African Research Review

Impact of Students' Financial Strength on their Academic Performance: Kaduna Polytechnic Experience

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Abstract

The Nigerian educational system has suffered disrepute in recent times. Schools outside Nigeria assess the certificates earned from Nigerian universities as being low. In this research, we used carefully

designed questionnaires distributed by stratified random sampling with proportional allocation scheme, to find out the impact of finance on students' academic performance with reference to Kaduna Polytechnic. The statistical tests we applied are Chi-square, Phi coefficient and Bi-serial correlation. It was found that financial status depends on the source of finance. The self-sponsored students are more satisfied than those that get their money either from their parents or from a scholarship fund. It was also discovered that the adequacy /inadequacy of a student's finance does not depend on gender. Bi-serial correlation analysis reveals that adequacy of the money affects student's academic performance. The conclusion that satisfaction cum improved academic performance depends on source of finance (and in particular, those that sponsor themselves feel more satisfied) explains why graduates from the countries where job opportunities are provided for students perform well in both external/professional examination and in the industry. Since jobs are rarely available for students in Nigeria, a student-loan-scheme is needed to ensure satisfaction, which leads to improved performance.

Key words*: adequacy, correlation, examination, school.*

Introduction

The concept of academic performance has become a source of concern to researchers, especially as the academic performance of the students is declining. Academic performance is defined or regarded as participants' examination grades at the end of a given duration (term, semester, programme). It could also be seen as the level of performance in a particular field of study. Higher scores indicate better academic performance (Egbule, 2004, p. 34). The Nigerian society places great emphasis on education because it is believed to be the only avenue for national development. However, this can only be achieved if undergraduates who are in the citadel of learning get actively involved in academic activities which will enhance their academic performance. This will, in turn, lead to the technological advancement of the nation. In spite of these values attached to

academic performance, Egbule, (2004, p. 40) showed that students' performance is declining. This could be because they are confronted with so many school and non-school related demands and responsibilities. This problem seems to be a major one that requires urgent and serious solution since students' academic performance affects the quality of human resources within the society (Ebenuwa-Okoh, 2010, p. 63).

The three age-old basic needs of man are food, shelter and cloth. The nineteenth century has introduced a fourth need – energy (Tiwani, 2002, p. 5). In pre-historic era, these needs were met by the humans wherever they existed. As the society civilised with attendant increase in the human population, there arose scarcity followed by competition for these needs. In the process, some were able to meet these needs more than others and this phenomenon led to social stratification into the "rich" and the "poor", depending on how adequate an individual's needs are met. Currently, the stratification has metamorphosed from the rich and the poor grouping to that of the "haves" and the "have not's". The haves are further sub grouped depending on the quality of these needs they can afford. Some of the have not's, on the other hand, take the most debasing employment (begging) in order to meet their needs while others take the most dishonourable means of livelihood (crime) for the same purpose. All human activities are always directed towards meeting these basic needs, hence it follows that the quest to meet these needs always preoccupy the minds and influence (directly or indirectly) the activities of the humans most of the times. Therefore, the ability or otherwise of an individual to meet the basic needs greatly affects the person's mental alertness.

In an academic institution, these basic needs go beyond food, shelter, clothing and energy. In addition to these four, the basic needs of a student extend to the cost of transportation, health care, stationary and more recently, the information and communication technology (ICT).

Many students have been finding it difficult feeding themselves because they lack enough money to do so. The school cafeterias that

are supposed to serve at subsidized rates are no more functioning. Even students who usually bring their foodstuff need money for ingredients, kerosene, etc.

Transportation is one of the major problems facing students. Most students who do not live close to their lecture venues usually walk a long distance on foot to their respective lecture venues due to financial problem. For a student to transport himself to and fro school, he needs a lot of money weekly, which can only be afforded by those that are financially buoyant. Another problem is that school buses are not functioning regularly and for a student to get regular access to one he has to book the ticket at the cost of ₦400 per week; this is equally competitive as students lobby before they can get it; not to talk of early morning operations of these buses.

Health care is another aspect where students usually spend unbudgeted and unexpected money. Because the school clinic has no drugs students can only see the doctor for prescription of drugs which they go out to buy. Only the financially buoyant can do this and the rest have no option than lie in their rooms till they get well. This, in effect affects the attendance to lectures and general performance.

Another thing that eats deep into the pockets of students is the issue of stationeries. Students need writing materials and textbooks. At the end of session, some need to present seminars, write reports and projects. These take a huge amount of money. Someone who is not financially strong cannot carry out all these. In fact, these problems are what prompted the researchers to make an investigation into the financial strength of students in relation to their academic performance.

