and their effects are eliminated though random assignment. Therefore, the strength of true experimental research design is that it can assure that the groups are truly comparable and that the observed differences are due to the treatment but not due to the results of extraneous factors or pre-existing differences of the control and experimental (or treatment) group. Through a true experimental research design, a study procedure can be conducted rigorously, which ensures the internal validity. Internal validity refers the extent to which a study establishes a cause-and-effect relationship between a manipulation (or treatment) and a finding (Blackstone, 2014).

The key of obtaining high internal validity is eliminating alternative explanations for an outcome by minimizing confounding as much as possible. Confounding happens when other factors potentially influence and confuse the study outcome, which makes the cause-and-effect result untrustworthy. There are several ways researchers can improve internal validity of a study: (a) blinding the participants (sometimes researchers too) to make them unaware of the intervention to avoid bias in their perceptions and behaviors; (b) manipulating an independent rather than just observing an association without intervention; (c) random selection of the participants to represent the population of interest; (d) random assignment to the treatment and control group to avoid systematic bias between groups; and (e) following rigorous study protocol for every group in the study to not to introduce any other effect than the treatment (Blackstone, 2014; Campbell & Stanley, 1966). As there are many ways to establish internal validity, there are some situations that can threat internal validity. First, attrition (whether the participants drop out of the survey) could potentially lead to biased sampling for the results. Another threat is confounding that the third variable, other than the treatment, influences the results. Additionally, situations such as diffusion (treatment group interacting with control group), maturation (when study takes place over a period of time it is possible the participants naturally changed), and repeated testing of the measures are potential threats for internal validity (Blackstone, 2014).

However, one of the biggest disadvantages of the experimental design is that it is artificial. The problem that the conditions of an experiment do not represent the real-world conditions creates external validity problems. External validity refers to how well the outcome of the experimental research can be generalized to different measures, persons, settings, and times (Steckler & McLeroy, 2008). External validity is threatened when experimental study does not account the

interactions of variables in the real-world (Cuncic, 2020). Researchers question how often the real-world social interactions can occur in the same way in a lab (Blackstone, 2014). When random assignment is not possible due to the constraining situations, quasi-experiments are considered to be the most useful (Cook & Campbell, 1979). Although, due to the lack of control over random assignment of participants to conditions, cause-and-effect results and internal validity of the study are often questioned, quasi-experimental research design is more common in studies conducted in real-world setting and show higher level of external validity of the findings (Cook & Campbell, 1979). External validity can be improved by: (a) creating psychological realism in the treatment by making the participants believe the event of the study is a real event; (b) using statistical method for calibration to adjust or reweigh problems related to external validity; (c) replicating the study with different samples or in different settings; and (d) conducing field experiments outside the laboratory (Blackstone, 2014). There are some situations that can threat the external validity such as pre- and post-test effects (where the cause-and-effect relationship diminishes without these tests), sample features (particular sample is responsible for the cause-and-effect relationship), selection bias (when differences between groups in a study is related to the independent variable), and situation factors such as time of the day, location, noise, etc. (Blackstone, 2014).

Sport marketing is one of the social science disciplines where there are many variations due to the external factors that may be affecting the manipulated variable, and it is hard to conduct a true experimental research in a laboratory due to the interactive dynamics of sport environment, which makes the randomization not possible. Therefore, quasi-experiments are prevalent in sport marketing area (e.g., Asada et al., 2020; Cianfrone et al., 2011; Cianfrone & Zhang, 2006; Jang et al., 2017; Kim et al., 2020). Jang et al. (2017) examined the effect of team identification on spectators' energy and happiness using an experimental research design. They used a 2 (team identification: high vs. low) × 2 (positivity of game outcome: winning vs. losing) between-subjects design. Participants were recruited from Amazon Mechanical Turk (MTurk) and they were randomly assigned to either winning or losing condition. A 6-minute highlight video of U.S. Men's National Soccer team's previous games was used as the stimuli (i.e., winning and losing outcome) in the study. They found that highly identified spectators showed a greater level of happiness than the lowly identified spectators when their team won the game. Both groups showed similar levels of happiness in losing situation. This experimental research established cause-and-effect between spectatorship and happiness while previous research findings showed inconsistent results whether sport spectatorship positively or negatively influences fans' happiness (Inoue et al., 2015).

Kim et al.'s (2020) experimental research tested the mediation effect of fans' coping strategies between the severity of spectator dysfunctional behavior (SDB) and revisit intention and the moderating effect of self-construal (interdependence vs. independence). Kim et al. (2020) went through a rigorous study procedure

where they added two pretests for the development and validation of stimuli and conducted repeated studies to establish external validity. Pictorial sketches were used as a stimuli and to identify the low severity of SDB, pretest 1 was conducted to ask participants who attended NFL games. High level of severity was physical fighting and low level of severity was argument among spectators. Pretest 2 was conducted to develop and validate the stimuli. In order to overcome the limitation of the cross-sectional design, they conducted two studies (study 1 and study 2 to replicate and extend the study 1). Asada et al. (2020) conducted three studies using MTurk data to analyze relative size and homogeneity influence fans' perceptions and intentions to support the team. In their study 1, they used a fictional city and a fictional soccer team in the experimental scenario which contained high internal validity but lacked external validity. To address the limitation, they conducted study 2, where they replicated the study with a more realistic stimulus in which they used actual city and team names. Study 3 further improved the external validity of the findings in the experiments.

Traditional Analytical Procedures

When a researcher is interested in comparing the differences in means of two groups, a t-test can be used. For example, a t-test can be used when a sport marketer is interested in comparing the stadium visit frequencies between fans and non-fans. There are several types of t-tests: (a) a paired t-test, (b) a two-sample (or independent) t-test, and (c) a one-sample t-test. A paired t-test is used when the groups are from same population (e.g., pre and post) while a two-sample t-test is used when comparing groups from two different populations (e.g., Cleveland fans vs. New York fans). A one-sample t-test is performed when one group is compared against a standard value (Bevans, 2020). When performing t-tests, researchers will select between a one-tailed t-test and a two-tailed t-test. To find out whether or not the two groups are different from one another, a two-tailed t-test will be used while a one-tailed t-test is used to find out whether one group's mean is greater (or less) than the other group (Bevans, 2020). In sport marketing, a t-test is often used to examine the group difference in descriptive research and in experimental research. Researchers hypothesize that a null hypothesis that the group means difference is zero and an alternate hypothesis that the group means difference is different from zero, and they want to detect statistically significant difference between groups. For example, Asada et al. (2020) used t-tests to test whether the manipulations successfully affected study participants' perceptions about the relative size and homogeneity. Hwang and Chung (2019) in their experimental study, where they examined the difference in sport fans' donation intention to college athletics by type of communication and interactivity of communication, used a t-test for manipulation check. They found significant difference in the mean score of social media and traditional media. After Asada et al. (2020) and Hwang and Chung (2019) identified the group means difference between the manipulations, they were able to proceed to the main analysis.

When there are more than two groups that a sport marketer wants to compare, a t-test cannot be used. In this case, a researcher performs an analysis of variance (ANOVA) to reveal any significant differences in a dependent variable among three or more sport consumer groups. There are two types of ANOVA that are commonly used, the one-way ANOVA and the two-way ANOVA. A one-way ANOVA compares the variance in the group means considering only one independent variable (or factor) while a two-way ANOVA compares the group means considering two independent variables (Mackenzie, 2018). When the group means are found to be significantly different using an ANOVA, researchers conduct post-hoc tests to identify which particular pairs of means are significantly different based on the probability of at least one Type I error in a set of comparisons (Levine, 2014). There are many post-hoc tests and some of the most common tests are Bonferroni procedure, Scheffe's method, Tukey's HSD test, etc. (Levine, 2014). In sport marketing research, an ANOVA has been used to compare three or more groups with one independent variable (Yim et al., 2020b) or two independent variables (e.g., Hwang & Chung, 2019). Yim et al., (2020b) examined sport consumption differences among fan groups from three generations, Millennials, Generation X, and Baby Boomers, using a series of one-way ANOVA. The ANOVA results revealed that there were significant differences in group means of sport consumption behaviors. Scheffe's method was used for post-hoc tests to identify group differences such as Millennials and Generation X spent more time on sport-related social media activity participation than Baby Boomers. In Hwang and Chung's (2019) study, there were two independent variables (media platform and interactivity), therefore they adopted a 2×2 factorial experimental research design and used a two-way ANOVA to analyze the data. They were able to find significant group mean difference of fans' online donation intention according to the media platform as well as interactivity of cause-related marketing (CRM).

Multivariate Statistics

While ANOVA only determines group differences in a single dependent variable, multivariate analysis of variance (MANOVA) can test for group mean differences in two or more dependent variables. MANOVA is an omnibus test statistic and do not tell a researcher which specific pair of groups were different from each other, so post-hoc tests need to be tested to identify which pairs are significantly different. In sport marketing research, scholars have used MANOVA to examine various spectator motivations (e.g., Andrew et al., 2020; Funk et al., 2009; Pizzo et al., 2018). Andrew et al. (2020) used a MANOVA to examine gender differences among attendance motivation (nine motivations) and found a statistically significant difference in vicarious achievement. Specifically, male fans reported greater vicarious achievement motivation for attendance. Pizzo et al. (2018) examined similarities and differences in spectator motives (15 motives) between one traditional sport (Korean Professional Soccer League) and esports

(FIFA Online 3 and StarCraft II) using a MANOVA. Tukey's HSD post-hoc tests were used to identify significant differences between context pairs. They found similar patterns for 11 out of 15 motives and 4 different patterns out of 15 and concluded that traditional sport and esports were similarly consumed.

Another useful parametric inferential technique is regression analysis, which estimates the relationship between a dependent variable (i.e., outcome) and one or more independent variables (i.e., predictor). Regression analysis is useful to predict future trends to determine the relationship between variables and understand one variable's change when the other one(s) changes (Blokhin, 2021). Due to its predictive power, multiple regression analysis is common in business research (Hair et al., 2010), including sport marketing (Byon & Zhang 2019; Jin et al., 2011). Simple regression and multiple regression are the most commonly used types of regression analysis (Blokhin, 2021). Simple regression analyzes the relationship between two variables (independent and dependent) in attempt to draw a straight line based on the data by calculating the slope and interception. However, in sport marketing research where it is rare that a dependent variable is explained by a single independent variable, researchers use multiple regression analysis which establishes the relationship between a dependent variable and more than two independent variables (Blokhin, 2021).

Quarterman et al. (2013) reported that regression was the most used (23.3%) analytic method published between 2000 and 2009 in the *International Journal of Sport Management*. Because they can address particular outputs (e.g., behavioral intention, satisfaction), regression models of sport consumer decision-making are highly useful for sport marketers and organizations. An example of multiple regression in sport marketing research is predicting sport fan satisfaction based on five dimensions of perceived service quality inside a stadium (Theodorakis et al., 2011). Four out of five service quality dimensions predicted the overall service quality and the overall service quality was found to mediate the relationship between the five service quality dimensions and fans' satisfaction. Although multiple regression analysis is a useful analytic method, it evaluates and constructs the relationship between variables of interval dependent variable and linear combinations of interval, dichotomous or dummy independent variables. Shortcomings of regression analysis are that it is difficult to use it to assess a complex path model with direct and indirect effects and it cannot use latent variables with multiple indicators to predict the dependent variables while SEM allows researchers to overcome these shortcomings.

Factor analyses, exploratory factor analysis (EFA), and confirmatory factor analysis (CFA) later emerged in sport marketing research where only about 3% of the studies employed advances statistical methods such as EFA, CFA, and SEM between 1987 and 2004 in *JSM* (Quarterman et al., 2006), but they gained immediate acceptance and are now common. Byon and Zhang (2019) revealed that until early 2000, EFA and regression, often called first-generation techniques (Hair et al., 2010), were used by sport management researchers to identify patterns in the data set or explore whether adding some independent variables help to

explain more variance in the dependent variable, which helped the sport management discipline to establish foundational knowledge and theories. Starting mid-2000, second-generation techniques, such as CFA and SEM, have become more frequently used in sport management research as the sport marketing research questions were developed toward verifying the developed knowledge and proving a priori determined factors and hypotheses (Byon & Zhang, 2019). The primary purpose of factor analysis is to define the underlying structure among variables (Hair et al., 2010), a process that has become popular in sport marketing research for several reasons. First, sport marketing research involves several latent sport consumer variables (e.g., sport fan identification, fan involvement, fan engagement, spectator motivation, perceived service quality, consumer satisfaction, and sport fan emotion). Effective measurement of these psychometric properties requires multiple items, and factor analysis can identify how those items interrelate. The colloquial expression "garbage in, garbage out" (Kilkenny & Robinson, 2018) applies to data and the findings they generate. To establish measurement validity and reliability and to minimize error, sport marketing researchers use multivariable tools, creating correlations among the variables. To manage highly correlated variables during analysis, scholars group them into factors and, in some cases, higher-order factors (Hair et al., 2010).

The goal of EFA is to identify the underlying relationships among measured variables and to examine its internal reliability. It is commonly used for scale development (e.g., Cianfrone et al., 2015; Yim et al., 2014) or when the theoretical factor structure of the model is weak so that the researchers have no hypotheses about the underlying factor structure, thus all the items are loaded to all factors (Byon & Zhang, 2019). So, in EFA the number of factors is decided by examining output from various factor extraction methods (e.g., a principal component analysis, canonical factoring, alpha factoring, image factoring, and least squares) such as the number of eigenvalues and scree plot. In an EFA procedure, the loadings are rotated once the initial solution is obtained (Hair et al., 2010). Two basic types of rotation are orthogonal rotation (varimax, quartamax, and equamax), which assumes the factors are to uncorrelated to each other, and oblique rotation (oblimin, promax, and direct quartmin) that is based on the assumption that the factors are correlated (Hair et al., 2010). In sport marketing, Yim et al. (2014) explored and conceptualized the factor structure of sport fans' emotions that arise during attending sporting events of their favorite team. EFA was used since the underlying factor structure was unknown. They generated 82 initial items through literature review and reduced the number of items via principal component analysis and Varimax rotation. Also, items that were similarly loaded on two or more factors, items that showed low factor loading, and items that loaded to factors that contradicted previous findings and scales were eliminated and the number of items was reduced to 36 items within 6 factors. Eigenvalue greater than 1.0 and scree plot both recommended a six-factor model and explained 64.8% of the variance which was adequate.

When researchers have good understanding of the theoretical factor structure, they use CFA to verify the factor structure of a set of observed variables. CFA

allows a researcher to specify which items load on which factor to assess and confirm the hypothesized latent factor structure (Byon & Zhang, 2019; Hair et al., 2010). Therefore, a researcher should postulate the relationship pattern a priori based on theory, empirical research, or both to test the hypothesis. CFA typically use maximum likelihood to estimate factor loading and it provides a fit of the hypothesized factor structure; therefore, with CFA a researcher can assess how well the proposed (hypothesized) model fits to the observed data. Once the model fit is considered to be acceptable, then the results are presented and interpreted. Hair et al. (2010) suggested to use multiple goodness of fit measures, including chi-square statistic (χ^2), normed chi-square (χ^2/df), root mean square error of approximation (RMSEA), standardized root mean residual (SRMR), Tucker–Lewis index (TLI), and comparative fit index (CFI). Many sport marketing researchers have used CFA (e.g., Kim et al., 2020; Yim & Byon, 2020) to test whether the measures of a construct are consistent with a proposed theoretical model. Kim et al. (2020) used AMOS 21 to conduct CFA to verify the viability of the measurement model before conducing SEM. They specified the factor structure and relationship based on previous empirical studies. Maximum likelihood estimation was used for CFA and the results showed excellent model fit for the measurement model: χ^2 = 450.31, df = 146, $p < 0.05$, CFI = 0.95, TLI = 0.94, and RMSEA = 0.08 with 90% CI [0.07, 0.09]. After the model fit was established, they computed composite reliability (CR) and average variance extracted (AVE) to examine construct reliability, which turned out to be greater than the suggested cutoffs.

Partial Least Square (PLS)

According to Byon and Zhang (2019), the use of SEM has exponentially increased in the top-ranked sport management journals (i.e., *Sport Management Review, Journal of Sport Management, and European Sport Management Quarterly*). SEM is a multivariate analysis conflating techniques of factor analysis and regression to examine relationships among latent variables (Hair et al., 2010). As mentioned above, SEM is one of the most widely employed multivariate statistical techniques in sport management and other social sciences research because of its capability to estimate a complex research model that includes multiple independent variables, mediators, moderators, and dependent variables. SEM can also account for measurement error associated with its measured variables and latent variables (i.e., disturbance). Another advantage SEM can offer is a model comparison among multiple competing models to select the most plausible model (MacCallum, 2003). For instance, Byon et al. (2020) examined a mediated-moderation model of constraints, motivation, and sport consumption using U.S. college football samples. Using SEM, the researchers could handle a complex model involving a mediator (i.e., negotiation) and a moderator (i.e., team identification). Using samples of Japanese and Euro-Canadian leisure participants, Kono et al. (2020) conducted a model comparison among five theoretically plausible competing models (i.e., the independence model, the constraint-effects-mitigation

model, the perceived-constraints-reduction model, the negotiation-buffer model, and the dual-channel model) to determine the optimal leisure constraint-negotiation model. By means of SEM, a model comparison between a fully mediated model and partially mediated model was reported in Byon et al.'s (2013) study.

There are two distinct approaches in assessing the relationships in a structural model. One is covariance-based SEM (i.e., CB-SEM) and the other is PLS SEM (i.e., PLS-SEM). The former one has been the dominant approach in the sport management research while the latter one is an emerging method in the field. Each approach is complimentary yet distinct in terms of characteristics and objectives. For instance, CB-SEM treats the latent variables as common factors explicating the covariation between its measured variables. However, the latent factors' scores are needed in the estimation of a structural model. However, PLS-SEM uses weighted composites of indicator variables for a construct of interest instead of using sum scores as is the case for regression, which is an inferior estimation method. Because of its use of weighted composites of variables, PLS-SEM is often referred to as a composite-based approach as opposed to CB-SEM.

Due to the popularity of its use of CB-SEM as evidenced in Byon and Zhang's (2019) study, our focus is delimited to the rules of thumbs for selecting between CB-SEM and PLS-SEM and empirical studies using PLS-SEM that are published in sport and leisure management journals. First, when the goal of a research is predicting the dependent variables, PLS-SEM should be used, as PLS-SEM aims to maximize an explained variance of endogenous constructs (Hair et al., 2017), whereas when the goal is theory testing, theory confirmation, and model comparison among theoretically plausible models, then CB-SEM should be adopted, as CB-SEM aims to minimize the difference between an implied-covariance matrix and a sample-covariance matrix (Hair et al., 2017). For instance, Kono et al. (2020), via the use of PLS-predict that is available in Smart PLS 3 packages, found that the independence model demonstrated the best predictive power compared to other alternative constraint-negotiation models.

The second situation is when a research model consists of either formatively measured constructs or a combination of formatively and reflectively measured constructs. In fact, CB-SEM could handle a structural model involving formative measures. However, CB-SEM requires a complicated rule for model identification (e.g., 2+ emitted paths rule), whereas PLS-SEM does not require such identification rule. Therefore, PLS-SEM is considered as a preferred SEM method for such complex models. As an example, Kim and Byon (2021) proposed the fitness switching costs model (FSCM) involving a third-order reflective-formative model to understand the antecedents of fitness consumer's switching costs. Using German professional soccer fans, Sarstedt et al. (2014) developed and tested a model measuring fan satisfaction index (i.e., FANSAT) that involves 17 formatively measured antecedents of fan satisfaction.

When sample size is small and/or data distribution is not normal, PLS-SEM is the preferred estimation method over CB-SEM. For instance, Reinartz et al. (2009), in their simulation study, found PLS-SEM, compared to its counterpart (CB-SEM),

produced higher statistical power when sample size was small. According to Hair et al. (2017), when the number of independent variables in a structural model is 5, a minimum of 45 sample is needed to achieve a statistical power of 80% for detecting 25% of variance explained in the dependent variable. However, it is important to note that insufficient sample size is subjected to Type II error. Therefore, researchers should not resort to the minimum sample size by solely relying on the ability from the statistical method such as PLS-SEM. It is recommended that researchers calculate proper sample size using programs such as G *Power regardless of using either CB-SEM or PLS-SEM.

The use of PLS-SEM resulted in a robust estimation with severely nonnormal data (e.g., highly skewed data), as PLS-SEM uses nonparametric approach (Reinartz et al., 2009). Involving samples collected from distance runners, Sato et al. (2018) tested a mediated model examining the extent to which distance runners' personality explains life satisfaction mediated by running involvement by citing "PLS-SEM allows researchers to assess the validity of measurements without strict assumptions about the distribution of the variables and sample size required by maximum likelihood techniques" (p. 35). In brief, SEM is widely adopted method, and it is a power method to estimate complex research models. Exponential growth and dynamic nature in sport industry makes PLS-SEM, as a complementary method to CB-SEM, a valuable method to address complex research questions to advance substantive knowledge of sport management field.

Digital Technology for Sport Analytics

With advances in digital technology, sport fans can now enjoy various online activities, but they leave valuable data behind, which generates information about the user's preferences, tendencies, and behavioral patterns. Like most people, sport fans use search engines (Google, Bing, Baidu, and Yahoo!, among others) to search for information about their interests, and they share their opinions on social media (Instagram, Facebook, Twitter, TikTok, YouTube, and WeChat) or online review platforms such as Google, Yelp, Amazon, and Trip Advisor. For instance, sport fans' internet search for big rivalry matches (e.g., Manchester derby, El Clasico, and Boston Red Sox vs. New York Yankees) is recorded on Google search engine, and they share their interest and supporting with Instagram photos, Twitter hastags, Facebook like, and YouTube video clips.

In the sport consumption industry, consumer interests change quickly, and it is difficult to follow these changes in real time. However, because online data provide timely information about consumer interests, the analytics of online sport consumption behaviors can now reveal the constantly evolving changes in consumer demands. To use the vast quantities of data that users generate, scholars and practitioners have developed business intelligence software. Given the emergence of the digital technology, we consider web analytics based on popular search engines, social media analytics, and how business intelligence can apply these data.

Web Analytics

Web analytics, also known as web usage mining, extracts information by analyzing data generated by webpage visitors (Sharda et al., 2016). For example, a descriptive analysis of user interest in sport is available using Google Trends (GT), which shows that U.S. internet users over the last 12 months searched for "NFL" approximately four times more often than they searched for "MLB". GT also reveals that topics of interest related to NFL include "NFL Draft", "Washington Football Team", and "NFL regular season". Web analytics is not limited to keyword searches. An analysis of the websites of sport organizations, for example, yields information about the online consumption behaviors of sport consumers, such as website usability (e.g., page views, site time, downloads, click map, and click paths), traffic sources (e.g., referral websites, search engines, direct search, offline campaigns, and online campaigns), visitor profiles (e.g., keywords, content groupings, geography, time of day, and landing page profiles), and conversion statistics (e.g., new visitor numbers, returning visitor numbers, online purchase, and exit rates) (Sharda et al., 2016). One such tool is Google Analytics (GA), which provides visitor traffic sources, behaviors, and conversion statistics by a landing page. For instance, according to GA, it is observed that English Premier League (EPL) fans' conversions are diminished during packed schedules of their supporting teams (Pasala, 2013). Based on the analytics, sport league managers might arrange their game schedule for optimize fans' engagement. Thus, by tracking consumers on their websites, organizations can analyze the number and type of visitors, and develop market strategies such as STP strategy (segmentation, targeting, positioning) and customer relationship marketing (CRM) perspective accordingly.

Social Media Analytics

The rapid development of information and communication technology (ICT) led to the emergence of social media platforms, such as Instagram, Facebook, and Twitter, as well as online review sites, such as Google, Yelp, Amazon, and Trip Advisor. According to one study, most internet users engage in an online community space and the time they spend on social media is now over 2 hours per person per day (Tankovska, 2021). In cyberspace, sport consumers share their emotions, opinions, expectations, and experiences of sport events, athletes, and sport organizations, and sponsors use social media as a collateral communication channel with sport consumers. Although much of the data created by social media users are unstructured and messy, new software allows for the useful analysis of large quantities of information generated by online users. Recently, several analytic techniques have been developed to analyze user behaviors in social media – one, a text analytic method known as web-scraping, reveals the preferences of sport consumers about advertising. Eddy et al. (2021) found that followers of National Football League (NFL) and National

Basketball Association (NBA) teams on Twitter engage in passive signage tweets of sponsor activation more often than they do with the sales promotional tweets of sponsor activation. Even sport fans' engagement in social media affects the stock price of sport clubs (i.e., Jubentus F.C., Manchester United, and Ajax Amsterdam) influencing individual' investing behaviors. The stock price of sport clubs is fluctuated before and after matches, and related number of social media conversations (Sóti et al., 2020).

Another novel technique is picture-based content analysis of the user's experiences. By using multiple machine learning applying Instagram pictures of Austrian sport tourism, Arefieva et al. (2021) found various related keywords in sporting activities like "urban activity", "mountain scenery", "lake", and "winter sporting activity" among user interests, and suggested tourist office managers to made advertising strategies related to sporting activities such as bicycle tours or biking activities. Social media communication has also combined with location-based information, such as geotagged tweets and Yelp's check-ins, to identify the tourists' designation of choice after classifying social media users as tourists or residents with location-based social media information. To reveal the tourists' spatial patterns of destination choices, multiple types of clustering methods can be used (e.g., k-means clustering, density-based spatial clustering, and mean-shift) (Hasnat & Hasan, 2018). Also, applying location-based social media data, in terms of sport-event-oriented travels, Xin and MacEachren (2020) categorized the travelers into three groups: professional athletics and colleagues, sport industry practitioners, and sport fans. Managers in related industries (e.g., hotel, restaurant, and transportation) might deliver specific information and marketing strategies toward tourists, to identify destination choices accurately.

Business Intelligence and Big Data

Due to the vast amounts of data generated by consumers, the concept of business intelligence (BI) has become pivotal for sport-related internet analysis. While BI is an overarching term for a firm's information-related activities – from data mining to online processing of information (Ratten & Dickson, 2020) – the goal of BI is to find useful information from data and provide businesses with a competitive advantage (Ratten & Dickson, 2020). Already, in the sport business industry, BI is applied in areas such as dynamic ticket pricing, customer relationship management, fan engagement, social media and digital marketing analytics, corporate partnership evaluation, and market research (Buckstein, 2016). By tracking spectator data (e.g., demographics, purchase history, and attendance), sport organizations can build CRM strategies (e.g., customized marketing campaigns to target customers) to improve their competitiveness. Because computer technology for data processing has grown exponentially, it is now possible to apply large amounts of information to BI, which consists of four areas: definition of objectives, data collection, statistical analytics, and application to data-driven results (Ratten & Dickson, 2020). What is more, various information-related technologies (e.g., mobile

devices, wearable devices, IoT, social media, and sensors) have boosted not only the quantity of data but also their quality and availability. Techniques to analyze big data are now essential for businesses to survive in the modern information-based marketplace.

Big data has five components: volume (quantity of data), velocity (speed of data), variety (diverse types of data), veracity (genuineness of data), and value (usefulness of data) (Ratten & Dickson, 2020). Although big data includes a massive amount of the five Vs, it needs to be aggregated and patterned to understand sport fan behaviors and help sport organizations to make meaningful decisions. Cabrera-Sánchez and Villarejo-Ramos (2020) suggested three types of data-analytic techniques for big data: machine learning (i.e., supervised learning, non-supervised learning, and semi-supervised learning), data mining (i.e., deep learning, classification, and association rules), and statistical methods (i.e., regression analysis, descriptive statistics, and inferential statistics). For example, in a sport consumer behavior study, Twitter mentions of "World Cup" can become a set of big data, which is then available for BI to aggregate and identify the behavioral patterns of sport fans, such as basking in reflected glory (BIRG) and cutting off reflected failure (CORF) in the sport event (Fan et al., 2020).

For example, in the 2018 FIFA World Cup semi-final match, when Croatia defeated England, England fans' team identification vanished on Twitter to weaken associations. Nowadays, various types of fan-related data overflow. Although the number of publicly accessible big data have increased, analyzing and understanding the massive data are more challengeable while the data provide meaningful clues to develop sport management strategies, and consequently sport organizations who reluctantly effort to apply sport analytics methods for digital information might be in trouble to survive in competitive market environments.

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Chapter 2

Application of Structural Equation Model in Sport Marketing Analyses

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Introduction

Structural equation modeling (SEM) has become one of the most widely adopted advanced statistical methods in social science research. The Sport management field is not immune to this phenomenon. Two reasons have made this possible: (a) An SEM model can accommodate more complicated research problems that involve several independent variables, mediators, moderators, and more than one dependent variables, and (b) increased availability of user-friendly statistical software packages (e.g., model-fitting software), such as IBM SPSS Amos, Mplus, LISREL, EQS, and SAS. Despite the advantage and accessibility, scholars in sport management have still struggled to better understand and appropriately apply SEM to their research. To make matters worse, it has often been reported that SEM is one of the most widely abused statistical methods (Byrne, 2012; Kline, 2011). This phenomenon is often observed in sport management research by using inadequate procedures, and reporting insufficient results makes scholars unable to reproduce the results. It is important to note that SEM is *not* the path to a successful publication or panacea but a valuable tool to confirm or disconfirm theories that help researchers generate new knowledge or verify existing knowledge. However, to the best of the authors' knowledge, there is no single manuscript or monograph that details SEM in terms of definition, key concepts, recommended procedures, and advanced SEM techniques existing in the sport management literature.

The purpose of the current study is to introduce concepts and application procedures related to SEM to the sport management community. We expect that this chapter can be used as a reference to help sport management scholars better understand and appropriately apply SEM as it helps to answer important research questions. The following sections address the following: (a) the definition of SEM, (b) recommended step-by-step SEM procedures, (c) advanced SEM procedures, and (d) illustrated examples showing how to conduct SEM using sample data.

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What Is SEM?

SEM is defined as "a technique that we use to analyze 'causal' influence relating latent variables along with their attendant measured indicator variables to one another" (Meyers et al., 2016, p. 583). SEM is a theory-driven data analytical technique that evaluates a *priori* specified hypotheses. Specifically, a theory-driven analysis (confirmatory) sets SEM apart from an exploratory analysis that is data-driven. An SEM model is comprised of at least two measurement models that have linked to each other. In other words, two or more constructs, both of which are defined by sets of observed (measured or indicator) variables, are theorized to examine a cause and effect by testing the relationship between the two or more constructs. Another characteristic that makes SEM valuable is the ability to correct for measurement error, of which other multivariate statistical procedures are not capable. Even regression analysis assumes that there was no error in the independent variables. When the error is substantial in the explanatory variables, the results that were not taken into consideration will immensely mislead readers. SEM can incorporate error(s) that exist not only in the observed variables (i.e., measurement error) but also those are associated with latent variables (i.e., disturbance). Lastly, the SEM model can be theorized to incorporate multiple independent mediators, moderators, and dependent variables. SEM procedures can simultaneously test a complicated model involving numerous latent variables, reducing Type I error compared to other multivariable statistical procedures such as regression analysis.

Given these useful features, SEM has become a widespread choice for social scientists whose design is non-experimental research (e.g., Byon et al., 2020; Zhang, Byon, Xu, et al., 2020). The following sections address recommended step-by-step SEM procedures that include a detailed explanation of some key concepts pertaining to SEM. In explaining the concepts and procedures, we provide an illustrative example of how to use and report SEM for research articles using empirical data.

General Procedures

Kline (2011) suggested six steps for SEM analysis: (a) specify the model; (b) evaluate model identification (if the model is not identified, go back to step 1); (c) select the measures to report (operationalize the constructs) and collect, prepare, and screen the data; (d) estimate the model; (e) respecify the model if necessary based on theoretical and sound empirical reasons; and (f) report the results. Other scholars have suggested similar procedures (e.g., Hair et al., 2010; Schumacker & Lomax, 2010).

Model Specification

The specification is defined as a "representation of your hypotheses in the form of a structural equation model" (Kline, 2011, p. 92). Researchers agree on the

importance of model specification and suggest that it is the most challenging step in SEM analysis (Hair et al., 2010; Kline, 2011). Kline (2011) argued that this step is essential because it confirms that the model is correct and ready for the subsequent steps. This argument indicates that SEM represents a theory-based data analytical method involving a priori hypothesis examining the relationship among latent variables. Because of the theory-driven aspect, many models that deem theoretically meaningful can be generated, which are termed "equivalent models", which can also be used as a counter-model against the originally proposed model. Thus, researchers must provide a rationale based on solid theory and empirical evidence in the model specification stage.

Researchers assign relationships between one latent construct and another based on the proposed theoretical model during model specification. A model specification often represents model parameters in the form of a diagram. The observed variables are specified as either squares or rectangles, and the latent variables are represented by circles or ellipses. The hypothesized directional effect of one variable on another variable is represented via a single arrowhead pointed from exogenous (independent) variable to endogenous (mediating or dependent) variable (see Figure 2.1). In addition, a curved line with two arrowheads between two exogenous constructs is used to show covariance in an unstandardized solution or correlations in a standardized solution.

Drawing a single arrowhead from one variable to another is not a simple task as it may sound. Strong theory must support for a theoretical relationship because it presumes a causal effect (Kline, 2011). For instance, Yim and Byon (2020) proposed the sport fan model of goal-directed behavior (SFMGB), a structural model, to predict millennial sport fan consumption behavior. In their hypothesis development, they provided detailed theoretical justifications to support the causal relationships specified among the latent variables. In SEM, a model specification derived from theory and empirical evidence is a "must-have" procedure because

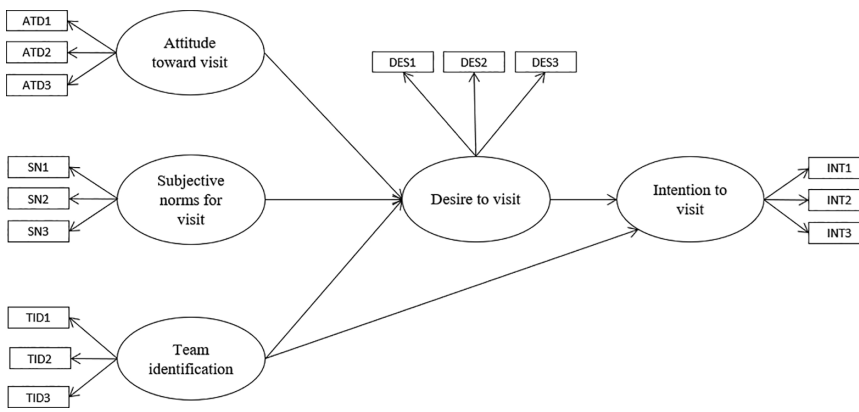

Figure 2.1 Five-Factor Proposed Model.

results from SEM analysis serve as either confirm or disconfirm a *causal* structural relationship among constructs of interest. Establishing a causal relationship is an imperative yet difficult procedure in science. Several procedures can be adopted to demonstrate a causal relationship. For instance, James et al. (1982) proposed a list of ten conditions. The first seven conditions establish a firm theoretical ground before testing the model, and the last three empirically test the causality assumptions using sample data.

The first condition is a *formal statement of theory in terms of a structural model*. Establishing a relationship between two or more variables requires a rationale based on the theory being used in the model (study). Moreover, the researchers should be able to display a causal relationship between variables graphically. The second condition is the *theoretical rationale of causal hypotheses*. When two or more variables have covariance, they do not automatically have a causal relationship. One analogy is the covariant relationship between the moon and the sun. When the moon goes down, the sun comes up, but we would be mistaken to think that the moon's disappearance causes the sun to rise. No theoretical rationale exists to support this causal relationship. The third condition is a *specification of causal order*. One should specify the sequence of the variables within the causal model. For example, suppose we wish to examine the causal relationship between satisfaction and repurchase intention. In that case, we must provide theoretical justifications for why satisfaction is a cause of repurchase intention.

The fourth condition is a *specification of the causal direction*. Directionality between variables can be one-way or two-way. Uni-directionality means that the causality between two variables flows in one direction only; bi-directionality means that the causal relationship is reciprocal, that each variable influences the other simultaneously. Failure to specify "a *priori*" in confirmatory analyses (e.g., confirmatory factor analysis [CFA] and SEM) will lead to an invalid post-hoc study. The fifth condition is *self-containment*. All possible reasons (i.e., variables) should be considered and included in the theoretical model to draw causality. One example might be the relationship between the height of a child and nutrition. We know a positive relationship exists between nutrition and the height of a child. However, other causal factors might exist along the pathway from nutrition to height (e.g., DNA and environment). Considering these other factors can strengthen the argument made for the theory (i.e., the relationship between height and nutrition). The sixth condition is the *specification of boundaries*, which is how far we can generalize beyond the context in which the model was tested. In one context, the model might work very well, but the causality might not exist in another context. For example, certain organizational cultures in Asian countries (e.g., "Gung Ho") might influence how willing the company's employees are to purchase its products. However, this phenomenon might not exist in the United States or European countries. The seventh condition is the *stability of the model*. If the model is stable, it will show invariance between repeated measures and yield similar results in different contexts.

The last three conditions deal with the empirical testing of causality. The eighth condition, *operationalization of variables*, refers to various questions related

to measurement, including (a) how do we measure the variables? (b) which items do we use to measure them? And (c) at what time intervals should we measure them? If the first seven conditions are met, this step will not typically raise any problems. The ninth condition is *empirical confirmation of the model proposed model*. In this stage, we test the model using the sample data collected in the eighth condition. Then, researchers should confirm all of the hypothesized paths, and we should specify all the errors that stem from the non-measured variables in the model. Finally, the tenth condition is *empirical disconfirmation of the omitted direct paths in the model*. Once we have tested and confirmed all the paths in the model, we need to test the model to disconfirm all of the direct paths omitted from the model. By doing so, we confirm that no causal relationships are missing from the tested model.

Moving through these rigorous stages to infer causal relationships can help researchers avoid misspecification issues. When the true model that generated the data is not consistent with the specified theoretical model, the theoretical model is said to be "misspecified" (Schumacker & Lomax, 2010). Misspecification can be easily detected by examining model fit indices. The most common reasons for model misspecification are errors of omission and/or inclusion of variables or parameters that do not fit the true model (Schumacker & Lomax, 2010). In other words, the proposed model was not generated based on sound theory and strong empirical evidence. Following the procedure suggested by James et al. (1982) can help researchers develop a good causal model and avoid model misspecification.

Model Identification

In SEM, researchers must resolve identification issues before data collection and estimation of parameters of a proposed model. Model identification presents the following question: "Can a unique set of parameter estimates be found through the sample covariance matrix S and the theoretically proposed covariance matrix Σ?" The type of model identification depends on the amount of information available in the sample variance-covariance matrix S (i.e., known elements) to estimate the unique parameters of the model (i.e., unknown elements). Structural equation models must be over-identified (at least just-identified) to be meaningfully analyzed. Of the three types outlined below, the first two indicate that the model is identified:

1. A model is *just-identified* if all the parameters are uniquely determined based on sufficient information in the matrix S (i.e., has the same number of free parameters as observations).
2. A model is *over-identified* when one or more parameters can be estimated in more than one way. The amount of information in the matrix S is more than sufficient (i.e., it has fewer free parameters than observations).
3. A model is *under-identified* (or not identified) when none of its parameters can be uniquely estimated due to a lack of information in the matrix S.

When a model is under-identified, the degrees of freedom for the model will be negative, and the parameter estimates would be untrustworthy. Several conditions must be met to establish model identification. Among those conditions, the order condition is the easiest one to identify. In other words, the number of free parameters estimated in a theoretical model must be less than (or equal to) the number of distinct values in the matrix S. The formula to calculate a distinct value is $p(p + 1)/2$, where p is the number of observed variables. However, the order condition, while necessary, is not sufficient. The rank condition is a sufficient condition but requires an algebraic determination of parameter estimation (see Bollen, 1989, pp. 98–103; Jöreskog & Sörbom, 1996).

Model Estimation and Model Fit Indices

The derivation of parameter estimates is based on statistical estimation methods. The most common estimation method used in the sport management field is the maximum likelihood (ML) method (e.g., Byon et al., 2013; Lee et al., 2016; Zhang & Byon, 2017). ML is based on normal theory in multilevel structural equation models (Ryu, 2011) based on two assumptions: (a) the population distribution of the endogenous variables is normal, and (b) the data are multivariate normal (Kline, 2011). Because the default estimation method of most SEM software is ML, researchers conduct data normality checks to ensure the data meet the standard of multivariate normality. Checking normality at the univariate and multivariate level can be done in several ways: (a) scatter plot and Q-Q plot examination, (b) skewness and kurtosis measures, and (c) Mardia's normalized multivariate skewness and kurtosis test. When these tests are successful, researchers can use ML to estimate the parameters. Because ML is the default method, sport management researchers do not typically report its usage in their data analysis methods. Still, Schumacker and Lomax (2010) recommended reporting estimation method types used in the results section. When the normality assumptions are shown to be untrue, and ML cannot be used, researchers should use alternative methods of estimation, such as weighted least squares (WLS), generalized least squares (GLS), and asymptotically distribution free (ADF) (Hair et al., 2010). In these cases, the researcher must provide theoretical justification for the chosen estimation method. For instance, Magnusen et al. (2012) found normality violations in their data at both the univariate and multivariate levels. Therefore, they justified their use of the Satorra–Bentler (S-Bx^2) scaling method (Satorra & Bentler, 2001). S-Bx^2 considers the non-normality condition and corrects the maximum likelihood chi-square variate and the standard errors of parameter estimates (Finney & Distefano, 2006). This adjusted estimation is Satorra–Bentler's maximum likelihood mean adjusted (MLR) estimation method, found in the Mplus software application. Zhang et al. (2006), in their development of a scale for program facilitators to measure the effectiveness of after-school achievement programs, utilized the WLS estimation method to conduct the CFA.

For SEM, assessing model fit is important, as the goal is to minimize the discrepancy between an implied-covariance matrix and a sample-covariance matrix. When the model fit is not satisfactory, the structural model does not represent the collected data well, and a modification to the model is necessary based on strong theoretical justifications and another set of data. Model fit indices are controversial for several reasons. First, only the chi-square test is a true statistical test of model fit; however, as sample size increases above 200 (see Hu & Bentler, 1999), the likelihood of type II error (i.e., false rejection) increases. Given that SEM is an asymptotic (i.e., large sample) technique, this pattern is problematic. Therefore, other model fit indices have been developed to address these limitations. For instance, Tanaka (1993) identified six dimensions of model fit: (a) absolute vs. relative (incremental), (b) simple vs. complex, (c) normed vs. non-normed, (d) population vs. sample, (e) estimation method independent vs. estimation method dependent, and (f) sample-size dependent vs. sample-size independent. Kline (2011) suggested three types: absolute, relative, and predictive fit indices. Sport management researchers typically report the following fit indices (e.g., Byon et al., 2013; Magnusen et al., 2012; Trail et al., 2012; Wright et al., 2017; Yoshida & Gordon, 2012; Zhang, Byon, Tsuji, et al., 2020).

Chi-square

This index should always be reported. It is an exact test of whether the model fits the data. Because it is a "badness of fit" index (i.e., a small value is better), researchers hope to find a non-significant chi-square. A problem with the chi-square index is that it is sensitive to the sample size, and most of the time, the results are significant. Therefore, alternative fit indices are needed to be examined. We discuss the other fit indices widely used in SEM studies.

Normed Chi-square

This index is the chi-square divided by the degrees of freedom. In an attempt to mitigate the impact of the sample size issue on the chi-square index, researchers have subscribed to the idea that their problems will be fixed if they use the normed chi-square. Bollen (1989) recommended a maximum ratio cut-off of 2.0 or 3.0; however, he mentioned that a cut-off of as high as 5.0 is adequate.

Standardized Root Mean Square Residual (SRMR)

This index is calculated as the difference between the observed and reproduced correlation matrices. It is an absolute fit index, where the lower results are better, and zero indicates a perfect fit. Hu and Bentler (1998) recommended a cut-off of 0.05 for good fit and 0.08 for acceptable fit. However, the mean value of 0.08 could indicate several correlation residuals greater than 0.08. Kline (2011) recommended supplementing this index with a visual inspection of the residual correlation matrix. Because this measure is based on population, it is not dependent on

the estimation method. SRMR is sensitive to variance/covariance differences and should be used with other measures such as CFI (Hu & Bentler, 1998).

Root Mean Square Error of Approximation (RMSEA)

This population-based measure is an absolute function that corrects for sample size ($N - 1$ in the denominator) and favors simpler models (i.e., uses degrees of freedom). It is also based on non-centrality, meaning that it can have a confidence interval attached to it. Lower values are better, but a common mistake is to think zero indicates a perfect fit. In this case, zero indicates that the chi-square is greater than the degrees of freedom. Hu and Bentler (1998) recommended that zero be in the confidence interval for a good fit. Hu and Bentler (1999) recommended a cut-off of ≤ 0.06. Any greater value indicates a bad fit. This measure is estimation method free; if researchers establish a chi-squared value, they can use the formula. This measure is useful in comparing nested models (e.g., Vandenberg & Grelle, 2009) and can also be used to evaluate the fit of the segregated structural component of a structural model in nested models. Many sport management scholars report both SRMR and RMSEA in their SEM results section (e.g., Byon et al., 2013; Magnusen et al., 2012; Trail et al., 2012), but sometimes, researchers only report RMSEA (e.g., Lee et al., 2016; Wright et al., 2017; Yoshida & Gordon, 2012).

Comparative Fit Index (CFI)

CFI is a normed, relative, population-based measure that favors complex models. Because it is most sensitive to factor loadings, it nicely balances the properties of SRMR. CFI is not very sensitive to sample size. According to Hu and Bentler (1998), a score of ≥ 0.95 is a cut-off value for the goodness of fit. Hair et al. (2010) relaxed the cut-off value to 0.90 or above. CFI is usually reported in the SEM results of sport management studies (e.g., Byon et al., 2013; Lee et al., 2016; Magnusen et al., 2012; Trail et al., 2012; Wright et al., 2017; Yoshida & Gordon, 2012).

Tucker–Lewis Index (TLI)

TLI is a non-normed, relative, sample-based measure that is not very sensitive to sample size. It is a comparison of the normed chi-square values for the null and specified model. The value can range from 0 to 1, and a value close to 1 is considered a good model. Similar to CFI, a value equals .90 or above is considered a good fit. In sport management studies, TLI is not as often reported (e.g., Wright et al., 2017; Zhang, Byon, Xu, et al., 2020).

Akaike Information Criterion (AIC)

AIC is a predictive measure, and while it has two different formulas used to calculate it, lower numbers mean that the solution will be reproducible (Kline, 2011). It is sample-based and insensitive to the calculation method. Comparing models

using AIC requires that the same sample be used. Compared to BIC, AIC does not perform well in simulations because AIC does not assume a perfect model. Instead, it assumes a best-fitting model among alternatives. From a conceptual viewpoint, AIC is more accurate for sport management studies (e.g., Zhang et al., 2006). In our attempts to represent processes that involve human behavior, we will never design a perfect model. This fit index is often used to compare non-nested models.

Bayesian Information Criterion (BIC)

Although AIC is better than BIC, reporting both indices is common. BIC is population-based, assumes that a true model exists, and is not estimation method sensitive.

Selecting Measures to Report

Various SEM theorists have proposed guidelines for reporting SEM results (e.g., Hoyle & Panter, 1995; Maxwell & Cole, 1995; Raykov et al., 1991; Schumacker & Lomax, 2010). Generally, the first item on the checklist is to review findings that support the theoretical model. Most SEM studies in the field of sport management support model specification with theoretical reasoning. The second item is to indicate the type and version of SEM software used. For example, Magnusen et al. (2012) reported that they used M-plus 6.1. The third item is to indicate the types of SEM model analysis used. The fourth item includes sample size and the correlation matrix, mean values, and standard deviations of the variables. With this information, analyzed models can be reproduced. See Table 2.1 for a sample table that includes correlation matrix, sample size, mean, and standard deviation.

Table 2.1 Descriptive Statistics and Correlation

				Correlation Matrix (n = 200)				
	Construct	*Mean*	*SD*	*1*	*2*	*3*	*4*	*5*
1	Attitude toward attending a sport event	6.21	.99	1.00				
2	Subjective norm for attending a sport event	5.59	1.13	.44*	1.00			
3	Team identification	6.25	.97	.48*	.47*	1.00		
4	Desire to attend a sport event	5.81	1.05	.71*	.54*	.49*	1.00	
5	Intention to attend a sport event	5.41	1.70	.54*	.43*	.38*	.61*	1.00

Note: Two-tailed; *SD*: standard deviation.
* $p < .01$.

Table 2.2 Maximum Likelihood Standardized Loadings, *T*-values, and Standard Errors for the Hypothesized Structural Model ($n = 200$)

Path coefficients	*B*	*T*	*SE*
Attitude toward attending a sport event → Desire	0.512**	8.794	0.058
Subjective norm for attending a sport event → Desire	0.318**	5.052	0.063
Team identification → Desire	0.113	1.805	0.063
Team identification → Intention	0.177*	2.473	0.072
Desire → Intention	0.518**	8.093	0.064

Note:
* $p < .05$.
** $p < .001$.

The fifth item is to include the proposed model in the form of a diagram. The sixth item that should be reported is the fit indices used and the reasons they were chosen. Sample size, power, and effect size reports are also suggested. Next, validity (e.g., convergent validity, discriminant validity) and reliability (e.g., Cronbach's alpha, construct reliability, average variance extracted) tests results should be reported. Lastly, the path coefficient table should be reported to give readers a better understanding of the overall SEM results. Many SEM studies include a path coefficient table (e.g., Byon et al., 2013; Magnusen et al., 2012) (see Table 2.2).

Model Modification

Achieving an acceptable fit index is necessary to test hypotheses, but the chance is high that a theoretical model will not have an acceptable fit initially (Hair et al., 2010; Schumacker & Lomax, 2010). Therefore, a model modification is typically necessary. Most model modifications are conducted at the measurement model level (i.e., CFA model) because it is a primary source of misspecification errors (Schumacker & Lomax, 2010) and the foundation of the structural model. Researchers can conduct model modification in several ways, but all modification decisions must be based on theoretical reasoning, not by the empirical reasoning provided by SEM software (Hair et al., 2010; Kline, 2011). When model fit indices are unacceptable, researchers can use chi-square difference test results to compare the measurement and structural models and determine whether any additional paths might improve the model fit (Hair et al., 2010). The next step is to examine the standardized residuals and modification indices. Eliminating items having a large standardized residual and modification index can improve the model (Hair et al., 2010). After modification, to cross-validate, the model, running the model with another set of data is suggested, and that additional estimation procedure can demonstrate that the model is revised based on theory, not by chance (Schumacker & Lomax, 2010).

Model Comparison

Good model fit does not guarantee that the proposed theoretical model is the best explains the observed sample covariance matrix (Hair et al., 2010). It is just a theoretically plausible model. Equivalent models are always possible (Schumacker & Lomax, 2010); therefore, it is highly recommended that researchers create rival models based on theory and compare them to the initially hypothesized model (see Byon et al., 2013; Byon et al., 2018). Doing so is a proper way to show that the proposed model is one of the plausible models that explain the phenomenon of interest. Researchers can compare rival models via model fit indices, chi-square difference test, and *R*-square values (for nested models) and via model fit indices of expected cross-validation index (ECVI) and AIC (for non-nested models) to determine the best plausible model (Brown, 2015). Figure 2.2 shows an example of SEM model comparison.

As indicated in Table 2.3, all the model fit indices for Model A were better than the other models. The chi-square difference tests also showed that Model A was better than the others. For example, the chi-square difference between Model A and Model B was 6.14, with a 1 degrees of freedom difference resulting in a *p*-value less than <.05. This result shows that the proposed model had one more parameter but was significantly better. On the other hand, the chi-square difference between Model A and Model C was 3.21, which is not significant at a *p*-value of <.05 level. However, all the Model A showed better model fit indices and higher R^2 value. Therefore, we select Model A to be an optimal model among the rival models.

Thus far, we discussed the definition of SEM, the advantages of using SEM over other estimation procedures, such as regression, and suggested SEM procedures that can be adopted by sport management scholars. Recently, advanced SEM procedures have been employed to estimate a highly complex research model, including mediators (e.g., Magnusen et al., 2012; Yim & Byon, 2020) or/and moderators (e.g., Yoshida & Gordon, 2012; Yim et al., 2018; Zhang, Byon, Xu, et al., 2020). In the following section, we will discuss advanced SEM procedures that are useful to help answer more complicated research questions.

Advanced SEM Procedures

Mediation

A mediating effect is assumed when a third variable intervenes between related constructs and helps explain why a relationship exists (Hair et al., 2010). Sport management researchers theorized models by incorporating many mediating variables (e.g., Magnusen et al., 2012; Trail et al., 2012; Yim & Byon, 2020; Yim et al., 2018). Several tests can assess mediating effects in SEM analysis. Of those, Baron and Kenny's (1986) approach has been a popular choice, which follows the four steps. Their causal steps approach linearly specifies the relationships among the

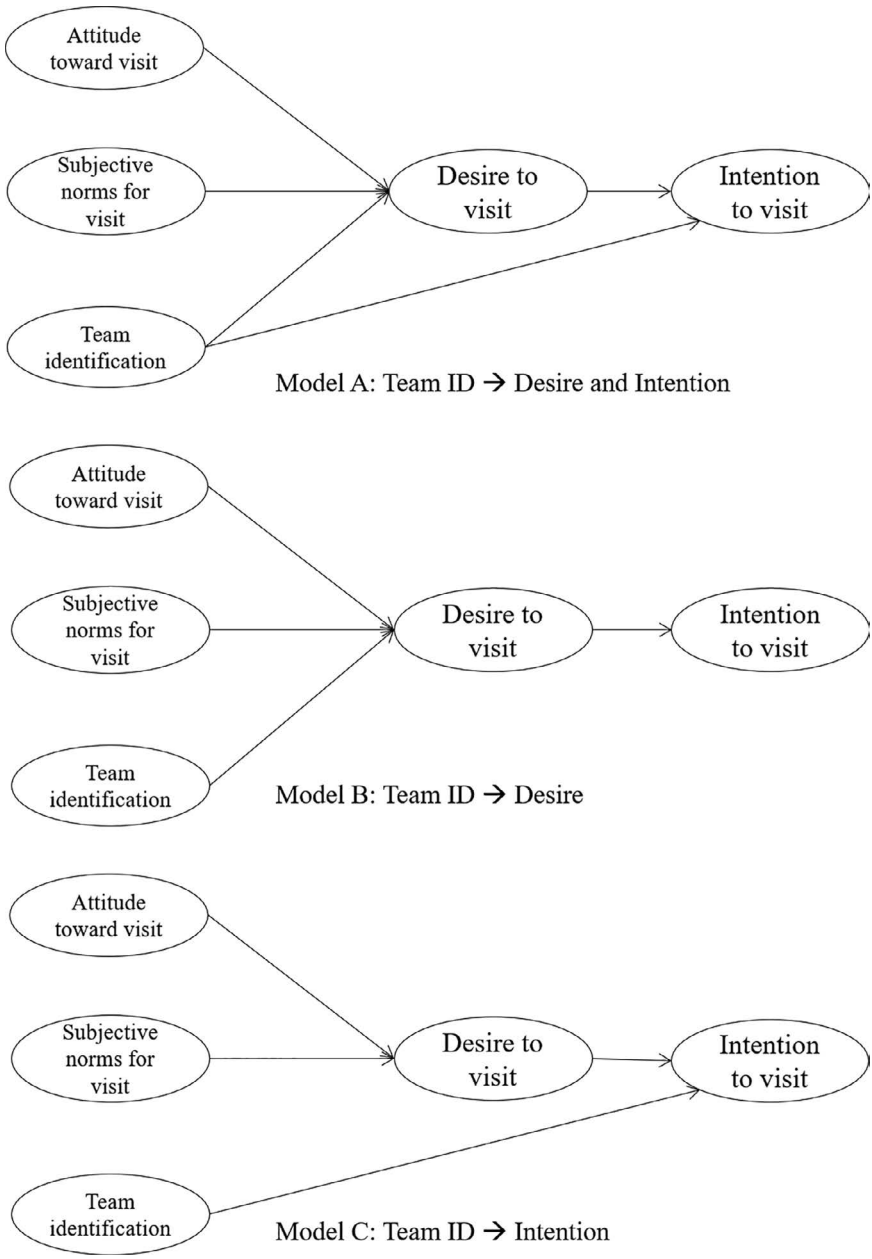

Figure 2.2 Competing Models.

Note: Model A is the originally proposed model, and Models B and C are rival models (alternative models). In order to compare them, we considered fit indices (i.e., χ^2, normed fit, CFI, TLI, and RMSEA) and *R*-square values (see Table 2.3).

Table 2.3 Fit Statistics and Standardized Path Coefficients for All Models (n = 200)

	Fit Index							ATT → Des	SN → Des	TID → Des	TID → Des	Des → Int
	χ^2	*df*	χ^2/df	*CFI*	*TLI*	*RMSEA*	R^2	β	β	β	β	β
Model A	181.71	69	2.63	0.96	0.95	.090	0.40	0.51***	0.31***	0.11	0.17*	0.51***
Model B	187.57	70	2.67	0.96	0.94	.092	0.38	0.51***	0.32***	0.12*	NA	0.61***
Model C	184.92	70	2.64	0.96	0.95	.091	0.39	0.56***	0.35***	NA	0.18**	0.52***

Note: ATT = Attitude toward attending sport event; SN = Subjective norm for attending sport event; TID = Team identification; Des = Desire to visit; Int = Intention to visit.
* $p < .05$.
** $p < .01$.
*** $p < .001$

independent, dependent, and mediator variables in four separate regression models. These four steps are listed below:

1 Demonstrate that the independent variable (X) is significantly related to the dependent variable (Y). This is denoted as the c path.
2 Demonstrate that the independent variable (X) is significantly related to the mediator variable (M). This is denoted as the a path.
3 Demonstrate that the mediator variable (M) is significantly related to the dependent variable (Y). This is denoted as the b path.
4 Demonstrate that the relationship between the independent variable (X) is no longer significantly related to the dependent variable (Y) once the presence of mediator (M) is accounted for. This is denoted as the c' path.

Following assessment of these four conditions, if the c' path is substantially reduced (to a non-significant c' path coefficient) following the inclusion of the mediating variable, the model provides evidence of full mediation. If the c' became substantially reduced after the mediating variable was added, then the model can be said to provide evidence of partial mediation.

Although Baron and Kenny (1986) provided one of the most cited approaches, several studies have criticized their approach (e.g., LeBreton et al., 2009; MacKinnon et al., 2002). For instance, LeBreton et al. (2009) argued that in order to specify mediation clearly, the model must have no specification errors and must be set up in a confirmatory, rather than exploratory, manner. Specification errors include incorrect causal order, incorrect specification of variable relationships, or failure to include a specific variable within the relationship. Bridging forward from the overall issue of specification errors, James and Brett (1984) argued that three conditions must be met for a model to satisfy the requirements of a confirmatory model: (a) no specification errors, (b) meaningful relationships between hypothesized variables, and (c) empirically demonstrated good fit of a model.

The model proposed by Baron and Kenny (1986) does not meet the requirements set forth by James and Brett (1984) for two reasons: first, the overall model and allowances for "partial mediation" do not test or uphold a confirmatory model; second, the availability of a "partial mediation" designation automatically includes the assumption that the model is not complete because all related variables are not included within the model (LeBreton et al., 2009). That is, because the model provided in Baron and Kenny (1986) does not require hypotheses regarding full vs. partial mediation, and a finding of a partial mediation insinuates that there are, in fact, missing variables, it is not a confirmatory model. In addition, MacKinnon et al. (2002) tested the model of the causal steps against two other models (including the one from Baron and Kenny) for mediation effects. They found no optimal approach, but they did find that the Baron and Kenny model fared the worst in all simulations, primarily due to reduced power.

Lastly, LeBreton et al. (2009) argued that because of an overall lack of causal modeling within the causal steps procedure, particularly the lack of falsifiable hypotheses and missing variables, the Baron and Kenny (1986) procedure is not thorough enough to draw steadfast conclusions regarding causal relationships and analyses within an SEM framework. Suggesting that a heuristic framework would better suit such conclusions, LeBreton et al. (2009) recommended an SEM framework for analyzing mediator relationships, particularly as they become more complex, for it can accommodate more complex regressions (e.g., multiple IVs, DVs, mediators) and non-linear relationships without substantial reduction in power. Another important reason is that mediation is by nature an investigation of causes and, thus, should be tested using confirmatory techniques such as SEM, which also directly addresses measurement errors and uses manifest and latent variables. SEM also allows for testing an entire set of equations in one model and provides individual parameters and goodness of fit levels. LeBreton et al. (2009) provided a heuristic to help assess such effects based on two dimensions: (a) how complex a model is and (b) how speculative (vs. conventional) the empirical background for such a model is. These two dimensions yield four types of models: (a) simple speculative, (b) simple conventional, (c) complex speculative, and (d) complex conventional. LeBreton et al. (2009) suggested that researchers should analyze either observed variables or latent variables when using simple models, but not both. Concerning the level of empirical support for a model, they argued that only OLS estimation procedures be utilized when examining speculative models, as specification errors are more impactful when using FIML procedures. On the other hand, researchers can analyze both observed and latent variables when working with complex conventional models and use FIML-based procedures. Finally, LeBreton et al. (2009) noted the importance of letting theory guide mediation analyses, including a priori prediction of partial versus full mediation.

In addition to the methods displayed in the summary table, other methods such as SEM-based mediation analysis and bootstrapping (e.g., Bollen & Stine, 1990; Byon et al., 2020; MacKinnon et al., 2004) have recently become popular. Bootstrapping is a non-parametric method based on resampling with replacement

Table 2.4 Mediation of the Effects of Attitude, Subjective Norm, and Team Identification on Visit Intention through the Desire to Visit ($n = 200$)

	Bootstrap Estimate		*95% Confidence Interval*	
	Path Coefficients	*SE*	*Lower*	*Upper*
ATT → Des → Int	0.313*	0.069	0.310	0.920
SN → Des → Int	0.194*	0.060	0.115	0.386
TID → Des → Int	0.075	0.066	–0.081	0.348

Note: Attitude toward attending sport event; SN = Subjective norm for attending sport event; TID = Team identification; Des = Desire to visit; Int = Intention to visit.
* $p < .001$.

and is performed many times (e.g., 5,000 cycles). The bootstrapping method is an alternative to Sobel's method, in which high Type I error rates and low statistical power with small sample sizes have been identified (MacKinnon et al., 2004). Bootstrapping controls for Type I errors has statistical power due to its data resampling procedure (MacKinnon et al., 2004). Table 2.4 shows an example of how to report the mediation test results in a table.

Moderation

Moderation is a third variable (or construct) that changes the relationship between two related variables (or constructs) (Hair et al., 2010). Moderation analysis advances knowledge as testing boundary conditions for relationships between variables is one of the causal conditions put forth by James et al. (1982). A moderation effect occurs when the relationship between two variables, X and Y, varies based on the level of a third variable, Z. Common practice to examine a moderating effect using a regression follows the following steps. First, X and Z are centered by subtracting their respective means, called mean-centering. These values are then multiplied to create a cross-product, XZ. Next, Y is regressed onto X and Z. Then, the product term is added, and the researcher examines the significance of the product term and the significance of an *F* test between the model *R*-squares. If these values are significant, an interaction effect is present. Consequently, simple slopes are plotted and tested to examine the exact nature of the interaction.

While the regression approach is certainly more common, moderation can be tested using latent interactions in SEM. While these procedures are more technical, they carry the advantages of the SEM framework. Particular importance is the ability of SEM to deal with non-normal data. For instance, Edwards (2009) recommended a bootstrapping procedure to handle interaction effects, which are, by definition, non-normal. In fact, Cortina et al. (2001) provided an informative review of the technical and theoretical considerations to be addressed in modeling latent variable interactions and explained several viable methods for doing so. They addressed several important issues. First, these types of analyses

must address that multiplicative terms are, by definition, non-normal. Second, in regression, the interaction term is created simply by multiplying the two manifest variables. This interaction becomes more complex in SEM, where multiple indicators exist, and multiple potential combinations can be used to create the product term. Third, how to specify the interaction term – as either exogenous or endogenous – is sometimes unclear. This question is complicated when, for instance, the predictor is endogenous, and the moderator is exogenous (as in a second-stage moderated model). Finally, the addition of interaction terms might cause identification issues in SEM.

Cortina et al. (2001) reviewed several methods for testing latent variable interactions, all of which are more complex than moderated regression procedures but vary in technicality and elegance. Researchers might choose different methods based on the types of data or types of questions they are interested in. Cortina et al. (2001) conceded that ML is not a panacea but is effective (and robust) under many conditions. However, in the presence of multivariate non-normality, the Satorra–Bentler correction may also be used. Even this method represents an improvement over the regression-based approach, which is unable to use a robust estimation for the interaction term, which is non-normal in that case as well. In sport management, a similar procedure was conducted by Trail et al. (2012), where they used the structural model approach from Jöreskog (2000) to test the latent interaction effect in an SEM. The latent interaction scores were computed after saving the latent variable scores through LISREL 8.80, and they were included in the path model to predict latent dependent variables (Trail et al., 2012). Also, Yim and Byon (2018) examined the moderating effect of identification with the team between the two types of satisfaction and consumption intention using latent moderated SEM (LMS) suggested by Klein and Moosbrugger (2000).

SEM analysis has the ability to capture group comparisons, whether between different groups of individuals (e.g., different cultural backgrounds) or the same group of individuals at different times (e.g., team identification levels throughout a season). However, before concluding group differences or modeling changes, researchers should examine the assumption of measurement invariance across groups or occasions (i.e., time points; Zhang, Byon, Xu, et al., 2020). While this step is often ignored, establishing invariance strengthens study design and lends credibility to the conclusions derived from the results. Only then can the researcher know whether meaningful comparisons have been made. Vandenberg and Lance (2000) developed a straightforward eight-step procedure for examining invariance in just about every aspect of a measure. Since then, however, theoretical advances have shown that all eight steps might not be necessary; instead, two steps are important in almost every context. The decision to use the rest depends on the research questions. The following sections will discuss each step of the original framework of Vandenberg and Lance (2000), and recently, amendments were made by Vandenberg (personal communication, 2013), and how Ployhart and Oswald (2004) built upon this framework to ask different types of research questions.

