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Predictors of Academic Motivation: The Role of Career Self-Efficacy Among NCAA Division II Student-Athletes

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This quantitative study examines to what extent psychological factors affect academic motivation among NCAA Division II student-athletes. More than 350 student-athletes from five Midwest NCAA Division II universities participated in an on-line survey. The survey instrument included statistical measures that focused on career decision-making self-efficacy, athletic identity, and academic motivation. Through a series of independent sample t tests, statistically significant differences were found between student-athletes in revenue producing sports versus non-revenue sports. Student-athletes in revenue producing sports had significantly higher athletic identity and significantly lower academic motivation. In the subsequent regression analysis, we found that career decision-making self-efficacy significantly influenced student-athletes' academic motivation, while controlling other factors such as student-athletes' year in school, athletic identity, revenue producing sport status, scholarship status, and the belief of becoming a professional athlete. Strong career decision-making self-efficacy predicted higher academic motivation among Division II student-athletes in this study. From the findings, implications and recommendations for practice and future research regarding balancing athletic participation and career preparation outside sport are discussed.

Keywords: student athletes, academic motivation, career decision-making, NCAA Division II institutions

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College athletics may be the most visible aspect of a collegiate institution. A successful athletic program brings vast attention to the university, increases institutional popularity and prestige, and connects diverse campus communities (Suggs, 2009; Toma, 1999). At the center of any successful sports program is the student-athlete. Compared to non-athletes, student-athletes must carry additional burdens of athletic training, travel schedules, injuries, and pressure to win in sporting competition. Student-athletes are often pushed to sacrifice campus engagement and academic endeavors to achieve a winning season (Etzel, 2006; Martin, 2009).

When the sport role dominates the collegiate career, student-athletes are often less engaged in campus life, non-sport career opportunities and academic exploration (Houle & Kluck, 2015; Lally & Kerr, 2005; Martin, 2009). This issue is particularly salient because holistic identity formation is achieved when young adults engage in multiple role possibilities as they examine their interests, values, and talents (Brown & Hartley, 1998; Lavallee & Robinson, 2007). In some cases, athletic success is achieved at the expense of decreased engagement in career development activities and academic curiosity (Grove, Lavallee, & Gordon, 1997; Linnemeyer & Brown, 2010). As a result, student-athletes may miss adequate opportunities to prepare for a career outside sport (Houle & Kluck, 2015; Lally & Kerr, 2005; Martin, 2009).

Two factors add critical layers to this collegiate sport context: NCAA Division membership and high-profile revenue producing sport participation. In the NCAA framework, there are three divisions: Division I, Division II, and Division III. The financial resources allocated to the athletic programs and the intended national attention distinguishes these three divisions. For example, the athletic programs in Division I institutions can attract the most public attention and obtain the most financial resources (e.g., football sponsorship). Conversely, the Division III student-athletes' focus is on being a student first; they place less emphasis on athletic competition and more emphasis on academics and campus life (NCAA, 2017a). The focus of Division II institutions is on the balance between athletic participation and campus involvement. Student-athletes attending Division II institutions are expected to graduate with career readiness while at the same time, commit to high-level athletic competition (NCAA, 2017a). However, Division II student-athletes may not realize the importance of this balance and how it distinguishes them from their counterparts in Division I or Division III institutions. Further, the sports that are generally understood to be revenue-producing are football and men's basketball (Linnemeyer & Brown, 2010; Martin, 2009). Among all student-athletes, those in a revenue-status sport may have greater risk of forgoing age-appropriate identity formation, engaging in career development activities, and developing academic curiosity (Linnemever & Brown, 2010). This increased risk may result from the revenue-status sport student-athletes' strong belief in their ability to have a sustainable career in professional athletics.

Only a selected few Division I, and even fewer Division II, student-athletes will eventually compete at the professional level (NCAA, 2017b). For the lifelong success of student-athletes, it is crucial to encourage and promote the development of their motivation towards a non-sport career; it is imperative to identify and examine psychological factors that influence student-athletes towards non-sport career activities. This study investigates the relationship between academic motivation and a series of psychological factors (such as self-efficacy and athletic identity) among Division II student-athletes. By revealing significant predictors of student-athletes' academic motivation, this study can help higher education professionals to better understand the psychological aspects of student-athletes. More importantly, this study's

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focus fills the research gap of lacking empirical evidence on Division II student-athletes' psychological and career development. Findings of this study can serve as a foundation for future studies on Division II student-athletes.

