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The effects of demographic and athletic variables on the retention of international student-athletes

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Abstract

Student retention is a common issue for college/university administrators. While student retention as a whole has been well-explored, targeted samples of the student population deserve more attention. Within student-athlete research, many scholars state that the significant cultural differences international student-athletes (ISAs) face warrants exploration. The study utilized cultural competency training (CCT) as the framework, the purpose of this study was to examine athletic and demographic variables to determine if any can predict the retention of ISAs through four years. Eight independent variables were used to evaluate retention among NCAA Division I ISAs: gender, home country (by continent/region), English proficiency of home country, sport, sport type (individual/team), scholarship type (headcount/equivalency), coaching change, and average team conference winning percentage. Correlation matrices and multiple linear regression were used to determine if the independent variables had a relationship with/predicted ISA retention. Post-hoc cross tabulations were conducted to further explore the significant variables. The results found that six of the eight variables investigated were significant predictors of retention. The insignificant variables were found to both be demographic variables. Ultimately, the findings from this study have the potential to inform college athletic administrators increating best practices for developing and retaining ISAs.

Keywords: international student-athletes; retention; college sport

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1. Background/Introduction

Within the last decade, the number of enrolled international student athletes (ISAs) competing in the National Collegiate Athletic Association (NCAA) has doubled to approximately 18,000 (Li et al., 2019), of which nearly 13,000 compete in NCAA Division I athletics (NCAA, 2020b). The increase in number of ISAs suggests that coaches are placing an increased emphasis on recruiting ISAs, and an increased interest by ISAs to compete in college athletics within the United States (U.S.). Increased recruitment by coaches and administrators highlights the need for specific research into ISAs that can influence policy decisions (Turick et al., 2020). ISAs are an important subgroup to explore as they experience the trials of being international students coupled with the strain of being student-athletes (SAs).

Not only are ISAs a unique blend of international students and SAs, but they also have vastly different needs than domestic SAs. One of the most salient differences facing ISAs are language and cultural differences (Bentzinger, 2016; Kontaxakis, 2011; Manwell, 2018). Participants across various qualitative studies noted that adapting to a new language tends to be the most difficult adjustment (Kontaxakis, 2011; Manwell, 2018; Popp et al., 2010). Outside of language barriers, ISAs also must adjust to a new sport governance style. The NCAA is a unique sport governing system that has been described as an economic cartel (Zimbalist, 1999) that is not mirrored anywhere else in the sports world. Even at the collegiate level, this system is often profit driven. Most other countries opt for a club-based system (Li et al., 2019). The differing sport systems also impact how ISAs view their athlete role, either as a way to develop physical skills and abilities, be competitive, or socialize with friends (Popp et al., 2009). For some ISAs, competing in college athletics is the only way they can continue their athletic careers after secondary school (Bentzinger, 2016). Overall, a myriad of cultural differences and unique sporting systems can impact an ISA's transition to the U.S., as well as their retention at a university.

While a substantial amount of research has been conducted on how to retain college students (e.g., Bettinger & Long, 2017; Gansemer-Topf et al., 2014; Han et al., 2017; Millea et al., 2018), "little information was found on the retention of specific populations of students" (Le Crom et al., 2009, p15). Bean and Metzner (1985) first suggested the need for more targeted retention research more than three decades ago. In recent years, there has been an increase in research conducted on smaller subgroups such as international students, graduate students, and SAs (Johnson et al., 2012; 2013a; Mamiseishvili, 2012; Turick et al., 2020). However, the retention of ISAs has yet to be thoroughly explored. Current retention research indicates that domestic SAs face different criteria for selecting a college than non-athlete students (Popp et al., 2011), as well as increased time demands from both athletics and academics during their college experience (Johnson et al., 2013a; Le Crom et al., 2009). However, because of the rapid increase in enrollment of ISAs over the past few decades the need to explore ISA retention has value for sport management practitioners and scholars.

The current body of research into ISA retention is largely qualitative and typically focuses on understanding the experiences of a select few ISAs. Bentzinger (2016), Manwell (2018), and Kontaxakis (2011) qualitatively explored the experiences of a small number of ISAs at a specific institution. However, to develop external validity through generalization, further quantitative research is needed to inform policy, as well as educate coaches and administrators about how ISAs are impacted by athletic and demographic variables.

2. Review of Literature

The current intercollegiate sport landscape within the U.S. has become popular for ISAs because of the increased sport commercialization and strong academic reputations of many colleges (Johnson et al., 2012; 2013a; Le Crom et al., 2009). ISAs appear to be attracted to both the competitive nature of U.S. college sport and the academic incentives that accompany playing a sport at a U.S. college (Kontaxakis, 2011; Manwell, 2018; Popp et al., 2009). As international recruiting has increased, so too has the need for athletic administrators and coaches to understand the complexity of retention among their athletes (Manwell, 2018; Turick et al., 2020).

2.1 College Students

Domestic students are the largest group of students attending U.S. institutions. The most common variable impacting the retention of domestic students in the U.S. is not feeling a sense of belonging (Han et al., 2017; Millea et al., 2018). Several studies have noted that if students feel they are a part of the college community, they are more likely to be retained (Gansemer-Topf et al., 2014; Han et al., 2017; Hausmann et al., 2007; Manwell, 2018). In a seminal study on the sense of belonging, Tinto (1993) theorized a model of student integration. The model highlights two facets that affect student retention – social and academic integration. Social integration highlights the importance of students feeling engaged with their campus and creating new social experiences. Similarly, academic integration is when students feel supported by professors and committed to their course work. Essentially, Tinto found that a student's personal characteristics shape their initial commitment level to finishing college and completing a degree, as well as the academic and social experiences of the student throughout their college experience.

Increasingly, domestic student retention has been impacted by financial limitations. (Han et al., 2017; Millea et al., 2018). While student loans have become the norm for low and middle-income families, this option is not workable for every family. The hidden costs of attending a higher education institution often cause families to alter how they 'make-ends-meet' (Bozick, 2007). Hausmann et al. (2007) outlined how the added responsibility of working throughout college can decrease a student's likelihood of continuing their education, as well as increasing their chances of receiving lower grades.

