ACADEMIC CLUSTERING BETWEEN STUDENT ATHLETES AND EMPLOYED STUDENTS

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ABSTRACT

This study evaluated factors associated with major choice and academic experience of student-athletes and employed students. Surveys were completed with items related to commitment to sport/job, self-esteem, locus of control, and overall academic experience. Ninety college students, 61 employed students and 29 student-athletes participated. Results indicated student-athletes reported they were more connected/close to their athletic team/associates than employed workers were to their coworkers/job. Student-athletes also reported a more external locus of control in academics than did employed students. Participants in the Business and Athletic Training/Coaching major cluster were found to have a more external locus of control than participants in the Other major cluster.

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CHAPTER I

LITERATURE REVIEW

A college student is influenced by numerous factors when choosing an academic major. Family members, social groups, peers, and internal factors can all play a role in deciding which major a student chooses. A study conducted by Allen and Robbins (2008) found that a student's first year grade point average (GPA) predicted what major they would select. The researchers also concluded that those who chose a major that aligned with their assessed interest are much more likely to persist in the chosen major (Allen & Robbins, 2008). The researchers defined major persistence as: "students either remained in their entering major group into their third year or switched major groups at some time before or during the third year" (Allen & Robbins, 2008, p. 67). Therefore, it can be concluded that various factors affect a student's choice of major.

However, the number of factors that influence a student's choice of major increases when a student has another major time commitment (athletics). The decision becomes harder for the student-athlete because other responsibilities, people, and factors may influence the student-athlete's choice of major. Topics such as academic clustering, eligibility, personal interests/experiences, academic resources, self-esteem, locus of control, and future/career goals will be discussed in this paper to explain what type of influences a typical student-athlete deals with when in the decision-making process of choosing a major.

Academic Clustering

Academic clustering occurs when a significant portion of the population of a certain major, such as Business, is comprised of student athletes. Fountain and Finley (2009) considered academic clustering to occur when at least 25% of student athletes were enrolled in a specific major. Fountain and Finley conducted a study assessing whether academic clustering occurred, whether there were ethnic differences, and evaluating the number of majors exceeding the threshold of being labeled as clustered (Fountain & Finley, 2009). The sample consisted of 394 males who were football players and attended one of 11 Atlantic Coast Conference (ACC) universities. Fountain and Finley (2009) gathered data using surveys, media guides, and websites. The media guides and websites were used to gather information about the student athletes published major and ethnicity. The study sample was 41.4% white and 58.6% nonwhite. The researchers found that academic clustering did occur, with football players clustering into several majors at all eleven schools; 73% of the football players clustered into the Business Management major. Nonwhite individuals also were found to cluster at a higher percentage into a specific major more often than the whites. Multiple majors did exceed the threshold of being considered clustered but only with nonwhites; the whites did not cluster into two or more majors at any of the schools (Fountain & Finley, 2009).

Fountain and Finley (2011) also conducted another study examining academic clustering in an effort to expand the knowledge about student-athletes clustering into majors. Like the 2009 study, the researchers in this study defined academic clustering using the same definition. The sample consisted of 349 football players over a 10-year

period (i.e., 2000-2009); 230 football players had a complete data set (Fountain & Finley, 2011) from one Division I school from the ACC that had evidence of academic clustering in a previous study (Fountain & Finley, 2011). The sample included, 45.3% white and 54.7% minorities. The researchers asked five different questions:

> 1) Did clustering occur over time? If so, was it different for white and minority players? 2) What was the common academic progression for students who started in general education (University Studies)? 3) Were players more likely to migrate into an academic cluster if they received "star" ranking from Scout.com during their senior year in high school? 4) Were players who were drafted into the National Football League (NFL) likely to have been enrolled in a clustered major? 5) Were there academic programs that players migrated away from during their academic careers? (Fountain & Finley, 2011, p. 28)

The researchers found that clustering did occur over time, with 53.2% of the football players clustered into Apparel, Housing, and Resource Management (AHRM). The researchers also found that more clustering occurred as the student-athletes progressed academically, with the football players list of majors being reduced from 28 to 19 over the course of four years. Nonwhite players had a significantly bigger presence in the AHRM major than the white players (Fountain & Finley, 2011). One hundred twenty football players started out with university studies as their initial choice of major. Forty-four players left the major before their senior year and of the 76 left with university studies as their major; 50 were nonwhite players who migrated mostly into the AHRM major (Fountain & Finley, 2011). Pertaining to the third question asked, the researchers

found that more than 50% of the players who were ranked with a star on Scout.com, indicating they are a top player, had AHRM listed as their final major, with several of these players being a nonwhite (Fountain & Finley, 2011). There were 37 players drafted by a team in the NFL and of that sample, 18 players had AHRM listed as their final choice of major. The researchers also found that initially the most enrolled major was Business Management, with 39 of the 230 players enrolled in it. However, over time 15 players made an early exit from the football program and several of the players who remained migrated to the AHRM major (Fountain & Finley, 2011).

Both studies described above indicate that academic clustering occurred with football players at the studied universities. Fountain and Finley (2009, 2011) also conclude that nonwhite participants tended to cluster more than whites and clustering occurred more as student athletes advanced academically. Neither study, however, included women athletes in their sample nor did they include any other type of sports in the sample. Although these studies suggest the occurrence of academic clustering, it is important to identify factors potentially influencing the student-athletes to choose (and to remain in) their college major.

Factors Related to Choice of Major for College Athletes

Eligibility requirements. Kulics, Kornspan, and Kretovics (2015) examined the relationship between degree requirements and factors such as athletic eligibility, college major selection, and summer school enrollment among 1,027 participants. The researchers measured these factors through demographic questions, open-ended questions, and a Student-Athlete Survey. All of the participants in the sample attended

one of six National Collegiate Athletic Association (NCAA) Division I schools (Kulics et al., 2015). They found that a higher number of male athletes chose a major solely based on athletic eligibility, which is relative to more male student-athletes being academically ineligible for competition because of degree requirements. In contrast, the results indicated that female student-athletes met with an academic advisor more frequently than did male student-athletes (Kulics et al., 2015). There was no difference between revenue sports (basketball and football) and non-revenue sport athletes (i.e., swimming, golf, gymnastics, baseball, and track/cross country) regarding the process of choosing a major in reference to athletic eligibility. However, revenue sport athletes were more likely to enroll in summer courses, be confronted by their coach to change major to keep eligibility, and to be ineligible because of degree requirements compared to nonrevenue sport athletes (Kulics et al., 2015).

