

Demographic Determinants of Wastage Rate among Fresh Undergraduates in South-South Nigerian Public Universities

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Abstract

This study investigated the demographic determinants of wastage rate among fresh undergraduates in South-South Nigerian public universities. The study was a descriptive survey that adopted the ex-post-facto research design. The population of the study comprised ten conventional universities in South-South Nigeria, one hundred and twelve (112) programmes in the universities and all the first-time undergraduates in the programmes. The sample consisted of 2676 fresh undergraduates from six programmes in two federal universities and two state government universities. Samples were purposively selected for the study. The research instrument was the checklist, titled "Student Enrolment and Flow Information Checklist" (SEAFIC). The instrument was validated by three experts in the Department of Educational Management, Faculty of Education, University of Benin, Benin City. Data gathered were analyzed using descriptive statistics. The findings revealed that: there were variations in the wastage rate among fresh undergraduates based on programmes, ownership of the university, generation of the university and gender. It was recommended among others, that university management should give more attention to variable of programme in allocation of learning facilities, adequate practical facilities should be provided for science programme to reduce the wastage rate among fresh undergraduates in the sciences and that state government should increase support to state universities to close the gap in variation in wastage rate between state and federal universities.

Keywords: Student wastage; Probation; Withdrawal; Demographic variables; First time undergraduates

Introduction

The issue of student wastage among undergraduates has become a serious problem that is bedeviling Nigerian public universities. Student wastage seems to militate against the actualization of the goals of higher education in Nigeria, which include; National development through high-level manpower training; creating proper values for individuals and society; building the intellectual capability of individuals to understand and appreciate their local and external environments; acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society; promote and encourage scholarship and community service; forge and cement national unity and promote National and international understanding and interaction {FRN 2013}.

Student wastage is an enormous loss of resources invested in the universities, This is due to the incidence of probation or withdrawal of students. Probation is when a student remains at the same level for more than one academic session doing what he/she has done in the previous session. A student that fails to meet the promotion criteria to the next higher level probates the same level. Probation could also connotes trial period or moving to the next level based on trial. Student withdrawal is when a student ends halfway through the university. This happens when a student withdraws from the university system for not being able to accumulate the required credit load to remain in the system, both student probation and withdrawal constitute student wastage. Student wastage arises as a result of student failure in university examinations. Some of these students are not able to accumulate the required credits to move to the next higher level. Students with less than 20 credits but have 10 credits probate the level and those with less than 10 credits load withdraw from the university. Those that probate repeat resources for another session and those that withdraw waste resources earlier used for the session. Student probation and withdrawal has cost implication on the institution and the individual students and their families.

Some demographic variables such as ownership of universities, academic programmes, generation of universities and gender of undergraduates could be determinants of the wastage rates in the universities. Academic

programmes are regulated by different policies. Programmes in the medical sciences relating to human treatment are taken seriously with stringent policies to ensure high competency. The institutional costs to run programmes in the medical sciences are more than that of the physical sciences and programmes in the art and social sciences due to their duration. Generation of university is a determinant advanced for wastage rate in Nigerian universities. In most cases, new universities tend to have state-of-the-art infrastructures and facilities, new structures, equipment, well-equipped libraries, and laboratories among others that aid teaching and learning, and therefore, increase student performance and reduction in wastage rate. Observations shows that older universities are better established with laid down traditions that make operation easy. More so older universities tend to have more experienced lecturers and professors that promote better learning. Gender is another important determinant of student wastage rate. This stems from the fact that male and female students adapt differently to a new environment. The university environment is still new to these students who are coming in for the first time. Male students seem to adapt more easily to a new environment than female students. Also, the present economic situation in the country is affecting the students, as their parents are not able to meet all their financial needs, hence these students have to work to meet their financial needs. These available jobs are part-time menial jobs that are more accessible to male students. Female students are hardly able to access these jobs, which makes them have financial difficulties, which could affect their wastage rate.

The theoretical framework for this study is Student Attrition Theory by Pascarella (1980). Pascarella's theory of student attrition explained that informal interactions between students and institution as being important in students' educational outcomes, retention or withdrawal. Pascarella argued that to understand the unique influence of student–institution non-classroom contact on educational outcomes and institutional persistence, it is necessary to take into account, not only background characteristics which students bring to the university but also actual experiences of the university in other areas, as well as salient institutional factors. Pascarella's theory emphasizes that student characteristics, institutional characteristics and three independent variables influence each other. The three independent variables include informal contact with faculty, other university experiences and educational outcomes. The three independent variables reciprocally affect each other so that a problem in one area may affect another area. Only educational outcomes have a direct influence on student retention decisions. All other variables affect the persistence, and withdrawal decision indirectly through their effect on educational outcomes. The Student Attrition Theory by Pascarella (1980) is relevant to the study because it explained the variables that could influence student wastage rate. The theory explained that students' educational outcome is a function of students' background characteristics and institutional characteristics.

