STUDIES ON UNDERSTANDING LOYALTY FORMATION IN THE SPORTING EVENT CONTEXT: IDENTITY-BASED PERSPECTIVES

A Dissertation

by

SE EUN LEE

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Chair of Committee,	William A. McIntosh
Co-chair of Committee,	Louis Hodges
Committee Members,	Jinmoo Heo
	Jane Sell
Head of Department,	Scott Shafer

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ABSTRACT

This cross-disciplinary study examines fan loyalty, motivation, and relationships with university athletic teams via a literature review and three separate SEM-based hypothesis-testing models, each of which includes theoretical investigations and action-oriented conclusions. The studies posit that identity orientations such as social in-groups on campus are drivers of fandom. Being in-group situates potential fans as individuals who can most easily overcome constraints to leisure activities involved in fandom experiences. The overcoming of such constraints leads to enhanced in-group activities and experiences and eventually loyalty formation. The outlier constraints that could lead to a lack of fandom are primarily intrapersonal (e.g. certain demographic groups) and structural constraints (e.g. a lack of funds or physical ability). The study is action-oriented in that recommendations include that university athletics can leverage the results to increase fandom on campus by removing primary structural and intrapersonal constraints as possible for specific demographic groups.

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1. INTRODUCTION

1.1 Research Problem and Purpose

There are risks and financial challenges that can accompany the sporting industry (Tsiotsou, 2013). Having the support of loyal fans is believed to be a focal point for sport practitioners and academics because this may mitigate financial hardships. The loyalty of fans is particularly important to marketing agents whose job descriptions include growing the profitability and reach of organizations. These marketing agents have been shown to focus on event improvement, advertisement sales, and loyalty creation in order to increase profit.

Individuals' allegiance to sporting teams can be represented in a variety of forms including social media, following mass media stories, purchasing team's merchandise, buying tickets (or even season tickets), watching televised event, and/or attending games as a spectator. Spectating a sporting event is the most salient form of fan loyalty of their teams. And this form of fanship is experiencing enormous growth. The National Collegiate Athletic Association (NCAA) reported that the total attendance at national college football games in 2014 was 49,072,591 (includes a total of 655 games) (NCAA Football Attendance, 2014). Attendance at NCAA football games has shown a continuous growth pattern for approximately two decades.

The reason for the growth in attendance may be complex. In college leagues, there are some possible reasons for the recent increase in fandom and attendance at sporting events. First, university students mostly reside at the location where their home team is based. Therefore, these individuals have a greater opportunity to attend sporting

events. Spectating live events has grown alongside increases in school attendance. Secondly, fandom leads to attendance; and fandom opportunities have changed in recent years. Events include secondary experiences where fandom can be increased. Such events can include: tailgating before games, watching away games at a bar with other hometown fans, attending away games, and/or experiencing a town-wide celebration when an important victory is won. Attendance at many of these events does not require the sacrifice of a large amount of time or money.

Although the aforesaid motives of watching games and attending events are explicit, a matter of being a fan or having a loyalty to a team can perhaps be better clarified with an understanding of the psychological aspects of fandom. A number of studies have differentiated a fan from a spectator (Pooley, 1978; Shank & Beasley, 1998; Sloan, 1989; Spinrad, Lüschen, Sage, & Sfeir; 1981). Fans are often described as individuals who are highly identified and affiliated with a team. Spectators are sometimes referred to as individuals who watch a sporting event but have no enthusiastic support or emotional association with a team or outcome. Universities prefer to have a maximum number of fans in lieu of spectators. This way they can maximize profit, affiliation with the school, long-term association with the university, donations for the future to the school, excitement on campus, and other positive attributes (Fort, 2000; Siegfried & Zimbalist, 2000; Smart, 2005). The student may have a better experience in such cases in that they feel a greater sense of connection to the school, the athletic team, and they may even consider the university athletic team an extension of themselves.

Considering an athletic team an extension of self can be construed as individuals are attached to a team that mirrors their own concepts and expressions. In other words, a team is a reflection of one's identity that refers to "people's concepts of who they are, of what sort of people they are, and how they relate to others" (Hogg & Abrams, 1988, p. 2).

The topic of loyalty formation has received attention in consumer behavior and sports management scholarship for more than two decades. A majority of these studies have shown quality, perceived value, and satisfaction as the antecedents of conative or behavioral loyalty (e.g., Nguyen & Leblanc, 1998; Murray & Howat, 2002; Cronin, Brady, & Hult; 2000; Morgan & Hunt, 1994; Mattila, 2004; Kashyap & Bojanic, 2000; Petrick, 2004; Tam, 2004; Tian-Cole, Crompton, & Willson, 2002; McDougall & Levesque, 2000; Murray & Howat, 2002; Wakefield & Blodgett, 1996; Back & Parks, 2003; Lee, 2003; Sui & Baloglu, 2003; Valle, Silva, Mendes, & Guerreiro, 2006; Yuksel, Yuksel, & Bilim; 2010; Oliver, 1999; Sirdeshmukh, Singh, & Sabol, 2002; Hernández-Lobato, Solis-Radilla, Moliner-Tena, & Sánchez-García, 2006; Madrigal; 1995).

The complexity of fan loyalty is widely recognized (Aiken & Koch, 2009; Sumida, Fujimoto, & Sakata, 2014; Tsiotsou, 2013). Yet, issue of what increases fan loyalty remains significant for sports managers due to its profit-generating prospects (Tsiotsou, 2013). Existing research has provided some insights to an individuals' fandom. For example, identity orientations and experiences (? can serve as prerequisites to loyalty formation (Underwood, Bond, & Baer, 2001). In the consumer behavior field

of research, an individual's salient identity may trigger a cognitive procedure that leads to behavioral outcomes (Oyserman, 2009). The current study focuses on loyalty formation mechanism of growing fan bases through the identity-based perspectives.

1.2 Introduction to Three Studies: Purpose, Objectives, Delimitations, Hypotheses

The purpose of this three-pronged dissertation is threefold: 1) to understand how fan loyalty with athletic team is created from the identity-based perspectives, 2) to investigate the influences of fan constraints upon loyalty and the role of team identification on the relationship between constraints and loyalty in the context of sport fandom, and 3) to explore demographic differences in loyalty among collegiate sport fans, and to identify the elements of sport fan segmentation as predictors of fan loyalty. This dissertation comprises three stand-alone academic studies. Each study tests multiple hypotheses within a model. The main objectives of each study can be understood as:

1.2.1 Study I

The purpose of Study 1 is to examine the antecedents of sport fan identity. This includes two sub-sections. First, the study seeks to determine which subscales of identity orientation may best predict sport fan identity. Secondly, the study is an examination of the role of sport fan identity as a predictor of loyalty.

1.2.2 Study II

The purpose of Study 2 is to examine the role of constraints as a predictor of loyalty. Within the study the moderating role of sport fan identity on the relationship between constraints and loyalty will also be investigated.

1.2.3 Study III

The final study has two primary purposes:

1. To determine how well a set of demographic variables predicts sports fan loyalty.

2. To determine whether any statistically significant differences exists in fan loyalty across demographic factors.

2. UNDERSTANDING THE DYNAMICS OF LOYALTY FORMATION IN THE CONTEXT OF SPORT FANDOM

2.1 Synopsis

The purpose of this study is to understand whether fan loyalty to collegiate athletic teams stems from identity-based perspectives. The study adopted a social identity theory framework lens to these ends. The study examines the fan loyalty formation process in the context of collegiate football fandom. The analysis included as assessment of whether there existed a positive or negative correlation between certain types of identity orientations and fan loyalty including: personal identity, social identity, masculine identity, feminine identity, and organizational identity, each of which was tested as a potential predictor of fan identity. In addition, a positive relationship between fan identity and attitudinal/behavioral loyalty were postulated and investigated.

The data was collected via a self-administered online survey with students enrolled at a NCAA Division I university in the mid-south region of the United States. A two-step modelling approach recommended by Anderson and Gerbing (1988) was employed to analyze the data. The result evidenced partial support for the hypothesized relationships of effects and draws implications for sport academics and practitioners.

2.2 Theoretical Background and Hypotheses

Social identity theory has been extensively applied in socio-psychological scholarship to explain how individuals verify themselves in social settings (Hogg & Terry, 2000). According to social identity theory, one's definition of self can be attained

based on their group membership (Tajfel & Turner, 1979; Tajfel, 1982). In other words, the basic tenet of this concept stresses "the group in the individual" (Hogg & Abrams, 1988, p. 3). Human beings categorize themselves as a member of certain group or organization such as a socioeconomic class, demographic grouping, and/or cultural/religious affiliation in a variety of settings (Tajfel & Turner, 1985; Watson, 2008). Such tendencies for belongingness are formulated through three phases of socio-cognitive process: self-categorization, social-identification, and social comparison in the social identity platform (Tajfel & Turner, 1979).

2.2.1 Phases of the Socio-cognitive Process

An individual's social behavior in a group context can be best explained in the self-categorization phase. Once individuals perceive a social group has similar attributes to one's self, they cognitively assimilate and classify themselves into the in-group and others into out-group (Billig & Tajfel, 1973; Hogg & Terry, 2000). It is common for people to embody their 'socially-categorized-self' in group norm, collective behavior, stereotyping (Spears et al., 1997), in-group favoritism (Hertel & Kerr, 2001), out-group derogation (Brewer, 1999), group bonding, and cooperative attitudes in this period.

The aforementioned in-group phenomena could potentially be better understood in the stage of social-identification. Tajfel (1974) indicated one's social-identification is achieved on the basis of his/hers knowledge and emotional attachment to group membership. Having a particular social identity means thinking and behaving like group members (i.e. collectivism), and potentially showing little regard for an individual's own perspectives (Melucci, 1989; Stets & Burke, 2000; Haslam & Reicher, 2006). Socially

identified individuals strongly focus on in-group relations by following group norms. Such pattern becomes more salient as in-group affiliation is more intensified. The in-group social identity can be retained when people realize that a group contributes to the creation and promotion of their social identity (Berger, 1966; Wann. 2006).

The last socio-cognitive stage of the social identity principle is social comparison. Some researchers claim that individuals may have self-image concerns in a variety of domains (Rosenberg, 1965; Simmons, Rosenberg, & Rosenberg; 1973). These concerns may manifest or be interpreted as anxieties over valuation and/or criticism from others. This assumption provides a basic tenet of social comparison theory (Festinger, 1954). In this phase, individuals determine their personal and social value by comparing themselves to other in-group members in lieu of employing more objective indicators. Festinger (1954) asserted that individuals tend to determine their own worth based on how they stack up against others. This comparison action can affect an individual's self-improvement or attitude(s) toward a group to which one belongs (Taylor & Lobel, 1989).

The social identity principles illuminate a sequence of how individuals become a part of in-group or out-group aligned with social construction. The outcome of positive and satisfactory social identity attained through the process of becoming a part is self-image and self-esteem boosting that lead to strengthening of in-group favoritism (Brown, 2000). People with high in-group favoritism are more likely to follow the in-group members' communal goals and norms. This can lead to a higher level of dedication to the group. Consequently, the impact of in-group favoritism on an

individual's loyalty, both in attitudinal and behavioral dimension, are investigated in the current study.

2.2.2 Identity Orientations

Albert and Whetten (1985) referred to sport teams as hybrid identity organizations, writing:

> …an organization whose identity is composed of two or more types that would not normally be expected to go together…It is not simply an organization with multiple components, but it considers itself (and others consider it), alternatively, or even simultaneously, to be two different types of organizations (p. 270).

Following the above notion, fan identity can be delineated as an aggregate of heterogeneous identities for an individual affiliated with a specific sport team. In other words, an individual's co-mingled identities (i.e. personal, social) to certain sport team can shape a new identity. This new identity is falls within fandom. Drawing on the social identity theory, the following identity orientations are postulated as determinants of sport fan identity.

2.2.2.1 Personal and Social Identity

Social identity theory posits that personal and social identity contribute to one's self-categorization process (Turner, 1985). Personal identity refers to one's characteristics and properties that have continuity and distinctiveness and indicates one's unique characteristics as distinguished from others (Lapsley, Rice, & FitzGerald, 1990),

in contrast to social identity which postulates normative features are shared with group members (Deaux, 1992).

The significance of personal identity lies in sustaining the self as a unique individual. Conversely, social identity emanates from an individual's affiliation to groups that hold homogenous attributes. The core premise of social identity is that people maintain consistency in perception and action among group members (Stets & Burke, 2000). In various social situations, individuals see themselves and others as members of certain groups, in lieu of a distinct individual (Ellemers & Haslam, 2011). In the realm of sports, the notion of social identity has been widely recognized as a key component of fan identity (Boyle & Magnusson, 2007; Dietz-Uhler & Murrell, 1999; Platow, Durante, Williams, Garrett, Walshe, Cincotta, & Barutchu, 1999; Heere & James, 2007).

The aforementioned resulted in a pair of hypotheses:

- **Hypothesis 1a**. Personal identity negatively influences fan identity.
- **Hypothesis 1b**. Social identity positively influences fan identity.

2.2.2.2 Masculine and Feminine Identity

Gender identity can be defined as a, "fundamental, existential sense of one's maleness or femaleness" (Spence, 1984, p.83). The concept of gender identity is distinguished from anatomical sex by the inclusion of psychological development and cultural experience (Weitz, 1977). In other words, both hormonal balances and societal factors influence one's perception of being more masculine or feminine, which are typical two facets of gender identity (Kohlberg, 1966).

In the above-mentioned context, anatomical sex does not always correspond with one's gender identity. As Burk (1989) indicates, gender identity is a role identity. Gender role refers to an acquired function or position within a particular culture, which is allied with the masculinity or femininity that a person may choose to adopt (Palan, 2001). Constantinople (1973) points out that a dichotomous conceptualization of masculinity and femininity should be potentially be accepted as a standard, in lieu of strict M/F gender-roles based on anatomy. Males and females do not necessarily function as distinct male or females in role, characteristics, and attitudes as they are currently constructed in society (Constantinople, 1973). With this said, there are norms within the dichotomous understanding of male and female gender roles. For example, it is conventionally agreed that masculine traits positively influence leadership, competition, dominance, ambition, and aggression; whereas femininity is often linked to affection, sympathy, understanding, compassion, and sensitivity (Bem, 1974). In gender research, although the mainstream has focused on anatomical sex, recent studies have started dealing with gender identity due to the influences of Western culture (e.g. Steensma, Kreukels, de Vries, & Cohen-Kettenis, 2013; Wood & Eagly, 2015).

In the domain of sports, much scholarly work has been done on the topic of sex differences in sports fan behavior (e.g. Anderson & Stone, 1981; Bahk, 2000; Dietz-Uhler, Harrick, End, & Jacquemotte, 2000; Gantz & Wenner, 1991; Lieberman, 1991; Prisuta, 1979; Wann, Waddill, & Dunham, 2004). Undoubtedly, sports have been traditionally deemed male-dominated territory. A majority of data evidences males are more deeply concerned with sports even though some recent studies have shown a

modest uptick in females' involvement in sports (Dietz-Uhler, End, Jacquemotte, Bentley, & Hurlbut, 2000; Galyon & Wann, 2012; James & Ridinger, 2002; Schurr, Ruble, & Ellen, 1985; Wann, Schinner, & Keenan, 2001; Wann, Waddill, & Dunham, 2004).