In a similar study with student-athletes, Navarro (2015) conducted a qualitative study assessing how academic affairs professionals work with student-athletes as they go through internal and external difficulties when choosing a career. The sample included 29 participants who were attending a Division I University, playing either football, basketball, track and field, swimming, wrestling, rowing, tennis, volleyball, soccer, softball, cross country, or golf. Navarro (2015) implemented demographic surveys and conducted 75-minute individual interviews to measure the student-athletes' career aspirations, how that decision has changed over time, any experiences that influenced the decision making process when choosing a major, and how their choice of major was related to their future career goals. Navarro (2015) found that three major life experiences

influenced a student-athlete's choice of major: interactions with academic/student affairs on campus, interactions with academic/student affairs within athletics, and the difficulty to find a balance between the roles of a student and a college athlete (role conflict). Much like the results shown in the Kulics et al. (2015) study, Navarro (2015) found that the majority of student-athletes felt pressured to select a major that could easily be maintained for eligibility purposes by taking classes that are easy to the student-athlete. Time commitment was shown to be an influential factor when selecting a major but the term time commitment was not defined (Navarro, 2015).

Finally, Roofe (2010) assessed factors related to a student-athlete's decision to major specifically in Family and Consumer Sciences (FCS). The researcher gathered a sample of 22 student-athletes from an NCAA Division I university, all of whom played men's basketball, women's tennis or football (Roofe, 2010). The student-athletes were administered a survey that asked about factors such as preparation for college academics, persons who influenced the student-athlete's choice of major, and the utilization of on-campus academic support resources (Roofe, 2010). The findings indicated that student-athletes' choices of major were associated with their future career goals and their athletic eligibility, which aligns with the results of the Navarro (2015) study. However, Roofe (2010) also found that the student-athlete's choice of major was most often a decision that was made independently, rather than with the help of family members, peers, and coaches.

All three of these studies selected their participants from a Division I school, included both males and females and included more sports than only football. None

reported ethnic differences. Based on the three studies, more males chose a major with eligibility as the primary influential factor than compared to females. However, females were found to meet with academic advisors more often than males, which could be related to males choosing an easier major for eligibility reasons (Kulics et al., 2015). Another important conclusion from these studies is that revenue sport athletes, such as football and basketball, were more likely to be confronted by their coach to change their major in order to keep eligibility than non-revenue sport athletes, but revenue sports also were more likely to be ineligible due to degree requirements (Kulics et al., 2015). These results also suggest that student-athletes' major choice may be associated with their ability to help them maintain eligibility easily (Navarro, 2015).

Interests and experiences. Pendergrass, Hansen, Neuman, and Nutter (2003) conducted a study focusing on level of agreement between assessed interests and declared college majors of undergraduate students, including 137 athletes and non-athletes. The breakdown of the sample for athletes included: 82 male athletes, 73% Caucasian, 1% Hispanic, and 26% African American (Pendergrass et al., 2003). The age range was 18 to 23 (M = 19.9) and the athletes choices of major crossed 33 different fields, with the most (33%) deriving from the College of Liberal Arts (Pendergrass et al., 2003). The athletes were from a Division 1 Mid-Western University. Participants were selected from revenue-generating (basketball and football) and non-revenue-generating (gymnastics, golf, baseball, cross country/track, and swimming) sports (Pendergrass et al., 2003). The sample of non-athletes consisted of 55 male students, including 74.5% Caucasian, 3.6% Hispanic, 16.4% Asian, 3.6% African American, and 1.8% Other ethnicity. The age

ranged from 18 to 23 (M = 19.6) and the non-athlete students' choices of major spanned across 29 fields, with the largest number (29%) coming from the College of Management (Pendergrass et al., 2003).

Both groups of participants completed the Campbell Interest and Skill Survey (CISS). The survey is comprised of 29 Basic Scales, 7 Orientation Scales, and 58 Occupational Scales. In this study, the researchers only administered the Occupational Scales. The researchers classified level of agreement between a student-athletes chosen major and their score on the CISS as *poor*, *moderate*, or *excellent* (Pendergrass et al., 2003). By implementing this measure, the researchers found that more (70.9%) non-athletes reach moderate or excellent level of agreement than athletes (65.9%) (Pendergrass et al., 2003). The results indicated that athletes in the revenue-generating sports reached a 63.4% excellent or moderate level of agreement, whereas the athletes in non-revenue-generating sports had a 74.1% excellent or moderate level of agreement (Pendergrass et al., 2003). The results of this study indicate that regardless of whether a student is an athlete or not, they are just as likely to select a major that aligns with their assessed interests (Pendergrass et al., 2003).

Similar to interests, Navarro (2015) examined what type of life experiences influenced a student-athlete's choice of major. The researcher conducted a semi-structured interview with each participant as a method of data collection. The interviews were 75 minutes long and the researcher asked the participants to describe personal experiences that the participants felt influenced their choice of major (Navarro, 2015).

The researcher found three major life experiences that had influenced the participants' choice of major: "interactions with academic/student affairs professionals across campus; interactions with academic/student affairs professionals internal to athletics; the struggle to balance the roles of student and collegiate athlete" (Navarro, 2015, p. 370). The majority of student-athletes (79%) mentioned in the interview that interacting with athletic-based professionals concerning student/ academic affairs was influential to their choice of major (Navarro, 2015). Many stated they relied on the athletic student support professionals because of their knowledge about eligibility requirements. A majority of the student-athletes stated they felt pressured to select a major that would be easy enough to maintain eligibility (Navarro, 2015). Only 48% of student-athletes mentioned how interacting with campus-based student/academic affairs staff was influential to their choice of major (Navarro, 2015). Those who did mention it noted that it was influential because it provided networking opportunities with individuals outside of athletics. All of the student-athletes mentioned how trying to balance the roles of being a student and an athlete influenced their choice of major and the time commitment required by their athletic role was the most influential factor when choosing a major (Navarro, 2015).