David and Joash (2017) in a study on the influence of school-based factors on educational wastage in Kenya found teaching and learning facilities, learning environment and quality of school management have a significant influence on student wastage. Institutional factors affecting the academic performance of public administration student in the university was studied by Ogbgu (2014). The study revealed interruption of electricity supply, overcrowded lecture rooms, unfavourable learning environment, incessant strikes, closure of school and method of collating results affect student performance. The study, however, revealed that institutional factors alone did not significantly affect student performance. In an analysis of wastage rate in Nigerian state universities, Abdulkareem, Fasasi and Akinnubi (2011) revealed that Ambrose Alli University had 28% wastage, Lagos State University, Ojo had 10% wastage, Imo State University, 17% Nasarawa State University, 46%, Adamawa State University, 19% and Ebonyi State University had 19% wastage rate. The mean wastage rate for all the universities was 23%. In another study by Inua and Maduabum (2014) on performance efficiency measurement in the Nigerian public sector; the federal university dilemma found variation among federal universities in Nigeria. Out of the seventeen (17), federal universities studied, only four (4) were adjudged as performing efficiently in terms of input and output phenomenon. Oyetakin and Odunayo (2013) found variation in student wastage among faculties in the various institutions under study. Investigation of the attrition rate in the Delta State of Nigeria, Duze (2011) found variation in the attrition rate between public and private schools, rural and urban schools and small and large schools.

Student wastage in Nigerian universities seems to be high and has become a source of worry to universities managements, lecturers and parents. Students on probation spend an extra year on a particular level, additional resources are used to service the extra year spent. Resources used the previous year are repeated, teaching and non-teaching staff, textbooks, lecture rooms, equipment, school building, social services, and school transport among others. The knowledge to be acquired in terms of subject matter content has been built into the programme cycles so that the academic programmes cover what a student can assimilate within the period. Probation does not increase the

knowledge acquired by the student rather it contributes to the wastage of resources. Similarly, student withdrawal before the completion of the cycle does not allow the student to acquire the required skills and knowledge planned for the cycle within the short time spent in the university. Resources used for a student who withdraws before the completion of a programme are wasted. This study therefore, reviewed empirically the demographic determinants of wastage rate among fresh undergraduates in South-South Nigerian Public Universities. The literature reviewed showed that demographic determinants of wastage rates among fresh undergraduates had not been empirically examined. This study seems to have filled this gap. This study has added to the existing body of literature on student wastage in Nigerian public universities. Information from this study would assist policymakers, educational planners and university administrators in further planning. It will equally help lecturers and students to improve their teaching and learning process. This study has also provided useful reference materials to researchers who might be interested in conducting a similar study.

Purpose of the study

This study investigated the demographic determinants of wastage rate among fresh undergraduates in south-south Nigerian public universities. Specifically, the study sought to:

- i. Assess whether the nature of the programmes offer determine student wastage rates among fresh undergraduates;
- ii. investigated whether ownership of universities determine student wastage rates among fresh undergraduates;
- iii. ascertained whether generation of universities determine student wastage rates among first-time undergraduates;
- iv. ascertained whether gender of undergraduate determine student wastage rates among first-time undergraduates.

Research Questions

The following research questions guided the study:

- i. Will nature of the programmes offer determine students wastage rates among fresh undergraduates in south-south Nigerian public Universities ?
- ii. Will ownership of universities determine student wastage rates among fresh undergraduates in South-South Nigerian public universities?
- iii. Will generation of universities determine student wastage rates among fresh undergraduates in South-South Nigerian public universities?
- iv. Will gender of undergraduate determine student wastage rates among fresh undergraduates in South-South Nigerian public universities?

Methodology

The study was a descriptive survey that adopted the *ex-post-facto* research design. This design was considered to be appropriate because the data used were already in existence. The variables of the study were not manipulated as they were only observed and described. The population of the study comprised ten conventional universities in South-South Nigeria, one hundred and twelve (112) programmes in the universities and all the fresh undergraduates in the programmes. Two federal universities, two state government universities, six programmes 2676 fresh undergraduates in the six programmes were selected as samples for the study. The stratified random sampling technique was used to select four universities based on ownership and generation of Universities while the purposive random sampling technique was used to select six programmes which represent 5% of the 112 programmes. The research instrument was the checklist, titled "Student Enrolment and Flow Information Checklist" (SEAFIC). The checklist has two sections, A and B. Section A was used to seek demographic information while section B was used to seek information on students flow in terms of probation and withdrawal. The checklist was designed and shown to three experts in the Department of Educational Management, Faculty of Education, University of Benin, Benin City who determined the validity. Their corrections and comments were effected before the final draft was produced for the study. Reliability was not done because the checklist did not require reliability. Data gathered were analyzed using the student flow statistics formula and descriptive statistics such as percentage, mean and rates.

