Original Article

Enhancement of non-academic environment by intercollegiate athletics and its intangible benefit in higher education

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Abstract:

This study examined team identification as a non-academic environment predictor of academic performance through an enhanced sense of belonging to the university. Data were collected with a convenience sample of 274 undergraduate students from a major university in the southeastern region of the United States. Findings indicated that while team identification did not have a direct relationship with academic performance, when mediated by a sense of belonging to the university, team identification explained a significant amount of unique variance in academic performance. This study may provide significant insight into intercollegiate athletics generating an intangible benefit in students' academic performance. By understanding an intercollegiate athletic program as one of the academic facilitators associated with academic performance, college administrators can utilize the appropriate environment of college sports to assist students' academic success.

Key words: team identification, college identification, academic performance

Introduction

Intercollegiate athletic programs have been grown over 150 years, and the campus festivals via college sports facilitate college environment surrounding success in seasons and competition with a rival team. In addition, the circumstances have become a powerful business integrating students, alumni, family, and other fans in our society (Clopton, 2008). In this sense, there is an argument that intercollegiate athletic programs characterize the college due to the power of cultural value affiliating other identified fans (Clopton, 2008; McEvoy, 2006; Toma & Cross, 1998).

Team identification is defined as psychological attachment toward a certain sport team and has been analyzed to understand social-psychological symptoms of sport fans (Koo & Hardin, 2008; Trail, Anderson, & Fink, 2000; Wann & Pierce, 2005). In higher education, Koo, Sung, and Martinez (in press) examined positive effects of the level of team identification in a college football team on students' adjustment toward college. They revealed that team identification toward a college sport team generates positive social interaction with other students, which have direct relationships with social and emotional adjustments (Koo, et al, in press). The phenomenon is consistent with socio-psychological well-being that highly identified individuals have more opportunities to integrate with other social group members and finally influence levels of depression, loneliness, and personal self-esteem (e.g., Wann, 2000, 2006; Wann, Dunham, Byrd, & Keenan, 2004; Wann & Pierce, 2005; Wann & Weaver, 2009). While they share self-concept and information through social activities, the individuals' identity for a certain group is enhanced and it facilitates strong bond with the social group (Wann, 2004).

Social identity theory developed by Tajfel (1981) supports the aforementioned circumstances. For instance, Tajfel (1981) observed that an individual's perceived affiliation with a favorite group reflects identification to the preferred group and plays a major role in-group association for an individual. Active interaction with the in-group members let individuals compare with rival groups creating a significant boundary against out-group members as well as boost the level of affiliation with the in-group (Tajfel, 1981). Sharing common interests and personal self-concept, the circumstance enables them to build strong group identification (Brewer 1979; Brandscombe & Wann 1991; Wann, 2000).

Along with effects of team identification supported by social identity, how the positive benefit of intercollegiate athletic programs derives to students has been paid attention to higher education. Mangold, Bean, and Adams (2002) specified that intercollegiate athletic programs create a student's affiliation and rich a sense of belonging to the school. The university is a larger community structure and heavily relied upon for a strong sense of social experiences such as campus culture and variety social clubs (Clopton, 2011). In conjunction with the sense of intercollegiate athletic identification, intercollegiate athletic programs promote campus tradition and ritual including tailgates parties, winning history and team symbols, as well as unique color representing a certain university (Clopton 2008; Smith, 1988). The relationship between intercollegiate athletic teams and the

large community was also supported by Wann and Robinson (2002). They concluded students who were highly identified to a college team have more tendencies to not only identify with their university but also decrease a perception of dropping out of the educational institution. With these studies in mind, the benefit of identifying toward intercollegiate athletic programs should be considered a major goal of higher education.

Along with social connection and sense of college community, non-academic environments such as social experiences in college life directly influence scholastic success, which, another major goal of higher education (Murray-Harvey & Slee, 2007). A number of students have failed to complete a degree in certain college fields due to lack of social relationships and academic setting, which has become a major challenge for higher education facilities in maintaining their students (National Center for Education Statistics, 2011). The most studied factors in previous research, focused on demographics, personality trait, coping styles, and social support to understand students' college life (c.f., Pedrotti, Edwards, & Lopez, 2008; Pittman & Richmond, 2007, 2008; Shankland, Genolini, Franca, Guelfi, & Ionescu, 2010). Pittman and Richmond (2008) examined the relationship between college identification and educational aspects. They revealed that students who had strong college identification were shown to possess higher levels of positive self-worth and perceived scholastic competence.