Literature Review

Academic Motivation Among Student-Athletes

Since the 1990s, the importance of academic motivation has been highlighted and discussed in empirical studies (Sedlacek & Adams-Gaston, 1992; Simons, Rheene, & Cogington, 1999). Multiple studies have argued that academic motivation plays a crucial role in predicting academic success among student-athletes (Gaston-Gayles, 2004; Sellers, 1992; Simons et al., 1999). As a psychological concept, academic motivation can be defined and measured in different ways. A notable attempt to statistically measure academic motivation is the Student Athletes Motivation towards Sports and Academic Questionnaire (SAMSAQ) developed by Gaston-Gayles (2004; 2005). Gaston-Gayles (2004) defined academic motivation as "a student's desire to excel in academic-related tasks" (p.77). She statistically measured and examined academic motivation (AM), student athletic motivation (SAM), and career athletic motivation (CAM) among more than 200 student-athletes in a NCAA Division I university. Academic motivation was the strongest predictor of student-athletes' college GPA besides American College Test (ACT) scores (Gaston-Gayles, 2004). Due to the importance of academic motivation in influencing academic success and eventually career success, numerous researchers have studied a variety of factors that may influence student-athletes' academic motivation. Several of these factors are reviewed below.

Athletic commitment. Student-athletes have all the same pressures as non-athletes. However, the added pressures of intercollegiate athletics have been found to lead student-athletes to increase their commitment to athletics and to minimize their academic commitment, thus motivating student-athletes towards sport and away from academics (Houle, 2010). For example, Adler and Adler (1985, 1987) concluded, through their study of a men's college basketball program, that athletic demands structurally constrained academic success among student-athletes by requiring the student-athletes to negotiate the college experience under high athletic expectations from coaches and the general campus community. These expectations resulted in isolation from campus engagement activities and insufficient time and energy for academic pursuits. Consequently, student-athletes dis-identified with being a student and embraced the athletic role (Adler & Adler, 1985, 1987).

Gender. Demographic characteristics of student-athletes have also been found to play a role in the relationship between athletics and academic motivation. For example, Meyer (1990) found that academic dis-identification did not occur among the female student-athletes as it did among males. Instead, athletic, academic, and social lives of a female student-athlete encouraged the commitment to academic completion (Meyer, 1990). Moreover, empirical studies utilizing SAMSAQ discovered gender differences in academic motivation levels (Lee & Sten, 2017; Sherry & Zeller, 2014). Lee & Sten (2017) concluded that female student-athletes have higher academic motivation than their male counterparts.

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Revenue producing sport and scholarship. "Revenue producing sports" are often used to describe football and men's basketball due to their popularity, visibility and thus revenue producing potential (Martin, 2009; Murphy, Petitpas & Brewer, 1996). Due to the local and national attention given to these sports, student-athletes in revenue producing sports are under added pressures from athletic department to excel at their sport, and are more likely to have difficulty in balancing their athletic and academic life (Linnemeyer & Brown, 2010; Murphy et al., 1996). Hence, student-athletes in revenue producing sports may have lower academic motivation than those in non-revenue sports (Houle & Kluck, 2015; McKinney, 1991; Murphy et al., 1996). Similarly, athletic departments often have greater expectations for student-athletes with athletic scholarships. This may add greater pressure to these student-athletes and encourage them to commit to their sports rather than to academics. Therefore, student-athletes with an athletic scholarship may have lower academic motivation compared to those without a scholarship (Gaston-Gayles, 2004; Werthner & Orlick, 1986).

Athletic identity. Athletic identity is a self-image expressing the extent to which an individual labels him- or herself as an athlete (Brewer, Van Raalte, & Linder, 1993). Numerous studies have focused on how athletic identity may associate with career planning attitudes and career maturity. In general, a strong athletic identity is associated with lower career maturity (Houle & Kluck, 2015; Kornspan, 2014; Murphy, et.al., 1996). Individuals with strong athletic identity tend to forgo opportunities to explore other aspects of their identity related to a career outside of sports (Brewer et al., 1993; Danish, Petitpas, & Hale, 1993; Houle & Kluck, 2015). To prepare for a career outside sports, a strong academic motivation is a desirable stepping-stone. Thus, the authors consider athletic identity as a potential negative predictor of student-athletes' academic motivation.

Career Decision-Making Self-Efficacy

As a core concept of social cognitive theory, self-efficacy refers to one's confidence level in terms of completing a specific task (Bandura, 1977). Accordingly, career decision-making self-efficacy is the belief that one can successfully complete tasks that are related to making career decisions (Taylor & Betz, 1983). For student-athletes, career decision-making self-efficacy is the most important predictor of career decidedness among other psychological variables such as locus of control and career salience (Brown, Glastetter-Fender, & Shelton, 2000; Layton, 1984; Taylor & Pompa, 1990).

Student-athletes often confront unique challenges in developing a strong career self-efficacy (Ferrante, Etzel, & Lantz., 1996; Figler & Figler, 1984). One of these challenges is balancing academic life with athletic demands. Trainings, injuries, travels, as well as conflicts with teammates and coaches all require extra time and energy that could be used in academic and career related activities. These pressures often result in a lower level of career decision-making self- efficacy among student-athletes (Brown et. al, 2000; Figler & Figler, 1984; Martin, 2009; Murphy et al., 1996).

