

Correlate of Grade Point Average (GPA) In Mathematics Among Undergraduate Students in Ekiti State

Thomas Olabode Abe (Ph.D)

Counseling Psychology Department,

College of Education,

Bamidele Olumilua University of Education Science and Technology Ikere

doi: <https://doi.org/10.37745/ijqqr.13/vol12n23843>

Published May 24, 2023

Citation: Abe T.O. (2024) Correlate of Grade Point Average (GPA) In Mathematics Among Undergraduate Students in Ekiti State, *International Journal of Quantitative and Qualitative Research Methods*, Vol.12, No.2, pp.38-43

ABSTRACT: *The study investigated the correlate of grade point average (GPA) in mathematics among undergraduate students in Ekiti State. The study employed ex-post facto, research design of survey type. The sample for the study was made up of one hundred and fifty (150) students which were randomly selected from different levels through stratified random sampling techniques in three (3) tertiary institutions in the state. A self-developed Performa was used as an instrument to collect data for the study. Three (3) hypotheses were formulated for the study and tested using Pearson product moment correlation coefficient was used to analysis at 0.05 level of significance. The results showed that there was low positive relationship among GPA 1, GPA 2 and GPA 3 of the performance of students in mathematics; there was low positive relationship between student's performance in the first three sessions GPA 1 GPA2 (GPA 1, GPA 2, GPA 3) and the final year performance (GPA4) of students in mathematics. Also, there was no significant composite effects of GPA 1, GPA 2, and GPA 3 on GPA 4 in mathematics there was no significant relative contributions of GPA 1, GPA 2 and GPA 3 on GPA 4 in mathematics and lastly, GPA 1, GPA 2 and GPA 3 will not significantly predict the achievement of students in GPA 4 in mathematics. The study recommended that assessment used to measure mathematics achievement at the national level as well as in classroom.*

KEYWORDS: correlate, grade, average, undergraduate, universities

INTRODUCTION

From many years back, students have been facing the problem of poor performance in the sciences particularly mathematics. What has also become a main concern is the negative attitude of students towards mathematics. The knowledge of mathematics is universally accepted, as indispensable for the learning of science and technology related disciplines which every modern society strives to advance. The broad aim of secondary education within the

Publication of the European Centre for Research Training and Development -UK

overall, national objectives are, the preparation for higher education (FRN, 2004). Specifically it is to equip students to live effectively in our modern age of science and technology. According to Effardi (2010), there is decline in mathematics achievement in schools because students consider mathematics as a difficult and boring subject.

Abe (2003 & 2012) argued that, the term academic achievement is the level of performance exhibited by an individual, that is, the extent to which one is able to accomplish a task, profession, training or leaning. Okereke (2002) observed that, despite the place of mathematics in the development of nation, students and pupil's academic the subject to be very difficult and thus dreaded. There is no doubt that students believe that mathematics is abstract and difficult to understand. Like Abe (2003) reported that, SSCE has a negative strength on student's performance in mathematics at polytechnic level. For many years, schools have assessed student achievement either as an average of grades or scores received by a student as a level related to reaching pre-defined learning goals. However, in order to measure students' academic achievement, researchers evaluated the test scores obtained from nationwide exams, cumulative grade point average and average passing scores in certain courses such as mathematics, social studies, reading, statistics or grading and retention as an indicator of academic achievement. Academic achievement in the literature is often used interchangeably with academic performance and academic achievement is often measured by the cumulative academic grade point average of individuals or its well-known name GPA.

Poor academic performance according to Aremu and Sokan (2012) is one that is adjudged by the examinee/testee as falling below an expected standard. Over the past decades, educational planners, policy makers and administrators all over the world have become increasingly concerned about the quality of education provided by the university system. Oguntuase (2010) observed that students who scored 300 and above were not teachable because they could not defend their scores but those who scored between 180 and 230 were in most cases those that wrote qualifying examination themselves and it had a consequential effects on the academic performance. It is on this premise that this study sought to investigate the correlate of GPA in mathematics among undergraduate students in Ekiti state.