While identification of intercollegiate athletics has a significant relationship with social integration and the enhancement of college identification, the well-constructed campus life through positive social activities could additionally influence the student's academic success in higher education (Astin, 1984; Bettencourt, Charlton, Eubanks, Kernahan, & Fuller 1999; Walton & Cohen, 2011). The findings coincide with Walton and Cohen (2011), supporting that the intervention of social group affiliation promotes grade point average (GPA) and decreases the academic gap for minorities. Beyer and Goossens (2003) also purported that social group involvements are positively interrelated with academic motivation, grade point average, and social-emotional functioning in education, while denoting a negative relationship with levels of depressive symptoms and rates of school drop out. Furthermore, a number of researchers suggested that a non-academic environment, such as college satisfaction and positive circumstances in college life, directly influences scholastic competence through a student's sense of college identification and mental health (Arndt, Greenberg, Schimel, Pyszczynski & Solomon, 2002; Murray-Harvey & Slee, 2007).

Although much research in higher education has found that the enhanced performance in schoolwork is one of the major determinants for academic success (Arndt, Greenberg, Schimel, Pyszczynski & Solomon, 2002; Astin, 1984; Beyer & Goossens, 2003; Pittman & Richmond, 2008), there is still lack of research on the possible intangible benefit of intercollegiate athletics on academic performance in higher education. Therefore, this study was intended to explore roles team identification has on academic performance through an enhanced sense of belonging to the university by testing the hypothesized research model (Figure 1) and three hypotheses:

RH1: Team identification has a direct relationship with a sense of belonging to the university.

RH2: A sense of belonging to the university has a direct relationship with academic performance.

RH3: A sense of belonging to the university has a mediating effect between team identification and academic performance.

Figure 1. Proposed structural model

Material & methods

Participants

A convenient sample of 274 undergraduate students enrolled in a major public university in the southeastern region of the United States was recruited for this study. Additionally, the university sampled was considered a good example to support an important role of intercollegiate athletics (i.e., team identification) in terms of attendance and winning (Wann, Tucker, & Schrader, 1996). Of the total 274 students, 109 (39.8%) were male and 165 (60.2%) were female including 24 freshmen (8.8%), 59 sophomores (21.6%), 105 juniors (38.3%), and 85 seniors (31.0%). The majority of students (60%) were between the ages of 19 and 22 while the mean age of participants was 20.98 years ($SD = 3.24$). A total of 274 undergraduate students were invited to participate in the online survey through email. This study employed a cross-sectional quantitative survey design. A sample of undergraduate students was chosen from the general elective courses offered by the university. Students were contacted via e-mail and were asked to complete a self-administered on-line survey. McDonald and Adam (2003) suggested that an on-line survey has some advantages such as lower costs, higher response rate, and lower rate of missing data as compared to traditional ones (e.g., pen-paper and telephone method).

Measurement

The proposed model contains three major components, including team identification, a sense of belonging to the university, and academic performance. First, the Spectator Sport Identification Scale (SSIS:

Wann & Branscombe, 1993) was used to measure team identification anchored by Likert scale items ranging from (1) strongly disagree to (5) strongly agree (e.g., "I strongly see myself as a fan of..."). Team identification items were slightly modified for the purpose of the study. The SSIS scale has been reported shown to be highly reliable; Wann and Branscombe (1993) reported an internal consistency of 0.91. The strong reliability exceeded an acceptable level of .70 threshold (Nunnally & Bernstein, 1994).

Second, academic performance was measured by Students Adaptation to College Questionnaire (SACQ) developed by Backer and Siryk (1989). Participants responded on a five-point Likert-type scale anchored by (1) strongly disagree to (5) strongly agree. In the SACQ, the academic performance contains nine items measuring the performance of schoolwork in the college (e.g., "I am satisfied with academic performance"). According to Dahmus, Bernardin, & Bernardin (1992), internal consistency of academic performance subscale ranged from .81 to .90. Therefore, the scale of SACQ was considered to have an acceptable level of reliability exceeding the .70 threshold (Nunnally & Bernstein, 1994).

Third, a sense of belonging to the university subscale includes seven items measuring preferences to attend and sense of transfer to another college (e.g., "I am pleased with decision to go to the college"), originally adapted by the Student Adaption to College Questionnaire (SACQ: Backer & Siryk, 1989). Backer and Siryk (1989) reported internal consistency of the college identification items of 0.80. The strong reliability is considered an acceptable level, exceeding the .70 threshold (Nunnally & Bernstein, 1994).

