

# Collegiate Recreation Participation and Retention

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Colleges and universities have been focusing on the rising costs to attend college and their impact on current and future students. Recruitment and retention of students is critical in justifying programmatic and academic offerings. In addition, recruitment and retention have an impact on the institution's bottom line. This article attempts to prove a correlation between a collegiate recreation program and retention. Specifically, first year retention rates were examined on students who participate in club sports, use the student recreation center, and are employed by the campus recreation department. The results of this study can be useful to the collegiate recreation practitioner to answer the question of "does your program have an impact on retention?" It is the hope that this study is duplicated to further emphasize the relationship of collegiate recreation programs and their positive relationship on retention.

**Keywords:** budgetary resources, college recreation center users, student employment, club sport participants

Today, colleges and universities are being scrutinized on the expenses they incur. In addition, tuition and fees are said to be increasing at higher rates when compared with health care and gasoline. Areas such as collegiate recreation can be seen as nonimportant to the overall collegiate learning experience and viewed as a nonessential "perk" (Brandon, 2010). However, college recreation programs provide students a chance to participate in activities outside the classroom. These programs offer recreational opportunities in formal and informal settings. The function of collegiate recreational sports is to supply fun and fitness options for the participant (Mull, Bayless, & Jamieson, 2005). Recreational sports, at the collegiate level, appear to have positive effects on student retention, satisfaction, and recruitment (Downs, 2003; Haines, 2001; Lindsay & Sessoms, 2006; Henchy, 2011). Recruitment and retention are the key attributes to sustain and grow a university. In addition, these programs provide the college student with outlets for holistic wellness and social interaction with other students, faculty and staff (Belch, Gebel, & Maas, 2001).

The purpose of this study was to examine the first year retention rates of students who participate in a college recreation program. Specifically, data were examined in relation to retention rates of students who participated in club sports, used the student recreation center, and were employed by the campus recreation

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department. Furthermore, this study attempted to provide the practitioner a process to highlight the potential impact of collegiate recreation on retention.

## Related Literature

### Need for Research

Budget cuts and program justifications are unfortunately a common occurrence within higher education. The collegiate recreation program has not been unscathed by this process over the past years. Declining enrollment and decreasing retention rates are a cause for concern when attempting to project a university and departmental budget. It is crucial for the collegiate recreational sports professional to provide meaningful and accurate data relative to their program that can demonstrate a commitment to institutional recruitment and retention. Hall (2006) implied that collegiate recreation professionals have struggled to explain the positive outcomes of a collegiate recreation program on student retention. Haines (2001) and Moffitt (2010) recommended that further research is needed on the importance of collegiate recreation as it relates to the benefits students obtain through use and participation in programming. Furthermore, the results of this study will provide the recreational sports practitioner a few examples on how to examine institutional data and find areas where benefits have occurred or where more emphasis is needed to meet programmatic and institutional needs as they relate to student retention.

### Recruitment

Institutions of higher education spend a lot of time and resources recruiting prospective students. There is a greater need now for colleges and universities to place a greater emphasis on recruitment. This is primarily due to decreases in federal and state funding at public institutions with more of the financial burden placed on the student. Private colleges and universities continue to place an emphasis on recruitment for it is the life blood of their existence (DesJardins, 2002). Bontrager (2004) described the recruitment process as one that aims to develop a relationship with the potential student. External perceptions of the institution tend to weigh heavy on the student's choice in a college. College administrators need to define what unique characteristics define the institution. One characteristic that has been a source of uniqueness is the college recreation center. The quality of a collegiate recreation center can have an impact on a person's decision to attend a college/university. Hesel (2000) found that a significant number of students indicated the quality of a college's recreational sports program is an important factor in determining their choice of a college/university. In addition, Kampf (2010) found that recruitment and retention tend to increase when a campus recreation center is built or renovated.

### Retention

Freshman attrition rates tend to be greater than any other year and can range between 20–30%. Each student that left before obtaining a degree equated to lost revenue for the institution. Students leave a school for a variety reasons. Bean (2005) suggests that retention can't be attributed to any one factor but can be a series of determinants. Retention is typically determined by the student's experiences and

attitudes toward the institution. However, he does suggest that everyone on the college campus has the responsibility to examine their role in improving student retention. Conversely, Tinto (1993) has developed a theory finding that a strong predictor of student retention is related to academic and social integration. The college recreation program can be a positive impact on the student's satisfaction with the institution and their academic and social integration.

