



FACTORS AFFECTING PERSISTENCE OF FRESHMEN: A CASE OF BUILDING TECHNOLOGY PROGRAMME

Patience F. Tunji-Olayeni, Rapheal A. Ojelabi Ignatius O. Omuh and Adedeji O. Afolabi

Department of Building Technology, College of Science and Technology,
Covenant University, Ota, Nigeria

ABSTRACT

Progressing from secondary school to the university can be a difficult transitioning period for most secondary school leavers. The higher institution presents new sets of experiences for first year students. Adapting to the new environment could be so challenging a task for most freshmen as to affect their performance, leading to eventual drop out. This research presents the results of a preliminary study on the persistence of first year students in a Nigerian University. The study adopted Astin's Model of persistence to provide insight into factors influencing first year students' persistence. Survey research design was used in the study with the aid of questionnaires distributed to sixty five first year students of building technology in a Nigerian university. Data obtained were analyzed by means of frequencies, cross tabs and categorical regression. The significant factors influencing first year students' persistence included clinic, cafeteria, library and hostel. Gender and classroom had no significant effect on the persistence of freshmen surveyed. Majority of the students describe their classmates, roommates and teachers as very supportive. In addition, 75% of the students surveyed, prefer to remain in the course till the point of graduation. Universities can experience greater retention of freshmen by improving on the quality of facilities identified in this study particularly, clinic, cafeteria, library and hostel.

Key words: Astin's model, building programme, freshmen, Nigeria, students' performance, students' persistence.

Cite this Article: Patience F. Tunji-Olayeni, Rapheal A. Ojelabi Ignatius O. Omuh and Adedeji O. Afolabi, Factors Affecting Persistence of Freshmen: A case of Building Technology Programme, International Journal of Civil Engineering and Technology, 9(6), 2018, pp. 1267–1273.

<http://www.iaeme.com/IJCIET/issues.asp?JType=IJCIET&VType=9&IType=6>

1. INTRODUCTION

The first year can be a very difficult period for many freshmen. Although, first year students have gone through the crucible of formal learning and have been found worthy both in

learning and character, the higher institution is a different ball game. The higher institution presents new set of experiences for freshmen in terms of people, system, learning styles and learning environment. Getting used to the new environment might be a very challenging task for most first year students. Acclimatizing with the higher institution may be so daunting a task for most first year students as to affect their performance, leading to eventual drop out. Moreover, some college programs like building technology (construction) have low entrant and persistence rates (Tunji-Olayeni *et al.*, 2018). Students drop out of school for many reasons including personal issues, work demands, dissatisfaction with the learning environment (Kuh *et al.*, 2005) and inability to pay their fees. Some of these factors are difficult to control. For example, personal issues from home and the need to work in order to pay their school fees. Other factors can be controlled to provide encouragement and inspiration for the students during their stay in the university. Frequent drop out of students lead to wastage of university's resources, it reduces universities' ability to meet educational goals and also shows the institutions inability to meet the diverse needs of students (Mangold, *et al.*, 2002). This research assessed factors affecting persistence of freshmen with a view of improving first year students' persistence rate and reducing the attrition level of freshmen.

2. LITERATURE REVIEW

2.1. Astin's Model of Students' Persistence

Alexander Astin was one of the foremost proponents of students' persistence models. He advanced the Astin's input-environment-outcome model. Astin (1993) believed that students' persistence in a course depends on two major factors: what they were before they gained admission into the college and the college environment. Astin (1993) identified several variables that described students' characteristics before gaining admission into college. These characteristics are called inputs and they include: age, gender, religion, ethnicity, high school grade and admission test score. Astin (1993) also identified other variables of the college environment to include: college characteristics, students peer group characteristics, faculty characteristics and major fields. Astin (1993) believed that it is the combination of input and environmental variables that lead to final outcome of academic recognition, career development, academic achievement and persistence.

