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Twitter Power and Sport-Fan Loyalty: The Moderating Effects of Twitter

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Sport fans who have formed strong connections to their favorite team may be termed loyal fans. One popular communication tool for such fans is Twitter, which has been found to be an important medium for sharing news and events, yet few studies have examined the moderating of Twitter use in a sport context. Adopting the relational approach examining the determinants of sport-fan loyalty, this study examined how Twitter use moderates the building of fan loyalty. Findings revealed that team attraction, team trust, and team involvement are positively related to team attachment. While team attachment was found to positively influence fan loyalty, sport fans' Twitter use was found to significantly reinforce their loyalty. Specific implications for both theory and practice are discussed.

Keywords: relational marketing, team attraction, team trust, team involvement, and team attachment

Not surprisingly, a large majority of recent sport teams and organizations have adopted social media as part of their marketing and public relations strategies (Newman, Peck, & Wilhide, 2017). They particularly rely on social media to facilitate fan behaviors such as purchasing tickets and/or team merchandise (C. Warren, 2016). Social media have generally served as a powerful marketing communication tool (Schivinski & Dabrowski, 2016) that allows athletic departments to take a step toward effective relationship marketing to forge a long-term connection directly with fans (O'Hallarn, Morehead, & Pribesh, 2016).

Relationship marketing, which was launched as a new paradigm shift in the mid-1990s, has evolved into multiple business approaches (Grönroos, 2004, 2011). Relationship marketing as an integrative mechanism, according to Grönroos (2000), requires three primary elements: communication, value, and interaction. With this paradigmatic shift have also come changes in consumers' expectations and needs. Consumers, called the "Net generation," often use two-way communication and new technologies to engage in emerging and prospective businesses and to pursue relationships (Tapscott, 2009). Current sport marketers manipulate the online

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environment to increase its impact on fan–team relationships (Hambrick & Kang, 2015) because relationship marketing eventually leads to brand loyalty (Shani & Chalasani, 2013).

Twitter has become one of the most prominent modern communication tools of social networking in the sport sector (Pedersen, Laucella, Kian, & Geurin, 2016). By relying on a short and direct message that is limited to 140 characters in real time, Twitter permits sport consumers to share their interests and opinions about their favorite teams, athletes, or brands (Ray, Smith, & Fowler, 2016). Accordingly, sport teams and organizations have increasingly used Twitter as a promotional marketing tool to cultivate relationships with fans, enhance fans' loyalty, and build or maintain a brand presence (Watkins & Lee, 2016). As the popularity of college sports has sharply increased in recent decades, Twitter also brings a unique and relevant medium to college athletic departments to retain relationships with their fans and promote a strong brand presence (Clavio & Walsh, 2014). Thus, due to its importance, it is believed that more research is needed to better understand Twitter users to develop their loyalty to players, teams, and/or organizations.

Many different types of businesses to date have endeavored to build a new brand through social media with the aim of conveying their products and services competitively (Holt, 2016). These businesses can include sport teams and organizations. By hiring creative agencies and geared technologists, the businesses have invested billions to represent their brands and develop relationships with their consumers throughout the digital universe (Leeflang, Verhoef, Dahlström, & Freundt, 2014). However, despite such efforts, there is very little payoff (Holt, 2016). The effects of Twitter, especially, from the view of bolstering fan–team relationships, are less well understood and require further investigation. Similarly, in practical settings, sport managers are not completely aware of how Twitter can be effectively used in relationship marketing (Williams, Chinn, & Suleiman, 2014) or to influence the development of fan loyalty.

The current study adopts a relational approach (Fournier, 1998) to examine the determinants of sport-fan loyalty and thus represents the fan–team relationship in terms of cognitive and emotional bonding. Given this background, the purpose of this study was to extend the relationships among components affecting sport fans' loyalty, including team attraction, team trust, team involvement, and team attachment, and to test the moderating effects of Twitter use—both on nongame days and during a game—as a brand-management tool on the formation of sport-fan loyalty. We believe that this area of study is noteworthy as results could help sport marketers better communicate with their fans. The next section presents a review of the literature on the topics of fan loyalty, determinants of fan loyalty, and Twitter.

Literature Review

Relationship Marketing

Relationship marketing refers to "all marketing activities directed toward establishing, developing, and maintaining successful relationship exchanges" (Morgan & Hunt, 1994, p. 22) and further leads to attract, maintain, and enhance consumer relationships (Berry, 2002). The marketing literature has posited key components

that underpin relationship marketing, such as trust (Veloutsou, Saren, & Tzokas, 2002), commitment (Chan & Ndubisi, 2004), and satisfaction (Leverin & Liljander, 2006). These components have been linked to consumer loyalty. Oly Ndubisi (2004) suggested that companies require worthwhile and strategic investments in building connections with loyal or at least potentially loyal consumers. Recently, most sport teams and organizations have endeavored to create loyal fans through different social-media platforms. However, the mechanisms of sport-consumer behavior have not been fully explored for how sport-fan loyalty is developed (Tsiotsou, 2013). It is thus necessary to identify a more comprehensive model in sport settings that would provide a better understanding of the drivers of fan loyalty.

Fan Loyalty

The concept of loyalty has received extensive attention from both academics and practitioners in marketing (Cater & Zabkar, 2009). Loyalty, according to Oliver (1999), is defined as a deeply held commitment to repurchase or repatronize a favored product or service consistently over time. Early researchers, who primarily focused on behavioral responses, failed to clarify why customers repeatedly purchased specific brands (Dwyer, 2011). Thus, researchers began to postulate that loyalty consists of not just behavioral components but also attitudinal ones (Hennig-Thurau, Langer, & Hansen, 2001). Behavioral loyalty includes repurchase intentions toward a particular brand or product, whereas attitudinal loyalty consists of some extent of preference and commitment regarding a specific brand or product (Chaudhuri & Holbrook, 2001). Notably, in sport settings, fan loyalty has been viewed as a person's steadfast commitment to a specific team, which can influence that person's thoughts (i.e., a personal psychological commitment) and behaviors (i.e., repeat purchasing of a product; Funk & Pastore, 2000). Past research has revealed that attitudes and behaviors are not mutually exclusive and that an understanding of the connection between the two components enables a sufficient description of fan loyalty (Mahony, Madrigal, & Howard, 2000).

