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Leveling the Playing Field: Faculty Influence on the Academic Success of Low-Income, First-Generation Student-Athletes

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Minimal scholarly research focuses on low-income, first-generation (LIFG) intercollegiate athletes. Student-athletes are a unique population on campus, and LIFG students face additional challenges related to academic achievement due to increased financial and family obligations. In this study, we provide a profile of LIFG student-athletes and examine the extent to which faculty interactions, concerns, and perceptions affect LIFG student-athletes’ academic success in higher education. After controlling for student-athlete profile characteristics, faculty-student interaction was found to be the most effective predictor of academic success for LIFG and non-LIFG student-athletes. Our findings affirm previous research that suggests the importance of students’ college experiences outweighs the influence of their background characteristics when predicting academic achievement.

Keywords low income, first generation, student-athletes, academic success, faculty influence

INTRODUCTION

Public debate continually calls into question the linkage between student and athlete as intercollegiate athletics has evolved from extracurricular activity to high-stakes competition. Student-athletes throughout higher education are afforded a special opportunity to compete at a high level and achieve athletic success. Student-athletes face unique time constraints that affect their ability to succeed in the classroom with their non-athlete peers (Wolverton, 2008). Low-income, first-generation (LIFG) student-athletes must overcome additional burdens in order to
succeed and persist as a college student. In our secondary data analysis of data obtained by the Student-Athlete Climate Study (SACS) research team at The Pennsylvania State University (Rankin et al., 2011), we examine the extent to which faculty interactions, concerns, and perceptions affect LIFG student-athletes’ academic success. The purpose of our study is to examine the influence of faculty members on the academic success of LIFG student-athletes. By doing so, we hope to provide insight into how to provide LIFG student-athletes with the same opportunity to be successful as other students on a college campus.

Central Research Questions

- After controlling for student-athletes’ individual profile characteristics, to what extent do faculty members affect LIFG student-athletes’ ...
  - grade point average?
  - intent to persist?
  - academic and intellectual development?

LITERATURE REVIEW

The likelihood of academic success for student-athletes is stratified by their race, family income, and parents’ educational attainment (Corrigan, 2003). Low-income, first-generation (LIFG) college students have been found to be among the least likely to persist through graduation (Thayer, 2000). In addition, retention rates for college students are lowest among low-income racial and ethnic minority subgroups (Kahlenberg, 2004). Higher education institutions have attempted to address empirical findings of inequity in retention rates and other academic success measures in order to ensure all students are afforded an equal opportunity to succeed, but inequities related to race, income, and parental educational attainment continue to permeate higher education.

For LIFG student-athletes, finances are integral to their academic success. Although Timpane and Hauptman (2004) suggest that low-income students are roughly 50% more likely to enroll in college than they were 30 years ago, their college experiences are not the same as their peers from more affluent backgrounds. Walpole (2008) found that low-income, first-generation students reported less interaction with faculty members, spent less time studying, reported less involvement in campus activities, and worked more than their non-LIFG peers. Donovan (1984) studied 403 low-income African American students from 69 colleges and universities, finding that nearly 40% no longer attended their institution after only three years. In addition, Donovan reported that college experiences are more important than background characteristics when predicting the success of low-income Students of Color.

The SACS research team classified a low-income student-athlete as one whose family earns an annual salary of roughly $30,000 or less (Rankin et al., 2011). First-generation students are defined as students whose parents have not earned a bachelor’s degree (Thayer, 2000). While low-income and first-generation student-athletes have distinct experiences, both sub-populations of student-athletes are
discussed together in this study due to the significant amount of overlap in the
literature. Previous research has found that roughly two-thirds of low-income
students are also first-generation students and many of the challenges and
collegiate experiences between low-income students and first-generation students
are shared (Corrigan, 2003).

Although the majority of LIFG student-athletes are awarded athletic scholar-
ships, many among the population rely on need-based financial aid (Fitzgerald,
2003). Financial aid is often a complicated process for first-generation students
who may not be aware of the type of aid available to them. First-generation
students and their families struggle to understand the financial aid process and lack
the requisite knowledge of college finances and budget management (Richardson
& Skinner, 1992; Flint, 1992). The United States General Accounting Office
(1995) reported that grants have the largest and most positive impact on the
persistence of low-income students, whereas loan aid resulted in an increased
likelihood of students leaving college before graduating. Unlike their non-athlete
peers, the majority of student-athletes spend nearly 40 hours per week participat-
ing in their respective sports (Wolverton, 2008), leaving little or no time available
for a part-time job.

Many low-income, first-generation student-athletes cannot obtain employment
to earn wages to cover the differences in expenses not covered by an athletic
 scholarship or grant. Family obligations of LIFG students, such as providing
financial assistance to parents, have a negative impact on their academic
achievement (Rendon, 2002). Several studies have found first-generation students
to be less likely to graduate from college when compared to college students whose
parents earned a bachelor’s degree (Thayer, 2000; Terenzini, Springer, Yeager,
Pascarella, & Nora, 1996; Warburton, Bugarin, & Nunez, 2001). In order to
account for low graduation rates, various studies describe first-generation students
as inadequately prepared before entering college (Choy, 2001; Hahs-Vaughn,
2004). While succeeding in the classroom as an LIFG student has been found to be
an arduous task (Phinney & Hass, 2003), any potential difficulties faced as an
LIFG student would be amplified by the decision to participate in intercollegiate
sport because college experiences have been found to outweigh student-athlete
profile characteristics when predicting academic success (Donovan, 1984).

