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Dylan Williams University of Alabama

Brian Soebbing
University of Alberta

Chad Seifried Louisiana State University

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Exploring the Direct Impacts of Geography on Sport Organizations through

Athletic Association Movement

Dylan Williams *University of Alabama*

Brian Soebbing
University of Alberta

Chad Seifried *Louisiana State University*

Scholars acknowledge the geographical location of a firm possesses unique characteristics organizations use to sculpt their identity. Further, the proximity of competing organizations can drive firm administrators to conduct organizational altering decisions such as affiliation changes. For higher education, both geography and affiliation play important roles as firms attempt to acquire institutional legitimacy and prosperity in intercollegiate athletics. The purpose of the current study is to examine how geographic differences associated with changing intercollegiate athletic associations have on total applications (i.e., reclassification effect) to the university. The present study measures outcomes of the assumed reclassification effect through applications received annually by all National Association of Intercollegiate Athletics (NAIA) and National Association of Intercollegiate Athletics (NAIA) Division II and III members between 2003 and 2012. Many institutions that were formerly associated with the NAIA left for the NCAA based upon the actions of their geographic peers and for identity improvement. Results broadly do not support the claim by university officials that a change in association will lead to an increase in applications. Other factors related to the number of sports offered, presence and performance of football and men's basketball teams, and certain university identities significantly affect applications.

Keywords: Geography, Social Identity, Reclassification, Higher Education, Impacts

ffiliations provide firms with opportunities to focus on broad interlocks and networks amongst peers (Beckman, 2006), shape social identities (Rao, Davis, & Ward, 2000), and allow for the diffusion of practices throughout organizational fields (Strang & Soule, 1998). One way affiliations occur is through geographic proximity, which can establish characteristics firms use to sculpt their identity (e.g., Glückler, 2007; Marquis & Battilana, 2009; Marquis, Glynn, & Davis, 2007). Furthermore, competition surrounding firms within geographic proximity can drive decision-makers to make organizational altering decisions (Elsbach & Kramer, 1996). In sports, affiliations and social identities not only fulfill similar roles (e.g., Kaufman & Patterson, 2005; Seippel, 2007) but geography notably plays a role for both affiliation (e.g., Williams, Seifried, & Soebbing, 2015) and competitive purposes (e.g., Kilduff, Elfenbein, & Staw, 2010).

One sport setting where geography can influence decision-making is in the institution of intercollegiate athletics in the United States. Athletic programs routinely utilize their location as a recruiting tool for both student-athletes and the general student body (Magnusen, Kim, Perrewé, & Ferris, 2014). In addition, it appears schools seek membership in the national governing bodies of intercollegiate sport (e.g., the National Collegiate Athletic Association [NCAA] and the National Association of Intercollegiate Athletics [NAIA]) based upon activities by their geographic peers/rivals (Williams, 2014; Williams et al., 2015). While past researchers attempted to study affiliation change from an athletic conference perspective (e.g., Smith, Soebbing, & Washington, 2015; Washington, 2004-05), there is a dearth of research on the role geography serves in the decision to change associations (i.e., reclassification).

The purpose of this study is to examine the impact geography has through studying important financial indicators (e.g., applications) connected to movement. According to Bremmer and Kesselring (1993), "successful' athletic programs provide a university with cost effective advertising which attracts more student applicants." (p. 409). This potential increase in applicants would generate additional funding in terms of application fees as well as possibly accepting a higher rate of students that provide extra revenue from tuition and fees charged for enrolling and boarding. Using propensity score matching to identify a sample of similar schools that did not move associations, the present research estimates regression models to determine if the number of applications a university receives after reclassification is affected by geography. Moreover, the present study measures the potential longevity. While many entities have various motives to consider reclassification (e.g., peer mimicry; financial; brand association), previous findings indicate that the expected results decision-makers tout from reclassification (e.g., increased applications, enrollment, recognition, brand awareness) may not appear to match the expected gains, leading to potential negative ramifications for years to come (Williams, 2014; Williams et al., 2015). As such, firms must study the organizational field and the movement of regional peers thoroughly before engaging in affiliation changes.

Literature Review

Geographic location is defined as a grouping of resources and opportunities within a spatial contiguity, which conveys a difference and contingency for economic development (Bathelt & Glückler, 2005; Glückler, 2007). This localized profile comprises structural aspects of relationships (e.g., those derived from firm climate and culture) and institutional resources

found within the area. The association between region and network, however, is not limited to one direction. Storper and Walker (1989) noted location does not limit identity formation, rather interaction among multiple identities influence the geography. Through identity creation, organizations develop characteristics to establish and sustain a competitive advantage among competitors.

As such, geography acts a social identity that organizations utilize to acquire characteristics unique to their area of business. Ashforth and Mael (1989) noted a social identity is an organization's perception of belonging to a particular group or collective. According to social identity theory, organizations will create an identity based on particular ideals and characteristics unique to the individuals associated with the firm (Albert & Whetten, 1985; Dutton, Dukerich, & Harquail, 1994; Elsbach & Kramer, 1996). This established identity allows organizations to associate with other organizations based on categories derived from prototypical and societal ideals (Tajfel & Turner, 1985; Turner, 1985). Once a firm establishes its social identity, it can interact with others they recognize as similar (the in-group) while distancing themselves from rival firms (the out-group) (Mael & Ashforth, 1992). Organizations found within a particular region often adopt the collective nuances found within its geographic location in order to relate to its regional consumer base (Jenkins, 2008). These particular nuances can include the various affiliations and groupings that are highly popular within a region.

According to Turner (1982), organizations utilize these social identities to define themselves amongst peer and rival institutions based upon their own personal characteristics and the characteristics of a particular group. For example, universities can craft their unique identity through its mission and vision statements while simultaneously adopting regional beliefs and characteristics (Ashforth, 2001). By associating with regional peers, entities can possess multiple dynamic characteristics able to function harmoniously in either a lower-order or higher-order category that is institutionalized in a formal social system (Washington, 2004-05). This formal social system may bring about tangible and intangible benefits for organizations within the system.

Numerous studies illustrate how variation exists among shared identities in entities across different locations. For instance, Marquis and Battilana (2009) argued a firm's local community creates an arena where regulative, normative, and cultural-cognitive processes affect group behavior and decision-making processes. This community identity creates a sense of local pride that can be leveraged by constituents (Knox, 1997). In other words, firms within this grouping embrace the public image and proudly boast their satisfaction of established standards (Porac, Thomas, & Baden-Fuller, 1989; Rosa, Porac, Runser-Spanjol, & Saxon, 1999). Molotch, Freudenburg, and Paulsen (2000) and Marquis et al. (2007) also noted contrasting and differing traditions reflected between local organizations and community social patterns can guide firm decision-making. Further, Lounsbury (2007) similarly found companies operating in multiple areas change their sale strategies based upon a location's culture despite selling similar products. Finally, geographic elements such as climate, culture, and distance influence the development and institutionalization of certain frames of reference. For example, the cultural distinctions between U.S. regions often begin with climatic variability (Marquis & Battilana, 2009), physical distance between major cities, transportation constraints, and political activism (Burris, 1987).

Washington (2004-05) noted organizations can identify certain cues within a particular grouping that would allow decision-makers to consider making a significant organizational change. As an example, a respected entity within a region may opt to cease one of its affiliation memberships due to cost. This event may be a cue for other firm officials to analyze their firm's

identity and conduct enhancement strategies to improve respective social standing (Williams et al., 2015). In the situation when an affiliation change is possible, organizations will conduct a social mobility strategy where a firm molds its own personal characteristics to those associated with a group or adopt new identities while maintaining prior associations (Hogg & Terry, 2000; Taylor & McKirnan, 1984). Through social mobility, group members determine if a positive social identity can be maintained following peer defections, creating a mimetic isomorphic pressure within the field (Rao, Monin, & Durand, 2003).