Adopting a relational approach to sport marketing represents several advantages. The relational perspective encourages consumer loyalty (Bolton, 1998) and, consequently, sport-fan loyalty by customizing its marketing strategies targeted to sport fans. First, it stimulates both constructs, attachment and trust, which help differentiate relational services from transactional services (Berry, 1995). Two additional constructs, attraction and involvement, were included in this study because both were predictors of sport-fan loyalty (Bee & Havitz, 2010). Second, a relational approach promotes cross-level research that connects consumer- and firm-level domains in terms of how firms (e.g., sport teams) create, maintain, and profit from strong consumer relationships (Sirdeshmukh, Singh, & Sabol 2002). It is well known that steadfast fan relationships help enhance financial performance by encouraging corporate social responsibility (Inoue, Kent, & Lee, 2011) and word of mouth (Verhoef, Franses, & Hoekstra, 2002). However, questions regarding the power of the accepted relationships between attachment and trust to loyalty still remain (Tsiotsou, 2013). Thus, more research is required to determine the benefits of fan loyalty.

A relationship marketing view (Chaudhuri & Holbrook, 2001; Fournier, 1998; Morgan & Hunt, 1994) typically includes both cognitive and affective aspects, and

the current study takes both facets in the sport fan–team relationship. Accordingly, the proposed conceptual model (see Figure 1) is composed of two aspects, cognitive (i.e., team attraction, team trust, team involvement) and affective (i.e., team attachment), as well as a conative (i.e., loyalty) factor. Furthermore, this model suggests that the cognitive aspect precedes the affective one in developing the fan–team loyal relationship. This approach is along the lines of the cognition-affect-conation paradigm (Oliver, 2014) and relationship marketing (Fournier, 1998). Loyalty, according to Oliver (2014), is a consecutive process where consumers become loyal through three levels: cognitive, affective, and conative. To further support the focus on the relationship, additional research is needed to help us understand the relationship of the determinants of sport fan loyalty.

Determinants of Fan Loyalty

Team Attraction.   Team attraction refers to as "the result of an individual willingly comparing and evaluating different sports and teams and acknowledging they have a favorite" (de Groot & Robinson, 2008, p. 125). The attraction process has further been suggested to represent how personal, environmental, and psychological determinants interact with fans' awareness and influence volition and emotional responses (Beaton, Funk, Ridinger, & Jordan, 2011). Attraction results in a number of outcomes including team-brand associations (Funk & James, 2006), which means images, thoughts, and ideas serving as recognition points for a specific sport team (Ross, James, & Vargas, 2006). Therefore, sport managers understand that their team, leagues, and properties are prospective "brands" that need to be managed.
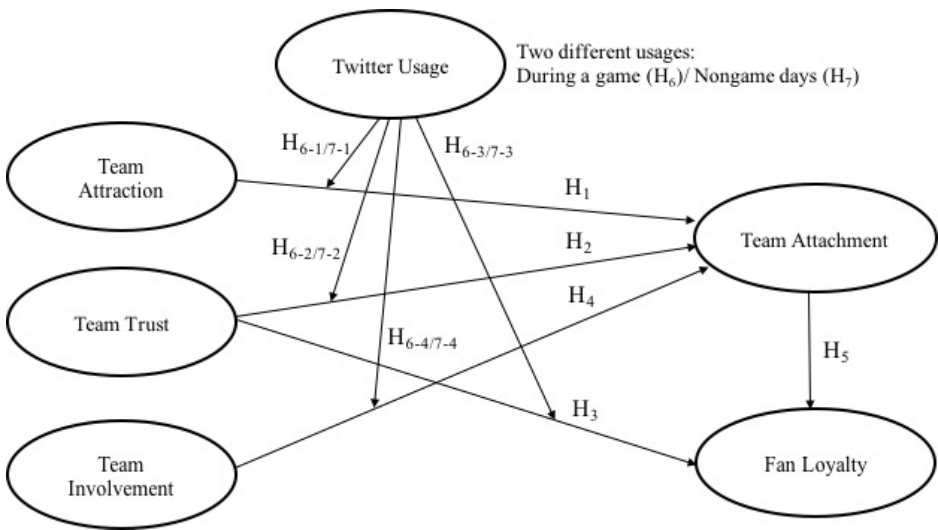

Figure 1 — Conceptual framework.

According to Keller's (1993) classification in consumer-based brand equity, sport-team associations are categorized into two stages: attraction (attributes and benefits) and attachment (attitudes; Funk & James, 2006). Attributes (e.g., star players, logo design) are the product's physical compositions that can affect team performance or service requirements. Benefits (e.g., escape, nostalgia), on the other hand, are related to personal value or meaning attached to the products or services. Funk and James (2006) examined whether attraction-stage associations affect team attachment. It is thus notable to consider factors that attract fans to a specific sport team.

Attraction to a sport team may potentially lead a person to become a fan attached to a specific team (Dwyer, Mudrick, Greenhalgh, LeCrom, & Drayer, 2015). For instance, if a fan is attracted to a sport team, he or she is more likely to display high levels of attachment to the team. Based on the literature cited herein, we hypothesized that

H_1: Team attraction would positively influence team attachment.

Team Trust.   Trust has been defined as a perception of "credibility and benevolence" (Doney & Cannon, 1997, p. 36) and as a valuable ingredient in social-relationship building between consumers and brands (Wilson, 1995). Morgan and Hunt (1994) considered trust a key variable in the development of a long-lasting desire to maintain brand relationships. Trust has also been widely used to understand the relationships between employees and organizations (Kramer, 1999) or between sellers and buyers (Doney & Cannon, 1997). Trust has further been found to lead to brand loyalty or commitment (Morgan & Hunt, 1994) and to directly influence actual behaviors such as brand purchases (Chaudhuri & Holbrook, 2001).

Team trust is likely important to sport organizations, although few studies have examined it. Kim, Trail, Woo, and Zhang (2011) reported that the quality of the relationship between sport fans and teams is partially determined by the extent of that relationship (e.g., commitment, intimacy). A fan's trust in a team or a player may affect his or her intention to attend future games or purchase merchandise (Wu, Tsai, & Hung, 2012) and may serve as a long-term connection between the fan and team (Filo, Funk, & Alexandris, 2008). Thus, team trust is a necessary element in developing attachment in a sport context (Tsiotsou, 2013) along with loyalty in building sport-team equity (Couvelaere & Richelieu, 2005). Based on the aforementioned concepts and findings, we proposed that

H_2: Team trust would positively influence team attachment.