Carodine, Almond, and Gratto (2001) referenced student-athletes’ difficulty
maintaining academic success in the wake of public scrutiny and arduous time
demands not faced by their non-athlete peers. The dismissive notion of student-
athletes as “dumb jocks” has been reported as a detriment to the academic
performance of student-athletes (Harrison, 2007). In addition, national data
pertaining to student-athletes’ experiences on college campuses have been missing
from the literature (Gayles, 2009). This study serves to fill a gap through an
examination of faculty members’ influence on student-athletes’ academic success
based on a litany of profile characteristics, including gender, race, income, sport,
and NCAA Division.

College or university students experience campus climates differently based
upon social and demographic group membership (Rankin & Reason, 2008;
Chang, 2002). We propose this to be the case for LIFG student-athletes as well.
Educational scholarship has yet to examine the extent to which various student-athlete profile characteristics relate to faculty influence and LIFG student-athletes’ attainment of academic success. Although a variety of support services are made available to student-athletes (Jolly, 2008), faculty members remain the embodiment of the classroom experience. Student-athletes’ social identity groups (e.g., gender and race) and perceptions of their educational environment represent integral factors in their academic outcomes.

Miller, Anderson, Cannon, Perez, and Moore (1998) observed that White students described their campus racial climate as positive while Students of Color rated the same campus racial climate as negative. Although White students recorded high ratings for instructors’ efforts to include multiple viewpoints in the curriculum and institutional policies related to recruitment and retention of all races, Students of Color labeled interracial interactions on campus as unfriendly and reported being the targets of racism. Rankin et al. (2011) aptly noted that student-athletes’ “experiences and perceptions are mutually reinforcing, with students’ perceptions of their campus climate influencing their experiences and their experiences influencing their perceptions” (p. 11).

When examining the academic success of student-athletes at colleges and universities, various hurdles surface along the journey to graduation. Extreme time demands and the blurred line between academics and athletics in higher education contribute to the difficulties facing student-athletes in their quest for academic success. Various studies across numerous institutions have found negative relationships between athletic participation and performance in the classroom (Richards & Aries, 1999; Gayles, 2004; Miller & Kerr, 2002). Given the limited amount of time available for academic work (Wolverton, 2008), student-athletes’ engagement, specifically their interaction with faculty members, becomes increasingly important.

Since LIFG students lack sufficient support networks (i.e., family, mentors, peers) that understand the challenges facing college students (Phinney & Hass, 2003), their interactions with faculty members are critical to their academic success. Faculty involvement on a frequent basis could serve to compensate for potential shortcomings in student-athletes’ academic preparation prior to arriving on campus and instill a culture of student involvement and academic success (Allen, 1999). Pascarella and Terenzini (2005) found that increases in students’ time and energy devoted to the learning and engagement process yielded improved potential for academic achievement and persistence at a college or university. The academic success of student-athletes also hinges on the level of commitment and support made available by faculty members outside of the athletic department (Harrison, Harrison, & Moore, 2002). In addition, the quality of formal and informal faculty interactions with student-athletes has been deemed as critical to the overall college experience and students’ academic achievement (Comeaux, 2005; Pascarella & Chapman, 1983).

Although the literature on low-income student-athletes’ college experiences is limited, sociocultural factors that affect students’ retention have been examined. Tinto (1993) theorized that student attributes influence individual goals and commitments, which interact with students’ informal and formal institutional
experiences. Tinto advanced two dimensions of commitment: institutional commitment and goal commitment. Institutional commitment references the degree to which a given student is motivated to persist and graduate. A student’s goal commitment relates to his or her personal commitment to earn a college degree. Since institutional and goal commitments are influenced by external influences and the student’s level of interaction with faculty members and peers, the level of involvement in the academic and social systems of a higher education institution by LIFG student-athletes—particularly those of color—could account for their decision to persist or leave the institution. As students’ institutional and goal commitments increase, the likelihood of persistence at the selected institution increases.

Given that Tinto’s persistence model is predicated upon a general framework of assimilation and acculturation, several researchers have questioned the validity of Tinto’s model to capture the experiences of diverse students (Braxton, 2000; Kraemer, 1997; Tierney, 1992). Braxton, Sullivan, and Johnson (1997) suggested that future researchers revise or replace Tinto’s theoretical perspectives when studying the persistence (or intent to persist) of minority group members. With this in mind, Rendon’s learner validation model (1994) would appear to be an appropriate response to the shortfalls of Tinto’s model when examining nontraditional postsecondary students.

Rendon’s (1994) validation model shows that learner validation, and not merely involvement, improved the learning experience for nontraditional students. Although the majority of White and traditional postsecondary students can become involved on their own when given interaction opportunities at a given institution, nontraditional students, such as LIFG student-athletes, expect active intervention and outreach in order to become involved on campus and in the classroom. Rendon found that “nontraditional students do not perceive involvement as them taking the initiative. They perceive it when someone takes an active role in assisting them” (p. 44).