Factors affecting students' academic performance

1. Reading culture

Study skills are influenced by learner motivation and when they are psychological balanced. Besides, learners' wish to study or not, difficulties in studying conditions, resistance against frustration and showing intimidation when faced with failure are factors influencing

learning as well. An assessment of reading culture among students in tertiary institutions found that apart from lack of reading habit, many factors - hunger, inadequately furnished library, high cost of books, inadequate instructional facilities and poverty - militate against good reading habit. Many students take only a meal per day and this affects their general performance as they lack energy to read.

Poor accommodation is also a factor affecting the students' reading culture. If a room meant for two students ends up housing 8-10 students at night, the discomfort will certainly have chain effect. Kanwai (2010, p. 43) in his studies found that facilities in the institution such as hostel accommodation, lecture rooms, textbooks, etc are not in proper condition. The hostel accommodation is not conducive for the students; in the lecture rooms, you find some students hanging on windows and some sitting on bare floor during lectures. If the student is not psychologically balanced, this may lead to low academic performance. Also in the libraries, there are not enough textbooks for the students to use, even if there are, they are not recent publications. Because of constant power failure, the library is often hot and most of the reference books are not there. The reading chairs are also unable to meet up with the geometric increase in the school enrolment (Zainal., Kamaruddin & Saiful-Nathan, 2009, p. 171).

2. Financial status and psychology

Literature points out that poor financial status affects academic performance, mental and physical well-being, and even their ability to find employment after graduation (Bodvarsson and Walker, 2004, p. 490; Lyons, 2003, p.70; Lyons, 2004, p. 28). Studies show that mental illness and rates of suicide are strongly connected to both poverty and unemployment. The unemployment rate is generally high more so as there have been some economic recessions worldwide (Krugman, 2009, p. 5). The poor economic conditions affecting most native communities, damage self-esteem and can result in depression, drug

and violence, all of which contribute to the high suicide rate (Ian, 1994, p. 200).

Corby and Benjamin*.,* (2008, p. 16) in their write up titled "Does financial Aid Status Affect student's Performance, Retention, Persistence, and Academic Success" found that differences in performance exist among the various financial aid participants and non- financial aid participants, these differences cannot be attributed to the financial aid group alone. Variables, both demographic and college specific are interacting with each other to form significant combination.

3. Absenteeism

The financial problems of students immensely contribute to low performance, thereby leading to poor quality of education in a number of ways. In the first place, most students cannot afford the essential learning materials like textbooks. Secondly, a student on "0-1-0" (i.e. one who takes lunch every day and cannot take anything again) cannot be expected to give his full attention to what is going on in class. All these lead to absenteeism since the student may have to be out of school, trying to meet these needs (Bello, 1998, p. 21). Absenteeism which could be due to transport fare is also rampant. The problem does not stop there for the education sector, for some of those half-baked graduates find themselves in classroom (at secondary or tertiary levels). In an attempt to solve the problem of lack and/or the high cost of textbooks, some lecturers resort to producing handouts.

A popular avenue among some female students is prostitution. Some "professionals" among them go to the extent of renting places off campus and attracting many well-to do men daily. Organised crimes on our campuses, like cultism, drug dealing and some form of protection rackets also get very willing participation from the financially down cast students. The rich boys with cars and a lot of money "need" girls, drug and protection; the poor boys with natural gift muscles can provide one or a combination of these (Prince, 2009, p. 2). This sets the ground for cultism and protection rackets.

It is no longer shocking to hear that so many students from our tertiary institutions are caught among gangs of armed robbers on the highways. One serious consequence of these financial problems is that some students are denied the chance to further their education. Even in the make-do arrangement currently in place (where a student could manage with far less than the minimum we indicate), a number of students could not afford to stay in our tertiary institutions. We are all aware that some students are forced to 'voluntarily' withdraw for financial reasons. Indeed, many more could not even take up their admission in the first place.

4. Examination malpractice

Examination malpractices range from leakage of question papers to copying, changing answer books, impersonation, misconduct in examination centre, approaching invigilators/examiners or any illegal behaviour by a candidate before, during or after the examination so that he/she can obtain an undue success.

Some students go to any length in their effort to make ends meet. One lucrative area is examination malpractice. On the campuses, some students are paid to collaborate with or even impersonate others. Even though not all cases of examination malpractice emanate from financial problems, some cases definitely do. Students' financial problems contribute even to examination malpractice outside the campuses. Most of those who are paid to impersonate others in external examinations are mostly students from tertiary institutions.

Copying and use of other unfair means/malpractice in examination is a serious problem (Wilayat, 2009, p. 519). This problem is symptomatic of a disease in our educational system which is eating into all facets of our society. This malaise is harmful for the moral and intellectual development of our youths. It is afflicting the ethical and social fabrics of our society. This state of affairs must not be allowed to last for long. There is dire need take measures to put an end on this evil. One way of dealing with the problem is to introduce effective

and comprehensive legislation, providing for stringent penalties against the use of unfair means in examinations.

