

# Campus Wellness Facility, Student Contentment and Health

Recreational Sports Journal  
2020, Vol. 44(1) 60-66  
© The Author(s) 2020  
Article reuse guidelines:  
sagepub.com/journals-permissions  
DOI: 10.1177/1558866120927322  
journals.sagepub.com/home/rsj



Timothy Makubuya<sup>1</sup> , Yvette Kell<sup>1</sup>, Cyprian Maro<sup>2</sup>, and Zhankun Wang<sup>3</sup>

## Abstract

Many U.S. college campuses have ways in which users' lives can be enriched through wellness efforts. Provision of wellness and recreational services through a state of the art or newly renovated recreation and wellness facility is one avenue. The primary goal of this study was to determine the level of campus recreation facility satisfaction and utilization outcomes among student users at a Mid-western U.S. institution. The Recreation Wellness Survey was designed and its items were successfully tested for reliability using Cronbach's  $\alpha$ . Study results revealed that student perceptions of satisfaction in key areas predicted their development of healthy habits and overall satisfaction. The study highlights the necessity of satisfaction with key aspects of campus recreational facilities in the development of utilization outcomes among student users.

## Keywords

Campus recreation, satisfaction, student utilization, healthy habits

Service delivery and satisfaction often drive perceptions of today's campus recreation and often play a great role in retention of student clientele (McClymont, 2013). For college students, the nature of campus recreation facilities is often among the factors for college enrollment (Andre et al., 2017). In addition, degree attainment as a result of successful completion of a college career is among key priorities for colleges

nationwide. According to the Council for the Advancement of Standards in Higher Education (CAS), student outcomes that relate to campus recreation can be a tool for assessing the impact of campus health and wellness initiatives (Wells, 2015). The CAS-related student learning outcomes fall within various domains: knowledge acquisition, integration, construction and application, cognitive complexity, intrapersonal

<sup>1</sup> University of Missouri–St. Louis, MO, USA

<sup>2</sup> University of Dar es Salaam, Tanzania

<sup>3</sup> Ningbo University, Zhejiang, China

## Corresponding Author:

Timothy Makubuya, University of Missouri–St. Louis, 364 Marillac Hall, 1 University Blvd., St. Louis, MO 63121, USA.  
Email: makubuyat@umsl.edu

development, interpersonal competence, humanitarianism and civic engagement, and practical competence. Within these domains, there are dimensions that relate to the specific outcomes recreational sports departments should use as guideposts for programming and service delivery. Student learning outcomes are unique clientele characteristics that could inform the facility on possibility of clientele intention for reuse and referral (Osman et al., 2006). Collegiate recreation departments work collaboratively with stakeholders on campuses to ensure that they are supporting the learning outcomes for their institutions, in order to maximize the service delivery impact of recreational programs on the student body.

We applied a concoction of the self-determination theory (SDT; Ryan & Deci, 2000) and the social identity theory (SIT; Turner & Tajfel, 1986) to explain how student's relatedness, social identity, group norms can drive overall satisfaction and impact their healthy and learning outcomes. SDT posits that an individual's social environment is related to their overall well-being, based on the tenets of autonomy, relatedness, and competence (Migliorini et al., 2019; Ryan & Deci, 2000). For example, interaction through friendship making can improve one's relatedness. A student user's competence with campus activities and resources can also improve their relatedness and identity. College students' ability to relate and be comfortable with their identity is important for academic achievement (Bliuc et al., 2011). To ensure a positive connection with student success, the availability of recreational programming data is key for institutional recruitment and retention efforts (Kampf & Teske, 2013). In addition, the need for research in areas of recreation facility usage and social and learning outcomes is well-documented (Zizzi et al., 2004).