Previous studies have identified gender as a driver for sport fandom (Dietz-Uhler et al., 2000). These studies have shown being a male as positively influencing fan identity, while being a female negatively influences fan identity. Gender identity differs from gender though. Specifically, gender is generally understood as a male/female dichotomy while gender identity can be identified as the entireness of physical and behavioral traits that are designated by a culture as masculine or feminine (American Psychological Association, 2009). Although previous studies have shown that individuals identifying as male have a positive influence on fan identity, no previous studies have investigated how gender identity influences fan identity. There is a possibility that this study could make a move toward filling a portion of this gap, as the link between gender role identity and sport fan identity was examined by a pair of hypotheses:

- **Hypothesis 1c**. Masculine identity positively influences fan identity.
- **Hypothesis 1d**. Feminine identity negatively influences fan identity.

2.2.2.3 Organizational Identity

The root of organizational identity can be traced to social identity theory (Tajfel, 1979). Social identity theory posits that individuals define themselves based on group

membership, in lieu of their own traits or values (Brown, 2000; Tajfel, 1981; Trepte, 2006).

Organizational identity can be understood as a vertical continuum. The level of organizational identity suggests the degree to which individuals consider the organization as part of themselves (Dutton, Dukerich, & Harquail, 1994). An individual who strongly identifies with a specific organization takes the organization's rules as his or her criteria for judgment and behaviors. Individuals form loyalty, a sense of belongingness, similar characteristics, and shared norm with the organizations of which they are affiliated to (Lee, 1971). In this current study, students' level of identification with the college they belong to are investigated to see if it is positively connected to their fan identity toward their own college sport team. Thus, it was hypothesized:

- **Hypothesis 1e**. Organizational identity positively influences fan identity.

2.2.3 Fan Identity as In-group Favoritism

In-group favoritism is the tendency of individuals to favor their own group. Therefore, positive characteristics of the favored group are likely more associated with one's perception (Dasgupta, 2004). The favoritism of the in-group over the out-group can potentially be explained by social identity theory. According to social identity theory, people may enhance the self-image and self-esteem by achieving positive in-group evaluation and a sense of superiority when compared to out-group (Levon & Sidanius, 1999). This often leads to peoples' affinity with their in-group accompanying out-group derogation.

Out-group derogation can be described as prejudice or discrimination against out-group and its members. Mummendey & Otten (1998) have argued that individuals are more likely to have in-group favoritism in lieu of out-group derogation that is associated with unfavorable evaluations and attitudes toward out-group as a whole. Out-group derogation usually occurs when the in-group feels threatened by others. The in-group verse out-group phenomenon can also be understood as a natural sequence of self-categorization processes (Brewer, 1999; Zhong, Phillips, Leonardelli, & Galinsky, 2008).

The notion of fan identity can be elucidated using in-group favoritism mechanism delineated above. The term fan identity has been interchangeably used with team identification in sports literature, being defined as "the degree to which a member defines him or herself by the same attributes that he or she defines the organization" (Dutton et al., 1994, p.239). In this sense, it is assumed that the notion of in-group favoritism and fan identity lie on the same conceptual line. Consistent with the postulation of in-group favoritism, fans high in identification are more inclined to be affiliated with the team, representing both attitudinal and physical supports (Smith & Stewart, 2007).

A majority of fan identity research has tended to center around the topic of its consequential outcomes. In effect, there is a growing body of literature recognizing psychological and behavioral consequences of fan identity and their impacts in various practices (e.g. Boyle & Magnusson, 2007; Kwon, Trail, & Anderson, 2005; Wann & Bronscombe, 1990; 1993). Psychological outcomes sport fan may have include self-

esteem boosting, satisfaction, affiliation to the team, and a sense of well-being (e.g. Dimmock, Grove, & Eklund, 2005; Madrigal, 2001; Sutton, McDonald, Milne, & Cimperman, 1997; Wann & Pierce, 2003). In the behavioral aspect, spectating live games (Fisher, 1998; Laverie & Arnett, 2000; Trail, Robinson, Dick & Gillentine, 2003), purchasing team-related merchandise (Fisher & Wakefield, 1998; Schurr et al., 1987; Kwon & Armstrong, 2002), or following the team on various media (Bernache-Assollant, Bouchet & Lacassagne, 2007) were reported as significantly related to sport fan identity. These two dimensions of fan identity outcomes are investigated in the current research to explain attitudinal and behavioral facets of sport fan loyalty.

2.2.4 Fan Loyalty as Manifestation of Fan Identity

The stronger fan identity an individual has with a sport team, the more likely a higher level of affinity with the team is evidenced (Madrigal, 1995). Such allegiance to the team can be called team loyalty. Sports academics and practitioners have treated team loyalty as a critical domain of team management, realizing its economic impacts on team's survival and prosperity. In this respect, team loyalty with a sales-focus needs to be accentuated and maintained in future research. However, the importance of non-commercial aspects of team loyalty (i.e. attitudinal loyalty) is realized in current research in consideration of the complexity of team loyalty. With this reasoning, insight into pretermitted factors unexplored in a majority of early sport marketing literature is believed to be potentially a worthy pursuit.

Some studies, primarily from the discipline of marketing, argue that loyalty can potentially be best understood via behavioral and attitudinal indicators (Bodet &

Bernache-Assollant, 2011; Evanschitzky & Wunderlich, 2006). Yet most researchers give priority to behavioral aspects (Griffin, 1995; Howard & Thomason, 1984).

Behavioral loyalty refers to consumer's inclination to purchase the same products or brands repeatedly over time (Ehrenberg & Goodhardt, 2000). According to Aaker (1991), this repeat patronage behavior can be measured by investigating actual purchase patterns including purchase frequency, purchase quantity, or number of brands purchased. In the domain of sports, behavioral loyalty can be expressed by expenditure on team-related goods (Fisher & Wakefield, 1998; Trail et al., 2003; Kaynak et al., 2008), following the team on media (Melnick & Wann, 2004), attending games (Gladden & Funk, 2001; Fisher, 1998; Laverie & Arnett, 2000; Wann & Branscombe, 1993), the length of being a fan (Kaynak et al., 2008), or purchasing season tickets (Bodet & Bernache-Assollant, 2011; Kaynak et al., 2008).

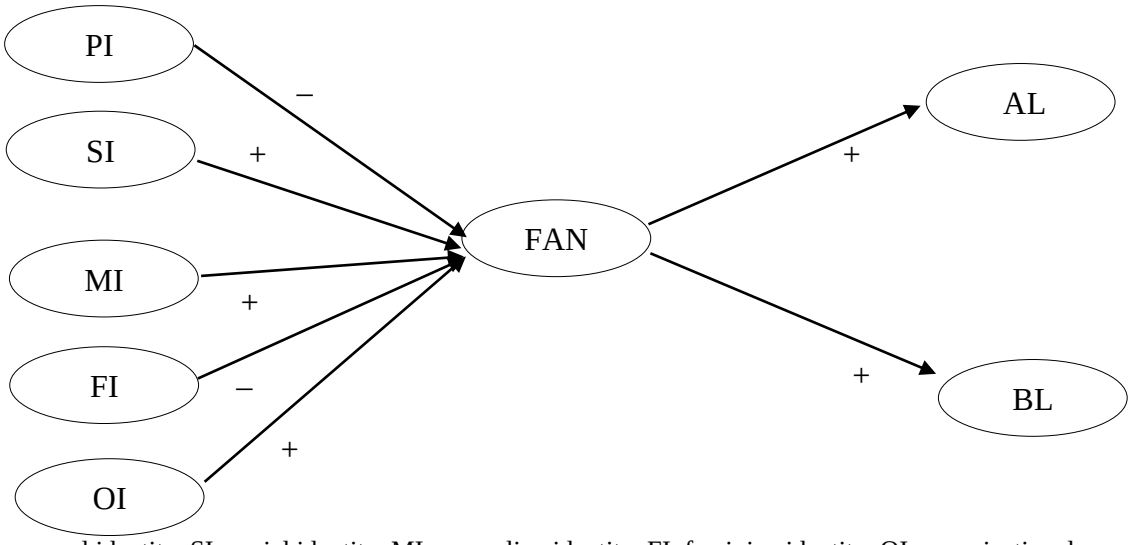
Although it was typical to lean toward behavioral features when gauging loyalty, some limitations do exist. Previous studies asserted that relying solely on behavioral measures may not enough to determine one's loyalty due to the absence of attitudinal influences (Day, 1969; Dick & Basu, 1994; Baldinger & Rubinson, 1996; Keller, 1993). According to Day (1969), attitudinal elements including a strong motive, emotion, or attachment need to be preceded to cause actual purchasing actions. The core premise of attitudinal loyalty is consumers' affections or attitudes (Uncles, Dowling, & Hammond, 2003).

Attitudinal loyalty can be described as person's consistent attitude, preference, and cognitive commitment towards a particular subject regardless of situational

variables. Pritchard, Havitz & Howard (1999) asserts that loyalty is a potential consequence of "resistance to change within the commitment process". The resistance to change has been used to measure psychological commitment and attitudinal loyalty in various contexts (e. g. Funk & James, 2004; Iwasaki & Havitz, 2004; Heere & Dickson, 2008; Kyle, Graefe, Manning, & Bacon, 2004; Taylor, Celuch, & Goodwin, 2004). In sports marketing literature, attitudinal loyalty has been actively utilized as a tool to examine team loyalty concomitant with behavioral loyalty (Biscaia, Correia, Rosado, Ross, & Maroco, 2013; Funk & James, 2006; Heere & Dickson, 2008; Neale & Funk, 2006). In this study, fan identity is predicted as a determinant of both attitudinal and behavioral aspect of loyalty:

- **Hypothesis 2**. Fan identity positively influences attitudinal loyalty.
- **Hypothesis 3**. Fan Identity positively influences behavioral loyalty.

The hypothetical model tested in this study is presented in Fig 1.



PI: personal identity, SI: social identity, MI: masculine identity, FI, feminine identity, OI: organizational identity, FAN: fan identity, AL: attitudinal loyalty, BL: behavioral loyalty

Figure 1 The hypothesized model

2.3 Methods

2.3.1 Sample and Procedure

An NCAA-sanctioned FBS (Football Bowl Subdivision) collegiate community with a large football stadium potentially provides sources of motivation for students to engage in events and be committed to their home team. For this reasoning, data was collected from students enrolled at an NCAA Division I university in the mid-south United States. The data was distributed after the NCAA college football 2015 season was completed in order for students to best reflect their sport spectating experience.

A self-administered online survey was employed to examine hypothesized relationships proposed in the study. A survey link was distributed to 57,000 students; 1,287 responses were returned. 23 responses were deemed unusable with more than 60% of the survey information missing leaving 1,264 valid surveys after an initial data screening. Table 1 lists the demographic information of the respondents.

Table 1
Demographic Profiles of Respondents for Study1 (n=1264)

Category	N	%
Gender		
Male	514	40.7
Female	750	59.3
Age		
<18	21	1.7
18-23	1014	80.2
24-30	134	10.5
31-40	58	4.6
41-50	25	2
51-60	10	0.8
>60	2	0.2
Household income		
Less than $10,000	43	3.4
$10,000 to $49,999	248	19.6
$50,000 to $99,999	320	25.3
$100,000 to $149,999	348	27.6
$150,000 and more	305	24.1
Father's education		
Uneducated	4	0.3
Elementary School	9	0.7
Middle School	30	2.4
High School	263	21
2-year College	136	10.7
4-year College/University	478	37.7
Graduate School and beyond	344	27.2
Mother's education		
Uneducated	4	0.3
Elementary School	9	0.7
Middle School	27	2.1
High School	254	20.1
2-year College	183	14.5
4-year College/University	527	41.7
Graduate School and beyond	260	20.6
Race		
American Indian or Alaskan native	6	0.5
Asian	79	6.3
Black or African American	43	3.4
Hispanic or Latino	211	16.6
Native Hawaiian or Pacific Islander	14	1.1
White	902	71.4

2.3.2 Measurement

The Aspects of Identity Questionnaire (AIQ) developed by Cheek (1989) was adopted to measure personal and social identity. Social identity measures the degree of an individual's commitment to social self or social roles while personal identity represents the degree of one's commitment to private self or personal roles. One item was rephrased to improve reliability and content validity. Specifically, the original item "my physical appearance: my height, weight, and the shape of my body" was separated into three items:

- my physical appearance: my height;
- my physical appearance: my weight;
- and my physical appearance: the shape of my body.

The final version of the questionnaire contains a ten-item personal identity and seven-item social identity item with responses ranging from 1=not important to my sense of who I am to 5=extremely important to my sense of who I am.

Masculine and feminine identity were measured using Masculinity Trait Index (MTI) and Femininity Trait Index (FTI), each of which Barak & Stern (1986) modeled on a form of the Bem Sex Role Inventory (BSRI; BEM, 1974). BSRI remains an oft-used instrument to measure sexual identity or gender role perceptions in various disciplines. In fact, this study originally intended to rely upon BSRI. But, during a pre-test it was found to be too long for respondents. A large number of respondents complained about the length of the survey and stopped taking the survey mid-way

through the assessment. Barak and Stern's model was thus chosen, in lieu of BSRI, because respondents preferred the model.

Both FTI and MTI were established based on Barak & Stern's (1986) factor analysis of the original forty-item Masculinity and Femininity sections of the initial BSRI. Each index contains ten self-ascribed "masculine" or "feminine" character items with scores ranging from 1=never or almost never true to 5=always or almost always true. These indexes are computed through a summation of the items: lowest score = 10, highest score = 50.

Mael & Ashforth's (1992) organizational identification scale consisting of six items was adopted to assess student's organizational identity with the university they belong to. Ashforth (1990) reports a coefficient alpha of 0.83 in a sample of managers from various institutions and Ashforth &Male (1989) reports it ranging from 0.83 to 0.84 in the army samples. Although this scale has been generally used in business firms and hierarchical organizational organizations contexts, it is often employed to measure university identification as the items were tested and established in university samples (Male & Ashforth, 1992).

Respondents were asked to indicate their agreement with each item on five-point Likert scales ranging from 1=strongly agree to 5=strongly disagree.

Fan identity was assessed using Wann & Branscombe's (1993) seven-item Sport Spectator Identification Scale (SSIS). Wann & Branscombe (1993) reported the scale is internally consistent, indicating the reliability estimate is high (α= .91). Survey respondents need to indicate their agreement with each item on five-point Likert scales

ranging from 1=not important to 5=very important. Individual items are totaled and divided by the number of items to obtain a mean score.

Both attitudinal and behavioral dimensions were measured to determine sport fan's loyalty toward team. The measurement tool used to investigate attitudinal loyalty comes from Pritchard et al.'s (1999) Resistance to Change items. Pritchard et al. (1999) established these items, asserting that "psychological commitment is best defined by a tendency to resist change" (p. 337). Three items were measured on a five point Likert scale, ranging from strongly disagree=1 to strongly agree=5. For the behavioral construct, four items operationalized from Fisher & Wakefield's (1998) group-supportive behaviors were used. Responses for both constructs are based on a five point Likert scale ranging from 1=strongly disagree to 5=strongly agree.

