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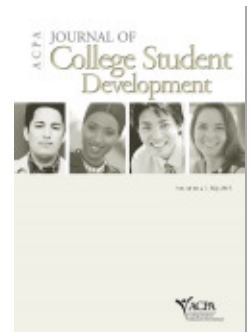
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## **Confirmatory Factor Analysis of Perceived Exploitation of College Athletes Questionnaire**

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# Confirmatory Factor Analysis of Perceived Exploitation of College Athletes Questionnaire

Derek Van Rheezen     Jason R. Atwood

The exploitation of college athletes has been a topic of controversy within American higher education for over half of a century. Ever since the term *student-athlete* was coined in the 1950s (Sperber, 1999), academics and administrators have debated the extent to which the commercialization of college sports has turned college athletes into commodities, excluded from the free market while their coaches, colleges, and conferences reap huge financial rewards (Branch, 2011; Van Rheezen, 2013; Zimbalist, 1999). Especially in the revenue-generating sports of men's basketball and football, critics have highlighted the surplus gains expropriated by colleges and universities on the backs of these young men, who are disproportionately Black (Eitzen, 2000; Hawkins, 2010; Rhoden, 2006).

The *Journal of Blacks in Higher Education* ("Are the flagship," 2005) argued, "The case is strong that flagship universities are exploiting Blacks for their athletic talents," by noting: "The majority of flagship state universities admit Black students who are not academically qualified . . . [and] solely for the purpose of their participation in intercollegiate athletics" (p. 2). James Duderstadt, a former college football player and President of the University of Michigan, also observed that universities "exploit" the athletic talents of college athletes "for financial gain and public visibility," in part by "tolerating low graduation rates and meaningless degrees in majors like general studies or recreational life" (Duderstadt, 2000,

p. 5-6). Even Walter Byers, who served as NCAA Executive Director from 1951 to 1987, titled his memoir *Unsportsmanlike Conduct: Exploiting College Athletes* (Byers & Hammer, 1995), a clear indictment of modern college sports and the institutional commodification of at least some of these student athletes.

To date, only a few studies (Adler & Adler, 1991; Beamon, 2008; Leonard, 1986) have explored the idea of exploitation from the perspective of college athletes, and the limitations of these reports reveal the need for a more comprehensive and comparative analysis.

The proposed Perceived Exploitation of College Athletes (PECA) Questionnaire is an internally consistent three-item scale ( $\alpha = .80$ ). These three items were initially part of a seven-item index about perceived exploitation, which was one of several constructs studied in earlier papers about noncognitive predictors of academic success among college athletes (Simons & Van Rheezen, 2000) and the academic motivation of college athletes (Simons, Van Rheezen & Covington, 1999). In these studies it was found that college athletes who were more committed to their sports were also more likely to feel exploited. Additionally, the more college athletes felt exploited, the lower their university grade point averages.

Utilizing this three-item exploitation scale on a sample of 581 Division I college athletes, Van Rheezen (2011) found significant differences by gender, sport, and race. Participants on the revenue-generating sports of

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men's basketball and football were over seven times more likely to report feeling exploited than their peers on nonrevenue sports teams.

Van Rheeën (2011) also found significant differences by race in self-reported perceptions of being exploited. The odds of Black college athletes feeling exploited were nearly five times as great as that of White varsity athletes and four times as great as student athletes who identified as Hispanic, Asian, Native American, or any other racial group.

The Perceived Exploitation of College Athletes (PECA) Questionnaire, if found to be statistically valid and reliable as hypothesized, will help researchers and student affairs practitioners interested in this important area. For example, the scale will allow researchers to examine whether perceptions of exploitation differ by sport, gender, race, year in school, and/or scholarship status. These analyses can be conducted at colleges and universities who participate at varying levels of athletic competition, are public or private, and who offer scholarships or not. The demographics of the student body at large, relative to the student athlete population, may also be a factor in these perceptions of exploitation.

Findings could inform administrators and educators about the need to reform institutional policies related to recruiting, academic support services, career counseling, and compensation. If it is determined that a subset of college athletes are particularly vulnerable to feelings of exploitation, colleges and universities—and the conferences and associations to which they belong—should propose ways to more fully support them so students feel valued for their academic abilities and potential, rather than predominantly for their athletic talents. These analyses may further substantiate the need for recent NCAA legislation that seeks to provide additional financial support and multiyear scholarships to Division I college athletes.