One's gratification from any activity is often determined by a variety of factors. With regard to campus wellness and recreation services, such gratification may be derived from facility factors related to relaxation and other dimensions of wellness, such as ambiance, operation quality, and staff competency (Beggs & Elkins, 2010). Satisfaction with campus leisure activities has

been previously linked to reduction in students' perception of academic-related stress (Ragheb & McKinney, 1993). Among the areas of interest to recreation clientele is service quality and overall satisfaction. Similarly, satisfaction with various services can determine retention of recreational participants at an institution, through indicators of their experiences and attitudes (Kampf & Teske, 2013). Previous research has highlighted the existence of positive satisfaction and social bonding with college recreation participants versus nonparticipants (Downs, 2003; Miller, 2011).

Institutions that provide recreation-related services to students are often considering ways that lives and experiences of students can be enhanced. Today, many new recreation facilities no longer have the simple locker rooms and court gymnasias but rather include new innovations in form of climbing walls, elevated walking or jogging tracks and so many other amenities (Kampf et al., 2018). At the same time, institutional efforts to meet the CAS's standards in higher education often places priority in areas of student services (CAS, 2015). Recreation programs are thereby tasked with navigating the enrichment of student experiences through ways in which student learning outcomes can be met. There is an existence of copious evidence to highlight the positive impact of the student learning outcomes in both academic and professional preparation especially with healthy habits (Ellis et al., 2002; Trockel et al., 2000). Similar evidence exists for campus and community appreciation (Dalgarn, 2001; Elkins et al., 2011; Miller, 2011), time management and stress coping (Häfner et al., 2014), and friendships and interactions (Belch et al., 2001; Miller, 2011).

## Purpose of the Study

The purpose of our study was to assess (i) student overall satisfaction and utilization outcomes of campus recreation based on selected recreation items, (ii) the relationship between selected recreation items and overall satisfaction, and (iii) the relationship between selected recreation items, overall satisfaction, and development of healthy habits.

## Method

### The Sample

University of Missouri–St. Louis, located in St. Louis, MO, with about 10,000 students, was utilized as the site for our study. A self-reported questionnaire was designed by the Department of Campus Recreation and Wellness Center (RWC) professional employees and administered to the 2,200 students who utilized the RWC during the 2017–2018 academic year. A total of 281 student participants responded to the survey, providing an overall student user response rate of 13%. Permission to conduct this study was obtained from the institutional review board at University of Missouri–St. Louis, IRB number 1238617-2.

### The Instrument

The questionnaire used was developed to address key objectives related to the satisfaction, programming, student learning and perception, and also provide the participants an opportunity to provide feedback on future programming priorities. The development of the questionnaire was guided by a combination of existing literature on participants' needs in the ever-changing campus recreation environment (Kampf et al., 2018), industry best practices, and CAS standards (Wells, 2015). Prior to designing and approving the final version of the questionnaire, the RWC professional staff met weekly to determine whether the questionnaire addressed identified learning outcomes and incorporate feedback. We also conducted pilot testing to determine question sensitivity and appropriateness, in addition to determining the burden to complete the questionnaire. The burden was 25–30 min required to complete this questionnaire. The input from the monthly Recreation Advisory Council (RAC) members was also considered. The RAC consists of representatives from faculty, staff, students, and community users of the recreational center. Item construct on student user satisfaction ranged from *extremely satisfied* (7), *moderately satisfied* (6), *slightly satisfied* (5), *neither satisfied or dissatisfied* (4), *slightly dissatisfied* (3), *moderately dissatisfied* (2), to *extremely dissatisfied* (1).

The item measuring the key constructs of utilization outcomes was also measured on a 7-point Likert-type scale. These reverse-scored constructs measured on a Likert-type scale were as follows: *strongly agreed* (7), *agreed* (6), *slightly satisfied* (5), *neither agreed or disagreed* (4), *somewhat disagreed* (3), *disagreed* (2), and *strongly disagreed* (1). Similarly, all items were measured for internal consistency and reliability, yielding an acceptable Cronbach's  $\alpha$  value of .89 (Nunnally, 1973).