2.4 Results

This study followed a two-step modeling approach customarily taken for SEM analysis (Anderson & Gerbing, 1988). In the first step, a confirmatory factor analysis (CFA) was performed to develop an acceptable measurement model after verifying the adequacy of the model fit. The reliability and validity of the scales were revealed by showing how adequately the indicator variables predict each latent variables at this stage. The second step identified the hypothesized structural relationships among latent constructs (i.e. identity orientations, fan identity, and loyalty).

Three fit indices recommended by Hu and Bentler (1999) were used in order to verify the adequacy of fit between the data and the proposed model: the root mean

square error of approximation (RMSEA), and the root-mean-square residual (RMR), and the Comparative Fit Index (CFI). There is a lack of consensus over what indices to report among scholars. Generally agreed threshold levels to accept a model are CFI>.93: good fit (Byrne, 1994), small RMR and RMSEA < .07: reasonable fit (Steiger, 2007, Tabachnik & Fidell, 2007).

2.4.1 Measurement Model

A confirmatory factor analysis was conducted in order to demonstrate a reasonable fit for the proposed model. The final measurement model presented an adequate goodness of fit with CFI=0.954, RMR=0.050, and RMSEA=.048 and yielded a reduced set of 32 items from the original set with 59 items. As all the fit indices satisfied the predetermined acceptable threshold for common measure fit, there was no need to re-specify the model. Correlations among the variables appear in Table 2. All of the identity orientations were significantly correlated with both attitudinal and behavioral loyalty. The correlations among the each of the identities were significant except for feminine identity which was not significantly correlated with masculine identity. All the correlation values below the threshold of .85 also evidenced no multicollinearity issue existing in the current investigation.

Table 2
Correlation Matrix of Latent Variables for Study 1

	1	2	3	4	5	6	7
1. PI							
2. SI	.17**						
3. MI	.22**	.12**					
4. FI	.36**	.09**	.03				
5. OI	.15**	.20**	.22**	.15**			
6. FAN	.07**	.21**	.23**	.11**	.65**		
7. AL	.11**	.17**	.18**	.16**	.63**	.74**	
8. BL	.11**	.22**	.23**	.14**	.63**	.84**	.71**

**. Correlation is significant at the 0.01 level (2-tailed).

With the purified measurement model, the measurement model was evaluated to establish reliability and validity of the construct using three indicators: factor loading, coefficient alpha, and average variance extracted (AVE). Reliability was examined to test the internal consistency of the measurement scales using the coefficient alphas (Cronbach, 1951). Table 3 presents that each latent construct ranged from 0.75 to 0.94, which exceeds the .70 cutoff value for being acceptable (Nunnaly, 1978; Pallant, 2005). In order to assess convergent validity, AVE of latent constructs was further estimated, which measures the average amount of variance in indicator variables relative to the measurement error. As shown in Table 3, all of the AVEs exceed the conventionally accepted threshold of 0.5, thus justifying convergent validity. Discriminant validity was confirmed using the maximum shared variance (MSV) and the average shared variance (ASV). When both MSV and ASV values are smaller than AVE for all the constructs, discriminant validity is established (Hair et al., 2010). All factor loadings were found to be well above the threshold level of 0.6 that is suggested as acceptable for empirical

research regardless of sample size (Field, 2005; Hair et al., 2010). Table 3 summarized the results of validity and reliability test.

Table 3
Results of Validity and Reliability Test for Study 1

Constructs		Mean	S.D.	Factor Loading	Cronbach's Alpha	AVE	MSV	ASV
Personal identity	PI2	4.23	0.76	0.6	0.75	0.58	0.18	0.05
	PI4	3.97	0.96	0.67				
	PI5	4.35	0.73	0.67				
	PI9	4.21	0.85	0.71				
Social identity	SI3	2.17	1.17	0.73	0.82	0.71	0.06	0.03
	SI4	3.05	1.17	0.69				
	SI5	2.97	1.18	0.71				
Feminine identity	FI4	4.12	0.86	0.76	0.87	0.63	0.18	0.04
	FI5	4.16	0.82	0.78				
	FI6	4.28	0.76	0.76				
	FI7	3.98	0.99	0.72				
Masculine identity	MI5	3.51	1.02	0.77	0.81	0.71	0.08	0.05
	MI6	3.69	0.97	0.76				
	MI7	3.86	1.03	0.71				
	MI9	4.11	0.78	0.64				
Organizational identity	OI2	3.93	1.05	0.8	0.85	0.69	0.52	0.24
	OI3	4.35	1	0.77				
	OI4	3.99	1.08	0.81				
	OI5	4.17	1.04	0.84				
Fan identity	TI1	3.91	1.18	0.78	0.94	0.80	0.77	0.28
	TI2	4.28	1.11	0.96				
	TI3	4.06	1.23	0.92				
	TI5	4.23	1.15	0.96				
	TI7	3.94	1.35	0.78				
Attitudinal loyalty	AL1	4.16	1.08	0.92	0.90	0.84	0.63	0.26
	AL2	3.97	1.09	0.81				
	AL3	4.14	1.12	0.88				
Behavioral loyalty	BL1	4.11	1.19	0.78	0.87	0.73	0.63	0.22
	BL2	3.92	1.27	0.8				
	BL3	3.62	1.34	0.76				
	BL4	3.75	1.3	0.86				

2.4.2 Structural Model

The structural model was examined to assess the goodness-of-fit of the proposed hypothesized model after establishing a valid measurement model. As illustrated in Table 4, the initial model fit indices showed an acceptable model fit to the sample data (CFI=.943, RMSEA=.053, RMR=.059). Estimation of the structural parameter estimates for the model demonstrated that whereas six parameters in the Beta matrix showed statistical significance, one parameter was statistically insignificant (i.e. feminine identity → fan identity). Accordingly, the insignificant path was deleted and the model was re-specified for parsimony. The modification and re-estimation procedure was carried out until the model obtains the optimized fit. In result, the final revised model indicated an adequate fit to the data: CFI=.947; RMSEA=.051; RMR=.059.

Table 4
Model Fit Indices

Model	CFI	RMR	RMSEA
Structural model 1	0.943	0.059	0.053
Structural model 2	0.947	0.059	0.051
Acceptable level	>.93	<.07	<.07

Table 5 presents the result of the path analysis for the structural model. As shown, social identity (SI), masculine identity (MI), and organizational identity (OI) had positive direct effects on fan identity (FAN) (β=.074, p<.01; β=.070, p<.01; β=.679. p<.001, respectively). The results supported hypotheses H1b, H1c, and H1e, respectively. That is, collegiate student with high SI, MI, OI is more likely to have stronger fan identity (FAN). On the other hand, fan identity (FAN) was negatively

predicted by personal identity (PI) (β=-.080, p<.01), supporting H1a. These results evidenced that organizational identity (OI) was the strongest predictor that determined collegiate student's fan identity. Meantime, the effect of feminine identity (FI) expected to negatively affect fan identity (FAN) was found to be statistically insignificant, rejecting H1d. All together, these antecedents proposed in H1 accounted for half of the fan identity variance (49.9%).

Table 5
Path Coefficients of Final Structural Model for H1

Path	B	SE	β	t-value	R^2
PI→FAN	-0.138	0.046	-0.080	-3.004**	
SI→FAN	0.063	0.020	0.074	3.099**	0.499
MI→FAN	0.141	0.053	0.070	2.679**	
OI→FAN	0.708	0.033	0.679	21.660***	

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

The analysis results in Table 6 also evidenced that fan identity was a significant predictor of both attitudinal and behavioral loyalty of collegiate sport fan. Fan identity has a strong positive direct effect on attitudinal loyalty (β=0.774, p<.001) and behavioral loyalty (β=0.886, p<.001), which evidenced H2 and H3 were supported. Fan identity accounted for 59.9% of the attitudinal loyalty variance and 78.5% of the behavioral loyalty variance, respectively, showing behavioral loyalty is better explained by fan identity than attitudinal loyalty. Figure 2 shows the final results of the structural equation model for the identity-loyalty data of the current study.

Table 6

Path Coefficients of Final Structural Model for H2 and H3

Path	B	SE	β	t-value	R^2
FAN→AL	0.901	0.031	0.774	27.424***	0.599
FAN→BL	0.825	0.033	0.886	26.743***	0.785

*** p<.001

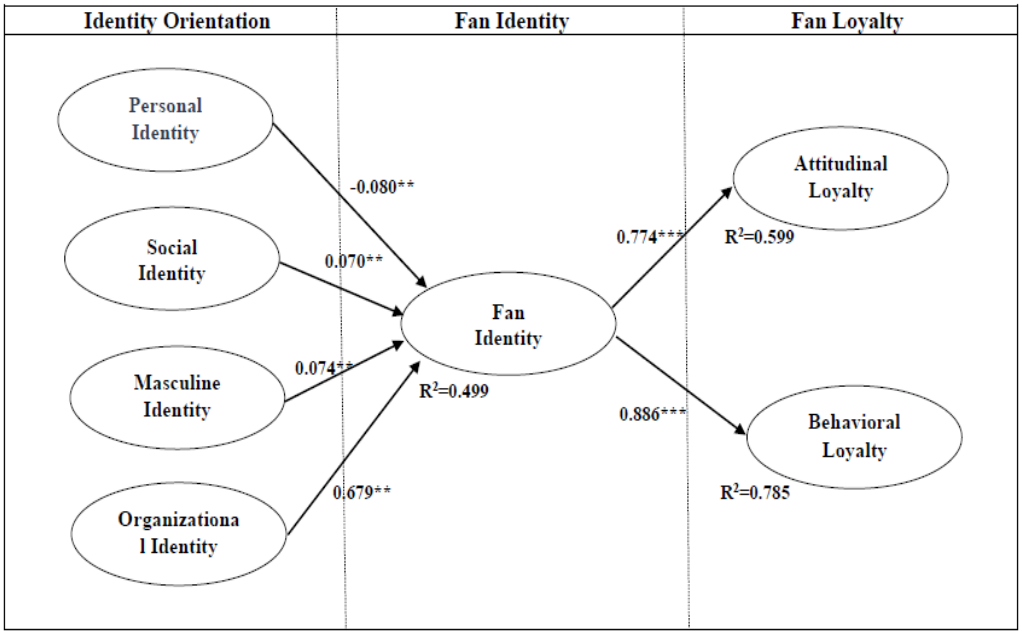


Figure 2. A final structural model with standardized path coefficients

2.5 Conclusion and Discussion

Drawing from social identity theory (Tajfel, 1979), the overall purpose of this study was to better understand the formation of sport fan loyalty. The study viewed this through the identity-based approach mechanism in the context of university sport fandom. The data collected supported the overall validity of the study's model.

The hypotheses were only partially supported. Specifically, all seven hypotheses except H1d, the negative effect of feminine identity on fan identity, were confirmed.

That is, fan identity with college football team is positively influenced by one's social identity, masculine identity, and organizational identity, while negatively affected by personal identity. Given the objectives of understanding the relationship between identity orientations and fan loyalty, a major finding of the present investigation is that organizational identity is the most significant predictor of fan identity. This can be interpreted that the collegiate students who are highly identified with their school are more likely to care about their athletic team and its performance. Meanwhile, feminine identity which was hypothesized to negatively affect fan identity was found to be statistically insignificant. This results indicate that even though sports was shown to be still a male-dominated territory, femininity does not necessarily demotivate sport fan identity.

In addition, another finding in this study is that a strong association between fan identity and two dimensions of loyalty (attitudinal and behavioral loyalty) exists. These findings are consistent with observations that fan identity is positively linked to attitudinal and behavioral commitment to sport teams (Madrigal, 1995; Wann & Branscombe, 1993). In the present study, fan identity proved to have more significant influences on behavioral loyalty than attitudinal loyalty.

3. INSIGHTS INTO COLLEGE SPORT FANDOM: THE INTERRELATIONSHIP AMONG CONSTRAINT, LOYALTY, AND TEAM IDENTIFICATION

3.1 Synopsis

Drawing on a leisure constraint theory developed by Crawford and Godbey (1987), this study examined how different types of sport fan constraints influence both attitudinal and behavioral loyalty. In addition, the moderating effect of individual's team identification on the link between sport fan constraints and team loyalty was examined. To this extent, a self-administered online survey was conducted with students enrolled at a NCAA Division I university in the mid-south region of the United States. Structural equation modeling evidenced that both attitudinal and behavioral loyalty were negatively affected by intrapersonal and structural constraints. It was also found that team identification played a moderating role between the intrapersonal/structural constraints and attitudinal loyalty links.

3.2 Introduction

Despite an abundance of research associated with sport fan motivation over the past two decades, the question of sport fan demotivation has received only minimal attention. Filling this gap, the current study attempted to investigate factors de-promoting sport fans' attitudinal and behavioral loyalty by employing a leisure constraint theory. In addition, a majority of studies focused on the topic of team identification investigated its role as a predictor of team loyalty (e.g. Bodet & Bernache-

Assollant, 2011; Matsuoka, Chelladurai, & Harada, 2003; Theodorakis, Wann, & Weaver, 2012; Wu, Tsai, & Hung, 2012). That is, although the positive direct influences of team identification on loyalty had been evidenced in a variety of contexts, no studies have considered that team identification may play a moderating role on the negative link from fan constraints to team loyalty. The current investigation attempted to fill this gap by testing whether negative direct impacts of fan constraints on team loyalty is moderated by team identification.

3.3 Literature Review

There's an old saying that in the South, that football is religion and every Saturday in the fall is a holy day. Sports in this era are globally a visible social presence (Kurtzman & Zauhar, 2003; Ritchie & Adair, 2004). Millions of individuals are devoted to watching competitive sports. Particularly in the United States, sport fandom is culturally relevant, making a record of $498.4 billion in the entire sport industry in 2016 (Plunkett, 2016). This phenomenon is also prevalent in the college sport leagues. Fandom of university athletic team has experienced a century-long growth pattern that has accelerated over the past two decades. The National Collegiate Athletic Association (NCAA) reported that the total attendance at national college football games in 2014 was 49,072,591 (includes a total of 655 games) (NCAA Football Attendance, 2014). Attendance at NCAA football games has grown continuously for decades.

Even with increases in revenue from ticket sales and corporate sponsorships, there are risks and financial challenges that can accompany the sporting industry

(Tsiotsou, 2013). University athletic programs struggle particularly over finances and team maintenance due to small athletic budgets and financial burdens in higher education. For this reason (i.e. mitigating financial hardships), having the support of loyal fans is believed to be a focal point for sport practitioners and administrators. The loyalty of fans is particularly important to marketing agents whose job descriptions include growing the profitability and reach of organizations.

3.3.1 Factors Positively Affecting Loyalty

In a variety of disciplines in marketing and management literature, issues of what increases consumer loyalty has been a continued interest due to its profit-generating prospects. For example, a positive link between satisfaction with a product or service and loyalty to a brand or company was reported by numerous scholars (e.g. Gallarza & Saura, 2006; Nguyen & Leblanc, 1998; Murray & Howat, 2002; Cronin et al., 2000; Morgan & Hunt, 1994; Mattila, 2004; Singh & Sirdeshmukh, 2000). This research supports Parasuraman's (1997) argument that satisfaction occurs when post-purchase perception positively exceeds pre-purchase expectation. It was empirically revealed that satisfaction is a strong driver of loyalty in both attitudinal and behavioral aspects.

