BUSINESS MANAGEMENT STUDENTS' ATITUDE AND PERFORMANCE IN STATISTICS LEARNING IN NIGERIA METROPOLITAN COLLEGE OF TECHNOLOGY

Adeyemi D. Aromolaran, Abiodun Karim, Emmanuel Ikegwu, U. Okoroafor, and Yemisi Ajiboye
Department of Statistics, Yaba College of Technology, Lagos, Nigeria
adeyemi.aromolaran@gmail.com

Attitudinal apathy among undergraduate management students in Nigeria towards learning of statistics and its consequential poor performance is of great concern. 300 structured questionnaires were administered by stratified random sampling method across three different departments in the school of management. The categories of students involved in the study were the year-two students who had the course in their curriculum in the session. Chi-square test and log-linear statistical tools in IBM SPSS was used for the data processing and analysis. Findings showed that most student preferred statistics to be removed from their course list, attributed their poor performance to the teaching approach being adopted by the lecturers and existence of association between previous knowledge in mathematics and performance in statistics. It is therefore recommended that students' interest in mathematics at secondary education level should be worked upon to enhance their interest in the learning of statistics at the tertiary education level.

INTRODUCTION

The growing attitudinal apathy among undergraduate management students in Nigeria technical institution towards quantitative courses is a concern for those in the education sector. This consequently affects their performance in Statistics and other mathematical related courses. Statistics has become a compulsory course of study among most undergraduates in tertiary institution across different field of study, due to its relevance in general knowledge application and research pursuit. Performance and attitude of students in business management programmes have brought about concern of the statisticians on how to entice the interest and improve the performance of the students in the study of statistics.

Numerous research findings have itemized a number of factors as being directly or indirectly accountable for the phenomenon. Kang'ahi et al. (2012) found that teaching styles used by lecturers in delivering their lessons have a positive influence on learners' academic achievements. Adunola (2011) and Kang'ahi et al. (2012) both identified teaching method used by teacher as being responsible for either poor teaching style or failure often recorded as outcome by the students. Other studies have argued that background mathematical knowledge can be a formidable driving force to determine any management student performance in quantitative courses. This view was substantiated by the submission of Choudhury and Das (2012) which found that students with good mathematical aptitude achieve higher grades in quantitative courses and have proficiency in performing numerical operations with speed and accuracy.

Ganyaupfu (2013) identified a combination of factors, including lecturer competence, teaching methods and quality of learning materials as being significantly influential of students' achievements in quantitative subjects.

Monks and Schmidt (2010) found that both class size and the total number of students that a faculty member is responsible for teaching have a negative impact on the self-reported outcomes of amount learned, instructor rating, course rating, and expected course grade. The analysis further reveals that class size and student load primarily influence student outcomes by altering certain aspects of courses that students find beneficial and helpful in learning. Numerous studies have analysed the associative nature of factors behind the academic performance of students in Statistics/Mathematics course. Understanding the relationship between the factors and the effective learning of Statistics has therefore become a great concern. Following this, the aim of this work focused on determining the factors directly influencing management students performance in statistics and the consequential poor performance. Herminio (2005) Even though the students' perceived that the smaller class size is a better academic environment than larger class size for a satisfactory academic performance in the first accounting course, the findings about class size and the first accounting course grade turned out to be the opposite.

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STUDY PROBLEM STATEMENT

Statisticians globally have been making efforts to see that the introductory statistics course is embraced by all professional fields of study. In this attempt, there have been increasing concerns directed at students from different educational levels and fields to ensure their understanding of the course. Findings have shown that business management students exhibit apathy towards learning of statistics being a numeric course and consequently perform poorly. This work focuses on addressing the problem likely responsible for the students negative behavior and poor academic performance in the study of statistics.