H_3: Team trust would positively influence fan loyalty.

Team Involvement.   Involvement has been found to be a vital determinant of consumer behavior and can be defined as an individual's perceived relevance of an object or event based on his or her intrinsic needs, values, and interests (Zaichkowsky, 1985). Involvement has also been found to bolster motivation, heighten arousal, and increase cognitive elaborations (Mano & Oliver, 1993). In sport settings, involvement has been defined as "a psychological state of motivation, arousal, or interest in an athletic team and related activities that is evoked by individual characteristics and situational factors that possess drive properties" (Funk, Ridinger, & Moorman, 2004, p. 52). Furthermore, involvement has been viewed as

acting as an antecedent and a mediator of developmental processes of behavioral loyalty in sport and leisure contexts (Iwasaki & Havitz, 1998).

Several researchers have identified involvement as a precursor to psychological commitment and loyalty (Iwasaki & Havitz, 1998). Backman and Crompton (1991) argued that involvement was a critical predictor of attitudinal loyalty such as attending a sporting event. In addition, Tsiotsou and Alexandris (2009) found a positive relationship between team involvement and team attachment. Overall, it is anticipated that team involvement will affect team attachment toward a particular team. Thus we hypothesized that

H₄: Team involvement would positively influence team attachment.

Team Attachment.   Attachment, which refers to emotional bonds characterized by persistence and resistance to change, can influence cognition and predict behavior (Krosnick & Petty, 1995). It has been suggested that a strong attachment leads to an individual's resistance to change and the ability of a brand (e.g., sport team) to maintain support regardless of poor performance (Keller, Apéria, & Georgson, 2008). Keller (1993) and Gladden and Funk (2002) proposed three dimensions of attachment: importance (i.e., symbolic meaning), knowledge (i.e., functional information), and affect (i.e., emotional response). Importance refers to an individual's perception of the symbolic relevance a certain team represents to that individual. Knowledge indicates the amount of functional relevance occurring in an individual's attitude toward a specific team, and the individual's affect is his or her emotional reactions toward a team.

Gladden and Funk (2001) suggested that attachment is a logical developmental process of evaluating internal psychological meaning associated with a team, such as identification and pride. They further asserted that team attachment is the psychological connection between an individual and a sport team that is affected by the complexity, stability, and strength of psychological associations to sports. Funk and James (2001, 2006) conceptualized the psychological continuum and, within its framework, argued that team attachment is a valuable construct because it can maintain and strengthen internal links between a team and its fans' attitudes and beliefs. In this sense, the more highly fans are committed to construct a self-concept through a sport or team, the more closely they will likely identify with the team and the more attached to the team they will likely become.

In addition, Funk and James (2006) argued that sport-consumer loyalty can be strengthened by increasing emotional meaning, functional knowledge, and symbolic value of a sport team. This argument is in line with the three components of attachment proposed by Gladden and Funk (2002). Furthermore, Kwon, Trail, and Anderson (2005) suggested that attachment to a team is one of the major determinants of attaining attitudinal and behavioral loyalty in spectator sports. After these considerations, we expected that

H₅: Team attachment would positively influence fan loyalty.

Twitter and Sport

Twitter is a form of microblogging, as it requires the exchange of relatively short messages (140 characters or less) between users (S.J. Warren, 2016). Sanderson

and Hambrick (2012) emphasized the importance of microblogging because Twitter users who have attachments to sport teams or athletes can share breaking news, post status updates, and convey their opinions using short and succinct messages. The social interest and power of sports to attract fans in real time has significantly changed the role of sport media from a broadcast environment to interpersonal interactions (Rubenking & Lewis, 2016). Therefore, as sport fans interact more with teams or athletes via Twitter, they can build stronger relationships with the teams or players they root for.

A growing body of literature has explored Twitter use and trends among professional athletes (Watkins & Lewis, 2016), college athletes (Watkins & Lee, 2016), fans (Yu & Wang, 2015), sports broadcasters (Hull, 2016), and sports journalists (Roberts & Emmons, 2016) and has examined the use of hashtags during sporting events (Burch, Frederick, & Pegoraro, 2015). Tweeting and hashtagging allow fans to express emotions such as fanship and happiness and to interact with other users in real time (Blaszka, Burch, Frederick, Clavio, & Walsh, 2012). Regardless of these various approaches in sport settings, it is difficult to determine what role Twitter will take. Thus, future studies are required to answer these questions.

Twitter Use as a Moderating Variable

We believe that the current study is the first to analyze how sport fans' use of social media, specifically Twitter, influences the development of fan loyalty with an integration of fans' trust and involvement toward a sport team. According to Reinhardt, Ebner, Beham, and Costa (2009), Twitter can be used simultaneously by a wide range of people at different times in many different places. Consistent with this perspective, this study examines the effects of Twitter on the process of sport-fan loyalty development with two different sport-specific uses: on nongame days and during a game.

Sport-Specific Twitter Use on Nongame Days.   Sport fans can use Twitter to announce upcoming news, to remind people of games, to evaluate those games, or to communicate with teams and athletes. They can also post their thoughts on Twitter and the feedback can provide longer and deeper reflections about games. Thus, sport teams, organizations, and/or athletes can witness the benefits of Twitter because it increases awareness of their brand and reputation by allowing them to directly communicate with their fans (Pegoraro, 2010). Consequently, it is likely worthwhile to explore the effects that sport fans' tweeting has on their loyalty toward the team.

Sport-Specific Twitter Use During a Game.   Spectators often use Twitter during games to upload pictures, to let others know they are attending the game, to make public their personal observations, and/or to share and communicate specific topics with other fans. The way fans use Twitter while attending a game can be a reflection of their individual preferences and styles. Such use of Twitter can help fans discover news sources, monitor what is happening in their community as it pertains to sport teams or athletes, and follow a sports story in real time. Therefore, sport teams and organizations are able to use Twitter during games to sustain or strengthen fans' attachment by posting up-to-date news, videos, or photos (Gibbs, O'Reilly, & Brunette, 2014). It would also likely be valuable to delve into fans' Twitter behavior and its effects toward their favorite team during a game.