Empirical Setting

University officials tout their athletic programs serve as a promotional vehicle for institutions. Successful programs may generate increases in student applications, enrollment, and other potential benefits (e.g., alumni donations, game attendance, gate receipts; Chung, 2013; Taylor, 2016). The novelty of athletic achievement acts similar to a marketing campaign and encourages potential students to research their institution overall and its application and enrollment process (Tomasini, 2005). This perspective or assumption on potential of athletic success stems from the actual increase achieved by Boston College (BC) in 1985 when the school received a 30% increase in freshman applications. The "Flutie Effect" emerged following a 10-2 football season in 1984, which featured a Cotton Bowl victory over the University of Houston, a final Associated Press (Associated Press- AP) Ranking at #4, and the awarding of the Heisman Trophy to Quarterback Doug Flutie (Castle & Kostelnik, 2011).

Tomasini (2005) noted many college administrators felt the need to create a successful athletic program in order to receive similar benefits (e.g., applications and image). As such, many scholars sought to identify the correlation between athletics success, affiliation, and university applications. For example, Mixon and Hsing (1994) determined universities participating in Division I (D-I) athletics attract more out-of-state students than the other NCAA divisions (i.e., D-II; D-III) and other athletic associations. Mixon and Ressler (1995) expanded on these findings, noting schools qualified for the NCAA D-I Men's Basketball tournament received a 6% increase in non-resident applications for each round the team advances in the tournament. Similarly, Murphy and Trandel (1994) projected institutions competing in major football conferences will receive an additional 1.3% increase in applications for each win against a conference rival. Toma and Cross (1998) further found schools capturing a national championship in football between 1979 and 1992 received over 10% in applications the following year. Long-term success in revenue-generating sports (i.e., AP Top 20 in football and Top 16 in basketball) was also connected to an increase in applications by 8% (Pope & Pope 2009). Finally, Chung (2013) noted applications increased approximately 18% when a university's football team goes from mediocrity to performing well on the field.

Besides application quantity, scholars examined the impact of success on quality of applications (Castle & Kostelnik 2011; McCormick & Tinsley 1987; Mixon, Trevino, & Minto, 2004; Smith 2009) and university status (Atler & Reback 2014; Trenkamp 2009). These investigations returned mixed results. For example, McCormick and Tinsley (1987) showed a 3% increase in the average SAT scores for entering freshman as well as an additional increase for on-field success against other conference schools. Later research by Mixon et al. (2004) supported these earlier results while Smith's (2009) examination found no relationship between athletic success and student quality. Castle and Kostelnik (2011) indicated a strong correlation between overall athletic success, the quantity of freshmen applicants, and the quality of enrolled

freshmen at the 14 D-II Pennsylvania State Athletic Conference (PSAC) affiliated institutions. Finally, Pope and Pope (2014) expanded on their earlier work by utilizing College Board date to find success in football and basketball increased SAT score quantity 10%. Past research examined the correlation between athletics success and benefits, particularly applications in terms of quantity and quality. These results generally found a positive and significant increase in total applications (e.g., Pope & Pope, 2009) and the quality of applicant (e.g., Pope & Pope, 2014).

Despite research on the impact of on-field performance success, there are calls for additional investigation to better understand other factors within an athletic strategy that could impact application recruitment (Taylor, 2016). An athletic strategy is a representation of organizational change to improve application rates and quality through various elements such as a change in athletic department structure (e.g., staffing and sponsorship), conference membership, or governing body affiliation (Collins, 2012). The ability to change athletic affiliation may create such a "reclassification effect," allowing firms to acquire additional resources regardless of performance.

Historically, the NCAA and NAIA provide symbolic resources and legitimization through field-level participant member acceptance or retention (Washington, 2004). However, since 1973 over 250 institutions changed their affiliation from the NAIA to the NCAA (Williams, 2014). Palatsky (2010) argued schools made this change due to their individual financial needs citing access to additional revenue from various and substantial NCAA contracts and grants and opportunities to reduce expenses such as traveling to geographically closer peers. Schools transitioning from the NAIA also viewed the NCAA brand name as a tool to improve their school's recognition among the general public and with their geographic peers (Covitz, 2016). Many scholars noted the increased exposure could help universities create national brand awareness, potentially increasing alumni donations, event attendance, and overall prestige (Beyer & Hannah, 2000; Tomasini, 2005).

Interestingly, Tomasini (2005) found no significant positive increase in terms of general fund contributions, attendance at sport contests, freshman applications, and undergraduate enrollment for NCAA member schools reclassifying from either D-II or D- III to Division I-AA (now Football Championship Subdivision [FCS]). Further, Frieder and Fulks (2007) discovered the reclassification efforts of schools moving from either Division I-FCS to the Division I-Football Bowl Subdivision (FBS) or from D-II to Division I-FCS led to substantial net losses even though higher reported revenues were reported. In their case study, Dwyer, Eddy, Havard, and Braa (2010) also noted the school's athletic department achieved a high budget deficit for three years due to increased expenses related to reclassification opposed to any significant increase in applications. Elsewhere, Hutchinson and Bouchet (2014a, 2014b) uncovered several cases of NCAA members moving between NCAA divisions (i.e., D-I to D-III) who were unable to afford the additional resource commitments required for D-I status and were not able to obtain the assumed reclassification benefits of D-I participation and reclassification. Thus, the question remains, why do schools continue to reclassify?

Scholars also argued certain characteristics encouraged these institutions of higher education to contemplate movement from one athletic association to another or one conference to another. For instance, institutions often categorize themselves with other schools (i.e., public/private, religious affiliation, size or enrolment) to compete for state and federal funding (Liefner, 2003). Washington (2004) observed this practice through schools transitioning from the NAIA to the NCAA from 1906 to 2004 and found institutions classified as liberal arts colleges,

Historically Black Colleges and Universities (HBCUs), and teachers' colleges were less likely to join the NCAA before 1952 and more likely after 1952 for such reasons. He also attributed this change to the NCAA developing policies to attract these smaller schools (Washington, 2004).

Washington (2004-05) later hypothesized defectors associated with either lower-order and cross-cutting social categories simultaneously would increase the focal organization's likelihood to join a rival group. Through an analysis of 500 NAIA member colleges and universities, he found schools associated with a particular NAIA athletic conference or classified as an HBCU had higher tendencies to transition to the NCAA following a fellow NAIA and conference school. Smith, Williams, Soebbing, and Washington (2013) expanded Washington's (2004-05) research and found certain identities (e.g., university size) were more likely to reclassify after a peer firm's actions. For instance, they connected geography to movement likelihood and found schools located in the New England and Rocky Mountain regions were more likely to reclassify after others in the area changed affiliation. Thus, the prior research found that geography, defined by either conference affiliation or geographic region, does prompt decisions made by universities. However, Smith et al. (2013) considered geography as simply an independent variable that would change based upon the region. Their results did not thoroughly analyze various differences among the regions in terms of the various social identities found within a geographic location. Overall, the direct impacts of university movement failed to show a consistent pattern and the impact of geography may be significant but previous work has not isolated it as a distinct motivator.

In summary, universities and colleges assist in creating a regional distinction as they are regarded as key sources of knowledge in pursuit of economic growth (Huggins & Johnston, 2008). Further, institutions are susceptible to various cultural distinctions within their regions. However, the regional contexts and universities contained within the region differ, suggesting the process relevance will also differ across regions and institutions (Howells, 2005; Tödtling & Trippl, 2005). Previous studies examining athletic department decision-making notice that geography plays a role in decisions such as changing athletic affiliations. Yet, research has not explored how geographic differences could impact student applications, an important financial indicator. The present research determines if a school's applications can be impacted by reclassification, examining the duration of such effect, and if any regional identity differences exist.