### Data Analysis

Statistical analysis for the variety of categorical variables in the data set was performed using IBM SPSS Statistics, Version 25 (IBM Corporation, New York) in which descriptive variables were reported using means ( $M$ ) and standard deviation ( $SD$ ). Using stepwise regression, a form of regression analysis that allows the consideration and elimination of variables in the best fit model, a number of independent variables, reflected in satisfaction and utilization outcomes, were examined for significance and relevance using the Fisher ( $F$ ) test statistic, a measure of variance ratio. The  $R$  squared ( $R^2$ ) or coefficient of determination was used to determine the proportion of the dependent variable that is predictable in the independent variables. Furthermore, regression assumptions of normality, independence of errors, linearity, and constant variances in error predictions were met during our analyses. The probability value was set at  $p < .05$ , and the measure of effect size was based on the coefficient of determination,  $R^2$  that reported the variance explained.

## Results

Student user contentment reported as satisfaction (Table 1) with recreation facility in general was largely based on membership ( $M = 6.60$ ,  $SD = 0.90$ ), hours of operation ( $M = 6.01$ ,  $SD = 1.46$ ), availability of diverse programs ( $M = 6.21$ ,  $SD = 0.99$ ), facility cleanliness ( $M = 6.50$ ,  $SD = 1.13$ ), and facility atmosphere ( $M = 6.57$ ,  $SD = 0.87$ ). Student user perception of the value of recreational facility programs on the development of

**Table 1.** Student User Satisfaction.

Item	Mean	SD	Reliability
Value of membership	6.60	0.90	.88
Hours of operation	6.01	1.46	.89
Availability of diverse programs	6.21	0.99	.88
Facility cleanliness	6.50	1.13	.88
Facility atmosphere	6.57	0.87	.88

**Table 2.** Student Utilization Outcomes.

Item	Mean	SD	Reliability
Developing healthy habits	6.19	1.05	.87
Greater appreciation of campus and neighborhood	6.17	1.24	.86
Developing better time management skills	5.73	1.34	.86
Learning the importance of involvement and connectedness	5.64	1.40	.87
Developing coping strategies for stress	6.05	1.26	.86
Opportunity to meet new people and form relationships	5.51	1.51	.85
Provision of an opportunity to learn a new skill or activity	5.91	1.27	.87

utilization outcomes is reported in Table 2, where a reverse score of 7 signifies *strongly agree*. The individual means for the utilization outcomes were computed and represented in Table 2, indicating development of healthy habits with the highest mean of 6.19 ( $SD = 1.05$ ) and meeting new people and forming relationships with the lowest mean of 5.51 ( $SD = 1.51$ ). All reliability scores in Table 2 were depictive of acceptable Cronbach's  $\alpha$  levels above .70 (Nunnally, 1973).

With an understanding of the limitations and criticism of stepwise regression, we cross validated our selected variables and carefully utilized this method to select predictor variables of overall satisfaction by performing the regression with all independent variable and selecting only those suggested for the best model as is the case with stepwise regression. Development of better time management skills, coping strategies for stress

**Table 3.** Results of Stepwise Regression on Student User Satisfaction and Healthy Habits.

Independent Variable	$\beta$	t	p
Model predicting overall satisfaction			
Development of better time management skills	.293	4.084	.000*
Development of coping strategies for stress	.276	3.568	.000*
Availability of cardio equipment	.115	2.263	.025*
Model summary: $F = 49.88$ , $p = .000$ , $R^2 = .511$ , adjusted $R^2 = .501$			
Model predicting development of healthy habits			
Involvement and connectedness	.202	2.355	.020*
Development of coping strategies for stress	.235	2.966	.004*
Meeting new people and forming relationships	.181	2.768	.006*
Value of membership	.281	3.334	.001*
Availability of cardio equipment	.375	2.911	.001*
Model summary: $F = 44.65$ , $p = .000$ , $R^2 = .613$ , adjusted $R^2 = .599$			