Older students are also expected to adopt better to University situations (Clifton, et al., 2008) but mixed findings are reported with some studies showing that older students achieve higher GPAs. Previous Reviews have considered predictors of undergraduate GPA drawing upon subsets of the literature we have considered. The most comprehensive by Robbins et al (2004) reviewed a range of motivational, skill and contextual factors. Resolutions Communiques and workshops on science, mathematics and technology sponsored in the past decades by government and professional bodies and the general aims of mathematics education as contained in the national policy on education (FRN 2004) have confirmed to point to the fact that mathematics learning requires greater attention.

Okereke (2000) observed that, despite the place of mathematics in the development of nation, students and pupils acclaim the subject to be very difficult and this dreaded. Hence, the need

Publication of the European Centre for Research Training and Development -UK
for this present study which focused attention on correlate of grade point average (GPA) in mathematics among universities undergraduate students.

The problem this study investigated is the correlate of grade point average (GPA) in mathematics among university undergraduate students in Ekiti state. Predicting performance depends on being able to assess it university undergraduate students performance is usually expressed in terms of grade point average (GPA), that is the mean of marks added over weighted courses contributing to assessment of the final degree. GPA is the key criterion for postgraduate selection and graduate employment and is predictive of occupational status. Hence, the study therefore premised to investigated the correlate of GPA in mathematics among undergraduate students in Ekiti state.

The purpose of this study was to investigate the correlate of grade point average (GPA) in mathematics among undergraduate students in Ekiti State. Specifically, the objectives of the study were to

1. examine the strength of relationship among grade point average (GPA) in mathematics;
2. determine the significant relationship between students' performance in mathematics and
3. examine the significant composite effects of grade point average (GPA) in mathematics

Research Hypotheses

Ho 1: There is no significant relationship among GPA 1, GPA 2 and GPA 3 of the performance of students in mathematics.

Ho 2: There is no significant relationship between students' performance in the first three sessions (GPA 1, GPA 2 and GPA 3) and the final year performance (GPA 4) of students in mathematics.

Ho 3: There is no significant composite effects of GPA 1, GPA 2 and GPA 3 on GPA 4 in mathematics.

METHODOLOGY

The research design employed was ex-post facto research design of survey type. The main population for this study included Universities in Ekiti State. There were 3 Universities in Ekiti State as at the time of the study. The targeted population consisted of students that were admitted into Faculty of Education, Department of Mathematics Education from 2016/2017 academic session till date. The students were randomly selected from different levels through stratified random sampling technique in the three (3) Universities in the state. The sample for the study consisted of 150 students in the university in the state.

The following research instruments were used for data collection. A self developed proforma was used as an instrument to collect data for the study. The proforma was in two parts, the first part was the academic records/particulars of the students, while the second part was the input variable of the students GPA from year one 1st semester to year four 2nd semester. The validity of the instrument were assumed since all the questions, marking schemes and the results were

Publication of the European Centre for Research Training and Development -UK moderated respectively by the department and external moderator were used in each of the selected Universities.

Data collected were analysis using Pearson product moment correlation coefficient for hypotheses one and two while multiple regression was used for hypotheses three at 0.05 level of significance using SPSS version 26.

RESULTS

Table 1: Mean and Standard deviation of Students GPAs

	Mean	Standard Deviation	N
GPA 4	2.77	0.45	150
GPA 1	2.54	0.50	150
GPA 2	2.58	0.52	150
GPA 3	2.70	0.84	150

The above table shows the mean and standard deviation of students performance in mathematics for the first three consecutive sessions GPA 1, GPA 2 and GPA 3 and the performance in the final year (GPA 4)

Hypothesis 1: There is no significant relationship among GPA 1, GPA 2 and GPA 3 of the performance of students in mathematics.

Table 2: Correlation Matrix for GPA 1, GPA 2 and GPA 3 in mathematics

	GPA 1	GPA 2	GPA 3
GPA 1	1.000	0.109 150	0.038 150
GPA 2		1.000	0.260 ** 150
GPA 3			1.000

P < 0.05 level of significance

The result in table 2 shows the relationship between GPA1, GPA 2 and GPA 3 in mathematics. The result reveals that there was a low positive relationship between GPA 1 and GPA 2 which was not significant relationship between GPA 1 and GPA 3 which was not significant since P=0.641. A low positive relationship existed between GPA 2 and GPA 3 which was significant at P < 0.05.