While institutional characteristics, personal characteristics, and financial constraints broadly impact a large portion of domestic students (Bet-

tinger & Long, 2017; Han et al., 2017; Millea et al., 2018), international students have additional retention considerations. Currently, over one million students attending a college or university in the U.S. are international students (Wermund, 2018). Between 2008 and 2013, there was a 39% increase in the number of undergraduate international students in the U.S. (Schulte & Choudaha, 2014). The rapid rise in international student populations has left many institutions ill-equipped to serve this student group (Andrade & Evans, 2009). Either the institutions do not have the appropriate services, or they have not increased their international support staff. The deficit of services, as well as the rapid growth in number of international students, emphasizes why there may be a lack of current research into this student subgroup (Schulte & Choudaha, 2014).

Two of the most reported issues contributing to high attrition rates among international students are language difficulties and cultural barriers (Andrade & Evans, 2009; Bentzinger, 2016; Kontaxakis, 2011; Mamiseishvili, 2012; Manwell, 2018). Students with remedial levels of English suffer from a low level of social connection and integration making them more at risk of attrition than other international students. Even when English skills are adequate, Andrade and Evans (2009) noted that international students face challenges with the course work, often needing to spend longer on readings without necessarily comprehending material as quickly as a native speaker might. Being able to communicate effectively in the dominant language of the institution has proven to be a key determinant in retention of international students (Andrade & Evans, 2009; Mamiseishvili, 2012; Schulte & Choudaha, 2014).

Similar to domestic students, financial concerns are a factor in predicting the retention of international students (Bista & Foster, 2011). Specifically, the cost of tuition and the inability for international students to work off-campus can cause financial hardship. The current average annual tuition cost in the U.S. is approximately $30,000, almost twice as high as the average cost for the rest of the developed world (Cooper, 2019). Coupled with high tuition costs, the F-1 student visa restrictions state that an international student is only permitted to work on campus, with specific education-related employment opportunities available off-campus (USCIS, 2020). International students are also prohibited from applying for financial aid, making the cost of college tuition an *out-of-pocket* expense (Bista & Foster, 2011; USCIS, 2020). Because these restrictions also apply to ISAs, it is assumed that these financial considerations also impact their retention decisions (Le Crom et al., 2009). However, with the aid of athletic scholarships, these concerns may be mitigated.

One method that may assist international students in their transition to the U.S. is by engaging in cultural competency training (CCT) (Sue, 2006). The conceptual framework for this training model outlines three key areas: (a) cultural awareness and beliefs; (b) cultural knowledge; (c) cultural skills. By understanding other cultures, their differences, and similarities, services and programs can be tailored to the specific needs of each international student, and not simply as a homogenous group.

2.2 Student-Athletes

The last two decades have seen Division I athletics dramatically increase in commercialization and quality (Johnson et al., 2012; 2013a; Le Crom et al., 2009). Because of this increase, SAs are faced with amplified pressure from their demanding athletic schedules and their strong athletic identities (Le Crom et al., 2009; Johnson et al., 2012; 2013a). Furthermore, a SA's college decision is often impacted by different factors than traditional students (Popp et al., 2011). These include the quality of the athletic program, the coach's philosophy, and the quality of athletic facilities.

Due to the rise in popularity of NCAA athletics, the Associationhas continuously worked to promote SA academic success. One method for doing this was by implementing academic standards, such as the Academic Progress Rate (APR) (NCAA, 2020a). APR combines eligibility and retention in each semester to measure how effectively a team is performing academically. By making the APR database available to the public, the NCAA has facilitated a substantial increase in awareness, interest, and research into SA retention (Johnson et al., 2012; Le Crom et al., 2009).

Le Crom et al. (2009) found that gender and sport type were significant predictors of retention, with female/individual sport athletes being retained at higher rates than male/team sport athletes. As one of the earliest studies into APR and SA retention, the finding that team/individual sport type is a significant predictor of retention establishedquestions about why different types of sports may produce different levels of retention. Additionally, the finding that gender is a significant predictor of retention forSAs highlights that gender impacts retention across many different student subgroups. While Le Crom et al. found that type of scholarship support did not predict retention, when coupled with other variables, scholarship support influenced the retention of SAs.

In addition to Le Crom et al.'s work, Johnson et al. (2012) hypothesized that SAs are less likely to leave college if they have been retained into their second year of college. Johnson et al. found sport type (revenue or nonrevenue sports) to have the strongest relationship with APR, with revenue generating sports scoring almost 19 APR points lower than nonrevenue generating sports. Coaching change and team winning percentage were also found to significantly impact APR (Johnson et al., 2012). A higher winning percentage improved APR scores, while a coaching change negatively impacted APR scores. Overall, Johnson et al. highlighted that the rigor of Division I athletics can significantly impact the academic success of a SA.

2.3 Cultural Competency and International Students

Cultural differences are critical when evaluating international students. The theory of cultural competency training (CCT) involves "one's actions and will to better understand different people, to be open and respectful of new cultural perspectives, and to work to provide equal opportunities for all" (Turick et al., 2020, p. 6). Within CCT, Lynch (2011) identified three dimensions

of education. First, participants are encouraged to examine their own culture and reflect. Second, participants must learn about other cultures and accept that they may have minimal awareness and pre-existing misconceptions. Finally, CCT involves participants learning specifically about the cultures and traditions of the population they are working with, as this will permit them to form genuine relationships and provide culturally sensitive support (Lynch, 2011; Turick et al., 2020).

Furthermore, CCT is vital in understanding the unique aspects of each international student (Sue, 2006). Because ISAs are an amalgamation of two distinct subgroups – international students, and SAs – CCT also has value within an athletic department due to the international background of many SAs (Turick et al., 2020). However, Cooper et al. (2017) outlined how NCAA member institutions and administrators lack CCT training. In 1991, the NCAA introduced legislation enforcing the need for academic support for SAs, addressing the *student* portion of a SA's identity (Sack & Staurowsky, 1998). However, since then, no systematic efforts have been introduced to assist other parts of a SA's identity, such as being an *international* student-athlete (Cooper et al., 2017). As the literature illustrates, different factors impact ISAs, and specific CCT training is lacking at many institutions.

2.4 Retention Factors

Gender. Gender has consistently been found to be a predictor of retention among college students. Reason (2009) expressed that "gender should be included as [a] predictor variable in all retention studies" (p. 497) due to the consistent findings of previous studies. Among the narrower subset of SAs, gender was found to be a significant predictor of retention (Johnson et al., 2012; Le Crom et al., 2009). Spady's (1971) retention research found that although attrition for males mostly involved their academic performance, female retention decisions involved more complex factors (i.e., institutional commitment and social integration). These complex decisions are likely enhanced for SAs who face a more complicated array of decisions than domestic students (Johnson et al., 2013a). Because ISAs are part of the SA subgroup, it is logical to assume that gender will also influence the retention of ISAs.