However, to our knowledge, there is no empirical evidence regarding the moderating role of Twitter on the relationships between team attraction, team trust, team involvement, team attachment, and fan loyalty. The proposed conceptual framework is illustrated in Figure 1, and hypotheses related to Twitter use are

H_6: Sport-specific Twitter use on nongame days would positively moderate the relationship between

   H_{6-1}: team attraction and team attachment.

   H_{6-2}: team trust and team attachment.

   H_{6-3}: team trust and sport-fan loyalty.

   H_{6-4}: team involvement and team attachment.

H_7: Sport-specific Twitter use during a game would positively moderate the relationship between

   H_{7-1}: team attraction and team attachment.

   H_{7-2}: team trust and team attachment.

   H_{7-3}: team trust and sport-fan loyalty.

   H_{7-4}: team involvement and team attachment.

Methodology

Sampling and Data Collection

The target population of the current study was college baseball fans of one university. College baseball games were selected due to their highly committed fan base and increasing popularity, the ease of data collection, and the perceived potential benefits from Twitter. For these reasons, recruited participants were fans over the age of 18 who attended men's baseball games at a major Division I-A university in the southeastern United States.

On game days, fans were randomly approached at the stadium and asked to voluntarily participate in the research survey. After orally agreeing to participate, participants were asked to give the researchers their names and e-mail addresses and were subsequently e-mailed a survey. The questionnaires were created using Qualtrics, a Web-based survey program. Three unique e-mail messages were created; the phrasing of each focused on encouraging fans to complete and return the survey. The initial invitation e-mail asked participants to click on a hyperlink to the survey the day they watched a game or the following day. Three days later, a second e-mail was sent reminding them about the survey and requesting that if they had not responded yet, to please do so within a week. After one more week, a final e-mail was sent thanking the respondents for their time and effort. The same process was followed for four different home games. On average, participants took approximately 15 minutes to complete the survey.

Of the 1,218 selected fans from the stadium, a total of 412 responses were returned without missing data, giving a response rate of 33.8%. The sample of 412 respondents included 264 men and 148 women with an average age of 34.4 years (*SD* = 8.51). The majority of participants (90.0%) were White and nonstudents (54.6%). A more comprehensive look at the sample's demographics is presented in Table 1.

Table 1   Demographics of the Sample ($N = 412$)

Sample demographics	Frequency	
	n	**%**
Gender		
male	264	64.1
female	148	35.9
Age		
18–20	185	44.9
20–29	61	14.8
30–39	49	11.9
40–49	44	10.7
50–59	61	14.8
60+	12	2.9
Education		
high school	35	8.5
bachelor's degree	297	72.1
master's degree	63	15.3
doctoral degree	12	2.9
other	5	1.2
Ethnicity		
White	371	90.0
Asian	26	6.3
African American	11	2.7
Native American	2	0.5
Hispanic	1	0.2
other	1	0.2
Occupation		
nonstudent	225	54.6
student	187	45.4

Measurement

Online surveys have been suggested to provide several benefits over traditional survey methods. Some advantages of online surveys can include higher response rates, reduced respondent error, reduced costs, reduced time, reduced need for coding, and improved design and aesthetics (Wright, 2005). The distributed online questionnaire was developed with the following scales and specified items.

Team Association Scale.   The Team Association Scale developed by Gladden and Funk (2001, 2002) is composed of 48 items to measure 16 latent constructs containing four attributes (i.e., intrinsic properties of the brand that feature a product or service: success, star players, head coach, and management), nine benefit properties (i.e., personal value and meaning that individuals attach to the brand's characteristics: logo design, product delivery, tradition, nostalgia, pride in place, escape, fan identification, peer-group acceptance, and stadium), and three attitude properties (i.e., affect, knowledge, and importance). Each latent construct included two to four manifest variables. The Team Association Scale was selected because the 13 attribute and benefit constructs have been shown to explain the concept of attraction (Gladden & Funk, 2001) and also to measure attachment via three attitude constructs: functional (i.e., knowledge), symbolic (i.e., importance), and emotional (i.e., affect). Consistent with Funk and James (2006), all items were operationalized using a 5-point Likert scale ranging from *strongly disagree* to *strongly agree*.

Team Trust.   To measure team trust, Chaudhuri and Holbrook's (2001) Team Trust Scale was employed. Their scale consists of four items with the following statements: "I trust this team," "I rely on this team," "This is an honest team," and "This team is safe." Similar to Chaudhuri and Holbrook, responses were placed on a 5-point agreement scale anchored by *strongly disagree* (1) and *strongly agree* (5).

Team Involvement.   Eight items were adopted from Zaichkowsky's (1994) Personal Involvement Inventory to measure team involvement and were scored on a 5-point Likert scale anchored by *strongly disagree* (1) and *strongly agree* (5). The scale measures two dimensions of involvement: importance and pleasure.

Fan Loyalty.   Gladden and Funk (2001, 2002) assessed loyalty with three items measuring behavior related to a team (attending a game, watching a game on television and frequency of media use, and direct experience with the team) and four items measuring psychological commitment to a sport team. These seven items were combined to construct a composite score following the example of Funk and James (2006). Each item was measured using a scale of 1 = *strongly disagree* to 5 = *strongly agree*.

Twitter Use Related to Team and Game.   Twitter use was assessed with Kim, Sung, and Kang's (2014) measures. To test the moderating effect of sport-specific Twitter use in two different phases (nongame days and during a game), the current study adopted and modified their measures to estimate how often, on a 5-point Likert scale (from *never* to *many times a day*), participants logged on to the men's college baseball team account while watching a game (or on a nongame day) and how often, on a 5-point Likert scale (from *never* to *many times a day*), they tweeted about the men's college baseball team while watching a game (or on a nongame day).