Data Analysis

Data were analyzed using IBM SPSS version 20.0 and EQS 6. Covariance matrix and maximum likelihood estimation were utilized for all measurement and structural equation model (Hu & Bentler, 1999). First, a confirmatory factor analysis (CFA) was employed to examine the psychometric evaluation. Second, structural equation modeling (SEM) was conducted to scrutinize a favorable model fit and relationships among latent factors including team identification, a sense of belonging to the university, and academic performance. The overall model fit was measured by the indices recommended by Hu and Bentler (1999), including the root mean square error of approximation (RMSEA) ($< .06$), the standardized root mean squared residual (SRMR) ($< .09$), and the comparative fit index (CFI) ($> .90$).

Results

Psychometric Evaluation of the Measures

A confirmatory factor analysis (CFA) was employed to examine whether the items actually measure each related latent construct as well as whether a latent construct is distinct to the other constructs (Hair, Black, Babin, Anderson, & Tatham, 2006). With 23 items, the first item of each latent construct was fixed by the numeric value equal to one for the model identification.

Four of seven items in a sense of belonging to the university and six of nine items in academic performance that were reverse coded resulted in a lack of favorable fit, indicating that the model was misspecified. While a bi-factor model has consequence about the scale linking, it is potentially able to imply to factors hypothesized to account for the commonality of the items. (Chen, West, & Sousa, 2006; Reise, Morizot, & Hays, 2007). As suggested, this study employed a bi-factor model specifying each item reverses coded. For example, bi-factor factor models for a sense of belonging to the university hypothesized that the responses could be explained by one factor, which, in turn, four of seven items were specified as one factor, scores reversed. In addition, academic performance bi-factor model hypothesized a single factor that underlies each of items and separate four items reverses coded. Finally, the results of fit indices demonstrated bi-factor model improves the favorable model fit.

The estimates of exact, absolute, parsimonious, and incremental fit indices demonstrated a favorable model fit for the initial measurement model: $\chi^2(213) = 577.200, p < .001$; Standardized Root Mean Squared Residual (SRMR) = .071; Root Mean Square Error of Approximation (RMSEA) = .079; Comparative Fit Index (CFI) = .889. The Lagrange Multiplier (LM) tests suggested that the model fit would be slightly better if the covariance of two pair of error terms were allowed to be freely estimated. Therefore, the final measurement model allowed the covariance of error terms because the modification was supported by the theoretical rationale. For instance, the pair of error terms that were allowed to freely estimate were, *I think a lot about dropping out of college permanently and I think about taking time off from the university, and I would prefer to be at another college rather than the university and I think about transferring to another college from the university*. While each two items assessed the same construct, the error terms could be allowed to covary each other. All fit indices for the modified measurement model met the recommended values specifying a good model fit to the data (Hu & Bentler, 1999; Kelloway, 1998): $\chi^2(211) = 525.785, p < .001$, SRMR = .070, RMSEA = .074, CFI = .904. The selected model indices recommended the use of the modified measurement model as part of a structural model examining causal relationships among the latent constructs.

Decomposition of the SEM

As shown in Table 2, the model indices derived from the SEM revealed a good fit to the data; $\chi^2(212) = 526.361, p < .001$, SRMR = .071, RMSEA = .074, CFI = .904, and all estimated parameters were significant. Although the results of the LM test suggested model modifications, which would provide a slightly better fit to

the data, the recommended modifications were not theoretically justifiable. Therefore, no additional path was included in the SEM for the further consideration.

Table 1. Decomposition of Effects with Standardized Values

Outcome	Predictor	Effects		
		Direct	Indirect	Total
Sense of belonging to the university $R^2 = .149$	Team Identification	.347 *		.347
Academic Performance $R^2 = .399$	Sense of belonging to the university	.398 *		.399
	Team Identification		.138 *	.138

* $p < .001$

Decomposition of significant relationships derived from the SEM revealed that students highly identified with a certain team increased their level of the sense of belonging to the university ($t = 2.397, p < .05$). For instance, a one standard deviation increase in team identification will lead to a .347 standard deviation increase in the sense of belonging to the university. The sense of belonging to the university influenced by team identification had a direct positive impact on academic performance ($t = 2.641, p < .05$), supporting the mediating role of the sense of belonging to the university between team identification and academic performance. For instance, a one standard deviation increases in the sense of belonging to the university will lead to a .399 standard deviation increases in academic performance.