Language. One of the primary concerns about an ISA's country of origin is that there is often a language adjustment/barrier that the athlete will have to overcome. Even if an ISA comes from an English-speaking country, nuances within U.S.-English and in sporting vernacular can create adjustment difficulty for ISAs (Andrade & Evans, 2009; Turick et al., 2020). Although it is obvious how unfamiliarity with a secondary language would inhibit their academic performance, a common challenge cited by participants was their lack of proficiency in English and generational slang-words left them struggling to create social relationships (Bentzinger, 2016; Kontaxakis, 2011; Manwell, 2018). Because ISAs come from different countries with unique cultural factors, it is reasonablethat an ISA's country of origin may impact their experience and likelihood of retention.

Culture. While language does play a crucial role in how a student performs in higher education, Andrade and Evans (2009) noted that broader cultural differences impact the retention of in-

ternational students. These include the academic environment, and the unfamiliarity with the U.S. higher education system. In addition to the education style, there are significant differences in how cultures shape perceptions of daily life. These differences are referred to as cultural indices (Hofstede, 2001). The five cultural indices are; (a) power-distance; (b) individualism; (c) masculinity; (d) uncertainty avoidance; (e) long-term orientation.

The two indices that most closely relate to ISAs are power-distance and individualism. Power-distance refers to "the extent to which less powerful members of organizations and institutions accept and expect that power is distributed unequally" (Crede & Borrego, 2014, p. 1601). Countries low on the power-distance index typically incorporate western cultures, while Asian countries typically have a high power-distance index (Crede & Borrego, 2014; Hofstede, 2001). For international students from high power-distance countries, this can prove to be challenging when interacting with professors, coaches, and administrators for whom the power-distance index is low. Individualism (the opposite being collectivism), signifies how integrated individuals are into the larger group (Hofstede, 2001). Countries with a low power-distance index tend to be individualistic societies with loose familial and friendship bonds and a self-reliant attitude (Crede & Borrego, 2014). High power-distance countries on the other hand are often more collectivist societies. This means the needs of the family, group, and society are more important than the individual's needs. Manwell (2018) outlined how having to adjust from a collectivist society to an individualistic society is an often-overlooked adjustment issue for ISAs. The cultural differences between countries highlights how the country of origin of an ISA could impact their retention decision.

Sport Played. A key consideration when evaluating the retention of ISAs is their sport. Women's and men's tennis and women's and men's soccer have some of the highest proportions of ISAs per team, while baseball and softball have some of the lowest proportions (NCAA, 2020b). These statistics highlight the potential discrepancy in resources and knowledge about ISAs on a team-by-team basis. Similarly, a lack of other ISAs on a team may impact how ISAs perceive team dynamics. Several studies have outlined the importance of having a community of ISAs for support, and that it is a critical factor in their adjustment (Kontaxakis, 2011; Manwell, 2018). Therefore, teams with a high number of ISAs may be better at retaining this subgroup of students. Popp et al. (2010) noted that there is comfort in being connected to other ISAs as they are most likely going through many of the same adjustments.

Sport Type. Another factor that has been found to affect the retention rates of SAs is whether the athletes are participating in an individual or team sport (Le Crom et al., 2009). Weiss and Robinson (2013) found that many players who quit an athletic team did so due to poor team dynamic/cohesion issues, such as a lack of cultural understanding from their teammates and coaches, or teams with cliques and groups. The authors suggested that athletes participating in a team sport find poor relationships with teammates to be more destructive than in individual sports where performance does not rely on teammates. Toxic team environments have been found to have a greater effect on

team-sport athletes than individual athletes who can remove themselves from the team environment without it inhibiting their individual performance (Le Crom et al., 2009; Weiss & Robinson, 2013).

Finances. Researchers have hypothesized that financial constraints do not play as big of a role in the retention of SAs due to the scholarships they often receive (Johnson et al., 2012; 2013a; Le Crom et al., 2009). However, the type of scholarship received has been found to significantly impact retention (Johnson et al., 2013a; Le Crom et al., 2009) and satisfaction (Trendafilova et al., 2010). Typically, SAs who receive partial funding rather than a full scholarship have a greater likelihood of being retained (Le Crom et al., 2009). One explanation has been linked to the different motivation factors of SAs whereby the athletes who are receiving partial scholarships are more intrinsically motivated than their full scholarship peers (Le Crom et al., 2009). Intrinsic motivation pertains to "engaging in an activity purely for the pleasure and satisfaction derived from doing the activity" (Pelletier et al., 1995, p. 36). Conversely, extrinsic motivation refers to "a wide variety of behaviors that are engaged in as a means to an end and not for their own sake" (Pelletier et al., 1995, p. 37).

Coach. The coach-athlete relationship is another important variable within collegiate athletics (Weiss & Robinson, 2013). Coaches can influence a SA's athletic development and success, social skills, and their emotional and psychological growth (Field, 1991). Researchers have thoroughly explored the many roles of a coach, highlighting how coaches fill roles of teachers (Brubaker; 2007), guardians, and counselors (Bradley, 2005). Johnson et al.'s (2012) study on first-year retention and Johnson et al.'s (2013b) follow-up study on Football APR found that coaching changeswere a significant predictor of APR. These results highlight the importance of the coach-athlete relationship and how changes in leadership can disrupt both SA academic performance and retention (Brubaker, 2007; Weiss & Robinson, 2013). Relatedly, team winning percentage provides insight into the quality of the program and has been found to influence SA retention. Johnson et al. (2012) found that conference winning percentage had a significant effect on APR. It is logical that winning would impact the retention and eligibility of those SAs on the team because "it is fun to win" (p. 165). Additionally, the unique circumstances of ISAs suggest that the coach-athlete relationship may be more important for them than for their domestic counterparts (Manwell, 2018).

3. Purpose, Research Questions, and Hypotheses

Based on the aforementioned literature, the purpose of this study was to determine whether athletic and demographic factors were able to predict the retention of ISAs through four years of eligibility in Division I-FBS NCAA Power 5 conferences. To that end, this study utilized findings from prior ISA studies to identify the variables of interest (Johnson et al., 2012; 2013a; Kontaxakis, 2011; Le Crom et al., 2009; Manwell, 2018; Trendafilova et al., 2010). Finally, the study was grounded in the framework of CCT to understand the retention factors impacting ISAs (Sue et al., 1996).