2.2. Factors affecting freshmen persistence

Academic Performance – Of all the pentameters used for predicting students' persistence, academic performance (*in terms of GPA score*) is the most useful (Astin, 1997; Robbins *et al.*, 2004 and Jensen, 2011). Students' level of preparedness and quality of instruction affects a student's performance in college (Demetriou and Schmitz-Sciborski, 2011). According to (Swail, 2004) many freshmen are not prepared for university demands of reading, writing and math. Allen *et al.* (2008) found that academic self-discipline has indirect effects on students' persistence and that academic performance is strongly influenced by academic discipline.

Precollege characteristics – Precollege students possess certain features that propel them towards academic success in college. These features include: gender, prior academic achievement, ethnicity, family support and socio economic status.

Gender – the literature reveal some differences in male and female persistence level of college students. Female students have been found to possess higher levels of persistence than their male colleagues (Christensen, 1990). It has also been discovered that female students are more likely to complete their course of study in college than their male counterparts (York, Bollar and Schoob, 1993; Lewallen, 1993 and Astin, 1993). Although some studies (St. John *et al.*, 2001) suggest that gender is not sufficient in predicting students' persistence, it still

remains an important factor in students’ persistence because of its ability to influence other factors.

Socio economic status – Socioeconomic status have also been found to influence first year student retention. Students from wealthy backgrounds are more likely to finish their degree program than those from a less wealthy background Astin (1993). Students from wealthy homes have a higher retention rate than others (Cabrera, Stampen and Hansen, 1990). Moreover, socioeconomic status affects female students’ persistence more than their male colleagues (Pascarella, Smart, and Ethington, 1993).

Social support – Social support refers to support students receive from classmates, peers, lecturers and other administrative staff in the college. Social support has a positive influence on first year students’ persistence. Pascarella and Terenzini (1991) revealed that many freshmen persist in college because of the support they receive from the peers and teachers outside classroom contact hours. The quality of support students receive from their teachers in terms of mentorship, advising, counseling, prompt response to inquiries had more influence on their persistence. Student’s peer group is an important source of influence for students’ performance and persistence (Astin, 1993). Peer relation is vital for support, identity, socialization and persistence (Astin, 1993). Moreover, quality of students peer relationship have positive influence on students’ persistence (Pascarella and Terenzini,1991)

3. RESEARCH METHOD

A quantitative research approach involving a questionnaire survey was the primary data collection strategy used. The advantages of this approach include its cost effectiveness, wider coverage, and anonymity (Bird, 2009). The target population was freshmen in the department of building technology from a Nigerian university. Of the 65 questionnaires distributed, 55 valid questionnaires were returned, representing around 85% response rate. The data was analyzed with the help of Statistical Package of the Social Sciences (SPSS) Version 23. Frequencies, cross tabs and categorical regression were used in analyzing the data.

4. STUDY FINDINGS

4.1. Factors Affecting Persistence of Freshmen

Table 1 Factors affecting persistence of freshmen

	Beta	Sig
R Square	0.594	
F	3.417	
Gender	0.165	0.227
Class of result	0.247	0.091
Classroom	0.138	0.227
Lecture theatre	-0.224	0.083
Laboratory	-0.114	0.330
Clinic	0.285	0.022
Cafeteria	-0.849	0.000
Library	0.484	0.006
Hostel	0.610	0.000

Table 1 shows the categorical regression (CAT REG) factors affecting persistence of first year students. The CATREG shows that the factors have a 59% impact on first year students’ persistence. The significant factors impacting on first year students’ persistence are clinic

(28.5%), cafeteria (84.9%), library (48.4%) and hostel (61%). Gender, class of result, classroom, lecture theatre and laboratory had no significant impact on first year students' persistence with $0.227 > 0.05$ and $0.091 > 0.05$ $0.227 > 0.05$ 0.083 and 0.05 respectively).