Whether nontraditional students are inside or outside of the classroom, Rendon (1994) demonstrates that these students experienced impactful gains in learning and persistence when some individual validated the student in some capacity. Through interpersonal and academic validation, validating agents showed an active interest in students. As nontraditional students were encouraged and affirmed as being capable of strong academic work, the critical role of the institution shifts from offering involvement opportunities to taking an active role in cultivating the validation of students. In an effort to encourage active learning and interpersonal growth, faculty and administrators should take the initiative to ensure nontraditional students feel validated, empowered, and supported in their academic endeavors and social adjustment (Braxton, 2000).

Previous research suggests that the frequency and quality of formal and informal faculty-student interaction affect students’ academic success—in particular a student’s likelihood to persist (Pascarella & Terenzini, 1977, 1980). While research has linked interactions with faculty members as integral to academic success (Comeaux, 2005; Pascarella & Chapman, 1983), student-athletes’ perceptions and experiences related to faculty influence diverge according to their
gender and race. Comeaux (2005) submits that male student-athletes’ interaction with faculty members significantly influences their academic success in college compared to female student-athletes. Simons, Bosworth, Fujita, and Jenson (2007) indicated that Student-Athletes of Color perceived a significantly higher degree of negative perceptions from faculty members than student-athletes who did not identify as a minority racial or ethnic group. Regardless of demographic characteristics, increases in engagement and interactions with faculty members have been shown to benefit student-athletes in ways similar to the general student population (Pascarella & Terenzini, 2005).

Discussion of student-athlete profile characteristics would be incomplete without including the type of sport played (featured or non-featured) and the NCAA Division (Division I, Division II, or Division III). Gayles and Hu (2009) found the effect of student engagement on cognitive outcomes varied according to the type of sport in which student-athletes participate. In addition, Wolniak, Pierson, and Pascarella (2001) offered evidence that athletes should not be considered as a homogenous population because experiences in college vary from institution to institution. For instance, Sellers (1992) noted that Student-Athletes of Color who participate in revenue-producing sports often enter college underprepared, causing them to be less likely to achieve academic success when compared to their peers (Ervin, Saunders, Gillis, Hogrebe, 1985). Regardless of division level, Umbach, Palmer, Kuh, and Hannah (2006) found that male student-athletes reported earning lower grades than their non-athlete peers while female student-athletes had similar grades to non-athlete female students.

Institutional characteristics differ significantly throughout higher education. In order to examine student-athletes, the NCAA Division (Division I, Division II, or Division III) in which they compete should be accounted for as an influential factor. After a review of the literature, the vast majority of the research on student-athletes has focused on Division I institutions (Baucom & Lantz, 2001). Student-athletes in Division III avoid similar media, financial, and professional expectations of student-athletes in Divisions I and II (Grites & James, 1986; Stansbury, 2004), but student-athletes (and non-athlete students) at Division I, Division II, and NAIA institutions had significantly higher self-reported grades than students at Division III institutions (Umbach et al., 2006).

Pascarella, Bohr, Nora, and Terenzini (1995), Pascarella et al. (1999) and Wolniak et al. (2001) have called for studies related to student athletes’ experiences to account for background characteristics (i.e., race and gender) and institutional contexts (i.e., NCAA division and whether the student-athlete participates in a featured sport). In addition, Astin (1993) and Kuh (2001) labeled student engagement as a function of both a student’s individual effort and the institutional practices and policies. Several studies have referenced the varied experiences of high-profile or featured sport student-athletes (e.g., football and basketball) versus those who compete in non-featured sports (e.g., swimming and golf) while in college (Terenzini, Pascarella, & Blimling, 1999). While featured-sports student-athletes have been found to score lower on examinations of their cognitive and critical thinking abilities when compared to their non-athlete peers, student-athletes who compete in non-featured sports have displayed a diminished
buy-in toward academic experiences that promote diversity and self-learning (Pascarella & Terenzini, 2005).

From our review of the literature, we did not find outcomes related to faculty influence on LIFG student-athletes versus the overall student-athlete population. Our goal in this secondary data analysis is to bridge the gap between previous literature and future initiatives to ensure all student-athletes, regardless of their financial or social circumstances, are afforded the opportunity to experience academic success at a higher education institution. The conceptual framework for our study is displayed in Figure 1.

METHOD

As indicated in our conceptual framework, we controlled for student-athlete profile variables (gender, race, featured versus non-featured sports, NCAA Division) that our extensive review of the literature has shown to influence academic outcomes. Faculty influence variables (faculty-student interaction, faculty concern for student development and teaching, faculty perception of student-athletes) served as predictor variables for student-athletes’ academic success. Specifically, the outcome of student-athletes’ academic success was comprehensively measured using three variables—current college GPA, intent to persist, and Academic and Intellectual Development.

Description of Sample

The Student-Athletes Climate Study (SACS) research team from The Pennsylvania State University collected the data used throughout this analysis. Their survey included 68 questions that assessed a range of student-athlete characteristics, experiences, perceptions, and outcomes (both athletic and academic). All 1,281 member institutions of the NCAA were invited to participate in the SACS study.
A total of 8,481 surveys were submitted from student-athletes at 164 NCAA member institutions. After weighting the dataset so it accurately represents these institutions, the final dataset consists of 8,018 respondents, representing 56,965 student-athletes from every NCAA Division, all 23 NCAA Championship Sports, and every region of the country (Rankin et al., 2011).