Method

To investigate a regional reclassification effect, the present study examines university applications from 2003 through 2012. This set of dates reflects the mandatory five-year waiting period the NCAA instituted for schools applying for membership (NCAA, 2015a, 2015b). The study's sample contains all current NAIA and NCAA D-II and D-III members and schools who became members of either association during the period. Since NAIA members share characteristics with D-II and D-III schools (Smith et al., 2015) and the NCAA does not allow new members to immediately enter D-I (NCAA, 2015a, 2015b), D-I institutions were not included in this sample. The list of NAIA and NCAA member schools was obtained from the Equity of Athletics Disclosure Act (EADA) database, the Integrated Postsecondary Education Data System (IPEDS), and the NAIA Membership Services Department. The unit of observation is a university-year with 8,305 university-year observations encompassing 854

different universities. The dependent variable is the total number of applications (*APP*) and was obtained from the IPEDS database. This study transforms *APP* to its natural log (*LNAPP*).

Explanatory Variables

This study encompasses four distinct categories of explanatory variables. The first category of variables relates to a university's athletics program (*Ath*) and includes six variables to measure the athletics effect. Through the EADA database as well as individual university's athletic department websites, we determine if the university is an NCAA member in the observed year (*NCAAmem*). From these sources, this research obtained the total number of sports sponsored by each university in each year (*#Sports*). Consistent with the two primary revenuegenerating activities for all athletic departments (Fulks, 2014), an indicator variable was created to understand if the university sponsored a football program (*fb*) and/or a men's basketball program (*mbb*). To control for a measure of quality of these teams consistent with previous research regarding the impact of athletic performance and application impact (e.g., Chung, 2013), variables for a university's prior season winning percentage in football season (*fbwpct*) and/or men's basketball season (*mbbwpct*) are included.

The second category relates to an institution's individual characteristics (*Char*). First, an indicator variable was designed for institutions affiliated with the Common Application (*CommApp*), a non-profit organization that provides a standardized application for member schools ("History," n.d.). The list of affiliated schools and when they joined the association was obtained from the Common Application website. It is anticipated the use of the Common Application will increase the number of applications a university receives. Further, each school's student to faculty ratio (*SFR*) and its squared term (*SFR*²) was calculated from IPEDS data (e.g., total number of enrolled students to the total number of faculty). Finally, undergraduate tuition (*Tuition*) were collected as a measure of a university's quality of education (Buss, Parker, & Rivenburg, 2004; Sumaedi, Bakti, & Metasari, 2011). The *Tuition* variable was divided into the Top 90th, 75th, 50th, 25th, or 10th Quintile in the observed year.

The third category explores identities for each observed university, particularly three distinct identity-based indicator variables (*ID*): historical black college and university (HBCU), religious affiliation, and private (*Private*). Prior work examining the likelihood of movement incorporated each of these identities (e.g., Williams et al., 2015). These identities were collected from the IPEDS database. Religious affiliation was aggregated into broader categories outlined by Steensland et al. (2000). These categories include (1) Mainline Protestant; (2) Evangelical Protestant; (3) Black Protestant; (4) Roman Catholic; (5) Judaism; and (6) Other (e.g., Mormon, Jehovah's Witness, Muslim, Hindu, Unitarian).

The final set of identity variables are geography variables. We use the geographic regions as identified by the IPEDS database. They are: (1) New England; (2) Mid-East; (3) Great Lakes; (4) Plains; (5) Southeast; (6) Southwest; (7) Rocky Mountain; and (8) Far West. For each of these regions, separate indicator variables are created equal to 1 if the university is located in that region. The final category controls for university movement to the NCAA (*Mvmt*). In the present study, movement into the NCAA is operationalized in two ways. First, separate indicator variables for each of the first ten years that a school moves into the NCAA are created to examine year-to-year effects of movement (e.g., *yr1*). Second, separate indicator variables are created that are equal to 1 if a school moved within the last 5 and 10 years in an attempt to look at broad impact. This strategy is consistent with previous novelty effects studies within sport

that look at stadium (Coates & Humphreys, 2005) and strike impacts (Coates & Harrison, 2005). These variables are then interacted with the geography variables to look at the impact that geography has on any potential reclassification effect.

Empirical Specification and Estimation Strategy

Equation 1 below presents the broad empirical specification for this research:

$$LnApp_{it} = Ath_{it} + Char_{it} + Id_{it} + Mvmt_{it} + \alpha_t + \varepsilon_{it}$$
 (1)

In Equation 1, i indexes university, t indexes year, α is a year fixed effect parameter, and ε is the equation error term.

The data collected from IPEDS includes schools who have always been NAIA members, schools that have always been NCAA members, and others who have moved from one association to the other. The choice of association membership, along with the decision to move to the NCAA is not a random occurrence. In other words, this study does not have random assignment into treatment and control groups. To have a better understanding of a potential reclassification effect, the present research constructs a control group of peer schools within the same region that are not involved in changing associations. In order to construct a control group, we use the propensity score matching technique outlined by Rosenbaum and Rubin (1985). This technique pairs schools that are in the treatment group (i.e., schools who moved in the last 10 years) with universities in the same region who did not move which form the control group. This strategy of developing a list of peer institutions is important in the understanding of peer effects in higher education (Winston & Zimmerman, 2004). They are paired using observable characteristics across universities with their IPEDS defined geographic region. During the sample period, we do not identify any institution in the Rocky Mountain region that moved. Thus, all university-year observations from this area is removed (n=230) from the initial sample.

In order to generate a control group, the present research estimates a probit model using the *psmatch2* technique in STATA14 where the dependent variable is a school that moved in the past 10 years. The explanatory variables in the model include: 1) the number of sports offered; 2) whether the school has a football and/or a men's basketball team; 3) the winning percentage of the football and men's basketball teams; 4) the use of the Common Application; 5) the university's student to faculty ratio; 6) quantile in which the university's tuition; 7) whether the university is an HBCU; 8) the religious affiliations outlined above; 9) the region of the country the school resides; and 10) whether the university is a private school.

We use the probit model in the psmatch2 technique to identify the two closest matched universities that did not move for each university that moved. A t-test on the value of means between the treatment group and the control group indicates whether the control group is similar to the characteristics of the treatment group across the characteristics identified above. For each of the characteristics, this research can accept the null hypothesis of no difference between the groups (p-value > 0.05). Thus, the final sample used for the present study consists of 3,790 university-year observations across 379 schools.

One concern within both samples is multicollinearity. For the models estimated, we calculated the Variance Inflation Factors (VIFs). The results from these calculations were that the mean VIFs for the model were all below the suggested threshold of 10 of Hair, Black, and Babin (2006). Thus, we do not believe multicollinearity is a concern within the present study.

Finally, the standard errors in all models are clustered by university to control for unobserved university effects.

Results

Table 1 presents the summary statistics for the full and matched samples. ¹ The average number of applications is 2,920 in the full sample and 2,424 in the matched sample. University-year observations who are members of the NCAA comprised approximately two-thirds of each sample. Universities offered on average 14 sports and most offering men's basketball compared to football. The common application is used by approximately 14 percent of both sample observations. Looking at the IPEDS regions, the Southeast region has the most university-year observations while the New England region has the least. Examining the novelty effects variables, one notices in the full sample that 4.1 and 10.5% have been NCAA members only in the last 5 and 10 years respectively. In the matched sample, the number these numbers are 9.1% and 23% respectively.

Table 2 presents the regression results for both the full and matched samples using the single novelty effect variable. Recall, two novelty effect variables are construct, one for if a university moved to the NCAA within the last five years in the observed year (*Novelty5*) and one for if a university moved to the NCAA within the last five years in the observed years (*Novelty10*). These two variables are interacted with the six geographic regions with the FarWest region serving as the reference group. Looking at results in models 1 and 3, which include the interaction of the novelty variable equal to 1 for movement into the NCAA within the last five years to each IPEDS region, we do not find any statistically significant variable coefficients. When expanding the novelty effect variable for universities that moved within the last 10 years, we find some geographic impacts. In Model 2, we find negative and statistically significant variable coefficients for the New England, Mid-East, Great Lakes, and Plains regions. In the matched sample, the Mid-East region has a statistically significant negative variable coefficient.