All in all, both studies retrieved their sample from a Division I school, included more teams than only football; however, Pendergrass et al. (2003) also included non-athletes but only included males. Neither study reported any ethnic differences. It is important to note that when considering student-athletes' choice of major and how well it agrees with their interests, athletes in the non-revenue sports had a higher percentage of

level of agreement than those in revenue generating sports (Pendergrass et al., 2003). It was also found that more non-athletes reached a higher level of agreement to their major than athletes, but even so, whether a student is an athlete or not, they are almost just as likely to choose a major that aligns with their assessed interests (Pendergrass et al., 2003). Also, experiences with athletic based professionals were found by Navarro (2015) to influence a student-athletes choice of major.

Academic resources. Few empirical studies assess the availability and use of academic resources and their association with a student-athlete's choice of major. Kulics, et al. (2015) examined the relationship between degree requirements and factors such as athletics eligibility, college major selection, and summer school enrollment among 1,027 student-athletes, including 575 male and 452 female student-athletes. The researchers measured these factors with demographic questions, open-ended questions, and a Student-Athlete Survey. All the participants in the sample attended one of six NCAA Division I schools (Kulics et al., 2015). They found that a higher number of male athletes chose a major solely based on athletic eligibility compared to females. More male student-athletes reported being academically ineligible for competition because of degree requirements than did females. In contrast, the results indicated that female student-athletes met with an academic advisor more frequently than did male student-athletes (Kulics et al., 2015). There was no difference between revenue sport and non-revenue sport athletes regarding the process of choosing a major in reference to athletic eligibility. However, revenue sport athletes were more likely to enroll in summer courses, be

confronted by their coach to change major to keep eligibility, and to be ineligible because of degree requirements compared to nonrevenue sport athletes (Kulics et al., 2015).

Much like the results shown in the Kulics et al. (2015) study, Navarro (2015) found that the majority of student-athletes felt pressured to select a major that could easily be maintained for eligibility purposes. Time commitment was shown to be an influential factor when selecting a major but the term time commitment was not defined (Navarro, 2015). Also, Roofe (2010) found that the faculty described the student-athletes as diligent and disciplined but also described them as apathetic and not engaged. The faculty stated they had a good rapport with the student-athletes but also stated that some coaches, like for football, did not keep a close eye on their player's academics (Roofe, 2010).

Collectively, all three of the studies included both male and female student-athletes from a Division I school, included more sports than just football but none of the studies found any ethnic differences. Concerning academic resources, Kulics et al. (2015) found that female student-athletes met with an academic advisor more frequently than male student-athletes, indicating a gender difference, and revenue sport athletes were more likely to enroll in summer courses. Also, the findings of the Roofe (2010) article yield that there is an important need for better communication between faculty, coaches, and student-athletes.

Personal factors. Furthermore, White (2010) assessed student athletes' perceptions of instructors and peers expectations of athletes, student athletes' perceptions of how they are treated by their professors and non-athlete students in academia, and

student-athletes' perceptions of how they view their own academic abilities compared to their athletic peer's academic abilities. The researcher samples 180 student athletes from an NCAA Division I university, with 105 being male and 74 being female. The participant's ages ranged from 18 to 25 with a mean of 19.91 years. The ethnicities represented in the study included: 125 Caucasian, 40 African American, 5 Hispanic, 1 Asian, and 8 other athletes. The student-athlete participants were categorized as follows: 10 volleyball, 12 softball, 18 soccer, 2 men's golf, 3 women's golf, 85 football, 11 women's cross country/track, 9 men' cross country/track, 4 women's basketball, 8 men's swimming, and 14 women's swimming.

The researcher created an electronic survey that asked questions pertaining to the student-athletes' ability to choose their majors, the student-athletes' point of view of other athletes' intelligence, and the athletes' view of the importance of their academic and athletic career (White, 2010). The results yield that student-athletes felt that higher expectations were placed on them by professors because they were student-athletes; however, student-athletes felt that other students placed lower academic expectations on them because they were student-athletes (White, 2010). Also, White found that student-athletes felt that other students and professors were much more willing to aid them in academics because they were student-athletes. White concluded that most student-athletes felt they were "free to choose their major" (p. 20). The results also indicated student-athletes rated their teammates' academic performances worse than their own academic performance (White, 2010). Finally, the student-athletes made their grade point average (GPA) available and when asked to predict their teammates GPA, the student-

athletes labeled their teammates' with a significantly lower GPA when compared to themselves (White, 2010).

Song and Glick (2004) conducted a study unlike the others mentioned by only including students in the sample and not student-athletes. Even though the primary focus of this paper is on student-athletes, it is important to consider the findings of this study because it reflects on personal characteristics that are influential to a person's choice of major. Therefore, the researchers sample consisted of 9,202 participants, with 4,470 males and 4,732 females. The participants' data came from the National Education Longitudinal Study (NELS88), which is a national sample of high school students (Song & Glick, 2004). The high school students were analyzed at two-year intervals. The sample group was comprised of numerous ethnicities such as 8,618 Caucasians, 113 Koreans, 176 Chinese, 143 Southeast Asians, and 152 Filipinos (Song & Glick, 2004).

The researchers used self-esteem and locus of control measures to evaluate the association between an individual's locus of control and self-esteem to a lucrative major (Song & Glick, 2004). The findings suggest a gender difference with males choosing college majors with higher earning potentials than females. Also, for males, high self-esteem was found to be associated with more lucrative majors and high locus of control was associated with less lucrative majors (Song & Glick, 2004). For females, self-esteem and locus of control were not significantly related to being associated with a lucrative major. The findings also yielded that students who had higher scores in Math in high school, choose majors with higher earning potentials (Song & Glick, 2004).