Results

Research Question 1: Will nature of the programmes offer determine student wastage rates among fresh

undergraduates in South-South Nigerian public Universities?

Table 1: Nature of the programmes as determinant of student wastage rates among fresh undergraduates

Programmes		Enrolment	Probation	Withdrawals	Wastage	Wastage Rate (%)
Humanities	Pol. Sci.	359	21	6	27	7.52
	English	566	48	25	73	12.90
	Accounting	433	25	20	45	10.39
Subtotal		1358	94	51	145	30.81
Mean %			6.92	3.76		10.68
Science	Agric.	273	15	5	20	7.33
	Civil Eng.	432	39	19	58	13.43
	Mathematics	613	66	19	85	13.87
Subtotal		1318	120	43	163	34.63
Mean %			9.11	3.26		12.37
Grand Total		2676	214	94	308	11.51

The mean percentage wastage rates for humanities and science-based courses as shown in Table 1 are 10.68% and 12.37% respectively. This indicates that there was a variation in the rate of wastage among fresh undergraduates in South-South Nigerian universities according to the programme. The difference in the wastage rate between humanities-based courses and science-based courses was 1.69%. The data in the table showed that a total of 145 students constituted wastage giving a mean wastage rate of 10.68%. The highest wastage rate for the humanities occurred in English (12.90%) followed by Accounting 10.39% while the least was recorded in Political Science (7.52%). The information in table 1 revealed that out of the 1318 first-time undergraduates that enrolled in the sciences within the period of the study, 120 probated while 43 withdrew from the Universities giving a total wastage rate of 163 (12.37%). The data showed that the wastage rate was highest in Mathematics, at 85(13.87%) followed by Civil Engineering at 58 (13.43%) while the least was recorded in Agricultural Economics at 20(7.33%).

Research Question 2: Will ownership of universities determine student wastage rates among fresh undergraduates in South-South Nigerian public universities?

Table 2: Ownership of universities as determinant of student wastage rates among fresh undergraduates.

Ownership of university	N	Enrolment	Probation	Withdrawal	Wastage	Mean wastage %
Federal	2	1648	130	50	180	10.92
State	2	1028	84	44	128	12.45
Total	4	2676	214	94	308	11.51

The data in Table 2 showed that the student wastage rate among fresh undergraduates in federal Universities was (10.92%) while that of state Universities was 12.45%. The wastage rate among fresh undergraduates in state universities is higher than that of federal Universities. This figure showed that there was variation in the rate of wastage among the fresh undergraduate according to ownership of Universities. The data also showed that of the one thousand six hundred and forty-eight (1648) first-time undergraduates that enrolled in federal Universities, one hundred and thirty (130) probated while fifty (50) students withdrew from the University making a total wastage of one hundred and eighty (180) and a wastage rate of 10.92%. In the state Universities, a total of one thousand twenty-eight fresh undergraduates were enrolled, eighty-four students probated and forty-four students withdrew, giving a total wastage of one hundred and twenty-eight (128) students and a wastage rate of 12.45%.

Research Question 3: Will the generation of universities determine student wastage rates among fresh undergraduates in South-South Nigerian public Universities?

Table 3: Generation of universities as determinant of Student wastage rates among fresh undergraduate in South-South Nigerian public universities.

Generation of universities	N	Enrolment	Probation	Withdrawn	Wastage	Wastage Rate (%)
First generation	1	1028	76	22	98	9.53
Second generation	1	620	54	28	82	13.23
Third generation	1	537	45	14	59	10.99
Fourth generation	1	491	39	30	69	14.05
Total universities	4	2676	214	94	308	11.5

The data in Table 3 showed that first-generation, second-generation third generation and fourth-generation Universities had student wastage rates of 9.53%, 13.23%, 10.99% and 14.05% respectively. There was variation in the wastage rate among the first-time undergraduate in South-South Nigerian public Universities according to the generation of Universities. The information showed that first-generation Universities had an enrolment of one thousand and twenty-eight (1028) students of which seventy-six (76) probated and twenty-two (22) withdrew from the University. Second-generation universities had an enrolment of six hundred and twenty (620) first-time undergraduates, out of which fifty-four (54) probated while twenty-eight (28) withdrew from the university. Third generation university had five hundred and thirty-seven (537) students enrolment, out of which forty-five (45) students probated while fourteen (14) students withdrew from the university and lastly in the fourth generation university four hundred and ninety-one (491) students enrolment, and out of which 39 students probated the level and thirty (30) students withdrew from the university.