Several questions from the existing literature guided the researchers in creating research questions and hypotheses.

RQ1: What variables are significantly correlated with ISA retention?

H1: All the demographic and athletic variables will be significantly correlated with ISA retention.

RQ2: What variables significantly aid in predicting ISA retention?

H2:All of the demographic variables – language, location, and gender – andathletic variables – sport type, scholarship type, coaching change, sport, and average team conference win percentage – will aid in predicting ISA retention.

4. Methods

4.1 Population and Sampling

According to the NCAA's Country of Origin dataset, 6,398 international student-athletes (ISAs) competed in Division I baseball, basketball, soccer, softball, and tennis in 2018 (NCAA, 2020b). The sample for this examination includes all Division I schools competing in a "Power 5" conference. The Power 5 conferences are the: Atlantic Coast Conference (ACC), Big Ten Conference, Big 12 Conference, Pacific-12 Conference, and Southeastern Conference (SEC). Power 5 institutions encompass a wide geographic area of the United States and are considered the most competitive and highly resourced programswithin the NCAA. ISAs who began their first season of competition from 2011-2016 were considered for this study to ensure that they competed into their fourth year of eligibility; meaning they exhausted their eligibility in 2019/2020.

The sports analyzed in this study are baseball/softball, men's and women's basketball, men's and women's soccer,and men's and women's tennis. These sports were specifically chosen as they have four unique characteristics. First, these sports vary in their number of ISA participants. Men's and women's tennis has the highest proportion of ISAs per team, followed by men's and women's soccer (NCAA, 2020b). Conversely, baseball and softball have the lowest proportion of ISAs per team. Second, a mix of team (basketball, soccer, baseball/softball), and individual sports (tennis) were chosen to determine if team or individual sports offered an environment that discouraged attrition (Le Crom et al., 2009; Johnson et al., 2012). Although tennis was the only individual sport examined, the number of ISAs participating in tennis equated to roughly half of our data points. Third, men's basketball, women's basketball, and women's tennis are sports that offer headcount scholarships (NCAA Manual, 2021). Fourth, only sports that had a gender counterpart were chosen (baseball and softball are considered to be equivalent in this study) to ensure that the gender differences in the type of sport would not impact differences in retention. The aforementioned variations helped to determine if differing athletic contexts impacted ISA retention. While there are 24 sports offered by the NCAA, additional sports were not examinedfor this study because they either do not have a gender equivalent, only have a few ISAs, or are not prevalent at Power 5 institutions (see ice hockey).

4.2 Procedures

Data were collected from online archives, which included the roster pages found on athletic websites as well as digital media guides for each sport. Increased scrutiny of electronic sources has led to greater acceptance of electronic reproductions in archival research as a better level of accuracy and reliability can be attained (Sterling et al., 2012). Additionally, the reporters of the electronic information – in this case the Sports Information Directors (SIDs) – have nothing to gain from falsifying the information (Regan, 2017). Data was compiled on every ISA that began participating in athletics between 2011-2012 and 2015-2016 so that determinations could be made about retention through completion of their eligibility. Eight independent athletic and demographic variables were examined to determine their ability to predict/impact the retention of ISAs. The athletic variables were (a) sport [baseball, basketball, soccer, softball, and tennis]; (b)sport type [individual/team]; (c) sport scholarship type [equivalency/head count]; (d) coaching change [a change did occur/a change did not occur]; and (e) average team conference winning percentage. The demographic variables were (a) location [ISA's home continent]; (b) language [English Proficiency Index score (Education First, 2020) of the ISA's home nation];and (c) gender [male/female]. The dependent variable was the retention of an individual ISA from year-to-year (Le Crom et al., 2009). Retention was measured on an annual basis through the athlete's status as a team member during the start of the fall semester. Data were compiled into a spreadsheet using Microsoft Excel software. The qualitative variables were coded by assigning the variable outcomes with a specific number. Every ISA was treated as a single observation for the number of years they were retained. Data were collected from each Power 5 institution for as many of the sports as they sponsor. Because some sports are not offered by every institution (e.g., men's soccer) some variables had more observations that others.

4.3 Data Analysis

The data were analyzed using SPSS Predictive Analytics Software version 27. Descriptive statistics were examined to determine frequency counts, measures of central tendency, standard deviations, percentages, and normality of the data. Additionally, a Pearson Correlation analysis was conducted to determine if any statistically significant relationships existed between the independent variables and ISA retention (RQ1). Next, a multiple linear regression analysis was run using the independent variables against the criterion/outcome variable of retention. The multiple linear regression analysis determined which independent variables aided in predicting ISA retention through four-years at a 0.05 alpha level (RQ2). The regression analyzed retention on an annual basis to determine whichvariables best predicted ISA retention through four-years of college. Additionally, post-hoc cross-tabular information was utilized to further investigate the variables and their relationships.

5. Results

In reviewing the frequency results (see Table 1), there were several noteworthy outcomes. Of the 835 (N = 835) recorded ISA observations,

almost three-quarters (73.4%; *n* = 613) were retained through four years. There was a relatively even spread between the gender of ISAs, with slightly more females (51.3%; *n* = 428) than males (48.7%; *n* = 407). The ACC had the most ISAs (27.8%; *n* = 232), while the SEC had the fewest (14.5%; *n* = 121). Additionally, half (50.3%; *n* = 420) of all the ISAs were from a European country, with the next highest arriving from North America (i.e., Canada) (18.1%; *n* = 151). In terms of language, using English Proficiency Index scores (Education First, 2020),one-third (33.3%; *n* = 278) of all the ISAs were from countries scored as "Native", while most (70.1%; *n* = 585) were from countries scored as "High", "Very High", or "Native". Women's tennis (26.7%; *n* = 223), men's tennis (24.1%; *n* = 201), and women's soccer (14.5%; *n* = 121) had the most ISAs among the examined sports. Conversely, softball (0.6%; *n* = 5), baseball (2.5%; *n* = 21), and women's basketball (9.5%; *n* = 79) had the fewest ISAs among the examined sports. The group size differences between team (50.8%; *n* = 424) and individual sports (49.2%; *n* = 411), as well as headcount (50.3%; *n* = 420) and equivalency (49.7%; *n* = 415) sports, were relatively even.One-fifth (20.7%; *n* = 173) of the observed ISAs experienced a coaching change during their time at an institution. Lastly, the average conference winning percentage for ISAs during their careers was, ironically, average (*M* = 50.08, *SD* = 23.16).