In all, both studies included both male and females in the sample; however, one study only examined students and the other looked at student-athletes. The study that did look at student-athletes, included more sports that just football in their sample and the sample was from a division I school. Pertaining to personal characteristics that influence a person's choice of major, it is important to note that males were found to have a high self-esteem that was associated with more lucrative majors and a high locus of control was associated with less lucrative majors (Song & Glick, 2004). It is also important to note that White (2010), found that most student-athletes felt they were completely free to select the major of their choice.

Future/career goals. Roofe (2010) conducted a study which examined what factors may influence student-athletes who majored in Family and Consumer Sciences (FCS). The sample consisted of 23 NCAA Division I student-athletes, 12 alumni athletes, and 5 FCS faculty from the University of Central Arkansas. The researcher also collected data from a focus group which consisted of six current student-athletes. Roofe (2010) evaluated the alumni athletes' opinions on what courses they felt prepared them most for their careers. The alumni athletes indicated that courses in business helped them prepare for their career and courses in FCS and business prepared them most for life. The FCS student-athletes mentioned that they were uncertain of job availability after graduation and one alumni athlete admitted to regretting changing his major due to being a collegiate athlete (Roofe, 2010).

Furthermore, Navarro (2015) also conducted a study which looked at student athlete's career goals and aspirations. The sample included 29 Division I college athletes

who participated in a 75-minute individual interview. The sample was broken down into 13 males and 16 females with the athletes deriving from numerous sports teams such as football, swimming, wrestling, rowing, tennis, soccer, softball, golf, etc. (Navarro, 2015). During the 75-minute interview, the researcher questioned each college athlete about his or her career goals, such as what career they wanted to obtain when they got older and how that changed throughout time.

Navarro (2015) found a gender difference yielding that more females' (77%) than males' (63%) major choice aligned with future career aspirations. Of the 29 participants, 20 college athletes had a major that aligned with their career aspiration (Navarro, 2015). Those student-athletes who knew early in their life what they wanted to do as a career relied more on student support professionals and less on athletic support staff for academic decisions. When analyzing the data further, the results indicated that college athletes in nonrevenue (swimming, wrestling, tennis, track and field, and rowing) and revenue (basketball and football) sports chose a major that aligned with their future career aspirations (Navarro, 2015). However, students on the nonrevenue sports relied more heavily on student support staff, whereas the students on the revenue sports relied more heavily on student support staff that was internal to athletics for decisions concerning their choice of major (Navarro, 2015).

All things considered, both studies included both male and female student-athletes from a Division I school, included more sports than only football but did not find any ethnic differences. A finding from a study conducted by Roofe (2010) indicated that alumni student-athletes said business courses help them most in their future career and in

life. Another interesting finding, is from a study conducted by Navarro (2015) which yielded that more females' major choices aligned with future career aspirations than males. A key finding was that student-athletes who knew early in their life what they wanted to do as a career relied more on student support professionals and not as much on athletic support staff (Navarro, 2015). Therefore, based on the two studies, it can be concluded that a student-athletes choice of major is influenced by their future career goals.

Summary and Purpose of the Current Study

Based on the literature, academic clustering does seem to occur, particularly with some collegiate athletes (e.g., football players), but less is known about why athletes may cluster to specific majors. The literature supports that numerous factors may play a role, such as time commitment, eligibility issues, what type of sport the student-athlete is playing (revenue vs nonrevenue), coach and peer influences, personal interests and experiences and, for males, self-esteem and locus of control. Research is inconsistent, however, in defining these terms and results are varied depending on the type of athlete. The purpose of the current study was to examine potential influences on a student-athlete's choice of major and compare their experience to those of another *time-committed* group (i.e., employed students). A similar time commitment to their sport/job was expected between the two groups (i.e., 20-25 hours per week). Time commitment, eligibility concerns, coach and peer influences, self-esteem, and locus of control all were measured to provide assess the potential influential factors playing a role in academic

decisions. These six factors were measured to tie the literature together and expand on previous research.

Specifically, it was predicted that student athletes would be more likely to major in traditional cluster majors (i.e., business and sport/athletic coaching) compared to nontraditional cluster majors. Further, it was predicted that student athletes would report more influence of their team/sport peers, coaches, and advisors than would employed student report from their job peers, bosses, and administrators. Finally, it was predicted that student athletes in traditional cluster majors would report higher self-esteem and more external locus of control than those in non-traditional cluster majors and employed students.

CHAPTER II

METHOD

Participants

The sample included 90 undergraduate college students from a regional southeastern university. Twenty-nine participants were student-athletes from athletic teams that included both male and female individuals; athletes from the football team were excluded. The comparison group included 69 students who worked at least 20 hours per week, which represented an estimated similar time commitment to a student-athlete. The full sample included 52 (55%) females and 38 (45%) males with an age range from 18 to 25 years (M = 20.37, SD = 1.91). The sample included primarily Caucasians (72.4%) who were single (89.7%). Year in school included all academic ranks. Table 1 provides a summary of the demographics by full sample and by group.

Measures

Demographics. All participants completed a brief demographic form asking for information about their age, gender, marital status, ethnicity, current year of study, declared major, and general career goal (see Appendix A).

Factors influencing major choice. These items were adapted and modified items from Kulics et al. (2015), who used the tool to analyze the academic behaviors and beliefs of student-athletes. These items measured who potentially influenced a participant's choice of major, how time commitments impacted academics, and how close/connected one's feels to peers and coaches/employers. Parallel versions for athletes

Table 1

Demographic variable percentages for student athletes, employed students, and the full sample.