Omnibus Test

This first test generally measures the invariance of the covariance matrices (Σ) in total. At the time of Vandenberg and Lance (2000), scholars believed that if this test revealed no lack of invariance, subsequent tests were unnecessary. However, this test has proved problematic, likely due to high Type I errors. Whatever the cause, subsequent tests sometimes reveal a lack of invariance even when the omnibus test is non-significant. A significant omnibus result might also yield a lack of invariance in later steps. Thus, this test is no longer necessary or sufficient for establishing invariance.

Configural Invariance

Configural invariance is a test of the same fixed and free factor across groups. This type of invariance is arguably the most important because it establishes that the measure functions the same way psychologically across different groups. If comparisons are made when there is a lack of configural invariance, a researcher is truly comparing apples and oranges. Given a lack of configural invariance, the researcher should inspect the CFAs to see whether a problematic item might be removed without severely altering the measure. However, more significant problems indicate that the researcher should go no further.

Metric Invariance

This test examines whether the values in the Λ_X matrix (i.e., the factor loadings) are equal across groups. Invariance in this respect indicates that respondents from different groups are interpreting items in the measure on the same scale so that their responses might be comparable. Some debate about partial metric invariance remains; that is, some researchers have suggested that if one item is invariant, it can be extrapolated to other items. Vandenberg (personal communication, 2013) suggested that partial invariance might not exist and might be a slippery slope. Instead of transforming the items, omitting a problematic item might be recommended, but omitting any more than one might alter the scale. If the researcher's goal is to run a path model, for instance, configural and metric invariance are sufficient.

Scalar Invariance

Scalar invariance is a test of the item intercepts across groups. When examining group differences (described in more detail below), the researcher should first constrain the τs of like items to be equal across groups. Doing so will effectively push the differences up to the latent means, which can then be tested.

Invariance of Item Uniqueness

Vandenberg and Lance (2000) used this test of the equivalence of the uniquenesses ($\Theta\delta$ and/or $\Theta\varepsilon$) to indicate the reliability of an item. However, invariance in this respect could represent true differences.

Equivalence of Factor Variances

Vandenberg and Lance (2000) treated this comparison of factor variances in the diagonal of the psi matrix as a necessary condition for interpreting item uniquenesses as reliable and as a secondary test of metric invariance. On the other hand, Ployhart and Oswald (2004) used this test to measure the homogeneity of variance, which is necessary for conducting group comparisons.

Equivalence of Factor Covariances

This test is often conducted simultaneously with the abovementioned step to establish equal covariances between the latent factors across groups. However, this test is somewhat redundant with configural invariance, which is a more stringent test and is not often used.

Latent Factor Means

This test examines the differences in latent factor means by forcing equivalence in the kappa matrix. Again, this step is not often used. Researchers interested in latent mean differences might prefer the procedure outlined by Ployhart and Oswald (2004).

Ployhart and Oswald (2004) built on this framework to ask research questions using mean and covariance structure (MACS) analysis. They addressed three questions: (a) Is the measure functioning in the same way across groups? (b) Is there homogeneity of variance? And (c) Are there differences in the latent means? First, a researcher would conduct tests of configural and metric invariance, as outlined above, in order to ensure that the comparisons will be meaningful. Having established equality in those respects, if mean differences are hypothesized, the researcher would expect to find a poor fit for scalar invariance when the item intercepts are constrained to be equal, pushing the differences up to the latent means. Factor variance equivalence must also be established using the procedure above. As Ployhart and Oswald (2004) recommended, the researcher should then fix one of the groups' means equal to zero; the theory might guide how this referent group is defined. The mean differences can be directly tested such that a significant mean would indicate a difference between that group and the referent group. This approach builds on the invariance steps by Vandenberg and Lance (2000) to introduce a strategy for hypothesis testing

in SEM. A similar test could be done with ANOVA or t-tests, but this approach takes advantage of the ability to model error in SEM and represents a more informative test.

After the series of CFA invariance tests, Byrne's (2012) method for SEM invariance is suggested. For the SEM invariance test, the configural model and the constrained equal model (i.e., invariant factor loading, intercept, and structural regression paths) are compared, and when the configural model demonstrates a significantly smaller chi-square value than the constrained model, the moderating effect is present. Testing for moderating effect using invariance analysis is not as widely adopted as it should be, considering the increasing interest of researchers in sport management to understand group differences (e.g., loyal fans vs. non-loyal fans, millennials vs. baby boomers, retail customers vs online customers) for effective marketing of sport products and services. A series of invariance tests are demonstrated in the illustrative examples at the end of this chapter. The LMS approach (Klein & Moosbrugger, 2000) is a more advanced method that can examine the moderation effect of a latent variable. In contrast, the multi-group SEM analysis after invariance tests can only examine the categorical variables. LMS uses the full information ML approach based on expectation maximization (EM), an approach also known as maximum likelihood robust error (MLR). Hence, it does not require creating a product term out of the observed variables. This method also deals with non-normality through a sandwich estimator to compute the standard errors, similar to bootstrapping.

An Illustrative Example

This illustrative example provides readers with an example of SEM application procedures and reporting of SEM results. The purpose of this example was to investigate the structural relationships of millennial sport fans' attitude toward sport game attendance behavior, the subjective norm for sport game attendance behavior, team identification, desire to visit sport event, and intention to visit sport event while taking into consideration the moderating effect of generational differences between Millennials and Generation X. In the current illustrative example, we developed a model based on Yim and Byon's (2020) SFMGB. For the demonstration purpose, we only selected the following variables: (a) attitude toward sport game attendance behavior, (b) subjective norm for sport game attendance behavior, (c) team identification, (d) desire to visit the game, and (e) intention to visit the game from SFMGB and included into this illustrative example.

For the purpose of this example, the following six hypotheses were tested: (H1) attitude will positively influence visit desire, (H2) subjective norm will positively influence visit desire, (H3) team identification will positively influence visit desire, (H4) team identification will positively influence visit intention, (H5) desire will positively influence visit intention, and (H6) generational differences will be found between millennial sport fans and Generation X sport fans when predicting intention to attend sport event (Figure 2.3). To demonstrate, the proposed

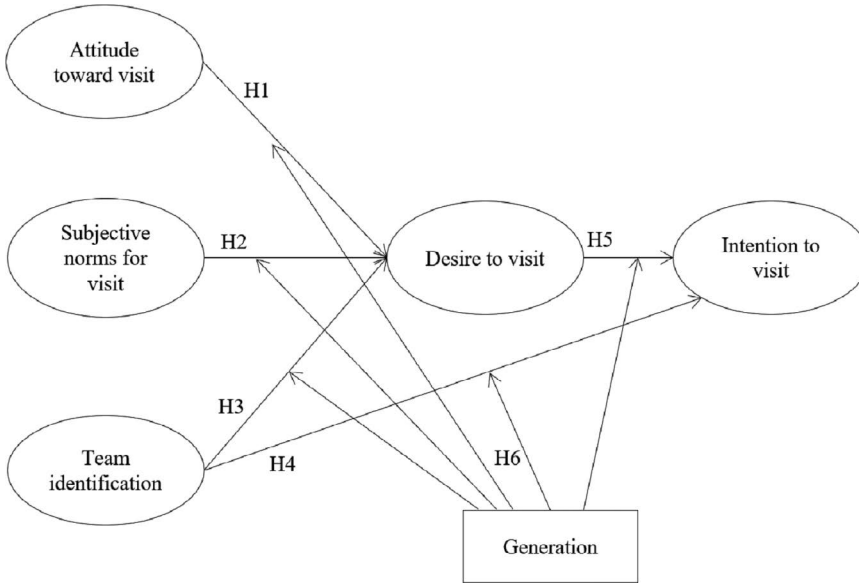

Figure 2.3 Proposed Research Model and Hypotheses.

model is the most plausible model among theoretically equivalent models, it was compared with two rival models (see Figure 2.2). The model B (alternative model 1 where the team identification was theorized to predict the desire to visit the game only) was based on Perugini and Bagozzi's (2001) MGB, where they theorized and empirically found that the desire as a mediator between motivational variable and behavioral intention. Previous researchers have also found that team identification predicts sport fans' behavioral intention (e.g., Fink et al., 2009); therefore, model C (alternative model 2 where the team identification only predicts the intention) was compared.

Using Amazon Mechanical Turk, a total of 400 data (i.e., 200 Millennials and 200 Generation X) were collected, which were subjected to an SEM. The SEM model includes three exogenous latent variables (i.e., attitude toward sport game attendance behavior, subjective norm for sport game attendance behavior, team identification) and two endogenous latent variables (i.e., desire and attendance intentions). Information on generation (i.e., Millennials and Generation X) was collected to examine the moderation effect.

Anderson and Gerbing's (1988) two-step approach was used to test the measurement model via CFA and then test the hypothesized structural model using SEM procedures. For this illustrative example, we used a Mplus 7.0. We followed Hair et al.'s (2010) suggestion to use multiple goodness of fit measures, including chi-square statistic (χ^2), normed chi-square (χ^2/df), RMSEA, SRMR, TLI, and CFI. For the chi-square statistic (χ^2), it is expected to have a non-significant difference. Bollen (1989) suggested that cut-off values of less than 3.0 for the normed

chi-square are considered a reasonable fit. According to Hu and Bentler (1999), the RMSEA value of .06 would indicate a close fit, and RMSEA between .06 and .08 indicates an acceptable fit. While smaller values of SRMR show good fit, values less than .10 are generally considered acceptable fit (Kline, 2011). TLI and CFI values greater than .90 indicate an acceptable fit, and values larger than .95 show a close fit (Kline, 2011).

To determine convergent validity, the researcher evaluated the magnitude and statistical significance of factor loadings for each observed variable. Generally, factor loadings should be statistically significant (Anderson & Gerbing, 1988), and the magnitude of factor loadings should be at least .50 or higher, ideally, .70 or higher (Hair et al., 2010). To establish discriminant validity, two methods were employed: (a) examination of the interfactor correlations (Kline, 2011), where discriminant validity can be established when interfactor correlation is below .85; and (b) Fornell and Larcker's (1981) method, which stipulates that a squared correlation between two constructs should be lower than the AVE for each construct. To measure the scale's reliability, three tests, including Cronbach's alpha values, construct reliability (CR), and average variance extracted (AVE), were employed. A cut-off value of .70 was adopted to determine the internal consistency of the Cronbach's alpha and CR (Fornell & Larcker, 1981; Hair et al., 2010). We adopted AVE .50 or greater suggested by Hair et al. (2010). Construct validity was assessed by means of testing convergent validity and discriminant validity. Once the measurement model was confirmed to be of good psychometric properties, we proceeded with an SEM analysis to examine the hypothesized structural relationships among the factors. The same fit index criteria were employed to examine the structural model as with the measurement model. Path coefficients were used to determine the direct and indirect relationships among the various sets of factors.

Prior to estimating the measurement model and structural model, various assumption tests were conducted that included normality. In terms of the data normality, skewness and kurtosis for the items were examined to evaluate the normality of variables. An absolute value of 3.0 was adopted as the cut-off value for skewness and kurtosis (Chou & Bentler, 1995). The findings revealed that all skewness and kurtosis values were well within the acceptable threshold. For instance, the skewness values ranged from –2.487 to –0.347. The kurtosis values ranged from –1.331 to 2.020.

The overall model fit of the measurement model was acceptable ($\chi^2 = 170.288$, $df = 67$, $p < .001$; $\chi^2/df = 2.54$; RMSEA = .088, 90% CI = .072–.104; SRMR = .047; CFI = .96; and TLI = .95). Convergent validity was satisfactory, where all indicator loadings were statistically significant and well above the minimum criterion of .50 (Anderson & Gerbing, 1988; Hair et al., 2010). None of the interfactor correlations were above the suggested threshold of .85 (Kline, 2011), ranging from .38 (between team identification and intention) to .71 (between attitude and desire), indicating good discriminant validity (see Table 2.1). As a result of applying the Fornell and Larcker's (1981) method, it was found that none of the squared correlations between any of the two constructs were above the AVE value of the respective construct, indicating strong discriminant validity of the measurement

model. Next, Cronbach's alpha, CR, and AVE values of all factors were examined. The measurement model was of excellent reliability as all the values exceeded the above-mentioned cut-off criteria. Obtaining satisfactory psychometric properties of the measurement model, it was deemed appropriate to proceed with testing the hypothesized structural model.

Before estimating path coefficients for the hypothesized structural model, goodness of fit indexes for the structural model was first evaluated. The overall model fit was reasonably well ($\chi^2 = 181.71$, $df = 69$, $p < .001$; $\chi^2/df = 2.63$; RMSEA = .090, 90% CI = .074– .106; SRMR = .057; CFI = .96; and TLI = .95). The chi-square difference test (between measurement and structural regression model following Anderson and Gerbing's 1988 two-step approach) was found to be statistically significant ($\Delta\chi^2_{(2)} = 11.422$; $p < .01$) but when comparing the loadings estimates between CFA and SEM to check for interpretational confounding (Mesquita & Lazzarini, 2008), they were deemed to be similar.

Two competing (alternative) models were developed to examine the adequacy of the proposed model to the data. While in the proposed model, team identification predicted both desire and intention, in the competing models, team identification predicted either only desire (model B) or intention (model C) (see Figure 2.2). To compare the models, in addition to the model fit indices comparison, we conducted a chi-square difference test since the competing models were nested models. The proposed model (model A) showed a significantly better model fit than model B ($\Delta\chi^2_{(1)} = 5.86$; $p < .05$) in the chi-square difference test, so we chose the proposed model over the model B. The chi-square difference test between the proposed model and model C was non-significant ($\Delta\chi^2_{(1)} = 3.21$; $p =$ non-significant); however, when examining the model fit indices and R^2 values, the proposed model was accepted as the final plausible model (see Table 2.3).

As shown in Table 2.2, Hypothesis 1, which hypothesized an influence of attitude on the desire to attend, was supported ($\beta = .512$, $p < .001$). Hypothesis 2 for predicting an influence of subjective norm on desire was supported ($\beta = .318$, $p < .001$). However, Hypothesis 2, which posited an influence of team identification on desire, was not supported. Hypothesis 4 for predicting team identification's influence on intentions was supported ($\beta = .177$, $p < .05$). Hypothesis 5, which postulated an influence of desire on intention was supported ($\beta = .518$, $p < .001$). One of the aims of this illustrative example was to examine the moderating effect of generation (i.e., Millennial vs. Generation X) in predicting game visit intentions. A multi-group SEM was conducted to detect the moderating impact of generation. In order to conduct group comparisons, a series of multi-group CFA invariance tests were conducted by following the recommended procedures from Vandenberg and Lance (2000) and Ployhart and Oswald (2004). For the CFA invariance test between Millennials and Generation X for game visit intention, the factor variance and covariance model ($\chi^2 = 411.27$; $df = 171$; CFI = .95; TLI = .95; RMSEA = .084; and SRMR = .084) and invariant factor means model ($\chi^2 = 423.56$; $df = 176$; CFI = .95; TLI = .95; RMSEA = .084; and SRMR = .097) were compared. The chi-square difference test was found to be statistically significant ($\Delta\chi^2_{(5)} = 12.29$; $p < .05$), indicating that there was a moderation effect (see Table 2.5).

Table 2.5 Test for CFA Invariance of Millennials and Generation X for Game Attending Behavior: Summary of Model Fit and χ^2-Difference-Test Statistics ($N = 400$)

Model	*ML*χ^2	*df*	*SRMSR*	*RMSEA*	*TLI*	*CFI*	*Model Comparison*	$\Delta ML\chi^2$	Δdf	*p*
Configural model	310.32	134	0.042	0.081	0.95	0.97	–	–	–	–
Metric invariance	319.62	143	0.050	0.079	0.96	0.97	vs. Configural	9.30	9	ns
Uniqueness invariance	398.41**	157	0.057	0.088	0.94	0.95	vs. Metric	78.79	14	<.001
Scalar test	416.79	171	0.066	0.085	0.95	0.95	NA			
Means different	404.43	166	0.060	0.085	0.95	0.95	vs. Uniqueness	6.02	9	ns
Factor variance and covariance	411.27	171	0.084	0.084	0.95	0.95	vs. Mean different	6.84	5	ns
Invariant factor means	423.56*	176	0.097	0.084	0.95	0.95	vs. Factor var.	12.29	5	<.05

Note: ns = non-significant.
** $p < .001$.
* $p < .05$.

After revealing the moderation effect of generation, a multi-group SEM was conducted to test Hypothesis 6. The goodness of fit indices of the structural model were examined, and it was found to fit the data well ($\chi^2 = 339.45$; $df = 156$; CFI = .96; TLI = .96; RMSEA = .077; and SRMR = .058). The results of the multi-group SEM showed differences between the Millennials and Gen X (see Figure 2.4). Both Millennials' and Gen X's attitudes significantly predicted the desire to visit (Millennial: $\beta = .52$, $p < .001$; Gen X: $\beta = .56$, $p < .001$); however,

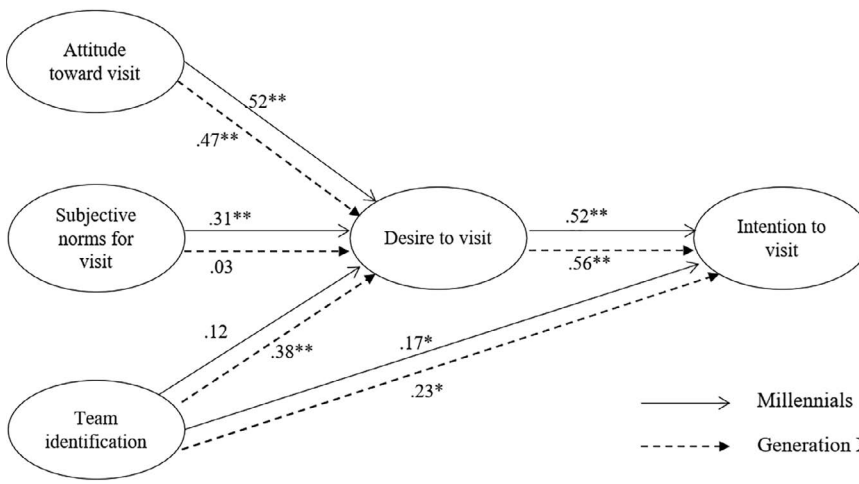

Figure 2.4 Multi-group SEM Results.

Note. *$p < .05$. **$p < .001$.

subjective norm was only significant among the Millennials (Millennial: β = .31, $p < .001$; Gen X: β = .03, p = non-significant) while only Gen X's team identification significantly predicted the desire to visit (Millennial: β = .12, p = non-significant; Gen X: β = .38, $p < .001$). This result implies that for the Gen X fans, team identification was an important antecedent to form a desire, but for the millennial sport fans, the subjective norm, such as peer influence, was a significant predictor for the desire to visit. Both groups' team identification and the desire to visit predicted the intention to visit.

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Chapter 3

Disruptive Technologies on Sport Event Marketing

New Centrality of Digital Communication

Patrizia Zagnoli and Elena Radicchi

Introduction

The new complexity of the sport industry requires a growing level of investments to be competitive not only in athletic performance but also in the sport business. This leads sports organizations to establish a wide composite "network of collaborative relationships" (Normann & Ramirez, 1993; Lusch & Vargo, 2006) with different stakeholders (Freeman, 1984; Freeman et al., 2007) for the implementation of various sport events such as matches, tournaments, games, etc., that can be at the national, international, and global level. The variety of stakeholders converges to let the sport event take place at a different level of complexity (amateur, professional, etc.). Sport events imply systemic relations among multiple actors involved in specific transactions able to collect and exchange economic, financial, technological resources toward an organizational frame where skills and capabilities are managed.

Sport clubs need to gain specific resources like talented players, venues, facilities, sporting goods, and equipment. Sport organizations must raise funds, gain revenues, and cover costs to possibly reach both a positive sportive and financial performance. This entails offering an exciting on-field spectacle, valuable services within stadiums and arena, additional activities (merchandising, restoration, social media services, connection, appliances, etc.) to enhance fans' identification with an athlete or a team, strengthen brand loyalty, and increase the media audience. A critical dimension for sport clubs is the capability to exchange different kinds of services with multiple actors like sponsors, TV networks, sporting equipment suppliers, institutions, marketing agencies, etc.

For global corporations, sport is very attractive to promote and sell their products. In recent years, they have increasingly secured ownership and control over internationally well-known soccer clubs, Formula 1, motorbikes, and cycling teams. On the one hand, buying into a major sport franchise is a business investment that might increase the owners' "trophy status" (Foster et al., 2005) and prestige. It can also generate financial gains and launch investors' products or brands into new markets. On the other hand, corporations play a strategic role in the development of sport organizations: not only do they integrate their financial

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resources providing funds to the team, but they contribute with their strategic and managerial skills in operating them. Company support allows sport organizations to achieve financial, human, and managerial resources, capabilities, and "complementary assets" (Pisano, 2006; Teece, 1986; Teece et al., 1997).

Sporting equipment suppliers capitalize on sport events as well. Sporting goods manufacturers and distributors supply professional clubs with technologies, materials, and components necessary to the sport performance outcome. Typically, soccer balls, shoes, fitness equipment, training software, etc. Sport is a great arena for R&D processes and product testing. Sporting technical partners are increasingly becoming sponsors of teams and events: companies gain many opportunities and synergies, such as strengthening of their ties with the local context. They can also boost their customers' loyalty and develop a clear brand identity in order to achieve economic benefits from the investments they have made. Fans and supporters play a catalytic role in sport. Their passion, excitement, and involvement are crucial for the event's implementation. Subscribers and spectators are key supporters in producing the game and making the sport event happen. They play a meaningful demand function, involving themselves and dragging friends, colleagues, and families. Fans are direct consumers of the service provided by the sport club (match). They trigger a virtuous circle where media, suppliers, distributors, institutions, sponsors, club investors, athletes play complementary roles and create significant value at the "clue" moment when the sport event takes place (Zagnoli & Radicchi, 2016). In this complex relational context, seemingly *new social media* can appear just like a new way to distribute the event content. Today, they play a meaningful role in stimulating the development of interactions among a lot of actors involved within the sport industry.

The new communication channels are a kind of "soundboard" of the sport content. New social media are strategic promotional tools for sport clubs and sponsors' image and brands growth. Moreover, social media allow sharing of sport content and "voicing" opinions: an important part of the fans' experience (Pine & Gilmore, 2011), "in and around the sport event". The new technological and fruition context is the base on which eSport is taking off. From arcade games (pinball machines, electro-mechanical games, redemption games, or merchandisers) in the 1980s and local area network (LAN) parties in the early 1990s – a gathering of people with computers or compatible game consoles, where a LAN connection is established to play multiplayer video games together – to the rise of massively multiplayer online games in the 2000s, gamers have spent decades building the foundations of eSports. The development of robust computing and graphics platforms, along with the growth of social media and high-speed internet access, has helped enable designers to introduce highly responsive and deeply immersive shared gaming environments. Now, the market for video games has grown so much that industry revenues are more than double compared to global box-office receipts for movies.

The relation between new technologies and sport is therefore not only merely confined to a distribution role. The new communication channels are really

a leading engine of the value co-creation process. They stimulate the people's potential demand and directly influence the partners' strategies. Media and new media companies compete to attract brands from different sectors, thus "multiplying" the spread value of sport contents. The contemporary sport real event is still the core of the process: new technologies have made the sport event more social, interactive, and immersive. The development of robust computing and graphics platforms, along with the growth of social media and high-speed internet access, has indeed helped enable major leagues and top professional teams to introduce highly responsive and deeply immersive shared gaming environments across the real event. This research aims to enlighten the new complexity of organizing and marketing a sport event in the light of the emergence of new variables such as the eSport that apparently seems to represent a natural evolution, but, upon close examination, it emerges like a disruptive technology's affirmation process.

New Sport Event Marketing Mix

The marketing mix is defined as a set of strategies and activities that involve Product, Price, Promotion, and Place (distribution). These are commonly referred to as "The Four Ps". An additional P (People) is usually considered in the services marketing, which is particularly important for the sport sector. The fact that these elements are grouped into a set or a "mix" is crucial because they should be coordinated together in an integrated strategic approach. Traditionally, at the heart of the decision-making process regarding a sport club marketing mix are the research and knowledge related to the organization of the event. The core product is the sport event – defined as the actual game in terms of competition (players training and sport equipment supply), the sponsor companies, the event venues and facilities, the ticketing selling process, and the promotion and distribution of core and additional services. Finally, specific services must be designed to increase the fans' attachment and loyalty. All factors must be given careful attention. If the sport event organizer ignores one or the other, this increases the chances of making improper decisions (Figure 3.1).

Over the years, the sport event marketing mix has progressively changed. First, a new important role has been gained by the location where the sport event is taking place. *Place* and distribution in marketing terms is the location and the process of getting the sport product to the consumer. It, therefore, refers to the location of the sport product (stadium and arena), the point of origin for supplying the "game" to the fans. Factors related to the physical location of the sport can have multiple favorable or unfavorable effects on the event marketing success. To ensure a positive effect, contemporary sport venues are more and more easily accessible (highway systems, parking, walkways, and ramps) and try to have an attractive physical appearance in an enjoyable, convenient, and sustainable environment, with safe and pleasant surroundings. Layout design, facility aesthetics, seating comfort, electronic equipment, and displays all significantly influence how sports fans perceive the stadium experience. In turn, the higher this

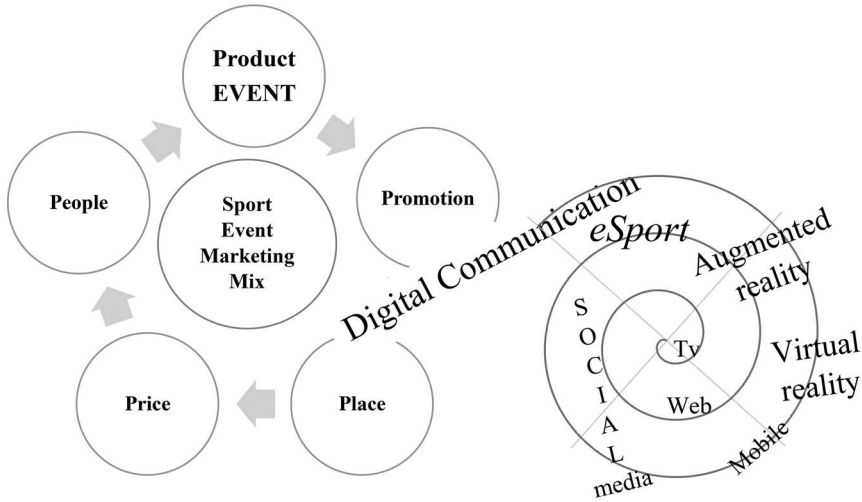


Figure 3.1 The Disruption of the Sport Event Marketing Mix.

perceived quality of the sports venue, the higher the sports fan's satisfaction and attachment to their sports club. If sport fans are enjoying the venue's environment, they are likely to stay in the stadium for a longer period, and they have a variety of entertainment and suppliers that attract them to spend more money; also, they are likely to return.

Distribution is strictly connected and sometimes even overlapped, with *Promotion*, a different *avenue for raising fans' awareness*. This process may involve a variety of methods for gaining the attention of users. In sport, promotion covers a range of interrelated *traditional* and *innovative tools* (*print media, sponsorship, advertising, PR, e-commerce, TV broadcasting, social network*, etc.). All these instruments are designed to catch and stimulate the interest and the awareness of fans and spectators, ending to a great desire to participate in the "sport event". Promotion is more and more about communicating and *engaging* people through a mix of new digital media that have spirally disrupted the sport event marketing mix, giving digital communication a pivotal role. The new centrality of communication has been enhanced based on new technological digital paradigms. Figure 3.2 represents the media devices that have supported the evolution of the technological communication paradigm toward digital disruption.

The process of digitalizing, that is, "to codify, transform, and broadcast information as a bit", in the computer systems at the beginning of the '80s has been the hauling element in the transformation of the telecommunications sector producing important and unexpected potentials. In this phase, the technological paradigm (Dosi, 1988) is characterized by the emergence of a personal computer that allows the database construction and, therefore, the management of a complex system of information on the PC, also by a single user. In the '90s,

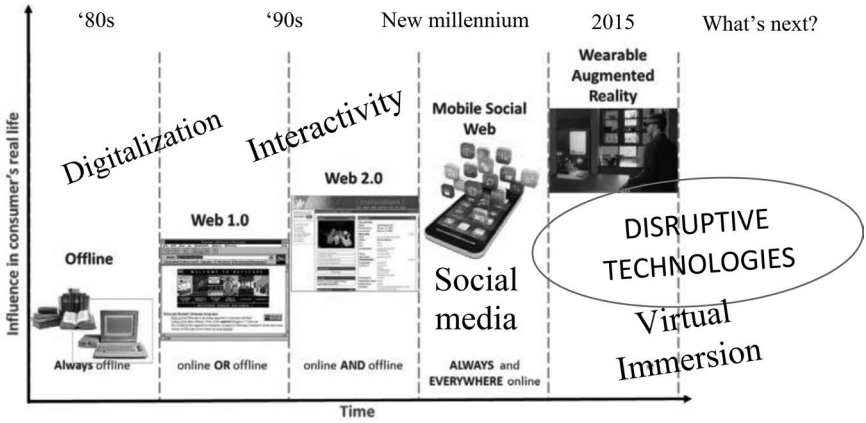


Figure 3.2 Media Devices: Communication Technological Paradigm and Digital Disruption.

the interaction between computer science and telecommunications represents the embryonic phase of the multimedia paradigm (Zagnoli & Cardini, 1994). The new technological paradigm is characterized by the Internet, which realizes the convergence between the computer science sector and telecommunications: information is transmitted through the web by overcoming space and time limits. Thanks to the development of the telecommunications sector and its convergence with computer science (ICT), new ways of organizing information emerged, both in terms of data elaboration and transmission and sharing.

The convergence of computing, telecommunication, and audio-visual technology (Yoffie, 1997; Tapscott, 1996) led to the diffusion of new media that is both interactive and digitally distributed, such as websites and mobile telecommunication (Santomier & Shuart, 2008). Two fundamental features distinguish new media from all other traditional media. In the past, each device usually accomplished some basic tasks: media contents (concerts, sport events, shows, etc.) were displayed on a television, music came through a tape or a CD, and videogames were played through a console. The evolution of ICT technologies changed the way how content is transmitted and accessed. Multimedia raises together a great variety of devices: television, radio, PC, laptop, tablet, mobile phones, and smartphones. Today's content like matches, music concerts, movies, etc., can be watched on television, on a tablet through high-speed internet access, or on a smartphone. From the user's perspective, all of those have been interchangeable tools. What makes the difference for the final consumer's choice is the context, quality of the image, video, audio, graphics, etc., and the potential of interactivity.

A major aspect of the changes in new media consumption is to provide the fan with the feeling of a sort of centrality that goes from *broadcaster to viewer.* Consumers have the technical potential to become editors themselves, empowered as to which messages they receive (Tapscott et al., 2000). Moreover, new

media technologies allow increasingly *constant connectivity* (Mazmanian & Erickson, 2014). With smartphones set to overtake the desktop as the primary means by which people browse the Internet, it seems that the need to connect with each other is something that is no longer confined to a single space and at a certain time of the day. Compelled to receive constant information updates from their ever-expanding peer networks, the average person has been transformed into a "hyper-connected habitué" of social media (Buzzetto & Moore, 2013).

Interactivity – intended as the "interaction" of the user with the new media, the event, and other users – is becoming central to how people, especially young people, use new media. In the Digital Economy, people are no longer merely passive agents but participate interactively (Tapscott, 1996). The emerging new digital technologies, particularly the broadband Internet and other different ways of broadcasting (mobile phones, digital television, etc.), enable the spectator to interact not only with the device but also with other people to create a relational network that gives place to virtual "communities". The latest development of communication and technological paradigm is moving forward due to the changes brought about by *digital disruption* such as *virtual reality*, *augmented reality,* and *eSport*.

Virtual reality (VR) is an artificial environment which is experienced through sensory stimuli (such as sights and sounds) provided by a computer and in which one's actions partially determine what happens in the environment. The purpose of VR is to allow a person to experience and manipulate the environment as if it were the real world. The best virtual realities can immerse the user completely. VR should not be confused with simple 3-D environments like those found in computer games, where you get to experience and manipulate the environment through an avatar rather than personally becoming part of the virtual world. Although augmented reality (AR) has gained much research attention in recent years, the term AR was given different meanings by varying researchers. AR can be defined as the use of wearable devices that are worn, like smart glasses, through which it is possible to merge virtual information with physical information in a user's view field. In recent years, VR and AR have seen a massive application in the field of sports, gradually transforming the way fans and athletes enjoy and perform different disciplines. The ultimate evolution is eSport, which encompasses a wide range of digital and virtual activities played by the sport fans.

The eSport Disruption

By 2020, the global eSports market is expected to generate $1.5 billion in annual revenues, primarily from sponsorships and advertising to an estimated global audience of 600 million fans (Nielsen, 2017). Marketers presented more than 600 brand sponsorships on eSport titles and events in 2017 alone. Additional revenues come from betting, ticket sales, and merchandise. Revenues and engagement from eSports are increasingly driving top gaming publishers' valuation and sales. For example, in its 2017 earnings announcement, Electronic Arts – the

videogames company based in Redwood City, California – reported 18 million players engaged in competitive gaming for its FIFA 18 (soccer) and Madden NFL (National Football League) 18 titles, up 75 percent over the previous year. More popular game titles are shifting to offer competitive multiplayer experiences.

For many businesses in media and entertainment, eSports offers a way to reach a demographic which has been increasingly beyond their grasp. Overall, players and fans are young, less likely to watch TV, and often less interested in professional sports than the general population. In 2017, Nielsen Media evaluated the demographics of eSports enthusiasts and found that 70 percent are male, aged 13–40, two-thirds said they watch live eSports, and 37 percent have attended live eSports events. Deloitte's own digital media trends survey shows that half of Generation X respondents say they play video games at least once a week, almost as much as millennials and Generation Z respondents. Generation X leads all generations in the amount of time they spend playing games on mobile. Older people might dismiss video games, but their children grew up with them and continued playing on consoles, smartphones, and PCs (Nielsen, 2017). The development toward *eSports* represents a very recent disruptive affirmation. Over the last two decades, multiplayer competitive video gaming has globalized and spread across the Internet and social media, aggregating large audiences of digital natives who have grown up in these virtual environments. As online access minimizes physical differences between individuals in a growing number of settings, the world of eSports allows anyone to become a player and even a broadcaster. The potential of disruptive technology emphasizes the sport content making it the *"eSport"* in which the event is in many ways deeply *inclusive* and *virtually immersive*.

Disruptive technologies imply that the digital acquisition era is implemented coupled with AR and eSport fantasy. Disruptive means that we access the stage of complex digital communication from communication technology to enrich the real sport event by gamifying the live fan participation. Disruptive technologies are a great social and economic incentive for stakeholders and especially in professional sport are becoming an inner part of the sport event to a point that rising new buildings are attractive and considered valuable in terms of a high price to be spent. Fans perceive great participation if they can watch the event and simultaneously use new technology to amplify their experience toward "gamification". Along the way, digital games have evolved from being narrative-based, single-player experiences to persistent social platforms with integrated and real-time communication. This shift to games as a service sees game publishers adding a variety of contents that users can customize, alongside free applications that keep the "game fresh". Some users also stream their play and commentary, bringing potential marketing opportunities for sports clubs and the sponsors.

The *eSports* users can represent a huge revenue potential in merchandise and content. Many teams provide visual appearances, including virtual team jerseys, that individual gamers can use for their on-screen avatar as downloadable content through the game platform. As with traditional sports, merchandise can be physical and digital and utilized to "extend" the franchise and its brand. Gaming

platforms can also be a space to offer co-branded content, digital accessories, and additional experiences. Anyway, to exploit the higher worth from these eSport potentials, teams and companies should be able to offer valuable services besides deploying rapid-response marketing. For example, in 2017, a large automaker sponsored a tournament at an eSports venue, parking cars out front and showing off its logo across stage and screen. Fans photographed and "meme-ified" the pictures, insulting the brand and sharing it across their digital networks. The carmaker quickly responded by making its own Instagram pictures to mock itself and the fans. People liked this ironic reaction of the car producer, and the brand conversation turned positive. Moreover, many fans enjoy watching *eSports together in stadiums*, with other players on location and massive screens tracking the action; championship games easily fill 15,000-seat arenas, and gaming hardware manufacturers are signing deals with venues to be the exclusive providers of PCs and peripherals. Developers are investing massively in new eSports venues, training facilities, and living spaces for teams. For example, Super League Gaming repurposes underused movie theaters as eSports arenas and has raised more than $28 million from investors, leading some to envision an eSports future for declining shopping malls.

Regarding its technological development, eSport can appear quite different to traditional team sports fans. Many eSport games make it challenging for viewers to focus attention on the play. Indeed, broadcast media may find it difficult to keep up with many games' pace and multiple viewpoints; coordinating 30 in-game camera views into a cohesive broadcast is already requiring heavy lifting by machine learning technology. Viewers are also often players with copies of the game already installed on their home systems. Some publishers let these viewers pay to watch a championship through their own game, driving the camera wherever they like across the playing field, following their favorite champions, and streaming their views to their own audience. Multiplayer games and the networks that sustain them are now capable of handling both large numbers of players and a global audience of social spectators. This rich technological ecosystem has created numerous social and economic incentives for stakeholders.

Digital technologies helped a lot the diffusion of sport event content, even not simultaneously when the event takes place. For fans, it is possible to use many different technological appliances to play with the match images and the athletes, even in a recorded broadcast. The real sport event seems to become just the origin of a huge entertainment potential for fans and spectators. The communication part of the event is the rest. Indeed, the sport clubs must be cautious not to over-promise in terms of how good the game will be or how well specific athletes may perform. Moreover, sport clubs have no direct control over sport performance, which is basically perishable. Its perishability forces sport event organizers to place a great emphasis on the quality of the game experience, which is more and more ensured, pushing an overall effort on the product extensions (Mullin et al., 2007; Zagnoli & Radicchi, 2011). To overcome and to diversify the financial risk connected with the unpredictability of sport performance in

the contemporary context, sport organizations invest in additional products and services, collateral to the sport practice itself such as merchandising, selling memorabilia, multi-functional facilities, broadcasting rights, and, last but not least, eSport entertainment.

Today, the cutting-edge trend related to the product extension strategy is offering a wide array of services and activities that can be "played" into the stadium or at home during a broadcast match. The disruptive dimension of this trend is the amplification of the "winning" and "losing" concepts. Through social, virtual, and augmented media, while players and athletes compose the real performance on the pitch, fans and spectators are entertained with virtual or augmented images. They are even kept busy with social network interactions: building, involving, and engaging spectators. It is an extension of the *product event* that enhances entertainment and even reduces bitterness and disappointment in case of defeat of fans' beloved teams. Therefore, the entertainment of digital communication has a decisive and overwhelming influence on the content and fans' behavior, especially in the case of losing performance. As shown in Figure 3.1, digital communication in sport plays a disruptive role compared to the classic relationships in the marketing mix leverage. Nonetheless, the key point is the product. In this case, it is the "product-event" that is becoming more and more like a stage in which not just the main actors, such as real athletes, are playing, but even *e*-elements and appliances keep both the fan physically participating in the arena and thousands of mediated spectators involved.

Different Typologies of Digital Communication

The sport event has, in essence, two distinct intrinsic dimensions: sport supplying the "practice" and the fruition enjoyed by fans and spectators. In early times, the participation in the sport event as a practitioner or a spectator was exclusively live. It was just a direct and real experience. With the advent in the '50s of analogical television and with the emergence at the end of the '90s of new media, the sport experience assumed connotations more and more imbued with a mediated reality. The entry of new technologies within the sport event began in the '60s with the first satellite transmission of the 1964 Tokyo Olympics. Moreover, since the Japanese Olympic Games, it enriched the participation of both practitioners and spectators with *multimedia and interactive dimensions* by allowing them to live not just a mediate but even an interactive experience with the event's environment and other consumers. Over the years, real sports events have been increasingly distributed through electronic, multimedia, interactive, and virtual channels enabled by the emergence of different technological paradigms (see Figure 3.2). The fans' experience at games continues to be the highest priority for sport teams. Nevertheless, "it's no longer a matter of going to a sporting event with a hot dog and a beer and taking three and a half hours and driving home in the station wagon" (Don Garber, MLS Commissioner, 2018). Full adventurous enjoyment of sports still sees many people preferring to go to the stadium.

Undoubtedly, watching sports live at the stadium creates an intense excitement in the crowd (Kanosue et al., 2015), deriving from the share of the same emotional environment with thousands of fans cheering the team they support – a mix of emotions that last longer in the memories of life. In the meantime, not passionate, especially less identified, fans may find sporting events sleepy, dull, displeasing, and perhaps distressing.

Sport events are appealing and enjoyable for an increasing number of people, even with a lack of identification with a team or a sport player. Even the hardcore fans sometimes experience this feeling. Pivotal Leagues and teams intensify to enhance fan excitement and enjoyment in a variety of ways: from pre-game music and video to sophisticated lights systems, electronic signage, and monitor displays around the venue. The process has established new rules in the Northern American context and diffusively in the European sporting emerging environment. In these countries, professional teams and leagues have invested tremendously to enrich the fan's experience at the game's venues. The main objective of the clubs is to offer *intense live participation to fans* by increasing their overall comfort and providing for supporters and partners spectators an unforgettable *emotional experience* (Pine & Gilmore, 2011).

The *stadium*, mainly through its architectural design, is not a mere place to play the game, but it becomes the fulcrum of promotional and marketing activity by offering a complex mixture of *additional services* suitable for fans and supporters. The sport venue is progressively perceived as a theater where athletes play their performance. Installation of VIP areas equipped with meeting rooms, restaurants, catering capabilities, etc., besides the so-called Sky boxes. For fans, the experience is even higher: the sport pitch itself is furnished with enormous screens and glass-walled rooms that transmit images, virtual and real, and in some stadiums, like those of NFL American football, acoustic consultants are brought on board to guarantee maximum amplification of crowd noise, ensuring a "wall of sound".

Digital technology has a huge impact on how sports buildings are imagined and designed. There are opportunities for layering the viewing experience – from seeing different camera angles in the seat to tracking the heart rate, speed, and impact of players wearing smart clothing on the pitch. With the rise of smartphones, mobile devices and social media have become more and more entwined. As such, sports fans like to be connected to their favorite social media outlets 24 hours a day and are increasingly participating at live sport events using their phones – ready to tweet, share, like, and take photos. Sports fans attend live sports games and use a mobile device either before, during, or after the event. One of the most common activities among fans using smartphones during live matches is calling, texting, social networking while the actual game occurs. To increase fans' virtual participation during the events, some professional clubs like Liverpool FC, Barcelona FC, Miami Dolphins, San Francisco 49ers have invested in developing the so-called *Connected Stadium*. This venue concept sees sporting arenas improved technically and digitally to ensure that the audience is encouraged to *interact online* from *within the stadium*. Nevertheless, we are just at the

beginning of the process. Indeed, social media applications within sport venues radically change the live event experience. It is a sort of meta-event, a "flagship" innovation that, on the one hand, is still in an experimental phase; on the other hand, it requires a huge amount of investment. Indeed, only major Leagues and clubs that have sophisticated and valuable partners are able to pioneer in this direction. This, in turn, explains why only a few clubs have been bringing their arenas into the digital and constant connection.

The new trend is clearly the increasing convergence of the physical and digital experience allowed by the connectivity placed in the stadium to bring fans closer to the players. This process is boosted by the application of VR. Overcoming the too early failed introduction during the 1990s, VR in the contemporary environment is positioned successfully in the technological framework. VR made its reappearance even in sports events, enabling watching the game with headsets such as Samsung Gear VR, Google Cardboard, and Oculus Rift. With the leap that VR has taken recently, the sport experience is being amplified and becoming deeply immersive. Searching the VR and AR applications in the sport sector, we can enlighten the following trends:

1 The fan can view the action from the player's perspective in the stadium/arena using an on-player camera feed. Moreover, the visor enables to have interactivity, stats, and additional info added to the display. For example, in 2018, player perspective video feeds at several sporting events were offered, including a Euro league basketball match. The garment contains an embedded HD camera, a microphone, and additional sensors that monitor player health stats.
2 A VR headset and an app enable the fan to have a look around the stadium as the action unfolds, all without leaving the comfort of his home. This is the most realistic experience from viewing a sporting event without attending it in person. The Rio 2016 Summer Olympic Games kicked off with a solid VR coverage by broadcasting networks such as NBC and BBC– a first in Olympics broadcasting – viewable with VR headsets through their respective apps.
3 The National Basketball Association (NBA) has made the most progress in adopting VR, but other leagues are not far behind, and VR has already covered three mid-season National Football League games plus the Super Bowl, the live-stream broadcast of the International Champions Cup (ICC) soccer games, a NASCAR (National Association for Stock Car Auto Racing) race, and a couple of National Hockey League (NHL) games.
4 Since one of the strongest arguments against the use of VR in consuming sports content is the fact that it takes away the social experience embedded in the direct attendance – losing part of the pleasure of watching a game with family and friends – social media companies are moving forward enforcing the innovation diffusion, trying to combine the virtual experience with the social connection. For example, some high-tech companies are working on

displaying – through a visor – the virtual reconstruction of the stadium and the players in near-real time. Fans are invited to step in and view the environment from any viewpoint they want. However, fans appear as avatars and can interact with each other through VoIP.

5 With AR, the fans can catch visual contents enriched with useful information about sports, players, and teams. AR technology can bridge this gap since the real-world view is supplemented with computer-generated digital content such as images, videos, or animations that enhance the fan's perception in real time. For example, tennis fans can follow the players through the "Hawk-Eye", a virtual ball tracking system, while challenging line-calling decisions. In cricket, it is used to depict a batsman's wagon wheel or a bowler's beehive. This system enables to visually track the trajectory of the ball and display a profile of its statistically most likely path as a moving image. The most popular example of AR application in sport is probably Pokémon Go. Using a fan's smartphone camera and GPS signal, the game makes it seem as if wild Pokémon are gathering up on the streets of the real world. When walking around and exploring, fans are alerted on their phones with bits of grass, which signal a Pokémon's presence.

6 Many teams have recently implanted a new way to engage supporters during the matches. For example, Manchester City FC launched in 2016 a game whose aim was to catch virtual animated Pokémon, which have been superimposed, into real-world locations by using a smartphone, both inside and outside the Etihad stadium. This AR game-based is an additional tool to enhance fans' loyalty, especially millennial supporters. On the other side, it enables the club to raise its mobile revenue charts. Although watching sports at home does not provide the mediate spectator the same experience as the fan gets in the stadium, nevertheless, it enables the user to enjoy the sporting events with a lot of commentaries, discussion, and graphical analysis.

7 The digital broadcasting of sport games is growing its level of involvement through the utilization of AR. It enables, for example, to see a replay of the match on the studio floor in the form of 3D animations, to watch the footage of the live game projected in 3D, to visualize the trajectories of the ball (or player) with the help of virtual lines and curves. Major sports broadcasters like Fox Sports, Sky Sports, Star Sports, Entertainment & Sports Programming Network (ESPN), etc., are already using this technology during the live broadcasting of sports events. Undoubtedly, the integration of AR into the broadcasting of sporting events creates a strong immersive viewing experience. Ultimately, it improves the engagement of the fans that, by getting used to this new fruition, are progressively becoming eager of their "distribution routine" granted by the sport broadcasting network that provides access to their team.

8 New technology allows offering new products. An example of pure virtual sport events is fantasy games, one of the most popular activities nowadays

in the sport industry. While fantasy sports were born of paper, pencil, and calculator, the preferred venue to trade players is online. Fantasy sports deal with selecting and forming virtual teams in which each virtual player represents a real player from a team of the professional league. Based on the actual performance of the real player from the actual game, the score for each virtual team is decided. Furthermore, the team whose players score maximum becomes a winner of the league. Thus, the game here is to draft, trade, and remove virtual players in line with the results of the real sport. CBS, ESPN, NFL, and Yahoo Sports are among the top Fantasy League Organizers. They help the fan organize (draft, trade, and remove) his team members through their website. A start-up firm named "AR Sports" came up with their patented AR platform for organizing the fantasy sports leagues. This AR Sports system can be used either as a stand-alone application or by integrating with the existing host sites. Additionally, this platform enables advertisers to display interactive advertisements using AR.

9 Even viewer habits are shifting. In 2017, pay TV subscriptions fell by 3.6 million as cord-cutting viewers continued to move to streaming and social platforms (Nielsen, 2017). Despite these new distribution channels, providers are generally "trapped" with their traditional business model: gathering audiences and selling third parties' access to their attention. Facebook has purchased exclusive rights to livestream tournaments of four popular eSports organizations, including, for example, "Valve's Counter-Strike: Global Offensive Pro League". Amazon's streaming service, Twitch, has acquired exclusive rights to stream Blizzard's Overwatch League games. One challenge for the industry – both game publishers and the companies building and maintaining the infrastructure making multiplayer gaming possible – has been metrics since participants do not necessarily fit into traditional TV-industry target markets.

10 The use of data analytics in eSport is evolving as well. For instance, after Nielsen launched an eSports division, the organization partnered with Activision – a US-based video games producer – to bring audience analytics into Call of Duty, one of the most popular multiplayer video games. More insight into use can help bring familiarity and clarity to the eSports market while driving advertising revenue to game publishers. The stakes are high: at least 30 major-player eSports tournaments worldwide are scheduled in 2018, with top players signed to multi-year contracts worth up to $320,000 annually (Nielsen, 2017). Success in professional eSports demands rigorous teamwork and persistent commitment to high performance; winning teams can earn millions in prize money, with popular teams and players drawing significant income from advertising, merchandise, and royalties. It is no surprise that many teenagers seriously aspire to be professional gamers. Some parents are now taking their children to live eSports events, sharing an experience that lies at the heart of spectator sports.

Marketing Implications

The increasing and tangible disruptive process that we tried to document in this work is mainly diffused in professional mass sport such as the most popular and well-known sports and teams (soccer, basket, etc.) (Hilvoorde, 2013; Zagnoli & Radicchi, 2016). The contemporary sport event can really depend on the skill levels of the athletes, the location of the event, the amateur or professional degree of the team, the technological infrastructure diffusion in a country, the sportive and financial-economic strength of the sport companies or associations, etc. (Parent & Smith-Swan, 2012). In Figure 3.3, we try to express the tangible differences in the feature of the sport event, looking at the traditional elements of the real sport event and at the observable new way induced by eSport affirmation. The technological side takes the stage with the mediate and virtual dimensions able to catch enormous attention by living and mediating spectators during and after the physical sport event.

Empirical research allows highlighting a wide range of experiential sports events. The contemporary context sees emerging a great variety of "hybrids", such as real events enriched with multimedia and virtual dimensions. Nevertheless, traditional ways of accessing sport contents such as live participation in terms of an amazing number of real spectators worldwide are not surpassed by new technologies. Rather, it seems that interactivity and virtuality are emerging and co-exist with the real experience, completing the latter with additional multimedia services. The real dimension feeds the virtual one: almost all the events involving physical and direct participation can be enriched through a "virtual world". New digital technologies appear to play a role in the virtual socialization

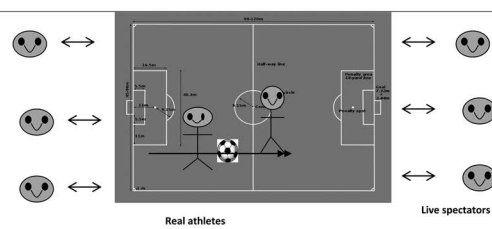
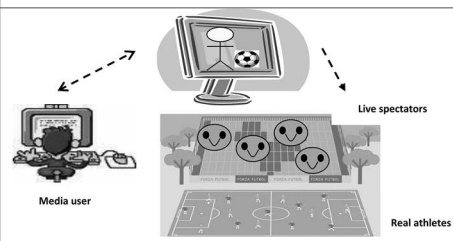
Feature of the event	Experiential marketing dimensions of the sport event	
Real sport event	- *Physical involvement* - "Immersion" within sport real practice experience - *Direct participation* - Physical emotional involvement (songs, choreography, fan clubs, sharing belongings, common participation) - *Associative experience* - Central role of the location/ place	
eSport Event	- Interactive co-production - Virtual experience - Virtual experience shared with other users - Interactivity - Gamification during sport event - Mediate and digital entertainment	

Figure 3.3 Features of Sports Events: From Real Events to *eSport*.

of people during the event by encouraging group interaction, involvement, and passion with which fans, sport clubs, and companies must cope with.

Fans form a kind of "community" during the real event, sharing their interest for specific passions like a team and creating collective identities, which are more and more "designed" by a gamified experience. Digitalization and virtuality shape a sort of "meta-event": fans are immersed in a virtual experience that is lived simultaneously when the real sport event is taking place. Virtual communities can enrich the content of the real event. Today, blogs, social networks, and online communities enable users to live a different experience putting in a virtual environment activity, such as commenting with friends a match result or an athlete's performance, that before was exclusively done in the real world, especially reading and discussing in circles, bars, pubs, etc., statistics and figures appearing in dedicated newspapers. By moving from real to virtual events, fans' engagement level seems to grow. New technologies allow supporters to express their opinions by giving voice to their participation and showing their abilities. Social media have become the new place in which to diffuse actions and discuss them among fans. In some cases, they can also co-create the event. Therefore, we found a change not only regarding the places where people access the event – sports physicals venues become the main stage where spectators live an immersive, social, and "augmented" experience. Moreover, by using social networks, virtual and AR apps, eSport, etc., fans can fulfil their needs of participation and discussion between each other.

For sports clubs, this emerging trend is a key advantage. On the one hand, new technologies increase the entertainment side of the sport event. On the other hand, they enable sport organizations to develop information feedback with fans on which to plan new customized marketing activities aimed to increase passion, identification, and "selling". Embracing the opportunities and challenges in *eSports* can help sport clubs evolve with their audience and transform to meet changes brought about by digital disruption. Teams' executives should understand that modern storytelling includes an important video game market. While sports audiences are being drawn to more interactive and immersive narrative experiences, the risk is that physical sport becomes more and more just a viable digital complement. Through the new digital technologies, viewers may become broadcasters using their own social media devices during the game, and fans are players while interacting with eSport games. The eSports industry may offer access to each of these functionalities and enable the fan to play different spectators' roles (players, broadcasters, streamers, etc.).

Companies should understand the nuances of each role before moving into the eSports arena, whether as sponsors, investors, service providers, etc. The sport event is increasingly a valuable platform to perform media's brand and companies (sponsors) names. Everything tends to follow the procedure of the stage. Digitalization conveys the sport event into the rules of the artificial set. On the contrary, the focus that puts in value sport and respects sport sustainability should be based on capturing the local specificity of the place, designing a

venue that somehow responds to the fan identity and to the culture of the sport team. Global companies are a master in this process and invest in huge sport events' communication and marketing deals. Global firms are, in fact, the biggest supporters of sport events. Especially sport-related companies – such as sporting goods suppliers, casual and sportswear producers, retailers, etc. – invest in sports events addressing the experiential marketing potential. Traditionally sport events for companies can have multiple connotations: (a) to involve practitioners and fans, such as prospective fruitful customers, and (b) to engage users in order to improve product usability and performance. Nevertheless, even non-sport-related corporations such as manufacturing firms, consumer goods producers (in prime's food and beverage, financial, and bank services), and multimedia companies (Internet, mobile phones providers, online games developers, etc.) are showing a high "strategic sensitivity" to join, catch, and exploit the people's emotions in promoting and selling their products addressed by the sport events.

Obviously, sport contents chosen by companies to enhance their products and brands' image are always *top-class sport*. Such as the *most exciting* and *popular disciplines* (e.g., football), the *best global performers teams* (e.g., Manchester City FC, NBA teams, etc.), or the *most worldwide appealing major sport events* (e.g., the Olympics, the Football World Cup, the American Sailing Cup, etc.). Industrial companies' marketing strategies require jointly promoting their products through events that represent successful, popular, and spectacular sports, seizing the attention of wider consumer segments and offering memorable emotions. Companies' goal is to enhance an identification process of consumers to carry within people's daily life the emotions of the sport increasingly driven into preferring their brands and products. Sport- and not-sport-related firms can partner with teams, players, Leagues, and broadcasting networks. At the base of these multiple relations, there are data analytics that is progressively moving into the gaming world.

Social media are an amazing source of data about fans, supporters, and users. The new media and the sponsor companies have access to a huge amount of information. Big databases enable identifying users' behaviors, tastes, preferences, and characteristics, and profile them according to quantitative and qualitative statistics and figures remarkably helpful to implement companies' marketing strategies. If multimedia companies are strongly impacted using these applications as tools of sport content distribution and promotion, this phenomenon is quite important also for other manufacturing firms which use interactive instruments to appeal to different consumers' targets by associating their products and brands with emotional experiences.

Finally, we can say that in the disruption process, digital companies are assuming a central role both in value creation and in sport distribution. Consequently, sport companies, especially at the global and professional level, must interact and select the overload of technological possibilities. They should choose among the mere entertainment technologies the most appropriate for the different sport and the fan highly differentiated in terms of passion, cultural and economic attitude. By the way, for sport events, despite enforcing a complex digital value co-creation

process, team interactions with its fans are still a core dimension. Therefore, in the rapidly evolving eSport industry, media, entertainment, and professional sports companies increase access to a valuable global audience, unlock advertising potential, and develop new entertainment and hospitality offerings, empowering the main sport franchises. Sport businesses can capitalize on this fundamental shift in media and sport shaped by social entertainment, live streaming, and high-intensity competition in the digital world. By highlighting their own passion for sport and digital gaming, companies can help co-create a more inclusive global future of interactive and immersive entertainment.

Nevertheless, in the sport sector, media channels have been acquiring progressively more and more power over the content providers (sport clubs, Federations, Leagues, etc.). As in early times emerged in other industries such as food and large consumer goods retailing or industrial manufacturing (Lugli, 2007), distribution channels have a tremendous impact on sports content management. In contrast, sporting organizations have reduced their power of controlling sport event's diffusion, taken over by multiple and overwhelming media corporations (Zagnoli & Radicchi, 2011; 2016), which dictate the characteristics of events and matches, change fundamental game rules, and influence the ways how fans and spectators enjoy the sports content. It is crucial for sport clubs to develop a more complex and structured organization that entails a set of strategic new media capabilities. Not only to retain the value generated but also to uphold a higher level of control over their own "identity" content.

Many questions are still open since sport is a socio-cultural and economic complex outcome. How can companies build relationships with players, leagues, and the millions of spectators watching them? How can broadcast media companies bring a more enhanced viewing experience to the emerging audience? What are some of the new merchandising opportunities with downloadable digital content? Considering that social media, video platforms, and messaging tools have expanded our physical behaviors into the eSport world, executives across media and entertainment, sponsor, and sport teams should think carefully about the involvement and the new centrality of digital communication and the media and technology that make it possible. Therefore, there are many raising challenges. However, the main one is how sport practice and competition can protect and maintain their essence despite sponsorship requirements and digital distribution imperatives. Will sports be able to keep its identity or become more and more a marketing opportunity?

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Chapter 4

Challenges in Sport Marketing

A Systematic Review of Digital Sport Marketing

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Introduction

"The change has come. The change is present". These two phrases could be a preview of the changes that are being promoted in organizations around the world, possibly due to the digital transformation that is taking place. The imperative need to work in parallel with the face-to-face and digital has had an impact on the opening of a new door not only to be explored but also to be implemented. Thus, digital transformation refers to new digital business models, a digital consumer, collaborative work, the implementation of analysis data, continuous innovation, the implementation of digital strategies, the change of organizational culture, creation and social media management, critical thinking, and of course, the attitude and aptitude of the people who make up the organizations. Actually, it refers to the permanent change of organizations through technologies since an improvement will always appear in the last update. That is why digital transformation is not the use of the latest technologies but the correct integration of them in organizations allowing the evolution of organizations and their development (Kane et al., 2015). The transformation could also be encouraged by changes in consumption. Precisely the ways of relating and communicating between organizations and consumers have changed. Now, in addition to "face-to-face" relationships, organizations are seeking to create relationships with their users and consumers in digital format (Phillips, 2015). In fact, most organizations are using different tools and have created profiles on social networks for greater contact and a greater relationship with their current and future consumers. This new perspective would therefore be focused on the new forms of marketing that organizations use and that ultimately are based on digital marketing.

Kannan and Hongshuang (2017) indicate that digital marketing may be seen as activities, institutions, and processes facilitated by digital technologies for creating, communicating, and delivering value for customers and other stakeholders. Specifically, they define it as "an adaptive, technology-enabled process by which firms collaborate with customers and partners to jointly create, communicate, deliver, and sustain value for all stakeholders" (Kannan & Hongshuang, 2017, p. 23). In fact, these new forms of communication create value through digital environments,

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creating new online experiences for the consumer. In this new form of communication, digital marketing must take into account the environment in which the organization operates to make an analysis of consumer behavior, search engines, contextual interactions, or possible "digital" competitors. These aspects are necessary to understand and analyze in order to establish actions with which the objectives of the marketing plan are achieved. Likewise, understanding the market that surrounds the organization and, in turn, specific to the sector helps to establish objective goals to be achieved through digital sport marketing.

Among the most important activities that are carried out, digital marketing is based on a strategy to be developed, focusing firstly on capturing the attention of the organization, the second is converting those contacts into potential clients, and a final phase that would analyze whether the measures and actions taken are consistent with the needs of consumers. In fact, digital marketing has changed the way of attracting customers and keeping them over time.

Digital marketing uses the website, email, apps, etc., and of course, social media. Precisely in the sports sector, social media have been the most used tools in digital marketing to reach more consumers and communicate with them (García-Fernández et al., 2017). In fact, He et al. (2013) stated that organizations use them to find new customers, improve user satisfaction, increase sales and revenue, retain them and consequently build a good reputation for brand image. For this reason, social media are the perfect tool to establish relationships with customers or potential customers, favoring repurchase and, therefore, loyalty (Yoshida et al., 2014).

In the sports sector, social media are defined as "new technologies that facilitate interactivity and co-creation that allow the development and exchange of content generated by users between organizations (for example, teams, bodies, agencies and media groups) and individuals (for example, consumers and athletes)" (Filo et al., 2015, p. 167). Thus, its importance lies in the continuous exchange of information from the organization to the consumer himself, managing to increase the knowledge of both parties. In fact, and due to the growing use by users of these platforms, companies from the different business sectors of sport are looking for strategies to make themselves known, improve their brand image, and reach their target audience (García-Fernández., 2015). For this reason, the relationship between digital sport marketing and social media is obvious, taking into account that social media have revolutionized communication in the sports industry and therefore in how sports organizations interact with consumers (López-Carril et al., 2020). However, so far, no study has been carried out on the specific studies that have analyzed digital marketing actions and their tools in sport. Therefore, the aim of this study is to carry out a systematic review of literature on digital sport marketing in the sports sector.

Method

To conduct the comprehensive review of literature, the search terms were established in two groups; one group included terms related to digital marketing: "*digital market**", "*digital communication*", "*internet market**", and "*e-marketing*"; while

the other group included terms related to sport: "*sport**", "*fitness*", and "*physical activit**". Different databases were selected to include a wide range of areas related to this interdisciplinary study, including sports science and marketing. The databases used were Web of Science, Scopus, SPORTDiscus (EBSCO), and ABI/Inform (Ovied). The search was conducted between September 03 and December 18, 2020. The search covered all years, and no language limitations were imposed, but the type of document was exclusively limited to scientific articles.

Inclusion and Exclusion Criteria

For the purposes of this review, we included empirical papers in peer-reviewed journals, excluding dissertations and abstracts. Grey literature was not included, ruling out evaluation reports, annual reports, articles in non-peer-reviewed journals, and other means of publication. The inclusion criteria for the articles in the search were the following: (i) journal articles; (ii) publications in English; (iii) use digital marketing in a sport context; and (iv) articles focused on online advertising and not on the consumer. As exclusion criteria have been used: (i) Congress proceedings, book chapters, books, or other types of publications; (ii) no digital marketing actions; (iii) theoretical studies, qualitative approach or reviews; (iv) articles in a language other than English, and (v) duplicate articles.

Assessment of Methodological Quality

The Methodological quality was assessed using a 20-item tool adapted by the authors to the context of sports marketing study typology in which there are no intervention processes on the subjects of the Consolidated Standards of Reporting Trials (CONSORT) checklist (Schulz et al., 2010). Each study was independently scored by two reviewers evaluating the different sections that make up the studies and scoring each item with 1 if the study satisfactorily met the criterion, and with 0 if the study did not satisfactorily meet the criterion or if the item was not applicable to the study. Disagreements between the reviewers were resolved by checking and discussing the original study until a consensus was reached.

Data Extraction and Synthesis

Figure 4.1 shows the Flow Diagram proposed by Moher et al. (2009) following the PRISMA methodology in all points that could be common to a systematic review of these characteristics. The initial database search returned 2,218 results, reduced to 1,573 once duplicates were eliminated. Two reviewers conducted a full scan of the title, then an abstract review, and finally a full-text review using the inclusion and exclusion criteria. The number of final documents for the qualitative synthesis was 13. Among the articles that remained at the abstract level ($n = 4$), a third reviewer also examined the abstracts of the articles to confirm their eligibility, and there were no discrepancies with the two previous reviewers.

A form was developed for data extraction that included the following aspects: (a) year of publication; (b) country; (c) journal title; (d) theory; (e) sport; (f) type or organization; (g) method; (h) data collection; (i) platform; (j) analyses performed; (k) main results; and (l) applications.