The statistical analysis conducted by the SACS research team did not include LIFG student-athletes as a variable of interest (Rankin et al., 2011). Our study specifically investigates faculty influence pertaining to the academic success of LIFG student-athletes. Further, LIFG student-athletes’ academic outcomes and demographic characteristics are examined across a variety of sports (featured versus non-featured) and institutions (Divisions I, II, and III).

Instrumentation
In order to measure student-athletes’ current college GPA, we used a question from the SACS survey that asked student-athletes to designate their GPA within a range that corresponded to letter grades. Student-athletes could indicate their grade from a range of 1 (D or below (<1.50)) to 9 (A (3.84–4.00)).

The SACS project was cross-sectional and anonymous, so no actual persistence data were collected. A student’s intent to persist has been shown to be strongly associated with actual persistence (Bean, 1980; Pascarella& Chapman, 1983). The SACS team measured student-athletes’ intent to persist based on the Persistence at the Institution subscale of The Undergraduate Persistence Intentions Measure (UPI; Robinson, 1996, 2003). We incorporated the following three questions from the SACS Persistence scale:

1. I intend to graduate from my current institution.
2. I am considering transferring to another college or university due to academic reasons.
3. I am considering transferring to another college or university due to athletic reasons.

The SACS research team amended the UPI subscale to use a Likert metric and differentiate between academic and athletic reasons for transferring from their current institution (Rankin et al., 2011). The persistence scale exhibited good internal consistency reliability (α=.792, n=3). All of the outcome and faculty influence scales we use in this study were created by the SACS team using Thurstone’s regression refined method of scale score calculation (Rankin et al., 2011) because its accuracy maximizes the validity of the scale and produces standardized variables with means of zero and standard deviations close to one (DiStefano, Zhu, & Mindrilà, 2009; Grice, 2002).

For Academic and Intellectual Development (AID), we utilized the questions related to student-athletes’ self-reported levels of satisfaction with their intellectual growth and stimulation—which contained components from Pascarella and Terenzini’s (1980) Academic and Intellectual Development subscale of their Institutional Integration Scale. The SACS questionnaire design added one question to the original AID subscale in order to simulate a previous question from the athletic success scale. The following six questions were answered on a Likert
metric of 1 (Strongly Disagree), 2 (Disagree) 3 (Neither Agree nor Disagree), 4 (Agree), and 5 (Strongly Agree):

1. My academic experience has had a positive influence on my intellectual growth and interest in ideas.
2. I am satisfied with the extent of my intellectual development since enrolling in this college/university.
3. I am satisfied with my academic experience at this college/university.
4. I have performed academically as well as I anticipated I would.
5. My interest in ideas and intellectual matters has increased since coming to this college/university.
6. I am performing up to my full academic potential.

AID questions addressed whether the student-athletes were performing up to their academic potential, student-athletes’ satisfaction pertaining to their academic experience and intellectual development, and whether the student-athletes have an increased interest in intellectual matters since arriving at a given college or university (Rankin et al., 2011). The AID subscale displayed high reliability ($z=.882, n=6$).

The two questions related to whether a student-athlete was low-income and first-generation served as the basis for classifying a respondent as an LIFG student-athlete ($n=173$). Consistent with the SACS research team, we defined an LIFG student-athlete as one whose family earns less than $30,000 and whose parents had not previously earned a bachelor’s degree (Rankin et al., 2011; Thayer, 2000). All respondents who indicated their annual family income was greater than $30,000 or whose parents obtained a bachelor’s degree or higher were classified as non-LIFG.

The SACS team derived the faculty influence variables from a variety of questions asking student-athletes about their experiences with faculty members outside of athletics. Using factor analysis, three distinct factors were identified by the SACS team (Rankin et al., 2011): Faculty-Student Interaction ($z=.84$); Faculty Concern for Student Development and Teaching ($z=.89$); and Faculty Perception of Student-Athletes ($z=.77$). Faculty-Student Interaction measures the amount and quality of interactions with faculty members. Faculty Concern for Student Development and Teaching pertains to the perception that faculty members care about students. With Faculty Perception of Student-Athletes, the SACS team wanted to measure the extent to which student-athletes believe that faculty members perceive them as being different than their non-athlete peers. As a result, a higher score is representative of a negative perception. Following are the faculty influence questions.

Faculty-Student Interaction

In general since coming to this university...

1. My interactions with faculty have had a positive influence on my intellectual growth and interest in ideas.
2. My non-classroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes.
3. My non-classroom interactions with faculty have had a positive influence on my career goals and aspirations.

4. I feel that the majority of my relationships with faculty are positive.

5. I have developed close personal relationships with at least one faculty member not associated with athletics.

How often do you...

1. Meet with a faculty member who is not associated with athletics?
2. Actively participate in class?

Please indicate your level of agreement with the following statement.

1. Most of the faculty I have had contact with are interested in helping students grow in more than just academic areas.

Faculty Concern for Student Development and Teaching

1. Few of the faculty members I have had contact with are generally interested in students.
2. Few of the faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students.

Faculty Perceptions of Student-Athletes

1. I feel that some of my professors discriminate against me because I am a student-athlete.
2. I feel that some of my professors favor me because I am a student-athlete.
3. I feel that some of my professors view me as more of an athlete than a student.