Purpose and Research Questions

Based on the review of previous studies, this study aims at fulfilling two research gaps. First, previous studies have mainly focused on a) how academic motivation, self-efficacy, and

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other psychological factors influence student athletes' academic performance (e.g., Gaston-Gayles, 2004; 2005), or b) how background characteristics influence these psychological aspects among student athletes (e.g., Lee & Sten, 2017; Sherry & Zeller, 2014). Rarely did previous research focus on the relationships among these psychological factors themselves. This study fills this research gap by examining how career self-efficacy may influence college student-athletes' academic motivation with other related factors controlled.

The second gap is the lack of research on NCAA Division II student-athlete perspective. Nearly all the research on student-athlete identity, career and academic-related issues has focused on Division I or Division III student-athletes and has not specifically considered Division II student-athletes (Kornspan, 2014). Division II universities have identified themselves as institutions that are less committed to their athletic programs than Division I universities — and more committed to high-level competition than Division III institutions (NCAA, 2017b). As Division I and Division III institutions function philosophically at the opposite ends of the commitment to competition spectrum, Division II student-athletes are uniquely required to balance their commitment to sport excellence and academic excellence. Therefore, it is imperative to examine Division II student-athletes as a unique student body population. In sum, this study focused on whether or not career decision-making self-efficacy significantly predicts academic motivation among Division II student-athletes while statistically controlling other factors such as athletic identity, beliefs in having a professional sports career, athletic scholarship status, and revenue producing sports status. The following research questions guided this study:

1. Is there a statistically significant difference in athletic identity, career decision-making self-efficacy, and academic motivation between NCAA Division II student-athletes in revenue producing sports (i.e., football and men's basketball) and those in non-revenue producing sports?

2. To what extent does student-athlete's career decision-making self-efficacy predict Division II student-athletes' academic motivation, while controlling other variables such as beliefs in having a professional career, scholarship status, revenue producing sports status, athletic identity, and background characteristics?

Theoretical Framework and Hypotheses

This study adopted the Social Cognitive Career Theory (SCCT) as the main framework (Lent, Brown, & Hackett, 1994, 2000). Based on the social cognitive theory, the SCCT model discussed the interaction among self-efficacy, career related goals and actions, and educational interests (Bandura, 1977). In particular, the original SCCT model depicted the following theoretical links: a) self-efficacy impacted one's interests directly; b) self-efficacy impacted one's outcome expectations, and then outcome expectations impacted one's interests (or, self-efficacy impacted one's interest indirectly through influencing outcome expectations); and c) self-efficacy also directly impacted one's goals and choices of activities (Lent et al., 1994). Multiple higher education studies have adopted these theoretical links to understand college students' educational aspirations and choice of major (e.g., Chen & Starobin, 2018; Johnson, Starobin & Laanan, 2016; Lent, Brown, Schmidt, Brenner, Lyons, & Treistman, 2003; Wang, 2013a; 2013b). For this study the SCCT model was used to conceptualize how self-efficacy (i.e.,

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career self-efficacy) may influence student-athletes' outcome expectations and goal setting (i.e., academic motivation).

Beyond the psychological factors, Lent and his colleagues (2000; 2003) also emphasized environmental influences on individuals' career choice and educational goals. In the SCCT model, objective environment factors such as available financial supports and quality of learning experiences may affect one's career development (Lent et al., 2000). In higher education studies, these environmental factors were operationalized as a) the contextual supports that facilitate students' decision-making towards desirable outcomes, and b) barriers that pull students away from the a particular major, career and desirable outcomes (Chen & Starobin, 2018; Wang, 2013b). Scholarship status and revenue producing sports status were included in this study as environmental factors due to their critical roles in influencing student-athletes' academic motivation and participation in career-related activities (Gaston-Gayles, 2004; Houle & Kluck, 2015; McKinney, 1991; Murphy et al., 1996; Werthner & Orlick, 1986). In sum, based on the SCCT theory and previous literature about student-athletes, two hypotheses associated with the two research questions were formed.

Hypothesis 1: Division II student-athletes in revenue producing sports (football and men's basketball) demonstrate significantly higher athletic identity, lower career decision-making self-efficacy, and lower academic motivation compared to those who are not in a revenue producing sport.

Hypothesis 2: Career decision-making self-efficacy is a statistically significant predictor of academic motivation while controlling for other variables. In particular, higher career decision-making self-efficacy predicts higher academic motivation among Division II student-athletes.

Methods

Population and Sample

Five NCAA Division II universities participated in this study. The universities were chosen based on geographic convenience and the institutions' willingness to participate. Two of these universities were public and the other three were private. All five universities were liberal arts institutions located in rural Midwestern States. The total student population of the five universities was 24,032 with 84% of the population being white and 59% of the population being women. Based on the records of the participating universities, these five institutions have 983 student-athletes enrolled in total.