## METHODS

Between the years 2006 and 2009, 750 NCAA Division I college athletes participating in 25 different sports programs at a large public university on the West Coast of the United States completed a survey that included the following three items: (a) "Sometimes I feel that I am being taken advantage of as an athlete," (b) "I give more to the university than it gives to me," and (c) "This university make too much money off its athletes, who see very little of it" ( $\alpha = .80$ ). Participants were asked to rate their level of agreement to each item by referencing a 6-item Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Total scores ranged between 3 and 18, with higher aggregate scores reflecting stronger levels of perceived exploitation among college athletes. Along with the perceived exploitation items, college athletes were also asked to identify their primary sport, gender, race or ethnicity, year in school, and scholarship status. The demographics of respondents are outlined in Table 1.

To test the dimensionality of the scale, a correlation/covariance matrix was computed from the sample data using STATA 10 (Acock, 2010; Hamilton, 2009). A principal-component confirmatory factor analytic model was run and estimated. All items were specified to load on one general Perceived Exploitation of College Athlete factor.

## RESULTS

The fit of the single-factor or principal-component model was assessed using chi-square analyses, where an associated probability value greater than 0.05 indicates acceptable fit. Next, the analysis produced a range of eigenvalues for the proposed factor, where the most important factors reported the largest eigenvalues. In general, using the Kaiser criterion, we should consider any factor that has an eigenvalue

TABLE 1.  
Demographic Variables ( $N = 750$ )

Sport	<i>n</i>	Race/Ethnicity			Athletic Scholarship		Year in School	
		Black	White	Other	None	Part/ Full	Under	Upper
Baseball	35	1	27	3	11	24	16	19
Basketball	10	1	4	4	2	8	5	5
W. Basketball	6	3	2	1	0	6	1	5
M. Crew	54	0	37	5	39	15	20	34
W. Crew	56	1	47	4	29	27	20	35
Field Hockey	24	0	16	6	0	24	10	14
Football	145	42	63	35	41	104	84	60
M. Golf	14	0	9	5	8	6	9	5
W. Golf	5	0	3	2	0	5	2	3
M. Gymnastics	9	1	6	1	2	7	1	8
W. Gymnastics	13	0	9	4	8	5	4	9
W. Lacrosse	17	0	16	0	2	15	4	12
M. Rugby	77	0	47	13	64	0	35	31
M. Soccer	23	0	14	7	0	23	13	10
W. Soccer	27	2	20	4	0	27	17	9
Softball	15	4	7	4	0	15	9	6
M. Swimming/Diving	32	1	22	7	14	18	6	25
W. Swimming/Diving	14	0	12	1	1	13	7	7
M. Tennis	10	0	7	2	3	7	5	5
W. Tennis	8	0	5	2	2	6	3	5
M. Track & Field / Cross-Country	41	10	25	3	10	31	18	22
W. Track & Field / Cross-Country	37	15	16	4	11	26	20	17
W. Volleyball	10	1	6	3	2	8	6	4
M. Water Polo	33	0	28	3	21	12	16	16
W. Water Polo	35	0	29	5	17	18	20	15
Total	100%	12%	69%	19%	39%	61%	48%	52%

equal to or greater than 1.0 (Hamilton, 2009).

Scree plots serve to illustrate the eigenvalue for each factor. The resulting graph in Figure 1 illustrates a significant drop and leveling off with a second factor. As Factor 1 has an eigenvalue of 2.1, and because no other

factors are above 1.0, we can discard other factors and continue with the confirmation of a one-factor scale.

Utilizing a varimax rotation, the analysis further calculated the estimated correlation between each item and each factor. In general,