Some researchers have argued that perceived value can be a stronger predictor of loyalty than satisfaction (Cronin et al., 2000; Oh, 2000). In effect, the influence of perceived value on customer loyalty has been reported in an abundance of research in the context of consumer behavior. The most common understanding of perceived value is the consumer's overall appraisal of a product or service based on perceptions of gains or losses (Woodruff, 1997; Zeithaml, 1988). Gallarza and Saura (2006) indicated that

these appraisals may correlate consumer satisfaction and may even be connected to customer repurchase intention. Both academics and marketing practitioners agree that positive perceived value is a critical indicator of customer loyalty (e.g. Cronin et al., 2000; Day, 1969; Gale, 1994; Parasuraman & Grewal, 2000; Sweeney & Soutar, 2001). Researchers' interests in perceived value continue to this day, and are often treated as the key outcome of marketing activities. As an example of continued understandings and growth of this portion of research, a recent line of research focuses on a multidimensional construct of perceived value (Sweeney & Soutar, 2001; Sanchez et al., 2006).

Some marketing scholars have shown an interest in product and service quality, including as a determinant of loyalty (Baker & Crompton, 2000; Fornell et al., 1996; Olsen, 2002; Rauyruen, Miller, & Barrett, 2007; Crosby & Stephens, 1987; Kelley et al., 1993; Rust & Zahorik, 1993). This line of research has reported a positive correlation between quality and loyalty. Furthermore, satisfaction appeared to be a mediator on the link between quality and loyalty in many cases (e.g. Bei & Chiao, 2001; Caceres & Paparoidamis, 2007; Olsen, 2002, Rauyruen et al., 2007). Although the vast majority of cases the research focused on a specific product or service, the results consistently revealed the quality-satisfaction-loyalty link positively correlated.

Particularly in the domain of sports, a great deal of literature has documented the factors that positively affect fan loyalty. Fan loyalty is often measured by expenditure on team-related goods (Fisher & Wakefield, 1998; Trail et al., 2003; Kaynak et al., 2008), following the team via media (Melnick & Wann, 2004), game attendance (Gladden &

Funk, 2001; Fisher, 1998; Laverie & Arnett, 2000; Wann & Branscombe, 1993), the length of being a fan (Kaynak et al., 2008), or purchasing season tickets (Bodet & Bernache-Assollant, 2011; Kaynak et al., 2008).

3.3.2 Factors Negatively Affecting Loyalty

Despite an abundance of research associate with sport fan motivation, the question of sport fan demotivation has received only minimal attention. Moreover, a limited number of attempts have been made to examine the factors negatively affecting fan loyalty. Yet some attention has been shown to structural constraints on attending sporting events. For example, external factors including weather (Noll, 1974; Welki & Zlatoper, 1999), cost (Baade & Tiehen, 1990; Pan & Gabert, 1997; Welki & Zlatoper, 1999), negative service experiences (Keaveney, 1995), and a team's poor performance (Baade & Tiehen, 1990; Hansen & Gauthier, 1989; Pan & Gabert, 1997) are reported as major barriers to attending sports events. However, this line of research is primarily concerned with structural indicators, with a disregard for intrapersonal and interpersonal constraints. Therefore, the major purpose of the present study is filling a significant gap in the literature in order to thoroughly understand the dynamics of sport fan loyalty.

3.3.3 Team Identification as Moderator

Sports team identification can be defined as "the degree to which a member defines him or herself by the same attributes that he or she defines the organization" (Dutton et al., 1994, p. 239). According to Smith and Stewart (2007), fans with high identification are more likely to be affiliated with the team by demonstrating both physical and attitudinal supports.

Most of the debates about team identification have tended to focus on its consequential influences. There is a growing body of literature recognizing both psychological and behavioral outcomes of team identification in diverse contexts (e.g., Boyle & Magnusson, 2007; Kwon, Trail, & Anderson, 2005; Wann & Branscombe, 1993). Behavioral consequences of team identification include spectating live games (Fisher, 1998; Laverie & Arnett, 2000; Trail, Robinson, Dick & Gillentine, 2003), purchasing team-related merchandise (Fisher & Wakefield, 1998; Schurr et al., 1987; Kwon & Armstrong, 2002), or following the team on various media (Bernache-Assollant, Bouchet & Lacassagne, 2007). In terms of psychological aspects, self-esteem boosting, satisfaction, affiliation, and sense of well-being are reported as significantly linked to team identification (Dimmock, Grove, & Eklund, 2005; Madrigal, 2001; Sutton et al., 1997; Wann & Pierce, 2003). Thus, an extensive amount of research has typically examined team identification as an antecedent of the aforementioned outcomes. However, the role of team identification as a moderator on the link between fan constraints and loyalty remains largely unexplored in the literature. Therefore, the current research attempted to fill the gap in the literature by reinventing the role of team identification in the loyalty formation process.

3.3.4 Sport Fan Constraint

The present research attempted to extend the understanding of sport fan loyalty. To achieve this purpose, the concept of leisure constraints was employed as a theoretical base. The notion of leisure constraints has been widely applied to understand individual's leisure trend, choices, and behaviors (Henderson & Bialeschki, 1993;

Jackson, 1993; Shaw, 1994). Constraints to leisure can be considered physical, psychological, or situational factors that hinder leisure preference or participation (Jackson, 1997). Generally in leisure research, attention has attempted to identify constraints, the role of constraints in obstructing leisure participation, and their influences on psychological or behavioral aspects of leisure decision (Samdahl & Jekubovich, 1997). A classical leisure constraint model identified three subscales of constraints: (a) intrapersonal: individual's inward mental state including stress, anxiety, and indifference, (b) interpersonal: human relationship and interaction, (c) structural: physical or external barriers including time, money, and weather (Crawford & Godbey, 1987; Crawford, Jackson, & Godbey, 1991). Crawford and Godbey (1987) suggested that intrapersonal and interpersonal barriers influence a person's leisure preferences while structural factors affect the relation between preference and actual participation.

The present study was designed to extend the conceptual model of leisure constraints within the sport fandom context. Hence, the typical constraint-leisure participation relationship was adjusted to the constraint-loyalty relationship in sport fandom. Constraints for sport fans are assumed to disrupt both attitudinal and behavioral commitments to a team an individual is affiliated with. In line with this logic, the current investigation attempted to examine the impact of constraints on the attitudinal and behavioral dimensions of team loyalty simultaneously. While prior studies focused on too specifically on structural constraints to leisure activity (Trail, Robinson, & Kim, 2008), the present study examined three types of constraints as originally suggested by Crawford and Godbey (1987) as negative predictors of sport fan loyalty. Considering

the aforementioned gaps in the literature, the following hypotheses were tested in the present investigation.

- **H1a**: Intrapersonal constraint has a direct negative influence on attitudinal loyalty.
- **H1b**: Interpersonal constraint has a direct negative influence on attitudinal loyalty.
- **H1c**: Structural constraint has a direct negative influence on attitudinal loyalty.
- **H2a**: Intrapersonal constraint has a direct negative influence on behavioral loyalty.
- **H2b**: Interpersonal constraint has a direct negative influence on behavioral loyalty.
- **H2c**: Structural constraint has a direct negative influence on behavioral loyalty.
- **H3**: The relationship between constraints and team loyalty is moderated by team identification.

3.4 Methods

3.4.1 Sample and Procedure

The data were collected by means of a self-administered online survey conducted with undergraduate and graduate students enrolled at a NCAA Division I university in the mid-south region of the United States. The site selected was an NCAA-sanctioned FBS (Football Bowl Subdivision) collegiate community with a large football stadium potentially provides sources of motivation for students to engage in events and be

committed to their home team. In order for students to best reflect their sport spectating experience, the data was distributed after the NCAA college football 2015 season was completed. The data collection period lasted from January 18th to February 10th of 2016. A survey link was distributed to 57,000 students. 1,287 responses were returned. After an initial data screening, 23 responses were deemed unusable with more than 60% of the survey information missing leaving 1,264 valid surveys. Table 7 presents the demographic information of the respondents.

Table 7

Demographic Profiles of Respondents for Study 2 (n=1264)

Category	N	%
Gender		
Male	514	40.7
Female	750	59.3
Age		
<18	21	1.7
18-23	1014	80.2
24-30	134	10.5
31-40	58	4.6
41-50	25	2
51-60	10	0.8
>60	2	0.2
Household income		
Less than $10,000	43	3.4
$10,000 to $49,999	248	19.6
$50,000 to $99,999	320	25.3
$100,000 to $149,999	348	27.6
$150,000 and more	305	24.1
Father's education		
Uneducated	4	0.3
Elementary School	9	0.7
Middle School	30	2.4
High School	263	21
2-year College	136	10.7
4-year College/University	478	37.7
Graduate School and beyond	344	27.2
Mother's education		
Uneducated	4	0.3
Elementary School	9	0.7
Middle School	27	2.1
High School	254	20.1
2-year College	183	14.5
4-year College/University	527	41.7
Graduate School and beyond	260	20.6
Race		
American Indian or Alaskan native	6	0.5
Asian	79	6.3
Black or African American	43	3.4
Hispanic or Latino	211	16.6
Native Hawaiian or Pacific Islander	14	1.1
White	902	71.4

3.4.2 Measurement

The instrument collected information on sport fans' constraints, loyalty, team identification, and demographic profiles. The instrument was selected based on a literature review and modified to fit the current study setting.

Individuals' constraints related to sport spectating are measured using three theoretical constructs of constrains geared from leisure constraints literature (Crawford et al., 1991): intrapersonal, interpersonal, and structural. Out of the initial 17 items, only 11 questions fitting in a sport fan context are drawn. Respondents were asked to indicate their agreement with each statement on five-point Likert scales ranging from 1=no influence to 5=strong influence. Statements representing each type of sport fan constraints are presented in Table 8.

Table 8
Fan Constraint Measurement Items

Author	Construct	Item
Crawford, Jackson, & Godbey (1991)	Intrapersonal constraints	-I don't like to watch sports games. -I don't like to watch football games. -I like to do other things for recreation.
	Interpersonal constraint	-I don't have any friends or companions to watch sports games together. -My family has no interests in watching sports games. -No one I know watches football games.
	Structural constraints	-I don't have enough money to spend on football game watching. -I don't have enough time to watch football games. -I am too busy with other activities. -There is no way to have access to sports games.

Team loyalty was tested by employing both attitudinal and behavioral dimensions, as evoked in the literature review. The measurement used to investigate attitudinal loyalty comes from Pritchard et al.'s (1999) resistance to change items. Pritchard et al. (1999) established this item, asserting that "psychological commitment is best defined by a tendency to resist change" (p. 337). Three items were measured on a seven-point Likert scale ranging from 1=strongly disagree to 5=strongly agree. Four items operationalized from Fisher & Wakefield's (1998) group-supportive behaviors were used for the behavioral loyalty construct. Responses for both constructs are based on a five-point Likert scale ranging from 1=strongly disagree to 5=strongly agree. Statements representing each type of team loyalty are presented in Table 9.

Table 9
Team Loyalty Measurement Items

Author	Construct	Item
Pritchard, Havits, & Howard (1999)	Attitudinal loyalty	-My preferences to the team would not willingly change. -It would be difficult to change my beliefs about the team. -I could never switch my loyalty from the team even my friends were fans of another team.
Fisher & Wakefield (1998)	Behavioral loyalty	-I will attend team's live games. -I will tune in to team's games through television, radio, the internet, or other media. -I will purchase the team's licensed merchandise. -I will talk with others about my association with the team.

Team identification was assessed using Wann & Branscombe's (1993) seven-item sport spectator identification scale (SSIS). Survey respondents needed to indicate

their agreement with each item on five-point Likert scales ranging from 1=not important to 5=very important. Individual items were totaled and divided by the number of items to obtain a mean score. Wann & Branscombe (1993) reports the scale is internally consistent, indicating the reliability estimate is high (α= .91). Statements representing each type of team identification are presented in Table 10.

Table 10
Team Identification Measurement Items

Author	Construct	Items
Wann & Branscombe (1993)	Team Identification	-How important is it to you that the team wins? -How strongly do you see yourself as a fan of the team? -How strongly do your friends see you as a fan of the team? -During the season, how closely do you follow the team via any of following?: in person or on television, on the radio, or televised news or a newspaper? -How important is being a fan of the team to you? -How much do you dislike the greatest rivals of the team? -How often do you display the team's name or insignia at your place of work, where you live, or on you clothing?

3.5 Results

3.5.1 Measurement Model

The analysis of the proposed moderation model took a two-step modeling approach suggested by Anderson and Gerbing (1988). A confirmatory factor analysis (CFA) was performed to establish an acceptable measurement model in the first stage of the analysis. The relationship between latent variables was investigated using Pearson

product-moment correlation coefficient. There was a strong, negative correlation between intrapersonal constraint and behavioral loyalty (r=-.64, p<.01), between intrapersonal loyalty and team identification (r=-.64, p<.01), and between structural constraint and behavioral loyalty (r=-.52, p<.01). All the correlation values below the threshold of .85 indicated no violation of multicollinearity, ranging from -.28 to .84. Table 11 summarizes the inter-construct correlations of latent variables.

Table 11
Correlation Matrix of Latent Variables for Study 2 (n=1264)

	M	*SD*	1	2	3	4	5
1. INTRA	1.97	1.21					
2. INTER	1.56	0.84	0.44**				
3. STRUCT	2.48	1.12	0.48**	0.44**			
4. AL	4.08	1.00	-0.45**	-0.28**	-0.41**		
5. BL	3.85	1.09	-0.64**	-0.38**	-0.52**	0.71**	
6. TI	4.08	1.07	-0.64**	-0.37**	-0.45**	0.74**	0.84**

**. Correlation is significant at the 0.01 level (2-tailed).
Note: INTRA=intrapersonal constraint, INTER=interpersonal constraint, STRUCT=structural constraint, AL: attitudinal loyalty, BL: behavioral loyalty, TI: team identification.

In order to verify the adequacy of fit between the data and the proposed model, three fit indices recommended by Hu and Bentler (1999) and Quintana and Maxwell (1999) were used: the root mean square error of approximation (RMSEA), the root-mean-square residual (RMR), and the Comparative Fit Index (CFI). Acceptable model fits are indicated by CFI values exceeding .95, having a small RMR (best if close to .08 or less), and having RMSEA values below .07 (Steiger, 2007, Tabachnik & Fidell, 2007).

The final measurement model resulted in a relatively good fit indices with RMSEA=.062, CFI=.973, RMR=.044, and yielded a reduced set of 17 items from the initial set of 23 items. Also, all the factor loadings for the established items employed for the current study were greater than .60.

After establishing the measurement model, the reliability and validity of the scales were assessed using three indicators: factor loading, coefficient alpha, and average variance extracted (AVE). Table 6 demonstrates the results of convergent validity and reliability test. As shown, all of the constructs (i.e., intrapersonal constraint, interpersonal constraint, structural constraint, attitudinal loyalty, behavioral loyalty, and team identification) in the model satisfied the cutoff values to be accepted with a composite reliability exceeding .70 (Nunnaly, 1978; Pallant, 2005). Convergent validity was confirmed with Cronbach's alpha greater than .70 (Pallant, 2005), AVE greater than .50 (Fornell & Larcker, 1981), and Chronbach's alpha coefficient greater than AVE. In addition, discriminant validity was evaluated using the maximum shared variance (MSV) and the average shared squared variance (ASV). When both MSV and ASV values are smaller than AVE for all the constructs, discriminant validity was established. The result presented in Table 12 confirmed adequate reliability and validity.