All 983 student-athletes from these five universities received the email invitation to participate in the survey; 353 student-athletes completed responses resulting in a 35.9% response rate. Within this sample, football and men's basketball (revenue producing sports) athletes represented slightly more than 28% of the student-athletes in the study; the remaining 72% of the participants participated in other sports (see table 1 for details about the other sports). Nearly 44% of the respondents were female and 53% were male; 93% were White, 4% were Black, and 3% identified themselves as "other" ethnicities. Over half (56%) of the participants were in their first or second year of college. Most of the participants (77%) were 19 years and older. Nearly 16% of the respondents identified as first-generation college students (highest degree earned by

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parents lower than associate degree), and the majority of the student-athletes (64.3%) were on partial scholarship with the remaining participants split between full scholarship (15.9%) and no scholarship (17.8%).

Table 1.
Demographic Characteristics of Participants (n=353)

	All student-athletes		Sport status			
			Revenue		Nonrevenue	
Variable	*N*	%	*n*	%	*n*	%
Major						
Liberal Arts	14	4.0	6	6.0	8	3.2
Education	29	8.2	11	11.0	18	7.1
Science & Engineering	62	17.6	10	10.0	52	20.6
Nursing & Health Science	84	23.8	14	14.0	70	27.7
Business	98	27.8	44	44.0	54	21.3
Other	58	16.4	14	14.0	44	17.4
Missing	8	2.3	1	0.1	7	2.8
Sport						
Volleyball	26	7.4	0	0.0	26	10.3
Football	76	21.5	76	76.0	0	0.0
Women’s basketball	25	7.5	0	0.0	25	9.9
Men’s basketball	24	6.8	24	24.0	0	0.0
Baseball	31	8.8	0	0.0	31	12.3
Softball	23	6.5	0	0.0	23	9.1
Men’s cross country	16	4.5	0	0.0	16	6.3
Men’s track/field	18	5.1	0	0.0	18	7.1
Women’s cross country	10	5.1	0	0.0	10	4.0
Women’s track/field	31	8.8	0	0.0	31	12.3
Women’s soccer	20	5.7	0	0.0	20	7.9
Men’s soccer	2	0.6	0	0.0	2	0.8
Other	44	12.5	0	0.0	44	17.4
Missing	7	2.0	0	0.0	7	2.8
Gender						
Female	155	43.9	0	0.0	154	60.9
Male	187	53.0	98	98.0	90	35.6
Missing	11	3.1	2	2.0	9	3.6
Race/ethnicity						
Black/African American	15	4.2	11	11.0	4	1.6
White	317	89.8	82	82.0	235	92.9
Other	10	2.9	5	5.0	5	2.0
Missing	11	3.1	2	2.0	9	3.6

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Year in school						
1st	105	29.7	29	29.0	76	30.0
2nd	93	26.3	25	25.0	68	26.9
3rd	73	20.7	20	20.0	53	20.9
4th	61	17.3	22	22.0	39	15.4
5th	13	3.7	3	3.0	10	4.0
Missing	8	2.3	1	1.0	7	2.8
Age						
18 years old	34	9.6	10	10.0	24	9.5
19 years old	91	25.8	25	25.0	66	26.1
20 years old	87	24.6	21	21.0	66	26.1
21 years old	70	19.8	24	24.0	46	18.2
22 years old	45	12.7	13	13.0	32	12.6
23	13	3.70	5	5.0	8	3.2
Missing	13	3.70	2	2.0	11	4.3
Scholarship						
Full	56	15.9	24	24.0	32	12.6
Partial	227	64.3	56	56.0	171	67.6
None	63	17.8	20	20.0	43	17.0
Missing	7	2.0	0	0.0	7	2.8
Parents' education						
High school or less	3	0.8	2	2.0	1	0.4
High school diploma	17	4.8	10	10.0	7	2.8
Some college	36	10.2	11	11.0	25	9.9
Associate's degree	32	9.1	8	8.0	24	9.5
Bachelor's degree	142	40.2	38	38.0	104	41.1
Some graduate school	10	2.8	2	2.0	8	3.2
Graduate degree	105	29.7	29	29.0	76	30.0
Missing	8	2.3	0	0.0	8	3.2

Instrument

To measure participants' academic motivation, self-efficacy and other important factors, this study utilized a survey designed by the authors titled *NCAA Division II Student-Athletes Academic Motivation Survey* for data collection. This survey instrument included selected measures from existing questionnaires such as Athletic Identity Measurement Scale (AIMS) (Brewer et al., 1993), Career Decision Self-Efficacy Scale (CDSE-SF) (Betz, Hammond & Multon 2005; Betz & Luzzo, 1996), and Student-Athletes Motivation towards Sports and Academic Questionnaire (SAMSAQ) (Gaston-Gayles, 2005). The following information were collected: (a) demographic information, (b) beliefs in the ability to become a professional athlete, (c) athletic identity, (d) career decision-making self-efficacy, and (e) academic motivation.