Data Analysis

The collected data were analyzed using SPSS 22.0 and AMOS 22.0. To test the measurement model, data analysis consisted of four steps. First, descriptive analyses were used to determine the demographic makeup of the sample. Second, through

hierarchical confirmatory factor analysis (CFA) using AMOS 22.0 software, the study employed a maximum-likelihood estimation with robust standard errors to address the potential violation of multivariate normality (Arbuckle, 2006). Goodness of fit for both the measurement and structural models was assessed with the ratio of the chi-square (χ^2) to its degrees of freedom (*df*), comparative-fit-index (CFI), root-mean-square error of approximation (RMSEA), and standardized root-mean-square residual (SRMR). Values above .95 are considered an excellent fit for CFI, and a 3.0 value or less shows an excellent ratio for χ^2/df (Bentler & Bonett, 1980). In addition, both SRMR and RMSEA have been shown to have an excellent fit when each is below .05, with a perfect fit indicated by an index of zero (MacCallum, Browne, & Sugawara, 1996). Third, reliability and validity of the scales were assessed to measure internal consistency with composite/construct reliability (CR) and convergent validity of the intended constructs with average variance extracted (AVE). The statistical-significance levels of both CR and AVE values were calculated, and all exceeded the recommended levels of .60 and .50, respectively (Bagozzi & Yi 1988). Finally, to estimate the measurement model, a multigroup structural equation model (SEM) aligned with the analytical steps suggested by Bentler (1989) was employed to test the hypotheses. A multigroup SEM analysis was also conducted to scrutinize the moderating effects of Twitter use in the development of fan loyalty toward a specific team.

Results

CFA

The original 66 items used to measure the five latent constructs were initially subjected to a hierarchical CFA using AMOS (version 22.0). The hierarchical CFA was employed to specify higher order factor structures for attraction, involvement, attachment, and loyalty. For these constructs, both first-order and second-order solutions were hypothesized to represent hierarchical connections. For example, the hierarchical CFA explained that the first-order factors (e.g., importance, knowledge, affect), which are observed variables, were significant factors in measuring the second-order latent variable (e.g., attachment).

Table 2 presents the factor loadings (λ), composite reliability (CR), Cronbach's alpha (α), and AVE for each of the constructs. All items loaded on their respective constructs ranging from .69 to .98. The criterion used as acceptable for factor loadings was ±.40 (Hair, Black, Babin, Anderson, & Tatham, 2006). As a result of this process, 12 items were eliminated due to low (<.40) or ambiguous (crossloadings) loadings and are listed in italics in Table 3. In addition, the CR values for all factors were greater than the recommended cutoff point of .60 (Bagozzi & Yi, 1988; Hair et al., 2006). The resulting CR for each construct ranged from .84 to .89. Internal consistency levels of Cronbach's alpha (α) were also acceptable, ranging from .78 to .93. A further assessment of construct reliability and discriminant validity was conducted by an examination of AVE values. The AVE for each construct was above .70, providing additional evidence of the constructs' reliability (Hair et al., 2006). These two tests revealed evidence that convergent and discriminant validity were satisfied, suggesting that the constructs measured were reliable and valid.

Table 2 Results of Measurement Model and Confirmatory Factor Analysis

Measurement item	Loading (λ)	α
Attraction (Exogenous Constructs): CR .89, AVE .86		.93
Product Delivery		.93
Clemson men's baseball team's games are exciting. (PD1)	.89	
Clemson men's baseball team's games are entertaining. (PD2)	.92	
Clemson men's baseball team's games are enjoyable. (PD3)	.91	
Star Player		
Clemson men's baseball team has some star players that I like to watch. (SP1)	.34	
I like to watch Clemson men's baseball team's star players. (SP2)	.36	
Logo Design		.91
I like the colors of Clemson men's baseball team. (LOG1)	.98	
I like the logo of Clemson men's baseball team. (LOG2)	.93	
Clemson men's baseball team's uniforms are attractive. (LOG3)	.89	
Management		.87
The Clemson men's baseball staff does its best to field a good team. (MGT1)	.83	
Clemson men's baseball team's staff does a good job of running the team. (MGT2)	.90	
The Clemson men's baseball staff makes wise player personnel decisions. (MGT3)	.79	
Head Coach		.86
I like Jack Leggett of Clemson men's basketball team. (HC1)	.83	
Jack Leggett is well known throughout the collegiate baseball. (HC2)	.74	
Jack Leggett does a good job. (HC3)	.92	
Venue		
The architecture of Doug Kingsmore Stadium is attractive. (VEN1)	.31	
Doug Kingsmore Stadium has "character." (VEN2)	.34	
Doug Kingsmore Stadium enhances the enjoyment of attending games. (VEN3)	.35	
Tradition		.85
Clemson men's baseball team has a history of winning. (TRD1)	.94	
Clemson men's baseball team has a rich history. (TRD2)	.90	
Clemson men's baseball team has good history. (TRD3)	.69	
Success		.84
It is important to me that Clemson men's baseball team reaches the post season. (SUC1)	.83	
It is important to me that Clemson men's baseball team competes a league championship. (SUC2)	.97	
It is important whether Clemson men's baseball team wins. (SUC3)	.89	
Identification		.81
It is important that my friends see me as a fan of Clemson men's baseball. (ID1)	.70	

(continued)

Table 2 *(continued)*

Measurement item	Loading (λ)	α
My friends and family recognize me as a fan of Clemson men's baseball. (ID2)	.85	
When someone praises Clemson men's baseball team, it feels like a compliment. (ID3)	.72	
When I talk about the Clemson men's baseball team, I usually say "we" rather than "they." (ID4)	.35	
Escape		.95
Watching the Clemson men's baseball team provides a temporary escape from life's problems. (ESC1)	.94	
Watching the Clemson men's baseball team helps me forget my day-to-day problems. (ESC2)	.96	
Watching the Clemson men's baseball team takes me away from life's hassles. (ESC3)	.91	
Nostalgia		.92
Thinking of Clemson men's baseball team brings back good memories. (NOS1)	.89	
I have fond memories of following Clemson men's baseball team. (NOS2)	.93	
I have fond memories of following Clemson men's baseball team with friends and/or family members. (NOS3)	.85	
Peer Group Acceptance		
It is important to follow the only my friends. (PGA1)	.38	
I follow Clemson men's baseball team because my friends like the same team. (PGA2)	.32	
Pride in Place		.93
Clemson men's baseball team helps its citizens be proud of where they live. (PIP1)	.86	
Clemson men's baseball team helps elevate the image of its community. (PIP2)	.93	
Clemson men's baseball team brings prestige to the community. (PIP3)	.94	
Trust (Exogenous Constructs): CR .84, AVE .87		.83
I totally trust Clemson men's baseball team. (TRU1)	.72	
I count on Clemson men's baseball team. (TRU2)	.88	
The Clemson men's baseball team is reliable. (TRU3)	.80	
The Clemson men's baseball team is trustworthy. (TRU4)	.35	
Involvement (Exogenous Constructs): CR .86, AVE .89		.85
The Clemson men's baseball team is fun. (INVOL1)	.93	
The Clemson men's baseball team is appealing. (INVOL2)	.90	
The Clemson men's baseball team is interesting. (INVOL3)	.88	
The Clemson men's baseball team is exciting. (INVOL4)	.38	
The Clemson men's baseball team is fascinating. (INVOL5)	.48	
The Clemson men's baseball team is important. (INVOL6)	.35	
The Clemson men's baseball team is means a lot to me. (INVOL7)	.54	
The Clemson men's baseball team is matters to me. (INVOL8)	.50	