Regarding our control variables, each of the following was included based upon findings related to demographic and societal influences in the literature: gender, race, featured versus non-featured sport, and institution type (NCAA Division). The SACS research team created dichotomous variables for gender (man or woman) and race (White or Student-Athlete of Color). Respondents who identified as transgender student-athletes were coded as “system missing” due to a small sample size (n=7). Although student-athletes differentiated the specific race with which they identified, the SACS research team coded the race variable as dichotomous due to low representation from a variety of races. Representatives from participating institutions identified sports as “featured” or “non-featured” at their particular institution. Division II and Division III were included among our control variables, making Division I the reference group because these institutions were of particular interest due to enhanced support services for student-athletes (Rankin et al., 2011).

Data Collection Procedures

The data utilized for our study were cleaned, weighted, and imputed by the SACS research team. They imputed missing data in order to keep the sample size beyond an acceptable threshold for the planned Structural Equation Modeling analysis.
Further, the SACS research team weighted the data on gender, race, and Division to increase or decrease the representation of student-athletes within the study in order to simulate the overall population (Rankin et al., 2011).

**Data Analysis**

We used descriptive statistical techniques to distinguish the characteristics between the weighted overall sample \(n=8,018\) and the sub-sample of LIFG student-athletes \(n=173\). In our subsequent analyses of these data, we used the original weighted dataset \(n=8,018\) created by the SACS research team. We conducted \(t\)-tests to compare the means of LIFG student-athletes and non-LIFG student-athletes for the following continuous variables: Faculty-Student Interaction, Faculty Concern for Student Development and Teaching, Faculty Perception of Student-Athletes, GPA, AID, and intent to persist. We used a Chi-Square Test of Independence to examine whether there were statistically significant differences between LIFG and non-LIFG student-athletes based on gender, race, featured versus non-featured sport participation, NCAA Division, and how student-athletes pay for college.

We utilized a hierarchical (or blocked) linear regression model to examine the extent to which faculty influence variables affect the academic success outcomes (GPA, AID, intent to persist) of the overall sample of student-athletes while controlling for student-athlete profile characteristics. Because we sought to analyze the relationship between various independent variables and each of the academic success variables (Hinkle, Wiersma, & Jurs, 2003), we produced three blocked hierarchical regression models—one for each of our outcome variables (current college GPA, intent to persist, and Academic and Intellectual Development).

Hierarchical regression allows the researcher to dictate the order of predictors to be used in the regression model by entering the predictors or groups of predictors into blocks of variables. The researcher is able to choose the sequence of predictor variables based on theory in lieu of relying on the computer to choose the order of the predictors in the model based on statistical criteria. As a result, researchers are able to account for how much variance in the dependent variable can be attributed to each block of independent variables (Howitt & Cramer, 2008).

We entered student-athlete profile variables, faculty influence variables, and a single LIFG variable into a regression model in a series of blocks for each of our three outcome models (GPA, AID, or intent to persist). In the first block, we entered the following student-athlete profile variables to statistically control for measures of demographic and institutional characteristics: gender, race, NCAA Division, and non-featured sport versus featured sport. In order to examine the effects of faculty influence and demographic characteristics on distinct measures of student-athletes’ academic success, we included the following faculty influence variables in the second block of the regression: Faculty-Student Interaction, Faculty Concern for Student Development and Teaching, and Faculty Perception of Student-Athletes.

LIFG student-athletes represent our population of interest in the study. The third block of each regression model contained only the LIFG variable in order to
account for any variance attributed to being LIFG and compare the sub-sample of LIFG student-athletes to non-LIFG student-athletes from the sample.

RESULTS

After providing descriptions of the data, we will report how the academic outcomes for the overall sample and sub-sample of LIFG student-athletes varied based on demographic, institutional, and faculty influence variables. All described findings are based on the weighted sample of 8,018 student-athletes from 164 higher education institutions and have been found to be statistically significant.

Description of Sample

Within the SACS dataset, 173 respondents identified as LIFG student-athletes—which represented 2.2% of the student-athletes in the sample. We used the Chi-Square Test of Independence to identify the number and proportion of student-athletes from the overall sample who represented key characteristics related to our study. Race, gender, and the type of sport in which a given student-athlete participated were critical independent variables. Approximately half of the student-athletes from the overall sample represented Division I institutions (50.9%), Division II (20.8%) and Division III (28.3%) student-athletes comprised the remainder of the respondents.

We examined how LIFG student-athletes and their non-LIFG peers paid for college. There were statistically significant differences in terms of LIFG student-athletes’ reliance on Pell grants ($\chi^2(1, N=8,018)=284.516, p<0.001$) and need-based institutional grants ($\chi^2(1, N=8,018)=63.106, p<0.001$) to pay for college. More than four times the proportion of LIFG student-athletes used Pell grants (62.2%) when compared to the remainder of the sample (14.8%). Regarding need-based institutional grants, more than twice the proportion of LIFG students (35.5%) received institutional aid when compared to non-LIFG student-athletes (14%). In addition, a high percentage (approximately 80%) of both LIFG student-athletes and non-LIFG student-athletes did not obtain a job to assist with financial burdens, which affirms literature related to the extreme time constraints of student-athletes (Wolverton, 2008). The percentage of student-athletes who received family contributions decreased significantly for LIFG student-athletes (17.3%) when compared to the rest of the sample (55.5%). The various types of reported financial aid for LIFG student-athletes and non-LIFG student-athletes are outlined and contrasted in Table 1.