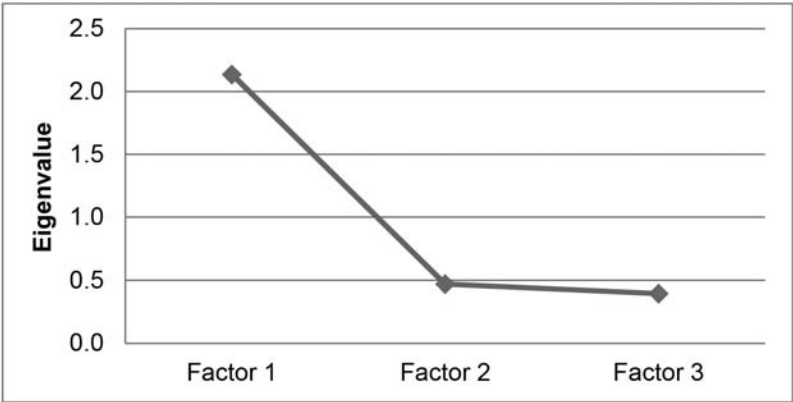
if an item has a loading over 0.4 on a proposed factor, it is considered a good indicator of representing a single dimension or factor (Kim & Mueller, 1978). The factor loadings illustrated in Table 2 are all high, ranging from 0.83 to 0.86, suggesting that each item is a good indicator of the general construct of strength of perceived exploitation among college athletes. Accordingly, the scale was found to be internally consistent with an observed variation of 71%.

DISCUSSION

To confirm the factor structure of the Perceived Exploitation of College Athletes Questionnaire (PECA) among a sample of Division I college athletes, a one-factor model was tested and accepted on the basis of fit statistics. The results support the hypothesis that the scale

TABLE 2.  
Factor Loadings (Pattern Matrix) and Unique Variances

Item	Factor 1 Load	Uniqueness
Sometimes I feel that I am being taken advantage of as an athlete.	0.84	0.31
I give more to the university than it gives to me.	0.86	0.26
This university make too much money off its athletes, who see very little of it.	0.84	0.30



Factor analysis/correlation	Number of observations = 750
Method: principal-component factors	Retained factors = 1
Totation: (unrotated)	Number of parameters = 3

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor 1	2.13501	1.66499	0.7117	0.7117
Factor 2	0.47002	0.07505	0.1567	0.8683
Factor 3	0.39497		0.1317	1.0000

FIGURE 1. Scree Plot and Factor Analysis Output of Proposed Perceived Exploitation of College Athletes Questionnaire

represents a unidimensional structure and is psychometrically sound.

This brief self-report instrument designed to measure the strength of college athletes' perceived exploitation fills an important void in the literature. Journalists, scholars, and administrators often debate whether college athletes are exploited, but few studies to date have asked the actual participants to reflect on their intercollegiate athletic experience. This study provides evidence that the PECA is a statistically valid and reliable scale that can be recommended for further use by researchers and clinicians interested in issues related to the exploitation of college athletes.

Because research utilizing the PECA has previously found an inverse relationship between feeling exploited and academic performance and motivation, this scale could help student affairs practitioners further identify academically and institutionally vulnerable students. Tailored, individualized support might focus on a more holistic approach that addresses these college athletes' sense of resentment and their corresponding social and academic disengagement.

Rather than simply helping student athletes maintain athletic eligibility, support services and programs for college athletes should seek to enhance personal and career development, as well as intervention strategies to improve the social integration of student athletes into the college setting (Comeaux & Harrison, 2011). Academic and social integration influences college athletes' academic engagement and performance, as these students are more likely to feel they have been afforded a genuine educational opportunity. Conversely, when college athletes feel valued primarily or solely for their athletic talent and potential, they are more likely to feel exploited by their institutions. From a policy perspective, then, the PECA is a valuable assessment tool for

student affairs professionals working with college athletes.

While this discussion addresses the educational responsibility of institutions, there remains a financial responsibility to this student population, particularly for the revenue-generating college athletes participating in football and men's basketball. Certainly the NCAA is attuned to the debate about the exploitation of college athletes. In an effort to stymie criticism that the organization does not do enough to compensate student athletes for their athletic performance, the NCAA Division I Board of Directors passed legislation allowing institutions to offer an additional \$2,000 annually, based upon the full cost of attending school, as well as multiyear scholarships up to the full term of athletic eligibility. A significant number of schools requested an override of adjustments to the miscellaneous expense allowance, prompting the NCAA to suspend this part of the legislation in January 2012. Multi-year scholarship legislation was upheld, allowing Division I schools to offer scholarships guaranteed for more than one year.

Testimony of college athletes at the 2012 NCAA National Convention was cited as one of the most compelling reasons why the Board of Directors sought support of increased stipends and multiyear scholarships. It is due time to honor the perspective of this population when determining national and institutional policies related to college sports. The PECA provides an important tool to measure how these college athletes feel about their place and perceived value in American higher education today.

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