Table 3 presents the year-by-year novelty effect variables interacted with the aforementioned IPEDS regions.² Looking at the results in Table 3, the results find significant and negative variable coefficients towards the end of the first 10 years across four of the regions. Taken together, the results regarding the novelty effect is that any impact on applications is negative and it occurs after the first few years of joining the NCAA.

Other variable coefficients are shown to affect the number of applications across the other variables categories. As per athletic characteristics, there is a positive and significant variable coefficient as it pertains to being a member of the NCAA, the number of sports offered, the quality of football and basketball programs in Table 2. However, simply providing football and men's basketball has no statistically significant impact on the number of applications throughout all seven regions.

As per university characteristics, the results indicate that tuition has a positive and significant increase in applications, while the common application and student to faculty ratio only has a significant impact in the full sample. For the matched sample, the results are

¹ For both samples, there are no observations of universities affiliated with the Jewish faith. For the matched sample, there are no observations of universities affiliated with the following religions: Black Protestant; Other Christian; and Other Religious Denomination.

² The results for the remaining variables are available by request.

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insignificant. As per the identity variables, HBCUs have a positive and significant impact on applications for both samples. The religious affiliation in the matched sample has a negative and statistically significant impact. For the full sample, there is a negative and significant impact for the Mainline Protestant, Evangelical Protestant, and other religious affiliated schools while Other Christian denominations have a positive and significant impact. Private schools have a negative and significant decrease in applications

Discussion

In terms of acquiring a competitive advantage, the results show a reclassification does not impact the number of applications received by a university. While affiliation with the NCAA does lead to a significant increase in applications, there is no reclassification effect for moving to the NCAA. As such, these results show that the move NCAA association is not viewed as a strong item to create a regional competitive advantage for student applications. Although geographic location can predict movement probability (Williams et al., 2015), a school's location does not produce the results university officials may expect following reclassification (Dwyer et al., 2010; Weaver, 2010).

Several factors can explain why a reclassification strategy from the NAIA to the NCAA based on geography does not have the desired effect on applications. First, the status quo of intercollegiate athletics has been legitimized by many actors within the organizational field based upon the growth and dominance of the NCAA since 1973. The mass migration of schools created an implicit and taken-for-granted social framework where individuals view the NCAA synonymously with intercollegiate athletics (Johnson, Dowd, & Ridgeway, 2006). Once firms alter their field to become the status quo, any contrasting viewpoint becomes difficult to challenge on any broad-based scale (Ridgeway, Boyle, Kuipers, & Robinson, 1998; Ridgeway & Correll, 2006; Ridgeway & Erickson, 2000). Thus, late reclassification members (i.e., laggards) joining the NCAA simply to affiliate with their geographic peers do not receive any significant benefits because the mimetic pressure to join the association became synonymous with the overall field. In other words, the present study seems to support Tomasini's (2005) assumption that reclassification to an organizational field's premiere association does not provide the desired substantive change for laggards because their past resistances to join the NCAA may have produced a negative public reaction to the move.

Second, affiliation with a national organization may create a negative identity in particular regions, especially when stakeholders may have discontent with the association (Rowley & Moldoveanu, 2003). While viewed as the premiere association in intercollegiate sports, the NCAA maintains a negative image among some constituents and stakeholders based on cases of academic fraud (New, 2016), financial reporting (Williams, 2016), recruiting and student-athlete transfers (Fader, 2016), and payment of student-athletes (Tutka & Williams, 2017). This sentiment among constituents can damage an association's identity, limiting the potential gains derived from a reclassification in some regions.

To counter negative perceptions, firm should communicate directly with constituents, detailing the benefits common with group membership. For example, the NCAA should educate and guide school officials considering reclassification through collective messages from various professional networks (e.g., geographic peer institutions and athletic conferences) that highlight the positives of the association and the importance of athletic performance and quality experience our output (Compagni, Mele, & Ravasi, 2015; Pope & Pope, 2009, 2014). These

positives include access to championship competition, grant funding, and program affordability through easier travel expenditures (NCAA, 2016). Without this communication, institutions may only rely on the association's perceived image despite evidence to the contrary that it is positive (Walker, Seifried, & Soebbing, 2018).

While geography as an identity itself does not have a direct impact, the results reveal other identities do have an effect on applications. Certain religious affiliations and HBCUs do see a positive and statistically significant increase in applications. Formed through a region's identity, cognitive distance relates to the mental representation of actual distance molded by social, cultural, and general life experiences (Ankomah, Crompton, & Baker, 1996).

The results of the present study also provide other additional findings related to application increases. For example, we find that schools sponsoring more varsity sports generate more applications. The ability to acquire additional resources following a substantive change confirms the findings of several scholars who noted universities access a broader base of individuals through athletics programs (Dwyer et al., 2010; Tomasini, 2005; Weaver, 2010). Through a prominent athletic department, schools create a sports-centric social identity that will attract new students to apply and combat decreasing enrollment numbers (Katz, Pfleegor, Schaeperkoetter, & Bass, 2015). Thus, schools may deem athletic programs successful based on the value added to the institution and its regional identity.

It also appears firms maintaining the presence of a particular social identity due to the pressure from geographic rival entities may be overstated. As an example, schools that sponsor football or men's basketball team do not receive a substantial increase or decrease in applications. Past research highlighted these conflicting views such as Trenkamp's (2009) analysis of D-I football and basketball success and its positive relationship with increases in a university's *US News and World Report* rankings and Atler and Reback (2014) finding "jock school" designation had no impact on applications. However, the present research and others (e.g., McCormick & Tinsley, 1987; Mixon et al., 2004; Pope & Pope, 2014) show the quality of these revenue-generating sports influences the number of applications received following reclassification. We find results supporting the broad results of sport quality and applications.

Finally, the results show the promotion of particular social identities may have a substantive impact on the acquisition of resources in an area. For example, HBCU designated institutions solicit a large number of applications while private institutions see a significant decrease following reclassification. While these results are partially unexpected, they highlight how various identities can influence the decision-making process to pursue reclassification (Smith et al., 2013; Washington, 2004, 2004-05; Williams et al., 2015). However, the "herdlike" movement for some identities does not appear to generate the expected results. As such, firms with these characteristics contemplating reclassification must consider additional situations including geographical elements and shared identity characteristics. For example, a regional milieu could be manipulated by a university's contributions by attracting a concentration of highly educated professionals and establishing a particular locational dynamic (Luger & Goldstein, 1997). These effects are imparted as a side product of university presence and are valued more by residents, businesses, and other regional stakeholders (Drucker & Goldstein, 2007). However, if an entity's actions offset by competing characteristics (i.e., a private, HBCU), then the generated benefits from the action will be reduced significantly. Thus, it is important for university officials to consider all options before engaging in reclassification.

Conclusion

While many reclassifying institutions maintained different motives to change their affiliation, such as mimicking geographic peer actions or desiring association with the premiere entity in the field, each university transitioned between affiliations under the guise of identity improvement and brand awareness. The present research analyzed the potential for reclassifying universities to obtain additional applications upon this change. However, this ideal appears to be unrealistic as a reclassification effect on applications based on geography could not be supported in the present research. As such, university officials should reconsider affiliation movement as a brand awareness strategy to increase applications. Further, the actions of geographic peers to change affiliation should not be used as a motivator to follow their lead. In essence, there is no significant inherent positive reclassification effect when following geographic peer movement.