A Chi-Square Test of Independence provided evidence of a statistically significant relationship between student-athletes’ race and whether they are LIFG ($\chi^2(1, N=8,018)=195.795, p<0.001$). More than twice the proportion of Student-Athletes of Color identified as LIFG (69.4%) than White student-athletes (30.6%). The racial split among student-athletes not identified as LIFG paralleled the proportion in the overall sample (76.7% White student-athletes and 23.3% Student-Athletes of Color).

We conducted t-tests to compare the means of faculty influence and academic outcome variables for LIFG student-athletes and non-LIFG student-athletes. For
GPA, LIFG student-athletes scored significantly lower ($M=5.95$) than non-LIFG student-athletes ($M=6.48$, $t=4.244, p<.001$). LIFG student-athletes also scored significantly lower ($M=-.46$) than non-LIFG student-athletes on the SACS report measure of persistence ($M=-.08$, $t=4.129$, $p<.001$). Regarding Faculty Concern for Student Development and Teaching, LIFG student-athletes scored lower ($M=-.21$) than non-LIFG student-athletes ($M=-.05$, $t=2.218$, $p<.05$). No

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<td>Non-LIFG Sample</td>
</tr>
<tr>
<td>Personal Contribution/Job</td>
</tr>
<tr>
<td>Low-Income, First-Generation</td>
</tr>
<tr>
<td>Non-LIFG Sample</td>
</tr>
<tr>
<td>Pell Grant</td>
</tr>
<tr>
<td>Low-Income, First-Generation</td>
</tr>
<tr>
<td>Non-LIFG Sample</td>
</tr>
<tr>
<td>Need-Based Institutional Grant</td>
</tr>
<tr>
<td>Low-Income, First-Generation</td>
</tr>
<tr>
<td>Non-LIFG Sample</td>
</tr>
</tbody>
</table>

Note. $n$ total larger than 8,018 and % total greater than 100% due to multi-selection.

* $p<.05$
** $p<.01$
significant differences were found among AID, Faculty-Student Interaction, and Faculty Perception of Student-Athletes.

**Faculty Influence on Academic Outcomes**

We entered student-athlete profile variables, faculty influence variables, and a single LIFG variable into a three-block hierarchical regression model to examine whether the selected independent variables served as predictors of a designated academic outcome (GPA, AID, or intent to persist). The first three-block hierarchical regression model was significant ($F(9, 7,592) = 154.718, p < .001$) and the total model explained 15.4% of the variance in student-athletes’ current college GPA. The results from each block of the first regression model are given in Table 2. The second block containing the faculty influence variables explained 6.6% of the variance—over one-third of the variance from the entire model. The third block containing only the LIFG variable was not found to be statistically significant. Graphs of the residuals from this and each of the following regression models indicate that each model is appropriately specified and that residuals are not related to the other variables within the given model.

We examined the complete model and observed that (after controlling for student-athlete profile variables) identifying as a Student-Athlete of Color has a strong negative association with GPA ($b = -.614, p < .001$). Faculty-Student Interaction ($b = .216, p < .001$) and Faculty Concern for Student Development and Teaching ($b = .224, p < .001$) both had a positive influence on GPA, while

<table>
<thead>
<tr>
<th>TABLE 2</th>
</tr>
</thead>
</table>

**HIERARCHICAL REGRESSION MODEL OF GPA (N = 7602)**

<table>
<thead>
<tr>
<th></th>
<th>Block 1: Individual Characteristics</th>
<th>Block 2: Faculty Influence</th>
<th>Block 3: LIFG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$b$</td>
<td>$b$</td>
</tr>
<tr>
<td>Woman</td>
<td>0.660 ***</td>
<td>0.574 ***</td>
<td>0.573 ***</td>
</tr>
<tr>
<td>Student-Athlete of Color</td>
<td>$-0.710$ ***</td>
<td>$-0.620$ ***</td>
<td>$-0.614$ ***</td>
</tr>
<tr>
<td>Division II</td>
<td>$-0.069$</td>
<td>$-0.085$</td>
<td>$-0.084$</td>
</tr>
<tr>
<td>Division III</td>
<td>$-0.082$</td>
<td>$-0.214$ ***</td>
<td>$-0.214$ ***</td>
</tr>
<tr>
<td>Featured Sport Status</td>
<td>$-0.175$ ***</td>
<td>$-0.101$ *</td>
<td>$-0.101$ *</td>
</tr>
<tr>
<td>Faculty-Student Interaction</td>
<td>0.215 ***</td>
<td>0.216 ***</td>
<td></td>
</tr>
<tr>
<td>Faculty Concern</td>
<td>0.224 ***</td>
<td>0.224 ***</td>
<td></td>
</tr>
<tr>
<td>Faculty Perceptions</td>
<td>$-0.205$ ***</td>
<td>$-0.205$ ***</td>
<td></td>
</tr>
</tbody>
</table>

Low-Income First-Generation

$R^2 = 0.088$ ***

$R^2 = 0.154$ ***

Change in $R^2$

0.066

0.000

Note. $b =$ beta, the unstandardized regression coefficient

* $p < .05$

** $p < .01$

*** $p < .001$
Faculty Perceptions/Beliefs of Student-Athletes ($b = -0.205, p < .001$) had a negative influence of similar magnitude. As previously noted, identifying as an LIFG student-athlete was not found to be a statistically significant influence on GPA.