Research Question 4: Will gender of undergraduates determine student wastage rate among fresh undergraduates in South-South Nigerian public universities?

Table 4: Gender of undergraduates as determinant of student wastage rates among first-time undergraduates in South-South Nigerian public universities.

Gender	Enrolment	Probation	Withdrawal	Wastage	Wastage Rate (%)
Male	1534	116	56	172	11.21
Female	1142	98	38	136	11.91
Total	2676	214	94	308	11.51

The data in Table 4 showed that students wastage for males was 172 out of 1534 students enrolled, therefore giving a wastage rate of 11.21 while students wastage for females was 136 out of the one thousand one hundred and forty-two (1142) students enrolled, with a mean wastage rate of 11.91%. This indicates variation in the wastage rate between male and female students. The difference in the rate of wastage was 0.7%. The wastage rate for female fresh undergraduate students was higher than that of male first-time undergraduate students.

Discussion of Findings

The variation in the rate of wastage among fresh undergraduates in South-South Nigerian public universities according to programmes revealed that the wastage rate was higher in the Sciences than in the humanities. The plausible explanation for the high wastage rate of science programs over programs in the humanities could be that science programs need more practical facilities. In most cases, these practical facilities are obsolete and sometimes not available for practical teaching. In many universities, practical courses and taught theoretically which leads to poor student understanding of the course, resulting in poor performance, carry-over of courses, probation and withdrawal from the university. The finding is consistent with Adeyemi and Ajayi (2006) who found variation in the rate of wastage among programmes. This finding is corroborated by Oyetakin and Odunayo (2013) who found variation in the rate of wastage among students in the various programmes studied.

There was variation in the rate of student wastage among fresh undergraduates in South-South Nigerian public universities between federal and state universities. This variation could be attributed to the high federal government subsidy of federal universities. This makes the undergraduates from federal universities spend less money than their counterparts in state universities, where state government universities subsidy is lower than that of the federal universities, thus making the undergraduates in state universities pay more. Another reason for the variation in the wastage rate of students between federal and state universities could be the difference in budgetary allocation to the universities. Federal universities seem to have more robust budgetary allocations than state universities. This finding is in agreement with the findings of Doze (2011), Inua & Maduabum (2014) and Akinsolu (2017) who found variation in the rate of student wastage among federal and state institutions. The finding of this study also corroborated the finding of Oyetakin & Odunayo (2013) in the analysis of student wastage rate between federal and state universities in South-West Nigeria. They found that the wastage rate was higher among students in state universities than in federal universities. Abdulkareem, Fasasi and Akinnubi (2011) lay credence to this result as their findings showed variation in students' wastage rate in the different universities of their study.

There is variation in the rate of wastage among first-time undergraduates in South-South Nigerian public universities based on the generation of universities. First-generation, second-generation, third-generation and fourth-generation universities had fresh undergraduate wastage rates of 9.53%, 13.23%, 10.99% and 14.05% respectively. University factors such as university culture, university structure, university image, administrative policies and decisions, university size, admission standard and academic standard are factors that could cause variation in the wastage rate of fresh undergraduates in the universities. The finding of this study is inconsonant with the studies of Sylvia, David and Joash (2017) and Ogbgu (2014) who reported that the learning environment has a significant influence on student wastage rate.

The study examined the rate of student wastage among first-time undergraduates in South-South Nigerian public universities based on gender. The investigation revealed that the mean wastage rate for male undergraduates was 11.21% while that of the female was 11.91%. The reason could be that African culture favour more of male education than the female counterpart, therefore the male tends to have an upper hand and more prepared than the female in terms of financing of education by parents. This finding was supported by Ngome and Kikechi (2015) who discovered the wastage rate for male to be 4.8% and that of females to be 5.1%. This finding is in agreement with the result of Doze (2011) who found variation in the attrition rate between males and females. Attrition rate was found to be higher in females 23.59% than in males 15.6%.

Conclusion

This study concluded that the programme of study, ownership of universities, generation of universities and gender of undergraduate determine student wastage rates among fresh undergraduates in south-south Nigerian public universities. The wastage rates among female fresh undergraduates was higher than that of male undergraduates. Science programmes had a higher wastage rate than programmes in the humanities and state universities had a higher wastage rate than federal universities.

Recommendations

Based on the findings, the following recommendations were made; Attention should be given to variable of programme in allocation of learning facilities, practical materials should be made readily available to students in the sciences to reduce the wastage rate in science programmes. State government should increase support to state universities by employing more academic staff and increasing learning infrastructure to close the gap in variation in the wastage rate between state and federal universities. All stakeholders in university education, the government, universities management, parents, family members and the entire society should support female undergraduates, to bridge the gap in variation in wastage rate between male and female undergraduate students.

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