Studies that focus on the role of collegiate recreation on student retention have found a relationship in the form of integration of the social atmosphere, providing a sense of community, and a sense of feeling good about themselves (Henchy, 2011). In studies on the relationship of a college recreation center on student retention, it has been found that campus recreation facilities and programs have an influence on a student's decision to remain at their university. Henchy (2011) found that 31% of the students surveyed indicated that recreational programs and facilities had an influence on the decision to remain at their institution. Lindsay & Sessoms (2006) concluded that 37.3% of students surveyed indicated the availability of a college recreation program was important/very important in influencing their decision to stay.

Similarly, Bryant, Banta, and Bradley (1995) discovered 30% of respondents indicated that campus recreation facilities played an important factor in their decision to attend and remain at their university. When focusing just on freshman retention, Belch, Gebel, and Maas (2001) found that freshmen who used the student recreation facility were retained at a higher rate when compared with nonusers. In addition, they earned a slightly higher grade point average and achieved more credit hours at the end of their first year.

The influence of involvement was studied by Henchy (2011) who found that 81% of students surveyed indicated that participating in college recreation programming has helped them feel more at home at the university. The involvement of students in a college recreation program aids in the integration into the social atmosphere of the university. Furthermore, Huesman, Brown, Lee, Kellogg, and Radcliffe (2009) found that campus recreation facilities provide students an environment of positive student interaction and are a likely contributor to student success. Usage of a collegiate recreation facility had a positive influence on academic success. Similarly, Hall (2006) found that students who participated in a recreational sports program felt a sense of community within the institution. Her research concluded, "These students indicated that they persisted in part due to their involvement in campus recreation activities. Participation in the program allowed them to develop friendships and feel part of the larger community" (p. 44). The involvement in a campus recreational sports program can have an influence on the student's social growth. Watson et al. (2006) proposed that student users of a collegiate recreation facility were more likely to feel good about themselves and received positive feedback from others. Specifically, 64.4% of users of the collegiate recreation center found their use of the facility made them feel more at home and 41.4% reported it had an influence on them making friends.

Student satisfaction with the college experience tends to be higher with participants of a college recreation program. Downs' (2003) intercept study suggested that students who participated in recreational activities were more likely to have a positive satisfaction at college versus those that did not participate. Students self-reported being more happy and satisfied with their overall experience and were more likely to encounter success while enrolled. Miller (2011) concurred in his study which found the student recreation center provided students a social bonding

experience and increased their belonging to the university. The student recreation center provides an avenue for networking and allows them to become engaged in student activities offered by the university.

## **Student Employment**

Another area where students gain benefit in the collegiate recreation program is through student employment opportunities. Many universities are attempting to link the classroom experience with the out-of-classroom experience. The outcome is the creation of a campus-wide community that supports students throughout their collegiate career. Students are provided positive outcomes from being employed in a college recreation program. They were able to work on campus with their peers and were provided leadership opportunities. In addition, collegiate recreation student employees were provided the opportunity to work in an environment similar to their academic coursework (Daprano, Coyle, and Titlebaum, 2005). However, not all student employees within a collegiate recreation program were from the same major. Collegiate recreation student employees tend to come from a diverse academic background. The employment experience within a college recreation program tends to provide the student with numerous transferable skills needed for success after graduation. Hackett (2007) found there was a positive relationship between employment with a collegiate recreation program and academic success. Freshman and junior student employees were found to have higher GPA's when compared with nonemployees within the same cohort.

## **Higher Education Theory**

Tinto's (1993) theory explaining student persistence in terms of integration with formal and informal academic and social systems, is the most frequently cited theory of institutional departure (Pascarella & Terenzini, 2005, p. 425). In a review of this and other theoretical frameworks used to examine student integration and retention, Pascarella and Terenzini (2005) concluded that "students' institutional commitments exert an important and positive effect in shaping their persistence decisions, both planned and actual" (p. 426). It remains unclear whether these effects are direct, indirect, or both.

The purpose of this study was to investigate the engagement-persistence relationship in the context of a campus recreation program. Specifically, the study sought to measure the effect of formal and informal social integration on retention rates through a multivariate analysis controlling for precollege characteristics. Variables examined alongside actual persistence decisions, evident by failure to enroll, denote both formal (club sport participation, student employment) and informal (facility use) social integration aspects of Tinto's theory.