If an institution decides to proceed with a reclassification strategy, it should work with the NCAA and its peers in order to understand the entire reclassification process and realistic benefits. Officials should focus their efforts first on improving the quality of their athletic programs including the revenue-generating sports of football and men's basketball, if either, is sponsored. The quality of these programs can generate interest in both the on-field product and the competitive atmosphere among peer and rival firms. Firms should not consider reclassification until their programs can be competitive at the next level immediately and among firms within close proximity. However, a reclassification effort could also cause the potential loss of an established rival. As such, officials considering reclassification should concentrate on building new rival relationships with peers at the next level or following established rivals who are also considering movement. This relationship building is possible as institutions at the NAIA level frequently compete against NCAA D-II and D-III schools already in cross-association contests across many sports.

University officials should also be cautious of various stakeholder groups that could persuade the decision to reclassify. Institutions analyze the interests of several stakeholder groups such as current and potential students, alumni, financial contributors, and employees. These groups will participate in the group action to reclassify as they become linked together through a common identity, shared fate, and general commitments (Fireman & Gamson, 1979). For example, it is possible that an athletic director may conduct a reclassification strategy to secure future employment opportunities for members in his or her staff at other NCAA member schools opposed to the interests of the university. Similarly, wealthy donors may opt to transfer their financial contributions to other interests in the region unless a decision to reclassify is made. Finally, local construction industry-related businesses may support a reclassification effort if they can secure new business with the university to construct facilities needed for the move. Future research could examine the specific interests and identities of the various stakeholder groups affiliated with a university through the construct of stakeholder group mobilization and firm responsiveness (Bundy, Shropshire, & Buchholtz, 2013) as anecdotes exist which suggest this is a reality (Williams, 2014).

Lastly, the present research contributes to the geography literature by identifying how affiliation with a premiere association can have mixed emotions in differing locales. This indifference in reaction could have negative ramifications for organizations considering an affiliation with this particular firm. The present analysis also suggests social identities within a region can sway the decisions of an entity opposed to the regional identity itself. If certain identities are indifferent or favored within a particular region, the decision to conduct a

significant organization change may be easier due to the social identity dynamics within the area. While these results can be used to assist organizations with their industry memberships, we do not analyze the impact of joining an association with a regional focus. Future research in college movement could determine if a reclassification effect could be obtained by universities transitioning from one regional conference to another conference. Further, the present research only considers movement from one association to another. Intra-association movement could be explored to determine if higher status within the affiliation (i.e., going from D-II or D-III to D-I) generates desired benefits.

References

- Albert, S., & Whetten, D. (1985). Organizational identity. *Research in Organizational Behavior*, 7, 263-295.
- Ankomah, P., Crompton, J., & Baker, D. (1996). Influence of cognitive distance in vacation choice. *Annals of Tourism Research*, 23, 138-150.
- Ashforth, B. (2001). *Role transitions in organizational life: An identity-based perspective*, Lawrence Erlbaum Associates, Mahwah, NJ.
- Ashforth, B., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14, 20-39.
- Atler, M., & Reback, R. (2014). True to your school? How changing reputations alter demand for selective U.S. colleges. *Educational Evaluation and Policy Analysis*, *36*, 346-370.
- Bathelt, H., & Glückler, J. (2005) Resources in economic geography: From substantive concepts towards a relational perspective. *Environment and Planning A*, *37*, 1545–1563.
- Beckman, C. (2006). The influence of founding team company affiliations on firm behavior. *Academy of Management Journal*, 49, 741-758.
- Beyer, J., & Hannah, D. (2000). The cultural significance of athletics in U.S. higher education. *Journal of Sport Management*, 14, 105-132.
- Bremmer, D., & Kesselring, R. (1993). The advertising effect of university athletic success: A reappraisal of the evidence. *The Quarterly Review of Economics and Finance*, *33*, 409-421.
- Bundy, J., Shropshire, C., & Buchholtz, A. (2013). Strategic cognition and issue salience: Toward an explanation of firm responsiveness to stakeholder concerns. *Academy of Management Review*, 38, 352-376.
- Burris, V. (1987). The political partisanship of American business: A study of corporate political action committees. *American Sociological Review*, *52*, 732-744.
- Buss, C., Parker, J., & Rivenburg, J. (2004). Cost, quality and enrollment demand at liberal arts colleges. *Economics of Education Review*, 23, 57-65.
- Castle, J., & Kostelnik, R. (2011). The effects of an institution's athletic success on the future freshmen application pool at NCAA Division II universities. *Journal of Issues in Intercollegiate Athletics*, 4, 411-427.
- Chung, D. (2013). The dynamic advertising effect of college athletics. *Marketing Science*, 32, 679-698.
- Coates, D., & Harrison, T. (2005). Baseball strikes and the demand for attendance. *Journal of Sports Economics*, 6, 282-302.
- Coates, D., & Humphreys, B. (2005). Novelty of new facilities on attendance at professional sporting events. *Contemporary Economic Policy*, 23, 436-455.
- Collins, W. (2012). *Key actor perceptions of athletics strategy* (Unpublished doctoral dissertation). North Carolina State University, Raleigh, NC.
- Compagni, A., Mele, V., & Ravasi, D. (2015). How early implementations influence later adoptions of innovations: Social positioning and skill reproduction in the diffusion of robotic surgery. *Academy of Management Journal*, *58*, 242-278.
- Covitz, R. (2016, March 14). Attrition forces NAIA to consider changes to Division I basketball tournament format. *Kansas City Star*. Retrieved from http://www.kansascity.com/sports/college/naia-tournament/article66008797.html.

- Drucker, J., & Goldstein, H. (2007). Assessing the regional economic development impacts of universities: A review of current approaches. *International Regional Science Review*, 30, 20-46.
- Dutton, J., Dukerich, J., & Harquail, C. (1994). Organizational images and member identification. *Administrative Science Quarterly*, 39, 239-263.
- Dwyer, B., Eddy, T., Havard, C., & Braa, L. (2010). Stakeholder perceptions of an athletic program's reclassification from NCAA Division II to NCAA Division I (FCS) membership: A case study. *Journal of Issues in Intercollegiate Athletics*, *3*, 76-97.
- Elsbach, K., & Kramer, R. (1996). Member's responses to organizational identity threats: Encountering and countering the Business Week Rankings. *Administrative Science Quarterly*, 41, 442-476.
- Fader, M. (2016, May 12). Coaches take aim at heartache and hardship of early recruiting. *ESPN*. Retrieved from http://www.espn.com/espnw/sports/article/15509558/the-impactearly-recruiting-players-coaches.
- Fireman, B., & Gamson, W. (1979). Utilitarian logic in the resource mobilization perspective. In J. McCarthy, & M. Zald (Eds.), *The dynamics of social movements: Resource mobilization, social control and tactics* (pp. 8-44). Cambridge: Winthorp.
- Frieder, L., & Fulks, D. (2007). NCAA reclassification: The impact of reclassification from Division II to DI-AA and from Division I-AA to I-AA on NCAA member institutions from 1993 to 2003. Indianapolis, IN: National Collegiate Athletic Association.
- Fulks, D. (2014). 2004-2013 NCAA Division I Intercollegiate Athletics Programs Report. Indianapolis, IN: National Collegiate Athletic Association. Retrieved from http://www.ncaapublications.com/productdownloads/D1REVEXP2013.pdf
- Glückler, J. (2007). Economic geography and the evolution of networks. *Journal of Economic Geography*, 7, 619-634.
- Hair, J., Black, W., & Babin, B. (2006). *Multivariate data analysis*. New Jersey: Pearson Prentice Hall.
- History. (n.d.). *The Common Application*. Retrieved from https://www.commonapp.org/Login#!PublicPages/History
- Hogg, M., & Terry, D. (2000). Social identity and self-categorization processes in organizational contexts. *Academy of Management Review*, 25, 121-140.
- Howells, J. (2005). Innovation and regional economic development: A matter of perspective? *Research Policy*, *34*, 1220-1234.
- Huggins, R., & Johnston, A. (2009). The economic and innovation contribution of universities:

 A regional perspective. *Environment and Planning C: Government and Policy*, 27, 1088-1106
- Hutchinson, M., & Bouchet, A. (2014a). Organizational redirection in highly bureaucratic environments: De-escalation of commitment among Division I athletic departments. *Journal of Sport Management*, 28, 143-161.
- Hutchinson, M., & Bouchet, A. (2014b). Achieving organizational de-escalation: Exit strategy implementation among United States collegiate athletic departments. *Sport Management Review*, 17, 347-361.
- Jenkins, R. (2008). Social identity (3rd ed.). New York, NY: Routledge.
- Johnson, C., Dowd, T., & Ridgeway, C. (2006). Legitimacy as a social process. *Annual Review of Sociology*, 32, 53-78.