Table 12
Results of Validity and Reliability Test for Study 2

Constructs	Factor Loading	Cronbach's Alpha	AVE	MSV	ASV
Intrapersonal Constraint		0.91	0.83	0.53	0.38
I don't like to watch sports games.	0.961				
I don't like to watch football games.	0.861				
Interpersonal Constraint		0.77	0.53	0.31	0.24
I don't have any friends or companions to watch sports games together.	0.742				
My family has no interests in watching sports games.	0.712				
No one I know watches football games	0.727				
Structural Constraint		0.88	0.78	0.35	0.27
I don't have enough time to spend on football game watching.	0.918				
I am too busy with other activities.	0.851				
Attitudinal Loyalty		0.91	0.76	0.63	0.36
My allegiance to the team would not willingly change.	0.924				
It would be difficult to change my beliefs about the football team.	0.821				
I could never switch my loyalty from the football team even if my close friends were fans of another team.	0.874				
Behavioral Loyalty		0.88	0.65	0.57	0.51
I will attend the team's live games.	0.769				
I will tune in to the team's games through television, radio, the internet, or other media.	0.817				
I will purchase the team's license merchandise.	0.773				
I will talk with others about my association with the team.	0.861				
Team Identification		0.95	0.83	0.77	0.45
It is important to me that the team wins.	0.772				
I consider myself a fan of the team.	0.973				
My friends consider me a fan of the team.	0.912				
I consider myself a fan of the team.	0.969				

3.5.2 Structural Model

The structural model was tested for three separate models for three distinct groups: the entire group, the low-TI group, and the high-TI group using the maximum-likelihood method in the AMOS (Version 24) program. For the entire group, squared multiple correlations (R^2) from each type of sport fan constraint to attitudinal and behavioral loyalty were obtained to see the amount of variance explained by the exogenous variables. In addition, the path coefficients and *t*-statistics were revealed to test the proposed hypothesized relationships in the present study. The result of the estimated structural model for the entire group is shown in Table 13.

As presented in Table 13, intrapersonal constraint and structural constraints have a direct negative impact on sport fans' attitudinal loyalty (β=-.365, $p<.001$, β=-.235, $p<.001$, respectively). This is in support of H1a and H1c. Intrapersonal and structural constraints also have negative direct influences on behavioral loyalty (β=-.366, $p<.001$, β=-.116, $p<.001$, respectively), which supports H2a and H2c. However, it was found that interpersonal constraints were found to be insignificant predictors of both attitudinal and behavioral loyalties. Thus, both H1b and H2b were rejected. All constructs in the model explained 30.8% variance in attitudinal loyalty and 78.2% in behavioral loyalty. Based on these results, the insignificant paths (INTER→AL, INTER→BL) were determined to be dropped. The newly generated model was used to test a moderation effect of the predicted model.

Table 13
Results of Hypotheses Test for the Entire Group

Hypothesis	Path	B	SE	β	t-value	R^2	Result
H1a	INTRA→AL	-0.29	0.030	-0.365	-9.561***	0.308	Supported
H1b	INTER→AL	-0.034	0.043	-0.034	-0.791		Not supported
H1c	STRUCT→AL	-0.195	0.030	-0.235	-6.409***		Supported
H2a	INTRA→BL	-0.333	0.026	-0.366	-12.674***	0.782	Supported
H2b	INTER→BL	-0.043	0.034	-0.038	-1.267		Not supported
H2c	STRUCT→BL	-0.11	0.025	-0.116	-4.476***		Supported

*** p<.001

In order to test for moderation effects in structural equation modeling, multi-group SEM analyses were conducted. The current study examined the moderating role of team identification on the link between fan constraints and loyalty. The team identification variable was divided into two level categories: relatively low team identification (n=628) and relatively high team identification (n=636), using a median split recommended by Osterhus (1997) and Byrne (2013). The median split procedure has been widely employed in the field of social psychology and consumer behavior research (Iacobucci et al., 2015)

Table 14
Results of Moderation Test

	Model	X^2	df	RMSEA	RMR	CFI	ΔX^2	Δdf	Critical Value	Sig.
Basic model		250.471	55	0.053	0.038	0.982				
Moderating model	Unconstrained	308.112	110	0.038	0.046	0.968				
	Constrained	380.884	116	0.043	0.084	0.958	72.772	6	22.46	p<.001

Structural equation analysis took the following procedure to test the H3. First, the fully unconstrained multi-group model with no constraints across samples on the structural parameters was tested. Then, all estimated path coefficients were constrained to equally across the two groups.

It can be judged a significant moderating effect presents if the change in the chi-square value is greater than the critical value indicated on the chi-square distribution table (Hsieh, 2010). Table 14 shows a significant change in the chi-square value from the constrained model (χ^2=380.884) to the unconstrained model (χ^2=308.112). 6 degrees of freedom corresponds to a critical value of 22.46 at an alpha of 0.001 according to the chi-square distribution table (confidence level of 99%). The current test showed that the change in the chi-square value is greater than the critical value from the chi-square table (72.772>22.46). Therefore, it can be concluded that team identification functions as a moderator between the fan constraints and loyalty relationship.

Table 15
Path Coefficient and Critical Ratio for Low and High Team Identification Groups

Paths	Low TI		High TI		Comparison
Parameters	β	t-value	β	t-value	
INTRA→AL	-0.220***	-4.077	-0.028	-0.437	L>H
STR→AL	-0.101*	-2.094	-0.261***	-4.119	L<H
INTRA→BL	-0.436***	-9.416	-0.136*	-2.096	L>H
STR→BL	-0.075*	-2.055	-0.274***	-3.831	L<H

***p<.001, ** p<.01, * p<.05
Note: TI=team identification

Comparing the path coefficient values between the low and high level team identification groups may clarify some differences among the presented paths. Table 15 demonstrates the regression coefficients from the low and high team identification groups. All unstandardized path coefficients were found to be identical across the two presented groups. This way, it can be inferred that the structural parameters defining the effects in this model are constant. Results from the analysis show that the relationship between intrapersonal constraint and both attitudinal and behavioral loyalty are moderated by team identification. In this case, the moderating effect is stronger in the low team identification group (β=-0.220***, t=-4.077, β=-0.436***, t=-9.416, respectively) than the high team identification group (β=-0.028, t=-0.437, β=-0.136*, t=-2.096, respectively). It was also revealed that team identification moderates the link between structural constraint and both attitudinal and behavioral loyalty, influencing greater on high team identification group (β=-.261***, t=-4.119, β=-.274***, t=-3.831, respectively) than low team identification group (β=-.101*, t=-2.094, β=-.075*, t=-2.055, respectively).

All the coefficient values for both low and high team identification groups appear to be significant. In addition, the path which predicted the moderating function of team identification on the connection between attitudinal loyalty and behavioral loyalty was found to be statistically significant. It can be understood that the moderating effect of team identification is stronger in the low team identification model (β=.493***, t=12.135,) than the high team identification model (β=.438***, t=5.840), representing the significant coefficient values for both groups.

3.6 Discussion and Findings

Drawing from leisure constraint theory (Crawford et al., 1991), the present study attempted to explore the role of fan constraints as the negative antecedents of team loyalty in the context of collegiate football fandom. It was found that the role of sport fan constraints can be understood in a similar context to leisure participation. That is, fan constraints were found to be a negative predictor of team loyalty.

The current study particularly evidenced that intrapersonal constraint is the most influencing factor in demotivating collegiate sport fan loyalty in both behavioral and attitudinal facets. Structural constraint was also revealed to be a negative determinant of both attitudinal and behavioral loyalty. However, interpersonal constraints were found to be an insignificant predictor of both attitudinal and behavioral loyalty. The results implied that while an individual's strained relationships with others is likely not an obstacle to team loyalty, one's negative psychological state including stress, anxiety, and indifference and physical barriers including time, money, and weather are negative determinants of his/her affiliation with a team.

The moderating effect of team identification on the relationship between fan constraints and team loyalty was also found to be significant. Although the role of team identification as a predicator of team loyalty has been identified in previous studies, its role as a moderator has been rarely examined. The current investigation revealed that individuals with psychological barriers are more likely to be demotivated to support team when weakly affiliated with the team. Individuals with physical obstacles are less likely to support their team when highly affiliated with the team.

4. EXPLORING DEMOGRAPHIC DIFFERENCES IN FAN LOYALTY AMONG COLLEGIATE SPORT FANS

4.1 Synopsis

The purpose of the present study is to reveal demographic differences (sex, age, income, parental education, and race) in loyalty among collegiate football fans, and to identify whether particular groups of respondents were prone to fan loyalty. The fundamental research objective centers on better understanding fan segmentation by investigating fan loyalty associated with demographic profiles.

Data was collected from 1,264 undergraduate and graduate students enrolled at an NCAA Division I university in the mid-south United States by using a self-administered online survey during the 2016 college football season. The questionnaire included four sections including attitudinal loyalty, behavioral loyalty, frequency of sporting event attendance, and demographic profile items.

The result of MANOVA analysis with a follow-up ANOVA post-hoc test identified that age, household income, parental education, and race are associated with sport fan loyalty. A subsequent multiple regression analysis revealed that parental education and race were significantly correlated with both attitudinal and behavioral loyalty, whereas household income affects only behavioral loyalty. Age, household income, and race were found to be significant predictors of sporting event attendance. However, the attributes of demographic factors had little impact separately.

Based on these results, it is argued that sport managers should likely consider elements of sport fan segmentation as predictors of fan loyalty to effectively marketing

(strategic marketing) sporting event and team. Effective branding to particular demographic segments, including those that have potentially been overlooked such as certain age groups of females, are perhaps market segments that should be paid more attention.

4.2 Introduction

Sport fandom is generally understood to encompass a plethora of activities including attendance at sporting events, purchasing apparel, being a part of a brand community and pride in the team, and travel. Such fandom is traditionally associated with professional athletics (Weiller & Higgs, 2008). In the United States, fandom is not as limited to professional athletics as it is in a majority of the rest of the globe, in that specifically NCAA college athletics are an integral part of the fan experience (Liu, Ter Hofstede, Duan, & Mahajan, 2015; Smith, 2013). For example, the National College Athletic Association (NCAA) reported that the total attendance at national college football games in 2014 was 49,072,591 (includes a total of 655 games) (NCAA Football Attendance, 2014). Football is not the only sport receiving intense viewership and fan participation in sporting activities. For instance, more than 33% of Americans watched at least one NCAA basketball game during the 2013 iteration of the tournament dubbed *March Madness* (Smith, 2013).

Attendance at NCAA events, particularly football, has been in a growth pattern for approximately two decades (Liu et al., 2015). Despite this growth in sports fandom, there are risks and challenges such as financial constraints that may accompany

university athletics. Realizing this, profit maximization by having loyal fans and increasing event attendance are believed to be fundamental to successful sport team management (Neale & Funk, 2006). Profit maximization in this situation may necessitate an updated understanding of markets and an ability to sustain a loyal group of fans, particularly as trends in fandom are potentially disconcerting for sporting teams that rely on fandom support for financial well-being. Furthermore, staying abreast of recent market segment trends is a best practice when individual consumers are a target market (Chandra & Kaiser, 2014).

Many studies in recent years have examined elements of what drives fan loyalty and event attendance specific to the context of spectating sports. Some researchers have identified satisfaction with team (Bodet & Bernache-Assollant, 2011; Matsuoka, Chelladurai, & Harada, 2003; Trail, Anderson, & Fink, 2005), physical sports facility (Greenwell, Fink, & Pastore, 2002), service quality (Theodorakis & Koustelios, 2009), and brand image (Bauer, Stokburger-Sauer, & Exler, 2008; Gladden & Funk, 2001) as significant predictors of team loyalty. It has also been discussed that team loyalty is positively linked to willingness to attend events or actual event attendance (Matsuoka et al., 2003; Wakefield, 1995; Neale & Funk, 2006; Wakefield & Sloan, 1995; Hill & Green, 2000). Recent data has shown that while there may be many drivers, a change in demographic patterns may be the most important trend in sport fandom in university athletics (Luker, 2016). Furthermore, the difference between willingness to attend and actual event attendance has not been studied specific to demographics on campus for

university athletic teams. Due to industry trends this short-coming in existing research may constitute a short-coming that is deserving of further investigation.

4.3 Literature Review

4.3.1 Trends in Sport Fandom

One of the most commonly used metrics for understanding fan engagement is sport spectator spending. Cannon and Ford (2002) offer insights and an understanding of how NCAA athletics, demographics, and sport spectator spending are correlated. Their research identified sport spectator spending as the market share of each dollar earned by a sport fan that is spent on their fandom activities, which include purchasing tickets to events as well as other activities associated with fandom such as travel, apparel, and experiential product spending. For example, if a sport fan makes $75,000 annually and spends $750 on their sport fandom then the spectator spending is 1%.

Relying on sport spectator spending as an indicator, fandom of university athletic teams has experienced an approximately century-long growth pattern. In fact, from the late 1980s until approximately 2011 there was exponential growth in sport spectator spending that went beyond personal spending growth (Cannon & Ford, 2002; Luker, 2016). Yet from 2011-2015 there has been a decline in sport spending; data from the past five years has evidenced a convoluted picture, with expenditures on sporting fandom not following trends that can be identified in the previous century (Luker, 2016). Many of these alterations in trends can be best understood via demographic data according to Luker (2016) (see Table 16).

Table 16
Sporting Expenditure Changes (2011-2014)

Men 12+	-8%
Men 12-17	-4%
Men 18-34	-12%
Men 35+	-7%
Women 12+	-3%
Women 12-17	-6%
Women 18-34	**+8%**
Women 35+	-8%
Parents	-1%
More interested in sports	-3%
Sports a high priority	-5%
Avid Sports Fan	-3%
Positive sponsor disposition	-2%
Online most of the day	-6%

Percent by group, decline or increase in spending monthly on sports in 2015 compared with the average percent of that group who spent monthly on sports in the 2011-2014 period (Luker, 2016)

The aforementioned changes in demographics impact current models of professional athletics because such models place profits above other qualities normally attributed to sporting activities (Késenne, 2014). Based on recent trends in data, it is possible that a greater understanding of demographics is needed in order to maintain profit levels, and perhaps to return profit growth to pre-2011 levels. Furthermore, understanding fan segments and managing fan loyalty are important components of profiting in sports marketing and the economics of professional team sports, which Késenne (2014) refers to as the body of literature under which this study falls.

4.3.2 Fan Loyalty

Building fan loyalty is considered a critical element when realizing teams' economic impacts on prosperity, and potentially survival. Despite this significance,

loyalty in the sport consumer domain is still relatively unexplored. Furthermore, sport consumer research has been focused on gender, rather than general demographic factors (Weiller & Higgs, 2008). For example, much scholarly work on the topic of sports fan behavior has been completed focusing on gender differences and evidenced males are more deeply concerned with sports than females (e.g., Dietz-Uhler et al., 2000; Galyon & Wann, 2012; James & Ridinger, 2002; Wann et al., 2004). As Table 16 shows, recent demographic trends need to be better understood particularly among females and their sporting fandom.