# **Methodology**

## **Data Collection**

The authors obtained census data for a cohort of first-time full-time students from the Office of Institutional Research at a large, four year, residential college. The data included demographic information (sex, ethnicity, native citizen status), precollege characteristics (ACT score, high school GPA, first-generation student status),

latest term cumulative one-year college GPA, and one-year Fall-to-Fall retention status. The Division of Student Affairs provided participation data for a variety of programs. With relevance to the current study, data were obtained for club sport enrollment, campus recreation student employment status, and student recreation center entry counts (via electronic card swipe). Participation data were merged with demographic and institutional data, and then matched by case with the student ID number serving as the key variable.

## Data Analysis

Chi-squared ( $\chi^2$ ) tests for independence were used to identify relationships between retention and student characteristics. For statistically significant ( $p < .05$ ) values, phi ( $\phi$ ) was used to determine the strength of the relationship. Phi produces a coefficient between 0–1, which substitutes as a correlational technique for nominal bivariate data (Huck, 2008). Next, a series of logistic regression models were created to evaluate the impact different student characteristics had on the odds of being retained. Logistic regression provides an ideal method for predicting retention from student characteristics because it deals in dichotomous dependent variables (retained = 1, not retained = 0). Logistic regression produced odds ratios for club sport enrollment status and student recreation center entry counts. Finally, additional student characteristics were added to the model to test whether the previous characteristics remained significant contributors to the model while controlling for these additional variables.

## Results

### Demographics

A census of 3,809 students in the first-time, full-time cohort was comprised of 41.5% men and 58.5% women. For the current study, student ethnicity was represented by a series of nonexclusive, dichotomous variables. For the statistical tests in the analysis, ethnicity was considered as a membership characteristic that was either present or not present (e.g., 1 = Black, 0 = Not Black). Approximately 5% of students could be considered multiethnic because they were classified as affirmative on more than one race/ethnicity variable. Students represented a variety of ethnic backgrounds, including Hispanic (3.9%), White (78.5%), Native American / Alaskan Native (1.5%), Asian (1.2%), African American / Black (16.2%), and Hawaiian / Pacific Islander (0.3%). In addition, 3.6% of students' ethnicity was not specified, and 1.6% were classified as International. First-generation students comprised 30.7% of the cohort. Academic measures included mean ACT score ( $M = 22.08$ ,  $SD = 3.69$ ), mean high school GPA ( $M = 3.218$ ,  $SD = 0.51$ ), and latest term cumulative 1-year college GPA ( $M = 2.56$ ,  $SD = 0.99$ ). It should be noted the last recorded cumulative college GPA includes final scores after Fall, Spring, or Summer terms during the first academic year, and it is not known during which semester students left the university.

### Cohort Retention

The census cohort of 3809 first-time full-time students had a Fall-to-Fall one-year retention rate of 69.5%. Incidence of retention (percent retained) by student characteristics (Table 1) is reported below, along with results from individual 2

**Table 1** Fall-to-Fall One-Year Retention by Student Characteristics

Variable	% retained characteristic present	% retained remaining cohort	$\chi^2$	df	p	$\phi$
Male	68.1	70.5	2.634	1	.105	-.026
Native US citizen	69.4	79.0	2.692	1	.101	-.027
Hispanic	62.7	69.8	3.461	1	.063	-.030
White	71.8	61.2	33.644	1	.000	.094
Native American	48.3	69.8	12.544	1	.000	-.057
Asian	85.1	69.3	5.456	1	.020	.038
Black/African American	56.6	72.0	57.800	1	.000	-.123
Hawaiian/Pacific Island	72.7	69.5	.054	1	.817	.004
Not specified	70.8	69.5	.110	1	.740	.005
Student of color <sup>a</sup>	58.7	72.5	58.454	1	.000	-.124
Club sport participant	86.1	69.0	15.360	1	.000	.064
Rec student emp. Fall	100.0 <sup>b</sup>	69.4	5.278	1	.022	.037
Rec student emp. Spring	100.0 <sup>c</sup>	69.4	9.258	1	.002	.049
Fall rec entry $\geq$ 1	98.1	38.7	1582.085	1	.000	.644
Fall rec entry $\geq$ 10	98.4	60.8	454.360	1	.000	.345

<sup>a</sup> Includes Hispanic, Native Am., Asian, Black/African Am., Hawaiian/Pac. Island.