To test quality, the risk of bias analysis of the 14 studies evaluated in the research showed that no studies had a high score of 15 points or more out of 20 totals. All studies except one had a mean score between 10 and 15 points, and only one study had a score below 10 points (Ioakimidis, 2010). It should be

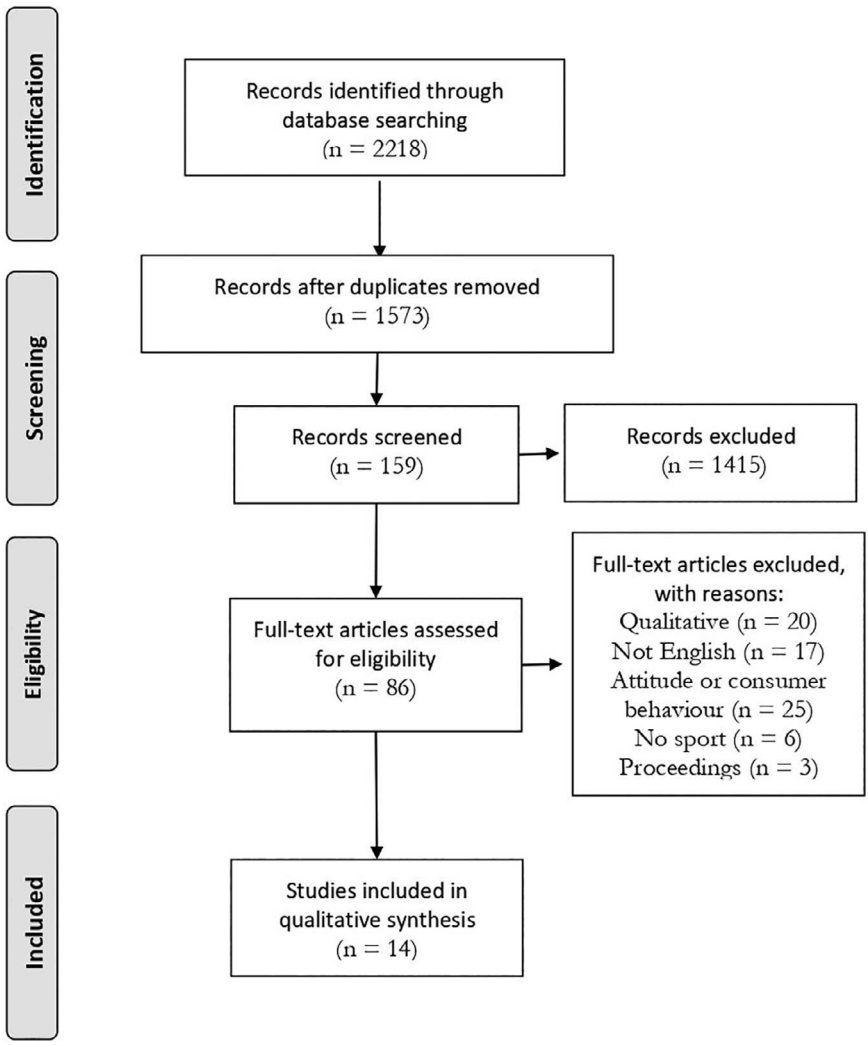

Figure 4.1 Flow Diagram. (Source: Moher et al., 2009.)

noted that none of the studies analyzed carried out a calculation of the sampling required for the generalization of the results, which could be due to the fact that all the studies carried out a selection of the sample for convenience within a certain population. No studies indicated the author who carried out each part of the research or funding.

Results and Discussion

Table 4.1 shows the results about the academic variables of the articles. The publication period covered from 2004 to 2019, and no articles were found in 2020 that met the criteria. Approximately one half of the studies have been published in the last three years, with four studies being published in 2019 (Burton, 2019; Naraine et al., 2019; Tejedor et al., 2019; Zanini et al., 2019). The years 2010 and 2018 had two publications in each case (Baena, 2018; Hazari, 2018; Ioakimidis, 2010; Tsitskari et al., 2010). The country of publication of the first leading author was the United States with four publications (Dick & Turner, 2007; Filo & Funk, 2005; Hazari, 2018; Popp et al., 2017), followed by Australia with three publications (Evans & Smith, 2004; Filo et al., 2009; Naraine et al., 2019). Two countries had two publications, Greece (Ioakimidis, 2010; Tsitskari et al., 2010) and Spain (Baena, 2018; Tejedor et al., 2019), and finally, with one article Brazil (Zanini et al., 2019), India (Kumar & Bagchi, 2020), and Canada (Burton, 2019).

All the articles were published in a total of eight journals, mainly in the sports context (10/14 articles), being three of the non-sport-related journals *Social Responsibility Journal*, *Future Internet*, and *Marketing Intelligence & Planning*. Five articles were published in the specialized journal *International Journal of Sports Marketing & Sponsorship* (Burton, 2019; Evans & Smith, 2004; Hazari, 2018; Ioakimidis, 2010; Popp et al., 2017), two articles in *Sport Marketing Quarterly* (Dick & Turner, 2007; Filo & Funk, 2005), while the rest of the journals had one publication. As it can be seen, most of the publications (7/14) have been made in specialized sport and marketing journals; there is also a publication in the *Journal of Sport Management*, a global reference journal in sport management. Only two studies expressly indicated that they used a previous theory to develop the research, the Social Identity Theory (Baena, 2018) and the Congruency Theory (Hazari, 2018).

The sports field on which the research was based showed that seven studies focused on digital marketing in sports organizations and five studies on sports events. Filo and Funk (2005) carried out their study in a sports organization and a sports event. One aspect of the sports on which studies have focused was that soccer was the most representative, with four articles published recently in the last three years (Baena, 2018; Burton, 2019; Tejedor et al., 2019; Zanini et al., 2019). Basketball was represented in two studies (Dick & Turner, 2007; Naraine et al., 2019), a study on motor racing (Filo et al., 2009) and the Olympic Games (Hazari, 2018). Two studies examined professional leagues in Australia, looking at rugby, Australian football, soccer, and basketball leagues (Evans & Smith, 2004), while

Table 4.1 Academic Variables of the Articles

Authors	*Year of Publication*	*Country*	*Journal*	*Theory*	*Sport*	*Focus*
Baena	2018	Spain	*Social Responsibility Journal*	Social Identity Theory	Soccer	Organization
Burton	2019	Canada	*International Journal of Sports Marketing and Sponsorship*	Not specified	Soccer	Sport event
Dick & Turner	2007	United States	*Sport Marketing Quarterly*	Not specified	Basket	Sport event
Evans & Smith	2004	Australia	*International Journal of Sports Marketing and Sponsorship*	Not specified	Multiple sport leagues	Organization
Filo & Funk	2005	United States	*Sport Marketing Quarterly*	Not specified	Women's Sport Clubs	Organization/ Sport event
Filo et al.	2009	Australia	*Journal of Sport Management*	Not specified	Motor race	Sport event
Hazari	2018	United States	*International Journal of Sports Marketing and Sponsorship*	Congruity theory	Olympic Games	Sport event
Ioakimidis	2010	Greece	*International Journal of Sports Marketing and Sponsorship*	Not specified	Multiple sport leagues	Organization
Kumar & Bagchi	2020	India	*Annals of Tropical Medicine & Public Health*	Not specified	Not specified	Sport event
Naraine et al.	2019	Australia	*Communication & Sport*	Not specified	Basket	Organization
Popp et al.	2017	United States	*International Journal of Sports Marketing and Sponsorship*	Not-specified	Athletics Department	Sport event
Tejedor et al.	2019	Spain	*Future Internet*	Not specified	Soccer	Organization
Tsitskari et al.	2010	Greece	*Serbian Journal of Sports Sciences*	Not specified	Soccer/Basket	Organization
Zanini et al.	2019	Brazil	*Marketing Intelligence & Planning*	Not specified	Soccer	Organization

the other study compared teams from US soccer and ice hockey leagues with UK soccer and rugby leagues (Ioakimidis, 2010). Finally, one study looked at teams from a women's sports organization (Filo & Funk, 2005), and another study evaluated the sports departments of the NCAA Division I universities (Popp et al., 2017). Kumar and Bagchi (2020) do not specify the type of sport attended by the participants in their study.

The results on the methodological aspects of the different studies are shown in Table 4.2. The objectives that the different studies had can be summarized in four different approaches. The first and most numerous approach (8/14) has been the studies that have evaluated or analyzed marketing strategies and techniques used by organizations and sporting events (Dick & Turner, 2007; Evans & Smith, 2004; Filo & Funk, 2005; Ioakimidis, 2010; Kumar & Bagchi, 2020; Popp et al., 2017; Tejedor et al., 2019; Tsitskari et al., 2010). The analysis of these marketing techniques or strategies focused mainly on the actions involving increased sales of tickets for matches or sports events. The second approach of the studies on digital marketing was focused on the impact of the organizations on the website or social networks (5/14), approaching the evaluation of the media possibilities and possible advertising actions in them associated with the organization or the interaction with consumers (Filo et al., 2009; Hazari, 2018; Naraine et al., 2019; Popp et al., 2017; Tsitskari et al., 2010). Third, two studies focused on assessing consumer commitment to brand love (Baena, 2018; Zanini et al., 2019). Finally, one study evaluated the feelings of social network consumers toward the marketing campaigns of sponsoring brands and the ambush marketing campaigns during a sporting event (Burton, 2019).

Regarding the method used to develop the research, nine studies used quantitative methods, four studies used mixed methods (Baena, 2018; Filo et al., 2009; Kumar & Bagchi, 2020; Zanini et al., 2019), and one study used observational methodology to assess the characteristics of professional team websites based on a category system (Ioakimidis, 2010). Studies using qualitative methodology also used interviews, open-ended questions, and tweet content analysis. The remaining studies used a variety of quantitative methodologies such as a telephone questionnaire (Evans & Smith, 2004), paper-based survey (Dick & Turner, 2007; Filo & Funk, 2005; Filo et al., 2009; Hazari, 2018; Tsitskari et al., 2010), and online survey (Baena, 2018; Kumar & Bagchi, 2020). Three studies used a social network analysis tool (Burton, 2019; Naraine et al., 2019; Zanini et al., 2019), two studies were based on information available on the website (Pop et al., 2017; Tejedor et al., 2019), and information from financial databases (Popp et al., 2017).

The platform most used by researchers to carry out their studies has been the website, being used in a total of eight studies out of 14 analyzed (Baena, 2018; Dick & Turner, 2007; Evans & Smith, 2004; Filo & Funk, 2005; Filo et al., 2009; Ioakimidis, 2010; Tejedor et al., 2019; Tsitskari et al., 2010). Five articles evaluated social networks such as Facebook, or primarily Twitter, as an ideal digital marketing tool (Baena, 2018; Burton, 2019; Naraine et al., 2019; Popp et al., 2017; Zanini et al., 2019), and one study evaluated multiple platforms without specifying which

Table 4.2 Methodological Aspects of the Articles

Authors	*Objectives*	*Method*	*Data Collection*	*Platform*	*Analysis*
Baena (2018)	To provide a better understanding of the effect that the corporate social responsibility (CSR) practices might have on brand love. To analyses the importance of making supporters aware and involved in such initiatives.	Mixed methods	Online survey/ interview	Website and social networks	Content analysis, regression
Burton (2019)	To explore consumers' attitudes toward ambush marketing and official event sponsorship through the lens of sentiment analysis. To examine social media users' ethical responses to digital event marketing campaigns during the 2018 FIFA World Cup.	Mixed methods	rTweet's Twitter data	Twitter	Comparative
Dick & Turner (2007)	To determine whether the marketing techniques that NBA marketing directors viewed as valuable and useful were viewed in a similar fashion by attendees at NBA games.	Quantitative	Survey	Website	Comparative
Evans & Smith (2004)	To identify any gaps between seven empirically derived theories of internet marketing 'best practice' and the activities of professional sports clubs. To provide recommendations for bridging any identified gaps.	Quantitative	Telephone-administered survey	Website	Descriptive

(Continued)

Table 4.2 Methodological Aspects of the Articles *(Continued)*

Authors	*Objectives*	*Method*	*Data Collection*	*Platform*	*Analysis*
Filo & Funk (2005)	To evaluate specific features of sport organizations that consumers identify as attractive- To compare such features to the virtual content presented as part of the sport organization's Internet marketing communication.	Quantitative	Surveys	Website	Content analysis, comparative
Filo et al. (2009)	To develop a better understanding of online information requirements for sport event organizations. To evaluate the impact of Website marketing communication on consumer motivation and attitudes toward the event.	Mixed methods	Survey and open-ended questions	Website	Comparative
Hazari (2018)	To investigate attitude toward sponsorship outcome as it relates to purchase behavior, gender, sponsor patronage, sports enthusiasm, and social media consumption.	Quantitative	Survey	Multiple	Comparative, regression
Ioakimidis (2010)	To identify and discuss opportunities for a sport organization to increase its fan base and online user interaction as a key marketing strategy.	Quantitative	Observation	Website	Descriptive

(Continued)

Table 4.2 Methodological Aspects of the Articles *(Continued)*

Authors	*Objectives*	*Method*	*Data Collection*	*Platform*	*Analysis*
Kumar & Bagchi (2020)	To identify productive digital strategies of sporting events. To study the impact of various attributes that contribute in the success of sporting events through online consumption.	Mixed methods	Survey and open-ended questions	Streaming Platforms	Descriptive
Naraine et al. (2019)	To examine the online brand community of a professional sport organization formed via a hashtag marketing campaign to highlight: (a) the types of communication networks that are formed, and (b) the types of segments derived from the hashtag.	Quantitative	Commercial social network analysis platform	Twitter	Comparative
Popp et al. (2017)	To examine the relationship between growth in social media engagement, as defined by the annual percentage increase in Facebook Likes and Twitter Followers, of US college athletics departments and outcome metrics of attendance and ticket revenue. To measure the impact of social media as a marketing tool for NCAA Division I college athletic departments.	Quantitative	NCAA.org and Financial Database	Facebook/Twitter	Descriptive, regression

(Continued)

Table 4.2 Methodological Aspects of the Articles *(Continued)*

Authors	*Objectives*	*Method*	*Data Collection*	*Platform*	*Analysis*
Tejedor et al. (2019)	To analyze digital communication of the main football clubs in Europe to identify and describe what strategies they follow to make themselves known on the internet and to interact with their users.	Quantitative	Team website	Website	Descriptive, comparative
Tsitskari et al. (2010)	To create the SIMEvl – Sport Internet Marketing Evaluation Instrument, a valid and reliable tool with Greek sport teams' fans. To evaluate the marketing variables appearing on the websites and not the variables dealing with the design, navigation or speed of the site.	Quantitative	Survey	Website	Content analysis, comparative
Zanini et al. (2019)	To identify how consumer engagement practices shape the dynamics of a soccer club virtual brand community.	Mixed methods	Tweets	Twitter	Descriptive

ones it used (Hazari, 2018). Kumar and Bagchi (2020) evaluated specific sport streaming platforms users. The type of analysis used showed that the comparative statistic (8/14) was the most used by the researchers (Burton, 2019; Dick & Turner, 2007; Filo & Funk, 2005; Filo et al., 2009; Hazari, 2018; Naraine et al., 2019; Tejedor et al., 2019; Tsitskari et al., 2010), followed by six descriptive studies (Evans & Smith, 2004; Iaokimidis, 2010; Kumar & Bagchi, 2020; Popp et al., 2017; Tejedor et al., 2019; Zanini et al., 2019). Three studies conducted content analysis (Baena, 2018; Filo & Funk, 2005; Tsitskari et al., 2010), and another three studies conducted regressions (Baena, 2018; Hazari, 2018; Popp et al., 2017).

The results on the main findings and applications that can be obtained from the studies (Table 4.3) show the multitude of approaches and methodologies used for their development. Following the line previously exposed about the grouping of objectives of the studies, those investigations related to the techniques and strategies of marketing, Dick and Turner (2007) found differences of opinion between Ticket Holders and Marketing Managers, evaluating better the second one, about the technique of marketing focused on the offer via email and website. On the other hand, Evans and Smith (2004) found that, in product marketing, providing useful and timely information by expanding the brand allows for the generation of more profits. In addition, these authors specify that an appropriate strategy for promoting digital marketing is to generate web alliances with other organizations. Filo and Funk (2005) found congruence between the characteristics and information provided on the website about the products from the viewer's perspective; however, there is great variability in the presentation and accessibility to the products, and it is necessary to develop content guidelines for the leagues. On the other hand, Kumar and Bagchi (2020) showed that 77% of the participants considered that digital marketing helps to increase the live events promotion, while 81% considered that it allows to generate more revenues. Also, they found that two-thirds of the participants consider that if they are willing to consume more sports events in streaming rather than live.

Ioakimidis (2010) compared American and British leagues and found that the American leagues offered a greater number of services, with all the teams using online sales through the website as a marketing tool. Another study focusing on the NCAA Division I university sports departments concluded that the use of social media was not a predictor of purchase and attendance at the event, as were other factors related to team performance, program history, or conference affiliation (Popp et al., 2017). In contrast, Tejedor et al. (2019) found that communication management is effective for sports teams, yet it did not make good use of all the possibilities that the digital arena allows. The majority of clubs incorporated online shops on their websites and included advertising within the multimedia content. The tweets that contained ticket sales promotion for the sports teams' matches had a greater number of user interactions than the tweets that presented sponsorship content (Zanini et al., 2019). The elements of the marketing mix have also been found to be strong predictors in the evaluation of digital sport

Table 4.3 Main Applications of the Studies

Authors	*Main Results*	*Applications*
Baena (2018)	There is a positive and significant association between the use of social networks (Facebook and Twitter) to update fans about the CSR actions carried out by the club with brand love.	The model developed can be useful in increasing knowledge about brand love in marketing. This study allows sports managers to use the results as a strategic guide for future plans as well as expand and reinforce their fan base. Social practices create a strong link between fans and the sports brand.
Burton (2019)	User attitudes toward ambush marketing appear to be significantly more positive than previously assumed, as social media users were very receptive to non-sponsored creative and value-added campaigns. The results suggest that event partners still have a considerable advantage by not maintaining consumer attention and engagement. Non-sponsored campaigns were well received by users at the launch of their campaigns and during the early stages of the event, but commitment decreased significantly over the course of the event.	The commitment of the sponsors had an illustrative competitive advantage for the brands through the official sponsorship. Sponsor brands should be aware of online consumer usage trends for promotional hashtags and should adopt evaluative social metrics accordingly. Ambush marketing takes an optimistic view of consumer sentiment, which depends on the delivery and effectiveness of the partnership created, and the added value for consumers. Sentiment analysis offers professionals the opportunity for direct interaction and meaningful engagement, but it must also be representative of the brand's objectives and approach.
Dick & Turner (2007)	There were significant differences between ticket holders' and marketing managers' perceptions of the importance of the Internet e-mail offer and the website. Ticket holders rated this marketing technique as the eighth most important, while marketing managers rated it as the sixth most important.	Not specified

(Continued)

Table 4.3 Main Applications of the Studies *(Continued)*

Authors	*Main Results*	*Applications*
Evans & Smith (2004)	The most predominant goals of the website were to provide useful and timely information, expand existing brand information, and generate revenue. Two-thirds consider that websites enable the generation of profit, and 58.33% indicate that profitability is a goal. The most widely used strategic Internet marketing tools are those focusing on partnerships/alliances on websites and link-based or individually managed websites.	Information is essential for the development of appropriate Internet strategies so that the scope of the Internet marketing opportunity and practical recommendations are achieved in an appropriate manner. The review of goals is necessary for the development of leadership and perceptions of e-commerce, linked to the strategic goals to gain competitive advantages in marketing. It is interesting to generate online forums that improve the position of organizations on the Internet and allow them to form partnerships or alliances. A large and loyal online community generates substantial advantages and income associated with its products and the creation of attractive spaces for sponsors.
Filo & Funk (2005)	There is some congruence between the product characteristics identified by viewers and the product communication on the website. The variability in the presentation and accessibility of these factors suggests the need for league-wide content guidelines, and efforts should also be intensified to ensure that consumer interest helps to better shape Internet marketing activities. Product presentation and accessibility were different from the other variables in the marketing mix.	The study shows a complementary process for effective research and development in an integrated Internet market. The links should examine the content guidelines of each team's website. The degree and rigor of Internet guidelines that are established will vary according to the stage of the life cycle in which the product is found and the degree of success of the league itself.

(Continued)

Table 4.3 Main Applications of the Studies *(Continued)*

Authors	*Main Results*	*Applications*
Filo et al. (2009)	The consumer's experience on the website is more satisfying when they participate in the targeted retrieval of information, rather than simply participating in the acquisition of incidental information through the multimedia aspects of the website. Providing the 15 specific topics of information required through website communication can create favorable attitudes toward the event among consumers with low motivation to attend.	The 15 themes identified provide a useful template for sports events organizations to ensure that appropriate information is available to consumers through their website, the websites they can connect to, or other communication channels. Visiting websites and retrieving targeted information led to a significant increase in the beliefs and feelings of those with low motivation. Sports event organizations can immediately capitalize on changes in consumer behavior intent by facilitating the next stage, the purchase of tickets for the event.
Hazari (2018)	Social media consumption is positively related to the attitude toward the event and sports sponsorship. Marketing to a target audience of a specific genre that plays competitive sports and is active in social media would further impact the results of sponsorship. The purchase forecasts as a result of seeing an advertisement in social media are gender, competitive sport practice and social media consumption.	Provide an opportunity for merchants to take advantage of social media networks for sponsorship communication. The use of sponsorship as a marketing communication tool can influence the constructs used in the study, such as attitude, sports sponsorship, and purchase intent. Companies can use celebrities in sponsorship messages, which can help make the product or company brand more relevant. New communication channels, such as social media, have the potential to amplify the sponsors' message due to the networking effect of users sharing content on the social network.
Ioakimidis (2010)	All teams established a website and offer online media services and interaction activities for fans. The American league's offer more services than the English ones. All teams used the sale of merchandise as a marketing tool on the website. Nine teams offer mobile services.	Professional teams could benefit from studying competitors' online practices, as access to the team's website is not restricted. Teams with more services tend to be more complex to navigate than those offering fewer services. To reduce the difficulty of navigating the website, a team's website could be linked to one or more secondary sites that focus on specific services such as the offer for younger fans.

(Continued)

Table 4.3 Main Applications of the Studies *(Continued)*

Authors	*Main Results*	*Applications*
Kumar & Bagchi (2020)	About 77% of the participants consider that DM has increased the promotion of live events, while 81% consider that DM allows them to generate more revenues. 71% consider that DM has changed sports consumption since it allows them to get to know other non-existential sports through digital platforms, especially social media. Two-thirds of the participants consider that if they are willing to consume more sports events in streaming rather than live.	The entrepreneur or sports marketer needs to understand digital marketing strategies to initiate digital campaigns that have a maximum reach. The global trend is that different digital platforms experience large traffic of consumers looking for information, entertainment, etc., so a huge task is to predict the right framework to apply digital marketing.
Naraine et al. (2019)	The Toronto Raptors' #WeTheNorth campaign has produced a tightly knit community of online users. Groups play an important role in facilitating the empowerment of other sub-groups. The brand's branded anchor, designed to solicit "Raptor fans", has also facilitated the development of other sub-groups (followers) through the digital junction itself.	There is an ongoing research arm focused on the top-level implications of social media and sport, in particular, the content, narrative, and text produced by the brand's consumer. The analysis indicates that the points where the hashtag network experiences a marked increase in the number of tweets and users interacting are attributable to important time points for the team. The bias toward male fans and the lack of female fans demonstrate an opportunity for future growth. Promotional contests in which fans have to mention or tag their friends and use the denoted hashtag can have an impact on the frequency of conversations but also on the density of the network, which can cultivate fandom and lead generation. An alternative strategy could be to focus on existing fan segments themselves and seek to develop content associated with those segments.

(Continued)

Table 4.3 Main Applications of the Studies *(Continued)*

Authors	*Main Results*	*Applications*
Popp et al. (2017)	The social media measures were not statistically significant predictors of attendance or ticket revenue. The regression models were highly predictive (between 53% and 88%), and most of the explained variations in attendance and ticket revenue were attributed to team performance, program history, and conference membership.	The findings suggest that increased interactions with social media may not necessarily achieve the marketing objectives related to increased attendance or income. Sports marketers will refine and improve the way they use social media as a marketing tool in the coming years. Sports marketers directly attribute ticket sales to social media marketing efforts, often describing sales that are likely to occur even without social media marketing. Social media marketing can be much more effective in achieving other marketing objectives such as branding, relationship building, and gathering market research.
Tejedor et al. (2019)	Communication management is effective, but it also warns that none of the equipment analyzed takes full advantage of the possibilities for user interaction offered by the digital scenario. The clubs offer on average six different languages on their websites. All but one of the clubs have a shop on the menu, and only three clubs have e-commerce. Ten clubs use the commercial domain. Nine clubs have advertising on their multimedia and interactive resources.	Communication and digital presence on the Internet can be improved by placing more emphasis on interaction, as this is a critical aspect of achieving user-level navigation. The 2.0 and 3.0 environment offers many possibilities yet to be discovered. It would be interesting to encourage research on aspects such as transmedia narrative or storytelling, which could enrich digital content and improve the user experience. It would be interesting to encourage the interaction between the follower and the club through the collaboration platforms and the digital communication tools that cyberspace offers.

(Continued)

Table 4.3 Main Applications of the Studies *(Continued)*

Authors	*Main Results*	*Applications*
Tsitskari et al. (2010)	The main elements of the sports marketing mix (product, price, promotion, public relations) were the ones that most affected the public when evaluating web marketing. The first factor was "Product", which represented 23.2% of the total variation, the second factor, "Price – place" was developed from the variables related to online sales, represented 17.4%, the third-factor "Promotion" explained 13.5%, and the fourth factor "Public Relations" explained 9.5%. Males obtained higher scores than females.	Teams can gain a competitive advantage for their customers through successful e-marketing of their websites; they can experience significant improvements in many aspects, such as their fan databases, financial gains, innovations, or business process efficiency.
Zanini et al. (2019)	The dynamics of the engagement is based on two types of practices: those involving tweeting, retweeting, answering, mentioning, and liking messages from and about the profile of the São Paulo FC football club. The entries related to tweets averaged 106.7 retweets, 296 likes, and 402.8 interactions. The sponsor had an average of 64.3 retweets, 227.1 likes, and 291.3 interactions.	This study offers the refinement of social media strategies and the development of content to make them more efficient and to establish a relevant communication channel with audiences. This research provides an overview of social media marketing efforts to build brands and better connections with consumers, considering three levels of contribution as follows: BMI strategy, social media strategy, and digital marketing metrics.

marketing, highlighting the product over the other elements; in addition, they affect differently according to gender (Tsitskari et al., 2010).

The consumer experience will be more satisfactory when consumers are involved in the generation of information if they participate only in the acquisition of such information (Filo et al., 2009). These authors identified 15 specific information topics on the website that allow for the creation of more favorable attitudes toward a sports event among consumers with low motivation. In the same line of sports events, social media consumption was positively related to a higher attitude toward sponsorship at the event, as key elements in social media for purchase, gender, competitive sports practice, and consumption at the event (Hazari, 2018). Burton (2019) observed that ambush marketing campaigns during a sporting event showed positive feelings among social media users, especially in the early and late stages of the sporting event, while sponsorship campaigns during the event gained greater competitive advantage and consumer attention. The campaigns started on Twitter through specific hashtags produced a more united community within the sports organization of its online consumers (Naraine et al., 2019). The different groups that exist around the community itself promote the empowerment of other subgroups through the digital union of users. Baena (2018) found a positive association between the use of social networks and the organization's corporate social responsibility actions led by brand love. Finally, the dynamics of the engagement were based on those that comprise the actions of interaction in social media and on the profile of the sports club (Zanini et al., 2019).

All studies except Dyck and Turner (2007) presented practical applications based on their results. Thus, the main applications stated by the different authors have been based on recommendations or guidelines to improve digital communication on the internet, such as the studies carried out by Baena (2018), Filo and Funk (2005), and Filo et al. (2009). Baena (2018) specified that social practices could create a strong link between brand love and fans, so sports managers can apply these strategies with the aim of increasing the fan base. The degree and rigor of website content guidelines imposed by sports organizations will vary depending on the life stage of the product or the success of the organization itself (Filo & Funk, 2005). Filo et al. (2009) identified 15 essential topics that a sports event should report on its website. In addition, sports event organizers should quickly capitalize on changes in consumer behavior intent to facilitate the purchase of tickets for the event itself. In contrast, Ioakimidis (2010) found that teams with more services have websites that are more difficult to access, so they should link services to other secondary sites that can focus on offering services to young fans. The global trend in the different digital platforms experience indicated that there is a large traffic of consumers looking for information or entertainment, which allows sport marketers to develop appropriate product promotion campaigns (Kumar & Bagchi, 2020).

The studies that have focused on its practical applications oriented toward improving communication and interaction with consumers highlight the fact

that information is fundamental for the development of strategies on the Internet (Evans & Smith, 2004). The 2.0 and 3.0 environments offer many possibilities still to be discovered by marketing agents, since communication and digital presence on the Internet can be improved by putting more effort into interactions with consumers (Tejedor et al., 2019). It is currently known that the different sports organizations use promotional content as a stratagem to encourage the consumers' participation in online platforms (Naraine & Parent, 2017; Stavros et al., 2014), which will depend on the size of the organization and the context (Gómez et al., 2019). Popp et al. (2017) suggest that increased social media interaction may not necessarily achieve the marketing objectives related to improving sports event attendance and ticket sales. Instead, this type of marketing can be effective in achieving other objectives such as building brands, establishing new relationships, or collecting market research information. In fact, sponsorship is considered very useful in achieving brand objectives (Johnston & Spais, 2016).

Zanini et al. (2019) offer a vision of social media marketing to promote brands and generate connections with the consumers through improved the marketing strategies and the development of efficient content. In turn, sports organizations and teams can gain competitive advantage for consumers through digital website marketing, which can significantly improve fan databases, financial benefits, innovation, and efficiency in business processes (Tsitskari et al., 2010). Running promotional contests among fans who have to mention or tag their friends and use a significant hashtag has a positive impact on the number of interactions and network density (Naraine et al., 2019). Thus, sports organizations need to continue working on digital sport marketing with the purpose of increasing women's participation, and they can look for other ways of engagement outside the digital platforms (Abeza et al., 2019). Filo et al. (2015) stated that the motives for the use of social media by users may differ according to their socio-demographic characteristics such as gender, age, educational level, or the sports context.

Finally, for sports events, social media communication channels allow the message of sponsors to be amplified at sports events due to the network effect of users sharing content with their supporters (Hazari, 2018). Chanavat and Desbordes (2014) found that social media can be powerful advertising channels during a sporting event such as the Olympic Games. This is corroborated by Burton's (2019) study, which believes that sponsor engagement has an illustrative competitive advantage for brands through official sponsorship. However, other brands' ambush marketing campaigns also have an optimistic view of consumer sentiment, so that success will depend on the delivery and effectiveness of the specific partnership and the added value for consumers. For example, Gillooly et al. (2017) demonstrated that sponsor brands achieve success in using social media when they engage in reward-based activation. Finally, Hazari (2018) considers the use of sponsorship as an important marketing tool to influence constructs such as sports sponsorship, consumer attitudes, and purchase behavior.

This systematic review has several limitations. Firstly, the existence of heterogeneous lines of research makes it impossible to analyze a line of research related

to digital sports marketing in depth. A second limitation may be selection bias since the diversity of studies may mean that some inclusion criteria are not sufficiently clear and objective. Another limitation is the restriction of access to the full text of certain studies that cannot be considered in the evaluation. Although attempts have been made to consider different databases to carry out the systematic review, there may be a research bias by not considering possible studies published in journals not indexed in the databases analyzed. Language bias should also be considered by including only studies in English, excluding studies in other languages such as Spanish or Portuguese. Finally, the last limitation is publication bias since only studies with positive and significant results are usually published, not studies with negative or non-significant results. These types of studies, if published, tend to take longer to be published or are not widely cited.

Future lines of research can be developed based on the results of this systematic review. Environment 3.0 offers many possibilities to be discovered (Tejedor et al., 2019) as new technologies and digitalization are continuously growing and new innovations are appearing. Most studies have focused on sports organizations, with sports events not receiving as much attention, especially in the current context of the COVID-19 pandemic. The limitation or prohibition of spectators at sporting events represents a great business opportunity for brands as all fans must follow and watch these events online in streaming or deferred. This creates an ideal space to advertise and be able to evaluate consumer behavior toward the advertising that is inserted in the online platforms during the event.

Among the different social media platforms studied, Instagram has not received any attention. It is a platform that is gaining more importance and follow-up due to its multimedia approach, highlighting the image over the text. The promotion of products from different organizations through photos can be a study approach that allows the number of interactions carried out on digital sport marketing to be properly analyzed. The fitness sector is a very important area within current sports management that has not received attention in the literature to evaluate the possible digital marketing in this field. Other fields of study are digital sport marketing in applications for the control and monitoring of physical activity or management in sports centers. Finally, the existence of a bias according to gender due to the lack of female supporters may represent an important opportunity for future growth in the digital marketing of sports organizations (Naraine et al., 2019).

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Chapter 5

Digital Ticketing Utilization in High School Athletics

The Role of Spectator Demographics

Armin A. Marquez and Beth A. Cianfrone

Introduction

In the United States, high school football is a popular spectator sport. On any given fall Friday night, when high school games are played, it is predicted that seven million people are in attendance across the country (Niehoff, 2019). In an environment where costs are continually rising, and revenue streams outside of school-assigned budgets are vital, high school athletic directors often rely on ticket sales as a critical funding source (Hatfield & Hatfield, 2014). One strategy that athletic directors have turned to increase ticket revenue is offering digital ticketing. Digital ticketing refers to spectators' online purchases (via phone or website) and redemption for entry at the gate. Digital ticketing is common at the professional level, and with the COVID-19 pandemic, it may become more prevalent at other levels of sports, such as the high school level. While it is becoming more common, many individuals prefer traditional walk-up ticket purchases at the high school and/or many athletic directors who have not implemented the digital ticketing option. There are many advantages to digital ticketing, so understanding why some attendees do not utilize it is a worthwhile endeavor that could assist administrators.

Sport administrators and marketers can use consumer data to target advertising or promotional materials to influence behavior. As part of this, they often utilize market segmentation and start with understanding their consumers' demographics. This information is often easily attainable by administrators and can help inform decisions. Digital ticketing is a technology-based feature/purchase, so specific demographic attributes may influence an individual's perception of the technology and intention to use the technology. As such, the high school marketplace research is limited and warrants further discovery to inform athletic directors of managerial decisions regarding digital ticketing (e.g., Cianfrone et al., 2015; Marquez et al., 2020a, 2020b). Even more specifically, there is no research exploring the demographic influence on spectators' adoption of digital ticketing, which suggests the importance of the present study.

The purpose of this study is to explore differences among the factors influencing the adoption of digital ticketing when attending high school football

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games based on spectators' demographics. Following the Theoretical Model for Athletic Event Digital Ticketing Use (Marquez et al., 2020b), we assessed differences in perceived usefulness, perceived ease of use, trust of digital ticketing, willingness to pay convenience fees, and intention to use digital ticketing for high school football games based on spectators' demographic attributes (i.e., gender, age, income, education, race, affiliation to the school, and composition of the party in attendance). This information should be useful for athletic administrators as they consider the adoption of digital ticketing and develop marketing and ticketing strategies.

Theoretical Framework

Historically, high school athletic events, such as football games, require attendees to purchase the game ticket at the stadium ticket booth with only cash on the game day, minutes before start time, and then proceed to have their ticket taken at the stadium entrance. Some challenges with this approach include theft of the ticketing cash box due to insufficient security or use of volunteer staff to manage the ticketing, crowd control from the various lines, and spectator dissatisfaction with needing cash on hand to purchase the ticket in an increasingly digital society (Marquez et al., 2020b). Further, advance ticket sales may not be an option, and fear of the game selling out and long lines may deter fans. For spectators, digital ticketing may improve their experience by providing added flexibility in their purchases, including advance purchases, and eliminating the need to have cash or waiting in ticket lines at the event. For administrators, digital ticketing may resolve challenges associated with cash gates, help secure revenue through advanced ticket sales, and provide schools with the opportunity to collect customer data, which may prove useful when devising sponsorship packages or marketing campaigns (Marquez et al., 2020b). However, many attendees continue to utilize the cash walk-up purchase option rather than digital ticketing in those high schools where both options are offered. Thus, administrators need to assess if there are possible differences across consumer segments.

Digital ticketing adoption by high school athletic departments has gained momentum. The National Federation of State High School Associations (NFHS) officially partnered with a ticketing company, Huddle Inc., to provide its member schools with the option of adopting the digital ticketing platform GOFAN. The company also works with schools on their traditional printed tickets (Huddle Inc., 2017b). According to Griffin Pugh, General Sales Manager at Huddle, of the nearly 9,000 schools using the Huddle's physical printed tickets, about 11% adopted the GOFAN platform for the 2018–19 school year (personal communication, August 30, 2018). Other digital ticketing companies are also in the high school athletic space, such as Mascot Media, State Champs, Ticket Roar, and Ticket Spicket, highlighting the attractiveness of this market (Marquez et al., 2020b). While it is becoming more prevalent, some athletic directors do not

offer the option of digital ticketing to their fans and spectators who do not use this technology, even when available. Marquez et al. (2020a) aimed to research why athletic directors may or may not adopt digital ticketing for their programs. Meanwhile, Marquez et al. (2020b) explored how attendees may perceive digital ticketing over a series of technology attributes and their intentions to use digital ticketing. Consideration of how digital ticketing factors are affected by potential consumers' demographic characteristics will add to the growing literature on digital ticketing.

Factors Influencing Adoption of Digital Ticketing

Researchers have used, modified, and extended the Technology Acceptance Model (TAM; e.g., Davis, 1989, 1993) to examine the adoption of technology by users in a variety of contexts. Many researchers have found its main factors of perceived usefulness (capability to use the technology to one's advantage) and perceived ease of use (lack of effort to engage in the activity) influence intention to use the technology (e.g., Davis, 1989, 1993; Venkatesh & Davis, 2000; Venkatesh et al., 2012). Fishbein and Ajzen (1975) explain that behavioral intentions are a strong predictor of actual behavior. Most applicably, Marquez et al. (2020b) adapted the TAM to explore spectators' intentions to use digital ticketing services when attending sporting events to derive a theoretical model of athletic event digital use – Theoretical Model for Athletic Event Digital Ticketing Use. They tested the influence of the variables perceived usefulness, perceived ease of use, and intentions to use from the simplified TAM, and the two new variables: trust of digital ticketing and the willingness to pay convenience fees. An individual's trust in digital ticketing referred to their trust in the online environment to transmit sensitive information, such as credit card numbers, to complete the ticket purchase. Willingness to pay considered spectators' willingness to pay extra (i.e., surcharges) to purchase digital tickets. They found that trust, willingness to pay and perceived ease of use influenced spectators' purchase intentions, which, in turn, affected individuals' intentions to use, while willingness to pay also had a direct influence on intentions to use. While the study was the first in the high school marketplace, it failed to address possible demographical differences in individuals, which may be influencing perceptions and intentions to use digital ticketing and could provide more information for athletic directors. Because Marquez et al. (2020b) found that all factors influenced intentions to use in some capacity, we include the five in our study in an effort to segment the market.

Market Segmentation and Demographic Influences

Athletic directors may be concerned with understanding which spectators are more inclined to use digital ticketing. Trail (2019) identifies demographics as one of the four primary bases for market segmentation, along with

psychographic, geographic, and behavioral factors. They also highlight that using these bases in combination can result in a more comprehensive profile of the consumer groups. In the technology space, Ha et al. (2007) and Venkatesh and Davis (2000) have pointed to the importance of investigating the moderating effects of demographic factors. As such, we focus on demographic influences.

Various individual demographics could play a role in one's adoption of technology, such as digital ticketing. Among the segments traditionally explored in sports consumption or technology acceptance includes gender, age, income, education, race, affiliation with the school, and the attendees' party composition (with others, alone, etc.). For example, in 2008, Scarborough Research identified Digital Savvy consumers as younger males with high education and income levels (Scarborough Research, 2008). Yet, as digital technology becomes more prevalent, this profile changes over the years and thus should be examined in the sport digital ticketing context. Decision-makers may desire to know if there are differences in these demographic groups on the five ticketing areas and intentions to use.

Gender

Gender is often used as a point for segmentation in sport marketing literature, with varying results. There are frequently behavioral differences between men and women, such as in attendance or other forms of consumption. Yet, "research does not support the existence of large differences between males and females on things such as attitudes, beliefs, intentions, motives" (Trail, 2019, p. 289). Therefore, perceptions on digital ticketing and intentions to use digital ticketing may or may not differ by gender and needs to be investigated.

Age

One may expect differences in perceptions toward a technology based on age. Age can influence the amount and type of media and technology people use. Millennials have different technology habits than Baby Boomers (60+), Generations X (45–55), and Y (26–44). As such, younger patrons may be more comfortable interacting with technology, which would likely influence perceptions of ease, usefulness, trust of digital ticketing, acceptance of paying extra fees, and intentions to use. Breaking down spectators' perceptions toward and intention to use digital ticketing by age may help identify those more likely to use the technology, providing greater insight than if we analyzed these elements separately.

Education

The level of education of an individual may also influence their perception toward the technology. It is a common factor in determining attitudes and behaviors (Hawkins & Mothersbaugh, 2010). Individuals pursuing higher

education levels may be more likely to gain exposure to technological advances, which in turn could impact their perceptions, and perhaps be more likely to leverage technology to achieve efficiencies in their everyday lives.

Income

Hawkins and Mothersbaugh (2010) noted that occupation and education influence consumer preferences and purchase, whereas personal or household income allows them to make the purchase. Although household income does not lead to or explain consumer purchases, it is clear that it plays a role and should be considered. Household income has been shown to explain some of the variance in why certain consumers are willing to pay more for tickets (Popp et al., 2018). Because there is an additional fee associated with digital ticketing, perhaps income influences. Also, those with higher income are more likely to engage with technology, influencing perceptions of ease, usefulness, and trust. Those spectators reporting higher income levels may be more likely to see traditional ticketing (e.g., long lines at a ticket gate) as a waste of their valuable time. Also, higher income may influence their willingness to pay fees for the added convenience, directly impacting their intentions to use.

Race

It is unclear how or if racial identity influences individuals' perceptions of digital ticketing technology. Trail (2019) notes that racial identity is rarely used in research to distinguish differences within sport consumer behavior literature. Nevertheless, finding such differences may provide valuable insights given that very little is known about the high school athletic spectator profile.

Affiliation

High school sports may differ from professional sports in that attendees may have unique ties to the school or athletic program. For example, Cianfrone et al. (2015) found that most spectators in attendance of a high school basketball tournament were parents of the basketball players, but there are also likely other spectator affiliations of attendees. School teachers or administrators who have a direct affiliation to the school may be in attendance. Relatives, beyond parents, of the participants (e.g., band members, cheerleaders, coaches, athletes) and, finally, alumni of the school may also be in attendance. These different affiliations may influence perceptions and intentions to use the digital ticketing option given their particular motives for attendance. Likewise, spectators' affiliation will likely affect the number of games attended during a given season and their individual ticketing needs. Therefore, understanding whether attendees' adoption of the technology is linked to their affiliation with the high school would enable athletic directors to design specific

marketing campaigns that align with each segment (e.g., "buy tickets for the whole family in seconds with online ticketing").

Party Composition

Who spectators choose to attend high school athletic events may influence their purchasing needs and, therefore, their perceptions toward digital ticketing and their intention to use this technology in the future. Perhaps groups are attracted to the convenience of making one purchase and sharing tickets via text messaging across group members (e.g., mom making the purchase and distributing tickets to children, grandparents, and other family members). On the other hand, large family groups may wish to avoid paying convenience fees on multiple tickets, which could add considerably to the expenses.

Identifying the different patterns of attendees and their ticketing preferences can aid athletic directors and ticketing and marketing companies working in the secondary education space to customize their efforts to educate fans about the option of digital ticketing when purchasing tickets in advance for sporting events. Additionally, from a practitioners' standpoint, understanding the effect of spectators' demographic profiles on their perceptions toward digital ticketing and future usage of this technology may help administrators design appropriate marketing efforts. Therefore, it was considered applicable to measure the differences in perceived usefulness, perceived ease of use, trust in digital ticketing, willingness to pay, and intentions to use based on spectator demographics (i.e., gender, age, income, education, race, affiliation, and attendee party composition).

Method

As part of a larger data collection, after university IRB approval, we ascertained data on adult spectators at 12 high school football games via a paper-and-pencil survey using (1) a mall-intercept approach at various sections of the stadium and (2) an information table, strategically located by concessions, at five different stadiums, located in multiple types of communities (metropolitan, suburban, and rural) across a southeastern state.

Participants completed 15 items on their digital ticketing perceptions and intentions to use (i.e., perceived usefulness, perceived ease of use, trust in digital ticketing, willingness to pay fees, and intentions to use). The digital ticketing factors were measured using multi-item 7-point Likert-type scale supported by the literature (i.e., Davis, 1993; İkram & Cem, 2016; Taylor & Todd, 1995; Zhao et al., 2016). Participants completed 7 demographic items (i.e., gender, age, income, education, race, affiliation with the school, and who they attended with). Age was divided into the categorical groupings used by Google Analytics (18–24, 25–34, 35–44, 45–54, 55–64, and 65-plus), as that information is accessible to athletic directors. Participants identified their affiliation from a parent of high

school student, parent of event participants (i.e., coach, player, cheerleader, or band member), non-parent family member (e.g., grandparents) of event participants, alumni of the high school playing in the game, high school representative or staff member, or non-affiliated spectators (who noted their different affiliations, such as football fan, community supporter).

To determine the overall differences in mean likelihoods between each of the levels of the spectators' demographic characteristics (i.e., independent variables: gender, age, income, education, race, affiliation, and the composition of the party in attendance), we performed seven multivariate analysis of variance (MANOVA) on differences in ticket adoption factors (i.e., dependent variables: perceived ease of use, perceived usefulness, trust of digital ticketing, willingness to pay, and intention to use. Further, the results from the between-subject effects test to identify the differences in the mean scores of the five dependent variables for each independent variable, and a post hoc Tukey test to assess pairwise comparisons between levels of those variables with more than two groupings (age, income, education, race, affiliation, and party in attendance), while applying a Bonferroni adjustment to account for the use of dependent variables on multiple tests.

Results

On average, participants (N = 523) were 45 years of age, primarily White (68.6%), married (75.5%), and earned a yearly family income of $100,000 or higher (50.3%). The majority (>75%) had attended college, with 54.1% completing a four-year degree or higher. Half (49.9%) of the spectators reported being in attendance with both adults and children, while the remainder were attending with other adults (45.3%) or alone (4.8%). In terms of affiliation to the high schools participating, 28.3% of respondents were alumni, 19.3% were non-parent family members of event participants (i.e., players, cheerleaders, band members), 16.8% were parents of event participants, 14.7% were parents of high school students (non-participants), 3.4% were representatives or staff of the school, and 17.4% did not identify with any of these categories. Participants reported having attended an average of 6.76 (SD = 5.73) high school football games the previous season. The items for the five digital ticketing factors showed good psychometric properties ($\alpha > .70$). Participants reported highest on perceived usefulness (M = 5.82, SD = 1.15), followed by perceived ease of use (M = 5.52, SD = 1.24), trust in digital ticketing (M = 5.39, SD = 1.36), intention to use (M = 5.21, SD = 1.52), and willingness to pay fees (M = 3.84, SD = 1.66).

To explore differences in ticketing adoption factors based on demographics of the spectators, we used MANOVA, finding statistically significant differences based on gender [$F(5, 517) = 2.76$, $p = .018$], age [$F(5, 517) = 4.60$, $p < .001$], school affiliation [$F(5, 517) = 3.66$, $p = .003$], and party attending [$F(5, 517) = 2.26$, $p = .047$]. On average, female participants scored significantly higher on perceived ease of use [$F(1, 521) = 6.05$, $p = .014$] and trust in digital ticketing [$F(1, 521) = 4.26$,

Table 5.1 Spectators' Perceived Ease of Use, Perceived Usefulness, Trust of Digital Ticketing, Willingness to Pay Convenience Fees, and Intentions to Use by Gender

Construct	*Gender*	*Participants*	*M*	*SD*
Perceived ease of use	Female	259	5.65*	1.29
	Male	264	5.39*	1.19
Perceived usefulness	Female	259	5.88	1.18
	Male	264	5.76	1.11
Trust of digital ticket	Female	259	5.52*	1.39
	Male	264	5.27*	1.31
Willingness to pay convenience fee	Female	259	3.98	1.81
	Male	264	3.70	1.49
Intent to use digital ticketing	Female	259	5.25	1.64
	Male	264	5.17	1.41

Note: * Group significantly different ($p < .05$) from the others.

$p = .039$] than men (see Table 5.1). The post hoc Tukey tests assessed differences on the factors of digital ticketing adoption based on independent variables with three or more levels. Scheffe post hoc was used in cases where group sizes were statistically different. Participants' willingness to pay was found to be statistically different based on age [$F(5, 517) = 3.30$, $p = .006$]. On average, participants of ages ranging between 25–34 years scored significantly ($p < .05$) lower ($M = 3.09$, $SD = 1.79$) than the 55-64 ($M = 4.36$, $SD = 1.76$) and 65+ ($M = 4.37$, $SD = 1.37$) groups (see Table 5.2).

Participants' intention to use digital ticketing was found to be statistically different [$F(4, 518) = 2.71$, $p = .029$] based on their affiliation with the schools (see Table 5.3). More specifically, the high school parents scored higher on intentions to use ($M = 5.60$, $SD = 1.17$) than all other groups, although the difference was only statistically significant compared to the alumni ($M = 4.96$, $SD = 1.79$) group. Based on party attending, there were statistically significant differences on perceived ease of use [$F(2, 520) = 4.56$, $p = .01$] and perceived usefulness [$F(2, 520) = 5.17$, $p = .006$]. Specifically, the parties comprised of adults and children ($M = 5.64$, $SD = 1.19$; $M = 5.96$, $SD = 1.03$ respectively) scored higher than parties of just adults ($M = 5.34$, $SD = 1.29$; $M = 5.65$, $SD = 1.25$ respectively), on both constructs (Table 5.4). Meanwhile, differences among factors of digital ticketing perception and adoption, based on ethnicity (Table 5.5), levels of income (Table 5.6), and education (Table 5.7), were non-significant.

Discussion

Ticket sales are an essential revenue stream for many organizations, including high school athletic departments. Digital ticketing offers schools an opportunity to maximize advanced ticket sales efficiently and eliminate many potential service issues (e.g., theft, lines, crowd control, etc.). To improve sport spectators'

Table 5.2 Spectators' Perceived Ease of Use, Perceived Usefulness, Trust of Digital Ticketing, Willingness to Pay Convenience Fees, and Intentions to Use by Age Group

Construct	*Age Grouping*	*Participants*	*M*	*SD*
Perceived ease of use	18–24	27	5.52	0.93
	25–34	38	5.54	1.29
	35–44	113	5.68	1.15
	45–54	272	5.48	1.26
	55–64	43	5.32	1.31
	≥65	30	5.46	1.52
Perceived usefulness	18–24	27	5.77	1.02
	25–34	38	5.76	1.32
	35–44	113	5.96	1.03
	45–54	272	5.79	1.14
	55–64	43	5.78	1.22
	≥65	30	5.76	1.45
Trust of digital ticketing	18–24	27	5.36	1.33
	25–34	38	5.26	1.41
	35–44	113	5.51	1.25
	45–54	272	5.38	1.34
	55–64	43	5.35	1.58
	≥65	30	5.38	1.61
Willingness to pay	18–24	27	3.59	1.73
	25–34	38	3.09*	1.79
	35–44	113	3.92	1.68
	45–54	272	3.80	1.60
	55–64	43	4.36*	1.76
	≥65	30	4.37*	1.37
Intention to use	18–24	27	5.36	1.77
	25–34	38	4.82	1.71
	35–44	113	5.27	1.41
	45–54	272	5.26	1.50
	55–64	43	5.13	1.55
	≥65	30	5.06	1.71

Note: * Group significantly different ($p < .05$) from the others.

experience, sport organizations must first understand their consumers and the factors influencing their decisions (Trail, 2019). However, the lack of consumer behavior research associated with interscholastic sports has left athletic directors, as well managers from marketing and ticketing companies working in this space, to rely on trial and error or anecdotal information when making critical decisions. The present study provides valuable insights into a market segment that gets limited attention from researchers by exploring the role of demographics.

Both men and women reported high intentions to use digital ticketing, although there were no significant differences between the two. There were no statistically significant differences found in participants' perceived usefulness of

Table 5.3 Spectators' Perceived Ease of Use, Perceived Usefulness, Trust of Digital Ticketing, Willingness to Pay Convenience Fees, and Intentions to Use by Affiliation

Perceived Ease of Use	*Participants*	*M*	*SD*
High school parent	77	5.68	1.03
Parent of event participant	88	5.63	1.11
Family of event participant	101	5.52	1.26
Alumni of the high school playing in games surveyed	148	5.40	1.43
High school representative or staff	18	5.63	1.05
Non-affiliated – Do not identify with a specific HS	91	5.43	1.21
Perceived Usefulness	*Participants*	*M*	*SD*
High school parent	77	6.05	0.88
Parent of event participant	88	5.84	1.06
Family of event participant	101	5.96	1.08
Alumni of the high school playing in games surveyed	148	5.65	1.34
High school representative or staff	18	5.83	0.92
Non-affiliated – Do not identify with a specific HS	91	5.73	1.18
Trust of Digital Ticketing	*Participants*	*M*	*SD*
High school parent	77	5.55	1.12
Parent of event participant	88	5.38	1.35
Family of event participant	101	5.38	1.33
Alumni of the high school playing in games surveyed	148	5.30	1.60
High school representative or staff	18	5.74	1.00
Non-affiliated – Do not identify with a specific HS	91	5.37	1.22
Willingness to Pay	*Participants*	*M*	*SD*
High school parent	77	3.99	1.53
Parent of event participant	88	3.66	1.59
Family of event participant	101	3.92	1.68
Alumni of the high school playing in games surveyed	148	3.82	1.75
High school representative or staff	18	3.57	1.49
Non-affiliated – Do not identify with a specific HS	91	3.88	1.70
Intention to Use	*Participants*	*M*	*SD*
High school parent	77	5.60*	1.17
Parent of event participant	88	5.22	1.38
Family of event participant	101	5.39	1.39
Alumni of the high school playing in games surveyed	148	4.95*	1.79
High school representative or staff	18	5.22	1.37
Non-affiliated – Do not identify with a specific HS	91	5.11	1.57

Note: * Group significantly different ($p < .05$) from others.

Table 5.4 Spectators' Perceived Ease of Use, Perceived Usefulness, Trust of Digital Ticketing, Willingness to Pay Convenience Fees, and Intentions to Use by Party Attending

Construct	*Party Attending*	*Participants*	*M*	*SD*
Perceived ease of use	Alone	25	5.85	1.10
	Adults	237	5.34*	1.29
	Adults and children	261	5.64*	1.19
Perceived usefulness	Alone	25	6.03	1.12
	Adults	237	5.65*	1.25
	Adults and children	261	5.96*	1.03
Trust of digital ticketing	Alone	25	5.51	1.37
	Adults	237	5.24	1.45
	Adults and children	261	5.52	1.26
Willingness to pay	Alone	25	3.96	1.97
	Adults	237	3.75	1.61
	Adults and children	261	3.91	1.68
Intentions to use	Alone	25	5.57	1.38
	Adults	237	5.04	1.61
	Adults and children	261	5.33	1.44

Note: * Group significantly different ($p < .05$) from others.

digital ticketing or willingness to pay fees based on gender. However, women scored statistically significantly higher than men on perceived ease of use and trust of digital ticketing. Although the difference was statistically significant, the men still reported strongly (>5.0) on both factors, suggesting that administrators should not segment their marketing materials about digital ticketing by gender. If women have more experience making purchases, they may find it easier and more useful to leverage technology to achieve efficiencies. Experience may also influence trust toward the use of technology, ultimately determining intention to use digital ticketing in the future.

In examining the role of age on the various ticketing factors, we found differences in participants' willingness to pay fees associated with digital ticketing. Those over 55 years old (55–65 and 65+) were more likely to be willing to pay the surcharges associated with digital ticketing than the other age groups. Individuals in the remaining age groups reported means below the 4.0 midpoint, indicating they were unwilling to pay the fees. Perhaps, older participants value their time more and would rather pay extra than stand in long lines. This group may also have higher disposable income. Although no differences were found based on income levels, they may have higher discretionary income to utilize on services like digital ticketing. Targeted marketing materials could be geared toward this demographic. More importantly, it is clear that fees affect consumers' perceptions toward digital ticketing, so searching for alternatives to remove this obstacle is critical. For example, some schools have searched for ways to absorb the fees, such as adjusting prices at the gate to match the total cost of digital purchases. However, there is no empirical evidence to show whether this strategy has been successful in improving patrons' perceptions toward the technology.

Table 5.5 Spectators' Perceived Ease of Use, Perceived Usefulness, Trust of Digital Ticketing, Willingness to Pay Convenience Fees, and Intentions to Use by Race

Construct	*Age Grouping*	*Participants*	*M*	*SD*
Perceived ease of use	White	359	5.51	1.22
	Black	96	5.63	1.16
	American Indian/Alaska Native	4	5.50	1.55
	Hawaiian/Pacific Islander	3	6.56	0.51
	Some other race	10	5.27	1.61
	Not answered	51	5.32	1.44
Perceived usefulness	White	359	5.85	1.15
	Black	96	5.83	1.09
	American Indian/Alaska Native	4	5.83	1.45
	Hawaiian/Pacific Islander	3	6.56	0.51
	Some other race	10	5.07	1.65
	Not answered	51	5.73	1.16
Trust of digital ticketing	White	359	5.44	1.33
	Black	96	5.52	1.23
	American Indian/Alaska Native	4	5.58	1.64
	Hawaiian/Pacific Islander	3	4.67	2.52
	Some other race	10	4.63	1.65
	Not answered	51	4.99	1.55
Willingness to pay	White	359	3.82	1.75
	Black	96	4.06	1.36
	American Indian/Alaska Native	4	4.58	1.62
	Hawaiian/Pacific Islander	3	2.89	1.02
	Some other race	10	3.17	1.64
	Not answered	51	3.69	1.53
Intentions to use	White	359	5.22	1.55
	Black	96	5.31	1.33
	American Indian/Alaska Native	4	5.58	1.34
	Hawaiian/Pacific Islander	3	6.44	0.96
	Some other race	10	4.10	2.11
	Not answered	51	5.07	1.52

In terms of affiliation to the school, high school parents were most likely to use digital ticketing (highest intentions). This group may already perform other school-related functions digitally (e.g., registering their children to participate in specific activities, paying for school lunch, and even purchasing school supplies). This insight would seem to have substantial marketing strategy repercussions, but fortunately for athletic administrators, all groups reported positively intending to use digital ticketing. Interestingly, alumni of the school ranked lowest on intention to use digital ticketing. Perhaps for this group, they are not aware of the option because it was not available when they were in school.

Some digital ticketing preferences differed by the groups who attended the games. The attendance parties composed of both adults and children (e.g., parents

Table 5.6 Spectators' Perceived Ease of Use, Perceived Usefulness, Trust of Digital Ticketing, Willingness to Pay Convenience Fees, and Intentions to Use by Income

Construct	*Age Grouping*	*Participants*	*M*	*SD*
Perceived ease of use	Less than $20,000	11	5.48	0.94
	$20,000–$34,999	17	5.94	0.85
	$35,000–$49,999	33	5.51	1.07
	$50,000–$74,999	65	5.46	1.25
	$75,000–$99,999	74	5.59	1.36
	$100,000 or more	263	5.53	1.26
	Not answered	60	5.32	1.25
Perceived usefulness	Less than $20,000	11	5.94	0.89
	$20,000–$34,999	17	6.18	0.73
	$35,000–$49,999	33	5.94	1.09
	$50,000–$74,999	65	5.59	1.21
	$75,000–$99,999	74	5.83	1.32
	$100,000 or more	263	5.87	1.11
	Not answered	60	5.66	1.20
Trust of digital ticketing	Less than $20,000	11	5.73	0.92
	$20,000–$34,999	17	5.94	0.88
	$35,000–$49,999	33	5.40	1.12
	$50,000–$74,999	65	5.10	1.41
	$75,000–$99,999	74	5.54	1.44
	$100,000 or more	263	5.41	1.33
	Not answered	60	5.22	1.56
Willingness to pay	Less than $20,000	11	3.85	1.66
	$20,000–$34,999	17	3.65	1.66
	$35,000–$49,999	33	3.89	1.86
	$50,000–$74,999	65	3.85	1.68
	$75,000–$99,999	74	3.82	1.69
	$100,000 or more	263	3.85	1.63
	Not answered	60	3.82	1.68
Intentions to use	Less than $20,000	11	5.91	0.88
	$20,000–$34,999	17	5.45	1.22
	$35,000–$49,999	33	5.45	1.29
	$50,000–$74,999	65	4.95	1.67
	$75,000–$99,999	74	5.18	1.71
	$100,000 or more	263	5.25	1.45
	Not answered	60	5.04	1.69

attending with high school students or younger children) had higher perceived ease of use and perceived usefulness of digital ticketing than parties of just adults. Attending sporting events with children can pose different challenges than when attending with only adults. Perhaps those attending with children are accustomed to using technology to their advantage when faced with inconvenient tasks, like standing in line to purchase tickets at a box office and remembering to have cash on hand and therefore find it both more useful and easier to use. As such, athletic directors or ticketing companies could market with images of those with

Table 5.7 Spectators' Perceived Ease of Use, Perceived Usefulness, Trust of Digital Ticketing, Willingness to Pay Convenience Fees, and Intentions to Use by Education

Construct	*Age Grouping*	*Participants*	*M*	*SD*
Perceived ease of use	High school	52	5.47	1.24
	College	316	5.53	1.22
	Master's	70	5.70	1.29
	Post-graduate	18	5.80	1.17
	Not answered	67	5.21	1.28
Perceived usefulness	High school	52	5.80	1.04
	College	316	5.88	1.09
	Master's	70	5.78	1.36
	Post-graduate	18	6.07	0.86
	Not answered	67	5.52	1.30
Trust of digital ticketing	High school	52	5.40	1.38
	College	316	5.42	1.34
	Master's	70	5.36	1.45
	Post-graduate	18	5.41	1.43
	Not answered	67	5.27	1.36
Willingness to pay	High school	52	4.20	1.27
	College	316	3.80	1.70
	Master's	70	3.57	1.78
	Post-graduate	18	3.83	1.76
	Not answered	67	4.03	1.54
Intentions to use	High school	52	5.25	1.43
	College	316	5.24	1.51
	Master's	70	5.14	1.80
	Post-graduate	18	5.33	1.38
	Not answered	67	5.10	1.40

families at games and relay the usefulness and ease of use of digital ticketing to those groups.

The participants did not differ in their perceptions or intentions to use digital ticketing based on their ethnicity, level of income, and education. It was somewhat surprising that levels of income did not play a role, given the relationship between technology access and wages and previous literature about the role income may play in consumption (e.g., Hawkins et al. 2010). Similarly, an individual's education level sometimes predicts perceptions or intentions to use, so it was interesting to see that lack of influence. However, digital ticketing prevalence in other aspects of lives (e.g., movies, professional sports, plays, concerts) may span income and education levels. Non-statistical differences based on ethnicity are still valuable, conveying less need for differentiation in marketing messaging.

Although we identified statistical differences based on spectators' characteristics, the magnitude of those differences was not distinctive enough to extrapolate practical conclusions that would allow schools and marketing companies to differentiate their messaging depending on the targeted recipients. Therefore,

based on this study, digital ticketing is the type of service that does not need to be targeted at a specific segment. As such, athletic directors should direct their marketing efforts broadly and not try to segment or target certain genders, ages, or types of attendees based on their affiliation with the school or with whom they attend games. Future researchers should explore the other bases for market segmentation (i.e., psychographic, geographic, and behavioral factors; Trail, 2019). Nevertheless, regardless of the individual characteristics, spectators reported high intentions to use digital ticketing when attending high school athletic events if given the opportunity. Such a finding can provide athletic directors with a certain degree of confidence in their decision to adopt the technology.

It is worth noting that the sample represents adult high school football spectators, and despite the popularity of high school football, spectators across other interscholastic sports may differ in perceptions toward and intentions to use digital ticketing. Also, some study participants had experienced digital ticketing in their respective high schools when attending sporting events, while others did not. Such experiences may have spurred individual differences in perceptions toward the technology and high schools' capabilities to execute its implementation. Future research may consider a more diverse sample across multiple states while accounting for various sports. Another valuable area for exploration may be high school students and their ticket purchasing behaviors. Similarly, factors influencing the decision to adopt digital ticketing in high school athletic departments warrant further exploration. Perhaps considering the relationship between adoption of multiple technological advances within high school athletic departments, such as video analysis for team analysis and scouting opposition, and the likelihood of digital ticketing adoption.

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Chapter 6

Social Media and Stakeholder Relationships

Analyzing an Online Communication Network in the Sport Industry

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Introduction

Sports in general are popular in South Korea (hereafter Korea as shorthand). The revenue generated from the sports and the outdoor activity market in Korea is $3,095 million in 2020 and is expected to increase $4,131 million by 2025 (Statista, n.d.). In addition, Korea has hosted several international sporting events, such as the 1988 Summer Olympics, 2018 Winter Olympics, and 2002 World Cup. Moreover, the country is also home to several professional sports leagues, which further suggest the popularity of sport. In Korea, the most popular professional sports league is a baseball league. The Korean Baseball Organization (KBO) league, which was introduced in 1982, has enjoyed increased interest and fan support over the last decade. This is evidenced by the fact that the price for the rights to broadcast KBO was just under $300,000 in 2010 and had increased to over $33 million by 2015 (Lee, 2017). In addition, the total economic impact of the KBO reached over $1 billion in 2011 (Kim, 2016). Furthermore, reports generated by the KBO have indicated that the number of league spectators has also increased significantly in the last decade. In 2007, the number of spectators was approximately 4.1 million, and that number increased to 8.4 million by 2017 (KBO, n.d.).

The second most popular professional sports league in Korea is a football league (K League), which was introduced in 1983. While soccer was at one time a sport that garnered interest in Korea, interest in and popularity of the K League has declined over the last decade. In 2007, the total number of spectators from 14 teams was 2.7 million, and that number from 22 teams had decreased to 1.5 million by 2018 (K League Information System, n.d.). In addition, in 2015, the price for the rights to broadcast K League was just over $4.1 million (Kim, 2015), which was only 12.4% of the price for the right to broadcast KBO.