Methodology

The statistical tools used in this study are:

      1. Chi-square statistic (χ^2)

      2. Phi-correlation (ϕ) and

      3. Bi-serial correlation (ρ_{bis})

Chi-square: The Chi-square statistic (χ^2) (Ray, Sharma, and Chaudhary, 2004, p. 696*)* as shown in equation (1) will be used to investigate whether financial status depends on source of finance. It was observed that the students' finance come from different sources and we deemed it necessary to investigate whether the adequacy or otherwise depends on the source. This will enable us to advise/encourage looking for finance through the most adequate source, if any. The identified sources of finance are Self efforts, Parents and Scholarships.

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \sim \chi^2_{\alpha}[(r-1)(c-1)] \quad \text{.......................(1)}$$

where α is the level of significance of the test.

    $\chi^2_{\alpha}[(r-1)(c-1)]$ = null distn of the χ^2 statistic at α level of sig.
                         and $(r-1)(c-1)$ degrees of freedom.

    r = number of rows.

    c = number of columns.

    O_{ij} = observed frequency in cell(i, j)

    E_{ij} = expected frequency in cell(i, j) =
$$\frac{ith \ row \ \text{m arg} inal \ total \ \times jth \ column \ \text{m arg} inal \ total}{Grand \ total} = \frac{R_i \times C_j}{G}$$

A null hypothesis is rejected if and only if $\chi^2 > \chi^2_{\alpha}[(r-1)(c-1)]$

Phi-correlation: The phi-correlation (ϕ) (Lindeman, Merenda and Gold., 1980, p. 423) as shown in equation (2) is used to express the degree of association or correlation between two or more truly dichotomous variables. It is used when the variables are nominal. It is the product moment correlation obtained by coding each dichotomous variable 0 and 1. Phi correlation coefficient may be considered as a measure of either association or correlation, depending on whether the categories of the variables involved are ordered or unordered, and is denoted by Ø. However, the phi- correlation coefficient can be calculated by a much simpler procedure. The dichotomous data on the two variables are tabulated in a 2 × 2 tables (table 1).

Table 1: General Form for 2×2 Arrangement to Calculate Phi Correlation coefficient

| | | Variable x | | TOTAL |
		0	1	
Variable y	0	a	b	$a+b$
	1	c	d	$c+d$
TOTAL		$a+c$	$b+d$	N

The number of person scoring 0 on x and 0 on y is designated a, the number of person scoring 0 on x variable is $a+c$, the number of person scoring 1 on x and 1 on y is designated d, the total number scoring 1 on y variable is $c+d$. We used this tool to test the relationship between gender and the adequacy of finance. This is in order to verify if there is bias in the adequacy of finance with respect to gender.

The formula for calculation of the phi-coefficient for 2×2 arrangement is given as

$$\emptyset = \frac{bc - ad}{\sqrt{(a+b)(c+d)(a+c)(b+d)}} \tag{2}$$

where a, b, c, and d represent the frequency of observation in the cells of the 2×2 table.

A null hypothesis is rejected if and only if $\chi^2 = n\phi^2{}_\alpha > \chi^2{}_\alpha$ (1)

Bi-serial correlation: The bi-serial correlation coefficient (ρ_{bis}) (Lideman, *et al.,* 1980, p. 382) as shown in equation (3) is an estimate of the product moment correlation between one continuous variables *x* and another continuous variable *y* that is treated as a dichotomy - an artificial dichotomy. Therefore the sample bi-serial correlation coefficient denoted by r_{bis} is a statistic that may be used to express the relationship between an artificially dichotomous variable such as financial status (adequate or inadequate) and a continuous variable such as cumulative grade point average (CGPA) scores.

$$r_{bis} = \frac{\bar{X}p - \bar{X}q}{SD_x}\left(\frac{pq}{h}\right)$$ .... (3)

where $\bar{X}p$ = mean of *x* of the 'adequate' group

$\bar{X}q$ = mean of *x* of the 'inadequate' group

SD_x = Standard deviation of *x* for the total sample

H = height of the coordinate of the standard normal distribution at the point Z_n corresponding to y_n.

A null hypothesis is rejected if and only if $Z = \frac{h\,r_{bis}}{\sqrt{pq/n}} > Z_\alpha$

Population under study

This study is targeted towards the students of tertiary institutions. The study population comprises of the students of Kaduna Polytechnic, Kaduna-Nigeria. The Polytechnic has five campuses:

    i. College of Art and Social Sciences (CASS)
    ii. College of Business and Management Sciences (CBMS)
    iii. College of Environmental Studies (CES)
    iv. College of Engineering (COE)
    v. College of Science and Technology (CST)

Each campus runs the Ordinary National Diploma (OND) and the Higher National Diploma (HND) programmes and has a central library. As at the time of this study (2012), the enrolments are shown as N_h in table 2.