Table 1 *Demographic Characteristics of ISAs in this Study*

Demographic Variable	*n*	%
Gender		
Female	428	51.3
Male	407	48.7
Location		
Europe	420	50.3
North America	151	18.1
Oceania	76	9.1
South America	55	6.6
Asia	52	6.2
Africa	37	4.4
Central America	23	2.8
Middle East	21	2.5
Language (English Proficiency Index Score)		
Native	278	33.3
Very High	201	24.1
Moderate	115	13.8

High	106	12.7
Low	94	11.3
Very Low	41	4.9
Sport		
Women's Tennis	223	26.7
Men's Tennis	201	24.1
Women's Soccer	121	14.5
Men's Soccer	93	11.1
Men's Basketball	92	11.0
Women's Basketball	79	9.5
Baseball	21	2.5
Softball	5	0.6
Sport Type		
Individual	424	50.8
Team	411	49.2
Sport Scholarship Type		
Head Count	420	50.3
Equivalency	415	49.7
Experienced a Coaching Change		
No	662	79.3
Yes	173	20.7
Total Number of Years Retained		
Four Years	613	73.4
One Year	90	10.8
Three Years	70	8.4
Two Years	62	7.4
Retained		
Yes	613	73.4
No	222	26.6

After recording the frequency statistics, Pearson correlation analyses were run (see Table 2) to determine if any statistically significant relationships existed between the independent variables and ISA retention. Sport type, meaning team versus individual sport, had a statistically significant weak positive correlation ($r = 0.096$; $p = .005$) with retention – as individual sports were more strongly related with retention than team sports. Coaching change had a statistically significant weak negative correlation ($r = -0.107$; $p = .002$) with retention – meaning as the coaching change variable increased so did retention,

indicating that more coaching changes means more retention. Although not statistically significant at an alpha level of .05, average conference win percentage was approaching significance (r = -0.067; p = .053) with its weak negative correlation with retention, indicating that as average conference win percentage of the ISA increases, retention increases – the more they win, the longer they stay.

Table 2 *Correlations for ISA Study Variables*

Variable	Retention
Retention	-
Gender	-.031
Location	.000
Language	-.023
Sport	-.012
Sport Type	.096*
Scholarship Type	-.014
Coaching Change	-.107*
Avg. Conf. Win %	-.067**

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is approaching significance at the 0.05 level (2-tailed)

Following the Pearson correlation analyses, a multiple regression analysis was conducted to determine how well the independent variables predicted retention (see Table 3). The model summary for the regression equation is statistically significant, R^2 = .059, $F(8, 826) = 6.435$, $p < .001$. Thus, the independent variables statistically significantly predict the dependent variable of retention. The R^2 value indicates that 5.9 percent of the variance in the dependent variable (retention) can be explained by the independent variables in the regression equation. Although the R^2 value is low, it makes sense when considering the context of this study is predicting human behaviour and people are hard to predict (Frost, 2018). The eight independent variables examined in this study are quantifiable and easily accessible – which is why we chose them for the regression equation – but they do not account for some of the qualitative ISA struggles that have been identified in the literature. Some additional reasons for why ISAs might not be retained through four years include academic struggles, difficulty adjusting to a new climate, family-related issues, homesickness, mental health, poor athletic performance, social isolation (being the only 'one' on a team), etc. (Jara-Pazmino et al., 2017; Pierce et al., 2011; Rodriguez, 2014; Turick et al., 2020).

Table 3 *Correlations for ISA Study Variables*

Variable	*B*	*SE B*	*β*	*t*	*p*
Retention (Constant)	.765	.140			
Gender	-.129	.039	-.146*	-3.313	.001
Location	.001	.010	.005	0.126	.900
Language	-.003	.012	-.010	-0.235	.814
Sport	.074	.015	.292*	4.841	.000
Sport Type	.284	.051	.322*	5.598	.000
Scholarship Type	.075	.036	.085**	2.080	.038
Coaching Change	-.206	.040	-.189*	-5.142	.000
Avg. Conf. Win %	-.216	.066	-.113*	-3.255	.001

$R^2 = .059$, $F(8, 826) = 6.435$, $p < .001$.
*$p < 0.01$; **$p < 0.05$.

Grace-Martin (2013) noted that, "Even small effect sizes can have scientific or clinical significance" (para. 7), while Paetzold (2016) shared that, "…in some fields, *R*-square is typically higher, because it is easier to specify complete, well-specified models. But in the social sciences, where it is hard to specify such modes, low R-square values are often expected" (para. 1). To that end, the fact that the regression equation is statistically significant is of most importance for this examination. Six of the eight variables were found to be statistically significant predictors of ISA retention. Gender (β = -.146; p = .001), sport (β = .292; p< .001), sport type (β = .322; p< .001), scholarship type (β =.085; p = .038), coaching change (β = -.189; p< .001), and average win percentage (β = -.113; p = .001) were found to be statistically significant in predicting retention at the .05 alpha level. On the contrary, language (β = -.010; p = .814) and location (β = .005; p = .900) were not found to be statistically significant predictors of retention.

Of the 835 ISAs examined, one-fifth (20.7%; n = 173) experienced a coaching change. When furthering examining that group, less than one-fifth (17.3%; n = 30) of those ISAs were not retained. In alignment with the focus on retention, of which slightly over one-quarter (26.59%; n = 222) of our observations were not retained, a crosstabs table was created to show how the eight independent variables differed in regards to retention. Men's and women's tennis recorded the highest proportion of retained ISAs, 78.6% and 76.7% respectively – not counting softball retaining four-fifths of its ISAs (20.0%; n = 4). Women's basketball recorded the highest proportion of coaching changes (27.8%), with women's tennis also boastinga high proportion of coaching changes (20.2%). However, 86.4% of these players who experienced a coaching change would go on to be retained through four years – higher than the team average retention rate. In addition, men's soccer exhibited the lowest proportion of coaching changes at 10%, while baseball and

softball both exhibited 100% of ISAs experiencing a coaching change. However, the sample of ISAs for both baseball and softball was too small to draw conclusions.