	Athletes (n = 29)	Employed (n = 61)	Full Sample (N = 90)
Gender			
Male	55.2	36.1	42.2
Female	44.8	63.9	57.8
Other	0	0	0
Chose no response	0	0	0
Marital Status			
Married	0	3.3	2.2
Separated or Divorced	0	0	0
Single; Never Married	89.7	95.1	93.3
Other	10.3	1.6	4.4
Chose no response	0	0	0
Ethnicity			
African American	13.8	24.6	21.1
Caucasian	72.4	50.8	57.8
Other	13.8	23.0	20.0
Chose no response	0	1.6	1.1
Year in School			
Freshman	51.7	26.2	34.4
Sophomore	13.8	18.0	16.7
Junior	24.1	29.5	27.8
Senior	10.3	24.6	20.0
Other	0	1.6	1.1
Chose no response	0	0	0

and employed students were developed with one additional question for athletes about how athletic eligibility played a role in choice of major (see Appendix B).

Rosenberg Self-Esteem Scale. Rosenberg's (1965) self-esteem measure was administered to assess characteristics of self-esteem among student-athletes and students who worked part-time jobs. The Rosenberg is a 10-item measure with item responses on a 5-point Likert scale. Items 9, 8, 6, 5, and 2 are reversed scored. *Strongly Disagree* equaled one point, *Disagree* equaled two points, etc. The total was calculated including all ten items; higher total scores reflect a higher self-esteem. This measure has a test-retest reliability of .85 and .88. This measure also correlated well with other measures of self-esteem, indicating significant validity (Ciarrochi & Bilich, 2006). This self-esteem measure was chosen because self-esteem has been associated with choice of major for student-athletes. For instance, a study conducted by Song and Glick (2004) found that for males, high self-esteem was found to be associated with more lucrative majors and high locus of control was associated with less lucrative majors.

Academic Locus of Control. The Academic Locus of Control Scale (Trice, 1985) was the measure used to evaluate how in control of their academic life that participants perceived themselves to be. This scale is a 28-item self-report with a true/false response format that is specifically designed for college students. Total scores are calculated by adding the number of externally-motivated response items that were endorsed, with higher scores indicating more external locus of control. Scores on this tool correlate with a student's motivation for achievement, has a test-retest reliability of .92, and an internal consistency of .70 (Trice. 1985).

Procedures

Gaining IRB approval was the first step in the procedure to data collection (see Appendix C). Once approval was obtained, participants were recruited in small groups to complete the packet of questionnaires anonymously. Once informed consent was obtained (see Appendix D), a questionnaire packet was given to the student athletes in person during team meetings and to the employed students individually in small groups. Questionnaires were presented in counterbalanced order to control for potential order effects; no identifying information was provided on any packet material.

CHAPTER III

RESULTS

Preliminary Analyses

Student-athletes and employed students were compared for potential differences in gender, age, ethnicity, and marital status. Chi square analyses showed no differences between athlete and employed groups in gender, ethnicity, or marital status. An independent samples *t*-test indicated that the student-athletes (age $M = 19.5$; $SD = 1.38$) were significantly younger than the employed students ($M = 20.8$, $SD = 2.0$), $t(88) = -3.04$, $p = .003$. Therefore, age was used as a covariate in all subsequent group comparisons.

Student Athlete and Major Choice

It was predicted that student athletes would be more likely to select traditional *cluster* majors (i.e., Business, Sport/Athletic Coaching) than majors that were not in this cluster. Of the 29 student athletes, 14 were in traditional cluster majors and 15 were in the *other major* category. A comparison of these proportions indicate that the student athletes were not more likely to choose traditional cluster majors, $z = 0.13$, $p = .55$

Group Comparisons

Means and standard deviations for all dependent variables by group are included in Table 2. It was hypothesized that athletes would report more influence on their academic choice by others involved in their commitment (i.e., sport or job) than employed students would report. To explore this analysis, an influence score was calculated for each group by adding the response to the six items (i.e., items 1-6 on the

Table 2

Descriptive statistics for dependent variables by group and major.

	Student Athletes			Employed Students		
Variable	Traditional Cluster Major	Other Major	All Athletes	Traditional Cluster Major	Other Major	All Employed Students
	M(SD)	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*
Influence	1.87(0.54)	1.68(0.49)	1.77(0.52)	1.65(0.70)	1.66(0.66)	1.66(0.67)
Connectedness	3.90(0.72)	3.91(0.72)	3.91(0.71)	3.12(1.16)	3.26(0.97)	3.20(1.05)
Self-Esteem	21.71(5.21)	22.53(4.17)	22.14(4.63)	23.14(4.65)	20.16(7.54)	21.55(6.48)
Locus of Control	13.71(3.43)	11.00(3.91)	12.31(3.87)	10.39(4.88)	9.21(3.66)	9.75(4.26)

adapted questionnaire) pertaining to perceived influence on his/her academic situation by work/athletic activities and affiliations. A one-way ANCOVA controlling for age was conducted to test for group differences (athlete vs employed students) in perceived influence. Results indicate no group difference in perceived influence on academic major and situations by others affiliated with their athletic or work commitments, $F(1, 88) = 1.57$, $p = .214$.

Based on previous studies indicating the potential for academic clustering by athletes, several hypotheses regarding characteristics of athletes and employed students in traditional academic clusters (i.e., Business, Athletic Training/health) and other majors were predicted. First, it was predicted that there would be no significant interaction between athletes and employed students in each major cluster with regard to perceived connection to their sport or job. A total connectedness score was calculated by adding scores for items 7 – 9, which assess perceptions of closeness to personnel and to one's sport/job. A 2 (athletes vs employed students) x 2 (traditional vs other academic major cluster) ANCOVA, controlling for age, was conducted to test this hypothesis. The results support the hypothesis that there is no significant interaction for group by major on perceived connections to their sport/job, $F(1, 89) = .03$, $p = .86$ (see Table 2). Follow up analyses indicate no main effect for academic major group, $F(1, 89) = .08$, $p = .78$, but athletes ($M = 3.91$, $SD = .71$) did report higher connection with their sport than did employed students ($M = 3.20$, $SD = 1.05$) to their employment, $F(1, 89) = 8.46$, $p = .005$.