Data collection

The population is viewed as composed of five strata: CASS, BMS, CES, COE and CST. These strata are homogeneous in costs of transportation, lecture materials, utilities, *etc*. Hence stratified sampling scheme using proportional allocation (Cochran, 1977, p. 220) was employed in sample selection according to equation (4). The resulting sample sizes are shown as n_h in table 2.

$$n_h = \frac{N_h}{N} \, n \tag{4}$$

where   N is the population size

   N_h is the stratum size h

   n_h is the size of sample from the stratum h

   n is the total sample size

Table 2: Breakdown of sample taken from each stratum

Stratum Name	Stratum Size(N_h)	$n_h = \frac{N_h}{N}n$	Sample Returned	Invalid/ Unreturned	Sample Analysed
CASS	4 000	100	82	30	70
CBMS	4 800	120	110	38	82
CES	3 000	60	68	42	38
COE	4 000	100	85	50	50
CST	4 800	120	120	40	80
Total	20 600	500	465	55	320

A carefully designed questionnaire was administered to the students of Kaduna Polytechnic according to the numbers shown in table 2. The

questionnaires were administered directly to the students. An initial sample of 50 questionnaires was used as a pre-test and this instrument was found to be suitable before the actual survey was conducted. Due to non-responses by some of the students and poorly completed questionnaires, the number of questionnaires used for analysis is recorded as Sample Analysed in table 2.

Results

The data collected was subjected to the statistical techniques described under methodology. Using the **Statistical Package for Social Sciences** (**SPSS**), the frequencies and the test statistics are shown in table 3 and table 4 respectively. Table 4 also contains the *p*-value associated with the statistics.

Table 3: Contingency table of source of finance and adequacy of finance

Source of Finance	Adequacy of finance		Total
	Inadequate	Adequate	
Self Effort	33(39.3%)	51(60.7%)	84
Parents	92(59.7%)	62(40.3%)	154
Scholarship	44 (53.7%)	38(46.3)	82
Total	169 (52.8)	151(47.2)	320

From table 4, there is a significant relationship between the adequacy of finance and the source of finance. Also, there is a significant relationship between the CGPA and the adequacy of finance. However, at the same 0.05 level of significance, there is no significant relationship between the adequacy of finance and gender.

Table 4: SPSS output of the analysis

Test Statistic	Variables	Value	*p*-value.
Chi-square (χ^2)	Source/Adequacy of finance	8.112	0.017
Phi (ϕ)	Gender/Adequacy of finance	0.081	0.148
Bi-serial (ρ_{bis})	CGPA/Adequacy of finance	0.728	0.002

Discussions

The result revealed that student's financial status does depend on source of finance. The study also indicates that over 48% of the respondents get their money from their parents. This is worrisome bearing in mind that Nigerian workers (who are majorly the parents) are highly underpaid. The Nigerian workers have severally complained that their take-home pay cannot take them home. A situation where the underpaid workers are the major financiers of students will necessarily lead to low performance, especially as it was also seen that the adequacy of finance affects the academic performance of the students. Taking into consideration the fact that Nigerian workers are underpaid, it is not surprising that among those that source their money from parents, only 40% consider the amount adequate. This is not surprising bearing in mind that the underpaid parents are the major sponsors. Lyons (2003, p. 43) found that one in three students reported his/her financial situation was "likely" or "somewhat likely" to affect the ability to complete a college degree. Bodvarsson and Walker (2004, p. 490) reported that, after controlling for a wide variety of factors that affect college performance, students receiving at least partial coverage from their parents for tuition and books were more likely than self-financed students to fail courses, to be placed on academic probation, and to earn lower Grade Point Averages.

We also found that there is no association between sex of students and financial status; this implies that the gender of students does not influence financial status.

Furthermore, it was found that there exists a strong positive relationship between the financial status and CGPA.

Conclusion

Finance is the avenue through which students' bills are paid. If their finances are not adequate, the situation may tend to affect their academic performance adversely. If, on the other hand, their financial needs are met adequately, probably their performance may be enhanced, (Odebunmi, 1988, p. 8 and Egbule 2004, p. 40). This can be seen practically: a student whose amount is inadequate will have to devise other ways to have more money and this will affect his lectures because he/she has to go out during lectures. Transport fare to lecture venues may not be available for the student to attend lectures regularly. Even when the student is present, apart from lack of concentration which could result from psychological problem or poor feeding, the student may not have enough money to cater for most of the financial needs like the cost of typing some assignments and browsing on the internet.

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