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A pilot study, conducted in April 2014 with 74 student-athletes from one Division II university, was used to explore relationships between related variables such as athletic identity, career decision-making self-efficacy, and academic motivation among Division II student-athletes. It also compared results between student-athletes participating in revenue-status sports with those participating in nonrevenue-status sports. An exploratory factor analysis (EFA) was conducted with the pilot data. The EFA was used to ensure internal reliability of the measures by calculating Cronbach's alpha. Survey items were removed that had a factor loading lower than 0.6 (Tabachnick & Fidell, 2012). The EFA using pilot data generated four constructs that had a good internal reliability as evidenced by acceptable Cronbach's alpha scores. In general, a Cronbach's alpha that is between 0.6 and 0.8 indicate an acceptable reliability; a Cronbach's alpha that is 0.8 or higher indicate a good reliability (Tabachnick & Fidell, 2012).

Measures

Academic motivation. The Academic Motivation (AM) subscales of the SAMSAQ (Gaston-Gayles, 2004; 2005) were adopted to assess academic motivation. After a critical review of the original scales and the statistical analysis of the pilot data, eight items from the original AM subscale were retained for use in this study. These eight items were measured in a six-point Likert scale ranged from "very strongly disagree" to "very strongly agree". In the current sample (n=353), four out of the eight items emerged as a statistically sound construct. The factor loadings of these four items ranged from .626 to .763. The Cronbach alpha ($\alpha = .738$) indicated a good internal reliability. Academic motivation was utilized as the dependent variable in this study.

Career decision self-efficacy. Two subscales of the Career Decision Self-Efficacy Scale (CDSE-SF) (Betz & Luzzo, 1996) were retained to measure career decision-making self-efficacy in this study. The original CDSE-SF consisted of five subscales identified as Self-Appraisal, Gathering Occupational Information, Goal Selections, Making Plans for the Future, and Problem Solving. Two out of these five domains, Gathering Occupational Information and Problem Solving, were selected because only these two showed satisfactory internal reliability among Division II student-athletes in the pilot study. In the subsequent factor analysis with the current studies sample (n=353), these two domains emerged as statistically sound constructs with good reliability ($\alpha = .776$ and $\alpha = .838$, respectively). Each construct contained five items with factor loadings ranging from .643 to .802. Participants' perceived degrees of ability in these two domains were measured through a four-point Likert-scale ranging from "no confidence" to "complete confidence". These two constructs represented two critical independent variables in our statistical analysis.

Athletic identity. Subscales from the Athletic Identity Measurement Scale (Brewer et al., 1993) were selected to measure athletic identity. The original scale included ten items measured in a seven-point Likert scale ranging from "strongly disagree" to "strongly agree". Internal reliability and construct validity were well established in the original study of AIMS (Brewer et al., 1993). In this study, four items out of the ten were included due to their high factor loadings in the pilot study. These four items emerged as a good construct ($\alpha = .776$) within the current sample (n=353). Factor loadings among the four items ranged from .686 to .856. This construct served as another important independent variable within the statistical analysis.

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Table 2.
Exploratory Factor Analysis Results

Variables	Factor loading
Athletic Identity (α = .776)	
Most of my friends are athletes	.701
Sport is the most important part of my life	.860
I spend more time thinking about sport than anything else	.856
I would be very depressed if I were injured and could not compete in sport	.686
Occupational Information Gathering (α = .776)	
Find information in the library about occupations you are interested in	.604
Find out the employment trends for an occupation over the next 10 years	.723
Find out about the average yearly earnings of people in an occupation	.770
Talk with a person already employed in a field you are interested in	.681
Find information about graduate or professional schools	.768
Occupational Problem Solving (α = .838)	
Determine steps if having academic trouble with an aspect of major	.741
Persistently work at your major or career goal you get frustrated	.643
Change occupations if you are not satisfied with the one you enter	.718
Identify major or career alternatives if unable to get first choice	.802
Change majors if you don't like your first choice	.685
Academic Motivation (α = .738)	
I will be able to use what is taught in my courses in different aspects of life	.763
I am willing to put in the time to earn excellent grades in my courses	.745
The most important reason why I am in school is to earn a degree	.635
It is not worth the effort to earn excellent grades in my courses	.626
I get more satisfaction earning a high grade than winning a sport game	.636
I chose my major because it is something I am interested in as a career	.659
The content of most my courses is interesting to me	.737
It is important to me to learn what is taught in my courses	.752

Data Collection

Initial contact was made with the academic success offices at the participating institutions. Participants were invited to complete the survey via e-mail, sent by representatives of the academic success office of the respective institutions, beginning in March 2016. The survey was open for two weeks at each institution. The email invitation was sent to all student-athletes (*n*= 983) enrolled in the five institutions. The online survey software Qualtrics was used to collect the responses. The email invitation contained a link to the survey; participants were able to opt out of the survey at any time without any consequences. Participants who did not respond to the initial email invitation received two reminders, at three-day intervals. The final survey was closed in April 2016.