An interaction was predicted regarding group, choice of major, and self-esteem such that athletes in traditional academic clusters (i.e., Business and Sport) would have

higher self-esteem than the employed students in traditional majors, but not for athletes and employed students in the *other* major cluster. A 2 (athlete vs employed student) x 2 (traditional vs other academic major cluster) ANCOVA, controlling for age, was conducted to test this hypothesis. The results indicated no significant interaction for group by major for self-esteem, $F(1, 89) = .659$, $p = .42$. The main effects for athlete/employed group, $F(1, 89) = .53$, $p = .47$ and that for major group, $F(1,89) = .36$, $p = .55$ also were not significant. Table 2 provides the descriptives for each group on the Rosenberg Self-Esteem Scale.

An interaction was predicted that athletes in traditional academic clusters (i.e., Business and Sport) would have more external locus of control (i.e., higher scores) than the employed students in traditional clusters, but not for those in the other major cluster. Therefore, a 2 (athlete vs employed student) x 2 (traditional vs other academic major cluster) ANCOVA was conducted to test whether athletes and employed students in the two primary academic clusters differed in locus of control. The results indicate that there was no significant interaction between group and major on locus of control, $F(1, 90) = .57$, $p = .45$. Overall, however, student-athletes reported a statistically significant higher (i.e., more external) locus of control ($M = 12.31$, $SD = 3.87$) than employed students ($M = 9.75$, $SD = 4.26$), $F(1, 90) = 6.51$, $p = .01$. Also, when considering the full sample, participants in the traditional major cluster (i.e., Business and Sport) reported a statistically significant higher (i.e., more external) locus of control ($M = 11.50$, $SD = 4.68$) than the *other* major cluster ($M = 9.77$, $SD = 3.79$), $F(1, 90) = 4.18$, $p = .04$.

CHAPTER IV

DISCUSSION

The primary goal of this study was to examine potential influences on choice of major and academic situations by students who have large time commitments aside from academics (i.e., student athletes and employed students). A sample of collegiate student-athletes and students employed at least 20 hours a week were assessed with tools measuring academic experience, self-perception, and locus of control.

The researcher predicted that student-athletes would cluster into three specific majors: (a) Business Management; (b) Sports Management/Athletic Coaching; and (c) Other. Given the small sample size for this study, majors were grouped into two clusters, combining the *traditional athlete clusters* (business and sport/coaching) into one and comparing to all other majors (i.e., *Other* major). Although it was predicted that athletes be more likely to fall into the traditional cluster, they did not. Instead the sample of student-athletes consisted of almost an even number of Business/Athletic training/Coaching majors (n = 14) and *Other* majors (n = 15). This finding contradicts prior research conducted by Fountain and Finley (2011), who found that athletes do cluster into certain majors, but their sample clustered into Business Management and Apparel, Housing, and Resource management (AHRM) majors. It is important to note that prior research related to academic clustering included primarily football players in their sample, but the current study specifically excluded those athletes. They were excluded because the previous research focused so much on football players. This study included non-football athletes, such as basketball, volleyball, and tennis players; results

show they did not tend to cluster into the business and/or athletic coaching/health majors. These findings fill a gap in the current literature, indicating that clustering may be unique to some athletic groups but not others.

Self-esteem, time commitment, peer influences, and locus on control were analyzed to assess potential group differences in student athletes' and working students' choice of major and academic experience. An interaction was not found between the student-athletes/employed students and the major group for any of the variables (self-esteem, locus of control, influences, and connectedness). Therefore, student-athletes in the traditional major cluster did not differ on any of the variables than employed students in the traditional major cluster. Also, student-athletes in the Other major group did not differ on any of the variables than the employed students in the Other major group. This outcome contradicted the researcher's prediction but it is important because it fills a gap in empirical research.

When considering only student-athletes and employed students and not what major group they belonged to, however, a few differences were found. It was predicted that student-athletes would be more influenced on their academic major than the employed students. Student-athletes and employed students, however, shared similar perceptions of how influential they found their peers, coaches, teammates, bosses, and co-workers to be when choosing their major. Both groups did not find other people to be significantly influential when choosing a major. This finding is supported by previous research conducted by Roofe (2010), who found that student-athletes most often made the decision about their choice of major independently. On the other hand, student-

athletes were found to be more connected/close to their peers than employed students were to their peers. Furthermore, it was found that student-athletes had higher scores on the Academic Locus of Control scale, indicating they have a more external locus of control than employed students.

Additionally, when considering the major group and not whether the participant was a student-athlete or an employed student, there were mixed findings. The researcher predicted that student-athletes in the primary major clusters would have a more external locus of control than employed students in the primary major clusters, but no interaction was discovered. Participants in the Business and Athletic Training/Coaching major cluster, however, were found to have a more external locus of control than participants in the Other major cluster. This finding is significant because it bridges the gap in empirical research. Again, Song and Glick (2004) found that a higher locus of control was associated with less lucrative majors but they did not include student-athletes in their sample.

Limitations and Further Research

There are several methodological limitations in the current study. First, the sample size was relatively small, especially for the student athletes (n = 29). Secondly, to ensure the comparison group of employed students included enough participants in the traditional major clusters, students were recruited specifically from business and athletic course classes, whereas the athletes' majors were not a factor in their recruitment, that is, all athletes were recruited regardless of major. Recruiting a larger sample size for both

athletes and employed students would increase the likelihood of a more representative sample of each major group.

The researcher purposefully excluded the football team because the majority of prior empirical research only included football teams in their sample. The researcher structured the sample in the current study to include more lucrative and less lucrative (i.e., how much financial income they bring to the university) sports teams; however, the researcher included only three different sports in the current study. If all student athletes from every team on campus participated in the study, then the results may have been different and would generalize more broadly to other college athletes.

Finally, although the tools used to assess self-esteem and locus of control are psychometrically supported and widely used in the research, the measure of influence and connection was adapted for use in this study. The reliability and validity of those items as measures of these constructs is unknown. Also, all tools were self-reported, which is reflective of the participants' perception but may not be consistent with their behaviors.