$\times 2$  contingency tables by variable, which provide significance of Pearson's Chi-squared, and strength of association in terms of Phi ( $\phi$ ).

Compared with students who did not return the following Fall, students who were retained had significantly higher mean ACT scores ( $p < .001$ ), high school cumulative GPA ( $p < .001$ ), and last recorded cumulative college GPA ( $p < .001$ ).

### Club Sport Retention

There were no significant academic differences (ACT score, high school GPA, latest term cumulative one year college GPA) between students who participated in club sports and those who did not. A chi-squared analysis revealed a significant relationship between Fall-to-Fall one-year retention and club sport participation (Table 1). A dichotomous variable for club sport participation was a significant contributor to the predictive success of a logistic regression model of retention. After controlling for academic and demographic variables (Table 2), club sport participation remained a significant contributor to the model. Students who participated in club sports were more likely to be retained, and had 2.22 times greater odds of enrolling the following year compared with students who did not participate.

### Student Employee Retention

Campus recreation student employees had statistically similar ACT scores and high school GPA ( $p > .05$ ), but significantly higher latest term cumulative 1-year college GPA ( $M = 3.05$ ,  $SD = .723$ ,  $p = .021$ ) compared with the remaining cohort ( $M = 2.56$ ,  $SD = .986$ ). Campus recreation student employees showed 100% Fall-to-Fall

**Table 2 Odds Ratios (OR) by Characteristic for Various Logistic Regression Models of Retention**

Variable	Model 1	Model 2	Model 3	Model 4
Constant	0.983	0.030***	0.052***	0.112*
Club sports participant	2.014*	2.385*	2.327*	2.220*
Fall semester rec center entry count	1.574***	1.442***	1.439***	1.442***
ACT score		1.085***	1.077***	1.068***
High school GPA <sup>a</sup>		0.976	0.980	0.979
Latest term cum. 1-yr college GPA <sup>a</sup>		1.113***	1.112***	1.111***
Sex <sup>b</sup>			1.044	1.024
First generation student			0.782*	0.797*
Native US citizen			0.669	0.633
White				0.661
Native American				0.661
Asian				1.324
Black/African American				0.503*
Hawaiian /Pacific Island				1.194
Not specified				0.529
Model chi-squared <sup>d</sup>	1040.57	1584.97	1591.13	1601.84
Degrees of freedom	2	5	8	15
Model prediction success <sup>c</sup>	79.9%	82.7%	83.2%	83.6%
Cox & Snell $R^2$	.262	.370	.371	.373

<sup>a</sup> GPA score  $\times$  10, therefore 1 unit increase = 0.1 point.

<sup>b</sup> Male = 1, Female = 0.

<sup>c</sup> Cut point .50. Initial prediction success (constant): 70.8%.

<sup>d</sup> All model chi-squared values are significant at  $p < .001$ .

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

one-year retention, regardless of employment semester. A chi-squared analysis revealed a statistically significant weak relationship between student employment in a campus recreation setting and retention (Table 1). Since all student employees were classified as retained, campus recreation student employment status was not included in the logistic regression models (Table 2) because of problems with zero cell counts.

### Student Recreation Center Participants Retention

Student recreation center entry counts (Fall) were positively correlated with high school GPA [ $r(3754) = .065, p < .001$ ] and latest term cumulative one year college GPA [ $r(3752) = .204, p < .001$ ]. Arbitrary thresholds in student recreation center entry counts were used to create dummy variables for a chi-squared analysis. Group memberships were defined for participants using the facility one or more times in the fall semester (used = 1, not used = 0), and for participants using the facility ten

or more times in the same time period (ten or more = 1, less than ten = 0). There was a significant relationship between entering the facility one or more times in the Fall semester and retention to enroll the following Fall (Table 1). This relationship had a large strength of association ( $\phi = .644$ ). Raising the threshold to 10 or more entries did not increase the strength of the relationship, although the relationship between ten or more entries and one year retention remained significant with a medium strength of association (Table 1). Because attrition between semesters was unknown, spring facility entry counts were not used in the analysis because facility usage in the spring is necessarily tied to being retained until the Spring.