4.2. Social Support

4.2.1. Support from Classmates

Table 2 Cross tab students persistence and support from classmates

		My class mates are supportive					Total
		*SDA	*DA	*NS	*A	*SA	
Given a chance I	SDA	1	2	2	10	4	19
Prefer to leave	DA	1	2	7	7	2	19
Building Technology	NS	0	0	1	2	2	5
	A	0	0	1	3	0	4
	SA	0	0	1	1	2	4
	Total	2	4	12	23	10	51

*SDA-Strongly Disagree, DA-Disagree, NS-Not sure, A-Agree, SA-Strongly Agree

From table 2, twenty three students agree that their classmates are supportive and 10 students strongly agree that their class mates are supportive. Out of all the students that indicated that their classmates are supportive, 3 students indicated that they agree to leave the program and 3 students disagree to leave the program

4.2.2. Support for Lecturers

Table 3 Cross tab students persistence and support from lecturers

		My lecturers are supportive					Total
		SDA	DA	NS	A	SA	
Given a chance I	SDA	0	0	3	6	10	19
Prefer to leave	DA	2	0	3	10	4	19
Building Technology	NS	0	0	0	3	2	5
	A	1	0	1	2	0	4
	SA	0	0	3	1	4	4
	Total	3	0	7	24	17	51

*SDA-Strongly Disagree, DA-Disagree, NS-Not sure, A-Agree, SA-Strongly Agree

Table 3 show that twenty four students agree that their lecturers are supportive and 17 students strongly agree that their lecturers are supportive. Out of all the students that indicated that their lecturers are supportive, 3 students indicated that they agree to leave the program and 4 students disagree to leave the program.

4.3. Students Performance

Table 4 Students' performance

	Frequency	Percent
First class	4	7.8
Second class upper	26	51.0
Second class lower	19	37.3
Third class	2	3.9
Total	51	100

From table 4, only 3.9% of the students are in the third class category. The remaining 95% are within the first class and second class categories.

4.4. Students' Persistence

Table 5 Students' Persistence

	Frequency	Percent
Strongly agree	25	49.02
Agree	13	25.49
Not sure	2	3.92
Disagree	5	9.8
Strongly Disagree	3	5.88

From table 4.4, 49.02% strongly agree while 25.49% agree to persist in the program. This gives a total of 75% freshmen who are interested in persisting in the programme

5. DISCUSSIONS

The significant factors impacting on first year students' persistence are clinic, cafeteria, library and hostel. This may be because these facilities may be in a poor state and need to be refurbished. Tunji-Olayeni *et al.*, 2017 also noted that physical features of the learning environment can attract and retain female students in the Building Technology program. Omuh *et al.*, 2017 noted that the school environment affected students' interest and ultimate persistence. From the study it was found that most of the students surveyed had good relationships with their classmates and lecturers and they reported that their classmates and lecturers were very supportive. This is similar to the finding of (Swail, 2004) who noted the establishment of friendships with peers, the development of mentors and connections to faculty members have been identified as important factors for student retention. A greater percentage of the students have shown a strong desire to persist in the course with majority of the students in good academic standing.

6. CONCLUSIONS

The study assessed the persistence of first year building technology students. The clinic, cafeteria, library and hostel had an impact on freshmen's persistence. Many of the first year students described their lecturers and classmates as supportive. The freshmen surveyed had a great level of persistence. Universities can experience greater students' retention by investing in the refurbishment of the facilities identified in this study particularly, clinic, cafeteria, library and hostel.

ACKNOWLEDGEMENT

The researchers acknowledge and appreciate Covenant University for full sponsorship of this research.

REFERENCES

- [1] Adelman, C. (1999). Answers in the tool box: Academic intensity, attendance patterns, and bachelor's degree attainment. Washington, D.C.: Office of Education Research and Improvements, U.S. Department of Education.
- [2] Astin, A. (1971). Predicting academic performance in college. New York, NY: Free Press.