Some research has identified males as being more loyal to their fandom than females (Galyon & Wann, 2012). This is of particular importance to recently identified trends in demographic data because it has been commonly argued that loyalty is a key determinant of consumer decision making process (Yuksel, Yuksel, & Bilim, 2010).

Loyalty can be measured by behavioral and attitudinal components (Bee & Havitz, 2010; Bodet & Bernache-Asollant, 2011; Evanschitzky & Wunderlich, 2006). Yet, many researchers give priority to behavioral aspects (Griffin, 1995; Howard & Thomson, 1984). Behavioral loyalty refers to consumer's inclination to purchase the same products or brands repeatedly over time (Ehrenberg & Goodhardt, 2000). According to Aaker (1991), this repeat patronage behavior can be measured by investigating actual purchase patterns including purchase frequency, purchase quantity, or number of brands purchased. In the domain of sports, behavioral loyalty can be expressed by expenditure on team-related goods (Fisher & Wakefield, 1998; Trail et al., 2003; Kaynak et al., 2008), following the team on media (Melnick & Wann, 2004),

attending games (Gladden & Funk, 2001; Fisher, 1998; Laverie & Arnett, 2000; Wann & Branscombe, 1993), the length of being a fan (Kaynak et al., 2008), or purchasing season tickets (Bodet & Bernache-Assollant, 2011; Kaynak et al., 2008).

Although many researchers lean toward behavioral features to investigate loyalty, some limitations came to the forefront. Some researchers believe that only behavioral measures are not enough to determine one's loyalty due to the absence of attitudinal influences (Day, 1969; Dick & Basu, 1994; Baldinger & Rubinson, 1996; Keller, 1993). Day (1969) points out that attitudinal elements including a strong motive, emotion, or attachment may cause actual purchasing actions. The core premise of attitudinal loyalty is consumer's affection or attitudes (Uncles, Dowling, & Hammond, 2003). More concretely, attitudinal loyalty can be described as person's consistent attitude, preference, and cognitive commitment towards a particular subject regardless of situational variables. Pritchard, Havits & Howard (1999) asserts that loyalty is a potential consequence of "resistance to change within the commitment process". The resistance to change has been used to measure psychological commitment and attitudinal loyalty in various contexts (Funk & James, 2004; Iwasaki & Havitz, 2004; Heere & Dickson, 2008; Kyle, Graefe, Manning, & Bacon, 2004; Taylor, Celuch, & Goodwin, 2004). In sports marketing literature, attitudinal loyalty has been actively utilized as a tool to examine fan loyalty concomitant with behavioral loyalty (Biscaia, Correia, Rosado, Ross, & Maroco, 2013; Funk & James, 2006; Heere & Dickson, 2008; Neale & Funk, 2006).

4.4 Research Questions

To fill the aforementioned gap in literature and applied industry, which can be understood as a lack of understanding of demographic trends in NCAA sport fandom, the current investigation attempted to extend the research on fan loyalty specifically as it relates to certain demographic factors. Considering the lack of research on sport fan segmentation, the fundamental research objective of the present study centers on better understanding fan segmentation by investigating fan loyalty associated with demographic profiles. The purpose of the present study is to reveal demographic differences (sex, age, income, parental education, and race) in loyalty among collegiate football fans, and to identify whether particular groups of respondents were prone to fan loyalty.

The present study investigated demographic-based fan loyalty in three dimensions: behavioral loyalty, attitudinal loyalty, and actual event attendance. A similar two-fold approach to demographic factors and sport fandom is well-established (Laverie & Arnett, 2000; Gladden & Funk, 2001). This study differs in that behavioral loyalty and event attendance are treated as separate variables. This is because behavioral loyalty assumes willingness to behave and event attendance means actual event attendance behavior. The alteration made in this study is based on factors that have been advised in recent research, particularly from within studies whereby the event attendance variable is intended to measure behavioral loyalty.

With the aforementioned in mind, the following two questions emerged as paramount to this study:

- Question 1: How well does a set of demographic variables predicts sports fan loyalty?
- Question 2: Are there any statistically significant differences in fan loyalty across demographic factors?

4.5 Methods

The target population is students affiliated with a university athletic team. An NCAA-sanctioned FBS (Football Bowl Subdivision) collegiate community with a large football stadium potentially provides sources of motivation for students to engage in events and be committed to their home team. For this reason, data was collected from 1,264 undergraduate and graduate students enrolled at an NCAA Division I university in the mid-south United States by using a self-administered online survey during the 2016 college football season. The questionnaire included four sections including attitudinal loyalty, behavioral loyalty, frequency of sporting event attendance, and demographic profile items. Table 17 presents the demographic information of the respondents.

Table 17
Demographic Profiles of Respondents for Study 3 (n=1264)

Category	N	%
Gender		
Male	514	40.7
Female	750	59.3
Age		
<18	21	1.7
18-23	1014	80.2
24-30	134	10.5
31-40	58	4.6
41-50	25	2
51-60	10	0.8
>60	2	0.2
Household income		
Less than $10,000	43	3.4
$10,000 to $49,999	248	19.6
$50,000 to $99,999	320	25.3
$100,000 to $149,999	348	27.6
$150,000 and more	305	24.1
Father's education		
Uneducated	4	0.3
Elementary School	9	0.7
Middle School	30	2.4
High School	263	21
2-year College	136	10.7
4-year College/University	478	37.7
Graduate School and beyond	344	27.2
Mother's education		
Uneducated	4	0.3
Elementary School	9	0.7
Middle School	27	2.1
High School	254	20.1
2-year College	183	14.5
4-year College/University	527	41.7
Graduate School and beyond	260	20.6
Race		
American Indian or Alaskan native	6	0.5
Asian	79	6.3
Black or African American	43	3.4
Hispanic or Latino	211	16.6
Native Hawaiian or Pacific Islander	14	1.1
White	902	71.4

4.5.1 Measurement

The present study has demographic variables as independent variables that consist of: 1) sex; 2) age; 3) income; 4) parental education; and 5) race. These demographic indicators were generated considering college students' socioeconomic status (SES) that refers to "a composite measure that typically incorporates economic status, measured by income; social status, measured by education" (Dutton & Levine, 1989, p. 30). The survey instrument consisted of four sections: 1) attitudinal loyalty; 2) behavioral loyalty; 3) frequency of game attendance; and 4) demographic profiles.

The measurements used to investigate attitudinal loyalty were taken from resistance to change scale developed by Pritchard et al. (1999). Three subscales were measured on a 5-point Likert scale, which ranged from 1=strongly disagree to 5=strongly agree (e.g., "My preferences to the team would not willingly change", "It would be difficult to change my beliefs about the team", and "I could never switch my loyalty from the team even my friends were fans of another team").

For the behavioral loyalty constructs, four items operationalized from Fisher & Wakefield's (1998) group-supportive behaviors were used (e.g., "I will attend team's live games", "I will tune in to team's games through television, radio, the internet, or other media", "I will purchase the team's licensed merchandise", and " I will talk with others about my association with the team"). Responses for this construct were based on 5-point Likert scale ranging from 1=strongly disagree to 5=strongly agree.

Event attendance construct was added to measure actual fan behavior. While the behavioral loyalty items are measuring one's willingness to behave, the event attendance

construct is investigating one's actual event attending behavior based on experience. Single item measurement was used to obtain the information on the frequency of field event attendance (e.g., "How many times have you attended the team's game at home stadium in the past calendar year?").

4.5.2 Data Analysis

Reliability was examined to test the internal consistency of the measurement scales using the coefficient alpha (Cronbach, 1951). As shown in Table 18, the Cronbach alpha coefficient for the scales were satisfactory, exceeding the .70 threshold value suggested by Pallant (2005). AVE of latent constructs was further estimated to test the convergent validity. All of the AVEs justified convergent validity, exceeding the conventionally accepted threshold of 0.5. Furthermore, the loading matrix demonstrated that all the items loaded satisfactorily on the factors, exceeding the 0.6 level (Field, 2005).

Table 18
Results of Convergent Validity and Reliability Test for Study 3

Constructs	M	SD	Factor Loading	α	AVE
Attitudinal loyalty					
AL1	4.16	1.08	0.87	0.90	0.84
AL2	3.97	1.09	0.82		
AL3	4.14	1.12	0.92		
Behavioral loyalty					
BL1	4.11	1.19	0.77		
BL2	3.92	1.27	0.80	0.87	0.73
BL3	3.62	1.34	0.77		
BL4	3.75	1.30	0.86		
Event attendance				N/A	N/A
ATT			N/A		

The analysis of the current study consisted of two major steps. In the first phase, three separate multiple regression analyses were conducted to explore the predictive ability of a set of demographic variables on attitudinal loyalty, behavioral loyalty, and event attendance. In the second phase, a one-way between-group multivariate analysis was performed to investigate demographic differences in fan loyalty. Five multivariate analyses were conducted on five separate sets of demographic variables aforementioned. After conducting the MANOVA for each demographic group, if significance was found, an ANOVA was calculated to determine where differences existed. The mean scores of each group were then examined to identify which group responded higher on the factor.

4.6 Results

4.6.1 Research Question 1

Sex, age, household income, parental education, and race were used as independent variables to measure collegiate student fan loyalty. In order to investigate three constructs of fan loyalty including attitudinal, behavioral, and event attendance, three separate multiple regression analyses were performed. Table 19 summarizes the results of multiple regression analysis for each of the fan loyalty constructs.

Each model fit was evaluated based on the coefficient of determination (R^2), the significance level of each of the estimated regression coefficients, and the tolerance for each coefficient. In terms of multicollinearity, a value of 0.1 is recommended as the minimum level of tolerance (Tabachnik & Fidell, 2001). It was evidenced that there is no multicollinearity existing in the three regression models, as tolerance of attitudinal loyalty, behavioral loyalty, and event attendance ranged from 0.827 to 0.988.

Analysis of data identified model 3 as statistically significant $F(5, 1258)=34.537$, $p < .000$. In fact, model 3 best fits the data among the three projected fan loyalty constructs, explaining 12.1 % of the variance in event attendance. Specifically, model 3 indicates age, household income, and race as significant predictors of event attendance:

- Older people are less likely to attend events (β=-.276, t=-10.426, $p < .000$);
- Higher income households attend more events (β=0.126, t=4.339, $p < .000$);
- And racially, whites attend events more often (β=0.113, t=4.016, $p < .000$).

Despite the low proportion of variance explained, the results of model 1 and model 2 were found to be statistically significant, indicating $F(5, 1258)=3.217$, $p<0.01$, and $F(5, 1258)=4.696$, $p<.001$, respectively. The multiple regressions for model 1 accounted for 1.3% of the variability, as indexed by the R^2 statistic. This demonstrates that parental education and race are significant predictors of attitudinal loyalty. Individuals evidence lower attitudinal loyalty when parents are higher educated (β=-0.072, t=-2.39. $p<.05$). Also, whites have higher attitudinal loyalty compared to non-whites (β=0.071, t=2.387, $p<.05$).

The multiple regressions for model 2 accounted for 1.8% of the variability, demonstrating that household income, parental education, and race are significant antecedents of behavioral loyalty, indicating β=.10, β=-.08, and β=.05, respectively. The results can be interpreted that the higher the household income is, the higher the behavioral loyalty is (t=3.458, $p<.01$). The more the parents are educated, the lower behavioral loyalty that individuals showed (t=-2.695, $p<.01$). Whites have higher behavioral loyalty than non-whites (β=.05, t=1.799, $p<.05$).

Table 19

Results of Multiple Regression Analysis

DV	IV	B	SE B	β	t	Sig.	Tolerance
Model 1: Attitudinal loyalty	(constant)	4.337	0.182		23.83	0	
	sex	-0.017	0.058	-0.008	-0.301	0.763	0.988
	age	-0.069	0.039	-0.05	-1.766	0.078	0.976
	household income	0.044	0.027	0.05	1.626	0.104	0.829
	parental education	-0.063	0.026	-0.072	-2.39	0.017*	0.869
	race	0.16	0.067	0.071	2.387	0.017*	0.879
		R=.112, R^2=.013, adjusted R^2=.009 F(5,1258)=3.217, p=.007					
Model 2: Behavioral loyalty	(constant)	3.973	0.198		20.107	0.000	
	sex	-.026	0.063	-0.012	-0.410	0.682	0.987
	age	-.056	0.042	-0.038	-1.327	0.185	0.979
	household income	.101	0.029	0.106	3.458	0.001**	0.827
	parental education	-.077	0.029	-0.081	-2.695	0.007**	0.879
	race	.131	0.073	0.054	1.799	0.023*	0.891
		R=141, R^2=.020, adjusted R^2=.016 F(5,1258)=5.089, p=.000					
Model 3: Event attendance	(constant)	3.794	0.283		13.411	0.000	
	sex	0.017	0.090	0.005	0.185	0.854	0.987
	age	-0.634	0.061	-0.279	-10.426	0.000***	0.976
	household income	0.181	0.042	0.126	4.339	0.000***	0.829
	parental education	-0.011	0.041	-0.008	-0.276	0.782	0.869
	race	0.419	0.104	0.113	4.016	0.000***	0.879
		R=.348, R^2=.121, adjusted R^2=.117 F(5, 1258)=34.537, p=.000					

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

4.6.2 Research Question 2

A one-way between groups multivariate analysis of variance was conducted to investigate gender differences in fan loyalty. Three dependent variables were tested: attitudinal loyalty, behavioral loyalty, event attendance. There was no statistically significant difference between males (n=514) and females (n=750) on the combined dependent variables, F (3, 1206) = .129, p>.05. No further analysis was completed because the MANOVA evidenced statistically insignificant results.

For the age demographic variable, respondents identified with one of five groups: a) 18-23 years old (n=1,035), b) 24-30 years old (n=134), c) 31-40 years old (n=58), d) 41-50 years old (n=25), e) over 51 years old (n=12). As the significant value of Box's test of equality of covariance matrices is less than .001 (p=.000), Pillai's Trace was chosen as the appropriate statistics to interpret the MANOVA. Main effects indicated statistical significance, F (12, 3777) = 15.27, p = .000; Pillai's Trace = .13; partial eta squared = .04.

To identify where significant differences lie among the five age groups, a follow-up univariate analyses was conducted. Specifically, a one-way ANOVA was performed on the dependent variables that were significant in the MANOVA, using a Bonferroni adjusted alpha level of .017. It was determined that significant differences exited in the all three dependent variables associated with fan loyalty: a) attitudinal loyalty, b) behavioral loyalty, and c) event attendance (see Table 20).