The Golf Industry in South Korea

In Korea, golf is considered a luxury sport due to the high cost of a round of golf. Despite the relatively steep financial outlay, golf's popularity has steadily increased among Koreans since 1988. In 1988, Se-Ri Pak, a Korean golf legend, made history when she won the LPGA (Ladies Professional Golf Association)

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U.S. Women's Open. Pak's win served as the catalyst to the golf boom in Korea. Many children who are called as "Se-Ri Kids" were inspired by Se-Ri Pak's victory and were thus encouraged to learn and play golf in hopes that they might become the world's next best golfer (Randall, 2012).

The Korea Golf Course Business Association (2017) announced that, as of 2016, Korea was home to 486 golf courses (the total number of visitors = 36.7 million), 236 more golf courses than had existed in the country in 2006 (n = 250, the total number of visitors = 19.7 million). In addition, the Korean Golf Association (KGA, 2017) found that approximately 6.36 million people played golf at least once in 2017, which was a 253% increase over the number of people who had played golf in 2007 (n = 2.51 million). Those golfers each spent around $300 per month on golf-related purchases (e.g., green fees or golf equipment). Moreover, Korean golfers even travel to overseas to play golf. According to the KGA (2017), roughly 2.11 million people had traveled to foreign countries (e.g., Thailand, Philippines, China) to play golf in 2017. In 2007, fewer than 600,000 Korean golfers (n = 560,000) took part in overseas golf tours.

The Korea Ladies Professional Golf Association (KLPGA) tour is one of the most popular spectating sports in Korea (Yoo, 2012). The KLPGA was introduced in 1978, and as of December 2020, there are 2,716 members (KLPGA, n.d.-a). In 2019, the KLPGA hosted 30 KLPGA tournaments, which is an increase of approximately 50% compared to the number of tournaments the association hosted in 2009 (n = 20; KLPGA, n.d.-b). The success of women's golf in Korea is not limited to the KLPGA. Korean women golfers are also dominating the LPGA tour. Since Ok-Hi Ku claimed Korea's first LPGA victory in 1988, 100 more Korean women golfers, as of 2011, went on to win the association's tournaments (Koo, Kim, & Won, 2014). The success of Korean women golfers is even greater today. One of the "Se-Ri Kids", Inbee Park became the first female gold medalist in the history of Olympics at the inaugural women's golf event, the 2016 Rio Summer Olympics. In 2019, Korean women golfers won 15 of the LPGA's 33 tournaments (45%). Similarly, Korean women golfers won approximately 43% (15 of 35) of the LPGA tournaments in 2017 (LPGA, n.d.). Because of this success, 11 Korean women golfers are ranked in the top 25 in the Rolex World Ranking as of February 2019 (Rolex Ranking, n.d.).

Despite this success, the KLPGA tour suffered a dearth of title sponsors in the early day (1980–1990s) (KLPGA, n.d.-c). Korea's economy was exposed to and was hurt by corruption in the 1990s, and because golf was considered a luxury sport, there was a lack of interest in golf during that time. Even though the KLPGA tour secured its first title sponsor in 1990, the association continued to suffer from a lack of financial support throughout the 1990s. Despite the difficulty experienced in that early period, however, interest in women's golf in Korea has increased substantially, especially during the last decade. In 2017, the KLPGA hosted 32 tournaments, and all of those tournaments were sponsored by major organizations (KLPGA, n.d.-b). In addition, all tournaments were broadcasted by Seoul Broadcasting System Golf (SBS Golf). Between 2014 and 2016,

SBS paid roughly $4 million annually to broadcast the tournament (Han, 2013). Furthermore, in 2017, approximately 278,000 golf fans visited the KLPGA tournament to watch the professional golfers (Kwon, 2017). Because of the popularity of women's golf in Korea, several corporations (e.g., Hi-Mart, CJ Golf, Hana Bank) have begun sponsoring a variety of golf professionals. Major corporations are especially interested in sponsoring golf professionals because those corporations are able to maximize the effects of their sponsorships by investing only a relatively small amount of money in the sponsored players (Moon, 2006).

Another unique characteristic of the Korean National Golf Tour is that female golfers have received more interest from fans and sponsors than male golfers (Kim & Seo, 2018). For example, in 2014, 101 out of 137 Korean LPGA golfers (73.7%) have endorsement contracts with primary sponsors, while only 64 out of 144 Korean PGA golfers (44.4%) have similar contracts with primary sponsors (Han, 2014). In addition, the television rating is higher for the KLPGA tour compared to the KPGA. This is unique in that many other countries (e.g., the USA, several European countries) tend to focus their attention on male athletes and male-dominated sports.

Media Coverage of Golf in South Korea

Due to the symbiotic nature of sport and the media, mediated forms of communication (e.g., mass media, social media) have assisted sport organizations in generating interest among and rapport with sport fans across the globe. Korea, as well as much of the rest of the world, is rich in sport-related news that originates with a plethora of media outlets, both traditional and digital in nature, including social media platforms (Yoo, 2012). Further, Korea has realized a growth rate regarding social media adoption that is largely unmatched elsewhere in the world (Lee et al., 2018). The Korean Internet and Security Agency (KISA) conducted a survey that found that, in 2016, 65.2% of Korean Internet users regularly used social networking sites. Further, the agency found that over 90% of Korean Internet users accessed these sites using their smartphone devices (KISA, 2016). South Korea's widespread adoption of social media is said to be perhaps due to the country's high-speed Internet, free Wi-Fi access, and ubiquitous nature of smartphones (Choi & Park, 2014). Nevertheless, the KLPGA's social media use is significantly underused.

As a result of Korea's economic growth, people's desires to participate in sports and leisure have increased. Accordingly, people's interest in golf has increased. Further, after Ok-Hi Ku achieved victory at the LPGA of Japan Tour (JLPGA) in 1984, and after she passed the LPGA qualifying school in 1985, the media in general (e.g., magazines, newspapers) became more focused on golf (Kim & Seo, 2018). As such, the development of golf in Korea is closely related to the media attention it has garnered. That is, through the media, professional golf channels became available to consumers, and consumer interest led to increased competition with regard to broadcasting rights.

Since 1998, there has been a gradual increase in the number of articles published that have named KLPGA golfers. Lee and Jung (2016) found that 4,447 articles including the keywords or phrases "Korean LPGA golfer", "Korean female golfer", and "LPGA" have been published in established Korean newspapers (i.e., Chosun-Ilbo and Dona-Ilbo) beginning the year Pak made her debut to August 2015. These articles have primarily focused on performance, achievement, nationality, physical beauty, gender role, and femininity. This has resulted in some prejudice and gender-based discrimination on the part of the media with regard to KLPGA. Still, KLPGA athletes continue to use various media outlets, including social networking platforms, to engage with their Korean and global fans.

Social Media Usage by the KLPGA and LPGA

To effectively reach out to existing and potential fans, KLPGA and LPGA actively utilize social media, such as Facebook and Twitter. The development of various social media platforms has profoundly changed how people consume and discuss sport, as well as how stakeholders (e.g., fans, athletes, sponsors, event organizing committees, teams) interact with one another. More specifically, social media platforms can allow for, among other things, live media coverage of sport events, streaming broadcasts of the events, fan polls, live interviews with both athletes and commentators, and behind-the-scenes looks at things like practices and pre-game rituals. Because social media platforms function in a variety of ways, stakeholders are increasingly interested in employing them as means of keeping up to date with their favorite athletes, teams, and events (Pfanner, 2012). In this regard, previous studies have examined the effects of different ways of using social media to communicate with their stakeholders (e.g., fans, sponsors) from individual athletes' (e.g., Lebel & Danylchuk, 2012; Thorpe, 2017), sport national governing bodies' (e.g., Eagleman, 2013; Naraine & Parent, 2016), and professional sport teams' perspectives (e.g., Gibbs et al., 2014).

Social media has proven valuable to golf courses as well as other golf organizations because it enables them to share content with customers and members and to therefore promote or grow their online communities (Tracy, 2018). For example, the LPGA makes use of social media platforms, and as of December 2017, more than 178,000 people were following the LPGA (@LPGA) on Twitter. The LPGA's senior director of social media marketing and communications, Tina Barnes-Budd, emphasized the importance of using social media. In discussing the importance of social media to the LPGA, she discussed the ways in which various social media platforms had become a means through which the LPGA could promote both golfers and tournaments and noted that social media had permitted the LPGA to better interact with fans (White, 2018). To promote golfers and tournaments, the LPGA has taken to including photos and videos in their social media posts because visuals such as these tend to be popular among fans across the globe. The LPGA's manager of digital content at the LPGA, Jennifer Meyer, also emphasized the role social media has played

in providing organizations such as the LPGA with opportunities to get their messages out and to encourage growth among their impassioned and invested fan bases. Social media also presents opportunities to fans as it enables them to both connect with organizations such as the LGPA and to become players in the organizations' stories (Meyer, 2017).

Purpose of Study

Sport has become a true indicator of globalization. Throughout the world, sport-related interactions have increased as a result of relatively recent advances in technology. This study investigated whether extant trends shifted with regard to the KLPGA as compared with the LPGA and each organization's social media communication networks. Upon examining the Twitter communication network, it becomes apparent that not only trends but also consumer attitudes can suggest what types of relationship might exist between sports in general and social media outlets. This is largely due to the fact that social media both reflects social reality and can establish and define social reality. Therefore, the purpose of this study is to examine the online social networks affiliated with the KLPGA and LPGA to investigate the online communication relationships that exist among users, as this will help to enhance our understanding with regard to who or what serves as influential stakeholders in the digital environment. The research question that guided this study asked the following: What degree do KLPGA and LPGA stakeholders engage with Twitter. In an attempt to answer this research question, this study investigated the usage of Twitter by key LPGA and KLPGA stakeholders, their networks, the groups involved, and the differences in position advantages of the groups involved.

Method

The methodology for this study was developed based on social network concepts. The Python programming language was employed per target user (i.e., @korealpga and @LPGA) in order to create Python codes, which were used to extract tweets from two official Twitter pages (i.e., those of the KLPGA and LPGA). In addition, as means of enhancing our understanding of the public's engagement level, data regarding the number of likes and retweets were collected. Lastly, the structure and position of the users within the KLPGA and LPGA networks were identified by extracting all of the *usermentions* in the tweets published on the official KLPGA or LPGA Twitter accounts. Regarding the users and ties in this investigation, mentioned users within tweets to the KLPGA (@korealpga) or LPGA (@LPGA) Twitter accounts were the nodes, and the relationships connected to the *usermentions* were the ties. There was directionality in the *usermentions* relationships as the arrowheads indicated the amount of backward and forward flow that existed within each of the various pairs of nodes. Additionally, the authors of this study sought to examine the network ties with

regard to their strengths and weaknesses. As such, data associated with the ties were weighted based on mentioning frequency.

Adjacency matrices were used so that the networks under study could be conceptualized mathematically (Borgatti et al., 2013). Each relationship that exists between any given pair of actors in the network is mapped out via a square matrix. With a large amount of data, correctly entering all the values into the cells would have been practically impossible to do manually. Thus, adjacency matrices were made through the creation of Python codes. As noted by Borgatti and colleagues, social network analysis is used to examine not only networks but also the attributes of the nodes, which are what differentiate the nodes from one another. Some nodes will share similarities, however, and these similarities can be defined in terms of nodes' attributes. Via these similarities or common attributes, one can identify both central groups and cohesive subgroups; this makes it also possible to assess whether subgroups might become central groups. Further, an attribute matrix and an adjacency matrix were created. This enabled us to determine that a total of eleven heterogeneous types of users exist. These include women golfers, men golfers, golf courses or clubs, golf tournaments, sponsors or partnerships, other sport players or organizations, golf associations, celebrities, media-related stakeholders, public users, and non-sport-related organizations or sponsors. The nodes were then categorized based on the eleven types of users, as this allowed for identification of the KLPGA and the LPGA's primary online stakeholder groups and their interactions.

In order to better understand the *usermentions* structure of interaction patterns, a one-mode network was assessed. *Usermentions* relationships permitted the authors of the study to examine how the actors were tied to one another. The application of graph theory principles affiliated with nodes and edges was done to build a *usermentions* interaction network. In order to answer the research question, with imported (adjacency) and attributional (KLPGA and LPGA) matrices, UCINET was used. Exploring quantitative measures (e.g., in-degree, out-degree, beta centrality) was facilitated through the use of this social network software. This was predicated on the identified interactive relationships between the nodes and clusters formed by specific types of nodes, resulting in sub-networks within the perceived domain. This study also made use of social network visualization software (i.e., NetDraw), which assisted in the interpretation of the data and results. Once the network was created, all users were color-coded by network user type. Further, the interactivity strength was highlighted by the degree to which the node size was set. As such, the greater the degree centrality, the larger the node was scored. The networks were then rearranged visually by organization type, as this enabled the identification of interactions (i.e., level) and stakeholders (i.e., primary) affiliated with the organizations. All of this permitted the viewing of a more fully assessed social media (i.e., Twitter and *usermentions*) network and structure of communication.

Results

To address the research question for this study, data published from August 2, 2010 to December 7, 2017 were collected from KLPGA and LPGA's official Twitter accounts. The KLPGA had posted 2,922 tweets on its Twitter webpage (i.e., @korealpga) and the organization had 3,978 followers. In the same time span, the LPGA (i.e., @LPGA), however, had posted 39,300 tweets and had 178,000 followers. For this study, all 2,922 tweets published on the official KLPGA Twitter webpage between August 2, 2010, when the account was created, and December 7, 2017, were collected using Python programming language. Due to the limitations associated with collecting data via Python, only 3,162 tweets published on the LPGA webpage were collected over the final five months of the data collection period (Table 6.1). In addition to the differences in the number of published tweets, there are significant differences between the organization (i.e., KLPGA and LPGA) with regard to the number of followers, likes, retweets, network sizes, and the total number of ties among Twitter stakeholders. As indicated in Table 6.1, regarding the LPGA, the average number of likes (M = 39.2) and retweets (M = 6.6) of each tweet, which could serve as indicators of "interestingness", is higher than the number of likes and retweets the KLPGA garnered (0.4 for likes, 0.1 for retweets), meaning that followers are more engaged with LPGA's tweets, which they demonstrate by liking or retweeting LPGA's tweets.

The size of the social network (i.e., numbers of nodes) represents the prime variable investigated in the analysis of a given online communication platform. In this study, the total number of users mentioned (nodes) that is considered to be a network size was 5 × 5 for the KLPGA and 368 × 368 for the LPGA, and the total number of mentions (ties) among the tweets for both the KLPGA and LPGA was 6 and 3,708, respectively (see Table 6.1). Only a few users and ties were identified in the KLPGA network because the KLPGA uses its Twitter webpage primarily as a way to share the results of KLPGA players' tours and not as a means of interacting with other stakeholders. On the other hand, the LPGA focuses on interacting with online stakeholders. Specifically, the LPGA mentioned at least one user in 2,399 of 3,162 tweets (76%).

To identify the KLPGA's and LPGA's primary online stakeholders, there were 11 categories for the coding of the data affiliated with *usermentions*. These categories

Table 6.1 Numbers of Tweets, Likes, Retweets, Network Size, and Total Ties in KLPGA and LPGA Twitter Pages

	Tweets	*Average Likes*	*Average Retweet*	*Network Size*	*Total Ties*
KLPGA	2,922	0.4	0.1	5 × 5	6
LPGA	3,162	39.2	6.6	368 × 368	3,708

Note: For KLPGA, the data were collected for over seven years, while for LPGA the data were collected for four and a half months. The average score of likes and retweets is for each tweet.

Table 6.2 Categorization of Online Stakeholders in the KLPGA and LPGA Networks

Categorization of Stakeholders	*Nodes Size*	
	KLPGA (@korealpga)	*LPGA (@LPGA)*
Women Golfer	0	147
Media Outlet	0	41
Golf Tournament	0	28
Sponsor	0	23
Public	6	23
Neither Sport nor Sponsor	0	23
Golf Course	0	21
Other Sports	0	20
Golf Association	0	16
Celebrity	0	15
Men Golfer	0	11
Total	6	368

Note: The KLPGA data were collected for over seven years, while the LPGA data were collected for less than five months.

Nodes size = the number of users who had communication-based relationships with the KLPGA and LPGA in each group.

included women golfers (e.g., @LydiaKo), men golfers (e.g., @TigerWoods), golf courses or clubs (e.g., @KingsbarnsGL), golf tournaments (e.g., @ROAD2LPGA), sponsors or partnerships (e.g., @PNCBank), other sport players or organizations (e.g., @serenawilliams), golf associations (e.g., LPGAGirlsGolf), celebrities (e.g., singers, actors, politicians), media-related stakeholders (e.g., @NBCSports), public users (e.g., non-golfer and non-celebrities), and non-sport-related organizations or sponsors (e.g., university). Table 6.2 indicates the numbers for each group of Twitter users that represented LPGA stakeholders. When responding to public user's questions, the KLPGA barely interacted with six public users. On the other hand, the LPGA was more inclined to mention different women professional golfers (n = 147) than it was to mention users from other categories. The second most mentioned group for the LPGA comprised media-related users (n = 41). Compared to other groups, men professional golfers did not comprise a major user group for the LPGA (n = 11).

For network analysis purposes, an adjacency matrix of 368 × 368 LPGA network (numbers of cells = 135,424) was created using Python programming language. The study suggests that high-degree nodes were closely associated with the LPGA's Twitter page. Within LPGA's network, among other stakeholders, the Golf Association engaged in the most interactions with other groups. For example, as shown in Table 6.3, Golf Association engaged in a significant number of interactions with women golfers (*ties* = 2,132), golf tournaments (*ties* = 701), and media outlets (*ties* = 337).

The descriptive analysis (Tables 6.2 and 6.3) discussed here shows the number of users per group and the number of ties among groups, but it does

Table 6.3 Eleven Groups Users in LPGA's Network

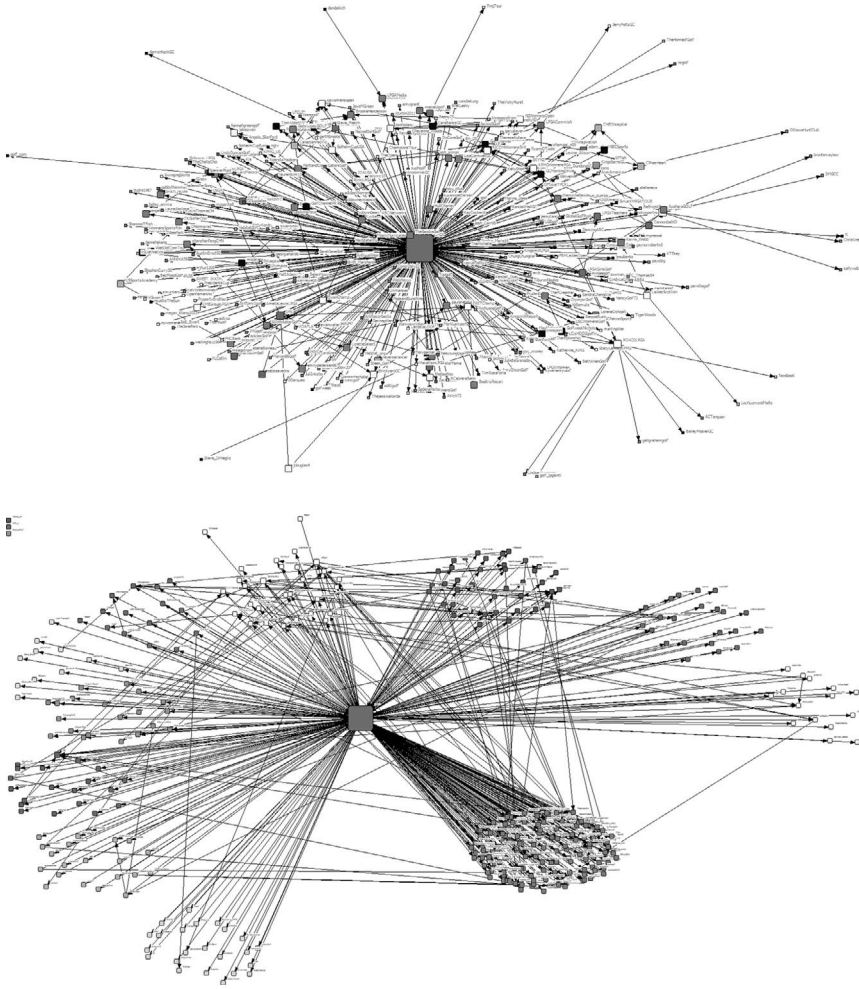
	WG	*MG*	*GC*	*GT*	*SP*	*OS*	*GA*	*CE*	*ME*	*PU*	*NS*
WG	5	0	0	0	0	0	3	0	2	0	0
MG	0	0	0	0	0	0	0	0	0	0	0
GC	0	0	0	3	0	0	1	0	0	0	0
GT	21	0	6	0	1	3	15	4	6	1	1
SP	0	0	0	0	0	0	0	0	0	0	0
OS	4	0	0	5	0	2	7	2	0	0	0
GA	2132	31	49	701	64	38	57	39	337	86	24
CE	1	0	0	1	0	1	0	1	0	0	0
ME	13	0	0	5	0	0	10	0	7	0	0
PU	0	0	1	3	0	0	2	0	1	0	2
NS	4	0	1	1	0	0	3	0	0	0	1

Note: WG = Women Golfers, MG = Men Golfers, GC = Golf Course, GT = Golf Tournament, SP = Sponsors, OS = Other Sport Players or Organizations, GA = Golf Association, CE = Celebrities, ME = Media, PU = Public, NS = Non-Sport-related Organizations or Sponsors.

not make any specific suggestions regarding which categorical group tends to be more central within the network, meaning that the groups have structural importance. This prompted the authors of the present study to conducts social network analysis in order to identify any Twitter-based interactions that occurred between the LPGA and its stakeholders and which groups of users serve as the LPGA's primary stakeholders groups. There are 11 categorical nodes (Figure 6.1). Additionally, the number of ties a node has (i.e., degree) may be the most straightforward measure of centrality. Because high-degree nodes are more visible, they are generally considered important. Therefore, in the visualized networks, the size of each node was adjusted by degree. In Figure 6.1, the network pictured on the lower side was rearranged via a categorical attribute; this permitted us to more readily recognize the LPGA's primary stakeholders as well as the strength of the interactions that occurred among the groups.

Within a network, a key property in terms of the position of a node is centrality (Everett & Borgatti, 1999). Thus, via centrality data, the degree to which certain nodes contribute to the network's structure can be identified. As such, a node's centrality may be considered structurally important. In this study, degree centrality was calculated using the number of users within each category in the LPGA network. As this study's findings illustrated, nodes of high-degree were affiliated with the LPGA's Twitter page (Figure 6.2). The LPGA frequently mentioned certain female professional golfers (e.g., Lexi Thompson, Stacy Lewis), golf-tournament-related users (e.g., Ladies European Tour, Evian Championship), and media outlets (e.g., Golf Channel) compared with other groups.

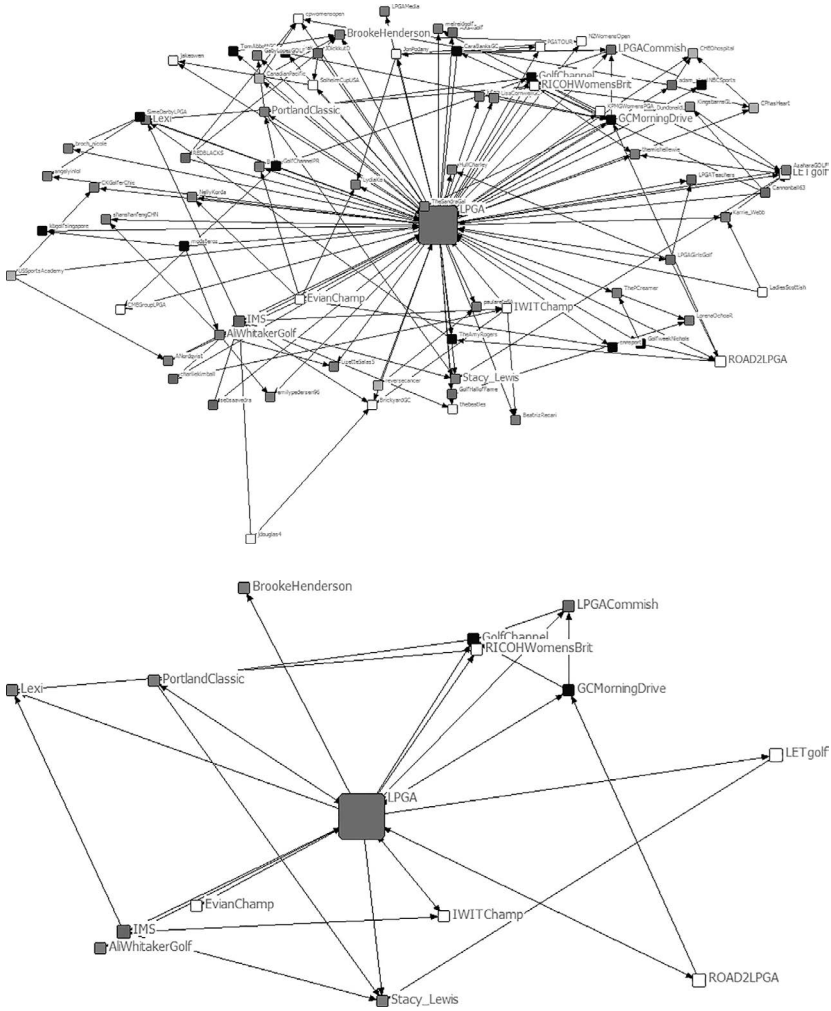
Social network software UCINET was employed to identify beta centrality values and to measure the total of each user's direct and indirect potential influence on all others (Borgatti et al., 2013). According to the results of the normalized beta centrality scores, female professional golfers (e.g., @Lexi, @CKGolferChic), golf tournaments (e.g., @RICOHWomensBrit, @CMEGroupLPGA), and media



Figures 6.1 Networks for the LPGA. Networks Located in the Lower Side are Adjusted by Groups (n = 368, ties = 3,708).

outlets (e.g., @GolfChannel, @TheAmyRogers) comprised most of the core actors (Table 6.4), which illustrates the 30 core actors in the LPGA networks as based on the beta centrality work of Bonacich (1987). This result did not come as a surprise, considering the sizeable followings these users have.

Furthermore, with the use of NodeXL Pro, 9,654 tweets published on LPGA's official Twitter page between June 2 and September 26, 2018 were collected. The criteria for this data set had to do with whether the tweets had an interaction with the LPGA (@LPGA) via the Twitter interaction functions of mention (n = 6,564, 68%), retweet (n = 2,198, 23%), and reply (n = 892, 9%). Another interesting



Figures 6.2 Networks for the LPGA by the Strength of Interactions (Degree).

point is that 18% of the collected tweets (n = 1,719) were written in other languages (e.g., Korean), which serves as an indicator of global fans' interest in the LPGA. As seen in Figure 6.3b, the LPGA engaged in direct interactions with core users within this network, but their messages have been expanded via the interactions among core users and subsequently via their interactions with users positioned along the periphery (Figures 6.3c and 6.3d). For example, as shown in Figure 6.3c, Angela Stanford, an American professional golfer currently competing on LPGA, is positioned in the center, but she has more Twitter interactions with other users who are positioned toward the periphery. With regard to the

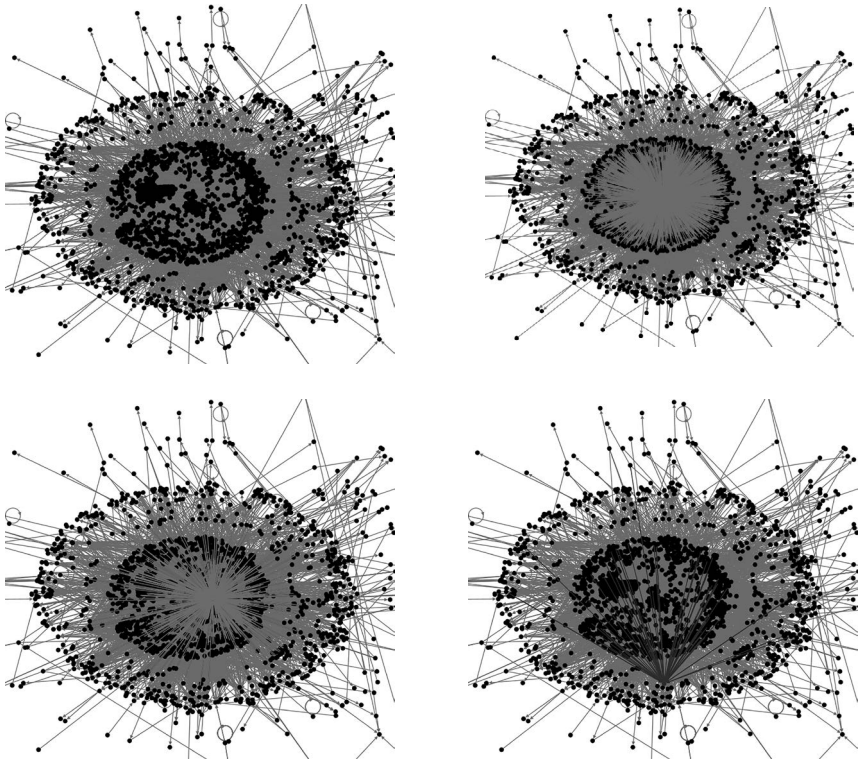
Table 6.4 30 Core Actors in the LPGA Twitter Networks Based on Bonacich's Beta Centrality

Users	*Bonacich's Normalization*	*Category*
@Lexi	6.852	Women Golfer
@GolfChannel	6.779	Media
@RICOHWomensBrit	4.725	Golf Tournament
@CMEGroupLPGA	4.661	Golf Tournament
@EvianChamp	4.634	Golf Tournament
@IWITChamp	4.612	Golf Tournament
@CKGolferChic	4.14	Women Golfer
@NZWomensOpen	3.777	Golf Tournament
@BrookeHenderson	3.732	Women Golfer
@PortlandClassic	3.47	Women Golfer
@shanshanfengCHN	3.41	Women Golfer
@LydiaKo	3.192	Women Golfer
@TheAmyRogers	2.966	Media
@SWEET_IKKIM	2.906	Women Golfer
@Stacy_Lewis	2.546	Women Golfer
@ANordqvist	2.471	Women Golfer
@themichellewie	2.368	Women Golfer
@LPGA	2.225	Women Golfer
@1soyeonryu	2.189	Women Golfer
@ThePCreamer	2.031	Women Golfer
@Brittany1golf	1.831	Women Golfer
@ingeechun_dumbo	1.831	Women Golfer
@MarathonLPGA	1.791	Golf Tournament
@daniellekang	1.712	Women Golfer
@Gerinapiller	1.712	Women Golfer
@Cpwomensopen	1.577	Golf Tournament
@JuliInkster	1.552	Women Golfer
@NellyKorda	1.516	Women Golfer
@jutanugarn	1.482	Women Golfer
@LizetteSalas5	1.438	Women Golfer

PGA (see Figure 6.3d), although it is positioned along the periphery of the whole network, it does have interactions with both users within the center as well as those along the periphery. As such, network analysis regarding Twitter online communication suggests that sport organizations can strategically interact with groups located at a certain position in order to achieve desired outcomes.

Discussion and Conclusion

Despite the public's significantly low levels of engagement with the KLPGA's tweets, the KLPGA has not made any noteworthy efforts to promote its events, golfers, or campaigns using other stakeholders (e.g., golfers, celebrities, fans, media). Further, the organization has not interacted with these stakeholders via the Twitter platform. The LPGA, however, has numerous stakeholders, and it



Figures 6.3 Twitter Communication Networks for LPGA @LPGA and the Impact of Distribution of Information via Angela Stanford (@angela_stanford) and PGA (@PGA).

Note: Layout in square shape as follows: (a) upper left side, (b) upper right side, (c) lower left side, and (d) lower right side.

has used its Twitter webpage to engage in a considerable number of interactions with those stakeholders in the Twitter webpage; there are differences among different types of users, though. That is, the LPGA had a much higher number of interactions with LPGA players, golf tournament users, and media-related users. These results can serve relevant organizations in that they can allow them to better understand the ways in which social media users interact with one another to spread information via the platform (Yang & Counts, 2010).

In order to address the research question at hand, this study evaluated network structures, relationship characteristics, and organizational contexts pertinent to the KLPGA and LPGA's Twitter use. More specifically, the authors of this study assessed the patterns of interactions that took place among the LPGA's stakeholders as they shared information. This was done so as to more fully understand the networks that emerge as a result of the Twitter-based interactions that

happen between the LPGA and its stakeholders. Social network analysis was employed here as a means of looking at these Twitter-based interactions and also as a means of visually depicting the stakeholders' networks. Further, to identify who was highly central within a given network, this study investigated the number of nodes present in each network, the degrees of those nodes, and the beta centrality of the social networks. If a node was found to be potentially important, due perhaps to the large number of network ties that involved that node, then the removal of that node might lead to a disconnect of the network. As such, it is necessary to look for and identify nodes that could be central to a network and thus could control the flow of information. Working under the assumption that ties are where the flow of information exists, degree centrality could be used as an index indicating a node's exposure within a particular network. Therefore, the position of a node could be considered the source of advantageous and opportunistic possibilities. This study found that LPGA golfers, golf tournaments, and media-related nodes were highly visible in the LPGA Twitter networks and were, therefore, considered important. For example, with regard to organizations, nodes with high degrees in organizational networks were often the nodes insiders mentioned as being important to their respective groups. However, per beta centrality scores, sports and sponsors (e.g., university), sport PGA golfers, and other sport-related users were not highly positioned within the LPGA Twitter network.

Overall, nodes are often referred to as being influential or as serving as gatekeepers, and they are generally considered to possess autonomy, control, and visibility while being engaged with others. Thus, sport organizations can use centrality scores associated with social network analysis in order to more strategically interact with highly centralized nodes that could affect the flow of information. Sport organizations (e.g., the KLGPA) and relevant practitioners could use the findings of this study to better employ social media platforms in order to expand on their fan bases throughout the world. It is recommended that future studies identify the reasons why the KLPGA uses social media only for information sharing purposes and not to attract more fans to its events and athletes. Additionally, it may be possible to examine the reasons behind the KLPGA's objectives as they pertain to social media use by conducting interviews with the KLPGA's social media managers.

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Chapter 7

Influence of Micro-Celebrities on the Formulation of Social Media Marketing Strategies

Benjamin Mole, Paul Cook, and Ruth M Crabtree

Introduction

Social media can be considered an integral and deeply embedded part of daily life that is relied upon by those who use it for various needs, for example, for daily news updates, entertainment purposes, sport events, an information source, as part of the user's purchase decision-making process and to communicate with other social media users around the world (Kapoor et al., 2018; Zhu & Chen, 2015). Social media currently has 3.96 billion active users, representing 51% of the world's population, who spend on average 2 hours and 24 minutes on social media every day (Chaffey, 2020). In the modern era of marketing, social media has become an essential part of marketing strategy, one that is being used by the majority of companies worldwide (Vinerean, 2017). As a result of the huge number of social media users, companies are enticed to exist in such a prosperous online environment (Eroğlu & Bayraktar Köse, 2019; Balliauw et al., 2020). Consequently, companies are investing significantly more resources into developing their social media marketing strategy, not only to increase their customer relations online but also to aid in achieving their marketing and business objectives (Zhu & Chen, 2015).

In recent years, one of the social media marketing strategies that companies have expressed an increased interest in is micro-celebrity endorsement (Schouten et al., 2020). Micro-celebrities are not famous in the traditional sense, instead they have strategically used social media to amass a large number of followers, often on a global scale, becoming recognizable both online and beyond the midst of their social media account, granting them a celebrity status (Djafarova & Trofimenko, 2019; Eroğlu & Bayraktar Köse, 2019). Companies are showing an increased interest in, and embracing the use of, micro-celebrities to endorse their brand, products, and services (Schouten et al., 2020). The allure of using micro-celebrity endorsements is that micro-celebrities often have a social media following which far exceeds that of the company (Holt, 2016); therefore, the social media posts made by a micro-celebrity can reach a larger audience. In addition, micro-celebrities develop a strong and meaningful relationship with their followers and through an endorsement, the

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company believes that the micro-celebrity can increase its relationship with its targeted consumers (Jun & Yi, 2020; Korontina & Jargalsaikhan, 2016). Although there are numerous industries worldwide that have embraced the use of micro-celebrities as a marketing tool, the fitness industry is arguably using micro-celebrities to the greatest extent (Djafarova & Thompson, 2020).

Worldwide there has been a socio-cultural change with the global population adopting a more active and healthier lifestyle, which has resulted in an increased sales of fitness apparel, sport nutrition, and supplementation products (Djafarova & Thompson, 2020). Subsequently, the fitness industry has become one of the fastest-growing industries in the world, second only to the high technology industry (Chekhovska, 2017). The fitness industry's growth has been so substantial that in 2019, it globally had an estimated value of $100 billion (Biron, 2019). However, this industry is highly fragmented, rich in competition, dynamic, and affected by the trends in both fitness and in fashion (Korontina & Jargalsaikhan, 2016). Those who participate in fitness activities have become increasingly more fashion conscious and are willing to spend more money purchasing fitness apparel that is both fashionable and practical (Djafarova & Thompson, 2020; Mintel, 2019).

The merging of fitness and fashion trends has led to the development of fitness apparel known as Athleisure, which is clothing that can be worn for social, casual, and fitness purposes (Euromonitor International, 2018). The considerable growth of the fitness industry, alongside the increased demand and sales of athleisure clothing, has substantially influenced the global sportswear market, with global sales exceeding $335.5 billion in 2019 (Euromonitor International, 2019). In addition, arising from the demand in athleisure clothing and the growth of the sportswear market, there has been a sudden growth in the number of new brands emerging, alongside existing brands extending their clothing range to include sportswear apparel, which has increased the competitiveness of the sportswear market on a domestic and global scale (Euromonitor International, 2018).

Celebrity endorsements have been a prominent marketing strategy that have been extensively used by companies around the world since the late 19th century (Knoll & Matthes, 2017). As such, considerable research has been conducted to investigate the effectiveness of celebrity endorsements, presenting a surplus of evidence that highlights their benefits and substantiates their use as a marketing strategy (Von Felbert & Breuer, 2020; Schouten et al., 2020). There has been a noticeable increase in micro-celebrity endorsements during the last decade, yet despite this, research investigating their effectiveness is still within its infancy, thus their marketing value is scarce (Schouten et al., 2020). Due to the lack of research conducted on this topic area, marketers may be apprehensive in integrating micro-celebrity endorsements as part of their marketing strategy. Therefore, it is of importance to further develop the understanding of the marketing value of micro-celebrity endorsements.

Celebrity Endorsement

A celebrity can be defined as a well-known individual who receives a significant amount of media and public attention, for example, actors, models, musicians, and athletes (Schouten et al., 2020). Companies in various industries worldwide have incorporated celebrities into their advertising strategy, using them to promote the company, their products, and services (Cuomo et al., 2019). One definition that encompasses all aspects of a celebrity endorsement has been provided by Bergkvist and Zhou (2016), as a "celebrity endorsement is an agreement between an individual who enjoys public recognition (a celebrity) and an entity (e.g., a brand) to use the celebrity for the purpose of promoting the entity" (p. 644).

Celebrity endorsements are not a recent phenomenon, they are a well-established advertising strategy that has been used for over 100 years with one of the earliest examples dating back to 1893 (Louie et al., 2001). However, the use of celebrity endorsements has seen a sharp rise in the last few decades. During the 1950s and 1960s, there was a considerable growth of the film industry, alongside an increased household ownership of television sets (Erdogan, 1999). Subsequently, there was a surge in the number of film and televisions roles, which by the 1970s, led to an abundance of celebrities available that companies could select to endorse their products. The increased use of celebrity endorsements was so significant that by the 1980s, one in five televisions advertisements in the United States of America featured a celebrity endorsement (Erdogan, 1999). The persistent and extensive use of celebrity endorsements as an advertising strategy can still be seen in the present day, as celebrity endorsements continue to feature heavily on television advertisements on every continent around the world (Bergkvist & Zhou, 2016). In addition, companies invest considerable financial resources into this component of their advertising strategy (Upadhyay & Singh, 2010), for example, Nike, a global sportswear brand, spends over $6 billion per year on athlete endorsements (Enoch, 2020). This implies that despite the financial costs involved, marketers consider celebrity endorsements to be a valuable component of their advertising strategy (Upadhyay & Singh, 2010).

Arising from their extensive use and the financial cost involved, considerable research has been conducted to investigate the effectiveness of celebrity endorsements as a marketing strategy. This is highlighted by the meta-analysis conducted by Knoll and Matthes (2017), as their search results from three major databases presented over 1,000 research articles relating to celebrity endorsements. However, celebrity endorsement research is highly fragmented due to the conflicting results from individual studies (Knoll & Matthes, 2017). This variation in research findings can potentially be explained, as individual research studies often explore the research phenomenon from a different perspective or using a different research approach, data collection or analysis method, or a population demographic. Although the research findings are fragmented and conflicting, there has been a number of literature reviews and meta-analyses that have concluded that celebrity endorsements can be an effective marketing

strategy, as they have shown to increase the consumers' purchase intention, increase brand and product awareness, and can improve brand loyalty, brand recall and brand image (Bergkvist & Zhou, 2016; Knoll & Matthes, 2017). In addition, Erdogan (1999) declares that celebrity endorsements are extremely beneficial when entering foreign markets, as the barriers of entering the foreign market of choice, such as language, culture, and time zones, can be broken down due to the celebrity's worldwide popularity.

Despite the aforementioned benefits, celebrity endorsements pose a number of potential risks. For instance, the endorsed celebrity may be associated with controversy, ill-behavior, or have accusations made against them, which not only negatively impacts their image but also the image of the company and the product they endorse (Upadhyay & Singh, 2010). The celebrity may sign an endorsement deal with a number of companies, and therefore their image is associated with an array of companies and products (Erdogan, 1999). This can tarnish the credibility of the celebrity as consumers perceive them as only being motivated by money (O'Mahony & Meenaghan, 1997). Furthermore, the popularity of the celebrity may increase to such an extent that they overshadow the product they endorse, or their popularity may decrease, which results in the consumer having no interest in the celebrity and, therefore, no interest in the endorsed product (Erdogan, 1999). Finally, celebrity endorsements incur substantial financial costs with no guarantee on the return of investment (Upadhyay & Singh, 2010). Such concerns signify that companies must take care when selecting a celebrity to endorse their products. Fortunately, a number of models and theories have been developed to aid in the celebrity selection process that can potentially increase the marketing effectiveness of the celebrity endorsement. Namely, the Source Credibility Model, the Source Attractiveness Model, the Match-Up Hypothesis, the Meaning Transfer Model, and the Brand Alliance Concept.

Celebrity Endorsement Models and Theories

The Source Credibility Model implies that the effectiveness of the delivered message depends on the credibility of the source, for example, the celebrity. Credibility is a construct of two characteristics, expertise, and trustworthiness, which the source must possess in order to be perceived as credible (Hovland et al., 1953). Erdogan (1999) suggests that a credible source can influence the attitudes, beliefs, and behaviors of the message's recipient, hence, when selecting a celebrity, credibility is of high importance. The Source Attractive Model contends that the effectiveness of the message, in fact, depends on the familiarity (awareness of the source), likability (affection of the source's physical appearance and behavior), and similarity (resemblance between the source and the receiver) of the source (McGuire, 1985; McCracken, 1989). Sources that are familiar, likable, and similar to the consumer are perceived as attractive (McCracken, 1989). The source's attractiveness not only encompasses any physical attractiveness but any characteristic that the consumer perceives as

attractive, such as intellect, personality, athletic prowess, and lifestyle. Erdogan (1999) concluded that attractive endorsers can enhance the consumers' attitudes toward both product advertising and the brand. Yet, research findings are equivocal regarding their influence over consumers' purchase intention, as mixed findings have been reported (Erdogan, 1999; Kahle & Homer, 1985). The Source Credibility Model and Source Attractiveness Model have been validated through several research articles; however, McCracken (1989) has criticized these models, as they imply the endorsement process is solely dependent on the celebrity and places no consideration on either the endorsed product or the brand. This criticism may potentially be rectified through the Match-Up Hypothesis.

The Match-Up Hypothesis suggests that the effectiveness of the endorsement depends on the level of congruence between the endorser and the endorsed product (Till & Busler, 2000). Multiple studies support this theory, whereby a high level of congruence between the celebrity and the endorsed product leads to a more effective endorsement, signified by consumers demonstrating an improved perception, recall, and believability of a product advertisement alongside an increased brand attitude and purchase intention (Schouten et al., 2020; Till & Busler, 2000). In comparison, when the congruence between the celebrity and the endorsed product is low, the celebrity is seen as a less credible source and the endorsement is considerably less effective (Schouten et al., 2020). Therefore, companies should select a celebrity that has a high level of congruence with their products and services, as this will increase the likelihood of an effective endorsement. Unfortunately, according to McCracken (1989), the Source Credibility Model, the Source Attractiveness Model, and the Match-Up Hypothesis fail to incorporate the entirety of the endorsement process, thus leading to the development of his own model that explains his view of the endorsement process.

McCracken's (1989) Meaning Transfer Model (MTM) consists of three stages that describe his view of the celebrity endorsement process (Figure 7.1). Stage one involves the creation of the image and personified the meaning of the celebrity through the roles they have portrayed throughout their career. In stage two, the

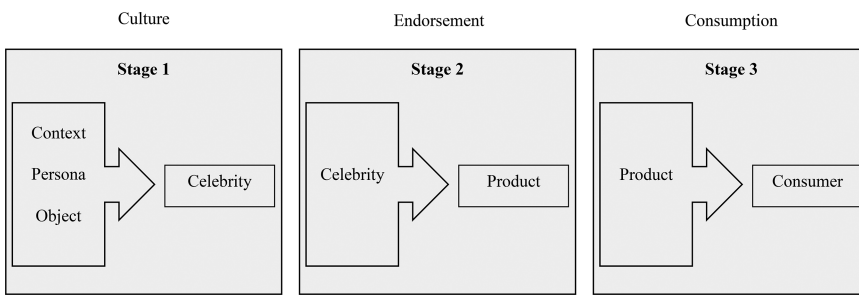

Figure 7.1 Meaning Transfer Model. (Adapted from McCracken, 1989.)

celebrity enters an endorsement deal, and their image and personified meaning are then transferred onto the product they endorse. Stage three, the consumer will purchase and consume the product to expect that the celebrity's image and personified meaning will be transferred unto them.

Though the MTM is one of the least researched models in the celebrity endorsement context (Roy & Jain, 2017), previous studies have supported its premise. For example, Langmeyer and Walker's (1991) research findings showed that symbolic meaning of the celebrity endorser, Cher, was transferred onto the endorsed product, Scandinavian Health Spas. The sample, consisting of 51 undergraduate students, associated Cher with physical fitness, sexiness and with an attractive physical appearance and by training at Scandinavian Health Spas, they could obtain similar characteristics (Langmeyer & Walker, 1991). Thus, supporting the premise of the MTM, as the meaning of the celebrity was transferred onto the product, and by purchasing and consuming the product, the consumer expects a similar meaning to be achieved.

However, the MTM model has also faced criticism as this model implies that the transfer of meaning only occurs in one direction (Halonen-Knight & Hurmerinta, 2010). Till's (2001) findings support this criticism, as the image of the celebrity was tarnished due to their endorsement of a negatively perceived product. Therefore, this signifies that the transfer of meaning can occur in the opposite direction, thus there is a two-way transfer of meaning from the celebrity to the endorsed product and vice versa. This resulted in the authors proposing the celebrity endorsement process should be considered as a Brand Alliance, whereby the transfer of meaning exists on a pathway that incorporates the celebrity endorser, the brand, and the endorsement action (Halonen-Knight & Hurmerinta, 2010).

The models and theories that relate to celebrity endorsements highlight the complexities involved within its process. Regardless, the use of celebrity endorsements as an advertising strategy remains highly prevalent. Though celebrity endorsements extensively feature on television advertisements in China and South Korea, the extent to which they feature on television and print media advertising across Europe and the USA is considerably lower than it was in the late nineteenth century. Instead, in this modern era of advertising, companies and celebrities are increasingly using the internet and social media as an advertising platform (Bergkvist & Zhou, 2016).

Social Media

Social media is a collective term for software-based technologies, such as an application or website, that provides the user with a digital environment where they can send and receive information or personal content and to interact with other users worldwide (Appel et al., 2020). In the last decade, social media has grown considerably, in 2010, there were an estimated 940 million social media users (Moerdyck, 2010), which has since increased to approximately 3.96 billion

in 2020 (Chaffey, 2020), equating to a 321% increase in the number of social media users during this period. This growth is perhaps attributable to the rapid developments in handheld technologies (Meng et al., 2015), as users have been provided with a quick and easy access to the increased number of social media platforms that have also emerged during this time period (Chaffey, 2020). Social media encompasses a wide range of platforms, not only are the most popular platforms such as Instagram, Twitter, and Facebook classed as social media, weblogs, vlogging, and online forums are just some examples that also constitute as social media. Appel et al. (2020) have a unique perspective of social media, as in their view, social media has become less about the platform's features and more about how people are spending their time on social media, which thus far, has primarily been the extensive sharing of information (Appel et al., 2020).

Traditionally, marketers have relied upon the 4 P's Marketing Mix framework (product, place, price, and promotion), developed by McCarthy and Perreault (1964), whereby careful consideration and optimal decisions of each of the 4 P's would result in the creation and execution of an effective marketing strategy (Johnson, 2015). Social media's emergence disrupted this reliance. It introduced several new influences which subsequently increased the complexity of the marketer's role, the marketing environment, and thus, the creation and execution of an effective marketing strategy (Johnson, 2015). However, Mangold and Faulds (2009) argued that social media should be considered as a hybrid element of the promotion mix (one of the 4 P's of marketing), as this medium facilitates the combination of traditional marketing communication tools (a direct engagement from the company to the consumer) with an amplified form of word of mouth (consumers talking to one another). In addition, to develop and implement an effective marketing strategy, social media should be integrated alongside the traditional promotion mix, which consists of advertising, personal selling, public relations, direct marketing, and sales promotion (Mangold & Faulds, 2009). This implies that the 4 P's marketing mix framework is still applicable in the modern era of marketing, marketers merely need to adapt and integrate social media in order to develop an effective marketing strategy.

The initial interest that companies had in social media stemmed from several developments, for instance, the declined response rate of e-mail, rapid technological developments, the declining use of traditional media, the increased time consumers spend on social media, and the low cost of implementing a social media marketing campaign (Gillin, 2007). In addition, research suggests that marketing managers reported that the online presence of their competitors and social media's growth, popularity, cost-effective and viral nature are motivational factors that have led to the integration of social media into their marketing strategy (Tsimonis & Dimitriadis, 2014).

Social media has presented companies with a remarkable marketing opportunity, one that is being used by over 90% of companies worldwide (Bennet, 2013) and according to Vinerean (2017) is essential to any business strategy. Social media provides companies with a marketing medium that can efficiently

disseminate information worldwide, which can reach customers regardless of the geographic, demographic, social, or political boundary while facilitating a two-way communication channel between the company and customer in an accurate and timely manner, all of which is incapable of traditional marketing communications (Zahoor et al., 2016). As such, companies are increasing their resources, financial or otherwise, toward developing their social media strategy (Machado et al., 2020; Neti, 2011). According to Ebrahim (2019), in the forthcoming years, up to 71% of a company's marketing budget will be allocated toward its social media strategy in an attempt to enhance its social media presence. As social media is being discussed within a marketing context, it is important to address this term. Dahnil et al. (2014) define social media marketing as "using the social media platforms and its related technologies and features to help achieve marketing objectives in conjunction with other marketing communication tools" (p. 120).

Many companies are integrating social media into their marketing strategy to coincide with their marketing objectives. For example, marketing directors and general directors of business-to-business companies in the United Kingdom reported that they are using social media to attract new customers, increase customer relations online, increase brand awareness, and to communicate their brand online (Michaelidou et al., 2011). In comparison, Turner and Shah (2014) alluded that business-to-consumer companies can leverage social media to acquire new customers and increase their sales revenue, which is the primary goal of the majority of business-to-consumer companies (Palumbo & Herbig, 2000).

Social media is regarded as one of the marketing phenomena of recent years, and as such, there has been a growing body of research that has aimed to address various aspects and to understand the effectiveness of social media marketing. Alalwan et al. (2017) reviewed 144 articles relating to social media marketing and upon their analysis, highlighted that social media marketing can enhance the company's promotional marketing activity, improve customer loyalty, and can increase brand awareness and the consumers' purchase intention. Research articles that were not included in this review have presented similar findings, as improvements to the consumers' brand, loyalty and engagement were also reported as a result of social media marketing efforts (Jibril et al., 2019). Despite the abundance of supporting evidence and overwhelming popularity, Zhu and Chen (2015) argue that social media is an ineffective marketing strategy, as the nature of social media is incompatible with the nature of marketing. They suggest that companies are using social media to promote their products and services to aid in achieving their business objectives, whereas people are using social media to connect with other social media users, as a creative outlet, and as a source of entertainment. Thus, people are not using social media to be subjected to advertising messages, supporting their argument. However, 93% of social media users think that a company should have a social media presence and 85% believe that the company should directly engage with them through social media (Michaelidou et al., 2011). This signifies that regardless of whether

social media marketing is effective or not, it is important that a company establishes a social media presence, as consumers have this expectation.

Social media, once primarily used to interact and share personal content with other users online, is becoming more frequently used as an information source and is being incorporated into the consumers' purchase decision-making process (Appel et al., 2020). Social media users can search for, and read the reviews of a brand, product, or service created by other social media users, thus obtaining pre-purchase information (Paquette, 2013). Research suggests that consumers have shown to trust online reviews created by unknown social media users to a greater extent than traditional media advertisements created by the company. Hence, social media can be considered an appealing information source, as the user has easy access to countless reviews online. Subsequently, as social media users are increasingly using this medium to search for and read reviews, this has led to the development of what is known as electronic word of mouth (Cheung & Thadani, 2012).

Word of mouth (WOM) is one of the oldest and most influential means of information transmission (Wang & Fesenmaier, 2004) with a sizeable body of marketing literature providing evidence that WOM is an effective marketing tool (Zamil, 2011). Advances in technology, the emergence of the internet and social media have changed the way in which information is transferred, thus providing an environment for electronic word of mouth (eWOM) communications (Cheung & Thadani, 2012). Similar to WOM, eWOM communication has shown to influence brand image, the consumers' purchase intention, and to increase product interest and awareness (Paquette, 2013). Although WOM and eWOM involve the same theoretical processes (i.e., the transmission and exchange of information), numerous aspects make eWOM unique. Electronic word of mouth involves a multi-exchange of information that can be disseminated at unprecedented speeds around the world with this information remaining accessible until deleted (Cheung & Thadani, 2012).

In comparison, in traditional WOM communication, information is usually exchanged in a private conversation amongst a small group of people, making it difficult to replicate the accurate transferring of the same information to parties absent from the initial conversation (Cheung & Thadani, 2012). Although eWOM is a powerful marketing force, companies have shown concern for eWOM, as the company is unable to control the dissemination of information in an online environment, and the power of shaping its brand image is no longer with the marketing department, instead the power lies with the consumers' online content and connections (Huete-Alcocer, 2017). For example, a negative review created about the company's product can be shared and made visible to millions of potential customers, possibly impacting the consumers' purchase intention and their perceived image of the company. As such, companies must find a solution to increase their control of the consumers' eWOM, reducing the risk of negative information being visible to millions of users online. The emergence of social media disrupted the reliance placed upon traditional marketing

strategies and has provided companies with a new avenue to promote their products and services. However, resulting from the significant integration, the market is now saturated with competitors using social media as a marketing medium. Therefore, marketers need to find new means of promoting their company, products or services in the online environment. One potential solution for a company to differentiate themselves from the competition and to increase their control of the consumer's eWOM is by using micro-celebrities.

Micro-Celebrities Overview

Social media's substantial growth resulted in the creation of a new form of celebrity, known as a micro-celebrity (Khamis et al., 2017). Traditionally, a celebrity status was achieved by receiving significant public and media attention, often as a result for professional talent or a considerable accomplishment (Schouten et al., 2020). Whereas, micro-celebrities have strategically used social media to amass a large number of followers, often on a global scale, thus becoming well-known and recognizable both online and beyond the midst of social media, granting them a celebrity status (Djafarova & Trofimenko, 2019; Eroğlu & Bayraktar Köse, 2019).

Albeit traditional celebrities have also amounted a considerable social media following, micro-celebrities have built their entire careers online and without social media they would not be known to the public, nor would their celebrity status exist (Schouten et al., 2020).

Micro-celebrities exist in different fields, for example, fashion, beauty, food, and fitness and they consider their followers as fans and strategically share self-generated content on their social media accounts in an attempt to increase their awareness, popularity, and their number of followers (Djafarova & Thompson, 2020; Schouten et al., 2020). The content that micro-celebrities share on their social media accounts primarily relates to the field in which they operate (e.g., fitness) and often consists of product reviews that have no marketing intention, leading to social media users perceiving micro-celebrities as a credible source of information (Lima de Carvalho, 2017). Consequently, micro-celebrities are able to build a highly regarded online reputation, allowing them to be recognized as experts in their respective fields, which has permitted certain micro-celebrities to turn their social media presence into a profession (Schouten et al., 2020).

In comparison to traditional celebrities, social media users consider micro-celebrities as more authentic and relatable, as micro-celebrities are seen as normal people who have found fame online as opposed to being subject to the star-making system (Neal, 2017). Furthermore, social media users can engage directly with the micro-celebrity through social media and via face-to-face meets (Su, 2017). Although traditional celebrities can also provide a similar level of interaction with their followers, this interaction is pivotal for increasing and maintaining the micro-celebrity's popularity (Schouten et al., 2020). The

interaction that the micro-celebrity has with their followers, through replying to messages or comments, has shown to increase the followers' emotional attachment with the micro-celebrity (Jun & Yi, 2020). Micro-celebrities also share intimate details of their personal lives to a much greater extent than traditional celebrities, which presents a persona that is less controlled and managed (Marwick, 2015). A combination of the aforementioned has enabled micro-celebrities to develop a strong and meaningful relationship with their followers (Jun & Yi, 2020).

The rise of micro-celebrities has led to companies showing an increased interest in and use of, micro-celebrities to endorse their products (Schouten et al., 2020). The more followers a micro-celebrity has, the greater their perceived influence and thus, the greater their commercial value for a company (Djafarova & Thompson, 2020). Companies select a micro-celebrity who exists in a similar field and pay them to promote their products on their social media account and to create content that highlights the product's benefits while encouraging their followers to purchase (Eroğlu & Bayraktar Köse, 2019). Micro-celebrities can create viral content that can relay the company's message, or advertise and promote the company's products directly in the view of thousands or millions of their followers that include the company's target audience (Eroğlu & Bayraktar Köse, 2019). Through the micro-celebrity endorsement deal, the company aims to transfer the strong and meaningful relationship between the micro-celebrity and their followers, onto the company (Djafarova & Thompson, 2020). Lima de Carvalho's (2017) findings support this expectation, as through a micro-celebrity endorsement deal, the perceived credibility of the micro-celebrity was transferred onto the company and vice versa. Thus, providing evidence that the MTM and the Brand Alliance Concept apply to micro-celebrity endorsements.

Researchers suggest (Bruns & Jacobs, 2006; Neal, 2017) that micro-celebrity endorsements are one of the hottest marketing trends that have the potential to be a highly profitable marketing strategy. Despite these claims, micro-celebrity endorsements are primarily used by small-to-medium sized companies, or companies exclusive to an online environment (Lim et al., 2017). Micro-celebrity endorsements are an emerging marketing strategy, while there has been an increased use of this strategy, their marketing value is not fully understood (Schouten et al., 2020), perhaps defending the apprehension of large companies implementing such a strategy.

Micro-Celebrities and the Fitness Industry

Micro-celebrity endorsements are being increasingly used in numerous industries; however, the fitness industry is arguably using micro-celebrities to the greatest extent and effect (Djafarova & Thompson, 2020). As mentioned, the fitness industry is in a state of considerable growth resulting from a worldwide socio-cultural change whereby the global population is adopting a healthier and fitter lifestyle (Djafarova & Thompson, 2020). This lifestyle change is perhaps

attributable to the substantial fitness-related content on social media (Djafarova & Thompson, 2020).

Social media has provided fitness-focused users with an outlet to share their personal progress and to find information and guidance on workouts and nutrition (Neal, 2017). As such, those with a lean and/or a muscular physique can become an inspirational figurehead, amassing a large number of social media followers and thus becoming a fitness micro-celebrity (Djafarova & Thompson, 2020). Fitness-focused users often follow the workouts and diets of fitness micro-celebrities and purchase products based upon their recommendations with the expectation that doing so will result in attaining a similar physique. Companies within the fitness industry were quick to recognize this commercial opportunity and incorporated fitness micro-celebrity endorsements into their marketing strategy (Djafarova & Thompson, 2020). These companies pay fitness micro-celebrities considerable sums, via one-off payments or sponsorships, to create content that features their products (Neal, 2017).

Lima de Carvalho (2017) claims that social media users recognize fitness micro-celebrities as a profession and have no negative attitudes toward their use as a marketing strategy. Opposing these findings, Djafarova and Thompson (2020) and Korontina and Jargalsaikhan (2016) reported that social media users can develop negative attitudes and feelings toward the fitness micro-celebrity when they excessively upload product advertising content. Comparable findings have also been reported in other industries, whereby overexposure to product advertisement negatively impacted the micro-celebrity's credibility (Elli, 2017). Korontina and Jargalsaikhan (2016) discovered that consumers developed a negative attitude toward the micro-celebrity as they felt the micro-celebrity was simply relaying the company's message in exchange for payment. Hence, micro-celebrities who excessively upload product advertising content might be perceived as being motivated by money and only relay the company's message as opposed to giving their honest review. A similar notion was reported by O'Mahony and Meenaghan (1997) with celebrity endorsements, therefore, micro-celebrities must find an appropriate balance between uploading personal and advertising content on their social media accounts to maintain their authenticity and credibility while continuing their online profession.

Micro-Celebrity Endorsement and Purchase Intention

Calvo-Porral and Lévy-Mangin (2017) interpret purchase intention as the probability of the consumer purchasing a certain product or service in the present or near future. The consumer purchase decision-making process (Figure 7.2) consists of five stages that the consumer moves through once they realize they want to purchase a product: need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase decision (Solomon et al., 2019). The time the consumer spends in each stage depends upon various factors such as their level of interest, involved risk, and their previous purchasing experience (Stankevich, 2017).

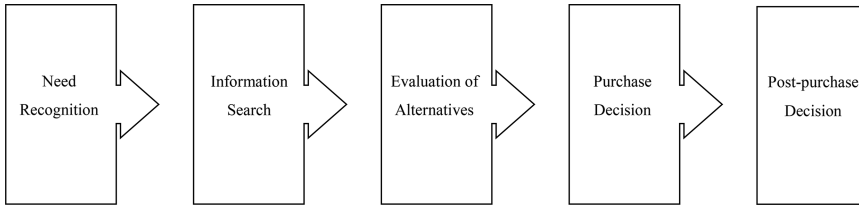

Figure 7.2 Consumer Purchase Decision-Making Process. (Adapted from Solomon et al., 2019.)

Although this model is widely used, it has, however faced criticism (Stankevich, 2017). This model relies upon the consumer behaving rationally and moving through each stage once they realize they want to purchase a product; however, this is an inaccurate depiction of consumer's purchase behavior which can often be irrational, acting on impulsive without planning nor thought (Solomon et al., 2019). Therefore, it can be assumed that this model only applies to specific scenarios, when the consumer has identified and realized, they have a need for a particular product or service. Korontina and Jargalsaikhan (2016) reported that micro-celebrities influence the first four stages of the consumer's purchase decision-making process. In addition, Djafarova and Trofimenko (2019) also highlighted that micro-celebrities can cause the consumer to search for information about the advertised product. However, micro-celebrities rarely influence the purchase decision of the consumer, as they are perceived as not a credible source of information. Contradicting Djafarova and Trofimenko (2019), several research findings have shown that micro-celebrities can increase the consumers' purchase intention for an array of products in numerous industries (Chapple & Cownie, 2017; Schouten et al., 2020; Trivedi & Sama, 2020). Many of these studies signified the importance of the Match-Up Hypothesis, whereby a high congruence between the micro-celebrity and the product plays a key role in influencing the consumers' purchase intention. Therefore, it can be theorized that due to the high congruence between a fitness micro-celebrity and fitness-related products, consumers should demonstrate an increased intent to purchase.

Research investigating the influence that micro-celebrities have on the consumers' purchase intention has primarily been conducted on youthful populations, as they account for the majority of social media users and are deemed as being most influenced by micro-celebrity product advertising (Chun et al., 2018; Djafarova & Thompson, 2020). However, there has been an increased use of social media by those in an older age bracket, for instance those over the age of 50 (Pew Research Center, 2019), yet despite this, a finite number of studies have investigated whether the micro-celebrity's influence on the consumers' purchase intention differs between age groups. One such study that investigated whether there was a relationship between age and an increased purchase intention was conducted by Chun et al. (2018). Their findings reported that there was an

insignificant relationship between age and an increased purchase intention of a fashion item advertised by a micro-celebrity on Instagram.

Micro-Celebrity Endorsement Characteristics

Albeit emerging, there is limited research that has investigated whether the widely accepted endorsement theories apply to micro-celebrity endorsements in the online environment (Djafarova & Thompson, 2020; Djafarova & Trofimenko, 2019). Håkansson et al. (2020) discovered, upon review of the available literature relating to micro-celebrities, research has primarily been based around four characteristics: trustworthiness, attractiveness, similarity, and authenticity. Their research findings claimed that micro-celebrities should possess the aforementioned characteristics in order to influence the consumers' purchase intention. Lim et al. (2017) investigated the influence that micro-celebrities have over the consumers' attitude and purchase intention by using the Source Credibility Model, the Source Attractiveness Model, the Match-Up Hypothesis, and the MTM. They highlighted that the Source Attractiveness Model, the Match-Up Hypothesis, and the MTM had a positive relationship and/or correlation with the consumers' attitude and purchase intention. No relationship was found between the Source Credibility Model and consumers' purchase intention and attitude, indicating that the Source Credibility Model does not increase the effectiveness of micro-celebrity endorsements.