- [3] Astin, A. (1973). Student persistence: Some stay, some don't—Why? *College and University*, 48, 298-306.
- [4] Astin, A. (1997). How “good” is your institution’s retention rate? *Research in Higher Education*, 38(6), 647-658.
- [5] Astin A. W. (1993). *What matters in college: Four critical years revisited*. San Francisco: Jossey-Bass
- [6] Bean, J. (1980). Dropouts and Turnover: The Synthesis and Test of a Causal Model of Student Attrition. *Research in Higher Education*, 12(2), 155-87.
- [7] Booth, A. (2001) Developing history students’ skills in the transition to university. *Teaching in Higher Education*, 6(4), 487–503.
- [8] Choy, S., National Center for Education Statistics & MPR Associates, B. (2001). *Students Whose Parents Did Not Go to College: Postsecondary Access, Persistence, and Attainment. Findings from the Condition of Education, 2001*.
- [9] Green, A. (2006) University challenge: dynamic subject knowledge, teaching and transition. *Arts & Humanities in Higher Education*, 5(3), 275–90.
- [10] Habley, W. R. (Ed.). (2004). *The status of academic advising: Findings from the ACT sixth national survey (Monograph No. 10)*. Manhattan, KS: National Academic Advising Association.
- [11] Hurdato, S. Han, J.C., Sa’enz, V.B., Espinosa, L.L., Cabrera, N.L. and Cerna, O.S. (2007) Predicting transition and adjustment to college: biomedical and behavioral science aspirants’ and minority students’ first year of college. *Research in Higher Education*, 48(7), 841–87.
- [12] Kuo, J., Hagie, C. and Miller, M.T. (2004) Encouraging college student success: the instructional challenges, response strategies, and study skills of contemporary undergraduates. *Journal of Instructional Psychology*, 31(4), 60–7.
- [13] Omuh, I.O., Amusan, L.M., Ojelabi, R.A., Afolabi, A.O and Tunji-Olayeni, P.F.(2017). Learning difficulties in the study of structural analysis in tertiary institutions. *Turkish Online Journal of Educational Technology, Special Issue for INTE 2017, November 2017*, 395-403
- [14] Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*. San Francisco, CA: Jossey-Bass.
- [15] Retention Study Group. (2004). *Promoting success for Carolina's undergraduates: Factors related to retention and graduation*. University of North Carolina at Chapel Hill: Enrollment Policy Advisory Committee.
- [16] Swail, W. S. (2004). *The art of student retention: A handbook for practioners and administrators*. Austin, TX: Educational Policy Institute.
- [17] Thayer, P. B. (2000). Retention of students from first generation and low-income backgrounds. *Opportunity Outlook*. (May), 2-9.
- [18] Tunji-Olayeni, P.F., Omuh, I.O., Amusan, L.M., Adedeji, O.A., Ojelabi, R.A and Ogundipe, K.E.(2017). Attracting and retaining female studnets in constructionrelated programs. *Turkish Online Journal of Educational Technology, Special Issue for INTE 2017, October, 2017*, 425-430.
- [19] Tunji-Olayeni, P.F., Owolabi, J.D., Amusan, L.M and Nduka, D.O. (2018). Job satisfaction of female construction professionals in male dominated fields. *International Journal of Mechanical Engineering and Technology*, 9(1), 732-738
- [20] Tinto, V. (2007). Research and practice of student retention: What next? *Journal of College Student Retention: Research, Theory & Practice*, 8(1), 1-19.

- [21] Tinto, V. (1993) *Leaving College: Rethinking the Causes and Cures of Student Attrition*. Chicago: University of Chicago Press.
- [22] White, C.B. (2007) Smoothing out transitions: how pedagogy influences medical students' achievement of self-regulated learning goals. *Advances in Health Sciences Education*, 12, 279–97.
- [23] Wyckoff, S. (1998). Retention theories in higher education: Implications for institutional practice. *Recruitment and Retention in Higher Education*, 12(2), 2-7.
- [24] Sweta V. Parmar and Lokesh Kumar Sharma, Comparative Study of Supervised Learning for Student Performance Evaluation. *International Journal of Computer Engineering and Technology*, 9(2), 2018, pp. 32 - 38.
- [25] K. B. Eashwar, R. Venkatesan and D. Ganesh, Student Performance Prediction Using Svm, *International Journal of Mechanical Engineering and Technology* 8(11), 2017, pp. 649 – 662.