Despite these limitations, this study offers an addition to the current literature in the diversity of athletes included and the comparison to another time-committed group: employed students. Future research should continue to explore how these groups' academic experience may be affected by their group affiliations.

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APPENDICES

APPENDIX A

DEMOGRAPHIC FORM

Please answer each of the following items.

1. Gender (Circle One)
    a. Female
    b. Male
    c. Other:
    d. I choose not to respond.

2. Marital Status:
    a. Married
    b. Separated or Divorced
    c. Single; Never Married
    d. Other: _____
    e. I choose not to respond.

3. Ethnicity
    a. African American
    b. Caucasian
    c. Other: _____
    d. I choose not to respond.

4. Current year of study:
    a. Freshman
    b. Sophomore
    c. Junior
    d. Senior
    e. Other: _____
    f. I choose not to respond.

Your current Age: _____

What is your current declared major?

Please describe your general career goal.

APPENDIX B

FACTORS INFLUENCING MAJOR CHOICE ITEMS

Athletes

1.	**How much did academic eligibility influence your selection of your current major?**	not at all 1	a little 2	somewhat 3	a lot 4	very much 5
2.	**How often have you been advised by your coach to choose a major to meet eligibility requirements?**	never 1	rarely 2	sometimes 3	frequently 4	very frequently 5
3.	**How often have you been encouraged by your athletic peers to select another major to meet eligibility requirements?**	never 1	rarely 2	sometimes 3	frequently 4	very frequently 5
4.	**How often have you failed a class or not passed at a C level for major/minor due to your athletic commitments?**	never 1	once 2	twice 3	three times 4	4 or more times 5
5.	**How often have you been required to take summer courses to become eligible for athletic competition?**	never 1	once 2	twice 3	three times 4	4 or more times 5
6.	**How frequently have you been advised by your academic advisor to choose a major to meet eligibility requirements?**	never 1	rarely 2	sometimes 3	frequently 4	very frequently 5
7.	**How connected/close do you feel to your teammates?**	not at all close 1	somewhat close 2	close 3	moderately close 4	very close 5

8.	**How connected/close do you feel to your coaches?**	not at all close 1	somewhat close 2	close 3	moderately close 4	very close 5
9.	**How connected/close do you feel to your sport in general?**	not at all close 1	somewhat close 2	close 3	moderately close 4	very close 5
10.	**How often have you been academically ineligible for competition due to academic issues?**	never 1	once 2	twice 3	three times 4	4 or more times 5

11. Approximately how many hours ***total*** do you spend ***in a typical week*** doing activities related to your sport (practice times, team meetings, study hall hours, team dinners, workouts, etc.)?

Employed Students

1.	**How much did your work commitment influence your selection of your current major?**	not at all 1	a little 2	somewhat 3	a lot 4	very much 5
2.	**How often have you been advised by your supervisor/boss to choose a major that would not interfere with your work schedule and commitments?**	never 1	rarely 2	sometimes 3	frequently 4	very frequently 5
3.	**How often have you been encouraged by your coworkers to select a major that would not interfere with your work schedule and commitments?**	never 1	rarely 2	sometimes 3	frequently 4	very frequently 5
4.	**How often have you failed a class or not passed at a C level for major/minor due to your work commitments?**	never 1	once 2	twice 3	three times 4	4 or more times 5
5.	**How often have you been required to take summer courses to make up for classes you failed or were not able to take due to work commitments?**	never 1	once 2	twice 3	three times 4	4 or more times 5

6.	**How frequently have you been advised by your academic advisor to choose a major that would not interfere with your work commitments?**	never 1	rarely 2	sometimes 3	frequently 4	very frequently 5
7.	**How connected/close do you feel to your co-workers?**	not at all close 1	somewhat close 2	close 3	moderately close 4	very close 5
8.	**How connected/close do you feel to your supervisor/boss?**	not at all close 1	somewhat close 2	close 3	moderately close 4	very close 5
9.	**How connected/close do you feel to your job in general?**	not at all close 1	somewhat close 2	close 3	moderately close 4	very close 5

Approximately how many hours ***total*** do you spend ***in a typical week*** doing work-related activities (i.e., work hours, work meetings, emails, driving time, etc.)?

APPENDIX C

MTSU IRB APPROVAL LETTER

IRB
INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129

IRBN007 – EXEMPTION DETERMINATION NOTICE

Thursday, April 20, 2017

Investigator(s): Elizabeth Morgan (Student PI) and Kimberly J. Ujcich Ward (FA)
Investigator(s') Email(s): enm3c@mtmail.mtsu.edu; Kimberly.Ward@mtsu.edu
Department: Psychology

Study Title: Academic Clustering between Student Athletes and Employed Students
Protocol ID: **17-1235**

Dear Investigator(s),
The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXEMPT** review mechanism under 45 CFR 46.101(b)(2) within the research category *(2) Educational Tests* A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	EXEMPT from furhter IRB review***	
Date of expiration	**NOT APPLICABLE**	
Participant Size	60 (SIXTY)	
Participant Pool	MTSU Psychology Research Pool.	
Mandatory Restrictions	1. MTSU student-athletes and MTSU students who are enrolled at full time students and work at least 25 hours a week at a job for pay. 2. 18 - 26 years of age	
Additional Restrictions	**All participants need to consent.**	
Comments	NONE	
Amendments	**Date** N/A	**Post-Approval Amendments** NONE

***This exemption determination only allows above defined protocol from further IRB review such as continuing review. However, the following post-approval requirements still apply:

- Addition/removal of subject population should not be implemented without IRB approval
- Change in investigators must be notified and approved
- Modifications to procedures must be clearly articulated in an addendum request and the proposed changes must not be incorporated without an approval
- Be advised that the proposed change must comply within the requirements for exemption
- Changes to the research location must be approved – appropriate permission letter(s) from external institutions must accompany the addendum request form
- Changes to funding source must be notified via email (irb_submissions@mtsu.edu)
- The exemption does not expire as long as the protocol is in good standing
- Project completion must be reported via email (irb_submissions@mtsu.edu)
- Research-related injuries to the participants and other events must be reported within 48 hours of such events to compliance@mtsu.edu

The current MTSU IRB policies allow the investigators to make the following types of changes to this protocol without the need to report to the Office of Compliance, as long as the proposed changes do not result in the cancellation of the protocols eligibility for exemption:

- Editorial and minor administrative revisions to the consent form or other study documents
- Increasing/decreasing the participant size

The investigator(s) indicated in this notification should read and abide by all applicable postapproval conditions imposed with this approval. Refer to the post-approval guidelines posted in the MTSU IRB's website. Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident.