For the second statistically significant hierarchical regression model ($F(9, 7,615) = 206.242, p < .001$), the first block of control variables accounted for 5% of the variance in student-athletes’ intent to persist (Table 3). The second block, which contains the faculty influence variables, explained 14.4% of the variance—approximately three-quarters of the total from the overall model (19.5%). The third block, which includes only the LIFG variable, was statistically significant but only accounted for 0.1% of the variance within the model.

Being a Student-Athlete of Color ($b = -0.138, p < .001$), a Division II student-athlete ($b = -0.236, p < .001$), or a Division III student-athlete ($b = -0.235, p < .001$) were negatively associated with one’s intent to persist. Faculty-Student Interaction had a statistically significant influence on intent to persist ($b = 0.117, p < .001$), while Faculty Perceptions/Beliefs of Student-Athletes ($b = -0.282, p < .001$) had a negative influence. The regression model confirms previous literature by showing that self-reporting as an LIFG student-athlete had a negative influence on one’s intent to persist ($b = -0.231, p < .01$).

The third three-block hierarchical regression model examining student-athletes’ Academic and Intellectual Development was significant ($F(9, 7,615) = 239.395, p < .001; Table 4$). The control variables explained 2.2% of the variance in

| TABLE 3 |
| HIERARCHICAL REGRESSION MODEL OF PERSISTENCE (N = 7625) |

<table>
<thead>
<tr>
<th>Block 1: Individual Characteristics</th>
<th>Block 2: Faculty Influence</th>
<th>Block 3: LIFG</th>
</tr>
</thead>
<tbody>
<tr>
<td>$b$</td>
<td>$b$</td>
<td>$b$</td>
</tr>
<tr>
<td>Gender</td>
<td>0.322 ***</td>
<td>0.246 ***</td>
</tr>
<tr>
<td>Student-Athlete of Color</td>
<td>-0.223 ***</td>
<td>-0.150 ***</td>
</tr>
<tr>
<td>Division II</td>
<td>-0.222 ***</td>
<td>-0.237 ***</td>
</tr>
<tr>
<td>Division III</td>
<td>-0.102 ***</td>
<td>-0.235 ***</td>
</tr>
<tr>
<td>Featured Sport Status</td>
<td>-0.086 **</td>
<td>-0.003</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty-Student Interaction</td>
<td>0.116 ***</td>
<td>0.117 ***</td>
</tr>
<tr>
<td>Faculty Concern</td>
<td>0.147 ***</td>
<td>0.147 ***</td>
</tr>
<tr>
<td>Faculty Perceptions</td>
<td>-0.282 ***</td>
<td>-0.282 ***</td>
</tr>
<tr>
<td>Low-Income First-Generation</td>
<td></td>
<td>-0.231 **</td>
</tr>
<tr>
<td></td>
<td>$R^2$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.050 ***</td>
<td>0.194 ***</td>
</tr>
<tr>
<td></td>
<td>Change in $R^2$</td>
<td>0.144</td>
</tr>
</tbody>
</table>

*Note. $b$ = beta, the unstandardized regression coefficient

$^* p < .05$

$^{**} p < .01$

$^{***} p < .001$
student-athletes’ AID. The second block containing the faculty influence variables explained 19.7% of the variance—which accounted for nearly all of the 22% of variance in student-athletes’ self-reported AID. The third block containing only the LIFG variable was statistically significant but did not account for variance within the model.

In the overall model, we found that identifying as a Student-Athlete of Color ($b=−.150, p<.001$) is negatively associated with AID. Faculty-Student Interaction had a strong influence on AID ($b=.431, p<.001$), and Faculty Perceptions/Beliefs of Student-Athletes ($b=−.077, p<.001$) had a slightly negative influence on AID. However, identifying as an LIFG student-athlete had a positive influence on AID ($b=.146, p<.05$).

**DISCUSSION**

Consistent with the literature, Student-Athletes of Color and men were found to be overrepresented among LIFG student-athletes. Compared to their peers, a smaller proportion of LIFG student-athletes used family contributions to pay for college and a larger proportion used Pell grants and need-based institutional aid. Both LIFG and non-LIFG student-athletes continually balance their academic workload with time constraints connected to participation in athletics (Wolverton, 2008). Athletic coaches typically shape student-athletes’ experiences related to

<table>
<thead>
<tr>
<th>TABLE 4</th>
<th>HIERARCHICAL REGRESSION MODEL OF AID (N = 7625)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Block 1: Individual Characteristics</td>
</tr>
<tr>
<td></td>
<td>$b$</td>
</tr>
<tr>
<td>Gender</td>
<td>0.203</td>
</tr>
<tr>
<td>Student-Athlete of Color</td>
<td>$-0.201$</td>
</tr>
<tr>
<td>Division II</td>
<td>0.077</td>
</tr>
<tr>
<td>Division III</td>
<td>0.113</td>
</tr>
<tr>
<td>Featured Sport Status</td>
<td>$-0.031$</td>
</tr>
<tr>
<td>Faculty-Student Interaction</td>
<td>0.431</td>
</tr>
<tr>
<td>Faculty Concern</td>
<td>0.007</td>
</tr>
<tr>
<td>Faculty Perceptions</td>
<td>$-0.077$</td>
</tr>
<tr>
<td>Low-Income First-Generation</td>
<td></td>
</tr>
</tbody>
</table>