Table 20
MANOVA for the Age Groups

Variable	Age	Mean	SD	F/Sig.	Post-hoc (Mean Difference)
Attitudinal loyalty	18-23	4.14	0.97	6.82/.000	18-23 > 24-30 (.43) over 51 > 24-30 (1.01) over 51 > 31-40 (.92)
	24-30	3.7	1.09		
	31-40	3.8	1.2		
	41-50	4.21	1.01		
	over 51	4.72	0.58		
Behavioral loyalty	18-23	3.9	1.04	7.15/.000	18-23 > 24-30 (.49) 41-50 > 24-30 (.81) over51 > 24-30 (.95)
	24-30	3.41	1.2		
	31-40	3.53	1.4		
	41-50	4.23	1.04		
	over 51	4.37	1.12		
Event attendance	18-23	3.48	1.62	33.03/.000	18-23 > 24-30 (1.35) 18-23 > 31-40 (1.72) 18-23 > 41-50 (1.47)
	24-30	2.13	1.32		
	31-40	1.76	1.12		
	41-50	2	1.11		
	over 51	2.42	1.5		

Pillai's Trace=.13; $F(12, 3777)=15.27$. $p<.001$, $\eta^2=.04$

Table 20 also presents the details of the means and differences for the statistically significant age groups. Post-hoc test employing Tukey identified that attitudinal loyalty differed significantly between the 18-23 and 24-30 years old group, over 51 and 24-30 years old group, and over 51 and 31-40 years old group. In the behavioral loyalty dimension, 24-30 years old age group has the smaller mean score than most of the age groups. The largest difference in the mean scores was between the 18-23 years old group and the 31-40 years old group on the event attendance variable.

For the household income variable, respondents identified with one of five groups: a) under $10,000 (n=43), b) $10,000 to $49,999 (n=248), c) $50,000 to $99,999 (n=321), d) $100,000 to $149,999 (n=347), and e) $150,000 or more. As the significant value of Box's test of equality of covariance matrices is greater than .001 (p=.157),

Wilks' Lamda was chosen as the appropriate statistics to interpret the MANOVA. Main effects indicated statistical significance, F (12, 3326) = 4.86, p = .000; Wilks' Lamda = .95; partial eta squared = .01.

To determine if there were differences in the responses among the five income groups, a follow-up one-way ANOVA was performed on the dependent variables that were significant in the MANOVA. A Bonferroni adjusted alpha level of .017 was used in this analysis. The differences that reach statistical significance were in the dimension of behavioral loyalty, $F(4, 1259)=3.48$, p=.008, partial eta squared = .01 as well as in event attendance, $F(4, 1259)=11.81$, p=.000, partial eta squared =.03. Table 21 summarizes the MANOVA, the follow-up univariate analysis, the post-hoc test, and the mean differences.

Table 21

MANOVA for the Income Groups

Variable	Income	Mean	SD	F/Sig.	Post-hoc (Mean Difference)
Attitudinal	under $10,000	3.75	1.09		
Loyalty	$10,000 to $49,999	4.09	0.86		Not
	$50,000 to $99,999	4.01	1.09		significant
	$100,000 to $149,999	4.15	0.95		
	over $150,000	4.13	1.05		
Behavioral	under $10,000	3.54	1.23	3.48/.008	$150,000 + > $50,000 to $99,999 (.24)
Loyalty	$10,000 to $49,999	3.76	1.08		
	$50,000 to $99,999	3.76	1.13		
	$100,000 to $149,999	3.9	1.04		
	over $150,000	4	1.08		
Event	under $10,000	2.53	1.8		$50,000 to $99,999 > $10,000 to $49,999 (.37)
Attendance	$10,000 to $49,999	2.76	1.57		$100,000 to $149,999 > under $10,000 (.83)
	$50,000 to $99,999	3.14	1.63	11.81/.000	$100,000 to $149,999 > $10,000 to $49,999 (.61)
	$100,000 to $149,999	3.37	1.66		$150,000 + > under $10,000 (1.05)
	over $150,000	3.59	1.61		$150,000 + > $10,000 to $49,999 (.83)
					$150,000 + > $50,000 to $99,999 (.45)

Wilks' Lamda=.95, $F(12, 3326)=4.86$, $p=.000$, $\eta^2=.01$

For the parental education variable, respondents identified with one of six groups: a) elementary school and under (n=13), b) middle school (n=28), c) high school (n=260), d) 2-year college (n=155), e) 4-year college (n=524), and f) graduate school and over (n=284). As the significant value of Box's test of equality of covariance matrices is greater than .001 (p=.715), Wilks' Lamda was chosen as the appropriate statistics to interpret the MANOVA. For the main effects of parental education, Wilks' Lamda=.955, $F(15, 3467)=3.88$, $p=.000$, indicating the combined dependent variables varied between parental education levels.

The sole difference to reach statistical significance when the results for the dependent variables were viewed independently was event attendance, $F(5, 1258)=7.162$, p=.000, partial eta squared = .02. This was found by using a Bonferroni adjusted alpha level of .017. In the event attendance dimension, the 4-year college group has the bigger mean score than the middle school group, the high school group, and the graduate school and over group. The largest difference in the mean scores was between the 4-year college group and the middle school groups, indicating the value of .98. Table 22 summarizes the MANOVA, the follow-up univariate analysis, the post-hoc test, and the mean differences for the parental education groups.

Table 22

MANOVA for the Parental Education Groups

Variable	Parental education	Mean	SD	F/Sig.	Post-hoc (Mean Difference)
Attitudinal loyalty	Elementary school or under	4.1	1.1		
	Middle school	4.05	0.77		
	High school	4.07	0.97		Not
	2-year college	4.1	0.98		significant
	4-year college	4.19	0.97		
	Graduate school +	3.88	1.09		
Behavioral loyalty	Elementary school or under	3.82	1.1		
	Middle school	3.8	1.09		Not
	High school	3.84	1.13		significant
	2-year college	3.96	1.07		
	4-year college	3.88	1.08		
	Graduate school +	3.71	1.09		
Event attendance	Elementary school or under	2.38	1.12		
	middle school	2.52	1.45		4-year college > middle school (.98)
	high school	2.92	1.62		4-year college > high school (.58)
	2-year college	3.21	1.67		4-year college > graduate school and beyond (.45)
	4-year college	3.5	1.64		
	Graduate school +	3.05	1.65		

Wilks' Lamda=.95, $F(15, 3467)=3.88$, $p=.000$, $\eta^2=.01$

For the race demographic variable, respondents identified with one of six groups: a) American Indian or Alaska Native (n=6), b) Asian (n=79), c) black or African American (n=45), d) Hispanic or Latino (n=212), e) Native Hawaiian or other Pacific Islander (n=11), and f) white (n=911). As the significant value of Box's test of equality of covariance matrices is greater than .001 (p=.139), Wilks' Lamda was chosen as the appropriate statistics to interpret the MANOVA. The one-way MANOVA revealed a multivariate main effect for race, Wilks' Lamda=.95, F(15, 3467)=4.09, p=.000, and effect size was small ($\eta 2 = .01$).

Subsequent univariate analysis of variance revealed significant differences existed in the attitudinal loyalty (F(5, 1258)=4.00, p=.001), behavioral loyalty (F(5,1258)=3.42, p=.004), and event attendance (F(5,1258)=9.07, p=.000) dimensions. The white group had the highest scores among all race groups. Table 23 presents the MANOVA, the follow-up univariate analysis, the post-hoc test, and the mean differences for the race groups.

Table 23
MANOVA for the Race Groups

Variable	Race	Mean	SD	F/Sig.	Post-hoc (Mean Difference)
Attitudinal loyalty	American Indian or Alaska Native	4.44	0.75	4.00/.001	White > Black/African America (.46)
	Asian	3.87	1.01		
	Black or African American	3.67	1.22		
	Hispanic or Latino	4.09	0.95		
	Native Hawaiian or other Pacific Islander	3.33	0.72		
	White	4.13	1		
Behavioral loyalty	American Indian or Alaska Native	4.25	0.7	3.42/.004	Hispanic/Latino > Asian (.42)
	Asian	3.43	1.1		White > Asian (.46)
	Black or African American	3.67	1.19		
	Hispanic or Latino	3.85	1.08		
	Native Hawaiian or other Pacific Islander	3.4	1.09		
	White	3.89	1.08		
Event attendance	American Indian or Alaska Native	3.17	2.04	9.07/.000	Hispanic/Latino > Asian (.77)
	Asian	2.33	1.47		White > Asian (1.04)
	Black or African American	2.4	1.61		White > Black/African American (.96)
	Hispanic or Latino	3.1	1.58		
	Native Hawaiian or other Pacific Islander	2.55	1.29		
	White	3.37	1.65		

Wilks' Lamda=.95, $F(15, 3467)=4.09$, $p=.000$, $\eta^2=.01$

4.7 Findings and Discussion

The present study attempted to understand that to what extent demographic factors influence sport fan loyalty. Specifically, the influences of sex, age, income, parental education, and race on sport fan loyalty in three dimensions including attitudinal loyalty, behavioral loyalty, and event attendance frequency.

4.7.1 Research Question 1

Some demographic factors were proved to have statistically significant influences on attitudinal loyalty, behavioral loyalty, and event attendance among collegiate sport fans. These are specific findings:

- Parental education has a direct and negative effect on attitudinal loyalty;
- Race has a direct and positive effect on attitudinal loyalty (i.e. whites are more loyal than non-whites);
- Income has a direct and positive effect on behavioral loyalty;
- Race has a direct and positive effect on behavioral loyalty (i.e. whites are more loyal than non-whites);
- Parental education has a direct and negative effect on behavioral;
- Income has a direct and positive impact on event attendance frequency;
- Race has a direct and positive impact on event attendance frequency (i.e. whites attend events more frequently than non-whites ;
- Age has a direct and negative effects on event attendance frequency.

Interestingly, race was found to make a statistically significant contribution to all three fan loyalty constructs, while sex was found to predict none of fan loyalty

constructs. Sports have been traditionally deemed a male-dominated territory. However, sex was not a significant predictor of sport fan loyalty in the current study.

Parental education and race were significant predictors of both attitudinal and behavioral loyalty. However, income was found to be a key indicator of behavioral loyalty only (not attitudinal loyalty). This can be interpreted that a willingness to attend games and to purchase team's licensed merchandise is associated with one's perception of household economic status. The influence of income was found more obvious in the event attendance construct that represents the frequency of one's actual event attendance at football field. Individuals' attitudinal or psychological commitment to a team can be connected to actual event attendance when they have financial abilities.

Age was evidenced to have a direct negative effect on event attendance even though it was identified as an insignificant determinant of attitudinal and behavioral loyalty. That is, the older the individual is, the less he/she is interested in attending sporting events at field.

4.7.2 Research Question 2

The study attempted to determine whether any statistically significant differences existed in fan loyalty across demographic factors. The results indicated that differences in fan loyalty based on demographic profiles do exist in all three constructs (i.e. attitudinal loyalty, behavioral loyalty, and event attendance).

4.7.2.1 Age

First, differences in all three dimensions were found based on age groups. In attitudinal loyalty, the over 51 year-old group reported a higher level of attitudinal

loyalty than the 24-30 year-old and 31-40 year-old groups. The 51+ year-old group also showed higher level of behavioral loyalty when compared to the 24-30 year-old group. In the behavioral loyalty dimension, the 24-30 year-old group reported lower levels than most of age groups including 51+, 41-50, and 18-23 year-old groups. In event attendance, however, the youngest age group reported the highest commitment level (when compared to 24-30, 31-40, and 41-50 year-old groups).

4.7.2.2 Household Income

Differences were identified when exploring fan loyalty and income. No significant differences were reported in attitudinal loyalty. In behavioral loyalty, however, the $150,000+ income group showed higher behavioral loyalty than the $50,000 to $99,999 group. In regards to event attendance, the highest income group reported higher event attendance more frequently than most income groups including the under $10,000, $10,000 to $49,999, and $50,000 to $99,999 income groups. The second highest income group ($100,000 to $149,999) also reported higher event attendance frequency than the smaller income groups.

4.7.2.3 Parental Education

The third finding is that differences by parental education were statistically significant only in the event attendance dimension. Interestingly, 4-year college groups reported higher frequency in event attendance than most parental education groups including middle school, high school, and graduate school and over groups.

4.7.2.4 Race

Statistically significant differences by race were detected in all three dimensions. In particular, whites reported higher levels of attitudinal loyalty than the black/African-American group. Whites also reported a higher frequency of event attendance than Asians and the black/African-American groups. Asians reported lower levels of behavioral loyalty and event attendance than whites or Hispanic/Latino.

4.7.2.5 Sex

Finally, there were no differences between male and females on any variable.

5. CONCLUSIONS

5.1 Theoretical Implications

The overall purpose of this dissertation was to better understand the formation of sport fan loyalty. The topic of loyalty formation has received attention in consumer behavior and sports management scholarship for more than two decades. However, the notion of identity orientations has received relatively little attention from sport scholarship in general.

The more specific purposes of this three-pronged dissertation was threefold: 1) to understand how fan loyalty with athletic teams is created from identity-based perspectives; 2) to investigate the influences of fan constraints upon loyalty and the role of team identification on the relationship between constraints and loyalty in the context of sport fandom; and 3) to explore demographic differences in loyalty among collegiate sport fans, and to identify the elements of sport fan segmentation as a predictor of fan loyalty.

Drawing on social identity theory (Tajfel, 1974), Study 1 examined the antecedents of sport fan loyalty to determine which subscales of identity orientations are best predicting sport fan identity. The role of sport fan identity as a predictor of loyalty was examined simultaneously. The results showed that fan identity with a college football team is positively influenced by one's social identity, masculine identity, and organizational identity. The study also showed that this formation is negatively affected by personal identity. Given the objectives of understanding the relationship between identity orientations and fan loyalty, a major finding of the present investigation is that

organizational identity is the most significant predictor of fan identity. Meanwhile, feminine identity which was hypothesized to negatively affect fan identity, was identified as statistically insignificant. These results indicate that femininity does not necessarily demotivate sport fan identity even though sport continues to be a male-dominated territory. In addition, a strong association between fan identity and two dimensions of loyalty (attitudinal and behavioral loyalty) was evidenced.

Accordingly, one of the major theoretical implications that this study contributes to is the extension of loyalty formation bases. This is in line with various identity orientations on the basis of social identity theory. By demonstrating that there are significant relationships between the identity-based predictors and sport fan loyalty, the current investigation provided insights into better understanding of what type of identity orientations have positive or negative influences upon fan identity. Also, the direct impacts of fan identity on both attitudinal and behavioral loyalty was evidenced. In the present study, fan identity proved to have more significant influences on behavioral loyalty than attitudinal loyalty.

The question of sport fan demotivation has received only minimal attention despite an abundance of research associated with sport fan motivation over the past two decades. This study may partially fill this gap. Specifically, the study demonstrated factors that de-promote a sport fan's loyalty in the attitudinal and behavioral dimensions by employing a leisure constraints theory.

Study 2 attempted to explore the role of fan constraints as a negative antecedent of team loyalty in the context of collegiate football fandom. This study particularly

evidenced that intrapersonal constraints are the most influencing factor in demotivating collegiate sport fan loyalty in both behavioral and attitudinal facets. Structural constraints were also revealed to be a negative determinant of both attitudinal and behavioral loyalty. However, interpersonal constraints were found to be an insignificant predictor of both attitudinal and behavioral loyalty.

The results implied that an individual's strained relationships with others is likely not an obstacle to team loyalty while one's negative psychological state (e.g. stress, anxiety, and indifference) and physical barriers (e.g. time, money, and weather) are negative determinants of his/her affiliation with a team.