\* $p < .05$ .

and availability of cardio equipment yielded a significant model ( $F = 49.88$ ,  $p < .000$ ,  $R^2 = .511$ ). The  $\beta$  weights in Table 3 indicate that for every one-unit increase in each of the variables, there is a considerable increase in either overall satisfaction or development of health habits. For example, for a one-unit increase in the availability of cardio equipment, there is an increase of .115 units in overall satisfaction. More so, for a one-unit increase in the availability of cardio equipment, there is an increase of .375 units in the development of healthy habits. In addition, the  $R^2$  values revealed that 50.1% of the variance in overall satisfaction was related to student users' ability to develop better time management skills, coping strategies, and availability of cardio equipment. In total, 49.9% of the variance was attributed to other factors.

Involvement and connectedness, development of coping strategies, meeting new people and forming new relationships, valuing membership, and availability of cardio equipment yielded a significant regression ( $F = 44.65$ ,  $p < .000$ ,  $R^2 = .613$ ) with statistical significance at the set  $p$  value. The  $R^2$  value of 59.9% indicates that the predictors contributed to the development of

healthy habits among student users. The model predicting healthy habits as an outcome based on multiple independent variables had a larger effect size compared to the model predicting satisfaction based on a number of independent variables (Table 3).

## Discussion

Our study was primarily designed to furnish information on the role of campus recreation facility satisfaction in determining utilization outcomes among student users at a Midwestern U.S. Institution. A majority of student respondents indicated greater satisfaction and ability to develop healthy habits and an opportunity for interaction and connectedness. In addition to this being in line with SDT (Ryan & Deci, 2000), these results are similar to propositions on the communal role of campus recreation among students from Dalgarn (2001). Furthermore, the results of student user satisfaction in Table 2 show high levels of overall student user satisfaction with acceptable Cronbach's  $\alpha$  values (Nunnally, 1973). The results in Table 3 reveal key findings in relation to overall satisfaction and development of healthy habits among student users of campus recreation. This study provides great insight on the role of various recreational aspects such as facility atmosphere and its role in maintaining a contented clientele of recreation and wellness programs at a primarily commuter campus. Overall, the significance of these findings is in line with previous research on student satisfaction. Previously, Wiers-Jenssen et al. (2002) found that physical structures, aesthetic aspects, and social climate are crucial for maintaining satisfaction and fostering a culture of learning. This finding is in line with how most recent physical structural improvements, in areas of campus recreation on many higher education campuses, are a way to appeal to a new generation of student users. Moreover, such investments continue to boast and benefit recruitment, retention and promote healthy lifestyles (Forrester, 2014).

In the present study, the development of better time management, coping strategies for stress, and availability of cardio equipment were all

significant predictors for students' overall facility satisfaction. This is consistent with a previous finding that identified areas of time management, social interaction, feeling of self-worth, and teamwork as opportunities for administrators and recreational sports professionals in understanding the role of intramural programs in social development of student users (Sturts & Ross, 2013). Our findings corroborate the role of social identity (SIT), relatedness, autonomy, and connectedness (as explained within SDT) in ways that students are able to become independent in their efforts to manage their time and connect with new networks.

The development of healthy habits was determined by student users' satisfaction with involvement and connectedness, development of coping strategies, ability to meet new people and forming relationships, their value of the facility membership, and availability of cardio equipment. These factors strengthen the literature on student users' benefits of overall wellness that include psychological, physical, social well-being associated with learning, and utilization outcome-related healthy habits (Ellis et al., 2002; Henchy, 2011; Trockel et al. 2000). A previous study by Sutin et al. (2010) examined perceptions of stressful events in relation to health and psychological distress and found that young and older adults appear to engage in various types of stress and coping mechanisms and are able to create meaning from their experience compared to their adolescent counterparts. It is plausible that the adult commuter student population at this specific institution values the presence of specific programs at the RWC facility that provide an opportunity for relationship and identity building after stressful life events.