All of the research-related records, which include signed consent forms, current & past investigator information, training certificates, survey instruments and other documents related to the study, must be retained by the PI or the faculty advisor (if the PI is a student) at the sacure location mentioned in the protocol application. The data storage must be maintained for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
Middle Tennessee State University

APPENDIX D

INFORMED CONSENT FORM

IRB
INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd, Murfreesboro, TN 37129

INFORMED CONSENT – RESEARCHERS' DISCLOSURES

(Part A – Participant's Copy)

Study Title	*Academic Clustering between Student Athletes and Employed Students*	Office Use
Principal Investigator	**Elizabeth Morgan**	*IRB ID: 17-1235*
Faculty Advisor	Dr. Kim Ujcich Ward	Approval Date: 04/20/2017
Contact Information	enm3c@mtmail.mtsu.edu - (931) 629 1760	Expiration Date: N/A

Dear Participant,

On behalf of the research team, the Middle Tennessee State University (MTSU) would like to thank you for considering to take part in this research study. You have been contacted by the above identified researcher(s) to enroll as a participant in this study because you met its eligibility criteria.

This consent document describes the research study for the purpose of helping you to make an informed decision on whether to participate in this study or not. It provides important information related to this study, possible interventions by the researcher(s) and proposed activities by you. This research has been reviewed by MTSU's internal oversight entity - Institutional Review Board (IRB) - for ethical practices in research (visit www.mtsu.edu/irb for more information).

As a participant, you have the following rights:

- You should read and understand the information in this document before agreeing to enroll
- Your participation is absolutely voluntary and the researchers cannot force you to participate
- If you refuse to participate or to withdraw midway during this study, no penalty or loss of benefits will happen
- The investigator MUST NOT collect identifiable information from you, such as, name, SSN, and phone number
- The researcher(s) can only ask you to complete an interview or a survey or similar activities and you must not be asked to perform physical activities or offer medical/psychological intervention
- Any potential risk or discomforts from this study would be lower than what you would face in your daily life

After you read the following disclosures, you can agree to participate in this study by completing "Part B" of this informed consent document. You do not have to do anything further if you decide not to participate.

1. What is the purpose of this study?

The purpose of this study is to examine factors associated with college students choice of major. We are studying groups of students who have commitments in addition to academics, like student athletes, students who are employed, etc. We are interested in how experiences in such committed activities might be related to academic decisions and behaviors. For the participants that work a part-time job, a minimum of 25 hours of work per week is required in order to complete the questionnaire.

2. What will I be asked to do in this study?

The participant will be asked to complete a questionnaire including questions that concern demographic information, personality characteristics and beliefs, activities related to one's non-acadmic commitments (like jobs and athletics), time commitments, and cohesiveness.

3. How many times should I participate or for how long?

The participant should only complete one questionnaire for the purposes of this study. The questionnaire will be handed out by the primary invesstigator during a research meeting. It should take only about 10 minutes to complete.

4. What are the risks and benefits if I participate?

The primary investigator forsees no potential risks for the participants. The benefits for the participant include promoting a scientific study. For students who are participating as part of a class, research participation credit may be given.

5. What will happen to the information I provide in this study?

The information that will be obtained will not be identifiable and only used in this study to test the primary investigators hypotheses. All questionnaires are completed anonymously and all data collected will be analyzed and presented only in grouped data, so no individual responses will be identifiable.

6. What will happen if I refuse to participate and can I withdraw if I change my mind in the middle?

The participant has the right to not participate and is allowed to withdraw from the study at any time with no penalty or negative consequence.

7. Whom can I contact to report issues and share my concerns?

You can contact the researcher(s) by email or telephone (**Primary investigator (Elizabeth Morgan) - email: enm3c@mtmail.mtsu.edu - phone #: (931) 629 1760 - Faculty advisor - email: kimberly.ward@mtsu.edu - phone #: (615) 898-2188**). You can also contact the MTSU's Office of Research Compliance by email – irb_information@mtsu.edu. Report compliance breaches and adverse events by dialing 615 898 2400 or by emailing compliance@mtsu.edu.

INVESTIGATOR's SIGNATURE	FACULTY ADVISOR's SIGNATURE	DATE

NON-IDENTIFIABLE PARTICIPANT ID# _____

Confidentiality Statement:
All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised, for example, your information may be shared with the MTSU IRB. In the event of questions or difficulties of any kind during or following participation, you may contact the Principal Investigator as indicated above. For additional information about giving consent or your rights as a participant in this study, please feel free to contact our Office of Compliance at (615) 898 2400.

Compensation:
Unless otherwise informed to you by the researcher(s), there is no compensation for participating in this study. The investigator must disclose if the participant would be compensated in the benefits section.

Study-related Injuries:
MTSU will not compensate for study-related injuries.

Exemption Criteria:
This study was submitted to the MTSU IRB – an internal oversight entity to oversee research involving human subjects. The IRB has determined that this investigation consists of lower than minimal risk and it is exempt from further IRB processes based on the criteria: *"Category 2 - Educational Tests."*

Note to the Participant

You do not have to do anything if you decide not to participant in this study. But if wish to enroll as a participant, please complete "Part B" of this informed consent form and return it to the researcher. Please retain the signed copy of "Part A" for your future reference.