Specific to the fitness industry, Djafarova and Thompson (2020) investigated whether the Source Credibility Model, the Source Attractiveness Model, and the Match-Up Hypothesis applied to fitness micro-celebrity endorsements in an online environment. Their study conducted a content analysis on five Instagram posts from ten popular fitness micro-celebrities, equaling 50 posts in total. By using an analytic statistical software package, they discovered that fitness micro-celebrities with a higher number of followers receive a higher level of engagement (i.e., likes and comments), also a high quality of posted content influences the fitness micro-celebrity's perceived credibility. Respondents were also required to state whether the characteristics included in the Source Credibility Model and Source Attractiveness Model would increase the fitness micro-celebrity's perceived credibility. They were required to identify whether the characteristics identified from the content analysis (high engagement, number of followers, and quality of content) and whether experience, uniqueness, and charisma would increase the fitness micro-celebrity's perceived credibility. From these results, a model can be formulated that identifies characteristics that will increase the effectiveness of a micro-celebrity endorsement.

Trustworthiness, expertise, and the congruence between the product and endorser were identified as being applicable to endorsement in both the online and offline environment, whereas expertise, the number of followers, high quality of content, uniqueness, and the number of likes and comments are newly identified characteristics that are only applicable to endorsements in the online

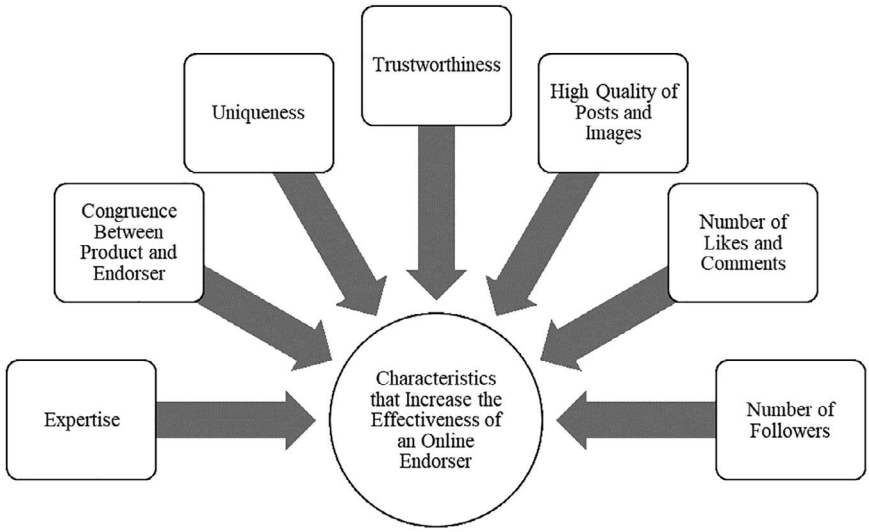

Figure 7.3 Characteristics That Increase the Effectiveness of an Endorser in an Online Environment. (Adapted from Djafarova and Thompson, 2020.)

environment. This research has provided marketers with a model, enabling them to select a micro-celebrity that possesses the identified characteristics in order to make the endorsement deal more effective. Furthermore, within this research, the respondents were also required to state whether fitness micro-celebrities have increased their purchase intention of fitness-related products. Those who stated that fitness micro-celebrities had influenced their purchase intention were asked to highlight which characteristics they perceived as influencing their intention to the greatest extent. Knowledge, expertise, lean and/or muscular physique, experience, and similarity to the respondent's ideal self-image were identified as the characteristics of a fitness micro-celebrity that had the greatest effect on the respondents' purchase intention. Although not included in the developed model, these characteristics of a fitness micro-celebrity are of importance to companies competing in the fitness industry, as they provide additional characteristics that should theoretically lead to an effective micro-celebrity endorser (Figure 7.3).

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Chapter 8

Examining Facebook Marketing Practice

The Case of New Zealand Provincial Rugby

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Introduction

Marketing literature documents a shift from a transactional paradigm to a relationship paradigm (Gronross, 1994; 2005). This shifting school of thought, along with social and technological drivers, has given rise to the rapid growth and popularity of social media, particularly Facebook (Ballings et al., 2015). Pronschinske et al. (2012) identify social media as one of the most salient developments in relationship marketing. As Ratten and Thompson (2021) argue, the ideological foundation of the internet was to provide a social platform that supported this relationship approach, which has now been further extended with the advent of social media. Importantly, social media facilitates ongoing two-way conversations between consumers and organizations, enabling frequent anthropomorphized brand interaction as well as instant feedback between both parties, characteristics that are central to relationship marketing. Arguably, social media have become a defining feature of 21st-century communications. Conceived in 2004, Facebook, in particular, has risen from relative obscurity to become one of the most visited websites in the world.

While social media use has grown exponentially, so too has its influence. Sport organizations were quick to capitalize on Facebook's popularity particularly with the introduction of brand pages in 2010. The trend is no different particularly in New Zealand Rugby's (NZR) National Provincial Championship (NPC). With significantly more users than any other platform, it can be suggested that Facebook is by far the most prominent social media channel for rugby teams in New Zealand (Ballings et al., 2015). Within this relationship paradigm, using this medium, sport managers can now listen and understand fans' needs, create "value adds" for fans to engage, and potentially translate into the building, maintenance, and enhancement of relationships (Abeza et al., 2019). Consequently, social media are widely accepted as important digital marketing channels for many organizations, including sport teams (Abeza et al., 2013; Ratten & Thompson, 2021). Indeed, one of the biggest changes within the sport industry has been the introduction and uptake of social marketing. These platforms have revolutionized traditional sport marketing practices be

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enabling organizations to engage in more direct and real-time interaction with their consumers.

Not surprisingly, with the popular growth and uptake across varying age brackets, social media are featuring in a growing body of research. Achen et al. (2017), Ballings et al. (2015), and Thompson et al. (2016) explain that because of Facebook's uptake and large user base, it has risen to become a major marketing channel for organizations and a central consideration in marketing strategy for sport organizations. Facebook is widely acknowledged as the most prominent social media platform in business-to-consumer businesses, including sport (Abeza et al., 2019; Pronschinske et al., 2012). While social media are acknowledged as important platforms for contemporary sport marketing practitioners, scholars also acknowledge the benefits and challenges of social media in contemporary marketing practice. That said, recent research indicates a lack of understanding and consistency in evaluating effectiveness within the context of Facebook. Scholars have further acknowledged a need to move beyond simple metrics as measures of performance.

The content and performance of actual Facebook posts by brand pages underpins most of the research on social networking sites (Achen et al., 2017; Achen et al., 2018; Bonsón & Ratkai, 2013; Pronschinske et al., 2012). Although Bonsón and Ratkai (2013) quantified expected levels of likes, comments and shares on a post there remains a lack of comparable context. Moreover, extant literature fails to provide any contextual approaches that would allow practitioners to accurately critique both positive and negative performance as well as compare it against other sport team brand page posts on Facebook.

Review of Literature

Several scholars contend that since its initial conceptualization relationship marketing has successfully been applied at multiple levels including organization-to- consumer, business-to-business (B2B), and organization-to-employee. Despite its multiple applications, the consumer remains at the center of dominant conceptual models (Abeza et al., 2019; Bee & Kahle, 2006; Gronroos, 2005; Ratten & Thompson, 2021). While perhaps more commonly considered within the business context, relationship marketing has emerged as an important marketing paradigm within sport. Undeniably, professional sport operates as a service-led industry where customer orientation is essential, and scholars have argued that in most cases, sport involves some form of relationship marketing activity (Bee & Kahle, 2006). In the context of sport, Stavros et al. (2008) interviewed several Australian professional sport franchises from Australian Rules Football, Rugby League, Basketball, and Soccer. Their findings indicated an understanding of relationship marketing's contemporary prominence but a lack of application acceptance and implementation (Stavros et al., 2008). Contrasting findings were reported by Achen (2014) in the study of professionals representing United States professional sports leagues. Respondents viewed

relationship marketing "as essential for the survival of professional sport teams and used numerous tactics to build and maintain customer relationships" (p. 14).

Scholars argue that a successful approach to relationship marketing extends beyond a short-term marketing activity (e.g., ticket and merchandise sales) and instead considers a more long-term view that focuses on developing meaningful relationships that are proactive, interactive, and enduring (Kim & Trial, 2011). If organizations can successfully achieve this outcome, they are more likely to benefit from enhanced loyalty, connection, and attachment of their fans. It is not only organizations though that receive benefits from a relationship marketing approach. For consumers, it reduces choices, makes decisions cognitively consistent and efficient, leading to increased satisfaction. Despite the distinct mutual benefits of relationship marketing, it can also present unique challenges (Gronroos, 2005; Stavros et al., 2008). Internally, relationship marketing is often set up superficially as a strategic tool, as opposed to developing the long-term established value of an organization's culture. In a survey of 25 British professional football clubs, Adamson et al. (2005) established that relationship marketing failed at the majority of clubs who implemented it because there was a lack of tangible commitment at both strategic and operational levels of the organization coupled with under-resourcing. In addition, external consumers can present challenges as they become accustomed to a relationship marketing approach.

As with other industries, the rise of social media has not gone unnoticed in sports. In line with the growing media-dominated sports consumer, research shows that social media are vital tools for sports marketers, and, as several scholars argue, social media provide an effective platform for sports organizations to execute a relationship marketing strategy (Abeza et al., 2019; Achen et al., 2018; Pronschinske et al., 2012;). In particular, several sports-related studies have illustrated the benefits Facebook provides to both professional, amateur, and niche sport organizations (Abeza et al., 2013; Eagleman, 2013). For example, after analyzing eight-participation-based running events in Ontario, Canada, Abeza et al. (2013) outlined specific sport organization benefits of using social media platforms such as Facebook. Specifically, Abeza et al. (2013) established the benefits of a social media presence for relationship marketing. These included better knowledge of fans, advanced consumer-organization interaction, effective consumer engagement, and quicker evaluation of relationship status with consumers. In a subsequent study, Abeza et al. (2014) discovered that while Canadian National Sport Organizations (NSOs) utilized Facebook as an effective information distribution channel, they struggled to generate effective relationship dialogue.

Scholars have also argued that Facebook offers the potential to better understand their fan bases (Abeza et al., 2013; Thompson et al., 2017). In relationship marketing, an organization must know and understand the consumer as an individual and Facebook present a realistic platform to achieve such knowledge that would otherwise be unrealistic due to cost and time (Abeza et al., 2013). The very nature of social media means that it allows for more regular

interaction with consumers to the point that marketing insight becomes more relevant, timely, accurate, personal, and cost-effective for sport organizations. Off-season brand interaction has also been highlighted as another Facebook benefit for sport organizations (Abeza et al., 2013; Abeza & O'Reilly, 2014; Thompson et al., 2017). Traditionally interaction with a sports brand only came as a result of direct consumption of the core product. However, it is now widely accepted that Facebook allows for real-time direct communication with fans allowing sports organizations to communicate activities beyond the core product, allowing for greater accumulation of both consumer groups and individuals' information.

Consequently, scholars widely advocate the use of Facebook brand pages by sports organizations, particularly professional teams, in the pursuit of marketing-related objectives (Achen et al., 2018). Thus, necessitating practitioners to be aware of both the benefits and challenges of managing a Facebook brand page. Research has highlighted that benefits of Facebook as a marketing platform include better understanding consumers, maintaining a brand presence, receiving instantaneous feedback, and providing the ability to assess the consumer organization relationship status (Abeza et al., 2013; Achen et al., 2018; Thompson et al., 2016). That said, research has shown that most platforms' analytical setup, including Facebook's, make it hard to establish the information needed to confirm an interactive ongoing relationship has been established (Abeza et al., 2013; Abeza & O'Reilly, 2014; Waters & Walden, 2015). Consequently, while several benefits can be derived from social media use, it's also important to acknowledge that Facebook can also present challenges to sport marketing practitioners alongside these benefits.

Despite a vast uptake of social media in the corporate industry, as well as commercialized sport, it is still challenging to manage. Challenges of managing a Facebook brand page have been shown to include credibility and reliability, managing the impact of consumer-driven content, identifying offline consumers, allocating sufficient resources, and guaranteeing the *reach* of brand content (Thompson et al., 2016). Moreover, with large audience sizes, it is hard to manage consumer posts to large organization-owned pages, and it is difficult to ensure that fans will not set up their own pages to compensate for their passion or perceived lack of relevant information being posted by the organization (Abeza et al., 2013). The literature also outlines that management of such social media involves using relational keywords in posts, ensuring content is entertaining, informative, personalized, and with prior permission and brand association (Kwok & Yu, 2013). Lastly, the high frequency of posts that are overly commercialized should be avoided (Cho & Cheon, 2004).

Previous research has noted the difficulties administrators often face in quantifying or measuring performance. In Facebook-related literature, such performance measures include *reach*, *engagement*, and components of *engagement* on brand page posts (*likes*, *comments*, and *shares*). *Reach* as a measurement is in line with traditional digital advertising metrics, but it is also argued as being too transactional (Ballings et al., 2015). *Engagement* is widely considered a more appropriate

measurement of Facebook performance, as it is more relatable to a relationship marketing approach. Also, winning percentage, as well as *total network* size, is shown to influence the level of engagement for sports brand pages (Pronschinske et al., 2012). Both total *page reach* and *total page engagement* are influenced by the performance of posts with *likes*, *comments,* and *shares* currently positioned, by some, as the most important metrics to consider (Bonson & Ratkai, 2013).

Despite the growing body of research on Facebook as a marketing platform, much of the research focuses on measurements of *reach*, *engagement*, *likes*, *comments,* and *shares* taken at face value. The literature lacks investigation into quantifying performance in a manner that is contextual and comparable within Facebook. That is, when referring to the context, previous research has limited acknowledgment of a brand pages existence within, for example, a competition's popularity, win/loss records, and population of the home city. Consequently, there is no indicative way identified in the literature, perhaps except for Achen et al. (2017, 2018), to compare one page to another. Although current findings indicate how to improve on these performance measurements, there is no comparable data or system to confirm that a brand page is performing at an effective level. Furthermore, negative performance indicators are yet to be analyzed. Thus, we contend that there needs to be further investigation into establishing a contextual evaluation of a sports brand's performance on Facebook.

Moreover, much of the extant social media sport-related literature has largely focused on specific geographical locales (e.g., North America and parts of Europe) and those operating at the professional level (e.g., professional soccer leagues, North American major leagues). Few studies have examined sports organizations operating at lower levels. This presents a noteworthy gap. While they are not, arguably, as prominent and well-resourced as many of the organizations currently examined, many other sport organizations would also occupy this space, and thus there is relevance in understanding these issues in this context. This current research builds on the literature to contribute toward the understanding of Facebook brand page practice and measurement. For this research, four provincial rugby unions were approached to examine the perceived challenges and benefits of Facebook brand page administration. Specifically, this research sought to investigate:

1 What are the perceived challenges for Facebook brand page administrators?
2 Is total network size relatable to the performance of Facebook brand page reach and engagement?
3 Are proportional measures relatable to the performance of Facebook brand page reach and engagement?

Method

This research uses a prominent mixed-method case study design called concurrent triangulation (Creswell, 2013). Concurrent triangulation involves collecting both qualitative and quantitative data simultaneously. Data is then compared to

establish confirmation, disconfirmation, validation, or corroboration (Creswell, 2013). Creswell (2013) asserts that utilizing both quantitative and qualitative methods increases the level of triangulation that can be gained around a research problem. Triangulation is an important characteristic of mixed-method case study research (Yin, 2009).

Case Context

New Zealand's NPC was originally formalized in 1976 and has gone through several format changes in the last decade. In its current format, 14 provincial teams compete across two divisions. For this study, a convenience sample was used to select the participating teams, with four National Provincial Competition (NPC) teams making up the final research sample (henceforth referred to as P1-P4). Since the introduction of Facebook brand pages in 2010, all four have experienced mixed on-field success. Two teams were based in cities that also had Super Rugby franchises (a franchise-based professional rugby competition featuring teams from Australia, Argentina, Japan, New Zealand, and South Africa). In the context of New Zealand, provincial rugby unions are affiliated to a specific Super Rugby team based on geographical proximity and, in some cases, partial equity agreements. The NPC in its current format exists as a second-tier competition in New Zealand behind Super Rugby. With significantly more users than any other platform, it can be suggested that Facebook is by far the most prominent social media channel for rugby teams in New Zealand. At the time of the study, each provincial team's Facebook brand page had more followers than any other social media account they held, including Twitter and Instagram (see Table 8.1).

Data Collection

All four pages were run by a professional whose role was part of the marketing and/or public relations function. One of the co-authors was the brand page administrator for one of the teams as part of their role as Brand Manager. They were the sole person in charge of the teams' Facebook page. The importance

Table 8.1 Participating Team Social Media Presence

	Teams			
	P4	*P2*	*P1*	*P3*
Facebook	10,511	19,616	12,830	117,112
Instagram	3,597	3,545	5,617	7,315
Twitter	3,069	4,359	4,971	5,817
YouTube	53	73	25	1,595

of including this perspective is supported by Wall (2006), who maintains that rich data, personal experience, connection to a cultural context, and influence strengthen auto-ethnographic data collection. Questionnaires, containing a combination of closed and open-ended items, were completed by each page administrator from the participating provincial unions (other than the lead author) pre- and post-season. Closed items include simple "yes" and "no" answers, as well as Likert Scales. Open-ended questions were used to allow the respondents to reveal personal insight from their context, adding richness to the data (Tashakkori & Teddlie, 2003). An auto-ethnographic journal was also recorded by the lead author pre, during, and postseason. As Duncan (2004) outlines, the salient difference between an auto-ethnography and an ethnography is that the researcher is already an insider within the research context as opposed to trying to become an insider. For this research, observations were recorded in a journal format along with reflective writing and documentation of artifacts in the form of screenshots.

Secondary data were sourced from Facebook's analytical pages found in the brand page administrator consoles (henceforth referred to as Facebook Insights data; see Figure 8.1). Administrator access was granted to the lead researcher by all participating page administrators to facilitate the collection of analytical data. A constructed week sample was utilized to collect data from all four of the

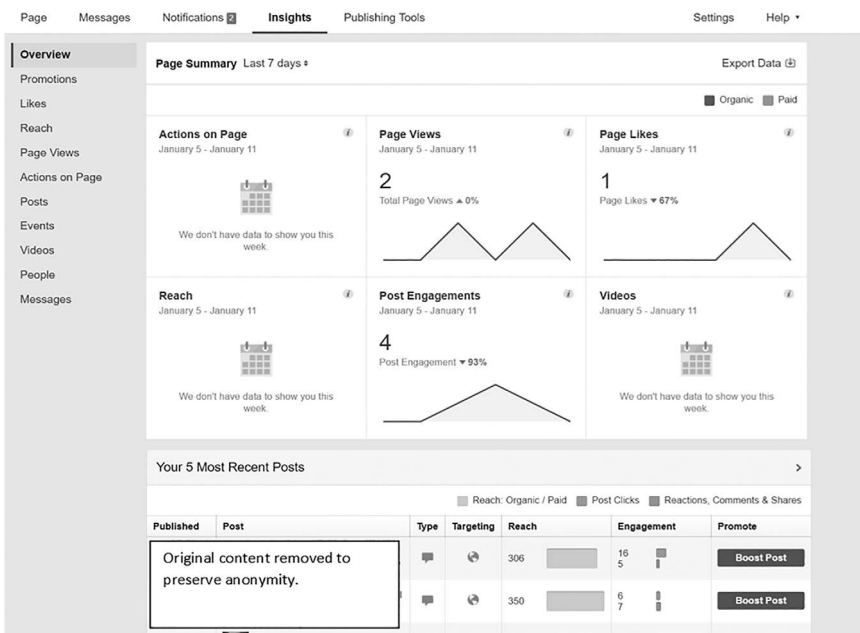

Figure 8.1 Facebook Insights as Displayed in the Brand Page Administrator Console.

participating team's Facebook brand pages. Stempel (1989) explains that constructed week samples see a variety of content on different days of the week as cyclical, whereby days are selected at random to represent a seven-day week over a defined period (Riffe et al., 2009). For this research, constructed week sampling was used to represent a seven-day week during the pre, regular and post-season periods. Both pre- and post-season data were randomly selected from a window of six weeks. Regular season data were randomly selected across the full ten-week window accounting for all ten rounds of the NPC.

Using Facebook's Insights, data was exported into an Excel spreadsheet. For each brand page, *total reach*, *engagement*, and *components of engagement* (e.g., *likes*, *comments* and *shares*) were recorded for each post. Additional insights were also recorded for each post including *date*, *day of the week*, *time posted*, *post type*, *post characters*, *content description* and when an applicable *number of hashtags*, *hashtags used*, *post clicks*, *photo views*, *clicks to play*, *link clicks*, *video views*, and *average view duration* of videos. Data for paid content were also recorded, if applicable, including *budget spent*, *paid reach*, *total paid actions*, *paid photo clicks*, and *paid links*. Negative user actions were also captured and included actions to *hide a post*, *report as spam*, *hide all posts,* and *unlike the page*. Negative actions were considered as they could provide important insight into consumer-organization relationship status as they may indicate disengagement and break down of the relationship marketing process among a consumer group. To ensure consistency, all posts were recorded at 10.00 pm (NZST) the same evening. In addition to individual post data, total page performance for the week was recorded on the Sunday of every week during the sample period at 10.00 pm. Data recorded also included *new page likes*, *total page likes*, *number of posts*, *total page reach*, *total reach on posts*, *total engagement*, *likes on content*, *comments on content*, *shares on content*, *post clicks*, *page ranking* as listed by Facebook and general notes about the content posted that week.

Data Analyses

A six-phase thematic analysis was used to analyze the data from both the questionnaires as well as the auto-ethnographic journal (Smith & Caddick, 2012). These six phases included (1) immersion in the collected data, (2) collating and coding the data, (3) identification of themes, (4) reviewing of themes, (5) refining the themes, and (6) creation of the research paper itself. Analytical Facebook Data from all four pages was also used to examine page reach and engagement before, during, and following the NPC season. The Facebook Insights quantitative data were analyzed by producing mean averages for each of the analytical measurements recorded. This was done for both the data collected from the constructed week sample for post-performance as well as the weekly total performance data taken for overall page performance. Averages were then compared at face value to determine how each of the participating brand pages performed when compared to the other. For this research, "face value" refers to Facebook data that has been

taken straight from Facebook Insights and not adjusted using any equations. The mean averages were then represented as a percentage of average *total page likes* for the entire collection period. The performance of the participating pages was then compared again to see if, and how, rankings differed when considering the proportional measurements.

Results and Discussion

Interestingly, prior experience among participants would suggest that social media and Facebook are now considered an established technology. Positioning Facebook as an established technology that solicits familiarity, awareness, and experience among professionals indicates a clear shift forward from Eagleman's (2013) earlier findings, where Facebook was viewed as an accepted, but emerging, communications tool among sports professionals. Participants identified innovation, accuracy, being thick-skinned or open to feedback and having a sense of humor as the preferred traits of a brand page administrator, which is, in part, consistent with Gillan (2009).

Facebook Benefits

Participants in this study positioned Facebook as their most important social media platform. Interestingly, this was largely based on audience size as opposed to any specific features intrinsic to Facebook itself, which appears to be counter to others' findings (Ballings et al., 2015; Thompson et al., 2016). Participants identified three key benefits of maintaining a Facebook brand presence for their respective teams and acknowledged that Facebook allowed for better knowledge of consumers, effective consumer engagement, and quicker evaluation of relationship status with consumers. These three benefits align with and are significant components of relationship marketing practice (Abeza et al., 2013). Specifically, for one team, Facebook has enabled the organization to gather knowledge on a variety of consumer's backgrounds as well encouraging the same consumers to repeat "basking in reflected glory" (BIRG) actions more frequently.

For another team, Facebook allows them to engage more effectively with consumers emphasizing being able to respond instantly. Within the context of relationship marketing, this is important as reducing the response times between enquiries has been found to increase the level of credibility and therefore trust of an organization (Gronroos, 1994). Moreover, such instantaneous feedback allows for a two-way, and therefore relational, dialog with consumers (Achen et al., 2017; 2018; Thompson et al., 2017). Another important benefit of using Facebook is the ability to collect qualitative market insight on the relational status with their consumers (Abeza et al., 2013), allowing the teams to make more informed relationship marketing decisions. All participants explained that Facebook allows them to establish the relationship status they have with their consumer group at large. For example, through

Facebook interactions, two teams now understand that their online consumers respond very negatively to the team losing and thus must ensure that their content remains honest and accurate so not to create greater despondence following a loss.

Facebook Challenges

Four key challenges were identified that were the most salient among participants: uncontrollable factors, maintaining credibility, guaranteeing *reach*, and resource allocation. Abeza et al. (2013) position uncontrollable factors as referring to user-managed pages. However, participants in the current study more readily cited core product inconsistency (i.e., losing games) as the most concerning factor that they could not control. Bee and Kahle (2006) suggest that unpredictability would lead to higher levels of "cutting off reflective failure" (CORF) behavior, and therefore outward demonstrations of brand loyalty would be less frequent.

Kotler et al. (2010) emphasize the ability of consumer-driven pages and content to impact credibility, whether it be positive or negative. However, participants in this study saw credibility as being influenced by their actions, or inaction, more so than the action of consumers. Specifically, participants expressed that commercially obligated content and posting relevant content in the off-season presented key challenges in maintaining credibility among the followers. Given the increasing importance of sponsorship revenue and the need to provide a return on investment to sponsors, this challenge is one that may become further exacerbated in the future and is something that page administrators will need to manage carefully.

Participants described maintaining the credibility of content by ensuring it is relevant to the core product as well as being honest about the core product performance, especially in defeat. In contrast to the current findings, Aydin (2016) positions credibility as largely being made up of the legitimacy of an information source. Yaakop et al. (2013), however, describes credibility as being influenced by the believability of content. Hence, utilizing honest relational language when posting about a poor performance could be considered best practice (Aydin, 2016; Yaakop et al., 2013). Therefore, as the participant's outline, reporting a result is important; however, being honest about how the team performed on route to the results is important to maintaining a credible relationship with consumers.

All participants alluded to the difficulty in guaranteeing *reach* and *engagement* on a post. Posts announcing winning results were suggested to consistently be the most successful. These views appear to support Bee and Kahle (2006) who suggested that successful teams were more likely to generate BIRG behavior among fans via social media if content remained focused on the success of the core product. Furthermore, P4 highlighted the challenge of remaining relevant and generating interest in the competitions nine-month off-season. Gensler et al.

(2013) describe brand relevancy as being strongest when communications are easily associated with the core product. All participants reported some level of spending on Facebook posts to help guarantee a desired level of *engagement* and *reach*. However, the proportion of P4's marketing budget allocated to social media only equated to 0.0055%, while P3 only spent $10 (NZD) on boosting Facebook content, despite overseeing the page with the highest number of followers. Despite industry-wide recommendations for increased spending on social media (Abeza et al., 2013), for these teams, spending remains minimal (i.e., less than 1% of each teams' marketing budget).

With the case of P4, a boosted post recorded in the sample only engaged six more people than the average for purely organic content posted on the page. Here, "organic" refers to Facebook activity that has not been paid for by the brand page. Such findings appear to align with the sentiment of Lee et al. (2014), who explain that while utilizing paid posts is encouraged by some, increasing spending on Facebook paid media does not guarantee significant increases in *reach* and *engagement*. While it is not clear what content will work for different organizations, it proposed that identifying and utilizing content that solicits high levels of *organic reach* and *engagement* should be the priority before considering paid media (Lee et al., 2014). Lastly, all participants highlighted a lack of time and human resources as a challenge in maintaining their Facebook pages. Responding to *comments* and direct messages to the page is acknowledged as the biggest consumer of time for two of the pages. P2 also cited allocating their brand page administration time to the P2 Super Rugby Team brand page as presenting a major challenge during the post and off-season periods. This finding is consistent with prior studies that argue the amount of time dedicated to Facebook brand page management is the main resource-based challenge (Abeza et al., 2013).

Facebook Administration

The participating page managers were cognizant of the need to ensure that page content is more conversational than transactional, and that content is interactive. As argued earlier, credibility was described as important in practice, particularly when a team suffered a defeat. Participants sought credibility through accurate and informative information that is delivered in a tone that suits the context of the post and the organization itself. P1 and P2 described the need to minimize commercial content frequency to avoid negatively impacting their page credibility. In the context of the P4 page, commercially obligated content was posted in September in line with an NZ rugby promotion for the NPC. This content featured transactional words that included grab, prize, and competition. However, the *total engagement* on the post was below the Page's average for the entire collection period. This finding is consistent with findings from Kwok and Yu (2013), who found that relational language and structure of content could improve engagement while transactional words such as "grab" and "competition" could reduce performance.

Furthermore, participants describe that interactive content, such as photos and videos, are the most successful to use on Facebook. The data from the constructed week sample of Facebook posts appear to support the participants' position here. On average, posts that contained either a photo or a video engaged more consumers than posts that did not. The data also show that average negative post actions coincide with *total network size*, with P4 receiving the least and P3 the most on measures related to *hide post* and *unlike the page*. However, with regard to *hide all posts,* P1 averaged more *hide all post* actions (n = 0.58) than P2 (n = 0.50) despite having a smaller *total network size*. P1 posted the most for the entire collection period (n = 53). This outcome indicates that posting too often may hurt performance. Such findings appear to align with Cho and Cheon's (2004) study that found advertising avoidance is more prominent when cluttering has occurred for the consumer. Thus, posting too frequently on a Facebook page can clutter and interrupt a consumer's newsfeed, increasing the chance they will avoid or un-follow content from that organization. Additionally, Facebook's EdgeRank algorithm pushes content to users who do not follow an organization's page but are "friends" with someone who does. Therefore, there is a high chance that cluttering could also have a negative impact on other consumers' opinions toward a brand due to the lack of prior association (Unal et al., 2011). Acknowledging and recording negative *engagement* actions could lead to ensuring an ideal frequency of posts is established for a brand page. Thus, page administrators must consider both positive and negative measures.

Facebook Performance: Reach

P3 averaged the highest *total reach* for the entire collection period (n = 140,276), while P2 averaged the least (n = 46,575). On average, the participating pages reached 371.50% more people than their *total network size*. The performance of the participating brand pages is exponentially more than what is suggested as expected levels of *reach* in the literature. For example, Aydin (2016) noted that brand pages could expect *reach* to continue to diminish moving forward. Both Manson (2014) and DeMers (2015) explain that brand pages could expect to *reach* 16.00% of their total Facebook followers in 2012. However, as of 2015, averages could be expected to be as low as 8.00% for pages with less than 50,000 followers due to adjustments in Facebook's EdgeRank algorithm (DeMers, 2015; Manson, 2014). Ballings et al. (2015) found that the greater network size, the greater *reach* could be expected to be. Ballings et al. (2015) argued that *reach* was the most relevant analytical measure to marketing practitioners using Facebook. Based on this rationale, one would expect P2, who averaged the second most followers (n = 18,081.22), to also average the second-highest *total reach* for the entire period. The results, however, contrast with this, with P4 and P1 averaging better *total reach* than P2 despite having fewer followers. It could be suggested that in contrast to the other participants, P2 is underperforming. Conversely, it could be

suggested that both P4 and P1 are exceeding expectations. The contradictory results of *total reach* taken at face value would suggest that it is not the most accurate means by which to measure performance as well as make comparisons of Facebook brand pages.

Facebook Performance: Engagement

Total weekly *engagement* varied across all three collection periods. P3 averaged the most *total page engagement* for the entire collection period (n = 15,059.61). The regular season saw the highest level of *engagement* for all participants. In a similar fashion to *reach, total network size* did not necessarily correlate to *total engagement* as P2 averaged the least *engagement* for the entire collection period (n = 4,569.22). Conversely, winning percentage in the regular season did not correlate with rankings by *total engagement*. During the regular-season, teams averaged the highest levels of *total page engagement*. During the regular season on average 46.20%, more people were engaged than the pre-season and off-season periods. This point is important as Pronschinske et al. (2012) found that the authenticity of brand page content was associated with levels of *engagement*. Therefore, the regular season is an important time for generating *engagement*.

In contrast to previous research (Ballings et al., 2015; Pronschinske et al., 2012), as with *reach, total network size* did not correlate to *total engagement* for the entire collection period. Of relevance is the fact that P2 has the second-highest number of followers but averaged the least *engagement* for the entire collection period. This contradicts Ballings et al.'s (2015) assertion that network size would result in increased *reach*. While Pronschinske et al. (2012) found that higher levels of *engagement* were significantly associated with the *total network size*, they also found that frequency and quality of the content was an important factor in generating *engagement* and in turn network size. However, the discrepancy between the findings of this current study and the literature would suggest that the actual content plays a greater role and that network size alone cannot generate *reach* and/or *engagement* (DeMers, 2015; Manson, 2014).

Facebook Performance: Posts

Post-performance rankings were consistent in terms of *reach* and *engagement* when compared to *total page reach* and *engagement*. On average P3 had the most *reach* (n = 17,740.81) and *engagement* (n = 554.71) across all thee collection periods on individual posts. However, performance did vary across components of *engagement*; *likes*, *comments*, *shares*. Once again, in contrast to Ballings et al. (2015), *reach on posts* was not always directly relatable to *total network size*. Three of the four pages' average *reach* on individual posts did rank in the same manner as their *total network size* (e.g., P3, P1, P4). However, P2 averaged the lowest *reach* on individual posts despite having the second largest network size and best on-field

performance for the collection period. This would suggest that P2's brand page was either under-performing or, contrary to previous findings, *post reach* is not significantly relatable to *total network size* or on-field performance (Ballings et al., 2015; Pronschinske et al., 2012).

Similar to *post-reach*, *post-engagement* did not appear to be directly relatable to network size. Again, three of the four participating pages' *engagement* did rank per their *total network size* (e.g., P3, P1, P4). However, once again, P2 averaged the least *engagement* on posts for the entire collection period. This would once again suggest P2 is either underperforming compared to other participating pages in terms of engaging their audience and/or winning is not necessarily linked to *post engagement* (Ballings et al., 2015; Pronschinske et al., 2012). On an average post, *engagement* was broken down as 79.00% from *likes*, 10.16% from *comments*, and 3.63% of *shares*, with the remaining 7.00% attributed to other post actions (e.g., *link clicks*, *photo views*, and *post clicks*). Bonsón and Ratkai (2013) found that brand pages could expect *likes* to make up 90.80% of *engagement* followed by *comments* ($n = 7.45\%$) followed by *shares* ($n = 1.76\%$). With regards to *comments*, all participants exceeded Bonsón and Ratkai's (2013) findings by more than 10.00%, with only P3 not exceeding the expected level of *comments* ($n = 6.38\%$). All participants exceeded Bonsón and Ratkai's (2013) findings with regards to *shares* on average by 1.87%, which is noteworthy given that Bonsón and Ratkai (2013) state that *shares* demonstrate the strongest interaction with a brand. The level of performance on *comments* and *shares* suggests that a two-way relationship does exist between participating brand pages and their consumers.

Proportional Performance: Reach

Considering *reach* as a proportion of *total network size* generated a shift in page performance rankings compared to face value performance. For the entire collection period P4 reached an audience 549.00% the size of their total network, followed by P1 ($n = 478.00\%$), P2 ($n = 260.00\%$) and P3 ($n = 199.00\%$). During the pre-season and post-season collection periods, P2 achieved the lowest proportional ranking for *reach*. During the regular season and for the entire collection period, average proportional rankings of *page reach* match *total network size* rankings in reverse (e.g., P4, P1, P2, P3). Proportional rankings of *page reach* being a reverse of *total network size* could be expected. Therefore, as P4 had the smallest *total network size* and, in turn, the best proportional ranking for *reach* during all three collection periods, it would initially suggest that proportional ranking of *reach* is not necessarily an effective indicator of performance.

However, during both the pre-season and post-season periods, P2 had the lowest *proportional reach*. During the pre-season period, P2's most recent core product performance was the regular season campaign that saw them relegated from the Premiership division with a 10.00% winning record. During the current regular season, P2 produced a 60.00% winning record, the best of the

participating teams. The post-season, however, saw them lose the Championship final and, in turn, their chance to be promoted back to the Premiership division. Furthermore, during the post and off-season periods, P2 shifts their time and human resource focus to an SR brand page, reducing the amount of content posted on the P2 NPC page. Hence, P2's reduction in *proportional reach* during the pre-season and post-season periods could be argued to reflect despondence and disconnection with the core product among consumers during these periods (Bee & Kahle, 2006). P2's *proportional reach* performance during each collection period is also reflected by the *total reach* data. This would once again indicate that in contrast to Ballings et al. (2015), network size can correlate to increased *reach,* but it does not guarantee *reach*. Therefore, representing *reach* proportionally produces more comparable performance rankings by factoring in *total network size* as a component of *reach* as opposed to the determining factor that produces *reach*.

Proportional Performance: Engagement

Representing *engagement* as a proportion of *total network size* produced different performance rankings across the pre-season, regular-season and post-season collection periods compared to *engagement* taken at face value. During the pre-season period P1 engaged the highest proportion of their total network (n = 77.00%) followed by P4 (n = 63.00%), P3 (n = 22.00%) and P2 (n = 13.00%). During the regular season, P1 once again had the highest *proportional engagement* (n = 75.00%) followed by P4 (n = 66.00%), P2 (n = 45.00%) and P3 (n = 29.00%). During the post-season P4 had the highest *proportional engagement* (n = 41.00%) followed by P1 (n = 38.00%), P3 (n = 10.00%) and P2 (n = 6.00%). Pre-season *proportional engagement* potentially reflects the current relationship between the brand pages and their respective consumer groups. Both P1 and P4 were approaching the upcoming season following division wins the previous year.

During the post-season collection period, P2's *proportional engagement* decreased by 39.00% from 45.00% to 6.00%, the largest decrease of all four participating brand pages. This outcome could be a direct reflection of P2's page administrator shifting efforts to another brand page immediately following the NPC season's conclusion. Also notable is the *engagement* decreases experienced by the other three participating pages, which ranged from 19.00% to 38.00%. The decreases in *proportional engagement* would suggest that all the participating brand pages struggle with disconnection from the core product during the post-season (Bee & Kahle, 2006; Gensler et al., 2013; Waters & Walden, 2015).

Proportional Performance: Posts

P1 proportionally averaged the highest *reach* on individual posts (n = 45.99%) collected in the constructed week sample. P2 recorded the lowest *proportional reach* (n = 16.16%). P1 and P2's proportional ranking contrasts with *reach* on

posts taken at face value. Furthermore, their ranking does not coincide with their ranking according to *total network size*, unlike *total proportional page reach*. Based on Ballings et al.'s (2015) findings, one might expect proportional rankings to match *total network size* rankings in reverse (e.g., P4, P1, P2, P3). Deviations from this could therefore represent above or below average performance when compared to other brand pages. For example, P2 would have been expected to have the third-highest *proportional post-reach* ranking given that they have the second-largest *total network size*. P2 ranking fourth could be argued to be a sign of the page underperforming within the context of the other participating brand pages. Therefore, *post-reach* presented as a proportion of *total network size* could be argued to be a comparable insight as to how brand pages are performing against one and other.

P4 averaged the highest *proportional engagement* on individual posts (n = 1.91%), while P3 averaged the lowest (n = 0.79). *Proportional post engagement* averages see the pages ranked according to *total network size* in reverse (e.g., P4, P1, P2, P3), suggesting it may be a predictable and therefore unnecessary performance ranking. However, post *comments* and post *shares* represented as a proportion of *total network size* are not comparable to page ranking according to network size. P1 proportionally averaged the most *comments* per post (n = 0.17%). P2 proportionally averaged the most *shares* per post (n = 0.07%) followed by P1 (n = 0.56%), P4 (n = 0.04%) and P3 (n = 0.02%). Considering the recommendations of Bonsón and Ratkai (2013), it can be suggested that P1's content is better at producing higher levels of commitment from their consumer group compared to the other brand pages. Conversely, by generating proportionally more *shares* than the other brand pages, P2 could be argued to produce content that is more viral and that generates higher levels of BIRG among their consumer group (Bonsón & Ratkai, 2013). These contrasting results indicate a further challenge in determining how effective a page is performing overall. Therefore, effectiveness may ultimately be a result of what an organization chooses to be its key performance indicator on Facebook.

P1 proportionally averaged the highest content-specific measures for *post clicks* (n = 7.02%), *clicks to play* (n = 2.82%), *link clicks* (n = 1.24%) and *video views* (n = 17.88%). P4 proportionally averaged the highest *photo views* per post (n = 2.29%). P2 proportionally averaged the lowest on each content-specific measure except *link clicks* which sees them rank third. These results would suggest that P1's content encourages more frequent interaction than other participating pages (Yaakop et al., 2013). Interactivity is also considered to be a strong indicator that content is effectively engaging consumers. As Yaakop et al. (2013) note, high levels of interactivity lead to higher levels of commitment and trust between the consumer and the organization, helping to ensure the consumer is more open to commercialized content. Conversely, it could be suggested that P4's photos generate the highest level of interactivity among consumers while P2's content does not stimulate high levels of interaction at all (Yaakop et al., 2013). Proportional representations of content-specific measures, therefore,

provide context to brand comparable page performance as well as insights into interactivity.

P1 proportionally averaged the highest levels of negative consumer actions for both "*hide post*" (*n* = 0.0127%) and "*hide all posts*" (*n* = 0.005%). Only P3 and P2 had "*unlike page*" actions during the sample period. P1 posted the most frequently of the four participating pages during the constructed week sample. Cho and Cheon (2004) state that the high frequency of branded content can lead to increased levels of avoidance among a consumer group. Hence, P1's negative action data could be the result of posting too frequently. Representing negative consumer actions as a proportion of total *likes* provides context around P1's data. Should negative actions be represented at purely face value, P1 would have averaged the third highest "*hide post*" actions and the second-highest "*hide all posts*", potentially leading one to conclude that post frequency was not an important consideration.

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Chapter 9

Analyzing Sport Fan Facebook Pages

Influences of Post Characteristics and Brand Attributes on Fan Engagement

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Introduction

Social media use is a global phenomenon, with 2.95 billion users worldwide in 2019 (Statista, 2020a). The most popular social networks usually display a large number of user accounts or strong user engagement. For example, Facebook was the first social network to surpass 1 billion monthly active users (Statista, 2020b). For professional sport organizations, key stakeholders such as sport teams, leagues, athletes, events, and fans are using social media (Abeza et al., 2017) for multiple purposes such as athlete endorsements, promotions, news updates, relationship marketing (Abeza et al., 2019), brand promotion, and most importantly, interacting and communicating with fan bases (Anagnostopoulos et al., 2018; Filo et al., 2015).

When operating social media pages, information is shared in the form of posts, and users can see and engage with posts by liking, commenting, and sharing. Posting types such as status updates, photos, videos, and links are likely to catch users' attention (Luarn et al., 2015). Various post types can represent different levels of media richness, commonly referred to as the vividness of online content (Coyle & Thorson, 2001). Posting types can also facilitate varying levels of interactivity, referring to the degree to which users can influence the form and content of the media environment (Liu & Shrum, 2002). These two post characteristics, namely vividness, and interactivity, can potentially enhance online engagement (de Vries et al., 2012). Indeed, research findings associated with sport settings (Gyulai, 2016; Osokin, 2019) and non-sport settings (Cvijikj & Michahelles, 2013; de Vries et al., 2012; Luarn et al., 2015; Tafesse, 2015) have indicated that different types of posts and post characteristics can influence the effectiveness of fan engagement (i.e., likes, comments, and shares).

Professional sport teams have widely adopted social media platforms as an effective branding technique to maintain and promote their brand and communicate with their fan bases (Anagnostopoulos et al., 2018). Researchers have studied the use of diverse social media to build team brand associations, such as Twitter (Parganas et al., 2015) and Instagram (Anagnostopoulos et al., 2018), and

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have found that brand attributes as one major aspect of the brand association are significantly related to the engagement of online followers. Despite such efforts, an examination of fan engagement of social media with brand attributes without considering post characteristics seems unsound because post characteristics are equally vital as they can help capture social media users' attention (Fennis & Stroebe, 2010) and strengthen their level of engagement (Gunawan & Huarng, 2015; O'Reilly, 2015).

The purpose of this study was to examine the impact of post characteristics (vividness and interactivity) and brand attributes (product-related and non-product-related) would affect sport fans' engagement (likes, comments, and shares) with two professional baseball teams' Facebook pages (Lamigo Monkeys and Fubon Guardians) that were created and managed by the fans themselves. These teams are a part of the Chinese Professional Baseball League (CPBL) of Taiwan. Instead of focusing on team Facebook pages, the present study examined two fan-created Facebook pages relating to CPBL. Given the fact that attendees of the CPBL games have not increased significantly over the past ten years (CPBL, 2020), an examination of fan-created social media may shed some light on a unique perspective for the league and team managers to genuinely understand their customers and develop effective marketing plans. Drawing theoretical insights from post characteristics (Cvijikj & Michahelles, 2013; de Vries et al., 2012) and sport team-branding models (Gladden & Funk, 2002; Bauer, Stokburger-Sauer, & Exler, 2008), the present study aimed to examine (a) how different post characteristics would affect fans' engagement (i.e., like, comment, and share) with two professional baseball teams' Facebook pages that were created and managed by their fans and (b) how brand attributes (product-related and non-product-related attributes) would influence fans' engagement with Facebook while controlling for season periods (pre-season, regular season, and post-season).

Review of Literature

Post Characteristics: Vividness and Interactivity

Social media are considered an extension of online advertising. Thus, posts need special characteristics or features that make them salient from the background and able to capture customers' attention (Fennis & Stroebe, 2010, p. 51). In particular, post vividness and post interactivity are two key characteristics affecting consumer engagement with posts on social media (Luarn et al., 2015). Vividness is the use of different ways to stimulate the senses, can be distinguished by the richness of the sensory stimuli (Coyle & Thorson, 2001), and can lead to more positive attitudes toward the brand post (de Vries et al., 2012). Media types, such as text, images, and videos, represent different levels of media richness (Luarn et al., 2015). The degree of vividness differs in the way that it stimulates various senses (Coyle & Thorson, 2001). For example, a picture is more vivid than textual information; similarly, a video is more vivid than a picture as the former enables

more sensory stimuli (i.e., hearing) than just sight. Research shows that highly vivid banners can effectively stimulate consumers' intention to click (Cho, 1999). Recent studies have also revealed that consumers have a better response to vivid posts on social media (de Vries et al., 2012; Osokin, 2019).

Interactivity is defined as "the degree to which two or more communication parties can act on each other, on the communication medium, and on the messages and the degree to which such influences are synchronized" (Liu & Shrum, 2002, p. 54). It is also characterized by communications between companies and customers, and among customers themselves (Goldfarb & Tucker, 2011). De Vires et al. (2012) identified low (link to a website and vote), medium (call to act and contest), and high (question and quiz) levels of interactivity of post characteristics of brand fan pages on a social networking site. Liu et al. (2017) examined post interactivity with low to high levels, including statements, links to a new page, and encouraging fans to take action on the Facebook page of convenience stores in Taiwan. Post characteristics differ in terms of the degree of interactivity and can stimulate consumers to react. Numerous previous studies have displayed that different types of posts, such as videos, can strengthen engagement (Gunawan & Huarng, 2015; O'Reilly, 2015; Osokin, 2019). Many scholars have studied engagement issues in social media use (Cvijikj & Michahelles, 2013; de Vries et al., 2012; Kwok & Yu, 2013; Osokin, 2019; Santos et al., 2019), confirming that different message characteristics can influence the effectiveness of brand posts. Hence, this study extends previous theoretical perspectives on advertising from brand fan pages.

Malhotra et al. (2013) recommended that posting photos can elicit the most likes. Tafesse (2015) explored five top-selling motorized brands in the United Kingdom and suggested that vivid brand posts have a critical positive effect on the number of shares, whereas interactive brand posts have a critical negative effect on the number of likes and shares. Gyulai (2016) found that supporters were actively responsive to the posts with images and videos on the USA Wrestling Facebook page. What is more, the study also indicated that sports fans tend to interact with the posts, which encourages them to do something such as sharing their opinions. Liu et al. (2017) examined the effects of social media characteristics on customer engagement with the Facebook pages of convenience stores in Taiwan and found that the higher the level of vividness and interactivity of a brand post, the more the popular it would be. Osokin (2019) analyzed European football and discovered that images and videos have a positive effect on the number of post likes. Santos et al. (2019) displayed that teams should create interactive opportunities to endorse fans' co-creation behaviors. As a result, we posit the following hypotheses:

H_1: The higher the level of vividness of a brand post, the more popular the brand post.

H_2: The higher the level of interactivity of a brand post, the more popular the brand post.

Brand Attributes: Product-Related and Non-Product-Related

Brand attributes, as a part of the brand association categories (i.e., attributes, benefits, and attitudes) (Keller, 1993), are the focus of the present study. Keller (1993) distinguished two types of attributes: product-related and non-product-related. The former refers to those necessary for performing the primary product or service function sought by consumers and the latter denotes external aspects of the product or service that relates to its purchase or consumption, although it does not relate directly to the product performance or service (Parganas et al., 2015). In the sport context, Gladden and Funk (2002) firstly developed the Team Association Model (TAM), consisting of 16 brand association aspects that were divided into product-related attributes (i.e., success, star player, head coach, and team management), non-product-related attributes (i.e., logo, stadium, tradition, and product delivery), benefits, and attitudes. Bauer et al. (2008) modified the TAM into product-related attributes (i.e., success, star player, head coach, and team performance), non-product-related attributes (i.e., management, logo, stadium, history and tradition, club culture and values, fans, sponsor, and regional provenance), benefits, and attitudes. They applied the concept to the professional football setting. Building upon Gladden and Funk (2002) and Bauer et al. (2008), Parganas et al. (2015) examined brand attributes by using product-related (i.e., team success, star player, and head coach) and non-product-related (i.e., brand mark, management, club's history and tradition, club's culture and values, events' image, sponsor, fans, and stadium) aspects to analyze the Twitter page of a professional football club. Recently, Anagnostopoulos et al. (2018) also adopted Parganas et al.'s (2015) analytical model to study Instagram photos of two football teams from the English Premier League.

Given the product-related and non-product-related attributes that are conceptually and empirically important, which are connected with different social media analyses in professional sports contexts, they were incorporated and examined in the present study. Product-related attributes represent those factors that contribute to the performance of the team, such as success, star player, head coach, and management (Gladden & Funk, 2001, 2002). In this study, we adopt a classification modified from that of Gladden and Funk, defining success, star player, head coach, team (members), and team performance (team play) as product-related attributes. These attributes can influence consumption behavior (Gladden & Funk, 2002; Kaynak et al., 2008). Bauer et al. (2008) demonstrated that non-product-related attributes include such aspects as management, logo and club colors, stadium, club history and tradition, club culture and values, fans, sponsor or owner, and regional provenance.

Empirically, Watanabe et al. (2015) found that team performance is directly significant to online engagement rates. Parganas et al. (2015) analyzed the use of Twitter by a professional football organization to understand brand attributes and their relationships to engagement features (reply, retweet, favorite)and found that brand associations' communication was transferred on social media with varying

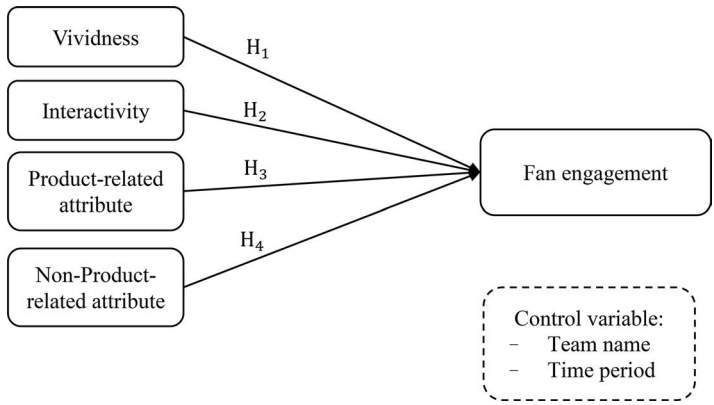

Figure 9.1 The Hypothesized Conceptual Framework.

degrees of fan interactions. In particular, fans responded more often to product-related attributes than to non-product-related attributes. Anagnostopoulos et al. (2018) examined how professional team sport organizations used Instagram for branding and influenced Instagram followers' reactions. The results showed that product-related attributes were used more often than non-product-related attributes and encouraged greater engagement from the followers. Santos et al. (2019) revealed that sharing team standings with others on match days or using team products may increase the level of fan engagement. As a result, we posit the following hypotheses (Figure 9.1):

H_3: The more a brand post is about product-related attributes, the more popular the brand post.
H_4: The more a brand post is about non-product-related attributes, the less popular the brand post.

Method

Three types of fan engagement behaviors were measured: numbers of likes, comments, and shares (de Vries et al., 2012). The specific post characteristics that reflect low, medium, and high vividness and interactivity are reported in Table 9.1. Post vividness was categorized into three different levels (low, medium, and high) (de Vries et al., 2012), and post interactivity was categorized into two levels (low and high) (Cvijikj & Michahelles, 2013). No vividness and low interactivity were used as base categories in the data analyses. Time period (Pargnas et al., 2015) and team name (Anagnostopoulos et al., 2018) were two control variables. Post characteristics and content were analyzed over the time periods selected based on the professional league's schedule: pre-season (i.e., January and February), regular season (i.e., March to October), and post-season (i.e., November and December) (Li et al., 2019).

Table 9.1 Operationalization of Vivid and Interactive Post Characteristics

Variable	*Reference*	*Coding*
Vividness	The richness of a brand post's formal features (de Vries et al., 2012)	Low: photo (images) Medium: event (announces an upcoming event on the page) High: video (mainly from YouTube)
Interactivity	The message content has different levels of interactivity (Cvijikj & Michahelles, 2013)	Low: text (sentences without photo, link, and video) High: link (mainly to news sites or blogs)

Data Collection

There are four teams in the CPBL, namely the Lamigo Monkeys, the Fubon Guardians, the Chinatrust Brothers, and the UniLions. However, the Chinatrust Brothers and the UniLions groups are closed groups whose Facebook pages could not be accessed. As a result, the participants in this study were only fans of the Lamigo Monkeys and the Fubon Guardians. The data were retrieved on March 20, 2019. Online information is constantly updated and removed. Thus, we targeted posts published between January 1 and December 31, 2017. There were a total of 3,879 posts from 17,469 members of the Fubon Guardians' group, and a total of 924 posts were collected from 9,448 members of the Lamigo Monkeys' group.

Data Analyses

Content analysis was employed as the methodological approach. After reviewing the literature on content analysis coding processes, we employed a content analysis where one of the authors coded the initial social media content sample for analysis and then a second independent coder performed the same coding to check for reliability (Potter & Levine-Donnerstein, 1999). The Kappa statistical analysis method was adopted to evaluate the inter-coder consistency. Disagreements were resolved through consensus. The Kappa coefficient in the current study is 0.94, which is above 0.8, indicating a high degree of reliability (Watson & Petrie, 2010). Multiple regression was used to examine the effect between post characteristics, brand attributes, and fan engagement. We view the Lamigo Monkeys, post-season, the text, combination (i.e., product and non-product attribute) as the baseline in the dummy variable. The three dependent variables (number of likes, number of comments, and number of shares) were skewed in their distributions in the data. Thus, the log transformation was first conducted in the analyses. Table 9.2 lists the categories and variables.

Results

A total of 924 posts were collected from 9,448 members of the Lamigo Monkeys' group; the average number of likes per post was 97.03 (SD = 2.77), the average number of comments per post was 13.05 (SD = 0.76), and the average number of

Table 9.2 List of Categories and Variables

Category	*Variables*
Type of communication	*Photo, video, text, link, and event*
Brand attributes (Bauer et al., 2008; Gladden & Funk, 2002)	*Product-related*: star player (individual athlete), sport (rules and requirements, teams; not specific athletes), team/game (focus on results from team sports); team/nongame (about the national teams but no results) *Non-product-related*: other people (fans; no star player), sport issue (tickets, official schedule, logo, clothes colors, stadium, sponsor or owner, location of team) *Combination*: both product- and non-product factors.

shares per post was 0.5 (SD = 0.04). There was a total of 3,879 posts from 17,469 members of the Fubon Guardians' group; the average number of likes per post was 225.25 (SD = 3.20), the average number of comments per post was 30.38 (SD = 1.68), and the average number of shares per post was 0.93 (SD = 0.03). In the Lamigo Monkeys' group, on average, about 58.77% of the posts contained vivid characteristics, and about 41.23% contained interactive characteristics. In the Fubon Guardians' group, about 35.96% of the posts contained vivid characteristics, and about 64.04% contained interactive characteristics (Table 9.3).

Table 9.4 presents the communication types over time periods. Specifically, the photo was the most popular among vivid fan post characteristics, and the link was the most popular among interactive fan post characteristics. The event of communication type was less used among vivid fan post characteristics. Because these characteristics did not show much variation, we decided to exclude them from further analysis. The two groups had a lower utilization of Facebook from

Table 9.3 Descriptive Statistics of Explanatory Variables

Variable	*Coding*	*No. of Post*	*Percentage (%)*
Lamigo Monkeys			
Vividness	Low: photo	395	42.75
	Medium: event	1	0.11
	High: video	147	15.91
Interactivity	Low: text	114	12.34
	High: link	267	28.90
	Total	924	100
Fubon Guardians			
Vividness	Low: photo	837	21.58
	Medium: event	6	0.15
	High: video	552	14.23
Interactivity	Low: text	362	9.33
	High: link	2122	54.70
	Total	3879	100

Table 9.4 Post Type Over Time Periods

Time period	*Photo*	*Video*	*Text*	*Link*	*Event*
Lamigo Monkeys					
Pre-season	10	1	1	21	0
Regular season	79	23	11	29	0
Post-season	51	22	17	26	0
Total	140	46	29	76	0
Fubon Guardians					
Pre-season	30	11	2	158	0
Regular season	86	73	55	223	0
Post-season	69	32	14	176	1
Total	185	116	71	557	1

December to February. Post characteristics and content were analyzed over the time periods selected based on the professional league's schedule: pre-season (i.e., January and February), regular season (i.e., March to October), and post-season (i.e., November and December).

Table 9.5 displays that there was no difference between post types and teams in the pre-season period ($\chi^2 = 6.00$, $p > .05$). Both of them utilized link posts. During the regular season, the chi-square test revealed a significant difference between post types and teams ($\chi^2 = 73.90$, $p < .01$). Lamigo Monkeys' followers preferred photos (55.6%), followed by links (20.4%) and videos (16.2%). Fubon Guardians' followers prefer links (51%), followed by photos (19.7%) and videos (16.7%) (Table 9.6). During the post-season period, post types were significantly related to teams ($\chi^2 = 50.28$, $p < .01$). Lamigo Monkeys' followers preferred photos (44%), followed by links (22.4%) and videos (14.7%). Fubon Guardians' followers preferred links (60.5%), followed by photos (23.7%) and videos (11%) (Table 9.6).

Table 9.5 Chi-Square Test Results of Time Period by Team

Test	*Variable*	χ^2	*Df*	*p*
	Time period			
Pearson Chi-Square	Pre-season	6.00	3	.11
	Regular season	73.90	3	.00
	Post season	50.28	3	.00
	Pre-season	.015	—	.02
Goodman and Kruskal's Tau	Regular season	.061	—	.00
	Post season	.064	—	.00
	Team			
Pearson Chi-Square	Lamigo Monkeys	33.427	6	.00
	Fubon Guardians	65.424	6	.00
Goodman and Kruskal's Tau	Lamigo Monkeys	.044	—	.00
	Fubon Guardians	.029	—	.00

Table 9.6 The Results of Team*Post Type*Time Period

Time Period	*Team*	*Photo*	*Video*	*Text*	*link*
Pre-season	LM	30.3%	n < 5	n < 5	63.6%
	FG	14.9%	5.5%	n < 5	78.6%
Regular season	LM	55.6%	16.2%	7.7%	20.4%
	FG	19.7%	16.7%	12.6%	51.0%
Post-season	LM	44.0%	19.0%	14.7%	22.4%
	FG	23.7%	11.0%	4.8%	60.5%

Note: LM: Lamigo Monkeys; FG: Fubon Guardians; % within the team.

When using time period as the segmentation variable, the post type was significantly related to the team in the pre-season (Tau = .015, $p < .05$), the regular-season (Tau = .061, $p < .01$) and the post-season (Tau = .064, $p < .01$) periods. In terms of time period, the strength of association between post type and team in order was post-season, regular season, pre-season. When using the team as the segmentation variable, post type was significantly related to time periods for Lamigo Monkeys (Tau = .044, $p < .01$) and Fubon Guardians (Tau = .029, $p < .01$). In terms of the team, Lamigo Monkeys had a higher relation to post type and time (Table 9.5). In summary, links were the predominant communication type used in the pre-season for both fan groups, whereas Lamigo Monkeys' fans utilized photos, and Fubon Guardians' fans utilized links the most during the regular season and post-season.

Table 9.7 displays the coding results by category of Facebook posts. Photos are the prevalent communication type used when discussing team/game and sport

Table 9.7 Brand Attributes by Post Type (by Number)

	Product-Related			*Non-Product-Related*		
Post Type	*Star Player*	*Sport*	*Team/ Game*	*Team/ Non-Game*	*Other People*	*Sport Issues*
Lamigo Monkeys						
Photo	35	13	54	11	9	13
Event	0	0	0	0	0	0
Video	13	1	22	1	7	1
Text	2	7	13	0	0	7
Link	48	5	42	1	4	5
Total	98	26	131	13	20	26
Fubon Guardians						
Photo	86	6	63	12	26	6
Event	0	0	1	0	0	0
Video	54	2	35	5	27	2
Text	18	9	30	6	8	7
Link	354	45	248	10	95	41
Total	512	62	377	33	156	56

issues in the Lamigo Monkeys' group. Links are the main communication type used when referring to a star player in the Lamigo Monkeys' group. Nonetheless, links are the predominant communication type used when discussing star players, team/games, and other people in the Fubon Guardians' group.

The largest number of posts was published in October in the Lamigo Monkeys' group when the Taiwan Series was held, whereas the largest number of posts was published in May in the Fubon Guardians' group. These findings further indicate that the post content was related to brand star players since spring training was held during the pre-season in both groups. During the regular season (i.e., October) and post-season (i.e., November), the most frequently discussed issue was teams/games in the Lamigo Monkeys' group because that was when the Taiwan Series was held. The Lamigo Monkeys had 74 wins, 41 losses, and their winning percentage was .655, whereas Chinatrust Brothers had 53 wins, 64 losses, and their winning percentage was .453 for the whole year. As a result, the Lamigo Monkeys were the champion of the Taiwan Series. On the other hand, the most frequently discussed issue in the regular season (i.e., May) was star players in the Fubon Guardians' group because it was time to vote for the All-Star Game. During the post-season period (i.e., November), fans were concerned about star players and teams/games (i.e., Asia Winter Baseball League and Asia Professional Baseball Championship) (Table 9.8).

Figure 9.2 shows that March, May, October, and November are the peak months in the Lamigo Monkeys group because these are the months when the World Baseball Classic (WBC), regular games, Taiwan Series, and Asian Baseball Championship are held. Most of the fans from Lamigo Monkeys actively discuss them on the Facebook group. However, December to February are trough months when no competitions are held. Figure 9.2 demonstrates that March, May, and August are the peak months in the Fubon Guardians group when fans focus on the World Baseball Classic (WBC), all-star game voting, and regular games.

Table 9.8 Brand Attributes Over Time Periods (by Number)

	Product-Related			*Non-Product-Related*		
Time Period	*Star Player*	*Sport*	*Team/ Game*	*Team/ Non-Game*	*Other People*	*Sport Issues*
Lamigo Monkeys						
Pre-season	16	6	6	0	0	6
Regular season	45	11	70	7	9	11
Post-season	37	9	55	6	13	9
Total	98	26	131	13	22	26
Fubon Guardians						
Pre-season	134	25	79	11	27	25
Regular season	223	15	142	13	87	11
Post-season	155	22	156	9	42	20
Total	512	62	377	33	156	56

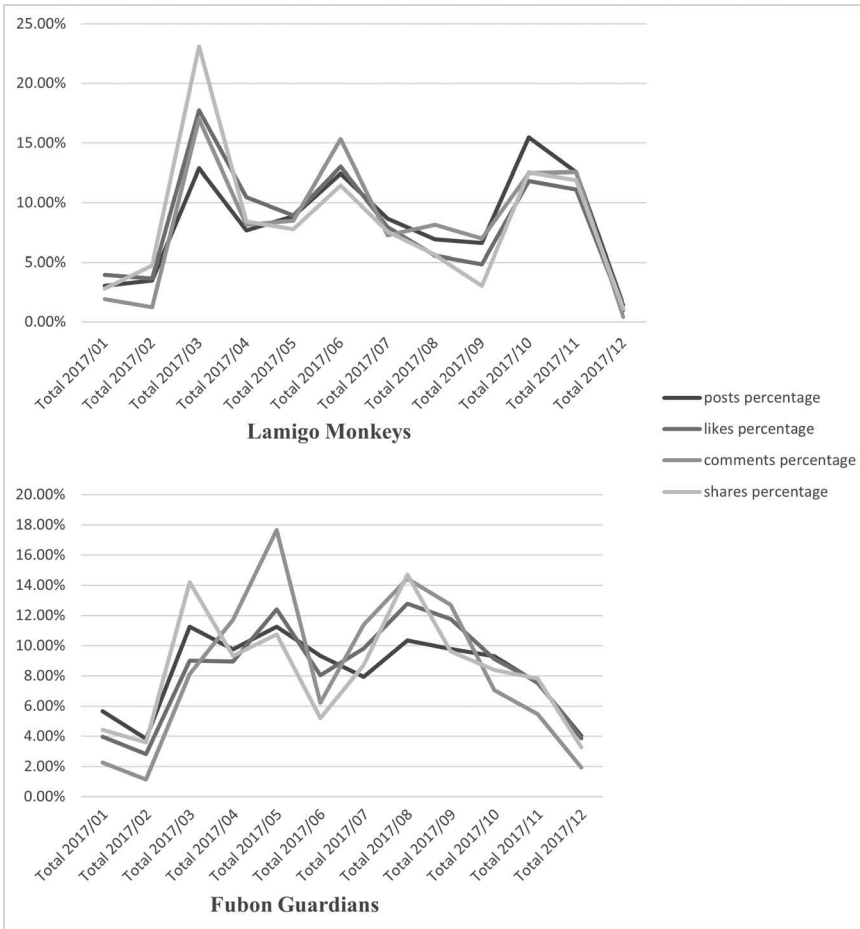

Figure 9.2 Percentage of Posts and Engagement by Teams.