Discussion

Previous research has suggested an important role of non-academic environment (e.g., sense of belonging to the university) in facilitating academic achievement, a major goal of academic institutions in higher education (Astin, 1984; Bettencourt, Charlton, Eubanks, Kernahan, & Fuller 1999; Murray-Harvey & Slee, 2007; Walton & Cohen, 2011). This current study has provided a better understanding of the intangible benefits of intercollegiate athletic programs on academic performance, mediated by a sense of belonging to the university, which assists to integrate campus life as well as academic success. In particular, the enhanced psychological attachment generating group identification, explained by social identity theory (Tajfel, 1981), represents a link between team identification and college identification, as well as a direct influence on academic performance.

The finding that team identification has a significant role to enhance a sense of campus belonging in higher education suggests a parallel parallel with previous research. In particular, positive social group interaction by identification to college teams significantly enhances students' social and emotional connection with campus environment (Koo, et al, in press). On a similar note, the students' social affiliation assists to decrease loneliness in campus life, and finally results in decreasing the rate of incomplete college degrees (Koo, et al, in press; Wann & Robinson, 2002). For example, intercollegiate athletic programs positively represent college history, tradition, logo, and color in sense of community (Clopton 2008; Smith, 1988). Additionally, students who are highly identified to a college team would have more tendencies to consider teams' winning, to consume time to watch games, to display the team's name or logo, and to attend social parties such as tailgate events (Trail, Anderson, & Fink, 2000; Wann & Pierce, 2005). While college life relied on positive social experiences, this study suggests that a sense of involvement in intercollegiate athletics is one of the tools to generate social affiliation.

Another finding of this study is that sense of belonging to the university enhanced by identification toward intercollegiate athletic programs promotes academic performance in higher education. Particularly, this result supports previous findings that the non-academic environment enhances students' academic setting while the sense of belonging to the university is significantly influenced by college satisfaction and positive social circumstances in college life (Murray-Harvey & Slee, 2007; Pittman & Richmond, 2008). The findings also parallel a study by Walton and Cohen (2011), representing an intervention of positive social experiences in campus community improves students' final grade point averages (GPA). Additionally, the sense of college belonging motivates students' academic achievement, as well as reduces depressive symptoms and perception of college dropping out (Beyer & Goossens, 2003). While the sense of belonging to the university is prominently generated by positive social affiliation through intercollegiate athletic program, it is important to note that students who have a strong bonding with college have positive self-worth and perceived scholastic competence, which in turn, is a major goal of academic institutions in higher education.

As a result, this study indicated that even though team identification does not directly influence academic performance, team identification has a significant role in improving the sense of belonging to the university, which has a direct impact on enhancing academic performance. The current study implies prominent

suggestions to college administrators. College administrators should emphasize the intangible benefits of college sport teams facilitating the strong bond with a college as well as indirectly assisting academic achievement in higher education. For example, a lack of social association with other students and academic setting is one of the major issues for students who failed to complete their college degree. (National Center for Education Statistics, 2011). The phenomenon has become a critical issue because the academic success is the major goal of higher education, which is related to students' future employment, level of wage, and skilled labors (Murnane & Levy, 1996). In this regard, our finding reinforces the relationship between students and intercollegiate athletic programs to assist students' academic success in higher education. Therefore, it will be more effective providing an important role of the intercollegiate athletic programs that comprise a variety of social experiences. In higher education, intercollegiate athletic programs could be the story beyond the game itself. Meanwhile, this study may also suggest to sport marketers to pay special attention to building of effective databases and tools to connect with student fans for a better quality of campus life.

The current study has limitations that suggest future investigations. First, the results of the current study relied on a traditionally successful institution in a major public university in the southeast region of the United States, suggesting a lack of external validity to represent overall institutions. While the level of team identification has been very varied within location and university division, future studies should be considerable of college location and size of institutions. Second, the current study may be limited in instrument measuring academic success since academic motivation and achievement are other components that facilitate academic success in higher education. The limitations for future study provide further clarity into the relationship between intercollegiate athletic program and academic success.

Conclusions

This study examined the relationship among team identification, sense of belonging to the university, and academic performance. The current study results show that while identification with intercollegiate athletic programs significantly and directly improves a sense of college belonging in higher education, the enhanced sense of belonging to the university is directly related to academic performance. The most significant conclusion of this study was to provide results supporting the intangible benefit of students' identification with intercollegiate athletic programs, which enhances the sense of belonging to the university that significantly facilitates academic performance as a major goal of higher education. Therefore, this study may suggest that intercollegiate athletic programs are major tools which can be used to integrate social group interaction in campus life, and to assist to maintain students' academic success, which is highly related to future employment.

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