A continuous variable for number of student recreation center entries was a significant contributor to the predictive success of a logistic regression model of retention. After controlling for academic and demographic variables (Table 2), student recreation center entry counts remained a significant contributor to the model. Students who used the recreation facility were more likely to be retained. Each one-unit increase in student recreation center entry counts increased the odds of enrolling the following year by 1.44 times.

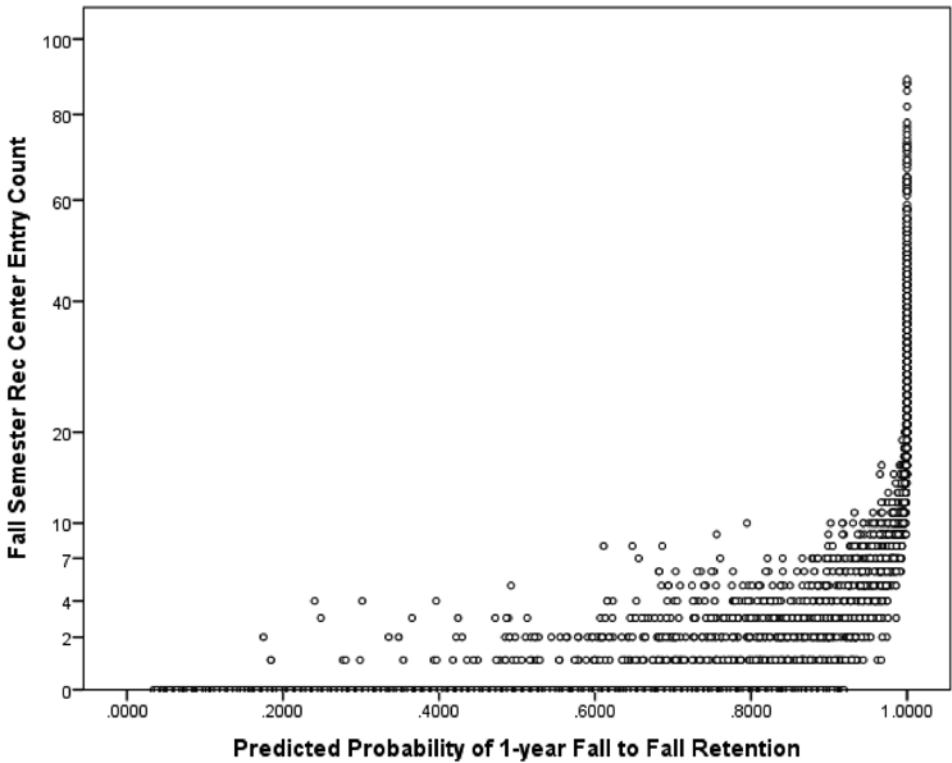
The logistic model as a whole was able to improve predictive success by +12.8% compared with a constant-only model, with an overall pseudo- $R^2$  value of .373 for 15 variables. To aid in the interpretation of the logistic regression model, predicted probabilities were calculated for each individual case using logits (natural log of the odds) from Model 4 in the logistic regression analysis. The predicted probability of one year Fall-to-Fall retention reports how likely a student is to be retained given the inclusion of other variables in the model. A scatterplot of the relationship between Fall recreation center entry counts and predicted probability of retention (Figure 1) shows the impact of recreational engagement on the likelihood of being retained while controlling for other variables in the model.

## Discussion

At the cohort level, students who were retained had significantly higher academic scores (both precollege and during). However, while club sport participants were retained at a higher incidence rate than nonparticipants, there were no significant academic differences between these groups. This result illustrates how social integration can impact attrition rates independently of academic success. Furthermore, club sport participation remained a significant contributor to a logistic regression model while most demographic characteristics like sex, native citizenship, and ethnic identity groups did not have a significant impact on the predictive success of the model. This result implies that formal social integration through campus recreation is a more important predictor of future enrollment than precollege characteristics.