LOG-LINEAR MODEL APPLICATION

Use of Chi-Square procedure has been the most commonly employed method of analysing quantitative research data of this nature. A more flexible tool for the analysis of complicated contingency table data is log-linear analysis. A log-linear model is best thought of as a model for the expected frequencies in a contingency table. But it is more than just an alternative form of the chi-square test. Log-linear analysis is based on the fact that the logarithm of a product is the sum of the individual logarithms of the individual terms in the product. In other words log ($p \times q$) = logp + logq. More formally, the logarithm of the cell frequencies is a linear function of the logarithms of the components. In log-linear analysis tables are formed that contain one-way, two-way, and higher order associations. The aim is to construct a model such that the cell frequencies in a contingency table are accounted for by the minimum number of terms.

METHOD AND RESULT

A simple random sampling method was adopted to administer the 23 item structured questionnaire used to obtain the data for the study. The questionnaires were administered to second year students of two business management departments (Accountancy and Business Administration). A total of one hundred and eighty-five students participated in the study (185), and IBM SPSS version 20 was used for the data processing and analyses.

The results (Table 1) show that the average age range of the student in the study is between 21-25 years while the male/female gender ratio is 60 to 40 percent. The study revealed that the students' interest in statistics is associated with gender, 66.5% of the students expressed positive interest in statistics, and 94.6% are of the view that statistical knowledge is very relevant in other courses they are offering in the semester. On factors militating against learning of statistics, 87.6% of the students identified teaching method of the lecturers as the most prevailing problem besides the need to struggle with formulae contained in statistics as a subject. The students also expressed non accessibility to the lecturers outside lecture period as a challenge confronting their getting solution to problems from private study. Also found from the study is the desire to offer statistics as an elective course even when not compulsory for a program.

On Acceptability and Relevance of the course (Statistics): A good percentage of the respondents 80.5% (149) expressed objection to having the course cancelled from their list of courses to be offered, while 94.6% (175) admitted to the relevance of Statistics in any other course being offered.

Log linear analyses results showed that the student interest in statistics as expressed is associated with students department and performance in the course, also discovered is that the students performance in statistics is associated with previous interest in mathematics, as well as year one grade in mathematics and relevance of statistical knowledge as expressed. This is evident in the two-way interaction display between student interest in mathematics and Performance in Statistics course. Hence, it can be concluded upon in this study that interest of student in mathematics and their performance in statistic course is dependent on their interest in statistics or mathematics.

Table 1: Frequency Distribution of the Respondents Demographic Composition

SN	Characteristics	Frequency	Percentage
1	Gender: Male	111	60.0
	Female	74	40.0
2	Age: Less than 20yrs	65	35.1
	21 – 25	111	60.0
	26 – 30	9	4.9
3	Marital Status: Single	177	95.7
	Married	8	4.3
4	Performance in Previous Statistics Examination :		
	A Class	23	12.4
	B Class	38	20.5
	C Class	56	30.3
	D Class	55	29.7
	Fail Class	7	3.9
5	General Academic Performance (CGPA):		
	A Class	15	8.1
	B Class	74	40.0
	C Class	54	29.2
	D Class	34	18.4
	Fail	7	3.8
6	Would You Take Statistics course at free will? Yes	108	58.4%
	No	77	41.6%
7	Would you prefer statistics cancelled from your course list?		
	Yes	36	19.5%
	No	149	80.5%
8	Do you find statistics relevant in any other course being taking?		
	Yes	175	94.6%
	No	10	5.4%

CONCLUSION

The findings from the study have successfully identified some problems mitigating against learning of statistics among business management students of a technological institution, which are consistent with some other research findings.

The study tested a number of hypotheses including association between student performance in statistics and factors like gender, student department, teaching method, student poor mathematics background and student interest in statistics. These findings are strongly believed to have solutions that could help improve students understanding of statistics. The prominent factors identified are teaching method, student poor mathematics background, lecturers' inaccessibility outside classroom for further assistant and nature of the course (with the formulae). Some of these problems have been corroborated in some other studies like Zachariah et al. (2012) which

identified both teachers and students retrogressive attitude as being a factor responsible for the problem. Also, Elvis (2013) result identified with the study that lecturer competence, teaching methods and quality of learning materials are the primary factors that significantly influence students' achievements in quantitative subjects.

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