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Data Analysis

This study adopted both descriptive and inferential statistical methods. First, frequencies were utilized to summarize the demographic and academic characteristics of the participants. Exploratory factor analysis (EFA) were adopted to reveal the structure of constructs that measure 1) athletic identity, 2) career decision-making self-efficacy, and 3) academic motivation. As part of the EFA procedures, principle component analysis and varimax rotation were used (Tabachnick & Fidell, 2012). The Cronbach's alpha was calculated to test the internal reliability of each construct emerged in EFA.

To answer the two research questions, the authors conducted independent *t* tests and a regression analysis. To be specific, the independent-sample *t* test was conducted to detect any statistically significant differences between student-athletes in revenue status sports (i.e., men's basketball and football) and non-revenue status sports (all the other sports). The two groups were compared on athletic identity, academic motivation, and career decision-making self-efficacy (i.e., occupational information gathering and occupational problem solving). A hierarchical multiple regression model was conducted to identify critical predictors of Division II student-athletes' academic motivation. Independent variables were added to the model by blocks. Specifically, the first block included student-athletes' number of years in college. In block two, the student-athletes' scholarship status, revenue sports status, and the variable "belief in pro career", which represented the student-athletes' beliefs in their ability to sustain themselves financially as a professional athlete after graduation were added. Finally, block three added the three constructs that emerged from the EFA: Athletic Identify, career self-efficacy on Occupational Information Gathering, and career self-efficacy on Occupational Problem Solving. All statistical analyses were conducted using IBM SPSS 24.0 software.

Results

Differences Between Revenue Producing Sports and Non-Revenue Producing Sports

The authors revealed group differences between student-athletes in revenue status (i.e., men's basketball and football) and non-revenue status sports (all the other sports) through four independent sample *t*-tests. Two out of the four *t*-tests indicated statistically significant differences. Significant differences existed in terms of athletic identity (p=.002) and academic motivation ($p < .001$). That is, Divisions II student-athletes in revenue producing sports reported significantly higher athletic identity and significantly lower academic motivation compared to student-athletes in a non-revenue producing sports. However, no significant difference was found in terms of the two subscales of career decision-making self-efficacy (i.e., $p = .092$ for occupational information gathering and p=.442 for occupational problem solving).

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Table 3.
Comparison of Student-Athletes by Sport Revenue Status

Variable	Revenue status	*n*	*Mean*	*Standard Deviation*	*Standard Error*
Athletic identity	Revenue	100	5.24	1.09	0.11
	Nonrevenue	246	4.81	1.20	0.08
Academic motivation	Revenue	93	4.64	0.49	0.05
	Nonrevenue	241	4.99	0.48	0.03
Information gathering	Revenue	96	3.37	0.49	0.06
	Nonrevenue	239	3.46	0.48	0.04
Problem solving	Revenue	96	3.31	0.49	0.05
	Nonrevenue	241	3.36	0.50	0.03

Table 4.
Independent Sample t-test Results Comparing Student-Athletes by Sport Revenue Status

	Levene's test for equality of variances		*t* test for equality of means					
Variable	*F*	Sig.	*t*	*df*	Sig	Mean diff.	*SE* diff.	95% CI
Athletic identity								
Equal variance assumed	1.57	.210	3.101	344	.002	0.429	.139	[0.157, 0.702]
Equal variance not assumed			3.235	201.7	.001	0.429	.133	[–.168, 0.691]
Academic motivation								
Equal variance assumed	1.40	.708	–4.154	332	.000	–0.354	.085	[–0.522, –0.187]
Equal variance not assumed			–4.117	164.2	.000	–0.354	.086	[–0.524, –0.184]
Information gathering Self Efficacy								
Equal variance assumed	0.147	.702	–1.688	333	.092	–0.099	.059	[–0.214, 0.016]
Equal variance not assumed			–1.671	172.03	.097	–0.099	.059	[–0.216, 0.018]
Problem solving Self Efficacy								
Equal variance assumed	0.112	.738	–0.767	335	.443	–0.046	.060	[–0.164, 0.072]
Equal variance not assumed			–0.770	176.04	.442	–0.046	.086	[–0.164, 0.072]

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Predictors of Academic Motivation

The hierarchical multiple regression was conducted to identify significant predictors of academic motivation. All three blocks resulted in significant models. The first model explained 3% of the variance. The independent variable "years in college" was found to negatively impact student-athletes' academic motivation (β=-.18, $p < .01$). The second model explained 8.3% of the variance. In addition to "years in college", variables "belief in pro career" (β=-.13*, $p < .05$) and "revenue producing sport" (β=.14*, $p < .05$) were significant predictors. Finally, the third model explained 31.6% of the total variances. In this model, "years in college" (β=-.18**, $p < .01$) and "revenue producing sport" (β=.11*, $p < .05$) were statistically significant, and the independent variable "belief in pro career" was no longer significant. The three EFA constructs were all significant predictors. Specifically, "athletic identity" was found to negatively predict the level of academic motivation (β=-.15**, $p < .01$), indicating student-athletes who had a higher athletic identity demonstrated lower academic motivation. Student-athletes' career self-efficacy with regard to "occupational information gathering" (β=.34**, $p < .01$) and "occupational problem solving" (β=.14*, $p < .05$) positively predicted academic motivation. That is, strong career self-efficacy on "occupational information gathering" and "occupational problem solving" predicts higher academic motivation among Division II student-athletes.