Multicollinearity was measured by the variance inflation factor (VIF) and the conditional index (CI). The findings showed that no multicollinearity occurred because the highest value of VIF was 3.09 (less than 4) (Hair et al., 2010), and the value of CI was 17.41 (less than 30) (Belsley, 1991). The model for post likes is significant as a whole ($F = 106.28$, $p < .01$) and explains the variance of the dependent variable reasonably well ($R^2 = 15.1\%$, adj. $R^2 = 14.9\%$). The pre-season posts were significantly and negatively related to the number of likes ($\beta_{pre-game} = -0.087$, $p < .01$), whereas the regular-season posts were significantly and positively related to the number of likes ($\beta_{game} = -0.051$, $p < .01$). The low ($\beta_{photo} = 0.170$, $p < .01$) and high ($\beta_{video} = 0.123$, $p < .01$) levels of vividness were significantly and positively related to the number of likes but did not confirm hypothesis 1. The high-level interactive post characteristics (i.e., "link") were significantly related

to the number of likes ($\beta_{link} = 0.397$, $p < .01$), supporting hypothesis 2. The posts talking about product-related attributes were significantly related to the number of likes ($\beta_{product} = 0.031$, $p < .05$), supporting hypothesis 3. However, the posts relating to non-product-related attributes were not significantly related to the number of likes and thus did not support hypothesis 4 (Table 9.9).

The model for post comments was significant as a whole ($F = 34.03$, $p < .01$) and explained the variance of the dependent variable reasonably well ($R^2 = 5.4\%$, adj. $R^2 = 5.2\%$). The pre-season posts were not significantly related to the number of comments, whereas the regular-season posts were significantly and positively related to the number of comments ($\beta_{game} = 0.063$, $p < .01$). The low ($\beta_{photo} = -0.173$, $p < .01$) and high ($\beta_{video} = -0.237$, $p < .01$) levels of vividness are significantly and negatively related to the number of comments, rejecting hypothesis 1. The high-level interactive post characteristics (i.e., "link") were significantly and

Table 9.9 Hierarchical Regression Analysis Results (DV: Number of Likes)

Variables	*Model 1* $\beta(t)$	*Model 2* $\beta(t)$	*Model 3* $\beta(t)$	*Model 4* $\beta(t)$
Team				
Lamigo Monkeys dummy (baseline)	—	—	—	—
Fubon Guardians dummy	0.27 (19.18***)	0.27 (19.44***)	0.22 (16.39***)	0.23 (16.04***)
Time period				
Post-season dummy (baseline)	—	—	—	—
Pre-season dummy		–0.07 (–4.08***)	–0.09 (–5.23***)	–0.09 (–5.14***)
Regular-season dummy		0.03 (1.41)	0.04 (2.50**)	0.05 (2.80***)
Post type				
Text dummy (baseline)	—	—	—	—
Photo dummy			0.17 (7.95***)	0.17 (7.80***)
Video dummy			0.13 (6.44***)	0.12 (6.37***)
Link dummy			0.40 (17.20***)	0.40 (16.92***)
Brand attributes				
Product & non-product dummy (baseline)	—	—	—	—
Product dummy				0.03 (2.04**)
Non-product dummy				–0.02 (–1.23)
Constant	97.06	91.10	–1.61	–6.07
Adjusted R^2	0.071	0.078	0.148	0.149
F-value	367.71***	137.12***	140.32***	106.28***

** $p < .05$.

*** $p < .01$.

negatively related to the number of comments ($\beta_{link} = -0.322$, $p < .01$), rejecting hypothesis 2. The posts associated with product-related attributes were significantly related to the number of comments ($\beta_{product} = 0.062$, $p < .05$), whereas the posts associated with non-product-related attributes were not significantly related to the number of comments, supporting hypothesis 3 and rejecting hypothesis 4 (Table 9.10).

The model for post shares was significant as a whole ($F = 23.10$, $p < .01$) and explained the variance in the dependent variable reasonably well ($R^2 = 3.7\%$, adj. $R^2 = 3.6\%$). The pre-season and regular-season posts were not significantly related to the number of shares. The low ($\beta_{photo} = 0.053$, $p < .05$) and high ($\beta_{video} = 0.189$, $p < .01$) levels of vividness were significantly and positively related to the number of shares, supporting hypothesis 1. The high-level interactive brand post characteristics (i.e., "link") were significantly related to the number

Table 9.10 Hierarchical Regression Analysis Result (DV: Number of Comments)

Variables	*Model 1* $\beta(t)$	*Model 2* $\beta(t)$	*Model 3* $\beta(t)$	*Model 4* $\beta(t)$
Team				
Lamigo Monkeys dummy (baseline)	—	—	—	—
Fubon Guardians dummy	0.07 (5.01***)	0.07 (5.11***)	0.10 (6.98***)	0.11 (7.19***)
Time period				
Post-season dummy (baseline)	—	—	—	—
Pre-season dummy		−0.03 (−1.50)	−0.02 (−1.36)	−0.02 (−1.22)
regular-season dummy		0.05 (2.85***)	0.04 (2.33**)	0.06 (3.28***)
Post type				
Text dummy (baseline)	—	—	—	—
Photo dummy			−0.17 (−7.34***)	−0.17 (−7.51***)
Video dummy			−0.24 (−11.52***)	−0.24 (−11.60***)
Link dummy			−0.32 (−12.78***)	−0.32 (−13.00***)
Brand attributes				
Product & non-product dummy (baseline)	—	—	—	—
Product dummy				0.06 (3.90***)
Non-product dummy				−0.02 (−0.99)
Constant	13.06	4.12	49.02	42.28
Adjusted R^2	0.005	0.010	0.049	0.052
F-value	25.12***	16.67***	42.00***	34.03***

** $p < .05$.

*** $p < .01$.

Table 9.11 Hierarchical Regression Analysis Result (DV: Number of Shares)

Variables	*Model 1* $\beta(t)$	*Model 2* $\beta(t)$	*Model 3* $\beta(t)$	*Model 4* $\beta(t)$
Team				
Lamigo Monkeys dummy (baseline)	—	—	—	—
Fubon Guardians dummy	0.09 (6.25***)	0.09 (5.28***)	0.06 (4.43***)	0.07 (4.50***)
Time period				
Post-season dummy (baseline)	—	—	—	—
Pre-season dummy		–0.01 (–0.63)	–0.01 (–0.71)	–0.01 (–0.73)
regular-season dummy		0.01 (0.64)	0.02 (0.96)	0.02 (1.08)
Post type				
Text dummy (baseline)	—	—	—	—
Photo dummy			0.05 (2.22**)	0.05 (2.29**)
Video dummy			0.19 (9.14***)	0.19 (9.17***)
Link dummy			0.19 (7.78***)	0.20 (7.85***)
Brand attributes				
Product & non-product dummy (baseline)	—	—	—	—
Product dummy				0.002 (0.10)
Non-product dummy				0.02 (1.14)
Constant	0.50	0.46	–0.02	–0.06
Adjusted R^2	0.008	0.008	0.036	0.036
F-value	39.08***	13.71***	30.58***	23.10***

** $p < .05$.

*** $p < .01$.

of shares (β_{link} = 0.196, $p < .01$), in support of hypothesis 2. The post talking about "product" and "non-product" was not significantly related to the number of shares, rejecting hypotheses 3 and 4 (Table 9.11).

Discussion

The purpose of this study was to examine how different post characteristics and brand attributes affect fans' engagement (i.e., like, comment, and share) by season periods on two fan-created Facebook pages for professional baseball teams. This study extends to the sport management literature (Anagnostopoulos et al., 2018; Parganas et al., 2015) by providing an opportunity to better understand how sport fans interact with brand attributes and post characteristics on different social media platforms in different professional sport (baseball) and culture (East Asia) contexts. Based on the findings, professional teams can implement strategic planning for promoting team brand and products to sport fans via specific post types on their social media.

The results show that both fan groups utilized links the most in the pre-season, focusing on the topic of spring training. The findings are consistent with previous studies (Anagnostopoulos et al., 2018; Clavio, 2013), which contended that sport fans value 'behind the scenes' information about their team and players. This study offers team marketing managers additional information about which post type (i.e., links) fans mostly adopted. During the regular season and post-season, Lamigo Monkeys' fans utilized photos the most and discussed teams/games; Fubon Guardians' fans utilized links the most and discussed star players beyond their favorite team, followed by teams/games and other people (e.g., coaches). Thus, this may suggest that Lamigo Monkeys' fans pay more attention to their favorite team (i.e., product-related attributes), implying that their fans may have higher team identification (Byon et al., 2013). Fubon Guardians' fans focus on star players in CPBL and other professional baseball leagues (e.g., Major League Baseball, Nippon Professional Baseball). It is reasonably speculated that fans of the Fubon Guardians were attracted to star players of other teams because the Fubon Guardians did not enter the post-season games. It is similar to Achen et al.'s (2018) research that during the off-season period fans are still curious about specific players' life outside sports. We suggest that Fubon Guardian's manager could draw fans' attention by posting attractive and interactive content, such as behind-the-scenes stories (Achen et al., 2018; Li et al., 2019), to encourage fans' ongoing engagement in particular when the post-season time is not available. More importantly, in terms of post characteristics, it is suggested that photos and links are the most favored ways for communicating and managing the team brand, which sheds fresh light for practitioners and academia.

The results also revealed that, compared to the post-season period, the posts published in the regular season can enhance the number of likes, whereas the posts published in the pre-season period were found to be negatively related to the number of likes. Overall, links (high level of interactivity) could result in a high level of engagement (likes), followed by photos (low level of vividness) and videos (high level of vividness). However, previous studies showed that there is no influence on links because to see them, it is necessary to go through another external page (de Vries et al., 2012; Kwok & Yu, 2013; Liu et al., 2017; Osokin, 2019). This might be explained by the fact that both groups of fans spent much time clicking through external websites relating to baseball news about CPBL games. As noted by Cvijikj and Michahelles (2013), photos could attract the highest engagement, followed by text, video, and links. Geurin and Burch (2017) also found that photo posts mentioning the brand could evoke greater engagement since fans are impassioned about the brand. Consequently, sport teams could consider posting links or photos to promote the number of likes among fans. Videos also positively encouraged fans to generate post likes, as indicated by previous studies (Osokin, 2019; Liu et al., 2017; de Vries et al., 2012). The findings also showed that, compared to the combination brand attribute, product-related attributes (e.g., star player, team/game) alone can positively influence the number of likes, which have been associated with higher purchase intentions and are a factor influencing

consumption behavior (Gladden & Funk, 2002; Kaynak et al., 2008). Besides, the posts concentrated on product-related attributes could stimulate engagement by followers (Geurin & Burch, 2017), and responses in terms of liking product-related attributes can be higher than those of non-product-related attributes in the context of Instagram for professional football (Anagnostopoulos et al., 2018). Thus, one idea emerging from this research is that the sport teams can combine star players or competitions with new product launches to create discussions.

The findings showed that, compared to the post-season period, the posts published in the regular season can enhance the number of likes and comments. Specifically, Lamigo Monkeys was eligible to play in the Taiwan Series, so fans still paid attention to the team. However, Fubon Guardians did not enter the post-season games, so their fans were easily distracted from their favorite team by other hot issues (e.g., the Asia Winter Baseball League, Asia Professional Baseball Championship). Li et al. (2019) indicated that the pre-season and in-season periods are good times to attract new followers in emerging markets. As a result, it may be a warning to those teams with poor league standings. We suggest that the manager of Fubon Guardians should actively create topics that talk about the team and player information to maintain discussion and fan support (Li et al., 2019).

The results of this study indicate that, compared to other characteristics (i.e., photos, videos, links), placing only a text can increase the number of comments, which is practically consistent with de Vries et al. (2012) and Liu et al. (2017). An explanation for this might be that the text post would let brand fans focus on the topic and comment on the brand post directly (Cvijikj & Michahelles, 2013; Gyulai, 2016). Previous research (Moe & Trusov, 2011) also shows that discriminating opinions in posted comments can bring about subsequent comments. Followers may view them as a part of the community because they engage with positive and negative arguments. The emotional response from fans not only shows a fondness for their favorite teams but also displays team support (Chang, 2019). Significantly, the content analysis revealed that fans are most likely to comment on product-related attributes such as games and star players, consistent with previous research (Santos, 2019). Our findings suggest that, for professional baseball teams to further understand fans, they should post with text.

Our findings demonstrated that post characteristics can enhance fan engagement with the number of shares. Previous studies (Eagleman, 2013) indicated that interactive posts can promote more fan interaction. This result is inconsistent with previous research on brand posts in convenience stores (Liu et al., 2017), which only discovered that call to act (e.g., collecting stickers or lucky draw) can induce the number of shares. This is in line with Osokin's (2019) perspective that users prefer short and informative content. By knowing that posting links or videos is one way to effectively increase the number of shares and fans' comments mostly related to star players and games, sport teams and their sponsors can have their products and promotion activities highly exposed through links and videos on social media. This is one of several ideas about using social media as a platform for promoting teams and sponsors' products to online fans.

Some limitations of this study should be acknowledged. First, Facebook pages represent only one social media platform for examination, and therefore future research should incorporate other platforms (e.g., Instagram, Twitter, etc.). Second, every professional baseball group has different input costs, and therefore future research should examine the relationship between costs and the success of the team. Third, importantly, we were unable to perform demographic analysis (i.e., age and gender) mainly because of the Personal Information Protection Act. Future studies should seek other methods to fully understand participants' demographic backgrounds. Fourth, the number of followers is a dynamic value; we recommend that future studies could analyze the relationship between different values. Fifth, in order to explore comprehensive effects, future studies could use different statistical methods (e.g., supervised learning, logistic regression, random forest, support vector regression, etc.). Lastly, additional factors such as the size of the professional baseball fan groups, the frequency of posts, post length and post time (i.e., workday and peak hours) differed. Future studies should consider this as one of the sources of variance in the data analysis.

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Chapter 10

Marketing Obstacles Facing Obstacle Racing

Jason Reese

Introduction

According to McKay and McKay (2020), obstacles have been used during physical activities and for military purposes since ancient times. We have seen a transition from the uses of obstacles by the ancient Greeks, Romans, and military around the world to the novel physical challenge we see today in major sporting events that combine exercise, entertainment, music, and all-day festivals (Fischer, 2015; McKay & McKay, 2020; Mullin, 2012). The popularity of these events can be traced to various theories. Weedon (2015) suggests that part of the appeal for obstacle racing is the "camaraderie" shared by participants. Mullin (2012) suggests that "two of the most prominent theories of physical activity motivation, achievement goal theory and self-determination theory (SDT), may at least partly explain their appeal" (p. 103).

The "key players in the obstacle course business" are Spartan Race, Warrior Dash, Tough Mudder, and Rugged Maniac (Fischer, 2015, p. 17). Each of these race promoters has entry fees ranging from $50 to upward of $200. Spartan Race puts on the most races at over 150 a year. Each of these promoters boasts hundreds of thousands of participants each year (Fischer, 2015). The growth of the obstacle racing industry is large. By 2015, about six years after the entrance into the market, the number of runners reached nearly five million all time (Fischer, 2015). Early on, the growth from year to year was spectacular. From 2010 to 2011, the growth rate sextupled. In 2012, the growth rate within the industry began to slow. In that year, the growth rate doubled. The growth rate was only 48% in 2013 and even less in 2014, 24% (Fischer, 2015). In 2009, the estimated revenue from obstacle racing was $15.9 million. Estimated revenue increased in 2014 to $362 million (Fischer, 2015). This has led to the development of the World OCR in 2014, the sport's governing body, which "had 89 national federations among its membership" (Radnedge, 2019, p. 1). In addition, the increased prize money has led to more athletes participating. For example, in 2019, those participating in the three-part obstacle racing event of the Ultra World Championship, the Trifecta World Championship, and the Spartan World Championship can win upward of $1 million (Radnedge, 2019). Because of the increase in participant rates, and the

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increase in the number of obstacle racing promoters, it is important to understand consumer's perceptions. These perceptions can help promoters better understand their reason for purchase and what they are looking for in obstacle races.

One of the major concerns for promoters of obstacle races is the recent decline in participation. For example, many executives of the larger promoters are openly discussing the maturity of the obstacle racing industry only six years after its entrance into the market (Fischer, 2015). This concern, coupled with the fact that approximately 40% of the runners of major obstacle races are repeat customers (Fischer, 2015), marketers of these types of events should be aware of consumer perceptions, to better ensure repurchasing. The purpose of this study is two-fold: a) to examine a case of an annual participant-focused obstacle sporting event and better understand the cause of declined participation and b) determine the most appropriate pricing strategies for participant sporting events like these.

Review of Literature

Price Fairness

The associations and emotions customers have when they evaluate the price they paid is the foundation of price fairness (Xia et., 2004). In addition, price fairness is arguably a consequence of price comparisons with consumers' internal reference prices (Petrick, 2005) and other providers' prices (Xia et al., 2004). For example, Malc et al. (2016) "confirms that social comparisons play an integral part in determining fairness" (p. 3693). Price fairness is defined as "a consumer's assessment and associated emotions of whether the difference (or lack of difference) between a seller's price and the price of a comparative other party is reasonable, acceptable, or justifiable" (Xia et al., 2004, p. 3). Firms should be concerned price fairness as it can have a great influence on future purchase behavior. For example, "perceptions of price unfairness may lead to negative consequences for the seller, including buyers leaving the exchange relationship, spreading negative information, or engaging in other behaviors that damage the seller" (Xia et al., 2004, p. 1).

Greenwell et al. (2008) argued that it is often more difficult to study price fairness in the context of the sport due to the strong emotional connection consumers in the sport industry often have with organizations. In addition, they also suggested that due to fewer consumer options, studies investigating price fairness in a sport context are unique. Regardless of the reason for its investigation, sport industry scholars and practitioners should be aware of the importance and uniqueness of price fairness perceptions in the sport industry. Price fairness is investigated through the lens of four theories: equity theory, dual entitlement theory, distributive justice, and procedural justice (Xia et al., 2004). Equity theory is the core of all these theories. This theory suggests that there should be an equitable disbursement of all resources to appropriate exchange parties, not necessarily equally (Kim et al., 2009). In other words, what the consumer gives up in the exchange should be equitable to the benefit they receive from the producer/firm.

Distributive justice advances equity theory by comparing the outcome of the exchange without taking into account the existing relationship the exchange parties have with each other (Oh, 2003; Park et al., 2010; Xia et al., 2004). Here, it takes into account the relationship and how it could change the perception of equity in the exchange (Kim et al., 2009). This is important to the discussion in the current study, as the knowledge and relationship the runners have with the non-profit promoter may change their perceptions of the event. This is reflected later, as hierarchical regression analysis is used in the statistical analyses, controlling for knowledge of the non-profit promoter. Dual entitlement theory investigates how the customer's price is aligned with the firm's expenses (Bolton & Alba, 2006). In short, the theory suggests that all exchange parties are entitled to an equitable outcome. Haws and Bearden (2006) suggest the theory proposes a fair (reasonable) profit for the firm and a fair (reasonable) price for the consumer. In other words, price increases should be reflecting increases in costs (Bolton & Alba, 2006).

Perceived Value

Coming from the marketing and consumer behavior literature (e.g., Han & Kwon, 2009; Helkkula & Kelleher, 2010; Itani et al., 2019; Kwon et al., 2007; Parasuraman, 1997; Parasuraman & Grewal, 2000; Zeithaml, 1988), perceived value is the comparison of the product received and what is given by the consumer. Zeithaml's (1988) seminal definition of perceived value is "the customer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (p. 14). Arguably, the core variable in examining perceived value is the perception of price and quality (Petrick, 2002). Perceived value is often considered the core of consumer decisions making. For example, some argue that "perceived value is the most important indicator of future purchase behavior for services" (Petrick, 2004, p. 29). Furthermore, other scholars argue that having a good understanding of perceived value can lead to a competitive edge (Parasuraman, 1997). Itani et al. (2019) suggest that perceived value has both indirect and direct positive impact on customer engagement. Investigating perceived value can be approached in several ways (Zeithaml, 1988). In the context of the current study, examining perceived value as a comparison of what the consumer receives and what they give up is most appropriate. If the product is not providing an adequate return on the consumer's investment in time/money, they will likely perceive the experience as having little value.

Satisfaction

In today's economy, sport organizations are constantly looking for ways to meet the needs and wants of consumers. According to Greenwell (2007), attendance at sporting events is commonly a problem for sport organizations. Firms understand that customer satisfaction is commonly associated with word-of-mouth referrals

from current customers (Xu et al., 2006). In addition to word-of-mouth, customer satisfaction has also been shown to be an indicator of a firm's profit (Anderson & Sullivan, 1993; Homburg et al., 2005). Therefore, firms have sought to understand ways to improve and control customer satisfaction.

Customer Satisfaction Defined

The seminal pieces of literature on customer satisfaction and loyalty come from Richard Oliver. Oliver (1999) suggested that customer satisfaction can be defined as a pleasurable level of consumption-related fulfillment. In other words, "the consumer senses that consumption fulfills some need, desire, goal, or so forth and that this fulfillment is pleasurable" (p. 34). Customer satisfaction has also been seen as "a comparison of expectations against a process or outcome" (Greenwell, 2007, p. 7). Suh and Yi (2006) also suggest that the experience consumers have with a good or service is compared with expectations, and satisfaction perceptions are formed based on these expectations. This variation from the customer's expectation is considered a disconfirmation of expectations (Anderson & Sullivan, 1993).

Transaction-Specific Satisfaction

Beccarini and Ferrand (2006) suggest that satisfaction can be evaluated by looking at the relationship between a customer and firm during a specific or several transactions. Some researchers have argued that customer satisfaction is a summation of the attitudinal judgments of a series of purchases (Xu et al., 2006). However, some researchers have argued that customer satisfaction can be examined immediately following a single transaction or event (e.g., Olsen & Johnson, 2003). This type of customer satisfaction evaluation is termed transaction-specific satisfaction. The alternative option would be to use a cumulative satisfaction approach (Homburg et al., 2005). In the cumulative approach, the customer is asked to evaluate their overall experiences with a good or service. The current study is attempting to determine the overall evaluation of an obstacle event, and therefore, the cumulative approach will be used.

Experiential Goods/Services and Customer Satisfaction

Sport goods and services are often experiential in nature. When you participate in a sporting event, you are consuming an intangible good. In addition, sport goods and services often bring with them emotional attachments that are sometimes viewed by society as being relatively irrational but acceptable. Therefore, emotions should often be considered when evaluating satisfaction. Caro and Garcia (2007) echo this idea when they suggest "emotional reactions associated with the consumption experience are important in the determination of satisfaction" (p. 71). This idea of emotional inclusion into the assessment of satisfaction is not an isolated thought. Kwak et al. (2011) suggested that satisfaction is an

"attitude-like evaluative judgment" (p. 6). This would support Caro and Garcia's (2007) statement that it is especially important to include emotions when dealing with services, specifically those experiential in nature (i.e., sport).

Customer Satisfaction & Repurchase Intentions

The relationship between satisfaction and repurchase intentions is one of the most researched areas in the satisfaction literature. Oliver (1980) suggested that customer satisfaction has traditionally been influenced by purchase decisions. However, it really was not until the early 1990s when that researchers consistently empirically investigated this relationship. In the sport marketing literature, several researchers have examined and/or discussed this relationship. Tsuji et al. (2007) investigated this link in their study of action sports, service quality, and satisfaction. According to Tsuji et al. (2007), "peripheral service quality and satisfaction were found to be significantly related to future intentions" (p. 199). Furthermore, Trail et al. (2005) found that satisfaction influenced consumers' behavioral intentions. Finally, Murray and Howat (2002) posit that "satisfaction appears to be a dominant antecedent of the future intentions of customers" (p. 37).

Purchase Intentions

Without re-patronage, firms will fail (Wilkinson, 2009). While this is likely not considered a novel concept, it is important to understand the consumers' intentions as it will provide marketers with an idea of how to create successful campaigns. Using (re)purchase intentions as the dependent variable is common among consumer perception studies. It provides the researcher the ability to better understand and predict future behaviors. The theory of planned behavior (Ajzen, 1991), derived from the theory of reasoned action, is often considered the foundation of purchase intention evaluations. The stronger the intention, the more likely the consumer will behave in that manner. "A central factor in the theory of planned behavior is the individual's intention to perform a given behavior" (p. 181). According to Tsuji et al. (2007), "measuring future intentions of attendees is important for the continued success of an event" (p. 201). This is partly due to the connection between repurchase intentions and perceived value. For example, perceived value has been shown to influence golfer repurchase intentions (Petrick et al., 1999). Scholars in other fields have also found the same perceived value/purchase intention relationships.

Price Sensitivity

Understanding a consumer's perception of price is important for firms attempting to examine their future behavioral intentions and retention (Dean, Morgan, Tan, 2002). It is suggested that price sensitivity "is considered a component of behavioral intentions" (Dean et al., 2002, p. 97). Petrick (2004) suggests, "Price sensitivity,

which is similar to price elasticity, is a measure of how much of an affect increases in price will have on customer's willingness to pay" (p. 465). In other words, price sensitivity is examining how consumers respond to price changes. For example, a price-sensitive consumer is one who purchases based on the price of the good or service being offered, more likely needing a discount than a less price-sensitive consumer (Petrick, 2005). Consumers who are price sensitive have been described as "blue-collar fans tend(ing) to have less disposable income" (Rishe & Mondello, 2003, p. 73). Marketers have also used price sensitivity as a way to segment the market, as "price perceptions often differ significantly across market segments" (Bolton & Myers, 2003, p. 108). Even though these types of consumers base many of their purchases decisions on price, when prices are equal among competitors in a price-sensitive market, consumers will focus more on the product's qualities (Ainscough, 2006).

Research Questions

Based on the aforementioned literature and the current participation problem facing the event being studied, the following research questions were developed:

1 Is the reason for the decline in participation across the three years of study due to problems with event elements and consumer perceptions?
2 Does the price tier system currently being used for registration appropriate for the event promoters, considering consumers' perceptions of price (fairness and sensitivity)?
3 What are the best predictors of future purchase behavior? In other words, what measures can we used to better determine repurchase intentions?

Method

This study investigates consumer perceptions and behaviors related to an annual fundraising obstacle racing event in the south region of the United States. The event is organized and promoted by a junior chamber organization. The purpose of the organization is to help their members develop leadership skills, as well as give back to the local community through projects and donations to other local non-profit organizations. The idea for this event was presented to the board of directors by a few of their members. After planning the event for a year, the event was held for the first time in 2013. The first event hosted 617 runners. In 2014, the event grew to 834 runners. It peaked in 2015 with 1,050 runners. Since that year, the participation has declined to 885 in 2016 and 627 in 2017.

The literature surrounding sporting event demand suggests that some uncontrollable variables have an impact on demand for sporting events (Rascher et al., 2007). In the case of this event, each year, the weather has been pleasant, with no rain during the event. Other elements out of the control of the event promoters include community-wide activities that compete for the runners' interests, as

well as volunteers' availability. In 2017, a large community service event around the local university occurred on the same day. This likely impacted the number of volunteers, as well as some runners. Other than 2017, very few local external elements impacted participation.

Price Tiers in Sport

The segmentation of goods and services offered by a firm is not uncommon in any industry. Most often, these segments are formed by categorizing products by their attributes and functions. The use of price tiers is often the way one can identify categories. According to Sivakumar (2000), the segmentation of price tiers can be based on retailer strategy, size, competition of product attributes, store type, consumer characteristics, manufacturer strategy, or environmental factors. Some scholars argue that the segmentation of price tiers is based on quality and/or price (Rao, 2005; Sivakumar, 2000)

Due to the dynamic sport industry, the types of products offered vary greatly. Price tiers could be based on the location of a seat in a facility. The tiers could be based on access to a fitness facility during certain times. For events like the one being investigated in this study, price tiers can be set up based on the registration date. Regardless of the product being offered, price tiers are defined as "the variety of prices that are typically offered at any given time" (Moe & Fader, 2009, p. 74). Moe and Fader (2009) also suggest, "failure to account for price tiers can lead to exaggerated inferences about the role of price over time" (p. 73).

Participants

The sample in Study 1 consisted of participants of an annual obstacle racing event across a three-year period, from 2015 to 2017. The data from Study 2 (2018) race year are discussed later in the discussion section. The age of race participants ranged from under 15 years old (approximately 16%) to over 50 years old (approximately 4%) during this three-year period. While the majority of runners (approximately 74%) during this time period lived within 50 miles of the race venue, some runners traveled over 200 miles (one-way) to attend these events. The majority of the runners for this event during this three-year period were female, approximately 57% of the race field.

The sample consisted of 143 runners in 2015, 87 runners in 2016, and 96 runners in 2017. The combined three-year sample consisted of 184 females (56.3%) and 75 males (23%) participants (note: 67 participants chose not to respond to this question). The majority of the study participants were White, non-Hispanic (N = 217, 66.6%). The study participants' mean age was 35.36 years old (SD = 10.30). Approximately half (49.6%) of the sample had at least a college degree. A little less than half of the sample (45.7%) had an annual household income of over $50,000.

Research Design and Procedures

This longitudinal study began in 2015. Beginning at that time, the data were collected from participants using an online survey-linked questionnaire. Within a few days of each event, the event promoter emailed all race participants. In the email, they thanked them for their participation in the event and asked that they click the link embedded in the email and complete the questionnaire. After the runner clicked the link, they were taken to an online questionnaire. The first screen asked the runner to consent to participation. Each year, the questionnaire consisted of questions related to several variables. These variables were suggested by the research team, and the event promoter approved them prior to distribution. In addition, in the years 2016 and 2017, some questions were added per request from the event promoters. These additional questions primarily dealt with changes to the obstacles and/or event activities (e.g., medals, finish-line activities, etc.). At the end of each questionnaire, the study participant was asked to provide demographic information (e.g., age, gender, ethnicity, income, and education). Finally, the event promoters offered a free entry fee to one participant at the end of the study each year. If the study participant wanted to be considered for this, they were asked to provide their email address at the end. They were allowed to opt out of this part of the study. The research team then provided the list of emails to the event promoter without being linked to the raw data at the end of the study period each year.

Measures

The measures used in this study were developed based on extant literature, except satisfaction questions related to race obstacles and knowledge of the non-profit promoter. For example, study participants were asked to rate each race obstacle (25–28 per year). All measures in this study were based on a 7-point scale, with 1 being "very dissatisfied" to 7 being "very satisfied". In addition, a simple agree-disagree scale for the runners' knowledge and support for the non-profit and their events was presented. The questions related to knowledge of the reason for the organization, self-identification as a supporter, and intent to attend other events hosted by the non-profit.

The measures for satisfaction were adapted from Greenwell et al. (2007), with added event satisfaction elements from Tsuji et al. (2007). The price fairness measures were adapted from Xia et al. (2004). The measures for price sensitivity were adapted from Petrick (2005). The perceived value measures were adapted from Petrick (2002). Finally, the repurchase intentions were adapted from Hermann, Xia, Monroe, and Huber (2007). According to the Cronbach's alpha tests, no issues with internal consistency were found (satisfaction = .840, price fairness = .911, repurchase intentions = .853, price sensitivity = .830, knowledge of the non-profit = .825, and perceived value = .913). In addition, to test for validity, Pearson Product–Moment Correlations were used. As with internal consistency, there

were no issues with validity, as all relationships were moderate to strong positive and significant ($p < .001$) for each measure.

To further test for validity and reliability, a factor analysis was conducted on each construct. No issues were found in the analysis. For each analysis, the Kaiser–Meyer–Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity revealed a factor analysis was appropriate (satisfaction KMO = .781 and Bartlett's = .000, price fairness KMO = .677 and Bartlett's = .000, repurchase intentions KMO = .695 and Bartlett's = .000, price sensitivity KMO = .653 and Bartlett's = .000, knowledge of the non-profit KMO = .738 and Bartlett's = .000, and perceived value KMO = .630 and Bartlett's = .000). In addition, all values within the correlation matrix were above .300 (satisfaction = all above .457, price fairness = all above .635, repurchase intentions = all above .605, price sensitivity = all above .481, knowledge of the non-profit = all above .727, perceived value = all above .474), with none showing similarity (those close to 1.000).

Statistical Analyses

Four statistical analyses were used during this study. First, to examine demographic information, participation, and mean scores, basic descriptive analysis was used. Second, to better determine the reason for the decline in participation, an examination of multiple variables between years was employed. Here, a multivariate analysis of variance was conducted. Third, to analyze price sensitivity and price fairness perceptions based on the time of registration, two separate analysis of variance were conducted. Finally, to better predict a runner's intent to return in future years (repurchase intentions), while simultaneously controlling for a runner's connection with the non-profit, a hierarchical regression analysis was conducted.

Results

To help answer Research Question 1 (reason for the decline in participation), a multivariate analysis of variance was conducted. To better determine the reason for the decline in participation, a number of variables were compared between years. The dependent variables were added based on the extant literature indicating potential impact on future purchase behavior. These dependent variables included both the event and obstacle satisfaction (Murray & Howat 2002; Tsuji, et al., 2007; Trail et al., 2005), price fairness (Xia et al., 2004), perceived value (Petrick, 2004), and knowledge of the non-profit promoter (Kim et al., 2009). Here, multivariate analysis of variance (MANOVA) was used. The analysis revealed there was indeed a significant multivariate effect, Wilks' $\lambda = .925$, F (10, 500) = 1.999, $p = .032$. Due to this significant effect, the univariate statistics were analyzed. Results are shown in Table 10.1. The results indicated that all dependent variables were not significantly different from year and year, except price fairness. To analyze the difference in price fairness perceptions between years, the Duncan post hoc test was used. Results reveal the mean score for the 2017 group

Table 10.1 MANOVA for Event Perceptions

Dependent Variable	*Df*	*F*	*p*	*Partial* η^2
Event satisfaction	2	.758	.345	.008
Obstacle satisfaction	2	.348	.504	.005
Price fairness	2	2.892	.036	.026
Perceived value	2	.368	.677	.003
Knowledge of the promoter	2	.160	.923	.001
Error	254			

(M = 5.78) was significantly lower than 2016 (M = 6.12) and 2015 (M = 6.10), but the 2016 and 2015 score did not significantly differ from each other.

To help answer Research Question 2 (price tier effectiveness), an analysis of variance was conducted. The four price tiers for each year were as follows: (a) Tier 1 – $30 (December 15–February 1), (b) Tier 2 – $40 (February 2–March 1), (c) Tier 3 – $50 (March 2–April 1), and (d) Tier 4 – $60 (April 2 – Race Day). Results show that the effects of the registration date on price sensitivity is not significant, F (3, 254) = .355, p = .785, partial η^2 = .004. The mean scores for runners in the four registration periods did not differ significantly from each other. The mean scores ranged from 4.60 to 4.83 (with 7 being very price sensitive). An analysis of variance was conducted. Results show that the effects of the registration date on perceived price fairness is significant, F (3, 257) = 3.125, p = .026, partial η^2 = .035. Results indicate that the mean values for those who registered before the first price increase (M = 6.25) are significantly greater than the values for those who registered in the final two prices' higher tiers (both M = 5.85). However, those who registered before the second price increase (M = 6.17) did not differ significantly from the any other group.

To help answer Research Question 3, a hierarchical regression analysis was conducted (Table 10.2). This event is held annually in a small rural community of approximately 34,000 citizens in the south region of the United States. The event promoter is a well-known philanthropic group that garners much respect in the community. Therefore, some people in the community likely register for

Table 10.2 Hierarchical Regression Analysis

	Model 1			*Model 2*		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Knowledge of the promoter	.234	.047	.341**	.085	.033	.124*
Satisfaction				.364	.063	.306**
Price fairness				.066	.073	.066
Perceived value				.482	.071	.493**

* $p < .05$.
** $p < .001$.

Table 10.3 MANOVA for Event Perceptions

Dependent Variable	*Df*	*F*	*p*	*Partial* η^2
Event satisfaction	3	.758	.076	.020
Obstacle satisfaction	3	.348	.052	.022
Price fairness	3	2.892	.030	.026
Perceived value	3	.368	.842	.002
Knowledge of the promoter	3	.160	.417	.008
Error	341			

their events to support the work they do in the community. To better determine the true effect satisfaction, perceived value, and price fairness perceptions have on repurchase intentions, the knowledge of the non-profit promoter was included as a control variable. Before an analysis of all three years of data could be run, it was important to ensure the data between the years were similar. Therefore, three separate hierarchical regressions were run, one for each year of data. The 2015 and 2017 hierarchical regression were both significant. However, the 2016 data were not significant at the .05 level (p = .066). Therefore, the 2016 data were excluded from the multi-year hierarchical regression. The tests for multicollinearity issues were performed and indicated there was a low level of multicollinearity present (*VIF* = 1.118 for knowledge of the promoter, 1.405 for satisfaction, 2.587 for price fairness, and 2.643 for perceived value). The control accounted for 12% of the variance ($p < .001$) in repurchase intentions. After accounting for this effect, the independent variables (satisfaction & perceived value) accounted for an additional 51% unique variance ($p < .001$). Both satisfaction ($\beta = .306$, $p < .001$) and perceived value ($\beta = .493$, $p < .001$) were significantly associated with repurchase intentions. However, perceived price fairness was not a significant predictor of repurchase intentions ($\beta = .066$, $p = .365$) (Tables 10.3 and 10.4).

Discussion

To better determine the reason for the decline in participation, a number of variables were compared between years. All of the variables (overall event satisfaction, obstacle satisfaction, perceived value, and knowledge of the non-profit promoter)

Table 10.4 Duncan's Post Hoc Test

		Subset	
Year	*N*	*1*	*2*
2017	72	5.776	
2018	88	5.799	
2015	115		6.101
2016	70		6.121

were not significantly different between years, except price fairness. In 2017, price fairness perceptions were significantly lower than the previous two years. Due to the consistent year-to-year drop in participation and the understanding of equity theory, one would likely surmise that one of the causes in participation could be unfair pricing tactics. However, the prices for the current event did not change from across the three years studied, nor were the price tiers. In fact, medals were added to the 2017 race, adding an element that could potentially increase price fairness perceptions.

To better understand why this variable showed this significance, the raw data were reviewed. When looking at those participants that filled out the questionnaire, 24.7% of all respondents registered for the race during the highest-priced period. However, among the respondents to the 2015 and 2016 questionnaires, only 11.9% and 11.4% registered during the highest-priced period, respectively. As the results of this study's ANOVA revealed, the later the participant registered for the event, the lower their price fairness perceptions went. Therefore, lower price fairness perceptions could be due to the sample in 2017, rather than an overall price fairness perception issue for the race over the studied three-year period.

Regardless of the reason for the price fairness significance in the MANOVA, the results of the study are likely most interesting because of the insignificance of the rest of the dependent variables. Extant literature suggests that consumer perceptions of satisfaction (Murray & Howat, 2002; Oliver, 1980; Tsuji et al., 2007; Trail et al., 2005), price fairness (Xia et al., 2004), and perceived value (Petrick, 2002) could all lead to changes in future participation. However, the results from this study suggest that may not be true for this event promoter. In other words, year after year, this event promoter had positive evaluations, yet the attendance continued to decline. The results of the study suggest the decline is likely not due to anything the event promoter is doing wrong, but more than likely, it is an indictment on the obstacle racing industry.

This promoter used a price tier system based on the registration date. As the date of the event gets closer, the price to register for the event increases. This was done for a couple of reasons. First, the event promoter may be attempting to attract consumers who are price sensitive (e.g., looking for the best deal). Second, event promoters try to "lock-in" participants to better plan the event. When grouped based on registration date, the price fairness perceptions decrease as the date of the event gets closer. Those who registered before the first price increase ($M = 6.25$) are significantly greater than the values for those who registered in the final two higher-priced tiers (both $M = 5.85$). When grouped based on registration date, the price sensitivity of runners is not significantly different between groups. The mean scores ranged from 4.60 to 4.83 (with 7 being very price sensitive). This would disagree with the event promoter's idea that they are attracting price-sensitive consumers early in the registration process.

If you couple the two findings above (lower price fairness perceptions as the event gets closer and no significances in price sensitivity between registration groups), one could argue that the price tiers for this event promoter are not

needed. In other words, if the price fairness is decreasing as the price goes up, but the price sensitivity is constant, why have to price tiers at all? Why not set a fixed price for the entire registration process? Two issues may come to bear for the event promoter if they were to make this change: (1) the runners will just wait to the last minute to register, and (2) the price fairness will be lower for every runner, instead of just those who register later. These two issues are addressed below.

The first concern about removing the price tiers is that runners may just wait to the last minute to register, leaving the promoter little time to plan for the size of the race field. In the current situation, the facility being used by the promoter does not change based on the number of runners in the race field. Individual heats are capped at a predetermined number of runners. The number of volunteers will not change based on the size of the race field. In addition, the race promoter plans on the number of shirts and medals based on the number of registered runners as the event comes closer. By setting a hard registration date for those that want to ensure they receive a shirt, the promoter could still plan appropriately. In addition, the cost would be the same regardless of the registration date, allowing the promoter to save the cost of T-shirts and turning that toward their profit. Finally, comparing the number of registrations this event promoter had throughout its existence, approximately 94% of participants registered before the "shirt guarantee" deadline. The second concern about removing the price tiers is that all runners will have lower price fairness perceptions, instead of just those who register later. To examine this relationship in the current study, a hierarchical regression analysis was used. When controlling for runners' knowledge of the non-profit promoter, satisfaction with the event and perceived value significantly predicted repurchase intentions. However, in this same analysis, price fairness did not significantly predict repurchase intentions. In other words, the perceived fairness of the registration fee did not impact whether they planned to run in the race in the future. In addition, even the group with the lowest price fairness perceptions (those purchasing at the highest prices) had relatively high price fairness ratings ($M = 5.85$, with 7 being the highest price fairness perception).

Following the results from the 2015–2017 data, price tiers were eliminated from the pricing structure of the 2018 event. Instead, a flat rate of $50 for pre-race day and $60 for race day registration were used. These prices were determined based on the last price tier in 2013–2017. Below is a comparison of the 2013–2017 and the 2018 price tiers. From 2013–2017, the price tiers were set up as follows: (a) Tier 1 – $30 (December 15–February 1), (b) Tier 2 – $40 (February 2–March 1), (c) Tier 3 – $50 (March 2–April 1), and (d) Tier 4 – $60 (April 2 – Race Day). In 2018, the pricing structure was $50 with discounts (December 15–April 1) and $50 with a $10 late registration fee (April 2 – Race Day). In addition to the price changes, an increase in marketing spending for 2018 occurred. In 2017, $1,740.64 was spent on advertising, with almost all being spent on targeted social media spending. The spending increased 87.97% in 2018 to a total of $4,419.49. The result was a 162-runner increase (25.84%) for a total of 789 runners. The revenue from increased registration fees was $6,691.25 (33.63%). The price per runner

increased from $26.40 in 2017 to $29.46 in 2018. As there was a change in price methodology in 2018, an additional round of data collection and analysis were conducted (Study 2). The methodology was identical to Study 1. The Study 2 (2018) sample consisted of 144 runners, 74.7% females and 16% males, with 36.8% choosing not to answer. The majority of Study 2 (2018) study participants were White, non-Hispanic (N = 78, 85.7%). The study participants' mean age was 37.13 years old. Over half (63.4%) of the sample had at least a college degree and (62.2%) had an annual household income of over $50,000.

In Study 2, a MANOVA was conducted to examine the differences in consumer perceptions, including the 2018 questionnaire data. The dependent variables were the same as the previous MANOVA in this study and included overall event satisfaction, obstacle satisfaction, price fairness, perceived value, and knowledge of the non-profit promoter. The analysis revealed there was indeed a significant multivariate effect, Wilks' $\lambda = .896$, F (15, 930) = 2.517, $p = .001$. Due to this significant effect, the univariate statistics were analyzed. The results indicated that all dependent variables were not significantly different from year to year, except price fairness (p =.030). To analyze the difference in price fairness perceptions between years, the Duncan post hoc test was used. Results are displayed in Table 10.4. The results reveal the mean score for the 2017 (M = 5.78) and 2018 (M = 5.80) groups were significantly lower than 2016 (M = 6.12) and 2015 (M = 6.10), but the 2015 and 2016 subsets were not significantly differing from each other. The results from Study 2 (2018) data analysis might suggest that a change from price tiers to a fixed price with price promotions did not change price fairness perceptions, nor did it decrease the price paid per runner. In fact, it could be argued that the price per runner increase was due to price changes, however, this statement is not controlling for the increase in marketing expenditures.

There are a few study limitations. First, the study is contextually limited. While the data were collected longitudinally, they were only collected at one event. This event was unique in that the event promoters are a non-profit volunteer organization. Their purpose for hosting the event was fundraising for the community. Therefore, their motives are likely different from for-profit race promoters. Another limitation to this study is the exclusion of the 2016 data from the hierarchical regression analysis. Having a complete three-year period would give more strength to the results. In addition, while the same variables were measured from year to year, changes in the event were not controlled for in the analyses. For example, each year, the event promoters added or removed obstacles, added medals in 2017, and changed their advertising approach from year to year. These elements could impact the consistency of responses between years. Promotions each year typically followed changes in the price (tier). However, because there is no precise information available regarding the timing of promotions each year, it may be a combination of promotion timing and price tiers that made the difference between years. This is an additional limitation. Future research could focus on a larger set of obstacle racing events. Comparisons across multiple regions, multiple event promoters (both for- and

non-profit), as well as types of non-traditional running events would be beneficial. Understanding consumer perceptions and behaviors is important for marketers of these types of events.

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Chapter 11

Congruity Perceptions in Endurance Event Participant Consumers

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Introduction

Endurance events in the United States, such as road running marathons/half-marathons and obstacle course events, play a vital role in the $1.4 billion running industry (Bershidsky, 2019). Running clubs and specialty stores across the United States recruit new customers and build rapport through community training programs designed for a number of these endurance events. Performance brands (e.g., nutrition, shoes, and apparel) also utilize endurance events as marketing communication channels. As a result of this far-reaching influence, changes in endurance event participation trends signal and impact greater industry trends. The United States endurance event industry has witnessed multiple booms and contractions over the past quarter-century (Miller, 2017). The most recent growth period, fueled by the introduction of non-traditional events (e.g., mud runs, color runs, and obstacle events), has experienced a cooling effect. After record, high participation numbers in 2013, Running USA (2016) reported contraction in the market, with all events types experiencing declines over the next few years. Even in more recent years, participation numbers have not returned to their previous highs (Running USA, 2018).

While it is unclear if experienced event participants are leaving the market or the pipeline of new participants has diminished, capturing a better understanding of these consumers is warranted. One way to understand these changes is to evaluate how individuals perceive these events. Past consumer behavior research has suggested evaluating choices based on perceptions of their utilitarian brand features and symbolic meaning (Kressmann et al., 2006). "The match between a consumer's ideal expectations of utilitarian brand features and their perceptions of how the product is perceived along the same features" has been identified as functional congruity (Kressmann et al., 2006, p. 955). In the case of endurance event participation, utilitarian features may include providing a challenging experience, the ability to obtain certain physical health outcomes, or social opportunities (Masters et al., 1993, 2003; Rice, 2015; Summers et al., 1983).

Symbolic meaning, on the other hand, is interpreted as the perceived fit between a person's self-concept with the brand (the event) or brand users (event

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participants), hereby referred to as self-congruity (Aguirre-Rodriguez et al., 2012). When the brand or brand users fit the consumer's self-concept, the consumer is more likely to interact with it. An example of poor fit has been demonstrated by the African-American runner experience. This group is an under-represented population in events such as marathons. Research has identified how African-Americans may view long-distance running as something white, not black, people do (Rice et al., 2018), resulting in low levels of self-congruency and impacting involvement. These brand perceptions may also differ by levels of involvement. According to the psychological continuum model (PCM), consumers progress through a series of identifiable levels, from awareness, where the activity has yet to be undertaken, through allegiance (Funk & James, 2001; Funk et al., 2011; Iwasaki & Havitz, 1998). Such a progressive model is important for sport marketers as it presents an opportunity to segment consumers by involvement profiles. To date, investigations into the participant sport consumer involvement process have remained mostly conceptual, with limited research exploring influential factors facilitating and developing movement into and along the process.

Previous sport participant studies identified certain motivations for those participating in endurance events (Masters et al., 1993; Ogles & Masters, 2003; Rice, 2015; Summers et al., 1983) but only categorized their sample as runners, failing to consider the range of consumer involvement. Most noticeably, the event non-participant is omitted from their evaluation. Others have explored the relationship between components influencing the sport involvement process (Beaton et al., 2011) and the effects of including additional components (Ridinger et al., 2012), but again omit event non-participants and do not evaluate the influence of conceptualized moderators. Building upon the efforts of past research, while understanding the value of potential event participants, the purpose of the current study is to investigate the presence and influence of consumer congruity on their sport involvement process.

With a declining consumer base, the endurance event market is challenged to attract new participants to the sport, while also remaining relevant to current participants occupying various levels of involvement. Therefore, this study combines sport activity involvement theory with consumer congruity research to better understand why consumers engage in and persist in endurance event participation. Further, this study utilizes a measure of congruity to evaluate different levels of consumers' involvement. By identifying where endurance events are either congruent or incongruent with consumers' expectations, marketers can better frame events and brand communications for specific consumer groups.

Review of Literature

As United States endurance sport participation numbers have witnessed a downward trend, the industry must establish itself as a relevant option. Research has found event consumers/participants are influenced by a variety of functional attributes. Individuals expect endurance events to provide a sense of fun

or enjoyment, an opportunity to complete or obtain a sense of achievement, a social atmosphere, and assistance with improving health (Masters et al., 1993; McDonald et al., 2002; Ogles & Masters, 2000; Rice, 2015; Ridinger et al., 2012; Summers et al., 1982, 1983). When consumers perceive endurance events as delivering these functional attributes, they will increase their involvement in them (Kressmann et al., 2006). While functional attribute evaluation is considered to influence a consumer's involvement with a brand, research has also suggested more symbolic measures, here called measures of self-congruity, have as much, if not greater, influence on the consumer's involvement process (Kressmann et al., 2006). Still, limited research on self-congruity's role in consumer decisions has been conducted in the sport context (Horton & Mack, 2000; Lough et al., 2014). This lack of research is surprising as many researchers have conceptualized the existence of self-congruency in the sport involvement process (Funk & James, 2001; Funk et al., 2011; Havitz & Dimanche, 1997). The current research addresses this void and follows the suggestion of Beaton et al. (2011), who recommended efforts exploring factors that facilitate the development and progression of involvement continue.

The Psychological Continuum Model (PCM)

Runners, like other sport consumers, exhibit a variety of characteristics, needs, motivations, and goals. As such, it would be unwise to treat all runners as the same, as participants in this activity tend to exhibit a broad range of levels of involvement. The PCM provides a basis for examining runners at different levels. The PCM was designed to evaluate an individual's level of involvement with a sport object, such as level of sport fandom, and later has been applied to sport and leisure activity participation (Funk & James, 2001). A key attribute of the PCM is its focus on the social-psychological connection an individual makes with a sport object, participation in an endurance event in the case of this study. The PCM identified that high levels of sport involvement exist when individuals evaluate their participation in a sport activity as a central component of their life, providing both hedonic and symbolic value, measured as centrality, pleasure, and sign (Beaton et al., 2011). As a level-based framework, the PCM examines the sociological and psychological processes associated with attitude formation along four vertical levels: (a) awareness, (b) attraction, (c) attachment, and (d) allegiance (Funk & James, 2001; Funk et al., 2011).

An initial evaluation of potential participation is triggered from external influences interacting with and shaping perceived and desired identities. This evaluation may come in the form of matching activities with perceived or desired identities held by the individual or other functional benefits (Beaton et al., 2011). The strength of a consumer's commitment is determined by an assignment of emotional, functional, and symbolic meaning to the activity (Funk & James, 2006) and by the extent to which the consumer identifies with important values and self-images associated with participation (McDonald et al., 2002). Once

participation in the event is perceived as properly aligned with self-concept, a level of commitment and attitudinal loyalty is formed, leading to repeat behavior (Meyer et al., 2004). While it is understood that individuals with no previous endurance event participation may occupy the awareness level of this model, the classifying characteristics sport marketers can use to effectively identify this segment beyond participation has been missing from sport participation research. The current research takes the call for more evaluation exploring factors facilitating the development and progression of involvement (Beaton et al., 2011) by providing an analysis of influences and facilitators conceptualized within the involvement process, here identified as congruity.

Consumer Congruency

Congruency is important in understanding consumer behavior because of the associations consumers hold about brands and the role these meanings take in the decision process. Various types of congruency have been acknowledged in past consumer research with two main categories, functional congruity and self-congruity. Functional congruity is "the match between a consumer's ideal expectations of utilitarian brand features and their perceptions of how the product is perceived along the same features" (Kressmann et al., 2006, p. 955). In a sport participation context, the influence of functional attributes on the involvement process has been identified in several studies (Funk et al., 2011; Masters et al., 1993; McDonald et al., 2002; Ogles & Masters, 2000; Rice, 2015; Ridinger et al., 2012; Scanlan et al., 2003; Summers et al., 1982; 1983). Functional expectations from event participation have included feeling a sense of fun or enjoyment, having the ability to compete, receiving socialization opportunities, improving health, and experiencing a sense of achievement. Functional congruity is most impactful when a participant desires the opportunities a brand category is expected to offer, and an event is perceived as able to deliver them.

The more symbolic form of congruity, self-congruity, is an internal process driven by individuals matching their self-concept with a target. Perceptions of self include both actual self-concept and ideal self-concept. The actual self is how consumers truly see themselves (Sirgy & Su, 2000), while the ideal self is how consumers would like to be (Hung & Petrick, 2011). In the case of endurance event participants, self-concept can range from self-identified non-runners to very serious runners. For example, someone driving a vehicle with multiple Ironman event or 26.2 stickers is demonstrating themselves as an endurance event athlete. Conversely, someone identified as a non-athlete would not demonstrate this and respond negatively when asked if they are a runner. With ideal self, someone not currently self-identified as a runner could harbor desires to be a runner. And so, actual and ideal self-concepts can differ.

Once self-concept is formed, they are evaluated against a target. Previous congruency research has identified that the target evaluated may be interpreted as a brand (Aguirre-Rodriguez et al., 2012) or a "stereotypical image of a person

believed to be found in a certain situation" (Kang, 2002, p. 174). Sport consumer research has identified the product as a sport category, such as basketball, and the brand as the team (Pritchard and Funk, 2010). The current research follows suit by identifying the product as running and the brand as the running event of interest, and so, the evaluation of congruity occurs between self-image and the brand. This is possible because consumers hold symbolic meanings and associations of brands that are evaluated during the purchase decision process (Gladden et al., 1998; Ross, 2006, 2008). In the case of endurance events, research has shown that symbolic meanings held for endurance events may include demanding, physical, committed, brave, insane, fun, social, and rewarding. Past research has suggested evaluating both functional and symbolic self-congruity for a complete measure of a consumer's decision-making process (Hung & Petrick, 2011). For this reason, the current study identified and measured one evaluation of functional congruity and three forms of self-congruity; brand association congruity, a stereotypical user with ideal self-image congruity, and a stereotypical user with actual self-image congruity. These four forms of congruity are defined within the context of this study in Table 11.1.

Congruency theory is a natural fit with popular sport involvement models and should assist in producing beneficial practical outcomes. As a level-based construct, the PCM relies on transitions between four different levels of involvement. As previously discussed, it has been hypothesized that each level has its own set of inputs/antecedents and outcomes/characteristics which initiate processing between the levels (Beaton et al., 2011). Conceptualizations behind congruency theory are represented in processes identified within all four of these levels. During the initial evaluation at the awareness level, a non-runner's attitudes are shaped by external influences such as social and cultural beliefs, media, family, and peers (Beaton et al., 2009), all agents that influence the creation of self-image

Table 11.1 Congruity Definitions

Congruity Type	*Definition*
Functional congruity	An evaluation of ideal utilitarian expectations of endurance event participation and an individual's perception of how long-distance road running participation is perceived along with the same attributes.
Brand association congruity	The match between an individual's actual self-image with perceived associations of long-distance road running events.
Stereotypical user with ideal self-image congruity	The match between how an individual would like to be (ideal self-image) with the image of a person believed to be a typical long-distance road running event participant.
Stereotypical user with actual self-image congruity	The match between who an individual really thinks they are (actual self-image) with the image of a person believed to be a typical long-distance road running event participant.

used in congruency theory (Tajfel & Turner, 2010). These event non-participants are likely to shape their actual and ideal self-image in response to the target. As individuals move from awareness to actual participation in the activity, identified as the next stage, attraction, and on to further levels, they continue to process information about the brand by evaluating its ability to satisfy functional and symbolic needs (Beaton et al., 2009; Funk & James, 2006).

Examination of the PCM confirms the theoretical placement of congruency theory within an evaluation of sport involvement. In response to participation trends within the United States endurance event market, the current research evaluated a range of consumers, from non-endurance event participants to serious runners, segmenting them based on involvement level. Characteristics of level occupants, based on the theoretical underpinning of sport involvement research, demonstrate the presence of consumer congruity within sport involvement theory. In other words, runners with higher levels of involvement should perceive the activity to be more congruous with their view and place in the world. As a result, the following hypotheses were generated.

H_1: Functional congruity will increase as the level of involvement increases.
H_2: Brand association congruity will increase as the level of involvement increases.
H_3: Stereotypical user with ideal self-image congruity will increase as the level of involvement increases.
H_4: Stereotypical user with actual self-image congruity will increase as the level of involvement increases.

Method

Participants

Understanding the need to maintain current event participants while attracting new participants, this study investigated a range of involvement levels, from non-endurance event participants to highly involved endurance event participants. The sample was recruited from 11 endurance training groups located throughout the United States. Training groups were chosen because many of these programs are designed to prepare individuals for endurance event participation. Often, the culminating activity for a group is a specific event or a collection of endurance events of different distances. This sample was considered appropriate due to the insight they would have toward endurance events and event participation through a range of involvement levels.

The sample also included students from two undergraduate and one graduate sport management courses at a public university in the United States Midwest. A sample of college students was determined adequate for several reasons. First, college students are endurance event participants. It is also a time when individuals are exposed to endurance event participation (Meschke, 2018; Ruiz, 2019).

Next, previous brand association research has utilized this type of sample (Aaker, 1997; Braunstein & Ross, 2010; Lee & Cho, 2009; Ross, 2008). Finally, student samples are often used in sport consumer researcher because they are significant consumers of sport and reflect a valued demographic for marketers (Braunstein & Ross, 2010; Ross, 2008).

In total, 650 questionnaires were collected, with 42 containing missing responses to key demographic or variable items. These were removed from the analysis. Of those remaining, 541 indicated respondents had previously participated in an endurance event (marathon or half marathon), and 67 indicated no previous endurance event participation experience but were familiar with endurance events. Following Funk and James (2006) and Beaton et al. (2009; 2011), these 67 respondents were automatically placed in the PCM's awareness level. Those with previous endurance event participation were placed into involvement levels based on their responses. The current study utilized a staging mechanism developed by Beaton et al. (2009), creating ranked involvement profiles from scores of three facets of involvement; pleasure, sign, and centrality. The collection of possible involvement profiles was then translated into a stage algorithm with endurance event participant respondents placed into one of the remaining three involvement levels. After this staging, 326 individuals occupied the highest level of allegiance, followed by 174 respondents in attachment, 42 in attraction, and 63 in the lowest level of awareness. The demographic profile of the endurance event sample was considered representative based on its similarity to that of endurance event participants in the United States. Running USA (2017) estimates the United States has more female runners than male, with 63% female runners, and the largest category of runners includes 35- to 44-year-olds (Running USA, 2017). A full report of demographic characteristics for the sample can be found in Table 11.2.

Measures

Each respondent received the same questionnaire consisting of three sections. The first section was comprised of qualifying items to assist with the remainder of the survey. This included the history of event participation. If respondents had not previously participated in an event, they were asked if they knew what an endurance event was. Those with no knowledge of endurance events were finished with the survey and excluded from the results. Those with no participation history but with knowledge of endurance events were retained and received questions measuring all constructs represented in the second section of the questionnaire except involvement's pleasure, sign, and centrality. Those indicating previous event participation received all items in the second section.

Within the second section of the questionnaire, the following constructs were measured: (a) involvement, (b) functional congruity, (c) stereotypical user congruity, and (d) brand association congruity with traditional endurance events (long-distance running events such as half-marathons and marathons). Past research has indicated non-traditional and traditional endurance events have

Table 11.2 Sample Characteristics

Variable	%	*Total*
Sex		
Male	25%	154
Female	74%	447
No Response	<1%	7
Age		
18–24	11%	63
25–34	27%	165
35–44	30%	184
45–54	23%	137
55–64	7%	45
65+	1%	6
No response	1%	8
Ethnicity[a]		
White (non-Hispanic)	82%	524
Black (non-Hispanic)	6%	37
Hispanic or Latino	5%	29
Asian or Pacific Islander	3%	16
American Indian or Alaskan Native	1%	5
Other	1%	6
Would rather not answer	1%	7
No response	1%	6
Past Event Participation[a]		
Marathon	49%	315
Half Marathon	83%	528
Obstacle Course Event	32%	203
No Previous Endurance Event Participation	10%	64
PCM Level for Traditional Endurance Events		
Allegiance	54%	326
Attachment	29%	174
Attraction	7%	41
Awareness	11%	67

[a] Respondents could choose all that apply. Percentage total >100%.

distinctive brand characteristics (Rice, 2015), and the current analysis would benefit from a clear evaluation of one category. While non-traditional events have an impact, as witnessed by their influence on recent trends, traditional endurance events remain the pillar of the industry, and their long history is suggested to produce a more stable influence. For these reasons, an evaluation of traditional endurance events was considered.

As suggested by Beaton et al. (2011), involvement was measured with nine items (three for pleasure, sign, and centrality) on a 7-point Likert-type scale (1 = *strongly disagree*, 7 = *strongly agree*). Each of the scale scores was used to calculate the occupancy of an involvement previously described (Beaton et al., 2009). Functional congruity, the ability to fulfill the perceived utilitarian attributes generally expected with endurance event activity participation, was measured using

an ideal-point model based on the research of Kressman et al. (2006). An exhaustive literature review found specific functional attributes related to endurance sport participation include obtaining a sense of achievement, having a fun experience, developing camaraderie, receiving an opportunity to be healthy, and satisfying a need to compete (Funk et al., 2011; Masters et al., 1993; McDonald et al., 2002; Ogles & Masters, 2000, 2003; Rice, 2015; Ridinger et al., 2012; Scanlan et al., 2003, 2013; Summers et al., 1982, 1983). The functional congruity score was determined by calculating the direct score of the five functional associations of endurance event participation by asking if "Long-distance road running event training and participation [provide the functional attribute]". Scores were calculated on a 7-point Likert-type scale (1 = *strongly disagree*, 7 = *strongly agree*). To produce a total functional congruity score, a mean score from these five different scores was calculated.

The congruency with the stereotypical user was measured on a 5-point Likert-type scale (1 = *not at all overlapped*, 5 = *nearly total overlap*) and (1 = *not at all similar*, 5 = *nearly total similarity*) based on Kang (2002) and Kwak and Kang (2009). Respondents were asked to "Please take a minute to think about the overall image of a typical long-distance road running event participant and respond to the following questions". With these pictures in mind, they were asked to respond to the items identifying their actual-self congruity and ideal-self congruity with a stereotypical user. For example, actual self-image was measured with the following item, "How much does your own actual self-image (who you think you actually are) and the perceived overall image of the typical long-distance road running event participant overlap?" Past studies demonstrated reliable and valid scores using similar measures. In Kang (2002), university students were asked to evaluate measures of self-image congruity for two distinct physical activities. Overall model fit was acceptable, and factor loadings for both physical activities were high. To produce a stereotypical user congruity score for both actual and ideal self-image, the mean from each set of items for their individual measure of the stereotypical user was calculated.

The researchers were also interested in the effect self-image congruity had on the perceived associations of a category brand. This is conceptualized as brand association congruity. To overcome issues identified by Ross (2008) and Caprara, Barbaranelli, and Guido (2001) with a popular 15-item brand association scale developed by Aaker (1997), the current measure of brand association congruity utilized a direct measure of congruence, as opposed to the difference score technique. This measure is supported by the work of Govers and Schoormans (2005) and Sirgy et al. (1997). The current analysis asked all respondents to "List the characteristics which first come to mind when thinking about a typical long-distance road running event". To receive the direct congruency measure, the questionnaire then requested respondents to consider the associations they just provided when answering the following three items on a 7-point Likert-type scale (1 = *strongly disagree*, 7 = *strongly agree*): "A typical long-distance road running event is like me", "I identify with my description of a typical long-distance road

running event", and "Considering my own personality and comparing it to the description I just provided for a typical long-distance road running event, I find they are similar". A total self-image congruity score was calculated by producing the mean score from the three items.

The final section asked respondents to record their basic demographic information. This included age, sex, marital status, race, number of years participating in endurance events, and previous race participation behavior over the past 12 months. These data were used for descriptive purposes to determine if the sample was representative to endurance event participant profiles, as indicated by Running USA (2017), and to allow for further analysis.

Data Analyses

All analyses in this study were conducted using the Statistical Package for the Social Sciences (SPSS 16.0). Specifically, descriptive statistics, multivariate analysis of variance tests (MANOVA), and Cronbach's alpha coefficients (α) were used to investigate the role of congruity within the participant sport involvement process. The treatment of the data was separated into three parts. First, descriptive statistics, including the means and standard deviations of all variables and involvement PCM level assignments for respondents, were calculated. Second, the reliability of the involvement scores and congruity scores were assessed by examining their Cronbach's alphas, as recommended by Nunnally and Bernstein (1994). Next, MANOVA was utilized to examine the relationship between participant PCM involvement level and the role of congruity. To examine the differences in the congruity effect between the four PCM involvement levels, the MANOVA utilized a grouping variable, PCM level, as the independent variable. The four types of congruity (functional congruity, stereotypical user congruity with actual self, stereotypical user congruity with ideal self, and brand association congruity) served as the dependent variables. These findings could determine which types of congruity are most associated with each participant's involvement level. Because the study was exploratory interested in finding and highlighting differences, a univariate post hoc analysis was chosen.