The role of team identification as an antecedent of team loyalty has been investigated in some studies (e.g. Bernache-Assollant et al., 2007; Fisher & Wakefield, 1998; Trail et al., 2003) although such previous studies have not identified loyalty as a moderator in the relationship. The moderating effect of team identification on the relationship between fan constraints and team loyalty was also found to be significant in Study 2. This investigation revealed that individuals with psychological barriers are more likely to be demotivated to support team when weakly affiliated with the team. Individuals with physical obstacles are less likely to support their team when highly affiliated with the team. Furthermore, the findings of Study 2 provided empirical support for the applicability of a leisure constraint theory developed by Crawford and Godbey (1987) to individuals' constraints from leisure participation specific to fan loyalty in general.

Finally, the influences of demographic factors on sport fan loyalty were examined in Study 3. Loyalty has been generally measured by two indicators: attitudinal and behavioral loyalty (Bodet & Bernache-Assollant, 2011; Evanschitzky & Wunderlich, 2006). While attitudinal loyalty has been described as person's consistent preference and cognitive commitment towards a particular subject (Heere & Dickson, 2008; Uncles et al., 2003), behavioral loyalty has been described as consumer's inclination to purchase the same products/brands repeatedly over time (Ehrenberg & Goodhardt, 2000). However, this study measured fan loyalty in three aspects by differentiating the frequency of actual event attendance from behavioral loyalty (which refers to willingness to purchase rather than an actual purchase behavior).

Managing a sport team is a complex task due to various factors of the fan-team relationship (Funk & Pastore, 2000). The present study attempted to gauge the applicability of loyalty theories to the development of an integrated team loyalty model. This model was optimized to the field of sports in order to understand dynamics of team loyalty. It is believed that the current investigation provided insights to serve in better understanding how sport teams reflect a supporter's identity in the loyalty formation process, thereby adding meaningful theoretical implications in the domain of sports.

5.2 Practical Implications

The findings of the investigation suggest sport practitioners, particularly sporting event marketers, need to pay more attention to understanding the loyalty formation

process from identity-based and market segmentation perspectives, particularly as based upon demographic profiles.

Study 1 revealed that the most influencing factor for an individual's fan identity is one's organizational identity. This can be interpreted that the collegiate students who are highly identified with their school are more likely to care about their athletic team and its performance in the context of college football league. Results suggest that sport marketers are able to use salient identity orientations as a reference for target marketing and creating a strong connection between one's fan identity and behavioral loyalty aiming at effective marketing strategy and profit maximization.

Study 2 demonstrated factors that may de-motivate sport fan loyalty. Sport practitioners may be able to develop marketing strategies that focus on minimizing physical barriers including ticket price, game schedule, and stadium facilities armed with this information. They can also focus on developing entertaining factors in addition to the primary sporting contest. This may attract individuals with intrapersonal constraints by offering additional events.

The results of Study 2 also suggest that sport practitioners may be wise to focus on promoting individuals' team identification. This is because team identification offsets a negative link between psychological barriers and team loyalty. An individuals' salient identity affects fan identity (team identification) as demonstrated in Study 1. This information can potentially be utilized as a marketing guideline.

Finally, demographic profiles have been overlooked as predictors of fan loyalty. This seems to be particularly true in NCAA sanctioned college football. Sport managers

should likely consider elements of sport fan segmentation as predictors of fan loyalty when marketing sporting events and teams according to the results of Study 3. Effective branding to particular demographic segments, including those that have potentially been overlooked such as certain age groups of females, are perhaps market segments that should be paid more attention.

5.3 Delimitations

Delimitations are parameters a researcher sets for their study (Simon & Goes, 2013). This study has the following delimitations:

- This study was delimited to Texas A&M University students attending the College Station campus. Differences in schools and geographic locations were not explored.
- For identity orientations, the study only focused on the most pertinent variables to achieve the study's objectives.
- This study tested the conceptual model delimited to NCAA-sanctioned collegiate football. Therefore, different sports at the university level as well as professional leagues may not be applicable.
- The data was collected immediately after the football season had ended. This time of year may exhibit a student body with higher than normal fandom due to the completion of the season and post-season.
- Qualitative research was not conducted specific to this student group prior to the quantitative portion of the study taking place.

5.4 Limitations

Limitations are issues that arise in a study which are beyond the control of the researcher (Simon & Goes, 2013). The current study has the following limitations:

- Fandom is an experiential activity. Each university student was able to notate their own social construction of their fandom in the survey.
- The author of this study is a currently enrolled student in a university and the survey participants are also currently enrolled students. This may lead to certain biases. For example, the researcher may want the university students to come across well.
- All students currently enrolled at the university received an invitation to participate in this study via email. Each student chose for themselves whether they would participate or not (i.e. self-selection). There is a possibility that students who were more interested in football were more likely to complete the survey. This could also mean that students who are less interested in football were less likely to complete the survey.

The scope of this study was limited to college football in a selected location of the mid-south region of the United States. Limitations and future research suggestions are raised from the limited research setting. First, the questionnaire employed was designed for a college football setting and the data was collected from currently enrolled college students, which limits the study's generalizability.

Secondly, the five types of identity orientations hypothesized as determinants of fan identity were selected in consideration of college student respondents. For example, university identity is representing an individual's organizational identity in the current setting. Sport teams as hybrid identity organizations (Albert & Whetten, 1985), a variety of heterogeneous identity, can be combined in different ways depending on the context of sport and the study population.

In addition, this study tested the conceptual model in a football league. Therefore, potential differences in fan constraints, depending on the type of sport, were overlooked by examining football-specific constraints. For example, football is the most expensive sport to spectate at event while attendance at other events are comparatively low or even free of charge.

5.5 Recommendations for Future Research

Recommendations for future research typically fall into one of six types of suggestions according to Laerd Dissertation (2016). These include:

1. When a finding in one's study leads to enhanced or additional studies there may be a recommendation;
2. When a research study has a flaw, perhaps stemming from a theory, framework, or model, then there may be a suitable reason for additional research;
3. When a study employs a specific theory, framework, or model and findings suggest there may be an additional or even a more suitable one available for best understanding a phenomenon;

4. Cultures, locations, and contexts are not necessarily similar. If a study employs a specific case then perhaps it is worth applying the same, or an extremely similar study, in a new setting in order to potentially establish credibility and/or replicability;
5. Not all findings are necessarily replicable, even in a study setting. When an identical study is employed multiple times in even identical settings with the same participant group(s) it is possible that the results will be different. Thus, it may be wise to re-evaluate the same study in the same location;
6. Finally, the expansion of a theory, framework, and/or model may be suitable to the findings.

This study has multiple recommendations for future research based on the aforementioned six potential characteristics.

- Future research could reflect various identity orientations that were not investigated in this study. This could include but is not limited to demographic elements and self-selection divisions such as religious identity, city identity, cultural identity, etc.
- Future research could be conducted in alternate sport leagues within the NCAA, professional sport leagues, minor leagues, and even high schools and traveling teams for other age groups. For example, there is a noticeable hierarchy of sports on university campuses. Baseball, basketball, ice hockey, and some other sports have high attendance at some schools. Conversely, tennis, swimming, and most track & field events in the NCAA rarely have high attendance at their events.

Furthermore, professional sport leagues such as MLB, NFL, or the NHL will likely have strong fandom support. Yet, some cities will likely evidence higher fandom than others. Cities such as Tampa Bay, Miami, and San Diego are known for not supporting their teams on par with cities such as Chicago, Boston, or Dallas. Even small towns may have minor league baseball or ice hockey teams with a high level of support. Finally, there has been enormous growth in recent years for traveling teams in baseball and basketball in young age groups. Some of these games at only twelve years of age elicit 5,000+ individuals in attendance. Studying fandom in these types of teams may provide trendy and useful information.

- Future research should be conducted in different size schools in different locations (e.g. outside the southeastern portion of the USA). It is possible that large state schools evidence a different level of support and fandom than smaller schools in alternate regions.
- Finally, the settings and findings of the current study should be re-specified in future studies for generalizability when targeting different types and scales of sport fandom.

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APPENDIX

SECTION A: Sporting Event Attendance

1. How many times have you attended a Texas A&M football game at Kyle Field in the past calendar year?

① 0 ② 1-2 ③ 3-4 ④ 5-6 ⑤ 7-8 ⑥ More than 9 times

2. How many times have you watched a Texas A&M football game on TV in the past calendar year?

① 0 ② 1-2 ③ 3-4 ④ 5-6 ⑤ 7-8 ⑥ More than 9 times

SECTION B: Identity Characteristics

※Instruction: These items describe different aspects of identity. Please read each item carefully and consider how it applies to you. Fill in the blank next to each item by choosing a number from the scale below:

3. How do each of the following statements apply to your sense of who you are:	Not Important	Slightly Important	Somewhat Important	Very Important	Extremely Important
My personal values and moral standards	**1**	**2**	**3**	**4**	**5**
My dream and imagination.	**1**	**2**	**3**	**4**	**5**
My personal goals and hopes for the future	**1**	**2**	**3**	**4**	**5**
My emotions and feelings	**1**	**2**	**3**	**4**	**5**
My thoughts and ideas	**1**	**2**	**3**	**4**	**5**
The ways I deal with my fears and anxieties	**1**	**2**	**3**	**4**	**5**
My feelings of being a unique person, being distinct from others	**1**	**2**	**3**	**4**	**5**
Knowing that I continue to be essentially the same inside even though life involves many external changes	**1**	**2**	**3**	**4**	**5**
My self-knowledge, my ideas about what kind of person I really am	**1**	**2**	**3**	**4**	**5**
My personal self-evaluations, the private opinion I have of myself	**1**	**2**	**3**	**4**	**5**

4. How do each of the following statements apply to your sense of who you are:	Not Important	Slightly Important	Somewhat Important	Very Important	Extremely Important
My popularity with other people	1	2	3	4	5
The ways in which other people react to what I say and do	1	2	3	4	5
My physical appearance: my height	1	2	3	4	5
My physical appearance: my weight	1	2	3	4	5
My physical appearance: the shape of my body	1	2	3	4	5
My reputation, what others think of me	1	2	3	4	5
My attractiveness to other people	1	2	3	4	5
My gestures and mannerisms, the impression I make on others	1	2	3	4	5
My social behavior, such as the way I act when meeting people	1	2	3	4	5

5. To what degree do each of the following characteristics apply to you:	Never True	Rarely True	Neither True nor Untrue	Sometimes True	Always True
Have leadership abilities	1	2	3	4	5
Willing to take a stand	1	2	3	4	5
Ambitious	1	2	3	4	5
Competitive	1	2	3	4	5
Dominant	1	2	3	4	5
Assertive	1	2	3	4	5
A strong personality	1	2	3	4	5
Forceful	1	2	3	4	5
Act like a leader	1	2	3	4	5
Aggressive	1	2	3	4	5

6. To what degree do each of the following characteristics apply to you:	Never True	Rarely True	Neither True nor Untrue	Sometimes True	Always True
Affectionate	1	2	3	4	5
Loyal	1	2	3	4	5
Tender	1	2	3	4	5
Sensitive to others' needs	1	2	3	4	5
Sympathetic	1	2	3	4	5
Compassionate	1	2	3	4	5
Eager to soothe hurt feelings	1	2	3	4	5
Understanding	1	2	3	4	5
Gentle	1	2	3	4	5
Warm	1	2	3	4	5

7. How do the following statements apply to you:	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly
When someone criticizes Texas A&M University, it feels like a personal insult.	1	2	3	4	5
I am very interested in what others think about Texas A&M University.	1	2	3	4	5
When I talk about Texas A&M University, I usually say 'we' rather than 'they'.	1	2	3	4	5
Texas A&M University's successes are my successes.	1	2	3	4	5
When someone praises Texas A&M University, it feels like a personal compliment.	1	2	3	4	5
If a story in the media criticized Texas A&M University, I would feel embarrassed.	1	2	3	4	5

8. To what degree do each of the following statements apply to you:	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
It is important to me that the Texas A&M football team wins.	1	2	3	4	5
I consider myself a fan of the Texas A&M football team.	1	2	3	4	5
My friends consider me a fan of the Texas A&M football team.	1	2	3	4	5
I closely follow the Texas A&M football team during the season in person, on television, on the radio, in the news, and/or in the newspaper?	1	2	3	4	5
I consider myself a fan of the Texas A&M football team.	1	2	3	4	5
I dislike Texas A&M football's rivals (i.e. LSU, Arkansas, Texas, Alabama)	1	2	3	4	5
I display the Texas A&M football team's insignia at my place of work, where I live, and/or on my clothing?	1	2	3	4	5

SECTION C: Sports Fan Constraints

9. To what degree do each of the following statements apply to you:	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
I don't like to watch sports games.	1	2	3	4	5
I don't like to watch football games.	1	2	3	4	5
I don't know how or where I can watch football games.	1	2	3	4	5
I like to do other things for recreation.	1	2	3	4	5
I don't have any friends or companions to watch sports games together.	1	2	3	4	5
My family has no interests in watching sports games.	1	2	3	4	5
No one I know watches football games.	1	2	3	4	5
I don't have enough money to spend on football game watching.	1	2	3	4	5
I don't have enough time to watch football games.	1	2	3	4	5
I am too busy with other activities.	1	2	3	4	5
There is no way to have access to sports games.	1	2	3	4	5

SECTION D: Sports Fan Loyalty

10. To what degree do each of the following statements apply to you:	**Strongly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Strongly Agree**
My allegiance to the Texas A&M football team would not willingly change.	**1**	**2**	**3**	**4**	**5**
It would be difficult to change my beliefs about the Texas A&M football team.	**1**	**2**	**3**	**4**	**5**
I could never switch my loyalty from the Texas A&M football team even if my close friends were fans of another team.	**1**	**2**	**3**	**4**	**5**

11. To what degree each of the following statements apply to you:	**Strongly Disagree**	**Somewhat Disagree**	**Neither Agree nor**	**Somewhat Agree**	**Strongly Agree**
I will attend the Texas A&M football team's live games.	**1**	**2**	**3**	**4**	**5**
I will tune in to the Texas A&M football team's games through television, radio, the internet, or other media.	**1**	**2**	**3**	**4**	**5**
I will purchase the Texas A&M football team's licensed merchandise.	**1**	**2**	**3**	**4**	**5**
I will talk with others about my association with the Texas A&M football team.	**1**	**2**	**3**	**4**	**5**

SECTION E: Demographic Questions

※ The Followings are for statistical processing. Please mark(V) your answers.

12. What is your gender?

① Male ② Female

13. Please mark your age range.

① <18 ② 18-23 ③ 24-30 ④ 31-40 ⑤ 41-50 ⑥ 51-60 ⑦ >60

14. Which of the following best describes your parents' household income?

① Less than $10,000 ② $10,000 to $49,999 ③ $50,000 to $99,999 ④ $100,000 to $149,999

⑤ 150,000 or more

15. Which of the following best describes your father's highest educational attainment?

① Uneducated ② Elementary School ③ Middle School ④ High School ⑤2-year College

⑥ 4-year College/University ⑦ Graduate School and Over

16. Which of the following best describes your mother's highest educational attainment?

① Uneducated ② Elementary School ③ Middle School ④ High School ⑤2-year College

⑥ 4-year College/University ⑦ Graduate School and Over

17. Please specify your race.

① American Indian or Alaska Native ② Asian ③ Black or African American ④ Hispanic or Latino ⑤ Native Hawaiian or Other Pacific Islander ⑥ White