Hypothesis 2: There is no significant relationship between students performance in the first three sessions (GPA 1, GPA2, and GPA 3) and the final year performance (GPA4) of students in mathematics.

Table 3: Correlation Matrix for GPA 1, GPA 2, GPA 3 and GPA 4.

	GPA 4	GPA 1	GPA 2	GPA 3
GPA 4	1.000	-0.072 150	0.028 150	0.178* 150
GPA 1		1.000	0.109 150	0.038 150
GPA 2			1.000	0.260* 150
GPA 3				1.000

P < 0.05 level of significance

The result in table 3 above shows the relationship between GPA 1, GPA2, GPA3 and GPA4 in mathematics. The table reveals that there was a very low negative relationship between GPA 1 and GPA 4 in mathematics which is not significant at P < 0.05. There was a very low positive relationship between GPA 2 and GPA 4 in mathematics which was not significant at P < 0.05. and a low positive relationship between GPA 3 and GPA 4 in mathematics which was significant at P < 0.05.

Hypothesis 3: There was no significant composite effects of GPA 1, GPA2, GPA3 and GPA4 in mathematics.

Table 4: summary of regression analysis of GPA 1, GPA 2 and GPA 3 on students performance in final year (GPA 4).

R	R Square	Adjusted R Square	Std error of the Estimate
0.195	0.038	0.018	0.44508

The above table shows that three variable (GPA 1, GPA 2 and GPA 3) faintly correlate (low) positively with performance in the final year mathematics (GPA 4) (R = 0.195).

DISCUSSION OF FINDINGS

From the test of hypothesis in tables 2 show that there was a low positive relationship between GPA 1 and GPA 2. There was a very low positive relationship between GPA 1 and GPA 3 and a low positive relationship between GPA 2 and GPA 3. Hence, table 3 reveal that there was a very low negative relationship GPA 1 and GPA 4 in mathematics. There was a very low positive relationship between GPA 2 and GPA 4 in mathematics and a low positive relationship between GPA 3 and GPA 4 in mathematics which is significant.

CONCLUSION

The study has been able to established the nature of the relationship that existed between the independent variables (GPA 1, GPA 2 and GPA 3) and the dependent variables (GPA 4) in Mathematics among University Undergraduates in Ekiti State.

Recommendation

The mathematics students improve in their efforts in learning and understanding the basic concepts in mathematics at first and second years of their study which were mostly pre-requisite courses for those to be taken at 300 and 400 levels of their study.

REFERENCES

- Abe, T.O (2003). Previous Knowledge and Semester Score as Correlates of Academic Achievement in Mathematics among Engineering Students. *Journal of Educational Foundation and Management* 3(1), 134-139.
- Abe, T.O (2012). Sex Differential in Predicting Academic Achievement from Cognitive Entry Characteristics and Semester Grades among the College of Mathematics Students.
- Aremu, A.O & Sokan, B.O (2012). A Multi Casual Evaluation of Academic Performance of Nigeria learners: Issues and Implications for National Development. *Journal of Academic Research and Reflection*. 3(7), 24-28.
- Clifton, R.A, Perry, R.P, Roberts, I.W,& Peter, T. (2008): Gender, Psychosocial Disposition and the Academic Achievement of College Students. *Research in Higher Education* 49(8,684-703.doi:10.1007/51162.008-9104-9.
- Effardi, Z (2003). The Effects of Cooperative Learning on Students Mathematics Achievement and Attitude Towards Mathematics *Journal of Social Sciences* 6(2), 272-275.
- Federal Republic of Nigeria (2004): National Policy on Education, Federal Ministry of Science and Technology, Abuja.
- Okereke, S.A (2002). Impact of Familiar Quantities on Pupils Achievement in Mathematics. *STAN Proceeding of the Annual Conferences and Inaugural Conference of CASTME Africa*, 358-363.
- Robblins, S.B. Lawal, K, Le, H, Davis, D, Largley, R, & Carlstrom, A. (2004). Do Psychosocial and study skill factors predict College outcome: A Meta-Analysis *Physiological Bulletin*, 130(2), 261-288. Doi:10.37/0033-2109.130.2.261.