Results

Four distinct types of congruity with endurance events were measured in the current analysis to evaluate the utlilitarian and symbolic relationships an individual had with endurance running and events. These results are displayed in Table 11.3. Confirmatory factor analysis indicated a good fit of the model to the data (CMIN/DF = 1.604, CFI = .983, GFI = .934, AGFI = .906, RMSEA = .045). As expected, results indicated the measures of congruity did increase as the level of involvement increases. Results from the MANOVA test revealed significant differences among the four unique types of congruity scores between the different levels of endurance event involvement, where Wilks' Lambda = 0.6281, $F(4, 593) = 28.862$,

Table 11.3 Descriptive Statistics for Univariate Analysis

Involvement Level	*Functional Congruity*		*Brand Association Congruity*		*Stereotypical User with Ideal Self-Image Congruity*		*Stereotypical User with Actual Self-Image Congruity*	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Allegiance	6.65[1]	0.59	5.74[1,2,3]	1.24	3.73[1,2,3]	0.82	3.27[1,2,3]	0.86
Attachment	6.44[1]	0.54	5.18[1,4]	1.32	3.33[1,4]	0.91	2.85[1,4]	0.79
Attraction	6.34[1]	0.56	4.61[1,4]	1.36	3.11[4]	0.81	2.59[4]	0.79
Awareness	5.08[2,3,4]	1.44	3.40[2,3,4]	1.94	2.73[3,4]	1.11	2.35[3,4]	0.99

[1] $p < 0.01$ with awareness.
[2] $p < 0.01$ with attraction.
[3] $p < 0.01$ with attachment.
[4] $p < 0.01$ with allegiance.

$p < 0.001$. The follow-up between-groups univariate tests revealed multiple significant differences between the PCM levels and measures of congruity.

To address hypothesis 1, an analysis of functional congruity, respondents in the allegiance ($m = 6.65$), attachment ($m = 6.44$), and attraction ($m = 6.34$) groups reported significantly higher functional congruity than those in the awareness group ($m = 5.08$). For hypothesis 2, which addressed brand association congruity, respondents in the allegiance group reported significantly higher brand association congruity ($m = 5.74$) than respondents in the other three groups. Respondents in the attachment ($m = 5.18$) and attraction ($m = 4.61$) groups were similar but significantly higher than respondents in the awareness group ($m = 3.40$). Hypothesis 3, concerned with a stereotypical user with ideal self-image congruity, respondents in the allegiance group reported significantly higher stereotypical user with ideal self-image congruity ($m = 3.73$) than the other three groups. Respondents in the attachment group ($m = 3.33$) were significantly higher than those in the awareness group ($m = 2.73$). And finally, in evaluating for hypothesis 4, respondents in the allegiance group reported significantly higher stereotypical users with ideal self-image congruity ($m = 3.27$) than the other three groups. Respondents in the attachment group ($m = 2.85$) were significantly higher than those in the awareness group ($m = 2.25$).

The greatest differences in congruity measures between the involvement levels were recorded between the awareness and allegiances levels. For functional congruity, the scores for awareness level occupants were significantly different from all other involvement levels. This was an effect of the large difference between awareness ($m = 5.08$) and attraction ($m = 6.34$), with scores of functional congruity increasing at each consecutive level. Interestingly, no significant differences were shown between the other involvement levels. This isolated difference was unique to functional congruity as other congruity measures differed between multiple involvement levels. For example, the allegiance level experienced significant

differences with all other involvement levels under each symbolic measure of congruity. However, no significant differences existed between attraction and attachment along with any congruity measure.

Discussion

The current research was designed to further investigate involvement within the endurance event market by introducing measures of congruity to operationalize influencers and moderators conceptualized within a popular sport involvement model. The research was also a response to recent endurance market trends of stagnation following a rapid growth period. Results revealed differences in congruity measures between some involvement levels, providing valuable insight into unique consumer segments for sport marketers and the sport involvement process but also challenged some conceptualizations of the PCM.

Endurance Event Involvement and Congruity

Initial results describe differences in the four measures of congruity (functional, brand association, stereotypical user with ideal self-image, and stereotypical user with actual self-image) throughout the involvement levels. Further analysis revealed that all congruity scores increased in coordination with involvement level, and noteworthy differences existed between many but not all levels. Specifically, those within the highest involvement level, allegiance, displayed significant differences between all other levels along with the three symbolic congruity scores but not with functional congruity. The lowest level of involvement, awareness, also produced multiple significantly different results, while no significant differences existed between those occupying the middle involvement levels, attraction, and attachment within each congruity measure. As conceptualized, differences exist between the two main categories of congruity. Current results reveal functional and symbolic congruity are interpreted differently within the endurance event market. Even within symbolic measures, brand association and the two stereotypical user congruity measures are also distinct. These results are in line with past research (Parker, 2009) comparing different congruity measures.

Functional congruity scores were the highest among all congruity measures. Non-endurance event participants occupy the awareness level, yet believe endurance events deliver desirable outcomes yet choose to not participate, it could be these outcomes are not considered desirable by these individuals, or in the least, are not motivated enough to begin participation. Still, the only significant increase in functional congruity occurred between this awareness level and attraction before a relative plateauing of scores through the next two involvement levels. This suggests that even though event participation is expected by many to deliver certain outcomes, a significant shift occurs as event participation commences. As a result, this increased emphasis on functional outcomes could be a trigger between event participation and non-participation but does

not dramatically increase involvement once participation is initiated. This is supported in the conceptualization of the PCM, which suggests sport participants move from valuing utilitarian outcomes to more personal and symbolic measures (Beaton et al., 2011).

The symbolic measures of congruity deliver important results in how scores can be distinguished between various involvement levels. While the symbolic congruity measures did increase along all PCM involvement levels, a categorization of three involvement levels are suggested by the results. The awareness and allegiant levels remain consistent with the PCM, scoring the lowest and highest measures, but the mid-levels of attachment and attraction recorded insignificant differences. These results suggest symbolic congruity measures have the ability to distinguish non-event participants and highly involved individuals from other levels.

Other unique results include the difference between actual self-image congruity with a stereotypical user and the higher scoring ideal self-image congruity. This implies a stereotypical endurance event participant is closer to the questionnaire respondent's ideal self than actual self and establishes a difference between the two measures. A subtle demonstration of symbolic congruity can be witnessed on marathon weekends and Ironman triathlon finish lines. Anyone visiting New York City over the first weekend in November will witness marathon finishers proudly wearing their medals in restaurants, walking around town, or at airport security stations. At the New York City Marathon, this practice is more traditional than an effort from the marketing team, but other marathons will ask their finishers over public address or social media announcements to proudly wear their medals around town or post photos with their medals on the social medal. The idea is runners should be proud of their runner identity, and public display of such will only reinforce this identity.

While the current research was conducted on endurance events such as marathons and half-marathons, the Ironman triathlon series provides another great example of advancing self-image congruity with one of its signature event features. At the finish line of every event, organizers announce "YOU are an IRONMAN" to every finisher. For some repeat finishers, this may be a mere ceremony, but for others, first-time finishers, in particular, this is a profound moment they have trained very hard to earn. As they join the Ironman club, it is quite possible they are also reducing the distance between ideal and actual self.

Theoretical Implications

Theoretically, these results confirm the presence of congruity within a sport participant's involvement process (Beaton et al., 2009). However, the uniqueness between each level is not evident. Major changes were present between the awareness and attraction phase as individuals moved from non-participation to participation in the target activity. While functional congruity is rated high for awareness occupants, a significant change in perception still occurs as they move

from the level of attraction. Since non-event participants exist in the awareness level, the increase in functional attributes is significant at they experience event participation. Endurance event marketers should continue to rely on these event attributes in their marketing communications targeted to those with lower involvement levels.

While significant increases in functional congruity occurred between these lowest involvement levels, significant differences were not present between other involvement levels. These results challenge Beaton et al.'s (2009) role of functional meaning in assisting movement between the attachment level to allegiance. Instead, the influence of this moderator is determined to exist between the awareness and attraction levels. Beaton et al.'s (2009) conceptualization of self-concept's role between attraction and attachment is also questioned. Current study results reveal no significant differences in three symbolic measures of self-congruity between the attraction and attachment levels, while significant differences exist between the allegiance level and all other levels. While past research has conceptualized and measured four unique involvement levels (Filo et al., 2011; Funk & James, 2001; Funk et al., 2011), the current results had difficulty creating distinguishing profiles of these four levels and suggests more investigation is warranted.

Practical Implications

Because all measures of congruity increase along with the involvement levels with significant increases from awareness to higher involvement levels, race organizers are encouraged to target not only current participants but also nonparticipants with messages containing characteristics suggested by the current measure of congruity. The New York City Marathon's social media accounts provide a good illustration of the event attempting to promote the marathon to a wide variety of people. Signaling evidence of symbolic congruity, a scroll through their Instagram account reveals a mosaic of runners. In the images, event participants represent numerous countries across the world, with unique ethnic backgrounds, diverse ages from young to old, an array of physical disabilities and body types, elite runners to first-timers, and even walkers. The diversity of this imagery is purposeful. The New York City Marathon organizers feel their event is for everyone, and they want everyone to imagine they have a place at their event. The current research supports these efforts, as lower involved individuals will transition to higher levels of congruity in relation to increases in involvement levels.

While conceptualizing a match with typical long-distance road running event participant may be more natural than doing the same with event brand associations, event producers would benefit from building distinct characteristics for their event. These may come in the more utilitarian form of functional congruity or the symbolic brand association congruity. Road running events like Bay to Breakers in San Francisco is known to have a party atmosphere, while a flat marathon course like the Chicago Marathon is considered to be fast, giving

participants a chance to accomplish personal records. While the current research did not distinguish which event characteristics were favored by the different involvement levels it did signify distinct changes in functional congruity scores between the awareness level and others.

Regarding brand association congruity, not only could events advertise themselves as fun, like Bay to Breakers, but also highlight other event characteristics an individual could match with themselves. For example, the Walt Disney World Marathon field contains a lot of first-time marathoners. A race advertising itself as first-time friendly with lots of runner support along the course would match well with first-time participants. However, a trail marathon with limited runner support (participants either carry nutritional needs with them or recruit a personal support crew) is a better match for a seasoned runner. A variety of event types can be successful, as there are a variety of runners to attract. The key is for the road running event market to produce and advertise events with a variety of characteristics that appeal to and attract the different involvement levels. As illustrated in the examples, characteristics found within the different measures of congruity may be used within marketing communications to activate occupants of the different involvement levels.

Limitations and Future Research

The current study was designed to investigate the process individuals undergo while becoming involved in a participant sport activity and to evaluate the presence of congruity within this process. While results produced insight into this process, multiple research opportunities are presented as extensions of the current study. These include further investigation of the involvement process, especially occupants of the awareness level and the influence of congruity measures on consumers. Further investigation should focus on the involvement process of sport event participants over time. While the current study provides additional information about the process and the presence of congruity measures, its cross-sectional nature limits the ability to fully understand triggers for level movement. This analysis would be aided by longitudinal studies focused on identifying why participants move between levels. Results from these studies may help complete our understanding of the involvement process and produce multiple practical benefits.

Involvement levels should also be evaluated in terms of practical outcomes, such as purchasing behavior and social influence, and theoretical considerations. The current study revealed attitudinal and behavioral increases in accordance with involvement levels. However, future analysis could measure the relationships between the involvement levels and multiple consumption behaviors to further describe their differences. Behaviors could include direct event consumption such as when the individual typically registers for an event (early discounted registration versus waiting until the last minute) or complimentary product consumption such as purchasing running magazines, books, training programs, apparel, or equipment. Other helpful descriptions of the involvement levels, such as

likelihood to recommend the event to a friend or possibility of volunteering at an event, could assist practitioners and further our understanding of the involvement process and behaviors of segments built around the involvement levels.

The current research found potential issues with the prescribed staging of involvement levels. Individuals occupying the lowest involvement levels, awareness, and attraction seem to be arbitrarily placed in these levels because they have or have not participated in the activity. Within the current study, some occupants of the attraction level would have fallen into the awareness level because they scored low in the three facets of involvement: pleasure, sign, and centrality. However, because they had previously participated in endurance events, they automatically fell into the attraction level based on the staging mechanism presented by Beaton et al. (2009). Similarly, limited psychological changes, here conceptualized as congruity, between mid-range involvement levels were present. Further investigation into these involvement levels is needed to appropriately assign and describe level occupants. A limitation of the current study is the sample of college students. Because the psychological development of younger consumers varies from their older counterpart, the study results representing the students may be generalized with caution.

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Chapter 12

Service Provider Selection with the Analytic Hierarchy Process

An Approach to Sport Facility Enterprization in China

Yunxia Ding and Yelena Y. Wang

Introduction

Public sport facilities, as the material foundation of national fitness, play an important role in the development of Chinese sport industry. In order to overcome the business difficulties that may follow mega events, such as the 2008 Beijing Olympics, the 2010 Guangzhou Asian Games, and National Games over the years, operational reforms are necessary. Facing the coming challenges such as the 2022 Beijing Winter Olympics and the 2022 Asian Games at Hangzhou, China is hastening to streamline the administration of the facilities to ease the contradiction between inefficient supply and unsatisfied demand of public sport services.

In May of 2016, the General Administration of Sport of China released *The 13th Five-Year Plan of Sport Development* and brought forward important strategies for introducing and applying the modern enterprise system, regenerating public stadiums, exploring the separation of ownership and operation of major stadiums, and promoting reforms of public stadium management and operation mechanisms (GASC, May 5, 2016). Soon afterward, *the 13th Five-Year Plan of the Sport Industry* proposed maintaining state-ownership of sport facilities while transferring operating rights (GASC, July 13, 2016). This transformation was again emphasized in *The Outline of the Healthy China 2030 Plan* (CPC central committee & Chinas State Council, October 25, 2016). Subsequently, the GASC formulated *The Work Programme on Further Reinvigorating Stadium Resources* and started trials in Jiangsu and Zhejiang provinces and the Chongqing municipality. These trials focused on sport facility management reforms, maintaining public stadiums as state-owned while granting operating rights to private entities. Through the innovation of institutional superstructure design and field exploration, the Chinese sport industry decision makers sought to advance the development of public stadiums, improve the capacity of sport services that they provide, pursue a new goal of fitness-for-all, and accelerate the development of the fitness and recreational sports industry.

According to the law of the market economy, any decision-making depends on a comparison of costs and benefits. The key to social investment and financing is the reasonable expected return on investment (ROI) (Ye, 2008). Public sport facilities

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are usually large- and medium-scaled, which require large investments. The related projects are long term in most cases. Therefore, only ROI above the average profit margin can attract private actors' interest. In order to address developing problems, such as financial losses in operating and maintaining local sport stadiums and arenas after mega games, specific business pattern reforms are necessary for the Chinese sport industry. As Xue and Mason (2019) said that the Chinese traditional sport facility operating pattern is different from that of their peers in North American cities, very few sport arenas in Chinese cities host home teams. After mega games, these facilities' expected ROI from day-to-day operations faces more realistic challenges. Newly developing multi-purpose sports complexes are emerging in response to the proper conditions. Revenues from multi supplementary businesses are expected instead of simply from sport events. Also, more benefits for the community to improve residents' quality of life need to be implemented.

High hopes are placed on the development of sports complexes. In this business mode, a general contractor (i.e., the service integrator) invites a group of subcontractors (i.e., sub-service providers) to build a service supply chain together. All service providers (e.g., sports training companies, entertainment corporations, and catering enterprises) contribute to the entire facility's operational effectiveness. All providers' service capabilities, standardization levels, and qualities are important. However, every subcontractor is usually single-functional in a certain space. Thus, resource integration is necessary to establish a service ecosystem, which improves the operational efficiency of public sport facilities and meets the multi-level and diverse sports service demands of consumers.

The selection of subcontractors is important in order to increase the entire flexibility of sport facilities and improve competitive power. How to make an effective selection of service providers within the supply chain in the sports industry also captures researchers' attention. In this study, the authors established a service provider selection model with an analytic hierarchy process. This study is the first AHP research to build a reliable and valid scale for service provider selection in terms of large- and middle-sized sport facilities in China. Through this model, service integrators are able to evaluate their potential subcontractors. To our knowledge, this model is the first applicable and sports-focused service provider selection model regarding the special market of China, which is expediting the pace of the supply-side reforms. The authors hope that our findings can help the Chinese sport industry to take a positive step in its enterprization process.

Review of Literature

The Supply Chain

The concept of the *supply chain* and *supply chain management* was considered the first important aspects within the theoretical framework of this study. The concept itself is not new. *Supply chain* was proposed in the early 1980s

(Oliver & Webber, 1982) and has become a wide research focus since the late 1990s (e.g., Beamon, 1999; Ellram et al., 2004; Fisher, 1997; Mentzer et al., 2001). Numerous definitions have been provided.

Handfield (1999) stated that the *supply chain* involves "all activities associated with the flow and transformation of goods from the raw materials stage (extraction), through to the end user, as well as the associated information flows. Material and information flow both up and down the supply chain", and "*supply chain management* (SCM) is the integration of these activities through improved supply chain relationships, to achieve a sustainable competitive advantage" (p. 2). Simchi-Levi et al. (2008) stated generally that SCM "is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system-wide costs while satisfying service level requirements" (p. 1). SCM also refers to the *logistics network* (p. 1). Based on existing studies, the authors adopted the SCM approach, which builds competitive strategic alliances. Fundamentally speaking, the purpose of SCM is to satisfy the diverse demands of consumers and, therefore, achieve overall competitiveness.

Some Chinese researchers have noted the rationality of Western economic theories and began to introduce the market-based operation pattern to the Eastern world. Since the Chinese market leans on traditional industries, most studies with regard to supply chain and SCM have focused on manufacture (Yang, 2006), agriculture (Zhu, 2004), and the real estate industry (Kang, 2007). Only a limited number of studies with regard to the service supply chain can be found in China (Yu, 2011), while many Western scholars have paid attention to comparing the differences between manufacturing and service supply chain performance (Sengupta et al., 2006), performing case studies of the after-sales service supply chain (Saccani et al., 2007), and examining the service supply chain management (Ellram et al., 2004; Stentoft Arlbjørn et al., 2011). Only a few pioneers can be found in the Asian context recently, such as Cho et al. (2012) and Wang et al. (2015). In China, even fewer scholars have started some preliminary explorations (Huang et al., 2013; Yan et al., 2005). A significant research gap still exists. Especially, the sport industry, an important component of the service industry, has not been well considered yet, to our knowledge.

Supplier Selection and Assessment

Supplier selection has been a widely studied research system all over the world for more than half a century. For example, Dickson (1966) studied vendor selection systems that existed at that time, analyzed more than 50 features of vendor performance that had been presented in a variety of purchasing literature and proposed a 23-factor criterion in which quality, delivery, and performance history were the top three weighted indexes. In Johnson, Meade, and Rogers' study (Liu & Zhang, 2011), time, quality, cost, and service were deemed as the success

factors in partner selection. Moreover, Kannan and Tan (2002) divided their criterion into two aspects: soft and hard. Their empirical study found that the soft aspect (i.e., non-quantifiable factors, such as a supplier's strategic commitment to a buyer) plays a more significant role than the hard aspect (i.e., quantifiable factors, such as supplier capability).

Most existing studies have focused on product suppliers' selection, and various assessment criteria have been proposed, while only a few were applied to the service market (e.g., Billhardt et al., 2007; Ko & Pastore, 2005). Since more business strategic partnerships are being established between product and service enterprises, suppliers and their provisions have become increasingly specific. Different supplier selection criteria must be developed in different domains, being more applicable. For instance, Kan and Chen (1998) suggested that an auto parts supplier assessment criterion should consider quality, delivery, flexible manufacturing, the balance between delivery time, price, and quantity, and diversity. Zeng et al. (2007) provided a four-dimensional transport service supplier selection model that involved quality, service, price, and delivery time. Moreover, Li and Wang (2015) established a criterion for the retailer-led supply chain that involved cost, flexibility, quality, technology, risk, and environment.

In the Chinese sport context, only Wang et al. (2013) have analyzed the demand of mega events, discussed the goal of establishing a supply chain that focuses on mega sport events and mentioned the process of selecting and assessing service providers. The importance of establishing criteria for service provider selection has been emphasized by Wang et al. (2013); however, they have not proposed any criteria yet.. On the one hand, several well-known enterprises, such as Amway, General Motors, Siemens, Henkel, Philips, and Sumitomo Mitsui, explained from the perspective of being global suppliers at the 2003 International Sourcing Summit Forum that their criteria involved seven major assessment standards: assurance of quality, speed of delivery, reasonable price, communication capabilities of foreign trade, ECO certification, application of E-commerce, and secure quality of service (He, 2003). On the other hand, from the perspective of selecting suppliers, Carrefour and Walmart stated that their standards included an examination of whether potential suppliers have export authority, price competitive advantage, quality assurance, mass productivity, a spirit of continuous learning, and on-time delivery (Chen & Qi, 2009).

According to all of the above studies, no accepted general standard of supplier selection can be determined. A specific set of criteria must be applied in a specific realm. Nevertheless, no literature with regard to the sport service provider selection, to our knowledge, has been done yet in Western or Eastern academia. Therefore, this study is the first research to propose an applicable service provider selection model. This study proceeds from the perspective of establishing a sport service supply chain and spotlights enterprization reforms in the Chinese sport industry.

The Stakeholder Theory

The stakeholder theory also guided this study as the third important aspect of the theoretical framework. Since the landmark book *Strategic management: a stakeholder approach* by Freeman was published in the early 1980s, the stakeholder theory has become a theoretical basis of various studies (e.g., Donaldson & Preston, 1995; Jensen, 2010). Freeman (1984) suggested that a company should be concerned about all of its stakeholders as he wrote the original concept that was stated by the Stanford Research Institute (1963), in which stakeholders are "those groups without whose support the organization would cease to exist." (p. 31). Then, he proposed more formally that a stakeholder can be "any group or individual who can affect or is affected by the achievement of the organization's objectives" (p. 46). In other words, these groups both directly and indirectly contribute to the operation of an enterprise and encompass customers, employees, suppliers, political action groups, environmental groups, local communities, media outlets, financial institutions, governmental groups, and more. Stakeholders affect the implementation of the enterprise objective and the operation's performance; in the meantime, the stakeholders' own interests are affected by the latter two groups (Freeman, 1984). Hendry (2001) emphasized that an organization cannot develop properly without the contributions of all stakeholders. Similarly, Blair and Stout (1999) suggested that each stakeholder invests from the perspectives of fairness, reasonableness, and balance. Stakeholders take responsibilities together and share the entire profits. In this way, a long-term effective benefit distribution mechanism can be established (Ensign, 2001).

Purpose of Study

Due to the complexity of SCM of large- and middle-sized sport facilities and the diversity of all of their participants, the authors adopted both the concept of supply chain and the stakeholder theory to analyze the stakeholders' benefit appeals and to examine how the ecosystem of sport facilities can be optimized. Therefore, initially, we need to demarcate two groups of stakeholders, including service integrators and service providers. According to the concept of SCM and the stakeholder theory, a key stakeholder must exist in each supply chain as the center of interest subjects. This key stakeholder coordinates all other subjects in the chain in order to harmonize the strategic partnership. The key stakeholder must also understand how to utilize the internal and external resources and help all subjects in the supply chain to achieve a win–win situation. In the domain of sport services, the service integrator who has operation rights plays the role of the key stakeholder.

Through fixed investment, the functional layout is planned, and certain facilities are arranged and installed in the sports complex by its contracted integrator. Then, the integrator invites potential sub-service suppliers – both sports and related supporting services – to join the chain. In this way, a supply-chain-based

sports complex mode can be run. The service integrator (i.e., the general contractor) as the key stakeholder establishes the service ecosystem by uniting all service providers. Therefore, the utilization and profitability of the sport facilities and the general competitive power of the complex are closely related to the integrator's performance. Strong capability of integration and standard management skills are necessary.

In an effort to separate operation rights from ownerships, privatization reforms are promoted to address the issues of Chinese traditional state-centered economic mechanism of public sports facilities. In order to develop each sports complex with its own features and optimize the service ecosystem, every single element of the supply chain needs the cooperation of different professional market subjects. These subjects are diverse service providers within the complex. They build the foundation of the chain. The service capability, standardization level, and quality of service of every single element impact the performance of the entire service chain. For example, hosting a Chinese Super League soccer tournament in Hongkou Football Stadium – a typical sports complex in Shanghai – requires that dozens of sports entities (e.g., the operator of the stadium, professional soccer clubs, the operator of the event, broadcasters, technology suppliers, fan service providers, sponsors) cooperate. The majority of these market entities is based in Hongkou Football Stadium or are located nearby. These entities have developed a cooperative effort as a community of interests.

Method

A case study, which is a qualitative research method, is based on a preliminary analysis of the objects. Researchers choose typical cases for in-depth investigation instead of a large sampling survey to explore new questions or new circumstances. In this study, the authors conducted a typical survey through field visits in ten sports complexes in six cities, in three provinces, including Jiangsu Wutaishan Sports Center, Nanjing Olympics Sports Center, Jiangsu Hongshan Sports Park, Shanghai East Asia Sports Center, Shanghai Hongkou Soccer Stadium, Shanghai Xiang Cube Multi-Purpose Sports Complex, Zhejiang Huanglong Sports Center, Zhejiang Hangzhou Gymnasium, Zhejiang Taizhou Sports Center, and Zhejiang Shaoxing Olympic Sports Center. The sports complexes that we chose are the typical successful cases in China. Many of them are on the recommendation list provided by the GASC (2020).

Questionnaire

We primarily used a quantitative method to analyze the collected data. Before that process, a pre-qualitative analysis (an empirical assessment of expertise) was utilized to determine the initial scale items. The quantitative analysis was conducted through SPSS to obtain descriptive statistics results and to test the reliability and validity of the study. Corrected item-total correlations and principal

component analysis were applied to the refining of the indexes of the proposed model.

Analytic Hierarchical Process

One of the main structured models is analytic hierarchical process (AHP), which comes from mathematics and psychology and was originally proposed by Thomas L. Saaty in the 1970s and was widely applied to support the decision-making theory in various domains for decades (e.g., Guariguata et al., 2014; Handfield et al., 2002). AHP helps researchers to develop scales through pairwise comparisons (Saaty, 2008). Saaty explained that these scales measure intangibles in relative terms. The comparisons are made by using a scale of absolute judgments that represent the extent to which one element dominates another with respect to a given attribute. In this study, following the review of literature, interviews of experts, and statistical analyses, the authors proposed a preliminary service provider selection model. Then, we examined this model in terms of AHP and gave different weights to different evaluation indexes in order to determine the status of each index in the entire index system. Therefore, the degree of each index's impact can be discovered.

Outline of the Initial Decision Hierarchy

Although various supplier selection studies have been conducted that focused on enterprise procurement, no extant literature focused on sport facilities. Initial items were adapted from existing literature, such as Chen et al. (2012), Saaty (2008), and Song and Huang (2010). Because of many recent development programs, such as sports towns, outdoor sports bases, sports and leisure bases, and sports tourism complexes, we structured our decision hierarchy from the top with the goal of selection of service providers, which is followed by objectives from three broad perspectives: *contract fulfillment* (from the perspective of the service provider), *cooperation within the supply chain* (from the perspective of the supply chain), and *consumer demand satisfaction* (from the perspective of the consumer), through the intermediate level (seven criteria on which subsequent elements depend) to the lowest level (a set of 41 alternatives). Most of the items of *contract fulfillment* and *consumer demand satisfaction* were adopted from the existing literature while the items of *cooperation within the supply chain* were selected by the authors according to the empirical assessment of expertise. Details are provided in Table 12.1.

Refinement of the Initial Decision Hierarchy

After the proposal of an initial hierarchy of sport service provider selection (7 intermediate criteria, 41 alternatives), which was adapted from the existing literature, we created a survey for a pretest to refine the index system. All

Table 12.1 The Initial Decision Hierarchy of Sport Facilities Service Provider Selection

Goal	*Objectives from Broad Perspectives*	*F*	*Lowest Level Alternatives*	*Qs (Is It Important Whether the Service Provider Has/Can/Is…?)*
Sport facilities, service provider selection (A)	Contract fulfillment (from the perspective of the service provider) (A1)	Brand (A11)	Industry Influence (A111) (Dickson, 1966)	Influence and a good brand position in the particular industry
			Service quality (A112) (Song & Huang, 2010)	High quality of its service product
			Public Image (A113) (Ding et al., 2021)	Social responsibility and public service achievements
			Cooperate culture (A114) (Roy et al., 2004)	A good company philosophy
			Entrepreneurship (A115) (Wasti & Liker, 1997)	Some leaders being proved successful
			Level of credibility (A116) (Li, 2006)	Credit record
			Policy support (A117) (Xu & Han, 2015)	Support from the government
		Management (A12)	Management team (A121) (Wagner & Hoegl, 2006)	An efficient management team
			Professorial level (A122) (Dickson, 1966)	Professorial management
			Organization (A123) (Wang & Wang, 2005)	A reasonable and friendly internal relationship
			Salary system (A124) (Huang, Yi, & Jie, 2016)	A reasonable salary system
			Innovation (A125) (Chen & Qi, 2009)	Some valuable proprietary marks or intellectual property rights
			Cross-industry collaboration (A126) (Hartley et al., 1997)	Experiences working with peer companies from other industries
			Marketing team (A127) ("Guidelines on promoting the development of region-wide Tourism", 2018)	A good marketing team
			Integration Capability (A128) (Song & Huang, 2010)	The capability of resources integration
			Flexibility (A129) (Hu, 2005)	Capability to deal with different situations in management

(Continued)

Table 12.1 The Initial Decision Hierarchy of Sport Facilities Service Provider Selection *(Continued)*

Goal	*Objectives from Broad Perspectives*	*F*	*Lowest Level Alternatives*	*Qs (Is It Important Whether the Service Provider Has/Can/Is…?)*
		Performance (A13)	Asset (A131) (Dickson, 1966)	Enough net assets and a good related financial position
			Debt (A132) (Xiao & Liao, 2010)	A reasonable asset-liability ratio
			Flows (A133) (Dou et al., 2016)	Reasonable inflow and outflow of corporate cash to carry out operations, investment, and financing
			Dynamic Performance (A134) (Wasti & Liker, 1997)	A good operating income and profit in the past three years
			Cooperation Experience (A135) (Liu et al., 2003)	Previous positive cases of cooperation and relatively low negative effect
			Industry Trends (A136) (Wynstra, & Ten Pierick, 2000)	A positive industry trend

41 alternatives were measured on a ten-point Likert-type scale. The participants included owners of the sport complexes, operation directors, decision makers of relevant government departments, decision-making consultants, and academic experts in the field of sports management. All selection indicators were described specifically. Also, the authors provided further explanations when needed during the questionnaire distribution and collection. Fifty questionnaires were distributed, and 48 were received. 14 of the responses were obtained by the researchers in the field, and 34 were collected online. Most participants were male (94%). All of them had college degrees, seven with master's degrees, four had PhDs, and two were doctoral candidates. Most participants had relatively long employment experience in their specific positions (≤5 years: 1, 5–10 years: 18, 10–20 years: 20, and ≥20 years: 9). Among them, six pieces with obvious bias (e.g., uncompleted or questionnaires which showed answers with obvious regularity) were removed. Therefore, a total of 42 valid samples were remained with the 84% effective rate. Then, statistical analyses were conducted through SPSS. Corrected item-total correlations and principal component analysis were utilized to refine the initial hierarchical model.

During the data collection, some experts pointed out that the concepts of several indicators overlapped, while some classifications were disputable. As they suggested, we narrowed down the model, deleted the seven intermediate level criteria, and directly linked the lowest level items to the three objectives from broad perspectives, such as sub-criteria and criteria. Moreover, we refined the model according to the rule of thumb, which holds that if we found an item with a corrected item-total correlation (CITC) value below .50 and a Cronbach's α below .70, we removed this item if there was no existing evidence from the literature that strongly supported the item (Churchill, 1979). SPSS 19.0 was used to examine the CITC and Cronbach's α values of the 41 items under each of the seven factors.

Results

According to the rule of thumb described above, four items (A112, A114, A115, A117) under the factor of Brand (A11) were removed. Under the factor of management (A12), two items (A128, A129) were removed. Three items (A131, A133, A134) were removed from the factor of performance (A13), while all four items under the factor of matching (A21) were retained. Under the factor of value enhancement (A22), two items (A221, A225), which CITC values .374 and .476, were removed. The items under the factor of market response (A31) were all retained. And three items (A323, A324, and A325) under the last factor, technology innovation (A32), were removed to meet the statistical requirements. After the reduction, all 27 retained items under the seven factors have CITC values over .50. And the Cronbach's α for each factor was over .70. The internal consistency reliability of the model after item deleted is acceptable, which meets the requirements of the rule of thumb (Table 12.2).

Table 12.2 CITC and Reliability Analysis of All 7 Intermediate Level and 41 Lowest Level Criteria

	Index Code	*Corrected Item-Total Correlation*	*Cronbach's α*	*Factor α*	*CITC if Item Deleted*	*Cronbach's α if Item Deleted*	*Factor α if Item Deleted*
Brand (A11)	A111	0.619	0.604	0.685	0.573	0.659	0.741
	A112	0.327	0.670				
	A113	0.541	0.616		0.542	0.683	
	A114	0.464	0.632				
	A115	0.283	0.676				
	A116	0.515	0.614		0.613	0.613	
	A117	0.184	0.732				
Management (A12)	A121	0.691	0.839	0.862	0.705	0.825	0.855
	A122	0.687	0.839		0.738	0.819	
	A123	0.611	0.845		0.579	0.841	
	A124	0.618	0.845		0.647	0.831	
	A125	0.631	0.844		0.587	0.841	
	A126	0.511	0.855		0.472	0.856	
	A127	0.649	0.841		0.642	0.832	
	A128	0.442	0.860				
	A129	0.493	0.857				
Performance (A13)	A131	0.584	0.658	0.731	0.613	0.732	0.789
	A132	0.462	0.695				
	A133	0.660	0.633		0.743	0.584	
	A134	0.526	0.678		0.544	0.800	
	A135	0.187	0.763				
	A136	0.404	0.716				
Matching (A21)	A211	0.719	0.669	0.798	0.719	0.669	0.798
	A212	0.709	0.713		0.709	0.713	
	A213	0.727	0.650		0.727	0.650	
	A214	0.824	0.446		0.824	0.446	

(Continued)

Table 12.2 CITC and Reliability Analysis of All 7 Intermediate Level and 41 Lowest Level Criteria *(Continued)*

	Index Code	*Corrected Item-Total Correlation*	*Cronbach's α*	*Factor α*	*CITC if Item Deleted*	*Cronbach's α if Item Deleted*	*Factor α if Item Deleted*
Value enhancement (A22)	A221	0.374	0.781	0.772			0.789
	A222	0.603	0.712		0.587	0.785	
	A223	0.705	0.673		0.766	0.595	
	A224	0.585	0.716		0.600	0.785	
	A225	0.476	0.756				
Market response (A31)	A311	0.830	0.793	0.872	0.830	0.793	0.872
	A312	0.847	0.784		0.847	0.784	
	A313	0.649	0.866		0.649	0.866	
	A314	0.592	0.885		0.592	0.885	
Technology innovation (A32)	A321	0.699	0.690	0.768	0.582	0.660	0.746
	A322	0.595	0.711		0.585	0.656	
	A323	0.329	0.783				
	A324	0.394	0.761				
	A325	0.480	0.743				
	A326	0.622	0.705		0.565	0.671	

Because this study has a limited sample size, a higher reliability is required. Thus, we re-tested the reliability of the model after the first round of screening to get the CITC and Cronbach's α values of the 27 remaining items. Also, we compared the Cronbach's α values of the overall model before and after the second round of screening. Therefore, 12 more items (A122, A123, A124, A125, A126, A127, A133, A211, A212, A222, A313, and A326) were removed because their CITC values were below .50. After the double refinement, the total Cronbach's α increased from .923 to 0.930. As a result, all retained 15 items' CITC values met the requirements of the rule of thumb (as shown in Table 12.3).

Index Weight Value Analysis

The index weight of an item quantificationally indicates the importance of this item in the measuring model. How to determine the index weight is the core

Table 12.3 CITC and Reliability Re-Analyses of the 27-Item Model after the First Reduction

Variable	*CITC*	*Cronbach's α*	*Total α*	*CITC If Item Deleted*	*Total α If Item Deleted*
A111	0.552	0.921	0.923	0.511	0.930
A113	0.613	0.919		0.647	
A116	0.617	0.919		0.591	
A121	0.608	0.920		0.641	
A122	0.486	0.921			
A123	0.345	0.922			
A124	0.311	0.924			
A125	0.461	0.923			
A126	0.455	0.922			
A127	0.479	0.920			
A131	0.589	0.920		0.616	
A133	0.414	0.921			
A134	0.528	0.921		0.508	
A211	0.445	0.922			
A212	0.486	0.921			
A213	0.565	0.922		0.597	
A214	0.646	0.919		0.670	
A222	0.417	0.923			
A223	0.564	0.920		0.502	
A224	0.518	0.921		0.508	
A311	0.700	0.918		0.730	
A312	0.750	0.917		0.747	
A313	0.469	0.917			
A314	0.753	0.918		0.755	
A321	0.659	0.919		0.711	
A322	0.565	0.920		0.591	
A326	0.361	0.920			

of this study. The authors followed Saaty's AHP pairwise in comparing each item. The index weights and an overall ranking of the 15 items were determined through a fuzzy comprehensive evaluation method that tested the proposed hierarchical index system. According to the model refinement and accuracy concerns that were identified by the experts who have participated in the pretest, the first-order sub-criteria (i.e., the intermediate level criteria in the initial model of Table 12.1) have been removed from further analysis. The specific four steps are as follows.

First, Structure the Decision Hierarchy

Based on the reduced model with items deleted, an analytic hierarchy sport facilities service provider selection model from the top with the goal of the decision, through the three criteria, to the 15 sub-criteria was developed (Table 12.4). The three criteria involve the three dimensions of structure factors: Contract fulfillment (i.e., provider-based), coordination (i.e., supply chain-based), consumer demand satisfaction (i.e., consumer-based). Also, four to six sub-criteria reside under each structure factor. This design meets the suggestion of recent studies that kept the number of factors as small as possible. Therefore, the survey will not bother respondents too much with a long list of comparisons (Lee & Ross, 2012). As Saaty and Ozdemir (2003) suggested, this analytic hierarchy model can be considered to be efficient since the number of elements in each group was no more than seven.

Table 12.4 The Initial Analytic Hierarchy Model of Sport Facilities Service Provider Selection

Purpose	*Criteria*	*Sub-Criteria*
Sport facilities service provider selection (U)	Contract fulfillment (provider-based factors) (U1)	Industry influence (U11) Public Image (U12) Level of credibility (U13) Management team (U14) Asset (U15) Dynamic performance (U16)
	Coordination (supply chain-based factors) (U2)	Target market (U21) Operation pattern (U22) Industry driving (U23) Consumption stimulation (U24)
	Consumer demand satisfaction (consumer-based factors) (U3)	Adaptive capacity (U31) Content innovation (U32) Professionals (U33) Standards (U34) Customization (U35)

Second, Construct a Set of Pairwise Comparison Matrices

For comparisons, Saaty's (1980) 1–9 fundamental scale was used, as shown in Table 12.5. Mathematically, the algebraic matrix of paired comparisons is depicted by the following expression:

$$A = \begin{bmatrix} w_1/w_1 & w_1/w_2 & \cdots & w_1/w_n \\ w_2/w_1 & w_2/w_2 & \cdots & w_2/w_n \\ \vdots & \vdots & \vdots & \\ w_n/w_1 & w_n/w_2 & \cdots & w_n/w_n \end{bmatrix}$$

where w_i/w_j is the relative importance for the element *i* to the element *j*. In other words, w_i and w_j are the contributions of element *i* and the element *j* on the objective U.

Considering both the expertise requirements of this study and the research limitations into consideration, we recruited ten experts in the field, which included three scholars from the leading sports management programs in China's universities, two department heads of provincial sports bureaus, and the directors of operations of five large-scale sport complexes. In order to calculate w for the matrix, the judgments of each element made by the experts were averaged, and

Table 12.5 The Fundamental Scale of Absolute Numbers

Intensity of Importance	*Definition*	*Explanation*
1	Equal importance	Two elements contribute equally to the objective
3	Moderate importance	Experience and judgment slightly weight one element over another
5	Strong importance	Experience and judgment strongly weight one element over another
7	Very strong importance	An element is weighted very strongly over another; its dominance demonstrated in practice
9	Extreme importance	The evidence weighting one element over another is of the highest possible order of affirmation
2, 4, 6, 8		Intermediate values between the two adjacent judgments
Reciprocals of above		If activity *i* has one of the above non-zero numbers assigned to it when compared with activity *j*, then j has the reciprocal value when compared with *i*

the relative weight results were rounded to two decimal places. The 3 by 3 reciprocal matrix of the first-order criteria is depicted as:

$$A = \begin{bmatrix} 1.00 & 1.55 & 2.20 \\ 0.65 & 1.00 & 1.70 \\ 0.45 & 0.59 & 1.00 \end{bmatrix}$$

And the specific matrices of sub-criteria under each structural factor A_i are depicted as:

$$A1 = \begin{bmatrix} 2.67 & 0.49 & 0.75 & 1.00 & 0.35 & 0.48 \\ 1.00 & 0.58 & 0.66 & 0.37 & 0.32 & 0.87 \\ 3.11 & 2.50 & 2.53 & 2.82 & 1.00 & 3.26 \\ 1.72 & 1.00 & 2.20 & 2.03 & 0.40 & 2.57 \\ 1.51 & 0.46 & 1.00 & 1.34 & 0.40 & 1.35 \\ 1.15 & 0.39 & 0.74 & 2.07 & 0.31 & 1.00 \end{bmatrix}$$

$$A2 = \begin{bmatrix} 1.00 & 0.90 & 0.55 & 0.32 \\ 1.11 & 1.00 & 1.00 & 1.00 \\ 1.82 & 1.00 & 1.00 & 0.98 \\ 3.16 & 1.00 & 1.03 & 1.00 \end{bmatrix} \quad A3 \begin{bmatrix} 0.86 & 1.00 & 1.24 & 0.47 & 0.65 \\ 1.79 & 2.12 & 2.17 & 1.00 & 2.15 \\ 1.15 & 1.55 & 0.81 & 0.47 & 1.00 \\ 1.00 & 1.17 & 0.98 & 0.56 & 0.87 \\ 1.02 & 0.81 & 1.00 & 0.46 & 1.24 \end{bmatrix}$$

Third, Consistency Analysis of Interval Judgment Matrix

Since decisions that are made by humans are likely inconsistent, how to measure and improve the consistency of judgments is emphasized by AHP researchers (Lee & Ross, 2012; Saaty, 2008). Several measures, such as Consistency Index (CI), Random Consistency Index (RI), and Consistency Ratio (CR) that were provided by Saaty have been widely accepted (Lee & Ross, 2012; Teknomo, 2006). Specifically, the largest Eigen value is equal to the size of comparison matrix, $\lambda_{max} = n$, and $CI = (\lambda_{max} - n)/(n - 1)$. Then, a researcher can use the CI to compare with the appropriate index which is called the Random Consistency Index (RI) to determine whether the Consistency Ratio (CR) is above 10% or less. The comparison can be depicted in formula CR = CI/RI (Saaty, 1980, 1982). If the CR is found to be more than 10%, Saaty (1980, 1982) stated that the judgments might need to be revised. Only when the CR is ≤10% is a good consistency indicated, and the weight vectors are the eigenvectors. Our results of the average RI (n = 1–10), respectively, equals 0, 0, 0.58, 0.90, 1.12, 1.24, 1.32, 1.41, 1.45, and 1.49. The Consistency Ratio results are given in Table 12.6.

Table 12.6 The Consistency Ratio Results Matrices

Pair-Wise Comparison Matrices Consistency Analysis				
	Matrix			
Index	*A*	*A1*	*A2*	*A3*
Λmax	3.00	6.29	4.10	5.06
CI	0	0.06	0.03	0.01
RI	0	1.26	0.89	1.12
CR	0.00	0.05	0.04	0.01
Assessment	yes	Yes	yes	Yes

According to the results, we noticed that Matrix A showed perfect consistency with a CR of .00, while Matrix A1, A2, and A3 had CR, respectively, equal to .05, .04, and .01. Consistency was indicated among the structural matrix and all measurement matrices.

Forth, Determine the Index Weight

The process of decision-making in the selection of sport service providers requires us to determine the index weight. Through yaahp, a software for AHP, we found weights for all of our indexes (Figure 12.1).

Fifth, Index Weight Assessment, Item Grading, and Reranking

According to the results we found, which were shown in Figure 12.1, the authors re-ranked the measurement indexes based on their own weights and calculated the cumulative weights. A Pareto analysis of variance was employed, and the measurement indicators were graded for their respective impact. The Pareto

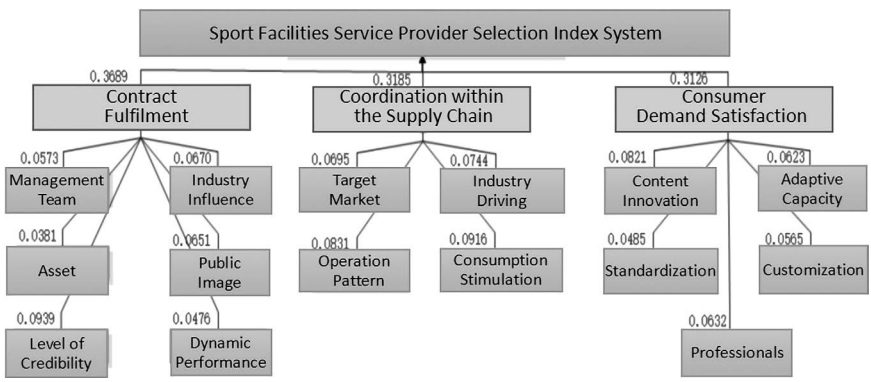

Figure 12.1 AHP Index System of Sport Facilities Service Provider Selection.

Table 12.7 Weight Assessment and Item Grading of the Refined Sport Facilities Service Provider Selection Index System

Order	*Measurement Index*	*Own Weight*	*Cumulative Weight*	*Grade*	*Parent Structure Index*
1	Level of credibility	0.1629	0.1629	A	Contract fulfillment
2	Consumption stimulation	0.1058	0.2687	A	Coordination within the supply chain
3	Management team	0.0986	0.3673	A	Contract fulfillment
4	Industry driving	0.0883	0.4556	A	Coordination within the supply chain
5	Target market	0.0804	0.536	A	Coordination within the supply chain
6	Content innovation	0.0681	0.6041	A	Consumer demand satisfaction
7	Asset	0.0604	0.6645	A	Contract fulfillment
8	Dynamic performance	0.0555	0.72	B	Contract fulfillment
9	Industry influence	0.0545	0.7745	B	Contract fulfillment
10	Operation pattern	0.0498	0.8243	B	Coordination within the supply chain
11	Public image	0.0413	0.8656	B	Contract fulfillment
12	Standardization	0.0359	0.9015	C	Consumer demand satisfaction
13	Customization	0.034	0.9355	C	Consumer demand satisfaction
14	Professionals	0.0335	0.969	C	Consumer demand satisfaction
15	Adaptive capacity	0.031	1	C	Consumer demand satisfaction

Principle (i.e., the "80/20 Rule") said that 80% of a project's benefit comes from key contributions, which account for only 20% of all work (Kaliszewski, 2012). Therefore, we sorted the 15 sub-criteria into three grades in descending order. The indexes with a cumulative frequency of 0%–70% are Grade A indicators, and the indexes within the range of 70%–90% are secondary indicators (Grade B), and the indexes from 90% to 100% are Grade C indicators. In general, seven items (level of credibility, consumption stimulation, management team, industry driving, target market, content innovation, and asset) were determined as the key indicators, and the remaining eight variables were general indicators (Table 12.7).

Discussion

When sport facility integrators apply the proposed service provider selection model through AHP to their future assessment and decision-making, they may follow up with some corresponding adjustments based on the differences in the focuses of their specific sports complex. Subsequent performance evaluation is

needed. Indeed, the selection of service providers is a multi-goal, multi-criteria decision, especially when the enterprization of sport facilities in China is still in its early stages. A time-proven application is necessary. Industry practitioners should adjust measures to local conditions and seek the most suitable criteria for themselves and consider city resource conditions, the proportion of sport and support services that they plan to offer, the future developing focus on their core activities, industry attributes, and trends of their key investment projects.

Urban areas will likely continue to be the main investment and development front regarding most sport facilities in China for a long time. However, not all cities can be considered similar. There are various population sizes, land resources, existing sports and related industry features, sports culture bases, traffic conditions, and different markets that the sport facilities target. Sports complexes in different cities and even in different districts within one city may require different developing patterns. A complex should establish a focused service provider system that accords with the complex's internal operation eco-mechanism and the surrounding market and determine service content through comprehensive consideration. Only in that way can efficient development with local variables be expected.

According to various carrier types and relevant structures, sport facilities in China can be divided into two categories: one type of complex in which sport services play a leading role and the other type in which sport services provide support. Specifically, a sport-service-leading complex is reformed based on new or existing large and medium-sized stadiums. In order to develop this type of complex, the original functional properties should not be changed; meanwhile, more sport service projects providers can be introduced and attract other related industry service providers to join the supply chain to achieve an all-win situation. In contrast to the above type, in order to develop a complex which uses sports as supporting services, decision makers should highlight their complex's commercial framework, inlaying sport-related services into the existing business services. In this way, the various extant service content will be enriched, and the commercial pattern will be optimized. In sport-supporting type of complexes, sport services are considered to be important because of their external influence. Therefore, fitness-for-all and commercial benefits can be promoted simultaneously.

From case studies that were done previously by the authors in terms of resource endowments and developing directions, the following five modes of sport facilities were developed: (1) event-oriented, (2) fitness and recreation-focused, (3) urban, comprehensive service support, (4) local sport industry incubator, and (5) sport tourism-oriented. A service integrator needs to consider both the supply side and the demand side of a sports complex's service content in order to optimize the industrial ecology and build an industrial ecosystem within the facility.

Sport activities can be generalized into two categories: daily workout and fashion sports (Ding et al., 2021). Different from participation in daily fitness and exercise, consumer stickiness is stronger among fashion sports participation because the ability to boost consumption is stronger, and the industry attributes are more

distinctive. When a consumer chooses to participate in a particular daily workout, s/he is very likely to be restricted to stay within the confines of her/his city and is very likely to remain faithful to a certain sport in a fixed facility. Conversely, participation in fashion sports, such as events that relate to snow and ice, mountain sports, water sports, automobiles and motorcycles, air sports, extreme sports, equestrian, etc. usually relies on the diversity of landscape resources, such as mountain land, water, and air area, wetland and wharfs, as well as forest land resources. The development of fashion sports also relies on diverse landscape resources. According to industry attributes and developing trends of various key investment projects, a variety of aspects should be focused on. Indoor-leading sport facilities should pay more attention to the selection of suppliers who can improve internal service performance within the facilities, while outdoor-leaning sport facilities need more supplementary service providers to cooperate with, such as restaurants, overnight accommodations, transportation, entertainment, travel, and retail in order to build a sport-core pooling of interest's mechanism.

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Chapter 13

COVID-19 and Economic Impacts of Major Sport Events

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Introduction

The understanding of economic concepts applicable in the sports industry has advanced and is now much broader in scope. The distinctive characteristics of the sports industry suggest that the "sport as business" comprises numerous aspects aimed at general development and regional specialism addressing, among other issues, aspects of managing sports events (Beech & Chadwick, 2004; Desbordes & Falgoux, 2007; Desbordes, 2012; Desbordes & Richelieu, 2012; Dolles & Söderman, 2011; Humphreys & Maxcy, 2007; Petrović & Desbordes, 2012, Petrović *et al.*, 2015; Trenberth & Hassan, 2011) and their beneficial impacts – some crucial determinants of which are economic (e.g., Andreff & Szymanski, 2006; Rodríguez *et al.*, 2006; Sandy *et al.*, 2004). Management of contemporary sports events involves an application of methods and models that are also used in commercial business as well as in public and not-for-profit organizations (Petrović, 2012). In this regard, over the past several decades, much academic effort has been invested in the development of methods and models which measure the economic impacts of different major sports events (Andersson *et al.*, 2008; Blake, 2005; Burns *et al.*, 1986; Baade & Matheson, 2002; Desbordes, 2007; Dwyer *et al.*, 2000; Getz, 1994, 1997; Gratton *et al.*, 2000, 2006; Kurscheidt, 2000; Matheson, 2002, 2006; Oldenboom, 2006; Preuss 1999, 2005, 2010; Syme *et al.*, 1989; Ritchie, 2000; Solberg *et al.*, 2002; Solberg & Preuss, 2007).

Discussions on the methodology and their research scope that may be found in the sports management literature are worth special mention (Crompton, 1995, 2006; Howard & Crompton, 1995; Porter, 1999). Research attempts have also been made to apply the Balanced Scorecard approach (Kaplan & Norton, 1992; 1996a; 1996b) to sports events evaluation (Gratton *et al.*, 2006) since the benefits associated with events are far-reaching and not confined solely to the analyses of economic impacts widely used thus far. The scorecard developed aimed at organizing the effects of a major sports event across four Balanced Scorecard perspectives, pulled together important elements of the hosts' agenda, but it did not claim to cover all the possible impacts (Dolles & Söderman, 2008). The various assessments are much more than just simple evaluation tools, although they

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must not lose their impartiality. For this reason, some of the assessments should be conducted by external institutions or consultants whose independence and lack of direct involvement could be a guarantee of quality of the results presented. The evaluation can be considered from different angles because there are as many ways of evaluating the sports event as there are points of view and stakeholders (Desbordes, 2012).

This is a hard time for major sports events and the sports economy. Generally speaking, hosting a major international sports event is a costly affair for the organizing country, as Matheson *et al.* (2012) mentioned. Further, the unprecedented COVID-19 pandemic and the lockdowns associated with attempts to stop its spread have made a great impact on both elite and grassroots sport. Elite sport teams and organizations have suffered immediate financial losses due to the absence of live spectators. As an example, The Rugby Football Union (RFU) has suggested that with no spectators attending the recent Nations Cup or the Six Nations, they would lose close to £60 million (BBC, 22 September 2020). It is not only elite sport that has been impacted, but grassroots sport, leisure clubs, and organizations, including gyms, swimming pools, golf courses, and other activities, have also been hit financially (*The Guardian*, October 13, 2020). Equally, gate and ticket receipts constitute a large part of the revenue football teams receive and the prolonged pandemic has led to many in the English football pyramid, one the most lucrative in the world, struggling financially (*The Week*, September 22, 2020). Therefore, planning, organizing, and staging a major sports event is not a free lunch; as such, an event requires different investments in infrastructure, facilities, security, and other services (Petrović, 2016).

The COVID-19 pandemic, as the greatest global health crisis of the last decades, has spread to almost all countries of the world and has affected all aspects of people's lives, including sport events. The pandemic, which is characterized as one of the more significant human experiences of the twenty-first century (Galvani *et al.*, 2020), has caused the most significant disruption to the worldwide sports calendar since World War II. The Olympics, for the first time in the history of the modern games, have been postponed until 2021, World Championships and World Cups for virtually every sport have been canceled or postponed, and the calendars for most major sports have been severely disrupted with no clear indication yet of how or when this will be resolved. Among the sports events that have been postponed are the running events, those at the international, regional, or local level. At the same time, serious concerns arose regarding the resumption of these events, the rules of their conduct but also the intention of the runners to participate in them (Burrows & Flynn, 2020). The sports events' organizers, like every other business in tourism and cognate industries, will have to provide evidence of the implementation of satisfactory health and safety measures to convince customers to come back again (Seraphin, 2020) and safeguard the health of athletes, participants, visitors, and others involved (Burrows & Flynn, 2020).

Different aspects affect the planning and staging a major international sports event; with regards to the sports event industry practice and for the purposes

of this paper, the term "major event" is used to follow the definition as suggested by Jago and Shaw (1998). The chapter reviews the three main types of economic analyses addressing measuring the economic impacts of major sports events, namely, *input–output analysis* in the second section, *cost-benefit analysis* in the third section, and *computable-general-equilibrium modeling* in the fourth section – all three having its own and specific characteristics. This classification of approaches to measuring the economic impact is followed by further explanation and analysis of the Balanced Scorecard framework as an evaluation model in the fifth section, modified and adapted for the needs of a major sports event evaluation. Finally, concluding remarks and some future directions are provided in the sixth section.

Input-Output Analysis

According to Andersson *et al.* (2008), "one of the most popular models, the input-output (I-O) analysis describes financial flows; more specifically money that flows into an economy is a positive flow, and money that flows out is a negative flow" (p. 165), better known as leakage. Used commonly by researchers and analysts to estimate economic impacts, I-O analysis measures inter-industry linkages in the national economy to explain the transactions between businesses and final consumers. I-O analysis uses comprehensive matrices reflecting inter-industry transactions. Duncombe and Wong (1998) state, "the heart of I-O analysis is the transaction table" (p. 168); indeed, the original I-O tables were constructed by W.W. Leontief in the 1930s, and his research and development in this field earned him the Nobel Prize. I-O tables estimate three sets of effects – *direct*, *indirect*, and *induced impacts* resulting from the final demand institutions (e.g., households, governments, inventory/capital purchases, exports, and inter-institutional transfers). For each of these sets, multipliers can be calculated that divide the *gross value added* or "*net output*" (GVA), *gross domestic product* (GDP), or *import impact* by the level of spending that drives that impact.

The multiplier is an estimate of how much additional economic activity will result from an investment in the economy; it is called the multiplier due to that total impacts are larger than the initial, direct impacts. It is the value which can lead to inaccurate, exaggerated, and spurious inferences (Crompton, 2006) and the widespread misuse of the concept in terms of "turnover multiplier" (Andersson *et al.*, 2008), inflates direct turnover effects to 10–90 percent higher than the original direct effects. The value of the multiplier is the most sensitive parameter in an economic impact analysis. Sandy *et al.* (2004) call it the "multiplier game". Numbers found in consultants' studies on regional multipliers vary from 1.2 to 5 (Matheson, 2002), with employment multipliers being somewhat lower. Furthermore, all values above 2 are highly suspect and should be considered with care. I-O tables assume constant returns to scale, and balance supply and demand in the production sector. They do not account for supply side variables such as price, technology, and industry competition, assuming full output homogeneity

within an industry sector. A complete set of account for an economy, typically for a certain year, is shown in I-O tables.

This technical note describes in details the methodology developed for assessing the daily economic costs of sports events for mitigating the effects of COVID-19. Economic impact of sports events can be defined as the net change in an economy resulting from a sports event. The change is caused by activity involving the acquisition, operation, development, and use of sport facilities and services (Lieber & Alton, 1983). These in turn generate visitors' spending, public spending, employment opportunities, and tax revenue. Specifically, the economic impacts of expenditure are composed of direct, indirect, and induced effects. *Direct effects* are the purchases needed to meet the increased demand of visitors for goods and services. *Indirect effects* are the ripple effect of additional rounds of re-circulating the initial spectators' spending. *Induced effects* are the increase in employment and household income that result from the economic activity fueled by the direct and indirect effects (Howard & Crompton, 1995).

The basic requirement of an economic impact analysis is to measure the total change of the city structure due to staging a sports event. Therefore, determining resources entering, leaving, rejection or exchange is crucial, as it is determining new or lost infrastructural projects due to investments being diverted (Preuss, 2010). In order to conduct an economic impact analysis of a major sports event, the following stages must be undertaken. *Firstly*, the effect of the event on spending by organizations such as the Local Organising Committee (LOC) as well as by individuals must be calculated. Spending by the LOC includes infrastructural spending in the pre-event period as well as spending during the period of the event itself. Spending by individuals includes the transport, accommodation, food, and entertainment expenditures of spectators as well as athletes, officials, and media representatives; although some of these categories have accommodation, food, and/or transport provided through the LOC's budget. Care must be taken to differentiate spending by residents from spending from non-residents and also to take account of spending that is diverted away from the host city. *Secondly*, this expenditure must be categorized by product (goods and services), and *thirdly*, a model must be used to calculate how this spending translates into income and employment.

It should be noted that GVA is sometimes also termed "net output", which is very important regarding the true impact of an event, as results for "output" meaning gross output are often given in the event's literature, which are then misinterpreted as being results for net output or GVA. Gross output is a measure of revenue and is in most industries significantly larger than GVA; therefore, impact calculations of gross output changes are usually much higher than earnings-based estimates through GVA. It is also important to underline that gross output and measures of impact based on it can have no interpretation as "benefit". GVA and GDP based measures are a suitable way of approximating the benefit of events as explained by Blake (2005).

Reasons to Conduct the I-O Analysis of Major Sports Events

A number of economic impact analyses have been conducted of major sports events (including the largest ones, such as the Olympic Games, FIFA World Cups, UEFA European Championships) using I-O methods. Hosting a sports event has revealed a number of benefits in our communities, of which the reasons like increasing community visibility and enhancing community image are all common and acceptable postulations. However, there is a doubt that sports events that utilize public subsidies always bring positive economic benefits into communities. Therefore, the main reasons for an I-O analysis of sports events may be seen as follows: *First*, due to that many sports events in communities are usually financed by the public tax support, I-O analyses continue to be an important public relations tool for local government. *Second*, there is a doubt that sports events may actually help developing a community in relation to its economy. Therefore, accurate estimations may be proposed and the results reported to community members. *Third*, as a sport is not just an entertainment but the industry, the results of the I-O analyses may be a cornerstone to develop many related businesses in communities. *Finally*, positive or negative economic results of sports events may be an important method to determine communities' draft budget for the coming year.

Problems of the I-O Analysis of Major Sports Events

This method of evaluation of major sports events is very controversial due to its subjective aspects. There are several problems mentioned in the literature on using I-O analyses in the context of sports event evaluation so far. The *first problem* may be seen in difficulties in determining the "right" data and framework, the lack of established methodology, and the mistakes accompanying such analysis that explain various results of an economic impact analysis (Preuss, 2010). Establishing the method of data collection – *bottom-up* or *top-down* – as well as the context and time frame for analysis are only a few of the issues requiring attention. *Second,* not only is a static approach (comparing an event case to a without event case scenario) possible, but a dynamic approach comparing the event case to a control case or an econometric approach comparing the event case to a reference case is possible as well. With smaller sports events and less direct impacts, it is increasingly difficult to find the right data for collection. For this reason, the top-down approach is limited for impact measurement, especially when considering larger host regions. In contrast to this, the bottom-up approach remains the preferable option for economic impact assessment; however, it is not without its own challenges. *The third problem* is in use of different and conflicting concepts of the multiplier itself (Howard & Crompton, 1995).

A danger in the multiplier and the way it is presented in research reports intended for policy makers is that its basic concept and application are deceptively sample. This means that economic impact studies are primarily used by

consultants hired by sport entrepreneurs and boosters to demonstrate the value of a proposed sports event (Jonson & Sack, 1996). *Forth problem* is the inclusion of local spectators, time-switchers, and casuals in the study. An economic impact analysis attributable to a sports event should include only new cash flow injected into an economy by visitors and other external businesses such as the media, banks, and investors from outside the community. In addition, due to the fact that expenditures of time-switchers and casuals would occur without the event, impacts of their expenditures should be excluded from the economic impact analysis. *The fifth problem* is that an economic impact analysis conducted by hired consultants from a political milieu usually estimates positive impacts only, which means benefits both economically and socially. It never measures substantial economic costs and/or potential social problems. Considering the side of economic impact, only gross benefits rather than net benefits are measured and reported. In the case of non-economic impacts, negative social impacts, including traffic congestion, vandalism, environmental pollution, disruption of residents' lifestyle, etc., are rarely reported. And finally, *sixth problem*, economic impact analyses are very subjective, depending on researchers to trust their results. Although some models and mathematical formulas for conducting economic impact analyses have been developed and used, results and their interpretation could be changed based on the intent of researchers and the unrealistic expectations of proponents.

Cost-Benefit Analysis

The COVID-19 pandemic leads governments around the world to making sport decisions about the cost of saving lives and the restrictions of that. Applying cost-benefit analysis is one of the methods to help the sports industry and economy. The cost-benefit analysis (CBA) is an alternative method to economic impact analyses. It has a different approach: it helps to decide whether hosting an event will improve the welfare of the community in the host region by comparing all relevant costs and benefits in monetary terms. Cost-benefit method is considered the proper way to estimate economic consequences, as Jeanrenaud (2006) explains.

The CBA is explicitly designed for determination of the total "value" of the sports event relative to a consistent set of goals, both initial event-related expenditures and their induced impacts that have to be categorized according to their effects on those goals. Such an evaluation method provides a clear structure that helps in classifying the repercussions of the project under examination. The effects themselves are to be distinguished in direct and indirect and tangible and intangible costs and benefits. That is, CBA comprehends not only quantitative but also qualitative information which is impossible or difficult to express in a money equivalent. The qualitative part of the CBA provides an additional perspective on the problem of evaluation, although consistently embedded in a common methodological framework. Nevertheless, the core of the CBA is the net present value (NPV), as a highly aggregated single figure that depicts all negative

and positive quantifiable impacts of the project (i.e., sports event). NPV is computed by summing up all discounted net benefits, which occur over time within a defined planning period. According to the Kaldor–Hicks welfare criterion, a potential part to optimality, the NPV should at least exceed zero to reach an overall positive evaluation (e.g., Preuss, 1999).

The main characteristics of the CBA may be seen as follows: (i) It is a decision-support method which address choice problems in order to raise efficiency of a project or actions; (ii) It is guided by the evaluation of effects or actions relative to a hierarchical set of goals and objectives; (iii) It is value-oriented, as CBA assesses the NPV of an economic contribution to GDP over time; (iv) It is an approach not precisely defined – it rather provides a certain structure or model, which allows identifying and considering key factors and variables relative to which effects and actions, respectively, are to be evaluated and/or improved by applying the concept; (v) and Ultimately, both CBA aims at applying basic micro-economic principles to a well-defined object of examination in order to support rational decision-making on complex choice problems (Kurscheidt, 2000).