Table 5.
Summary of Multiple Regression Predicting Academic Motivation (n = 320)

Variable	β	95% CI	Adjusted R^2
Block 1			
Constant		[4.975, 5.32]	0.030
Year in school	–.18**	[–0.174, –0.045]	
Block 2			
Constant		[4.566, 5.340]	0.083
Year in school	–.18**	[1.169, –0.41]	
Scholarship status	.06	[–0.056, 0.205]	
Belief in pro career	–.13*	[–0.086, –0.006]	
Revenue producing sport	.14*	[0.044, 0.415]	
Block 3			
Constant		[2.497, 3.921]	
Year in school	–.18***	[–0.164, –0.053]	0.316
Scholarship status	–.02	[–0.135, 0.099]	
Belief in pro career	–.08	[–0.062, 0.009]	
Revenue producing sport	.11*	[0.012, 0.333]	
Athletic identity	–.15**	[–.150, –.029]	
Information gathering	.34***	[0.299, 0.686]	
Problem solving	.14*	[0.013, 0.390]	

Note. CI = confidence interval, $n = 320$.
*$p < .05$. **$p < 0.01$. ***$p < 0.001$.

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Discussion

Data analysis revealed statistical findings that are worth further discussion. First, the hierarchical regression analysis confirmed the significant influences of the two career self-efficacy subscales (i.e., occupational information gathering and occupational problem solving) on academic motivation among Division II student-athletes in the sample. This means the hypothesis 2 was found to be true, and this study confirmed stronger career self-efficacy on occupational information gathering and occupational problem solving as predictors of stronger academic motivation among Division II student-athletes. Further, the influence of career self-efficacy in occupational information gathering is the greatest among all other predictors in this study. Recognizing the significant influence of academic motivation towards academic performance (Sellers, 1992; Simons et al., 1999; Gaston-Gayles, 2004), strategies that cultivate strong self-efficacy on occupational information gathering and occupational problem solving among student-athletes should be implemented. Such strategies include educating higher education professionals in the athletic department (especially those within Division II institutions) about the importance of encouraging student-athletes' development and aspiration towards a non-sports career. An additional strategy to cultivate growth in career self-efficacy could include inviting former student-athletes, who are successful in a non-sports career, to speak with current student-athletes regarding the transition to a non-sports career, the use of transferrable skills garnered through participation in athletics, and the necessity of participation in non-athletic campus academics and engagement. Based on Bandura's (1977) self-efficacy theory, a strong self-efficacy can be derived from successful experiences from previous activities, as well as verbal persuasion and emotional arousal. Thus, it is crucial to encourage student-athletes to be more involved in career-related activities. This action also fit within Division II institutions' commitment to student-athletes' holistic development.

Second, statistical analyses of Division II student-athletes revealed similar findings with previous studies on Division I student-athletes. For example, as with Division I student-athletes (Grove et al., 1997; Houle, 2010), Division II student-athletes may struggle with balancing their athletic role and academic role. Results of regression analysis suggested that higher athletic identity had negative influences on academic motivation among Division II student-athletes in our sample.

Third, findings of independent *t* tests suggested that the revenue producing sports status plays a similar role for both Divisions II and Division I student-athletes. Consistent with previous studies of Division I student-athletes, Division II student-athletes in revenue producing sports scored higher in athletic identity and lower in academic motivation (Adler & Adler, 1985; 1987; Houle & Kluck, 2015). The interpretation of this finding may be similar to those under the Division I context. That is, Division II student-athletes in revenue producing sports, just like their counterparts in Division I institutions, may experience more pressure to achieve the athletic goals than do student-athletes who participate in non-revenue producing sports (Linnemeyer & Brown, 2010; Murphy et al., 1996). As Houle (2010) and Adler and Adler (1985, 1987) found for Division I student-athletes, Division II student-athletes in revenue producing sports, may be more motivated towards the athletic role as they receive the role reinforcement from teammates, coaches, administrators, and fans on and off campus. These student-athletes find themselves under time restraints and nonacademic pressures (e.g., sport practice, rehabilitation from injuries, game films, travel, and sport training) and are less likely to be engaged in activities for academic achievement and career exploration.

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Lastly, years in school was a negative predictor of student-athletes' academic motivation. This means, the academic motivation of upper-class student-athletes was lower than lower-class student-athletes in this study. Previous studies of Division I student-athletes can provide some hints in interpreting this finding. Previous Division I studies suggested that when young student-athletes arrive on campus they have high academic expectations (Coakley, 2011; Stephan & Brewer, 2007). However, over time many of these student-athletes realized they were unable to succeed at both athletics and academics. This realization resulted in lowering academic expectations to spend more time preparing for athletic competition (Coakley, 2011; Figler &Figler, 1984; Stephan & Brewer, 2007).