(continued)

Table 2 *(continued)*

Measurement item	Loading (λ)	α
Attachment (Endogenous Constructs): CR .88, AVE .89		.86
Importance		.84
Being a fan of Clemson men's baseball team is important to me. (IMP1)	.86	
Compared with how I feel about other collegiate teams, Clemson team is very important to me. (IMP2)	.84	
Knowledge		.92
I possess a great deal of knowledge about the Clemson men's baseball team. (KNW1)	.90	
If I were to list everything I knew about the Clemson men's baseball team, the list would be quite long. (KNW2)	.95	
Compared with other sport teams, I consider myself an expert about the Clemson men's baseball team. (KNW3)	.81	
Affect		.91
Do you feel "wise" about the Clemson men's baseball team? (AFF1)	.74	
Do you feel "good" about the Clemson men's baseball team? (AFF2)	.74	
Do you feel "beneficial" about the Clemson men's baseball team? (AFF3)	.93	
Do you feel "strong" about the Clemson men's baseball team? (AFF4)	.93	
Loyalty (Endogenous Constructs): CR .85, AVE .94		.78
Behavior		.88
I have purchased more Clemson men's baseball team's tickets and products over the last several years than other teams. (BEH1)	.72	
I consider Clemson men's baseball to be my favorite team. (BEH2)	.94	
Clemson men's baseball team has been my primary team for the past few years. (BEH3)	.89	
Commitment		.89
I have developed a closer business relationship with Clemson men's baseball team than other teams. (COM1)	.38	
I really like doing business with Clemson men's baseball team, better than other teams. (COM2)	.84	
I am willing to put in more effort to purchase tickets and products from Clemson men's baseball team than other teams. (COM3)	.94	
I want to remain a customer of Clemson men's baseball team more than other teams because we enjoy our relationship with them. (COM4)	.80	

Note. α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted estimate. Items in italics were excluded due to factor loadings lower than .40 or cross-loadings with differences greater than .10. Loadings less than .40 are omitted. $N = 412$.

Because the 12 items with low or ambiguous loadings were excluded from the original items, the revised measurement model consisted of 54 items. The goodness-of-fit indices indicated that the measurement model had an acceptable fit of the data ($\chi^2 = 3192.583$, $df = 1{,}341$, CFI = .91, RMSEA = .05, SRMR = .06), supporting the unidimensionality and convergent validity of the model (Bagozzi &

Table 3   Parameter Estimates and Results of Hypothesis Tests

	Hypothesized relationship	Estimate	CR (t)	p	Results
H1	Attraction → attachment	1.622	12.698	.00	Supported
H2	Trust → attachment	0.120	2.695	.01	Supported
H3	Trust → loyalty	0.088	1.114	.27	Not supported
H4	Involvement → attachment	−0.085	−2.430	.02	Supported
H5	Attachment → loyalty	0.752	8.140	.00	Supported

Note. CR = composite reliability.

Baumgartner, 1994). Thus, the collective evidence supported the fit of the revised measurement model.

Testing the Structural Model

After the preliminary analyses, the structural model was tested using AMOS 22.0, employing a maximum-likelihood estimation. Table 3 represents the various fit indices calculated for the structural-model estimates. Four hypothesized effects were explained with all standardized path coefficients being significant at the 95% level, except for the path from trust to loyalty (i.e., H_3). A comparison of all fit indices with their corresponding recommended values (Hair et al., 2006) provided evidence of a relatively good model fit ($\chi^2 = 3197.485$, $df = 1,343$, CFI = .91, RMSEA = .51, SRMR = .05).

The first hypothesis posited that team attraction would positively affect team attachment, and the results displayed in Table 3 provide support for this hypothesis (1.622, $p < .05$). Results of the second hypothesis revealed that team attachment positively affected sport-fan loyalty (.120, $p < .05$), providing support for H_2. H_4 proposed that team involvement would positively affect team attachment, and the results supported this (−.085, $p < .05$). Unexpectedly, team trust was not found to have an effect on fan loyalty (.088, $p > .05$). Thus H_3 was not supported. As predicted in H_5, team attachment was found to be positively affected by team trust (.752, $p < .05$).

Testing the Moderating Effect of Twitter Use

To test the moderating effect of Twitter use, this study examined the differences between two groups (Twitter users and non–Twitter users). Forty-one percent of respondents ($n = 169$) used Twitter during a baseball game while 59% ($n = 243$) did not. For Twitter use in everyday life, there were 173 (42%) non–Twitter users and 239 (58%) Twitter users.

To test the moderating effect of Twitter use during a game, a three-step multiple-group analysis was completed using Mplus software. First, all path coefficients across the two groups (i.e., Twitter users vs. non–Twitter users) were set to free (i.e., free model). The chi-square value of the free model ($\chi^2 = 3192.583$, $df = 1,341$, $p < .05$) was then employed as a baseline model for a comparison of the two groups. In the second step, all path coefficients across the two groups were constrained to be equal ($\chi^2 = 5142.874$, $df = 2,693$, $p < .05$). A chi-square-difference test ($\Delta\chi^2 = 1950.291$,

$\Delta df = 1,352$, $p < .05$) indicated that the constrained model had a significantly ($p < .05$) better fit than the free model. In the last step, the individual path coefficients, taken one at a time, were used to compare the two groups (Sauer & Dick, 1993). Results revealed that the four paths (H_{6-1}–H_{6-4}) were significantly different between groups, except for the path between team trust and fan loyalty (H_{6-3}; see Table 4). That is, Twitter use during a game was found to significantly ($p < .05$) influence fan loyalty, and the effect of Twitter use during a game was found to be significantly ($p < .05$) different between the two groups.