- Katz, M., Pfleegor, A., Schaeperkoetter, C., & Bass, J. (2015). Factors for success in NCAA Division III athletics. *Journal of Issues in Intercollegiate Athletics*, 8, 102-122.
- Kaufman, J., & Patterson, O. (2005). Cross-national cultural diffusion: The global spread of cricket. *American Sociological Review*, 70, 82-110.
- Kilduff, G., Elfenbein, H., & Staw, B. (2010). The psychology of rivalry: A relationally dependent analysis of competition. *Academy of Management Journal*, *53*, 943-969.
- Knox, P. (1997). Globalization and urban economic change. *Annals of the American Academy of Political and Social Science*, 551, 17-27.
- Liefner, I. (2003). Funding, resource allocation, and performance in higher education systems. *Higher Education*, *46*, 469-489.
- Lounsbury, M. (2007). A tale of two cities: Competing logics and practice variation in the professionalizing of mutual funds. *Academy of Management Journal*, 50, 289–307.
- Luger, M., & Goldstein, H. (1997). What is the role of public universities in regional economic development? In R. Bingham & R. Mier (Eds.), *Dilemmas of Urban Economic Development* (pp. 104-134). Thousand Oaks, CA: Sage.
- Magnusen, M., Kim, Y., Perrewé, P., & Ferris, G. (2014). A critical review and synthesis of student-athlete college choice factors: Recruiting effectiveness in NCAA sports. *International Journal of Sports Science & Coaching*, *9*, 1265-1286.
- Marquis, C., & Battilana, J. (2009). Acting globally but thinking locally? The enduring influence of local communities on organizations. *Research in Organizational Behavior*, 29, 283-302.
- Marquis, C., Glynn, M., & Davis, G. (2007). Community isomorphism and corporate social action, *Academy of Management Review*, 32, 925–945.
- Mael, F., & Ashforth, B. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior*, 13, 103-123.
- McCormick, R., & Tinsley, M. (1987). Athletics versus academics? Evidence from SAT scores. *Journal of Political Economy*, 95, 1103-1116.
- Mixon, F., & Hsing, Y. (1994). The determinants of out-of-state enrollments in higher education: A tobit analysis. *Economics of Education Review*, 13(4), 329-335.
- Mixon, F., & Ressler, R. (1995). An empirical note on the impact of college athletics on tuition revenues. *Applied Economics Letters*, 2, 383-387.
- Mixon, F., Trevino, L., & Minto, T. (2004). Touchdowns and test scores: Exploring the relationship between athletics and academics. *Applied Economics Letters*, 11, 421-424.
- Molotch, H., Freudenburg, W., & Paulsen, K. (2000). History repeats itself, but how? City character, urban tradition, and the accomplishment of place. *American Sociological Review*, 65, 791–823.
- Murphy, R., & Trandel, G. (1994). The relation between a university's football record and the size of its applicant pool. *Economics of Education Review*, 13, 265-270.
- National Collegiate Athletic Association. (2015a). Article 3: NCAA membership. In 2015-16 NCAA Division I manual, Indianapolis, IN: Author.
- National Collegiate Athletic Association. (2015b). Article 20: Division membership. In *2015-16 NCAA Division I manual*, Indianapolis, IN: Author.
- National Collegiate Athletic Association. (2016). *Benefits of Division II membership: Talking points for athletics directors and staff.* Indianapolis, IN: Author. Retrieved from https://www.ncaa.org/sites/default/files/DII_Toolkit_ADTK_20160223.pdf

- New, J. (2016, April 1). Fraud and the Final Four. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/news/2016/04/01/two-teams-facing-charges-academic-fraud-meet-ncaa-basketball-tournament
- Palatsky, N. (2010). NAIA schools consider jump to NCAA Division II. *The Biola University Chimes*. Retrieved from http://chimes.biola.edu/story/2010/may/12/schools-consider-divisionII/
- Pope, D., & Pope, J. (2009). The impact of college sports success on the quantity and quality of student applications. *Southern Economic Journal*, 75, 750-780.
- Pope, D., & Pope, J. (2014). Understanding college application decisions: Why college sports success matters. *Journal of Sports Economics*, 15, 107-131.
- Porac, J., Thomas, H., & Baden-Fuller, C. (1989). Competitive groups as cognitive communities: The case of Scottish knitwear manufacturers. *Journal of Management Studies*, 26, 397-416.
- Rao, H., Davis, G., & Ward, A. (2000). Embeddedness, social identity, and mobility: Why firms leave the NASDAQ and join the New York Stock Exchange. *Administrative Science Quarterly*, 45, 268-292.
- Rao, H., Monin, P., & Durand, R. (2003). Institutional change in Toque Ville: Nouvelle Cuisine as an identity movement in French gastronomy. *American Journal of Sociology, 108*, 795-843.
- Ridgeway, C., Boyle, E., Kuipers, K., & Robinson, D. (1998). How do status beliefs develop? The role of resources and interactional experience. *American Sociological Review*, 63, 331-350.
- Ridgeway, C., & Correll, S. (2006). Consensus and the creation of status beliefs. *Social Forces*, 85, 431-453.
- Ridgeway, C., & Erickson, K. (2000). Creating and spreading status beliefs. *American Journal of Sociology*, 106, 579-615.
- Rosa, J., Porac, J., Runser-Spanjol, J., & Saxon, M. (1999). Sociocognitive dynamics in a product market. *Journal of Marketing*, *63*, 64-77.
- Rosenbaum, P., & Rubin, D. (1985). Constructing a control group using multivariate matched sampling methods that incorporate the propensity score. *The American Statistician*, *39*, 33-38.
- Rowley, T., & Moldoveanu, M. (2003). When will stakeholder groups act? An interest- and identity-based model of stakeholder group mobilization. *Academy of Management Review*, 28, 204-219.
- Seippel, Ø. (2008). Sports in civil society: Networks, social capital, and influence. *European Sociological Review*, 24, 69-80.
- Smith, D. (2009). College football and student quality: An advertising effect or culture and tradition. *American Journal of Economics and Sociology*, 68, 553-579.
- Smith, J., Soebbing, B., & Washington, M. (2015). Motivations for changing athletic associations. *Journal of Contemporary Athletics*, 9, 117-132.
- Smith, J., Williams, D., Soebbing, B., & Washington, M. (2013). The influence of a university's social identity on changing athletic affiliations. *Journal of Issues in Intercollegiate Athletics*, 6, 22-40.
- Steensland, B., Park, J., Regnerus, M., Robinson, L., Wilcox, W., & Woodberry, R. (2000). The measure of American religion. *Social Forces*, 79, 291-318.