Further post-hoc analyses of the descriptive statistics for all non-retained ISAs revealed several crucial findings. First, half (50.9%; *n* = 113) of ISAs who were not retained were from a European country. Second, only three-fifths of ISA (60.98%; *n* = 25) arriving from "Very Low" English Proficiency countries were retained. Third, "Native" and "Very High" English proficiency speakers accounted for over three-fifths (62.61%; *n* = 139) of the not retained ISAs. Fourth, non-retained ISAs are most susceptible to attrition after their first year, with 40.5% of non-retained ISAs leaving after their first year. Fifth, although it is a small sample, only a little over half (56.52%; *n* = 13) of ISAs from Central America were retained. Similarly, in terms of small sample sizes, more than half (61.90%; *n* = 13) of ISAs in baseball were not retained (Table 4).

Table 4 *Crosstabs for ISA variables and Retention*

Variable	Retention			
	No		Yes	
	n	%	*n*	%
Gender				
Male	114	28.01	293	71.99
Female	108	25.23	320	74.77
Location				
Central America	10	43.48	13	56.52
Oceania	22	28.95	54	71.05
Asia	15	28.85	37	71.15
Europe	113	26.90	307	73.10
North America	39	25.85	112	74.17
South America	14	25.45	41	74.55
Middle East	4	19.05	17	80.95
Africa	5	13.51	32	86.49
Language (English Proficiency Index Score)				
Very Low	16	39.02	25	60.98
Very High	64	31.84	137	68.16
Native	75	26.98	203	73.02
Moderate	29	25.22	86	74.78
Low	18	19.15	76	80.85
High	20	18.87	86	81.13

Sport				
Baseball	13	61.90	8	38.10
Men's Soccer	32	34.41	61	65.59
Women's Soccer	38	31.40	83	68.60
Men's Basketball	26	28.26	66	71.74
Women's Tennis	52	23.32	171	76.68
Women's Basketball	17	21.52	62	78.48
Men's Tennis	43	21.39	158	78.61
Softball	1	20.00	4	80.00
Sport Type				
Team	127	30.90	284	69.10
Individual	95	22.41	329	77.59
Sport Scholarship Type				
Equivalency	113	27.23	302	72.77
Head Count	109	25.95	311	74.05
Experienced a Coaching Change				
No	192	29.00	470	71.00
Yes	30	17.34	143	82.66

Table 4 *Crosstabs for Sport Type, Coaching Change, and Retention*

Variable	Coaching Change				Retention			
	No		Yes		No		Yes	
	%	%	*n*	%	*n*	%	*n*	*%*
Sport								
Baseball	0	0	21	100.00	13	61.90	8	38.10
Men's Soccer	78	83.90	15	16.10	32	34.41	61	65.59
Women's Soccer	105	86.80	16	13.20	38	31.40	83	68.60
Men's Basketball	78	84.80	14	15.20	26	28.26	66	71.74
Women's Tennis	178	79.80	45	20.20	52	23.32	171	76.68
Women's Basketball	57	72.20	22	27.80	17	21.52	62	78.48
Men's Tennis	166	82.60	35	17.40	43	21.39	158	78.61
Softball	0	0	5	100.00	1	20.00	4	80.00

6. Discussion/Conclusion

6.1 Demographic Variables

Gender was not significantly correlated with retention through four-years; however, it was found to be a significant predictor of retention through four-years. This result may appear counterintuitive but suggests that when evaluated in isolation there is not a relationship to retention, and when evaluated in tandem with the other variables it rises to the level of significance. This finding is not uncommon in regression analyses as the influence of multiple variables on each other can impact the magnitude of influence for one variable (Green & Salkind, 2014). The finding is consistent with much of the previous research which noted that gender is a predictor of retention (Johnson et al., 2012; Le Crom et al., 2009; Reason, 2003). Spady's (1971) seminal research into retention decisions, however, outlined why gender may not be individually related to retention for ISAs. Spady found that for domestic students, females were retained at higher rates because they generally faced more complex decision factors, beyond simply their academic eligibility. Meaning that females were more likely to be retained even if their academic standard was low because of other factors such as social connections. Spady's findings that gender is a significant predictor of retention through a vast array of student subgroups are echoed in the recent studies on domestic SA retention (Johnson et al., 2012; 2013a; 2013b; Le Crom et al., 2009). Furthermore, the results of this study indicate that gender is also a significant predictor of retention of ISAs through four-years.

The location variable was found to not significantly correlate with, or predict, retention through four years. This finding is also curious as past research has indicated that the retention of SAs is impacted by their geographical distance from home (Johnson et al., 2013a). A possible explanation for the lack of significance could be how the variable was defined. The location variable categorized ISAs based on the continent or region of their home country. This is a broad classification system that may disregard the myriad of nuances between cultures within a specific region. Cultural competency also highlights how a deeper understanding of specific cultures can help to better connect with international students, which reinforces why a larger geographical definition of location appears unsuitable (Sue, 2006). Ultimately, this result indicates that grouping ISAs by continent/region is likely too broad of a variable that does not add utility to ISA retention research.

The last demographic variable was language. Interestingly, this variable was also not found to significantly correlate with, or predict, retention. This was a surprising finding as most research into ISAs and international students cite language difficulties as one of the strongest barriers for academic integration (Andrade & Evans, 2009; Bentzinger, 2016; Kontaxakis, 2011; Manwell, 2018). The lack of significant relationships with retention could be due to the operational definition used in the study. Due to the archival study design, individual language skills of an ISA could not be assessed. The language variable was defined based on a broader assessment of language from the ISA's home country. The researcher used an English Proficiency Index (Education First,

2020) to classify the English proficiency of the ISA as either native, very high, high, moderate, low, or very low. Because of how broad the variance of English proficiency is within one country; a more specific measure of individual English proficiency could have yielded different results. Additionally, English proficiency may not have as much of an impact on ISAs over regular international students due to the 'social bubble' of competing on an athletic team (Manwell, 2018). Previous qualitative research into ISA retention has highlighted how many participants felt that their English improved quickly by being surrounded by teammates and coaches, as well as other ISAs adapting to a new language (Bentzinger, 2016; Kontaxakis, 2011; Manwell, 2018). Finally, the English/language skills of students willing to study in the U.S. is likely to be stronger than the average speaker in a specific country, especially for those ISAs from Canada. In summary, none of the three demographic variables appear to be predictors of ISA retention.