Likewise, to test the moderating effect of general Twitter use related to a baseball team or game, a three-step multiple-group analysis was used employing Mplus. As a first step, all path coefficients across the two groups (i.e., Twitter users vs. non–Twitter users) were set to free (free model). To compare the two groups, the chi-square value of the free model ($\chi^2 = 3192.583$, $df = 1,341$, $p < .05$) was used as a baseline model. In the second step, all path coefficients were constrained to be identical for both the Twitter-user model and the non–Twitter-user model ($\chi^2 = 5352.478$, $df = 2,584$, $p < .05$). The chi-square-difference test ($\Delta\chi^2 = 2159.895$, $\Delta df = 1,243$, $p < .05$) revealed that the constrained model compared with the free model was significant ($p < .05$). For the last step, the individual path coefficients were compared one at a time between the two groups. Results showed that the relationships for hypotheses H_{7-1}, H_{7-2}, and H_{7-4} indicated positive moderating effects (see Table 5). H_{7-3} (moderating effect on team trust and fan loyalty) was an exception to this finding. In the paths to fan loyalty, group differences were found for all paths. Therefore, H_6 and H_7 were partially supported, but H_{6-3} and H_{7-3} were rejected.

Discussion

The primary purposes of this study were twofold. First, we hoped to shed light on not only ways to assist sport fan–team relationship marketing but also the hierarchical process in explaining how sport-fan loyalty toward a favorite team can be built. To do this, the relationships among elements influencing fan loyalty, including team attraction, team trust, team involvement, and team attachment, were examined. Results confirmed that three determinants—team attraction, team trust, and team involvement—positively influenced team attachment, which further positively led to fan loyalty. Differently stated, team attachment was found to be a key antecedent to sport-fan loyalty. This finding is supported by the argument drawn by Funk and James (2001, 2006) that team attachment, as the consumer's psychological connection to a sport team, is positively associated with an individual's loyalty toward a team. In addition, Wann and Branscombe (1993) demonstrated that individuals with a high level of team attachment tended to support a team by more actively attending home games than those with a low team-attachment level. Thus, the more fans feel attached to their favorite team, the more likely they will be to identify with the team and become loyal.

Second, this study examined a moderating effect of Twitter on the developmental process of sport-fan loyalty. Furthermore, it investigated if and how fans' Twitter use—both during a game and on nongame days—played a moderating role. The findings revealed that the use of Twitter for a team, both in the person's daily life and during a game, enhanced the positive effects of perceived team attraction and team involvement on team attachment. However, notably, Twitter use did not moderate the association between team trust and fan loyalty. In addition to the

Table 4   The Moderating Effects of Sport-Specific Twitter Use During a Game (Partially Supported)

| Hypothesized relationship | Coefficient | | χ^2 | | Results |
	Twitter user ($n = 169$)	Twitter nonuser ($n = 243$)	Constrained model ($df = 2,693$)	χ^2 diff. from free model ($\Delta df = 4$)[a]	
H$_{6-1}$ Attraction $\times$ Twitter $\rightarrow$ attachment	1.95 (7.54)	1.96 (9.83)	5,097.61	1,905.02	Supported
H$_{6-2}$ Trust $\times$ Twitter $\rightarrow$ attachment	0.14 (1.89)	0.14 (1.98)	5,042.43	1,849.84	Supported
H$_{6-4}$ Involvement $\times$ Twitter $\rightarrow$ attachment	0.13 ($-$2.01)	0.12 ($-$1.55)	5,188.98	1,996.40	Supported

[a]Calculated by subtracting the χ^2 value of each constrained model from the χ^2 of the free model ($= 3,192.583$).

Table 5   The Moderating Effects of Twitter Use on Nongame Days (Partially Supported)

| Hypothesized relationship | Coefficient | | χ^2 | | Results |
	Twitter user ($n = 173$)	Twitter nonuser ($n = 239$)	Constrained model ($df = 2,584$)	χ^2 diff. from free model ($\Delta df = 4$)[a]	
H$_{7-1}$ Attraction $\times$ Twitter $\rightarrow$ attachment	1.62 (8.96)	1.61 (9.12)	5,436.80	2,244.22	Supported
H$_{7-2}$ Trust $\times$ Twitter $\rightarrow$ attachment	0.13 (2.11)	0.14 (2.28)	5,372.96	2,180.37	Supported
H$_{7-4}$ Involvement $\times$ Twitter $\rightarrow$ attachment	0.03 ($-$1.80)	0.12 ($-$2.31)	5,524.76	2,332.18	Supported

[a]Calculated by subtracting the χ^2 value of each constrained model from the χ^2 of the free model ($= 3,192.583$).

moderating effects, the analysis represented direct effects of Twitter use on fan loyalty. That is, the sport-specific use of Twitter during a game and also on nongame days was positively related to loyalty toward the team.

The present study provides significant contributions from both theoretical and practical standpoints through a mechanism by which the principal constructs of relationship marketing contribute to the formation process of sport-fan loyalty and is an initial step in understanding the moderating effect of Twitter on the development of fan loyalty. These findings have theoretical and practical implications, which are discussed next.

Theoretical Implications

Three important theoretical implications can be drawn from the findings of this study. First, this study advances our theoretical understanding of the effects of Twitter on the formation of fan loyalty by proposing and testing a research model including the moderating role of Twitter. Although a large number of sport-related researchers have highlighted the importance of the use of social media by sport organizations as an expansion of traditional marketing departments (Dixon, Martinez, & Martin, 2015), the effects of Twitter have generated relatively little research attention in fan–team-relationship marketing. Furthermore, in the present investigation, the moderating effects of Twitter were carefully defined and the measurements were also empirically validated. Specifically, this study went beyond interrelationships among the determinants of sport-fan loyalty to examine the characteristics of Twitter-user behaviors and the resulting effects in a sport context.