- Storper, M., & Walker, R. (1989). *The capitalist imperative: Territory, technology, and industrial growth.* New York, NY: Basil Blackwell.
- Strang, D., & Soule, S. (1998). Diffusion in organizations and social movements: From hybrid corn to poison pills. *Annual Review of Sociology*, 24, 265-290.
- Sumaedi, S., Bakti, I., & Metasari, N. (2011). The effect of students' perceived science quality and perceived price on student satisfaction. *Management Science & Engineering*, 5, 88-97.
- Tajfel, H., & Turner, J. (1985). The social identity theory of intergroup behavior. In S. Worchel & W. Austin (Eds.), *Psychology of intergroup relations* (2nd ed., pp. 7-24). Chicago, IL: Nelson-Hall.
- Taylor, C. (2016). How much does an NCAA basketball championship matter? *International Journal of Advertising*, 35, 617-621.
- Taylor, D., & McKirnan, D. (1984). A five-stage model of intergroup relations. *British Journal of Social Psychology*, 23, 291-300.
- Trenkamp, B. (2009). Does the advertising effect of athletics impact academic rankings? *Applied Economics Letters*, *16*, 373-378.
- Tödtling, F., & Trippl, M. (2005). One size fits all? Towards a differential regional innovation policy approach. *Research Policy*, *34*, 1203-1219.
- Toma, J., & Cross, M. (1998). Intercollegiate athletics and student choice: Exploring the impact of championship seasons on undergraduate applications. *Research in Higher Education*, *39*, 633-661.
- Tomasini, N. (2005). An assessment of the economic differences associated with reclassification to NCAA Division I-AA. *Sport Marketing Quarterly*, *14*, 7-16.
- Turner, J. (1982). Towards a cognition redefinition of a social group. In H. Tajfel (Ed.), *Social identity and intergroup relations* (pp. 15-40). Cambridge University Press, Cambridge.
- Turner, J. (1985). Social categorization and the self-concept: A social cognitive theory of group behavior. In E. Lawler (Ed.), *Advances in group processes* (2nd ed., pp. 77-122). Greenwich, CT: JAI Press.
- Tutka, P., & Williams, D. (2017). The expensive truth: The possible tax implications related to scholarship and cost of attendance payments for athletes. *Journal of Legal Aspects of Sport*, 27, 145-161.
- Walker, K. B., Seifried, C. S., & Soebbing, B. P. (2018). The National Collegiate Athletic Association as a social control agent. *Journal of Sport Management*, 32, 53-71.
- Washington, M. (2004). Field approaches to institutional change: The evolution of the National Collegiate Athletic Association 1906-1995. *Organization Studies*, 25, 393-414.
- Washington, M. (2004-05). Declining legitimacy and social mobility. *International Studies of Management and Organization*, 34(4), 32-51.
- Weaver, A. (2010). Reevaluating prestige: The influence of history on the decision to reclassify to Division I: A case study. *Journal of Issues in Intercollegiate Athletics*, 3, 131-153.
- Williams, D. (2014). An analysis of a university reclassification effect on applications following a move to a new intercollegiate athletic association. (Unpublished doctoral dissertation). Louisiana State University, Baton Rouge, LA.
- Williams, D. (2016). Ticking and tying at the buzzer: An analysis of the NCAA agreed-upon procedures for reporting financial data. *Journal of Issues in Intercollegiate Athletics*, 9, 185-207.

Williams, D., Seifried, C., & Soebbing, B. (2015). The influence of a university's social identity on NCAA divisional affiliation. *Journal of Intercollegiate Sport*, 8, 153-182. Winston, G., & Zimmerman, D. (2004). Peer effects in higher education. In C. Hoxby (Ed.), *College choices: The economics of where to go, when to go, and how to pay for it* (pp. 395-423). Chicago: University of Chicago Press.

Table 1 Summary Statistics

Sample (obs; #Universities) All (8,305; 831)		305; 831)	Matched (3,790; 379)		
Variable	Mean	Std Dev	Mean	Std Dev	Description
App	2,920	3,562	2,424	3,580	# of Applications
NCAAMem	0.651	0.477	0.675	0.468	School was an NCAA Member (1=Yes)
#Sports	14	5	14	5	# of Sports
fb	0.456	0.498	0.412	0.492	Sponsors Football (1=Yes)
fbwpct	0.220	0.292	0.189	0.277	Win % Football last year
mbb	0.913	0.282	0.953	0.212	Sponsors Men's Basketball (1=Yes)
mbbwpct	0.434	0.250	0.453	0.239	Win % Men's basketball last year
CommApp	0.136	0.343	0.144	0.351	University uses Common App (1=Yes)
sfr	28	30	27	14	Student to Faculty Ratio
sfr ²	1,718	28,575	950	1,728	Student to Faculty Ratio Squared
Tuition	2	1	3	1	Tuition Quintile
HBCU	0.076	0.265	0.037	0.189	School is an HBCU (1=Yes)
Cath	0.126	0.332	0.161	0.368	Affiliated with Catholic Religion (1=Yes)
MainProt	0.233	0.423	0.245	0.430	Affiliated with a Mainstream Protestant Religion (1=Yes)
EvanProt	0.132	0.339	0.157	0.364	Affiliated with an Evangelical Protestant Religion (1=Yes)
BlProt	0.005	0.069			Affiliated with an Evangelical Protestant Religion (1=Yes)
OthrChrist	0.001	0.035			Affiliated with another Christian Religion (1=Yes)
OtherRel	0.003	0.056			Affiliated with another religion (1=Yes)
Private	0.669	0.471	0.728	0.445	School is a Private School (1=Yes)
NewEngland	0.056	0.231	0.040	0.195	School is in the IPEDS NewEngland Region (1=Yes)
MidEast	0.134	0.340	0.127	0.333	School is in the IPEDS MidEast Region (1=Yes)
GreatLakes	0.170	0.375	0.127	0.333	School is in the IPEDS Great Lakes Region (1=Yes)
Plains	0.138	0.345	0.132	0.338	School is in the IPEDS Plains Region (1=Yes)
SouthEast	0.319	0.466	0.335	0.472	School is in the IPEDS South East Region (1=Yes)
SouthWest	0.083	0.276	0.129	0.336	School is in the IPEDS South West Region (1=Yes)
Far West	0.100	0.299	0.111	0.314	School is in the IPEDS Far WestRegion (1=Yes; Reference Group)
Novelty5	0.041	0.199	0.091	0.287	School moved to the NCAA within last 5 years (1=Yes)
Novelty10	0.105	0.307	0.230	0.421	School moved to the NCAA within last 10 years (1=Yes)
yr1	0.009	0.092	0.019	0.136	Year 1 in NCAA (1=Yes)
yr2	0.008	0.091	0.018	0.135	Year 2 in NCAA (1=Yes)
yr3	0.009	0.094	0.020	0.138	Year 3 in NCAA (1=Yes)
yr4	0.007	0.085	0.016	0.125	Year 4 in NCAA (1=Yes)
yr5	0.008	0.091	0.018	0.134	Year 5 in NCAA (1=Yes)
yr6	0.010	0.101	0.023	0.149	Year 6 in NCAA (1=Yes)
yr7	0.012	0.110	0.027	0.161	Year 7 in NCAA (1=Yes)
yr8	0.012	0.108	0.026	0.158	Year 8 in NCAA (1=Yes)
yr9	0.014	0.117	0.030	0.171	Year 9 in NCAA (1=Yes)
yr10	0.016	0.125	0.034	0.182	Year 10 in NCAA (1=Yes)