Our study used cross-sectional data of a convenience sample administered to student users of campus recreation. Therefore, caution should be applied in extrapolating the meaning of these specific results in larger populations. Furthermore, our usage of stepwise regression didn't ensue without limitations arising from its criticisms of test bias (Copas, 1983; Rencher & Pun, 1980), over simplification of real models (Roecker, 1991), and poor estimation of degrees of freedom (Hurvich & Tsai, 1990). However, we

cross validated our selected variables prior to selecting the independent variables and compared them to those not included in the model. Thus, this study is uniquely poised to generate an understanding of student user satisfaction and learning outcomes, particularly in campuses that are predominantly diverse and commuter in nature, as the study site.

One implication for this study relates to emphasizing good practice, especially relating to continued facility maintenance, timely facility renovation, and investment in various areas that relate to student needs and contentment. An example would be the designing of specific stress and coping programs for various student groups during times of stressful life events. Furthermore, other recreational facility professionals should utilize the results of the student utilization outcomes in designing diverse programming, maintaining facility ambiance and aesthetics while addressing student recreation needs. In addition, an understanding of the role of different recreational programs in promoting resilience to academic stress is necessary. Future studies should also focus on utilization outcomes related to academic performance, and transitioning from college to real life, especially on how recreational social ties and relationships formed can enhance their academic success and create career opportunities through networking. It is plausible that informal connections through recreation activities could provide valuable opportunities for mentorship and collaborations.


### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### ORCID iD

Timothy Makubuya  <https://orcid.org/0000-0002-9236-0876>

### References

- Andre, E. K., Williams, N., Schwartz, F., & Bullard, C. (2017). Benefits of campus outdoor recreation programs: A review of the literature. *Journal of Outdoor Recreation, Education and Leadership*, 9(1), 15–25. <https://doi.org/10.18666/JOREL-2017-V9-11-749>
- Beggs, B. A., & Elkins, D. T. J. (2010). The influence of leisure motivation on leisure satisfaction. *LARNet; The Cyber Journal of Applied Leisure and Recreation Research*, 15(3), 1–10. <https://doi.org/10.1017/CBO9781107415324.004>
- Belch, H., Gebel, M., & Maas, G. (2001). Relationship between student recreation complex use, academic performance, and persistence of first time freshmen. *NASPA Journal*, 38(2), 254–268.
- Bliuc, A., Ellis, R., Goodyear, P., & Hendres, D. (2011). Understanding student learning in context: Relationships between university students' social identity, approaches to learning, and academic performance. *European Journal of Psychology of Education*, 26(3), 417–433.
- Copas, J. B. (1983). Regression, prediction and shrinkage. *Journal of the Royal Statistical Society Series B*, 45, 311–354.
- Council for the Advancement of Standards in Higher Education. (2015). CAS learning and development outcomes. In J. B. Wells (Ed.), *CAS professional standards for higher education* (9th ed.) <https://www.cas.edu/learningoutcomes>.
- Dalgarn, M. K. (2001). The role of the campus recreation center in creating a community. *NIRSA Journal*, 25(1), 66–72.
- Downs, P. E. (2003). Value of recreation sports on college campuses. *Recreation Sports Journal*, 27(1), 17–31.
- Elkins, D. J., Forrester, S. A., & Noeül-Elkins, A. V. (2011). The contribution of campus recreational sports participation to perceived sense of campus community. *Recreational Sports Journal*, 35(1), 24–34.
- Ellis, G., Compton, D., Tyson, B., & Bohlig, M. (2002). Campus recreation participation, health, and quality of life. *NIRSA Journal*, 26(2), 51–60.
- Forrester, S. (2014). *The benefits of campus recreation*. NIRSA.
- Häfner, A., Stock, A., Pinneker, L., & Ströhle, S. (2014). Stress prevention through a time