Considering the major sports events as public projects, CBA plays the role of a forecasting and a feedback instrument that allows an appropriate evaluation in the process of strategic management. The result of a CBA is the qualitative and quantitative assessment of the efficient action relative to alternatives and thereby establishing or raising "allocative efficiency". The outcome of the strategic management is emerging from "hierarchy of strategic intent" (Miller, 1998) to enhance the so-called *production efficiency* of the respective organization. In particular, CBA is suitable for examining the repercussions of specific action plans on the overall result. It helps to identify and then to prevent possible trade-off effects that might be induced since all the measures and variables work in the same direction. Such counter-effects can be visible by CBA as it always shows the total picture and critical values of the project's impacts. Last but not least, the structure of the CBA provides a deep understanding of the driving forces and interrelationships of project effects. Thus, CBA itself can be a tool for indicating efficient strategies that direct resources to a productive use.

The outcome of a CBA may be found in the main types of benefits and costs that may be identified (Dwyer & Forsyth, 2009). On the one hand, the benefits comprise payments to event organizers, resident consumer benefits, surpluses to state business, and surpluses to labor; on the other hand, there are three main sets of costs to be differentiated, i.e., major categories of organizer's costs (event management and staging, recurrent engineering, marketing/promotion, and catering, and administration), other event-related costs incurred by government agencies (payments in respect of roads and traffic authority, police, fire brigade, etc.), as well as social and environmental costs (noise, congestion, disruption to resident lifestyle, impact on destination image, etc.). Therefore, CBA should be used to account for the wider social and environmental impacts of sports events.

Computable-General-Equilibrium Modeling

The COVID-19 pandemic has caused a strong discontinuance in the economy worldwide. In many developing and developed countries, the sports economic sector is a major source of occupation and revenue. Without this crucial section, most of the countries might experience a dramatic decline in event revenue and increase in rate of club bankruptcy. The computable general equilibrium model may help to assess the implications of the COVID-19 crisis on the sports economic sector. Computable-general-equilibrium (CGE) modeling has now largely supplanted more traditional forms of economic analysis, such as CBA, and less reputable methods, such as I-O analyses. They consist of several sub-models, which describe various markets and economies, and a fundamental principle of this evaluation technique is that markets and economies are treated as interdependent (Andersson *et al.*, 2008).

Generally speaking, CGE models are used in a wide variety of economic areas such as international trade, free trade areas and customs unions, agricultural policy, economic development, and environmental policy. Recently, they have also begun to be used in the field of the economic impact analysis of sports events, where they are replacing I-O analyses, which are now seen as the "old" method. As an example, the main analyses of the Sydney 2000 Olympic Games as well as the 2010 FIFA World Cup South Africa have been conducted with CGE modeling techniques. The main difference between I-O and CGE methods is that key relationships that I-O analyses ignore are included in CGE models. The incorporation of these changes means that a CGE method is more complex than an I-O analysis but also that it measures impacts more accurately. That is, I-O models can measure all positive impacts of an event but are incapable of modeling most of the negative impacts, so they consistently overestimate the impact of events. Therefore, CGE modeling gives more realistic results.

However, most economists agree upon that I-O models suffer from several major flaws, including, in the first instance that they impose no constraint on the amount of extra income that can be earned by labor or capital. In contrast to this, CGE models impose constraints on income and expenditure for private households and separately for the government (the value of income must equal expenditure) with additional constraints of a much higher level of complexity to necessary model prices and wages and the quantity variables responding to them. Two main differences emerge in the way that CGE models and I-O analyses predict the effects of a sports event, namely:

1 The effects of changes in demand have different effects in these two types of models. I-O analyses capture the initial effects of sports spending plus the indirect, and if included, the induced effects. The "multiplier" of sports spending on GDP is therefore fairly high, moreover, if induced effects are included, can be greater than one, including (i) the effects of higher prices "crowding-out" demand, and more significantly (ii) the movement of resources into

sport-related industries from other industries, with consequent falls in the output of other industries, particularly in other exporting industries, which have much lower multiplier effects (e.g., Adams & Parmenter, 1995; Blake *et al.*, 2001).

2 The second way in which CGE models differ in the impacts that they will predict for sports events is that construction expenditures are not necessarily positive. A CGE modeling requires income-expenditure conditions to be met; therefore, the spending on construction must be paid for. The time dimension should also be included in the effects of the constructed infrastructure being available after completion (e.g., government that paid for the construction might rent out the built infrastructure or receive income from its sale. If the value of constructed capital exactly pays for its construction costs, there may be an initial net zero effect on GDP).

Balanced Scorecard Approach

The new pandemic disease has a direct influence on sport events and organizations. The assessment of sports organizations in a pandemic situation has a different approach and must have certain factors. Many organizations don't have the means or resources to quickly and effectively assess the impact of the pandemic on their organization. However, many tools and methodologies exist for the organizations that can be used to help them assess the impact with great success. One of the implementations is well-known as the Balanced Scorecard (BSC), which is a framework that organizations can use to verify that they have established both strategic and financial controls to assess their performance. This technique is most appropriate to be used when dealing with business-level strategies, although it can also be successfully used with the other strategies organizations may choose to implement at different levels – corporate, unit, cooperative, and international. Originally proposed by Kaplan and Norton, the BSC can help to get a good perspective for the complete evaluation of a company's activities. While the initial focus and application of the BSC has been in the for-profit–private sector, as emphasized by Kaplan and Norton (1996a), the opportunity for the scorecard to improve the management of public and not-for-profit organizations is, if anything, even greater.

Since traditional metrics were not offering a full understanding being in most cases outcome focused instead of being process orientated, both academics and practitioners were urged to develop better metrics that could ease the process of strategic planning and control. The major inadequacies of traditional metrics that may be found in the literature are as follows: (i) traditional accounting measures of performance are inadequate for strategic decisions; they do not link non-financial metrics to financial numbers (e.g., Kaplan & Norton, 1992); (ii) they are backward-looking, providing little information on root causes; (iii) they report functional not cross-functional processes; (iv) they rarely consider intangible assets; and (v) they rarely estimate the value created.

Poorly designed performance measurement systems (mostly based on accounting measures) and the pressure for short-term financial performance also caused companies to reduce spending on new product development, process improvements, human resource development, information technology, and customer and market development. It was to avoid such "distorted" incentives when the deployment of the BSC was suggested. As a performance management tool, the BSC has been designed to assist management in aligning, communicating, and tracking progress against ongoing business strategies, objectives, and targets. The BSC is unique in that it combines traditional financial ratios with non-financial measures to measure the health of the company from the four equally important perspectives:

1 Financial: Measures the economic impact of actions on growth, probability, and risk from shareholder's perspective *(net income, ROI, ROA, and cash flow)*;
2 Customer: Measures the ability of an organization to provide quality goods and services that meet customer expectations *(customer retention, profitability, satisfaction, and loyalty)*;
3 Internal Business Processes: Measures the internal business processes that create customer and shareholder satisfaction *(project management, TQM, and Six Sigma)*;
4 Learning and Growth: Measures the organizational environment that fosters change, innovation, information sharing, and growth *(staff morale, training, and knowledge sharing)* (Bauer, 2004).

Although the focus of each perspective is distinctly different, there is a common thread of causality that provides a universal linkage among the four perspectives. The cause-and-effect chain is central to the BSC. It is the chain that distinguishes the model from other approaches. Kaplan and Norton (1996a) assume the following causal relationship: *measures of organizational learning and growth → measures of internal business processes → measure of the customer perspective → financial measures.* Therefore, the measures of organizational learning and growth are the drivers of the measures of the internal business processes. The measures of these processes are in turn the drivers of the measures of the customer perspective, while these measures are the drivers of the financial measures. A good BSC should have a mix of outcome measures (= lag indicators) and performance drivers (= lead indicators). (An example of a lag indicator is increased turnover, while order execution time is a lead indicator.) Each strategic area should have both lead and lag indicators, yielding two-directional cause-and-effect chains; lead and lag indicators apply horizontally within the areas and vertically between the areas. The causal paths from the measure indicators on the scorecard should be linked to financial objectives. This procedure implies that strategy is translated into a set of hypotheses about cause and effect (Kaplan & Norton, 1996a, 1996b).

One of the first applications of the BSC to a not-for-profit social enterprise occurred for the Massachusetts Special Olympics. The framework of the Special Olympics BSC was virtually identical to that which was used for companies and business units. In 1991, in the UK, the Audit Commission set out a series of indicators to evaluate civic management. As a result of these efforts, the publication of a report in 2000 (Audit Commission, 2000) stressed the usefulness of focusing on a series of key objectives. Therefore, one of the ways of developing performance indicators is to use the three "E" frameworks, i.e., dimensions of *economy, efficiency, and effectiveness*; these three economic dimensions deal with a set of elements necessary to obtain them. These elements are infrastructure investments and cost estimations *(cost),* the human and material resources employed *(resource),* the services-processes and single activities obtained *(service),* the results of the activities *(output),* and the value that is desired-expected to be achieved *(outcome)*. The aforementioned economic concepts – economy, efficiency, and effectiveness – link two of the elements (Audit Commission, 2000; Petrović, 2012).

Applied in this context, the BSC forms the platform for the evaluation framework, assessing both direct and indirect effects of the performance determinants-perspectives on the sports event, using the line management indicator framework, the three "E" framework, as a basic evaluation tool. A performance measurement system as an evaluation framework usually has a wide range of users who may use the information in different ways. That is, in accordance with the level of the information users (management & staff/local-national–public & stakeholders/international-public & governing bodies), the cause-and-effect relationships may be considered and an adapted version of Kaplan and Norton's BSC may be proposed with the modifications in the BSC perspectives, following Bauer's key indicator matrix initially developed for-profit companies and adapted for the needs and purposes of a sports event evaluation. As the BSC approach includes different areas of the organization, as well as showing the cause-and-effect relationships which can help to determine whether the various processes (in line with the vision and strategy at the time of planning) achieve their objectives, the basic structure of the modified BSC to meet the needs of the stakeholders of a major sports event, is seen as shown in Figure 13.1.

Financial/Economic Impact Perspective

The modifications to be found in financial perspective are focused on the use of the financial resources and designated funds employed in the planning and organization of the sports event. Shareholders in the corporate context are replaced here with stakeholders in the staging and implementation of the sports event. Typical criteria of the profit companies in terms of an increase in financial performance are considered redundant in this case; therefore, this perspective has to show how resources are employed using cost estimations and revenue generated and how are the same reflected on the sports event's equity as well as the marketing of the sport event, important for the prospective organizer.

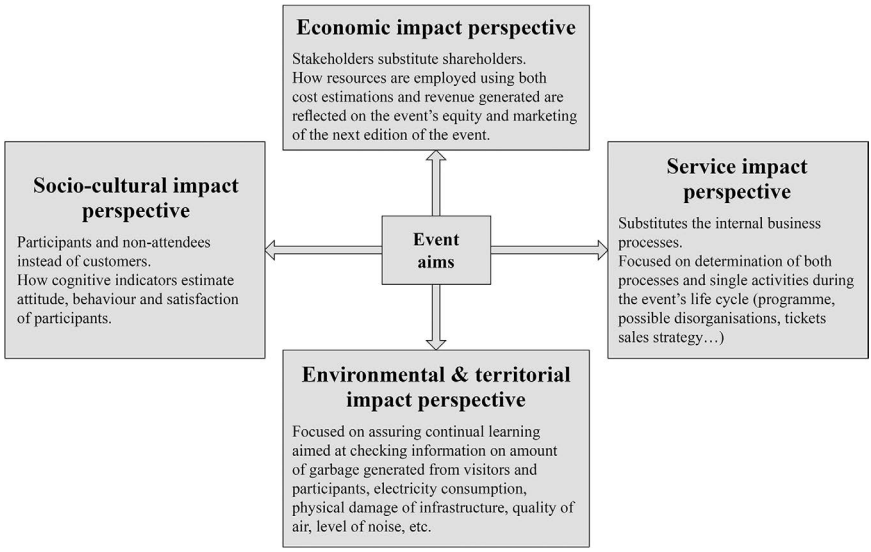

Figure 13.1 The Stakeholders' Approach to Balanced Scorecard Sports Event's Evaluation.

Customer/Socio-Cultural Impact Perspective

In this perspective, the BSC model has to consider those who benefit from the staging of a sports event; therefore, it is reasonable to think more in terms of consumers as participants and non-attendees instead of corporate customers. This perspective has to show how cognitive indicators estimate attitude behavior and satisfaction of participants, considering that the professional sport creates benefits for the population in general.

Internal Business Processes/Service Impact Perspective

Internal business process perspective is replaced by the impact created from services aimed at identifying both the key processes and single activities generated during the sports event's life-cycle. The processes should be monitored in order to achieve desired results related to the event's program (the most important indicators are related to the program), possible disorganizations, strategy for the tickets' sales, etc. A better co-ordination of the activities of the program could be accompanied by the co-operation with other institutions in their organization.

Learning and Growth/Environmental and Territorial Impact Perspective

This perspective is similar to that found in the BSC of the profit company. The key aspects are focused on continuing improvement of environmental and ecological

Table 13.1 Matrix of Key Indicators Considering the Perspectives of the Balanced Scorecard for Major Sports Event Evaluation

Performance Measurements	
Economic impact perspective (STAKEHOLDER) • Performance of financial resources (designated funds) • Cost estimations and savings in expenses • Resource utilization • Staff productivity, etc.	**Socio-cultural impact perspective (PARTICIPANT AND NON-ATTENTEES)** • Product quality and innovation • Consumer loyalty and satisfaction • Service quality, etc.
Service impact perspective (KEY PROCESS AND SINGLE ACTIVITIES) • Quality of processes and activities related to the event's program • Productivity • Efficiency of processes and services • Event cycle time, etc.	**Environmental and territorial impact perspective (CONTINUING IMPROVEMENTS)** • Innovation and improvements' implementation, updating • Technological advances • Knowledge and information exchange, etc.

Source: Modified from Bauer (2004).

aspects via checking information on garbage generated from visitors and participants, electricity consumption, physical damage of infrastructure, quality of the air, level of noise, etc. In order to work successfully, the BSC has to be well designed. That means it should integrate the key indicators into matrix, based on the BSC, which reflects the desired "activity" to be evaluated. The matrix of key indicators in Table 13.1, below considering the perspectives of the BSC model for a major sports event evaluation, has been developed following Bauer's (2004) matrix initially intended for companies.

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Chapter 14

Brand Attributes Scale for Professional Sport Teams

Measuring Strength, Favorability, and Uniqueness of Team Attributes

Yukako Wada and Hirotaka Matsuoka

Introduction

Building a strong brand is one of the most critical issues not only for general business companies but also for sport organizations. The value of brand assessments, such as brand name, logo, and quality, is generally called "brand equity" (Aaker, 1991; Keller, 1993). Since brand equity accumulates in consumers' memories, customer-based brand equity (CBBE) is a significant concept of strategic brand management (Keller, 1993). Brand knowledge, which is the core concept of CBBE, consists of two aspects: brand awareness and brand image. A positive brand image is created by strong, favorable, and unique brand associations. These three types – strong, favorable, and unique – of brand associations are the key to accumulating different brand equity in the minds of consumers. Therefore, the concept and components of brand associations are crucial. Sub-dimensions of brand associations and their scales have been examined and developed for assessing corporate brands and services (Baalbaki & Guzman, 2016; Christodoulides et al., 2009; Gordon et al., 2016; Grace & O'Cass, 2002; Low & Lamb, 2000; Mann & Ghuman, 2014).

The concept of brand management has been a focus of the sport spectator industry since the mid-1990s (Gladden, 2014). Researchers have recognized athletes and sponsors for sporting events or sport teams as brands and examined consumers' perceptions and attitudes toward them (Boronczyk & Breuer, 2020; Girish & Lee, 2019; Gwinner, 1997; Kunkel et al., 2020; Kwon & Shin, 2020; Taniyev & Gordon, 2019; Won & Lee, 2020). Studies on sport teams have mainly discussed brand association scales based on Keller's (1993) CBBE concept because it assesses structured brand equity that sport organizations can manage and control (Bauer et al., 2005, 2008; Biscaia et al., 2013; Gladden & Funk, 2002; Kunkel et al., 2014, 2017; Ross et al., 2006, 2007, 2008).

The team association model (TAM; Gladden & Funk, 2002), based on Gladden and Funk's (2001) framework, was the first model to assess brand associations concerning sport teams (Ross et al., 2007). Thereafter, Bauer et al. (2008) refined and modified the refined TAM. The team brand association scale (TBAS; Ross et al., 2006) was also developed and applied to measure brand associations concerning

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collegiate and professional sport teams (Biscaia et al., 2013; Ross et al., 2007, 2008). Except for Bauer et al. (2008), these studies did not measure each of the strong, favorable, and unique brand associations, even though these three types are essential to brand success (Keller & Swaminathan, 2019). Bauer et al. (2008) examined the relationship between fans' team brand image and their loyalty by measuring the strength, favorability, and uniqueness of associations regarding professional sport teams. Their study, however, did not verify the validity of the scale to measure associations representing teams.

The relationships between brand associations and team loyalty have been one of the main topics, and researchers have also examined associations representing sport teams based on fans' perceptions over time as longitudinal research studies (Bauer et al., 2005, 2008; Daniels et al., 2019; Gladden & Funk, 2001; Kunkel et al., 2016; Martín et al., 2020; Wear & Heere, 2020). However, there is no academic scale to measure strong, favorable, and unique brand associations regarding sport teams. Such a scale is also important for marketers to grasp their team brand image based on consumers' perceptions. Thus, it is crucial to develop a scale to measure team brand equity in terms of their strong, favorable, and unique brand associations.

Review of Literature

Keller (1993) proposed that brand associations are classified into three dimensions: brand attributes, brand benefits, and brand attitudes. Brand attributes are memories or thoughts that consumers recall when they buy or consume a particular product or service. According to CBBE, attributes are "descriptive features that characterize a product or service" (p. 4). Brand attributes have two aspects, namely product-related and non-product-related attributes. Product-related attributes are the "ingredients necessary for performing the product or service function sought by consumers", while non-product-related attributes are the "external aspects of the product or service that relate to its purchase or consumption" (p. 4). Product-related and non-product-related attributes are categorized differently depending on consumers' perceptions and needs.

Brand benefits are described as "the personal value consumers attach to the product or service attributes" (Keller, 1993, p. 4). Attitudes refer to consumers' overall evaluations of a specific brand that influence consumer behavior. Benefits and attitudes are personal evaluations of attributes, and they are abstract associations. Gladden and Funk (2001) did not measure attitudes because attitudes are very abstract associations and formed through associations related to attributes and benefits. Individuals may recall attributes regarding a specific team first and then evaluate them as benefits or attitudes. Nonpattern stadium attendees who are not fans may find it difficult to recall benefits or attitudes toward a specific team. Therefore, this study develops the factors and measurement items of team attributes that can measure strong, favorable, and unique brand associations separately.

Brand Attributes in a Sport Team Context

Brand attributes are related to products or services and have two dimensions: product-related and non-product-related attributes. Non-product-related attributes include four sub-dimensions: price information, packaging or product appearance information, user imagery, and usage imagery. The theory of "product levels" (Kotler, 2003) also indicates five levels of products or services, and there are four dimensions except for the core benefit that consumers require. Thus, non-product-related attributes in the sport marketing context could be composed of more than one dimension. The TAM and the TBAS, however, did not differentiate between product-related and non-product-related attributes. The refined TAM distinguished product-related from non-product-related attributes, but non-product-related attributes had only one dimension.

The refined TAM mentioned that product-related attributes represented the core product of a sport team (i.e., team performance), and non-product-related attributes reflected external aspects of the core product (i.e., no relationship with team performance). Therefore, this study defined brand attributes of the sport team as "descriptive features of a sport team that help consumers to recognize its product or service". Product-related attributes were defined as "the elements of a certain sport team that form the performance of games". Non-product-related attributes were regarded as "external aspects concerning the core product or service of a certain sport team that do not affect the team performance of games directly".

The refined TAM remodeled success, star player(s), head coach, and management of the TAM as five product-related attributes: success, star player, head coach, team, and team performance. It also revised the logo design, stadium, product delivery, and tradition of the TAM to four non-product-related attributes: logo and club colors; club history and tradition; stadium; and fans. With regard to the 11 labeled groups of attributes of the TABS, non-player personnel, team success, team history, stadium community, team play, and brand mark can be classified into product-related and non-product-related attributes of the TAM. Three other TBAS attributes, namely rivalry, organizational attributes, and concessions, which the TAM model lacks, can be categorized as non-product-attributes. The other two labeled groups of attributes, namely commitment and social interactions, can be classified as benefits (Kunkel et al., 2016). These studies, however, focused on fans who show relatively high loyalty toward their favorite teams. Mullin et al. (2014) divide stadium attendees into three segments: frequent, multiple, and nonpattern attendees. Although the assessment of team value based on fans' perceptions is important (Kim et al., 2020), marketers also need to understand the evaluations of not fans, such as occasional spectators toward teams in their marketing for team management. Brand associations, which are perceived by occasional spectators in the proper targeting markets of teams, have not been studied.

The strong, favorable, and unique brand associations construct a differentiated positive brand image that leads to brand success (Keller, 1993; Keller &

Swaminathan, 2019). It is important to assess the strength, favorability, and uniqueness of brand associations based on consumer perception to understand the characteristics of a certain brand. Keller (1993) indicated the concept of strong, favorable, and unique brand associations, but the measurement items were not indicated. The strength of brand associations can be measured by the number or order of associative words and time when one recalls associations concerning a certain brand association (French & Smith, 2013; Till et al., 2011). These are based on objective methods, not consumers' perceptions. According to the CBBE context, strength shows the degree to which a consumer links a certain brand and keeps a part of the brand image in one's mind (Keller, 1993). As consumers receive several stimulations by encountering and using a certain brand, their assessment of a certain brand is based on their trace, which lasts a long time in their mind (Brakus et al., 2009). Although consumers receive numerous information from a certain brand, a part of it comes to mind when they recall the brand (Keller, 1993). Thus, the strength of brand association could be measured by consumers' perceptions of whether a certain brand association always comes to their mind.

Favorability is the core concept of brand associations and consumers' evaluation of how a specific brand association is favorable or not (Dacin & Smith, 1994). Favorable brand associations are pivotal for brand success because they reflect the importance and benefits of a specific brand in one's mind (Keller, 1993). Consumers' preferences, feelings, and beliefs toward an object are pivotal to forming consumption behaviors (Blackwell et al., 2001). Although brand associations do not always facilitate consumer behaviors, favorable associations lead to overall positive attitudes toward a certain brand. Therefore, marketers need to understand whether associations concerning professional sport teams are favorable or not for their customers.

Uniqueness is key to creating a unique position within a market and pivotal for maintaining competitive advantage (Keller, 1993; Southworth & Ha-Brookshire, 2016; Vieceli, 2011). Brand success requires unique firm associations that are different from the others (Olsen, 2008). However, brand associations are often shared with different brands, even though there are no competitors (Keller & Swaminathan, 2019; Krishnan, 1996). It could be crucial that the associations concerning professional sport teams are unique and identified as the associations of a certain sport team. Thus, brand association concerning professional sport teams must be perceived as unique by the customers.

Professional sport teams could be one of the symbols of their hometown. It would be important to measure the strength, favorability, and uniqueness of team attributes based on the inclusion of various insights, such as frequent, multiple, and nonpattern attendees, to provide empirical implications for improving team management and further develop the fan base. Therefore, the purpose of this study was to develop a scale for measuring the strong, favorable, and unique brand attributes of professional sport teams. As brand images of a sport team would be both inside and outside of a stadium, brand associations regarding sport teams should be collected by spectators who have attended a game at least once. This

study collects data from various types of sport consumers within proper targeting markets of teams and composes brand attributes of professional sport teams with product-related attributes and multiple dimensions of non-product-related attributes for scale development.

Method

The scale was developed in two steps: Step 1 involved collecting words representing professional sport teams from local residents where the teams were located and then categorizing them to construct items for measuring team attributes. In terms of non-product-related attributes, sub-dimensions of non-product-related attributes were considered in the process of categorization. Step 2 included the generation of items and determining the construct validity of the scale. The scale comprised three models, namely the Strength, Favorability, and Uniqueness models. The Strength model measures the strength of team attributes, the Favorability model measures the favorability of team attributes, and the Uniqueness model measures the uniqueness of team attributes.

Data collection in Steps 1 and 2 were conducted in six cities where the home stadiums of professional baseball teams were located in the Pacific League. Professional baseball, operated by the Nippon (Japan) Professional Baseball Organization (NPB), is one of the most popular spectator sports in Japan. The NPB has 12 teams in two leagues – the Pacific League and the Central League – each has six teams. Professional baseball teams have been considered advertising tools of their owner companies in Japan. For the last two decades, however, the business models of professional baseball teams, especially teams in the Pacific League, have been developed following the European and American professional sport team management. The marketing target of each team is local residents where the home stadium is located, and teams have made efforts to strengthen bonds with residents living in their marketing areas through promotional and outreach activities for better team management (Wada & Matsuoka, 2016). Thus, the Pacific League teams and their marketing targets (i.e., the local residents where home stadiums of teams are located) may be valid subjects for developing a scale to measure brand associations of professional sport teams.

Step 1

Data Collection

Data were collected from 930 respondents, 155 of which were from local residents in six cities where the Pacific League teams are located. An online survey was conducted through an internet research company. The sample included individuals over 16 years old who had registered with the Internet research company and had attended at least one game between the 2012 and 2014 seasons. The question used to collect words concerning team attributes was “Please write down up to

three words when thinking of 'a specific professional baseball team' in the order they come to your mind", we requested respondents to write down at least one word. As the NPB baseball season runs from the end of March to the beginning of November, the online survey was conducted in mid-February 2015 to avoid a strong influence from game results and team successes or failures during or immediately after the season.

A Ph.D. expert and five graduate students specializing in sport marketing discussed and categorized the words collected from local residents relying on the TBAS, TAM labels, and refined TAM model. When the words were unclear and unknown, the expert panel contacted the concerned teams. The entire process was carried out based on the practitioner's advice, who had worked for a Pacific League team as a player and team staff member.

Findings

Among the respondents ($N = 930$), 56.67% were male, and 43.33% were female. The mean age of the respondents was 47.50 years (SD = 13.69). Of these, 71.69% had lived at their current residence for more than ten years, and 54.69% had attended games one to three times in the last three years. The sex and mean age of respondents were compared with the database of the Sasakawa Sports Foundation (SSF) to confirm the representativeness of the sample. The SSF is one of the most prominent Japanese research and survey institutions specializing in sport. According to the 2014 database of the SSF concerning Japanese general baseball spectators, 63.29% were male, and 36.71% were female. Their mean age was 48.90 years (SD = 16.28). There was not much difference between the respondents in Step 1 and the SSF database of 2014. Thus, the respondents in Step 1 were recognized as a valid sample to represent the population.

A total of 1,967 valid words representing team attributes were obtained. Categorization, labeling, and their definitions were considered while referring to previous research studies (Bauer et al., 2008; Gladden & Funk, 2002; Ross et al., 2006). The collected words were categorized into 15 labeled items: "team performance", "players", "field manager", "owner", "team history", "concessions and attractions", "team designs", "mascot characters", "relations with a community", "region", "home stadium", "fans", "Pacific League and baseball", "others", and "none". Unmeasurable labeled items, "others" and "none", and an item with less than 5% of all associative words, "Pacific League and baseball", were excluded as measurement items. Consequently, 12 measurement items were composed to measure attributes representing professional sport teams.

The 12 labeled and measurement items were divided into three sub-dimensions: one product-related attribute (performance factor) and two types of non-product-related attributes (internal factor and external factor). The product-related attribute was related to the performance of teams in games. Therefore, it was named the "performance factor", and it included three measurement items, namely team performance, players, and field manager. The remaining nine items corresponding

to non-product-related attributes were divided into the internal factor and the external factor.

As mentioned previously, the CBBE has four sub-dimensions of non-product attributes, namely price information, packaging or product appearance information, user imagery, and usage imagery. However, the survey data featured no associations regarding price information. Labeled items concerning team designs and mascot characters are related to packaging or product appearance information that Keller (1993) mentioned. Kotler and Armstrong (2011) argued that product planners "need to develop product and service features, design, a quality level, a brand name, and packaging" (p. 249). These are controllable factors by which product planners deliver value to consumers. Every Pacific League team has a parent company that hosts game day events and provides attractions using the team's history or parent company images. Team designs, mascot characters as well as team history, owner, and concessions and attractions relate to quality level, brand name, and packaging or product appearance information. Thus, the internal factor comprised aspects that teams can manage directly at any location or environment, namely team history, owner, concessions and attractions, team designs, and mascot characters.

Relations with community, region, home stadium, and fans relate to user and usage imagery described by Keller (1993). Therefore, the external factor was composed of aspects that relations between teams and their external environments that teams cannot manage directly, namely relationship with the community, region, home stadium, and fans. Twelve labeled and measurement items and their definitions are shown in Table 14.1. The structure of the team attribute scale is shown in Figure 14.1.

Step 2

Item Generation

As 10 of the 12 labeled items, except region and home stadium, implied various associative words concerning each label when the expert panel categorized and labeled them, these items began with "regarding" as measurement items (e.g., regarding team performance or success; regarding active players). On the other hand, region and home stadiums did not include their functions or services but implied definite names as proper nouns. Therefore, the measurement items of the region and home stadium were "a community or region where the home stadium of the team is located" and "home stadium" (Table 14.1).

Each measurement item measured its strength, favorability, and uniqueness. The question items to measure the strength of team attributes were, "When thinking of a 'specific professional baseball team', how much do the following items come to your mind?" This was measured on a 7-point Likert-type scale ranging from "never" (1) to "always" (7). The question items to measure the favorability of team attributes were, "when thinking of 'specific professional baseball team',

Table 14.1 Factors, Labeled Items, Definitions, and Measurement Items for Team Attributes

Factors	*Labeled Items*	*Definitions*	*Measurement Items*
Performance factor	Team performance	Thoughts regarding the team performance or success of a specific team	Regarding team performance or success
	Players	Thoughts regarding the active players or their performance and qualities in a specific team	Regarding active players
	Field manager	Thoughts regarding the current field manager of a specific team	Regarding a current field manager
Internal factor	Owner	Thoughts regarding an owner or an owner company of a specific team	Regarding an owner or an owner company
	Team history	Thoughts regarding precursors and the history of a specific team	Regarding the history of a team
	Concessions and attractions	Thoughts regarding concessions and attractions for a specific team at the stadium (except a game), such as eating and drinking or special game day events	Regarding concessions and attractions at the stadium
	Team designs	Thoughts regarding the symbolic designs, such as colors, logos, and slogans of a specific team	Regarding symbolic designs of the team (such as colors, logos, and slogans)
	Mascot characters	Thoughts regarding mascot characters of a specific team	Regarding mascot characters
External factor	Relationship with a community	Thoughts regarding the relationship between a specific team and the community of the region where the team's home stadium is located	Regarding the relationship between a team and a community
	Region	The community or region where the home stadium of a specific team is located	A community or region where the home stadium of a team is located
	Home stadium	The home stadium of a specific team	Home stadium
	Fans	Thoughts regarding supportive fans or fan cheers of a specific team	Regarding fans of a team

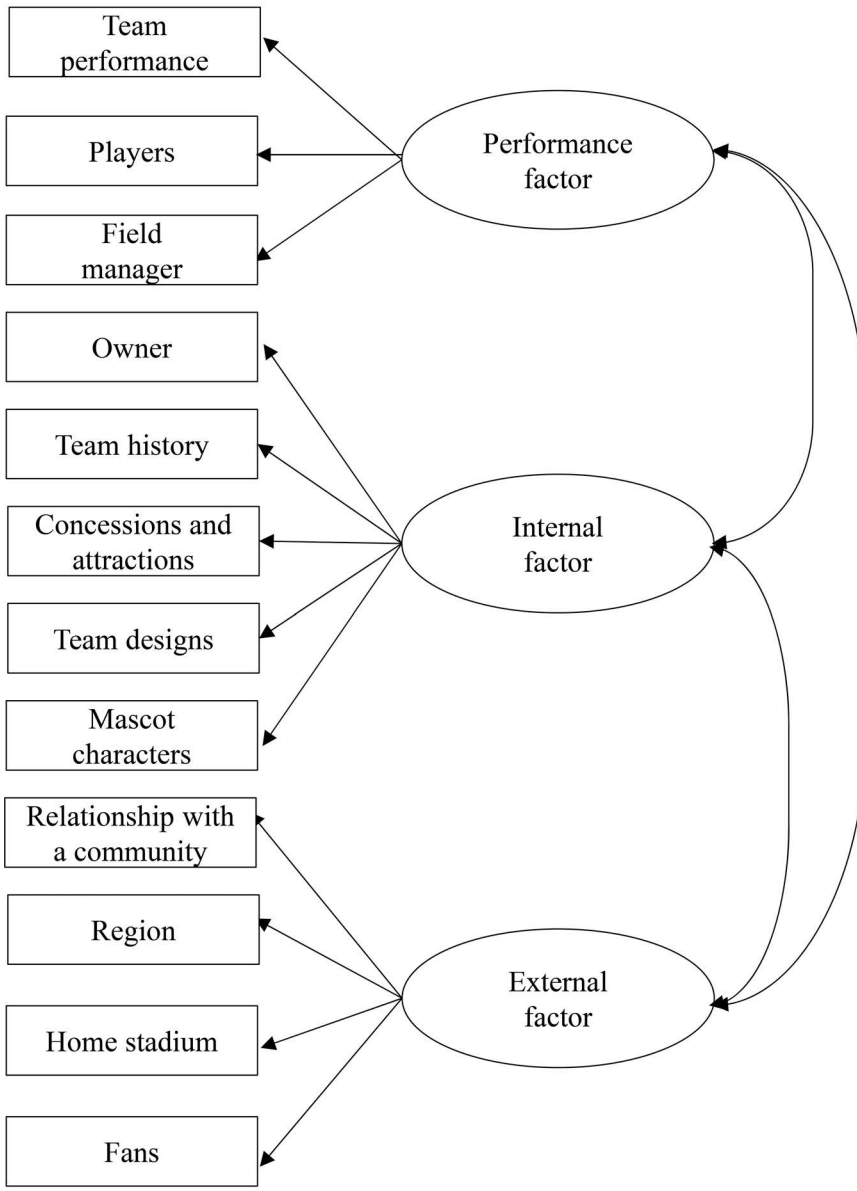

Figure 14.1 The Structure of the Team Attributes Scale in the Strength, Favorable, and Uniqueness Models.

how much are the following items seen as a good or bad image?" This was measured on a 7-point Likert-type scale ranging from "very bad image" (1) to "very good image" (7). The question items to measure the uniqueness of team attributes were, "when thinking of a 'specific professional baseball team', how much are the following items unique?" This was measured on a 7-point Likert-type scale ranging from "not unique at all" (1) to "very unique" (7). The scale validity was confirmed with acceptable discriminant validity, convergent validity, and reliable estimates in the Strength, Favorable, and Uniqueness models.

Data Collection

An online survey was conducted to confirm the construct validity of the scale through an internet research company at the end of January 2016. Data were collected from 171 to 173 residents in each city where the Pacific League teams were located. The samples comprised respondents over 16 years old who were expected to pay for themselves to attend games and had attended at least one home game during the 2013 to 2015 seasons. The sample included 1,033 of the 1,034 responses (99.9%).

Findings

More than half (57.60%) of the respondents were male, and the female respondents were 42.40%. The mean age of the respondents was 49.47 (SD = 13.51) years. Among the respondents, 73.67% had lived at their current residence for more than ten years. The sex and mean age of the respondents were compared with the 2016 data of the SSF. Among Japanese general baseball spectators, 59.62% were male, and 40.38% were female. Their mean age was 48.34 (SD = 17.43). There was not much difference between the respondents in Step 2 and those in the 2016 database of the SSF. They were quite similar to the characteristics of the respondents in Step 1 and the database of the SSF in 2014. Thus, the respondents in Step 2 were recognized as a valid sample to represent the population.

The mean scores, standard deviations, and correlations across measurement items of team attributes were calculated using SPSS Version 26 in terms of their strength, favorability, uniqueness, and brand image as composite variables (Table 14.2). The correlations of team performance and players were over .800 in terms of the strength of team attributes. However, none of the items were eliminated because the correlations were lower than .700 for the favorability and uniqueness of team attributes. Previous studies did not reject these items because they were important for forming product-related attributes (Ross et al., 2007; Ross et al., 2006).

Confirmatory factor analysis was conducted using Amos 26 to verify the validity of the scale. The chi-square to the degree of freedom ratio (CMIN/df), the goodness of fit index (GFI), normed fit index (NFI), comparative fit index (CFI),

Table 14.2 Means, Standard Deviations, and Correlation Ranges between Items for Strength, Favorability, and Uniqueness Models

		Strength Model		*Favorability Model*		*Uniqueness Model*	
Factors	*Labeled Items*	*Mean (SD)*	*Correlation Ranges*	*Mean (SD)*	*Correlation Ranges*	*Mean (SD)*	*Correlation Ranges*
Performance factor	Team performance	4.48 (1.82)	.546**–.805**	4.66 (1.39)	.397**–.583**	4.44 (1.19)	.462**–.660**
	Players	4.59 (1.79)	.544**–.805**	5.22 (1.16)	.583**–.693**	4.67 (1.11)	.515**–.660**
	Field manager	4.15 (1.91)	.546**–.747**	4.98 (1.24)	.511**–.633**	4.45 (1.23)	.487**–.622**
Internal factor	Owner	3.71 (1.83)	.431**–.741**	4.50 (1.34)	.479**–.716**	4.33 (1.23)	.462**–.610**
	Team history	3.68 (1.78)	.542**–.733**	4.88 (1.15)	470**–.669**	4.58 (1.13)	.514**–.644**
	Concessions and attractions	3.74 (1.75)	.445**–.695**	4.84 (1.20)	.415**–.596**	4.45 (1.17)	.422**–.556**
	Team designs	4.03 (1.82)	.446**–.703**	4.97 (1.18)	.434**–.612**	4.58 (1.13)	.489**–.602**
	Mascot characters	4.01 (1.80)	.507**–.705**	5.12 (1.21)	.455**–.672**	4.70 (1.14)	.422**–.630**
External factor	Relationship with a community	5.38 (1.86)	.515**–.741**	5.66 (1.25)	.474**–.716**	4.69 (1.23)	.501**–.643**
	Region	4.01 (1.77)	.431**–.653**	5.06 (1.20)	.416**–.671**	4.66 (1.18)	.440**–.604**
	Home stadium	4.89 (1.80)	.546**–.706**	5.27 (1.24)	.544**–.671**	4.81 (1.18)	.496**–.644**
	Fans	3.85 (1.90)	.548**–.706**	5.18 (1.23)	.397**–.681**	4.67 (1.19)	.462**–.609**

Note: SD = standard deviation.
** $p < .01$.

and root mean square error of approximation (RMSEA) were used to evaluate the goodness-of-fit criteria. The fit index of the Strength model was $\chi^2/df = 3.34$ ($p < .001$), GFI = .984, NFI = .990, CFI = .993, and RMSEA = .048; the fit index of the Favorability model was $\chi^2/df = 3.09$ ($p < .001$), GFI = .985, NFI = .989, CFI = .992, and RMSEA = .045, and the fit index of the Uniqueness model was $\chi^2/df = 2.86$ ($p < .001$), GFI = .984, NFI = .986, CFI = .991, and RMSEA = .042. The goodness-of-fit in each model was regarded as within the acceptable range.

Convergent validity was assessed via factor loadings (Table 14.3). The factor loading that supports convergent validity is greater than .707 (Fornell & Larcker, 1981). Some factor loadings were lower than .707 (i.e., Team performance of the Favorability model was .645; the Owner of the Favorability and Uniqueness models was .658 and .679, respectively, and the Region of the Strength model was .650). None of the items, however, were excluded because the factor loadings for other models (Strength, Favorability, or Uniqueness models) were greater than .707. In terms of the average variance extracted (AVE), all items in all models were greater than .50 (Hair et al., 2018). Discriminant validity was assessed by comparing the squared correlation between two constructs with their respective AVE (Table 14.4). The AVE for each construct must be greater than the squared

Table 14.3 Factor Loadings and Evaluation for the Goodness-of-fit of Models

Factors and Labeled Items		*Strength Model*	*Favorability Model*	*Uniqueness Model*
1. Performance factor				
Team performance	← 1	.863	.645	.784
Players	← 1	.874	.917	.859
Field manager	← 1	.855	.762	.724
2. Internal factor				
Owner	← 2	.801	.658	.679
Team history	← 2	.845	.763	.737
Concessions and attractions	← 2	.773	.743	.727
Team designs	← 2	.874	.862	.805
Mascot characters	← 2	.845	.806	.752
3. External factor				
Relationship with a community	← 3	.831	.791	.812
Region	← 3	.650	.752	.725
Home stadium	← 3	.818	.802	.797
Fans	← 3	.767	.826	.757
Evaluation of the goodness-of-fit of models				
The chi-square to the degree of freedom ratio (CMIN/df)		3.34***	3.09***	2.86***
Goodness of fit index (GFI)		.984	.985	.984
Normed fit index (NFI)		.990	.989	.986
Comparative fit index (CFI)		.993	.992	.991
Root mean square error of approximation (RMSEA)		.048	.045	.042

*** $p < .001$.

Table 14.4 Average Variance Extracted and the Squared Correlation between Two Factors

Factors		*1*	*2*	*3*
Strength Model	1. Performance factor	AVE = .75		
	2. Internal factor	.63	AVE = .69	
	3. External factor	.68	.67	AVE = .59
Favorability Model	1. Performance factor	AVE = .61		
	2. Internal factor	.60	AVE = .59	
	3. External factor	.59	.61	AVE = .63
Uniqueness Model	1. Performance factor	AVE = .63		
	2. Internal factor	.60	AVE = .55	
	3. External factor	.62	.63	AVE = .60

Note: AVE= Average variance extracted

correlation between that construct and any other constructs (Fornell & Larcker, 1981). The squared correlation between the internal and external factors was greater than the AVE in the Favorability and Uniqueness models. All Cronbach's alpha and composite reliability (CR) scores were over .80. The reliability estimates were also acceptable (Table 14.5).

Table 14.5 Reliability Estimates for Models

		S	*F*	*U*
Factors	*Measurement Items*	*α (CR)*	*α (CR)*	*α (CR)*
Performance factor	Regarding team performance or success Regarding active players Regarding a current field manager	.90 (.90)	.80 (.82)	.81 (.83)
Internal factor	Regarding an owner or an owner company Regarding the history of a team Regarding concessions and attractions at the stadium Regarding symbolic designs of the team (such as colors, logos, and slogans) Regarding mascot characters	.90 (.92)	.89 (.88)	.87 (.86)
External factor	Regarding the relationship between a team and community A community or region where the home stadium of a team is located Home stadium Regarding fans of a team	.86 (.85)	.88 (.87)	.88 (.86)

Note: S = Strength model; F = Favorability model; U = Uniqueness model; α = Cronbach's alpha; CR = composite reliability.

Discussion

This study developed a brand attribute scale for professional sport teams (BASPST) using the associations representing professional baseball teams based on the CBBE. The BASPST was composed of three factors and 12 measurement items, which considered both product-related and non-product-related attributes and proposed more concrete dimensions for non-product-related attributes. The items were used to measure strength, favorability, and uniqueness. The measurement items were constructed based on the associative words representing teams perceived by the local residents who lived in the teams' actual targeted markets, not only by fans. Furthermore, the validity of the BASPST was also confirmed using data collected from local residents who had attended the home game at least once within three years. Consequently, the BASPST was developed using perceptions among various types of sport consumers' perceptions within the targeted markets of the teams. The scale validity was confirmed to be acceptable in terms of the Strength, Favorability, and Uniqueness models. Therefore, we concluded that the BASPST was valid for assessing brand attributes representing professional sport teams.

This study had several limitations that require future research. The first is the application of the BASPST to other sport teams. The scale development was conducted by focusing on professional baseball teams and their marketing area. Therefore, further examinations for scale validity should be confirmed by assessing other types of sports teams so that the BASPST would enable researchers and marketers to assess brand associations concerning professional sport teams in different environments.

The second point is the discriminant validity of the scale, which is the same concern as previous scale developments. Correlations between items were high, and the squared correlation between the internal and external factors was greater than the AVE in the Favorability and Uniqueness models. There are several possible reasons for these results. Promotions inside and outside the stadium and outreach activities by professional baseball teams are becoming increasingly diversified. Teams are becoming physically and psychologically closer to residents through these activities and are blending into the daily lives of residents. The more they blend in, the harder it is to distinguish among associations of professional sport teams. On the other hand, as the numerical values of the squared correlation between the internal and external factors were greater than the AVE (from only .02 to .08), revising the wording of measurement items may resolve the problems concerning the discriminant validity of the scale.

The third point concerns brand benefits and attitudes. This study collected words representing team attributes only and did not measure the strength, favorability, and uniqueness of benefits or attitudes. However, in terms of benefits and attitudes, whether individual benefits and attitudes regarding a particular product and service are favorable or not could be a contradictory question. The refined TAM (Bauer et al., 2008) did not measure the favorability of benefits because

they are intrinsically favorable associations. Attitude may also be a concept that implies the perception of consumers as favorable or not regarding a particular product or service. Therefore, in future research, the method for collecting words or phrases regarding benefits and attitudes within marketing areas and measuring their strength, favorability, and uniqueness should be considered when developing a scale.

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Chapter 15

Analyzing Athletes' Satisfaction toward the Organization of a Sport Event

Development of a Questionnaire

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Introduction

The National Universiade is the most important student sport event in Mexico, as it gathers the best athletes from higher education public or private institutions. Participating in them means the beginning of an elite sport career as it represents a possibility to compete at the World Sport Universiade, Central American and Caribbean Games, Pan American Games, and even Olympic Games. In these events in which a big number of sport disciplines are involved, good management implies the follow up of planning, development, and evaluation of the quality of the organization. Nowadays, quality has become a need to guarantee the continuity and progress of the organizations, as it can generate benefits for all those involved in the service process, such as clients (athlete), officials, employees, among others, but overall, the image of the organization. Besides that, the world of sport has been sensible to this issue and has incorporated it in its organizations, as well as it has been of interest in the academic world (Calabuig & Crespo, 2009).

There are few studies that use instruments to evaluate participants' satisfaction of the organization of a massive sport event. So, through the level of satisfaction obtained, key points can be identified in order to accomplish a successful event; and with it, improvement aspects can be considered. The quality and satisfaction of sport organizations and sport events have been the study reason of different authors. In this sense, O'Neil et al. (1999) developed a scale for valuing the service quality of a surfing sports event in Australia, based on the dimensions of SERVQUAL reduced to three factors. Authors like Shonk and Chelladurai (2008) have focused on valuing the satisfaction in a sport tourism event with four factors: access quality, lodgings quality, and contest quality; in this same sector, Kaplanidou and Gibson (2010) evaluated the relationships of service quality, satisfaction, and future intentions of the attendees in a tourism sports event. They

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used the structural equations model, where the service quality is a significant predictor of satisfaction. In another study made by Morquecho et al. (2016), the QUNISPORT V.MX instrument was designed to evaluate the perceived quality in organizations of university sports services, with the aim of measuring five factors: functionality and comfort of the university sport areas, interaction with the coach, sport service management, characteristics of the sport activities program, as well as environment and amenities of the bath/dressing rooms. Likewise, Calabuig-Moreno et al. (2016) made the validation of a scale that measures spectators' perception of service quality in sport events through the structural equations model: the EVENTQUAL scale, which measures the spectators' quality in sport events: accessibility, personnel, tangibles, and complementary services. MacIntosh and Parent (2017) carried out a study on athletes during a sports event who answered the questionnaire about the experience of the athlete; the findings showed a high level of satisfaction with the event. The real recipients and interested in the improvement of sports events are the athletes themselves, and for this reason, their opinions must be analyzed, and it is essential to attend to their needs (Bamford & Dehe, 2016; Hill & Hill, 2011). It is for this reason that the aim of this study consisted in designing and validating a scale that allows valuing the satisfaction with the organization and management of a massive sport event from the athletes' point of view.

Method

Participants

The population sample was of 706 athletes (364 women and 342 men), with an age range of 17–26 years old ($M = 21.04$; $DT = 1.86$); they participated in a voluntary way, during the development of the University Games 2017 in Mexico, in 23 sport disciplines, both individual sports disciplines (chess, athletics, boxing, fencing, gymnastics, judo, karate, weightlifting, wrestling, Tae Kwon Do, tennis, table tennis, archery, and triathlon) and team sports disciplines (basketball, baseball, football, indoor football, handball, softball, volleyball, beach volleyball, and flag football). The sample was divided randomly into two sub-samples. Sample 1 was used to make the exploratory factor analysis (Study 1), made up of 354 athletes (179 women and 175 men), with an average age of 20.83 years old ($DT = 1.92$). Sample 2, which was used to make the confirmatory factor analysis (Study 2), was integrated by 352 athletes (185 women and 167 men), with an average age of 21.26 years old ($DT = 1.75$). The age range and the type of sport discipline were represented in a proportional way in both sub-samples.

Design of the Instrument

In order to design the Questionnaire of Athletes Satisfaction in the Organization of a Sport Event (CUSADE, by its initials in Spanish), the one applied by Medina-Rodríguez (2010) was taken as a reference, where 11 factors related with the

satisfaction were evaluated, and it was developed in the Mexican sports context, at municipal level. In this case, the level of satisfaction in aspects related with the organization of a massive sport event, whose target population are the athletes, for which the design of the present instrument, 10 factors with a total of 50 items were designed: information (general information about the event), facilities, programmed activities, attitude (attitudes of the organizers, support personnel, services), lodgings, transportation, food, medical service, security and vigilance, and global valuing. A Likert-type scale was used to evaluate each item, with values from 1 to 5, where 1 is de minimum satisfaction and 5 is the maximum satisfaction.

Procedures

In order to design the CUSADE, a preliminary analysis was carried out. It consisted of the revision of studies with a similar topic and the experience of experts in sport management, where possible factors and items were discussed. They were related with the satisfaction of the organization of a massive sport event. From this point, criteria and pertinent instructions were established for the application of the instrument. Thus, content validation was obtained. Then a meeting with the responsibility of the National Sports Education Council (CONDDE, for its initials in Spanish) and the university sports chairman was held in order to count with the approval to carry out the research.

The application of the instrument was made during the development of the university games, for which a group of trained survey takers visited the different event areas (sport facilities, hotels, dining room, medical service, and the athletes' rest area) through an explanation where they found out the aim of the study and the way of completing the questionnaire, as well as any doubt or suggestion related with it. The printed survey was self-administered, with the presence of the survey taker. The average time of application was 15 minutes.

Data Analyses

In order to analyze the data, SPSS v.24, LISREL 8.80 (Jöreskog & Sörbom, 2006), and the Mplus statistical programs were used. First, depuration and quality of the database were carried out with the identification of the *outliers*; descriptive parameters such as the mean and the standard deviation were obtained, as well as the correlation between factors through the Pearson coefficient and Cronbach alpha if the element is eliminated. An exploratory factor analysis was made, using the KMO sample adequation measure and the Bartlett sphericity test; through the extraction method of principal components and with the use of an oblique rotation criterium (Promax, kappa = 4). Afterward, a confirmatory factor analysis (CFA) attending the ordinal nature of the variables. Polychoric correlations matrixes and asymptotic covariances were used as *input*, and the method of estimation used was Maximum Verosimilitude (Bentler, 2006). Criterions of the χ^2/gl minor than 3.0 were considered in order to be considered a good adjustment of the model (Kline, 2005). The CFI and NNFI indexes above 0.90 indicate an

acceptable adjustment (Hu & Bentler, 1999). For the RMSEA, satisfactory values the ones minor than 0.05, and the inferior values are the ones bigger than 0.08 (Llorent-Segura et al. 2014). Once the CFA was concluded, standardized coefficients were employed to determine the compound reliability indexes (CR) and the extracted mean variance (AVE). Finally, the structural equations model (SEM) was used to estimate causal relations chains, relating two or more latent and manifested variables (Muthén & Muthén, 2007).

Results

The internal consistency was calculated through the Cronbach Alpha Index, referring to the resulting factors that form the instrument. The reliability analysis revealed a good internal consistency, showing values that, in this case, are greater than 0.70 (Cronbach, 1951; Oviedo & Campos-Arias, 2005), among ranges of 0.83 and 0.92 (Table 15.1). The correlation analysis showed that all factors (information, facilities, programmed activities, attitude, lodging, transport, food, medical service, security, vigilance, and global valuing) correlate in a positive way among them and are significantly related ($p < .01$).

In order to confirm the adequation of the instrument, an exploratory factor analysis of the 50 items was made. The adequation of the sample was confirmed through the Bartlett sphericity test and the Kaiser–Meyer–Olkin (KMO) adequation sample index. The value of the sample adequation measure was optimal, with a KMO index of 0.94 and the Bartlett test resulted statistically with a value ($\chi^2 = 12769.4$, $gl = 1225$; $p < .001$). Ten factors were extracted Eigen values of 1 or greater than 1 which, altogether, explain a total variance of 70.95% (Table 15.2). In order to confirm that the scale follows the expected factor structure, a confirmatory factor analysis was carried out through the LISREL 8.80 program (Jöreskog & Sörbom, 2006). The adequation of the model was analyzed following some recommendations through different indexes: the value of Chi-squared divided by the degrees of freedom (χ^2/gl) must be minor than three (Kline, 2015), the nonnormative adjustment index (NNFI), the comparative adjustment index (CFI) above 0.90 (Hu & Bentler, 1995) and the average squared root of the proximity error (RMSEA) inferior to 0.06 or a maximum value of 0.08 (Byrne, 2000). For the previous, the indexes of the goodness of fit of the model resulted satisfactory: $\chi^2/gl = 2.55$, NNFI = 0.96, CFI = 0.97, RMSEA = 0.07.

The reliability with internal consistency analysis, through the Cronbach Alpha Index, revealed a good internal consistency, showing values in this case greater than 0.70 (Cronbach, 1951; Oviedo & Campos-Arias, 2005) among a range of 0.84 and 0.92. The correlation analysis showed that all the factors are correlated in a positive way among them and are significantly related $p < .01$. Moreover, a calculation of the compound reliability coefficient (FC) based on confirmatory factor analysis was made, taking as criteria the values bigger than 0.70 (Hair et al., 2004, 2010). The result was with values between 0.87 and 0.92. The extracted average variance (AVE) showed, likewise, adequate values, in this case superior, to

Table 15.1 Mean, Typical Deviation, Compound Reliability, and Correlations among the Variables

Factor	*Range*	*M*	*DT*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Information	1–5	4.15	.68	(.88)									
2. Facilities	1–5	4.33	.60	.532**	(.83)								
3. Programmed activities	1–5	4.42	.61	.547**	.537**	(.86)							
4. Attitude	1–5	4.31	.72	.505**	.561**	.580**	(.91)						
5. Lodging	1–5	4.19	.80	.487**	.382**	.428**	.483**	(.89)					
6. Transport	1–5	4.34	.72	.379**	.437**	.437**	.633**	.539**	(.90)				
7. Food	1–5	4.16	.73	.372**	.283**	.359**	.446**	.359**	.516**	(.87)			
8. Medical Service	1–5	4.20	.85	.414**	.349**	.350**	.390**	.392**	.423**	.380**	(.91)		
9. Security	1–5	4.27	.79	.509**	.505**	.407**	.540**	.477**	.547**	.451**	.548**	(.92)	
10. Global Valuing	1–5	4.40	.67	.531**	.470**	.475**	.623**	.538**	.599**	.468**	.484**	.657**	(.89)

Note: FC = compound reliability; AVE = extracted mean variance; Cronbach's alpha over the diagonal.
** $p < .01$.

Table 15.2 Organization of the Rotated Factor Structure, Communalities, Self-Values, and Explained Variance Percentages (by Factor and Global)

	Factor										
Item Statement	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Commonality*
Ítem 2 The time it takes to serve you from the moment you request it	.821										.66
Ítem 4 The information received by any means of communication	.740										.56
Ítem 3 The information received at the time of arrival at the lodging site	.740										.57
Ítem 6 The information received upon arrival at the event site	.721										.67
Ítem 5 The attention you receive from the staff of the organizing committee	.713										.66
Ítem 1 Regarding the timetable of attention/ orientation	.675										.58
Ítem 7 How do you consider the personalized treatment received	.668										.58
Ítem 19 The organizing committee demonstrates a capacity to adapt to its interests		.886									.76
Ítem 20 The staff fulfilled their assigned functions		.882									.78
Ítem 21 The staff was accessible to your requirements		.828									.76
Ítem 23 The staff was located in places where they could easily be reached		.765									.74
Ítem 22 Overall assessment of the attitude of the organizing committee		.697									.70
Ítem 15 The schedule of the games was respected			.886								.72
Ítem 17 The general rules of participation were complied with.			.845								.64

(Continued)

Table 15.2 Organization of the Rotated Factor Structure, Communalities, Self-Values, and Explained Variance Percentages (by Factor and Global) *(Continued)*

	Factor										
Item Statement	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Commonality*
Ítem 16 The referees were at the appointed time and place			.826								.69
Ítem 13 The games were held at the established time and place			.707								.62
Ítem 18 The games were held at the established place			.669								.58
Ítem 14 Overall evaluation of the programmed activities			.554								.64
Ítem 28 The stay at the assigned hotel was comfortable				.885							.77
Ítem 24 The distance between the hotel and the facilities was in accordance with the size of the city				.868							.75
Ítem 26 When you requested information you were attended in an adequate manner				.854							.79
Ítem 25 The organizing committee guided you regarding security measures in the hotel				.677							.68
Ítem 27 Overall rating of the lodging				.647							.64
Ítem 36 The quality of the food received					.915						.75
Ítem 37 The designated food service meets the expected needs and requirements					.875						.76
Ítem 33 The dining room and the staff in charge of it comply with health requirements					.795						.71
Ítem 35 The food area is in hygienic, clean and ventilated conditions					.685						.67
Ítem 34 Overall evaluation of the food service					.631						.68

(Continued)

Table 15.2 Organization of the Rotated Factor Structure, Communalities, Self-Values, and Explained Variance Percentages (by Factor and Global) *(Continued)*

	Factor										
Item Statement	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Commonality*
Ítem 38 There was a place and personnel marked as "Medical Service"						.914					.78
Ítem 39 The emergency personnel are trained to perform these functions						.842					.81
Ítem 41 The medical service designated for the event						.809					.80
Ítem 40 Overall assessment of the medical service						.795					.85
Ítem 45 Number of security personnel who guarded the event							.924				.78
Ítem 44 The attitude of the event's security personnel							.896				.80
Ítem 43 How do you rate the security of the event?							.892				.81
Ítem 42 Overall assessment of security and surveillance							.794				.78
Ítem 49 How do you rate your participation in the event?								.818			.74
Ítem 48 How satisfied are you with the organization of the event?								.791			.76
Ítem 50 If you were to participate in a similar event again, would you consider choosing the same venue?								.773			.70
Ítem 46 How would you rate your stay in the host city?								.630			.73
Ítem 47 How do you rate the attention you received?								.581			.66
Ítem 30 The transport is comfortable, clean and ventilated									.874		.80

(Continued)

Table 15.2 Organization of the Rotated Factor Structure, Communalities, Self-Values, and Explained Variance Percentages (by Factor and Global) *(Continued)*

	Factor										
Item Statement	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Commonality*
Ítem 29 The transport complies with the necessary safety conditions for its transportation									.861		.78
Ítem 31 The driver respects the current traffic regulations									.840		.79
Ítem 32 Overall evaluation of the transportation service									.791		.75
Ítem 8 Adequacy of the facility for sports activities										.886	.68
Ítem 9 Cleaning and lighting of sports facilities										.880	.73
Ítem 12 Signage and access to sports facilities										.716	.66
Ítem 11 The attention received by the staff of the sports facilities										.563	.57
Ítem 10 Overall assessment of sports facilities										.435	.62
Values Eigen	18.35	3.13	2.69	2.20	2.13	1.86	1.54	1.34	1.18	1.06	—
% of variance	36.71	6.27	5.39	4.40	4.27	3.71	3.08	2.68	2.35	2.12	70.95

Note: 1 = information, 2 = attitude, 3 = programmed activities, 4 = lodging, 5 = food, 6 = medical service, 7 = security y vigilance, 8 = global valuing, 9 = transport, and 10 = facilities.

0.50 (Bagozzi & Yi, 1988; Hair et al., 2004, 2010), in a range among 0.53 and 0.75 (Table 15.3). Analyzing the factors that form the instrument, five parameters of the standardized solution were determined by conducting structural equation model analyses, which are presented in Figure 15.1. For the analyses, the perception of the received information and the programmed activities for the athletes was a predictor in the satisfaction of the facilities and lodging; and this, at the same time, acts as a positive predictor of the global valuing of the organization of a massive sport event.

Discussion

The aim of the present study consisted in designing and validating a scale that allows valuing the satisfaction with the organization and management of a massive sport event from the athletes' point of view. The results obtained in the present study show adequate indexes for the scale, the internal consistency of each of the resulting factors that conform it was excellent, showing that there exists great homogeneity among the items of each factor, according to Nunnally (2008). The confirmatory factor analysis applied shows that de indexes of the goodness of fit of the model resulted satisfactory, which coincides with results obtained by other authors that have used similar scales, such as Bernal (2013), Calabuing et al. (2008), Kim and Trail (2010), and Medina-Rodríguez (2010). In this sense, the CUSADEP showed a solid structure of ten factors.

Similar studies show scales with a smaller number of factors like the ones from O'Neil, Getz, and Carlsen (1999), who evaluated three factors; Shonk and Chelladurai (2008) four factors and Morquecho et al. (2016) included five factors to evaluate similar scales to one of the present studies. It is considered an important aspect the fact of including wide range of factors, because it allows to identify those that can condition the success of an event of this kind and, at the same time, they allow the detection of negative effects on the satisfaction of the clients/athletes (García et al., 2012). For this study, the degree of satisfaction of the service respecting the information, facilities, programmed activities, attitude, lodging, transport, food, medical service, security and vigilance, and global valuing was evaluated positively for all factors, coinciding with other studies, in which the totality of the scale factors was evaluated favorably (Bernal, 2013; Calabuing et al., 2008; García et al., 2016; Medina-Rodríguez, 2010; Nuviala et al., 2008; Ruíz-Alejos, 2015; Sánchez et al., 2017; Vila et al., 2009; Yildiz, 2011).

Rocha and Chelladurai (2012) don't recommend the use of small samples to use the design of structural models, for which counting with a big sample in the present study allowed applying the structural equations model. This, at the same time, leaded to identify the factors that best predict the satisfaction level of the participants in a massive sport event, which correspond to those related with human resources and tangible attributes, for which coincide with some authors (Bodet, 2006; Kim & Trail, 2010). They define them as determinants of the satisfaction generation. In this sense, not only must the attributes with best valuing be taken care of, but a bigger effort must be dedicated, for future sport events, to implement

Table 15.3 Mean, Typical Deviation, Compound Reliability, and Correlations among Variables

Factor	*M*	*DE*	*FC*	*AVE*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Information	4.15	.72	.89	.55	(.90)									
2. Facilities	4.33	.65	.87	.53	.610*	(.84)								
3. Programmed activities	4.37	.68	.88	.55	.541*	.557*	(.88)							
4. Attitude	4.30	.77	.91	.68	.512*	.579*	.531*	(.91)						
5. Lodging	4.17	.77	.87	.57	.551*	.494*	.427*	.588*	(.87)					
6. Transport	4.27	.81	.92	.75	.414*	.473*	.444*	.609*	.515*	(.92)				
7. Food	4.05	.81	.90	.63	.447*	.381*	.412*	.405*	.458*	.520*	(.89)			
8. Medical Service	4.13	.85	.91	.73	.491*	.387*	.370*	.452*	.415*	.463*	.427	(.91)		
9. Security	4.27	.76	.91	.73	.505*	.464*	.424*	.470*	.326*	.515*	.402*	.557*	(.91)	
10. Global Valuing	4.36	.68	.89	.61	.535*	.597*	.520*	.667*	.568*	.618*	.480*	.509*	.540*	(.89)

Note: FC = Compound reliability; AVE = extracted mean variance; Cronbach's alpha over the diagonal.
** $p < .01$.

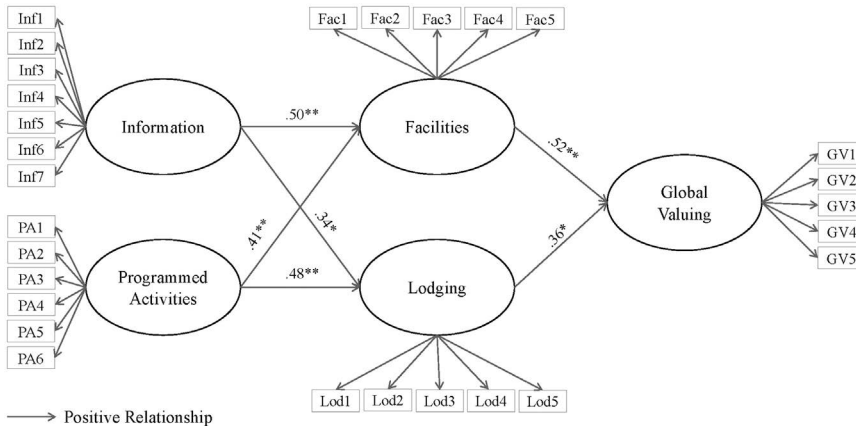

Figure 15.1 Standardized Solution of the Structural Model of the Satisfaction in the Organization of a Massive Sport Event.

strategies in those factors that show a low-quality perception (García et al., 2012). Understanding the service attributes is an important aspect for the researchers and for the responsible of the enterprises in the sports sector (Albayrak & Carber, 2014). In this way, the results obtained in the present study are adequate to justify and support the use of this scale and make it available for professionals as a tool with adequate psychometric attributes, which will favor decision-making at the strategic level (Gálvez et al., 2015).

The instrument represents a tool of easy application, and it has sufficient psychometric guarantees in order to be used by researchers, professionals, and sport managers for valuing the quality and satisfaction at the moment of organizing massive sport events. Regarding the restrictions of this study, it is considered that the specificity of the instrument itself can be considered a limitation; by virtue of the fact that it can only be applied in massive events that involve all the factors that define it and where the services and characteristics of the event are of such magnitude. The model of structural equations allowed identifying the predictive factors to accomplish global satisfaction, focusing on the received information by the athlete attendees, the programming of activities of the event and those, at the same time, related to the facilities where the event and lodging are being carried out, identifying these four factors as the key elements that must be considered, at the moment of organizing a sports event.

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