Second, this study broadens the understanding of the effects of attachment on loyalty in sport fan–team relationships. Specifically, it indicates that attachment to a team, as a fan's underlying psychological factor, is a direct and significant determinant of fan loyalty. This loyalty was also found to link consumers' perceptions of team attraction, team trust, and team involvement to their team loyalty. These findings are supported by previous research regarding consumer behavior not only in the field of sport but also in general brand/product marketing. Sport management researchers (e.g., Funk & James, 2006) have concluded that fans' attachment to a team acts as a bridge to bond their liking of and loyalty to a team. Similarly, according to Park, MacInnis, Priester, Eisingerich, and Lacobucci (2010), consumers' brand attachment is a crucial construct for understanding their behaviors including product purchase. Furthermore, Fedorikhin, Park, and Thomson (2008) concluded that brand attachment positively affects consumers' willingness to pay, word of mouth, and brand forgiveness. As such, this study concludes that attachment is a key concept for strengthening the relationships between fans and the teams that they support.

Finally, the current study assists with the comprehension of Twitter's effects by applying it to a sport context and exploring it in two different uses: sport-specific Twitter use on nongame days and during a game. It was found that on nongame days and during a game, fans' Twitter use had positive influences on their fan loyalty development. Similar to Kim et al. (2014), the more follows and tweets in which fans engage on the team's Twitter, the stronger team identity they develop in a sport-fan–relationship context. Twitter could thus be considered a supplementary element in developing fan loyalty.

Managerial Implications

In addition to contributions for sport scholars, this study provides meaningful implications for practitioners. First, the findings of this study could be useful for leaders or marketers in many sport teams and organizations to develop the role of Twitter and its implementation in marketing strategies. In particular, the results present some strategic insights for team marketers to employ an online brand community on Twitter as a channel to strengthen relationships with their existing fans or make connections with potential fans. In relationship marketing, partner selection has been found to be a critical component in competitive strategy (Morgan & Hunt, 1994). In a sense, the more sport marketers strengthen the relationships with their fans through Twitter, the more likely those fans will be committed and attached. Moreover, with social media's rapid dissemination of information (Lovejoy, Waters, & Saxton, 2012), team marketers or managers are recommended to encourage their fans with a higher awareness of or more interactions with a team by posting interesting content related to team news or inside stories of athletes, such as real-time images, videos, promotional events, or economic incentives (e.g., coupons, free gifts, and free access to resources) on their team Twitter page(s).

Second, this study suggests an effective approach for sport marketers to understand the value of their sport team as a brand. Sport marketers could use fans' perceived team attraction, team trust, team involvement, and team attachment toward a team as criteria to measure their self-expressive and emotional values for a team, which could further enhance their loyalty. One of the key findings revealed that team attachment is an important factor affecting fan loyalty both directly and indirectly using Twitter, which has the potential to provide substantial insights for practical applications. In addition, since loyalty has been found to be closely associated with brand performance (Chaudhuri & Holbrook, 2001), sport marketers could evaluate their team brand by measuring these five factors, including fan loyalty. This also suggests that team managers should focus and invest their resources to improve their team's brand image or position to better foster emotional bonds.

Finally, results suggest that college athletic departments should be able to effectively build stable, long-term, and profitable relationships between their fans and teams in stages through Twitter. From a macro perspective, strong online relationships with fans could bring benefits to the university as a whole. As athletic programs are one of the key components that represent the university and help increase support (e.g., sponsorship) and donations from alumni and other associations (Filo, Funk, & O'Brien, 2010), the findings of this study suggest that Twitter can assist in building and maintaining good relationships with their alumni, fans, donors, and sponsors. For instance, a college that has a successful football or basketball program may ask former star players to direct their Twitter followers to a fund-raising page (Hull, 2014). Such messages may be more effective for fund-raising efforts.

Limitations and Future Research

Future research is recommended to confirm the current findings. Most notably, social media have become an incredibly active, fast-moving domain with new platforms being created. Along with these trends, consumer behaviors have gradually changed, and sport fans are no exception. The use of social media by sport

fans, when compared with consumers in other areas, has received much attention in recent years because the fans are likely to have a strong sense of pride, passion, attachment, and loyalty toward their favorite players or teams over time (Funk & James, 2006; Sutton, McDonald, Milne, & Cimperman, 1997). It is therefore crucial for future research to require the latest data with regard to social media.

Second, depending on the type of sources used for the attitudinal component related to loyalty, the results of this study may differ. This study used Gladden and Funk's (2001) Team Association Scale to explain the development process of sport-fan loyalty. While this construct is widely used, it is not the only option for assessing loyalty. For future research, the psychometric properties of the development of the loyalty process are needed for scale refinement. Furthermore, other determinants of fan loyalty (e.g., team image, team personality) and its outcomes (e.g., game attendance, merchandise purchase, and season-ticket purchase) might complement the proposed model and provide a more comprehensive picture of the relationship between consumers and brands.

An additional limitation to consider is the absence of scales related to Twitter use. This study examined only fans' tweet frequency in general and during a game, without any content analysis. It is possible that the types of tweets fans make also have an effect on their loyalty and attachment to their team. Thus, an intriguing extension of this study would be to create new scales to more accurately measure the properties of fans' Twitter use.

Furthermore, the current study does not provide a representative reflection of all fans or fans of all sports. More specifically, this study was restricted to four baseball games in one conference (Atlantic Coast Conference [ACC]), permitting it to have only limited external validity. Further investigation is needed to enhance the accuracy and generalizability of the results through other conferences (e.g., Southern Eastern Conference [SEC], Big 10) and other sports (e.g., football, golf, etc.).

Finally, this study is limited by the inability to capture processes and monitor changes in the attitude of fans over a period of time, as the data were collected at only one point in time. Future research should involve longitudinal research methods and capture possible fluctuations of fans' attitude over time. Overall, developing a general study approach toward fan loyalty that includes a close look at Twitter use could lead to worthwhile research in the future. In conclusion, while the current study did have some limitations, we believe that the findings provide implications for both theory and practice and suggest that Twitter can be a valuable tool that needs to be better understood by sport management.

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