Student employment in a campus recreation setting showed a significant positive relationship with retention, which is not surprising since 100% of these students were retained to enroll the following fall. However, the strength of this relationship was relatively weak and could not be investigated in our logistic regression model because an odds ratio would be meaningless with no negative cases. It is interesting that campus recreation student employees had a higher college GPA but no significant differences in precollege academic success. It appears that these students are performing better at the college level regardless of high school academic





**Figure 1** — The relationship between collegiate recreation facility usage and predicted probability of retention calculated from logistic regression Model 4 (Table 2) using SPSS Statistics 19 software. A nonlinear scale for entry count (y axis) was used to visually depict differences in predicted probability of retention for smaller entry count values.

performance and being retained at higher rates compared with the general student population. These results were interpreted with caution with consideration for the low number of students classified as campus recreation student employees ( $n = 21$ ).

Interpretation of student employment retention results within Tinto's theory of institutional departure is challenging because Tinto (1993) considered student employment as a restraint on time that would cause social integration and academic performance to suffer (as cited in Riggert, Boyle, Petrosko, Ash, & Rude-Parkins, 2006). The present study demonstrated a positive association between one area of student employment, academic success, and retention. However, student employment outside a recreational setting was not assessed for the cohort as a whole. Riggert et al. (2006) summarized that some researchers view student employment as potentially harmful while others regard it as neutral or even beneficial. The best continuous variable for social integration at the university was student recreation center entry count. Beyond group membership, this measure provided information about the frequency of use for a compulsory and highly social campus facility. Because students retained until later in the year would have an opportunity to use

campus facilities more times, student recreation center entry counts for fall semester provided the best data for comparison.

Student recreation center usage was moderately correlated with college GPA but produced a strong significant relationship between recreation center usage and retention. The strength of this relationship illustrates the impact of social integration on retention, specifically for campus recreation as a type of informal social integration.

## Limitations of the Study

Generalizability of the results for the current study is limited by the single-campus design. Furthermore, our observational data cannot conclude causality but merely examines the relationship between student characteristics and other outcomes. Group membership characteristics for club sport participation and campus recreation facility use were self-selective rather than experimental (i.e., not random). In addition, student employees self-selected to apply for positions within the department but were hired in part based on perceptions of their academic and social competency. This process could produce a group that is preselected for traits relating to persistence.

The present study does not include a direct measure of intent to persist. A review of the engagement-persistence relationship suggests that when logistic regression models include a direct measure of commitment to the university, other indirect measures (e.g., engagement) might cease to be significant contributors to the model (Pascarella & Terenzini, 2005, p. 427). The present study also lacks measures of formal and informal academic integration. Using Tinto's (1993) theory as a guide, the current study only investigates formal and informal social integration. While student GPA provides some indirect information about student academic engagement, it does not include behavioral components necessary to assess integration.

Interpretation of the results for student employment was limited by a numerical problem with *complete separation*. Because 100% of campus recreation student employees were retained, a  $2 \times 2$  contingency table includes zero cells for the "not retained" category in both semesters. While there were suggestions for collapsing categories to deal with zero cell counts (DeMaris, 1995), this option was not available when zero cells exist for both fall and spring groups.

## Conclusions

The purpose of this study was to examine the first year retention rates of students who participate in a college recreation program. It was found that participation in a club sport, working as a student employee within collegiate recreation, and use of a collegiate recreation facility all had a positive impact on retention. The club sport participant had a higher rate of retention when compared with the nonparticipant. This was crucial data that can be used on collegiate campuses to further promote participation in club sports. In addition, this information could be used to further expand upon club sport offerings at all institutions.

The results of this study related to student employment further the positive experience students achieve from this experience. As retention of first time, full time students continues to be a focus for colleges and universities, it is important for those who hire student employees to provide opportunities to first time students

(typically freshmen). Although some may argue that first time students should spend more time on their academic work, this study further illustrates the need for a more holistic student. Ideally, a student will have a focus on academics, becomes part of a social group (club sport), is employed on-campus, and uses the collegiate recreation center.

The most significant result of this study was the impact on retention related to a student's use of a collegiate recreation center. The more a student used the collegiate recreation facility, the greater the positive correlation to retention. This is significant finding for the collegiate recreation field. Practitioners claim their program has an impact on the lives of college students, but many find it difficult to substantiate these claims.

This study provides the collegiate recreation professional information to present to higher administration to substantiate their program and to use when presenting requests for additional budgetary resources. In addition, this study provides a blueprint for further studies. As colleges and universities continue to examine resources, information related to retention will become more substantial to the sustainability of a collegiate recreation program.

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