6.2 Athletic Variables

The first athletic variable examined was sport. This variable refers to the specific sport (e.g., tennis, soccer, basketball, baseball, or softball). Sport was not found to be significantly correlated with retention; however, it was found to be a significant predictor of retention. This result indicates that ISAs who play tennis are most likely to be retained, followed by soccer, and lastly basketball. Weiss and Robinson (2013) also found that different sports offered varying team dynamics and cohesion. This may be because of proportion of ISAs on the team, good team and coach relationships, and an inclusive environment within the team. Additionally, Manwell (2018) highlighted how ISAs rely on the support of teammates, other ISAs, and coaches, which makes a sport environment one that can impact their retention decisions. Because teams with high proportions of ISAs (e.g., tennis and soccer) were found to be better at retaining ISAs, these teams may be better at creating an enhanced culture of support during all phases of recruiting and playing. This team culture may support a social bubble from which ISAs feel comfortable, and ultimately may impact retention (Manwell, 2018). This point also reinforces the theory of cultural competency training, whereby ISAs likely feel some sense of comradery with other ISAs as they navigate their experiences playing college sports in the U.S.

The next athletic variable was team or individual sport. This variable was found to both significantly correlate with, and predict, retention. Individual sports retained ISAs at a higher rate than team sports. This finding reinforces the sport results above, as well as several studies indicating that poor team cohesion is detrimental in retaining ISAs (Gansemer-Topf et al., 2014; Han et al., 2017; Hausmann et al., 2007; Tinto, 1993). Additionally, Weiss and Robinson (2013) found that SAs in team sports were less likely to be retained than SAs who participated in an individual sport. This was because they found that team dynamics played a larger role for team sport athletes than individual sport athletes. They noted that SAs competing in individual sports did not have to rely on their teammates' performance, so they were more directly involved with their own athletic outcomes. Additionally, the lack of team

cohesion faced by ISAs on team sports highlights the potential lack of cultural awareness by their domestic SA counterparts and coaches. The nature of sports teams and becoming a close-knit family outlines how CCT could create a more welcoming and understanding environment for ISAs. In a similar study, Kontaxakis (2011) did not find a difference in retention between team or individual sport athletes. However, the research conducted by Manwell (2018) and Kontaxakis (2011) is qualitative in nature, meaning that these findings cannot be generalized for the entire ISA population. Because the findings from this study are quantitative, these results can better serve as generalizable results specifically for ISAs.

The next athletic variable was scholarship type. This variable was found to not significantly correlate with retention, but again it did significantly predict retention through four-years. The findings indicate that ISAs participating in equivalency sports are more likely to be retained through four-years. Past research confirms this finding, indicating that the amount of scholarship (e.g., full, partial, none) received by SAs impacts their retention (Johnson et al., 2013a; Le Crom et al., 2009). Furthermore, intrinsic and extrinsic motivation can play a part in whether a SA will be retained (Deci, 1975; Legault, 2016). For SAs who receive a full scholarship, Deci's (1975) research hypothesizes that they will be extrinsically motivated and less likely to be retained. Conversely, SAs who do not receive a full scholarship may be more intrinsically motivated by the satisfaction obtained from playing their sport, and therefore, more likely to be retained. Le Crom et al. (2009) found that SAs who receive partial funding rather than a full scholarship have a greater likelihood of being retained, confirming the extrinsic and intrinsic motivation theory (Deci, 1975; Legault, 2016). However, upon further review, this variable may have been too polarizing to capture how scholarship type impacts the retention of ISAs. In this study, scholarship was defined as whether the ISA participated in a head count sport (e.g., basketball, or women's tennis) or an equivalency sport (e.g., soccer, baseball, softball, or men's tennis). Future research could consider the percentage of funding received.

The coaching change variable was found to be significantly correlated, and the strongest significant predictor of retention. However, the results indicated that this variable had a negative significance, meaning that retention rates increased as a result of a coaching change. This finding is surprising as it is inconsistent with the current body of coaching change and retention literature (Johnson et al., 2012; 2013a; 2013b). Because of the immense obstacles facing ISAs as well as their smaller social network (Manwell, 2018), it was hypothesized that coaching change would be a significant predictor of ISA retention, such that an ISA who experienced a coaching change would be less likely to be retained. Often, students who transfer do so because of subjective variables (e.g., team dynamics, coaching experiences, win percentage), and not the constant variables (e.g., sport, gender, location; Weiss & Robinson, 2013). Another reason for the negative relationship could be because the type of coaching change was not distinguished. Johnson et al. (2012; 2013b) first distinguished between the types of coaching changes to determine if losing

a coach due to career progression would be less detrimental than losing a coach because of poor performance or other contract violations. While both a positive and negative change resulted in lower APR scores, a negative coaching change produced significantly lower APR scores than a positive change (Johnson et al., 2012). Although it was found that any sort of coaching change is detrimental to APR scores, a negative coaching change is more impactful than a positive change.

Though the coaching change result was surprising, it is important to highlight the descriptive statistics to further understand this variable. When analyzing the ISAs who experienced a coaching change, 17.3% were not retained. What administrators need to assess is whether this is an acceptable number. Are they willing to lose almost one-fifth of their ISAs on a team when the coach leaves? Additionally, further research needs to be conducted into how ISA retention differs – or is similar – to domestic SAs when a coach leaves a team.

Furthermore, the added difficulty of transferring institutions for ISAs may explain why they do not leave the team if there is a coaching change. After Eastern Michigan University cut several their sports to remain financially stable, a rising senior on the women's tennis team outlined the extensive steps she would have to take to transfer institutions to continue playing tennis (Bauer-Wolf, 2018).

She would need to be accepted into another university with a women's tennis program and then receive another scholarship offer before she withdrew from Eastern Michigan. Then she would need to return to her home country and obtain a new visa -- all before the next season (para. 15).

The addition of immigration and visa challenges highlights why a coaching change may not be enough for an ISA to consider transferring institutions to continue playing the sport.

Before Johnson et al.'s extensive research into coaching change and retention, research focused on the impact coaches had on a SA's experience (Brubaker, 2007; Weiss & Robinson, 2013). While this research was an important first step, having quantitative evidence that a coaching change impacts retention of SAs and ISAs highlights the importance of the role coaches play in their athletes' lives. CCT outlines how international students adjust better, and feel more comfortable, when people try to understand their home country and culture (Sue, 2006). The prominent role coaches play in their ISA's lives highlights the need for education about different cultures, specifically those from which they will recruit ISAs. Furthermore, the results from this variable indicate that ISAs are a unique subgroup of students, and not a fusion of international students and SAs. The typical factors that impact retention for these two subgroups do not impact the retention decisions for ISAs, confirming the need for further research into ISAs and the variables that impact their retention.