Table 2

Regression Results, Single Novelty Variable

Sample	All			Matched				
Model	1		2	,	3		4	
Novelty	5		10	0	5		10	
Variable	Coef	SE	Coef	SE	Coef	SE	Coef	SE
NCAAMem	0.301***	0.057	0.333***	0.059	0.265***	0.071	0.304***	0.074
#Sports	0.061***	0.007	0.058***	0.007	0.054***	0.009	0.054***	0.009
fb	-0.033	0.061	-0.037	0.061	-0.022	0.089	-0.033	0.088
fbwpct	0.256***	0.071	0.246***	0.071	0.224**	0.104	0.225**	0.102
mbb	-0.132	0.126	-0.108	0.126	-0.081	0.176	-0.073	0.178
mbbwpct	0.319***	0.075	0.321***	0.075	0.430***	0.108	0.432***	0.108
CommApp	0.178***	0.066	0.175***	0.065	0.131	0.100	0.119	0.097
sfr	0.004***	0.001	0.004***	0.001	0.008	0.005	0.008*	0.005
sfr2	0.000*	0.000	0.000*	0.000	0.000	0.000	0.000	0.000
Tuition	0.202***	0.027	0.200***	0.027	0.250***	0.035	0.243***	0.035
HBCU	0.785***	0.097	0.772***	0.098	1.290***	0.222	1.282***	0.221
Cath	-0.137	0.095	-0.133	0.095	-0.225**	0.114	-0.222*	0.114
MainProt	-0.177**	0.078	-0.177**	0.078	-0.287***	0.107	-0.287***	0.106
EvanProt	-0.193**	0.090	-0.187**	0.090	-0.373***	0.115	-0.364***	0.115
BlProt	0.360	0.242	0.345	0.241				
OthrChrist	0.973***	0.173	0.957***	0.178				
OtherRel	-0.333*	0.199	-0.335*	0.199				
private	-0.966***	0.098	-0.939***	0.098	-0.725***	0.137	-0.696***	0.136
NewEngland	-0.115	0.144	-0.052	0.154	-0.523**	0.222	-0.465	0.290
MidEast	0.115	0.120	0.183	0.126	-0.117**	0.152	0.010	0.162
GreatLakes	-0.097	0.118	-0.065	0.125	-0.281*	0.151	-0.233	0.162
Plains	-0.378***	0.117	-0.337***	0.123	-0.479***	0.136	-0.431***	0.145
SouthEast	0.061	0.114	0.098	0.120	-0.030	0.129	0.016	0.136
SouthWest	0.024	0.134	0.073	0.142	0.068	0.156	0.144	0.166
Novelty	0.185	0.409	0.254	0.243	0.132*	0.429	0.212	0.253
Nov*NE	-0.644	0.435	-0.694**	0.288	-0.238	0.473	-0.305	0.366
Nov*ME	-0.624	0.423	-0.753***	0.272	-0.409	0.442	-0.622***	0.286
Nov*GL	-0.406	0.420	-0.454*	0.256	-0.263	0.442	-0.364	0.274
Nov*PL	-0.414	0.425	-0.465*	0.271	-0.248	0.442	-0.319	0.281
Nov*SE	-0.197	0.431	-0.378	0.260	-0.152	0.443	-0.312	0.268
Nov*SW	-0.104	0.498	-0.374	0.283	-0.033	0.507	-0.371	0.291
\mathbb{R}^2	0.546		0.550		0.499		0.505	
Mean VIF	2.570		2.440		2.79		2.76	

Note: Year fixed effects not included, but available upon request. Standard errors clustered by university. * p<0.10, **p<0.05, ***p<0.01

Table 3

Regression Results, Year-to-year Novelty Variables

Sample	All		Matched	
Variable	Coef	SE	Coef	SE
NewEngland	-0.081	0.152	-0.509*	0.279
MidEast	0.150	0.125	-0.061	0.162
GreatLakes	-0.090	0.124	-0.283*	0.161
Plains	-0.360***	0.122	-0.474***	0.145
SouthEast	0.074	0.119	-0.027	0.137
SouthWest	0.043	0.140	0.084	0.166
yr1	0.209	0.366	0.116	0.381
yr2	0.332	0.537	0.250	0.594
yr3	0.067	0.505	0.004	0.535
yr4	0.168	0.464	0.109	0.495
yr5	0.088	0.473	0.110	0.481
yr6	-0.031	0.243	-0.080	0.252
yr7	0.160	0.196	0.087	0.210
yr8	0.058	0.183	-0.030	0.189
yr9	-0.072	0.138	-0.038	0.137
yr10	0.114	0.166	0.032	0.171
yr1*NE	-0.769**	0.384	-0.217	0.451
yr2*NE	-0.878	0.554	-0.396	0.645
yr3*NE	-0.549	0.525	-0.141	0.589
yr4*NE	-0.700	0.493	-0.289	0.563
yr5*NE	-0.570	0.516	-0.266	0.556
yr6*NE	-0.447	0.288	-0.073	0.359
yr7*NE	-0.470*	0.262	-0.084	0.335
yr8*NE	-0.470*	0.269	-0.084	0.328
yr9*NE				
yr10*NE	-0.498**	0.249	-0.073	0.317
yr1*ME	-0.620	0.395	-0.365	0.412
yr2*ME	-0.785	0.553	-0.565	0.608
yr3*ME	-0.671	0.523	-0.475	0.551
yr4*ME	-0.700	0.482	-0.525	0.513
yr5*ME	-0.516	0.492	-0.447	0.502
yr6*ME	-0.362	0.282	-0.230	0.296
yr7*ME	-0.654***	0.248	-0.476*	0.264
yr8*ME	-0.610**	0.241	-0.433*	0.245
yr9*ME				
yr10*ME	-0.568**	0.231	-0.412*	0.229

yr2*GL -0.550 0.550 -0.408 0.605 yr3*GL -0.260 0.513 -0.099 0.549 yr4*GL -0.278 0.497 -0.114 0.530 yr5*GL -0.529 0.489 -0.455 0.505 yr6*GL -0.266 0.218 -0.167 0.247 yr8*GL -0.266 0.218 -0.167 0.247 yr8*GL -0.143 0.230 -0.039 0.246 yr9*GL yr10*GL -0.311 0.261 -0.191 0.270 yr1*PL -0.444 0.373 -0.245 0.386 yr2*PL -0.532 0.545 -0.328 0.598 yr3*PL -0.301 0.571 -0.140 0.591 yr4*PL -0.505 0.507 -0.345 0.534 yr5*PL -0.426 0.509 -0.346 0.510 yr6*PL -0.474* 0.275 -0.319 0.278 </th <th>yr1*GL</th> <th>-0.484</th> <th>0.389</th> <th>-0.304</th> <th>0.403</th>	yr1*GL	-0.484	0.389	-0.304	0.403
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yr2*SE -0.256 0.661 -0.144 0.706 yr3*SE -0.060 0.678 0.046 0.694 yr4*SE -0.098 0.607 -0.023 0.630 yr5*SE -0.122 0.525 -0.164 0.530 yr6*SE 0.036 0.311 0.030 0.316 yr7*SE -0.370 0.265 -0.342 0.273 yr8*SE -0.257 0.235 -0.224 0.237	F-				
yr3*SE -0.060 0.678 0.046 0.694 yr4*SE -0.098 0.607 -0.023 0.630 yr5*SE -0.122 0.525 -0.164 0.530 yr6*SE 0.036 0.311 0.030 0.316 yr7*SE -0.370 0.265 -0.342 0.273 yr8*SE -0.257 0.235 -0.224 0.237	F-	-0.069	0.445		0.439
yr4*SE -0.098 0.607 -0.023 0.630 yr5*SE -0.122 0.525 -0.164 0.530 yr6*SE 0.036 0.311 0.030 0.316 yr7*SE -0.370 0.265 -0.342 0.273 yr8*SE -0.257 0.235 -0.224 0.237		-0.256	0.661		
yr5*SE -0.122 0.525 -0.164 0.530 yr6*SE 0.036 0.311 0.030 0.316 yr7*SE -0.370 0.265 -0.342 0.273 yr8*SE -0.257 0.235 -0.224 0.237	•				
yr6*SE 0.036 0.311 0.030 0.316 yr7*SE -0.370 0.265 -0.342 0.273 yr8*SE -0.257 0.235 -0.224 0.237	yr4*SE	-0.098	0.607	-0.023	0.630
yr7*SE -0.370 0.265 -0.342 0.273 yr8*SE -0.257 0.235 -0.224 0.237	yr5*SE	-0.122	0.525	-0.164	0.530
yr8*SE -0.257 0.235 -0.224 0.237	yr6*SE	0.036	0.311	0.030	0.316
	yr7*SE	-0.370	0.265	-0.342	0.273
yr9*SE	yr8*SE	-0.257	0.235	-0.224	0.237
	yr9*SE				