Implications

Division II institutions identify themselves as institutions that are less committed to their athletic programs than are Division I institutions and more committed to a holistic college experience for student-athletes, encouraging academic curiosity and campus engagement opportunities outside the sport role (NCAA, 2017a). This commitment should allow Division II student-athletes more opportunities to balance athletic and academic involvement, resulting in higher academic motivation, better academic outcomes, and eventually better workforce preparation. Practical implications can be drawn from this study to help administrators and practitioners in Division II universities better serve their student-athletes. In the following section, we summarize these implications as well as recommendations for future research.

Implications for Practice

First, Division II institutions might consider various strategies to foster student-athletes' career self-efficacy in occupational information gathering and occupational problem solving. For example, it might be beneficial for Division II student-athletes to have a multiple semester seminar class that focuses on increasing their confidence in their ability to gather occupational information. This seminar class also should aim at helping student-athletes prepare for life outside the sport environment. A good model for this class may be the 3-I framework of inquire, inform, and integrate (Gordon, 2006). Student-athletes often have developed high level skills related to time management, work ethic, and general confidence level due to the athletic participation but are unaware of how these athletic skills translate into life and career skills (Aquilina, 2013; Chen, Snyder, & Magner, 2010). This class would assist student-athletes in understanding how these athletic skills are transferable to career-related activities.

Second, Division II advisers should realize their critical role in providing academic support for student-athletes. Importantly, the interaction between student-athletes and advisers should be a valuable and meaningful experience and not just function for maintaining the student-athletes' athletic eligibility. Advisers should pay more attention to cultivate student-athletes' occupational aspirations beyond sports and make timely recommendations regarding major choice and course-taking strategies.

Third, institutional culture is important in terms of emphasizing the holistic development of student-athletes. Coaches, student affairs educators, and faculty members need to understand the challenges student-athletes have in balancing athletics and academics. For this reason, Division II institutions may consider establishing a task force to identify the gaps between

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student-athletes and academic affairs professionals, between the athletic department and student affairs department, as well as between the faculty members and athletic department.

Recommendations for Future Research

Several implications of future research can be summarized. First, future research could explore degrees of differences between Division I and Division II student-athletes' athletic identity, career maturity, and academic motivation, as this study inferred that Division II student-athletes share similar challenges with their Division I institutions counterparts. For example, both Division I and Division II student-athletes may have lower academic motivation due to a high athletic identity. Future research may compare the magnitude of this relationship between Division I and Division II student-athletes. If no significant differences are found (or, the negative influence of athletic identity is higher for Division II student-athletes), it might be an alarming result to indicate the discrepancy of Division II institutions commitment to student-athletes' academic success and the actual outcomes.

Second, future research can further explore the role of career self-efficacy on the actual academic outcomes such as retention, completion, and cumulative GPA. In such studies, academic motivation might be a mediating factor that connects career self-efficacy and academic outcomes.

Third, future research should include more racially diverse participants in diverse geographic locations. For example, future studies may focus on how underrepresented minority student-athletes may have different levels of career self-efficacy, athletic identity, and academic motivation compared to White student-athletes. More importantly, future studies can examine how relationships among these psychological factors may be different by race.

Limitations

There are some limitations that are worth mentioning. First, the sample was taken from Division II institutions located in five Midwest states with predominantly White populations. Thus, readers must use cautious when attempt to generalize our findings to institutions that have more diverse student body or from other geographic locations. Further, the lack of racial diversity in the sample restricted the comparison of critical racial differences in the psychological measures. Second, this study is limited by the use of self-reported survey responses. Although many survey items are developed based on validated and reliable psychological scales, readers still should recognize the subjective nature of self-reported data and potential biases associated with it. Third, this study mainly focused on the relationships between psychological factors. The actual outcomes such as cumulative GPA, the actual post-graduation salary, the workforce satisfaction, etc, were not considered due to both the scope of this study and data availability. It will be ideal if other data resources could be accessed (e.g., student transcript data) and combined with the current survey data to expand the statistical analysis in this study.

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Conclusion

Academic outcomes and career maturity among student-athletes have been emphasized by empirical studies for decades. This study contributed to the existing literature by 1) emphasizing the critical role of career self-efficacy (on occupational information gathering and occupational problem solving) in predicting academic motivation among student-athletes; and 2) adding perspectives from NCAA Division II institutions. This study alerts Division II university leaders that just as Division I, Division II student-athletes' academic identity and academic self-worth is crucial to their academic motivation and success. Additionally, this study reinforces the need for the intentional encouragement of student-athletes to participate in career-related activities resulting in the development of higher career self-efficacy, higher academic motivation and a better chance of a successful non-sport career outcome.

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