The final athletic variable investigated was team winning percentage. For the purposes of this study, this variable was divided into average conference winning percentage through all years of competition and final year conference winning percentage. This was done to determine if there was a difference in retention of ISAs who had

one bad season or if their team was consistently underperforming. The average winning percentage variable was found to be both significantly correlated with, and a significant predictor of, retention. However, the final year win percentage was found to only be significantly correlated with retention and not a predictor of retention. This result is consistent with the current body of literature on win percentage and retention. Several scholars have highlighted how an increase in win percentage increases retention (Johnson et al., 2012; 2013b). The strong athletic identities of athletes at this level of competition outlines how winning is an important determinant of satisfaction, and ultimately retention (Murphy et al., 1996). For ISAs who are pursuing the opportunity to compete in the NCAA to further their athletic career (Popp et al., 2009), it is evident how an increased winning percentage can lead to an increase in retention.

6.3 Practical Considerations

In aggregate, the results suggest that some measures could be taken by coaches and athletic departments to better retain ISAs. Improved retention can boost APR scores and reduce recruiting expenses. First, proactive steps should be taken for ISAs who participate in a team sport, or a sport with a low proportion of ISAs. It is clear that ISAs competing under these conditions are less likely to be retained, and thus should be the focus of retention programming. Furthermore, regardless of the reason for the coaching change, this variable has the most impact on the retention of ISAs due to the strong bond formed between the two parties. While the prediction model does not indicate that ISAs are more likely to leave when a coaching change occurs, administrators need to evaluate whether the current rate of retention among ISAs who experience a coaching change is acceptable. Also, given the results, it would be pertinent to consider the impact of a coaching change in evaluating coaching candidates or contracts. Additionally, athletes competing in a team sport are at a higher risk of attrition, presumably because of the lower number of ISAs on these teams (Li et al, 2019) and low levels of cultural competency (Turick et al., 2020). Similarly, ISAs competing in tennis and soccer were found to be retained at higher rates, indicating that ISAs in other sports (e.g., basketball, baseball, and softball) could benefit from increased retention programming. Additionally, coaches who lack experience in recruiting and retaining ISAs often lead teams with lower proportions of ISAs which may in turn lead to lower retention rates of ISAs (Manwell, 2018; Weiss & Robinson, 2013). Lastly, teams with a consistent losing record are more likely to not retain their ISAs. Therefore, in times of poor performance, coaches and administrators should pay close attention to their ISAs and increase retention efforts. These results highlight that during losing seasons, particularly on specific sport teams, increased retention programming would be recommended.

Currently, not much research exists about how to practically implement retention programs for ISAs. However, both Newell (2015) and Turick et al. (2020) share some insights. One recommendation is to create a more systematic approach in recruiting ISAs, rather than each coach being responsible for making sure all the necessary

enrollment steps have been taken. For example, Turick et al. (2020) recommend "for athletic departments to create an ISA on- boarding checklist for athletic administrators and coaches to reference when working with ISAs to ensure that their transition goes smoothly" (p. 12). Newell (2015) highlights how CCT education sessions and workshops explaining the cultural differences between an ISA's home country and the U.S. is crucial for both ISAs and athletic stakeholders. While it is important for ISAs to adjust to U.S. culture, however, ensuring that they do not feel "forced to forget nor be discouraged from sharing their home nation's culture with others" is imperative (Turick et al., 2020, p. 14). It is essential that athletic administrators and coaches understand that ISAs are a subgroup of students, and therefore have specific needs and factors influencing their retention decision. Lastly, while retention programming may not be a service being considered by administrators due to budgetary restraints, it would be pertinent to evaluate whether the additional recruiting costs incurred by not retaining ISAs through four-years could be reduced through the implementation of CCT and broader retention programming.

Limitations

Even though there are practical implications, there are limitations of the current study. First, as highlighted by the literature review, personal characteristics play a major role in the retention decision of students (Han et al., 2017; Millea et al., 2018; Tinto, 1993). Family issues, interpersonal considerations, and medical concerns are examples of personal issues that could impact retention but were not evaluated in this study. As a result, there were several variables that prior research would support as likely variables to investigate in future studies. Because ISAs are first and foremost students, it is important to study the factors impacting that aspect of their identity, specifically the unique attributes that contribute to their athletic experience. Second, ISAs who transferred to a different institution were not analyzed within this study. This point is important because transfer students are still enrolled in college and working towards their degree. So, from an overall college perspective these students would be retained, but from an individual program perspective they were not. Finally, it was discovered throughout the data collection and analysis phases that the descriptive variables of location and language were most likely defined too broadly. With more sensitive metrics to assess these variables, outcomes could be different. This point relative to these variables is important because prior literature suggests these variables could be significant with a more precise evaluation.

7. Future research

There are several recommendations for future research. Foremost, the scope of this study could expand to include ISAs competing outside of a Power 5 conferences. Although this population did allow the researcher to explore a large number of ISAs in a wide geographical area, the Power 5 conferences have the most resources to finance academic services and retention programming. These resources are not as abundant at lower Division I, Division II, and Division III institutions. Some smaller conferences and institutions

do not have dedicated athletics academic advisors concerned with maintaining team GPA and APR scores, or the eligibility of individual athletes. An additional consideration for future research is to include more variables. Because of resource constraints, this study was limited to eight independent variables. As outlined in the limitations section, the eight variables chosen were limited from hundreds of possibilities. Future research could expand the types of variables being examined to include academic variables and personal reasons for ISA attrition. Future research could also focus specifically on exploring how ISAs differ from their domestic counterparts. For example, how coaching change impacts these two groups differently.

8. Conclusion

Given the lack of quantitative research regarding the retention of ISAs – especially considering the sharp increase in number of ISAs – empirical evaluation of this topic was overdue. The variables selected for this study were highlighted within the current body of retention research pertaining to domestic students, international students, and SAs. Retention of ISAs was best predicted by coaching change, sport, team/individual, and average win percentage. These variables are all part of the athletic variable category highlighting the large impact college athletics has on the retention decision of ISAs. Moreover, demographic variables, while significant for non-athletes in prior research, did not prove to be predictive of retention for ISAs. While it was hypothesized that ISAs were an amalgamation of both international students and domestic SAs, the results confirmed that ISAs are a unique subgroup of students. Additionally, the results indicate that ISAs cannot be treated the same as international students when creating retention programs and services. Special consideration should be given to the type of athletic contexts each ISA enters, and how the leadership of those teams operates throughout the ISAs' tenure. Although majority of the ISAs were retained through four years, the need for further research into this subgroup of students, and retention programming and services should not be ignored.

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