- management training intervention: An experimental study. *Educational Psychology*, 34(3), 403–416. <https://doi.org/10.1080/01443410.2013.785065>
- Henchy, A. (2011). The influence of campus recreation beyond the gym. *Recreational Sports Journal*, 35, 174–181.
- Hurvich, C. M., & Tsai, C. L. (1990). The impact of model selection on inference in linear regression. *American Statistician*, 44, 214–217.
- Kampf, S., Haines, S. G., & Gambino, S. (2018). The impact of new or renovated collegiate recreation centers on recruitment and retention. *Recreational Sports Journal*, 42, 18–32. <https://doi.org/10.1123/rsj.2017-0005>
- Kampf, S., & Teske, E. J. (2013). Collegiate recreation participation and retention. *Recreational Sports Journal*, 37, 85–96. <https://doi.org/10.1123/rsj.37.2.85>
- McClymont, A. R. (2013). *The role of sports clubs in university recruitment and retention: A mixed-methods case study*. Educational Administration: Theses, Dissertations, and Student Research (pp. 167). <http://digitalcommons.unl.edu/cehsedaddiss/167>
- Migliorini, L., Cardinali, P., & Rania, N. (2019). How could self-determination theory be useful for facing health innovation challenges? *Frontiers in psychology*, 10, 1870. <https://doi.org/10.3389/fpsyg.2019.01870>
- Miller, J. J. (2011). Impact of a university recreation center on social belonging and student retention. *Recreational Sports Journal*, 35, 117–129.
- Nunnally, J. C. (1973). *Psychometric theory*. McGraw-Hill.
- Osman, R. W., Cole, S. T., & Vessell, C. R. (2006). Examining the role of perceived service quality in predicting user satisfaction and behavioral intentions in a campus recreation setting. *Recreation Sports Journal*, 30, 20–29.
- Ragheb, K. G., & McKinney, J. (1993). Campus recreation and perceived academic stress. *Journal of College Student Development*, 34, 5–10
- Rencher, A. C., & Pun, F. C. (1980). Inflation of  $R^2$  in best subset regression. *Technometrics*, 22, 49–54.
- Roecker, E. B. (1991). Prediction error and its estimation for subset-selected models. *Technometrics*, 33, 459–468.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, 55(1), 68–76. <https://doi.org/10.1037/0003-066X.55.1.68>
- Sturts, J. R., & Ross, C. M. (2013). Collegiate intramural sports participation: Identified social outcomes. *International Journal of Sport Management Recreation and Tourism*, 11, 25–41. <https://doi.org/10.5199/ijsmart-1791-874X-11b>
- Sutin, A. R., Costa, P. T., Jr., Wethington, E., & Eaton, W. (2010). Perceptions of stressful life events as turning points are associated with self-rated health and psychological distress. *Anxiety, stress, and coping*, 23(5), 479–492. <https://doi.org/10.1080/10615800903552015>
- Trockel, M. T., Barnes, M. D., & Egget, D. L. (2000). Health-related variables and academic performance among first-year college students: implications for sleep and other behaviors. *Journal of American College Health*, 49(3), 125–131. <https://doi.org/10.1080/07448480009596294>
- Turner, J. C., & Tajfel, H. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Hall Publishers.
- Wells, J. B. (2015). *CAS professional standards for higher education*. Council for the Advancement of Standards in Higher Education.
- Wiers-Jenssen, J., Stensaker, B., & Groggaard, J. B. (2002). Student Satisfaction: Towards an empirical deconstruction of the concept. *Quality in Higher Education*, 8(2), 183–195.
- Zizzi, S., Ayers, S. F., Watson, J. C., II, & Keeler, L. (2004). Assessing the impact of new student campus recreation centers. *NASPA Journal*, 41(4), 589–630.