$R^2$ | 0.022 | 0.219 | 0.220 |
Change in $R^2$ | 0.0197 | 0.001 |

*Note. $b=\beta$, the unstandardized regression coefficient
* $p<.05$
** $p<.01$
*** $p<.001$
intercollegiate athletics, but student-athletes’ academic success is significantly associated with the interactions, concerns, and perceptions of faculty members at their institution. While being an LIFG student-athlete is a statistically significant predictor of Academic and Intellectual Development and persistence, the amount of variance attributed to it is minimal. Faculty-Student Interaction was found to be the strongest indicator of academic success for LIFG student-athletes. Although LIFG students typically report less interaction with faculty members than their non-LIFG peers (Walpole, 2008), the effectiveness of faculty-student interactions for LIFG student-athletes was found to be more influential than student-athlete profile characteristics. This is consistent with the previously described theoretical models based on the work of Tinto, Kuh, and Rendon, showing the importance of students having positive interactions with faculty members.

Student-athletes’ racial and social identity groups represent important influences on their academic outcomes. Previous literature found that students experience campus environments differently based upon demographic and social group membership (Chang, 2002). LIFG Student-Athletes of Color typically have lower levels of academic success and more negative perceptions of collegiate environments than their peers (Miller et al., 1998), but Faculty-Student Interaction proved to be a stronger predictor of academic outcomes than any student-athlete profile characteristic. Our findings build upon Donovan’s (1984) assertion that college experiences are more important than background characteristics when predicting the success of low-income Students of Color and apply it to LIFG student-athletes in general. Several studies referenced the usefulness of interactions with faculty members when attempting to optimize academic success for underprepared students in a university setting (Pascarella & Terenzini, 2005; Choy, 2001; Hahs-Vaughn, 2004; Sellers, 1992).

Previous literature established the importance of faculty-student interaction in higher education. In our study, faculty influence variables were found to account for one-half to nine times as much of the variance among academic outcomes compared to demographic or social characteristics. Demographic and social characteristics of students and employees are an important consideration when developing policy for higher education institutions. However, faculty-student interactions are the strongest and most effective predictors of academic success for LIFG and non-LIFG student-athletes. Previous research found that LIFG students reported less interaction with faculty members, spent less time studying, reported less involvement in campus activities, and worked more than their peers (Walpole, 2008). Our findings support the importance of institutional practice and policy that encourage LIFG student-athletes’ positive interactions with faculty members.

Given that our study examines nontraditional students (LIFG student-athletes), Rendon’s validation model (1994) is highly relevant to the implications of our findings. Learner validation, and not merely involvement, can be a way for faculty and staff to take an active role in improving the confidence, learning, and persistence of nontraditional students. Specifically, if LIFG student-athletes receive validation from faculty members in and/or out of the classroom, they would appear to have greater confidence in their ability to succeed in the classroom and a higher likelihood of academic success. Although the SACS research team did not
directly measure instances of out-of-class validation, the questions included in the Faculty-Student Interaction scale refer to various positive aspects of such interactions. We believe Rendon’s model could be applicable in relation to learning gains experienced by LIFG student-athletes as a result of validation by academic and athletic personnel, and we encourage future research that focuses in this area.

Student-athletes face public scrutiny and strenuous time demands associated with intercollegiate athletics participation. Although the stated goals of higher education institutions continually reference the importance of diversity and student learning, student-athletes often face barriers to academic success due to various demographic and institutional characteristics. They may also feel the “stereotype threat” associated with the “dumb jock” stereotype prevalent in higher education (Harrison, 2007). For example, in one study, only 15% of student-athletes said they were perceived positively by faculty members compared to a third who believed they were perceived negatively (Simons et al., 2007). Our analysis indicated the importance of faculty members’ concern for student-athletes and their perceptions of them as being different from other students. Athletics departments can take steps to improve faculty members’ beliefs by, among other things, (a) coordinating information sessions or workshops about the demands of athletic participation, the difficulties LIFG students face, and the importance of faculty-student interaction, (b) facilitate meet-and-greets between faculty members and student-athletes to both improve perceptions and initiate positive interactions, and (c) ask Faculty Athletics Representatives, team advisors, and other faculty members who are already involved with athletics to nominate and encourage fellow faculty members who they believe would provide a positive interactive experience with student-athletes.

Student-athletes often face barriers to academic success due to various demographic and institutional characteristics, including those related to their low-income, first-generation status. Our results highlight areas where athletics and academic administrators can influence LIFG student-athletes’ academic success. While the support system afforded to student-athletes is typically helpful, greater faculty involvement would serve to increase faculty-student interaction, showcase a direct indication of faculty concern for student development and teaching, and curb negative perceptions of student-athletes by faculty members throughout higher education.

REFERENCES


**Notes on contributor**

Justin C. Ortagus studies online education, organization issues, and student-athletes in higher education. He is a Ph.D. candidate in the Higher Education program at The Pennsylvania State University. He also works as a graduate assistant at Penn State’s Center for the Study of Higher Education.

Dan Merson studies college student outcomes, college environments, and STEM education. He is a research associate with the Leonhard Center for Enhancement of Engineering Education at Penn State. He also consults on campus climate assessment with Rankin & Associates Consulting and provides professional methodological consulting to researchers and graduate students.

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