



TREND ANALYSIS OF STUDENTS PERFORMANCE IN ECONOMETRICS 2018-2022 IN NASARAWA STATE UNIVERSITY KEFFI, NIGERIA

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ABSTRACT

The study investigated trend analysis of students' performance in Econometrics 2018-2022 in Nasarawa State University Keffi, Nigeria. Two research questions and its corresponding hypotheses guided the study. The study adopted Ex-post factor research design and 1,750 Economics students (800 are B.Sc (ED) and 950 are B.Sc) were used as a sample size for the study through purposive sampling techniques. Examination Scores Records of Students Performance in Econometrics (ECO327, 414) (ESRSPE) 2018-2022 were used as an instrument. The ESRSPE was valid and reliable. Time series, mean was used to answer the research questions while ANCOVA and Sample t-test was used to test the hypotheses at the 0.05 level of significance. Findings revealed that there is a significant difference in the percentage trend of students that obtained E-D grade, C-B grade and A grade in Nasarawa State University Keffi, Nigeria 2018-2022, which indicated about 75% of students passed Econometrics with E-D, 20% C-B grade, while 5% passed with A grade and there is a significant difference in the grade scores of B.Sc (ED) and B.Sc students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022 was stochastic with random walk. Based on the findings, it was recommended that Econometrics extra lesson should be created for students to put more effort, Econometrics should be encouraging many strategies lecturing and teachers should be encouraged to allocate more time in learning of Econometrics to enable full coverage of the course syllabus.

Keywords: Trend Analysis, Students Performance, Econometrics, Grade, University

INTRODUCTION

Trend analysis is the **widespread practice of collecting information and attempting to spot a pattern over time series, hence, the** study investigated trend analysis of Students performance in Econometrics. Literally, econometrics means measurement

(the meaning of the Greek word metrics) in economic. However, econometrics includes all those statistical and mathematical techniques that are utilized in the analysis of economic data. The main aim of using those tools is to prove or disprove particular economic propositions and models (Hall & Asterion, 2011). Econometrics, the result of a certain outlook on the role of economics consists of the application of mathematical statistics to economic data to tend empirical support to the models constructed by mathematical economics and to obtain numerical results. Gujarat as cited in Galle and Kukwi (2020) defined Econometrics as the quantitative analysis of actual economic phenomena based on the concurrent development of theory and observation, related by appropriate methods of inferences.

According to Wooldridge (2012) that Econometrics is based upon the development of statistical methods for estimating economic relationships, testing economic theories, and evaluating, implementing government and business policy. Based on the importance of Econometrics, National University Commission (NUC) implementing the study Econometrics into Economics curriculum for under graduate students to study and pass to a tolerant level. This course is devised into two sections, that is introduction to Econometrics (ECO 327) and advanced Econometrics (ECO 414). However, the trend of students' performance in ECO 327 and ECO 414 is alarming in Nasarawa State University Keffi, as most of the students, about 70 to 85% passes with the weak grade such as E and D while the remaining 15%, 10% passes with C grade and 5% passes with B-A grade (Economics Department Exams and records, 2022). Also, students' demographic variables such as age, sex, play some role in determining university performance. Exogenous factors such as the institutional environment, intellectual leadership, a proper learning infrastructure and environment at the university, socio-economic characteristics, and psychological attitudes also play an important role in predicting students' performance. The contention is, these determinants of student success are not straightforward measures of student quality as they are the sum of complex and multifaceted factors, making the prediction of student success a far more complex and multifaceted process demanding further investigation (Gerry & Dev, 2014).

According to Galle and Kukwi (2020) this could be due to nature of students' study habits or lecturers lecturing methods or otherwise extraneous variables that may affect the students to perform very well in the Econometrics as course. Others variables that could affect students' performance occurred as a results of error in the test taker, error in the test administration and error in the test development (Anikwezi,2016). Academic performance is the **extent to which a student, teacher or institution has attained their short or long-term educational goals**. Completion of educational benchmarks such as secondary school diplomas and bachelor's degrees represent academic performance. The academic performance of tertiary institutions is weighted on five-points scale graded as thus: 40-44 (E=1 point), 45-49 (D=2 points), 50-59 (C=3 points) 60-69 (B=4 points) and 70-100 (A=5 points) respectively (Educational Research,

Measurement and Evaluation Unit, Students Manual, Nasarawa State University Keffi, 2020). The five-points scale are measured in interval and the parameters/ predictor to students Cumulative Grade Point Average (CGPA) or Grade Point Average (GPA). According to Gerry and Dev (2014) South Africa needs higher education graduates with the capability to adapt to and function in a knowledge-driven and knowledge-dependent economy and society. High dropout and failure rates, as well as the slow progression of students, have revealed themselves as complex, persistent challenges and seemingly intractable crises at South African universities. To identify determinants of management studies student success, this study fits the student records data in two different educational production functions applying two econometric approaches, namely, Ordinary Least Squares and Logistic Regression models.

Several studies such as Galle, Sabo and Akawu (2023) findings revealed that the trend of students' performance in SSCE/NECO Economics 2013- 2022 was stochastic with random walk and there is a significant difference in the percentages of males and females' students' performance that obtained credit (A_1-C_6), pass (D_7 & E_8) and fail (F_9) in NECO Economics 2013-2022. Abdulmajeed (2020) findings revealed that there was a significant different in the trend of B.Sc (ED) and B.Sc students' performance in Econometrics 2011-2017 by grade, and most of the B.Sc (ED) and B.Sc students obtained E to D grade performance was stochastic with random walk. Further results indicated that 75% of students passed Econometrics with D-C while 25% passed with A-B grade. Galle and Kukwi (2020) finding reveals that formative assessment reduced anxiety level and significantly increased econometrics academic achievement of the University students. Bell & Bell (2001) revealed statistically significant negative relationship between test anxiety scores and undergraduate nursing students' academic level ($r = -0.144$, $p = 0.01$) which explain that undergraduate nursing students in higher academic level experience less test anxiety. Pearson's R revealed a negative none statistically significant relationship ($r = -0.090$, $p = 0.157$) between test anxiety scores and undergraduate nursing students Grade Point Average. Onanuga, and Saka results showed that students performed well in the selected STEM subjects in the years under review. Furthermore, the study revealed that while performance in other subjects will continue to improve steadily, performance in mathematics will dwindle between 2016 and 2018 and then will begin to steadily improve from 2019 to 2020.

Statement of the Problem

Over time series, the fluctuating students' performance in Econometrics has become a thing of concern both to Government, parent and teachers because these students are to be the future leaders of the nation and without the application of Economics in various areas of learning the nation will be left behind in technological advancement The world is advancing every day and people with innovative and creative mind are needed in various field of study. Econometrics is a truthful way of

finding solution to problems, these problems abound in our everyday life activities. The knowledge of Econometrics 'promotes the habit of accuracy, logical reasoning, systematic and orderly arrangement of fact in the individual learner. It also encourages the habit of self-reliance and assist learners to think and solve their problems themselves.

Research Questions

The following research questions will guide the study:

1. What are the percentage trend of Econometrics students' that obtained E-D grade, C-B grade and A grade in 2018-2022 Nasarawa State University Keffi, Nigeria?
2. What is the difference in the grade scores of B.Sc (ED) and B.Sc students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022?

Statement of Hypotheses

Ho1: There is no significant different is the percentage trend of students that obtained E-D grade, C-B grade and A grade in Nasarawa State University Keffi, Nigeria 2018-2022

Ho2: There is no significant difference in the grade scores of B.Sc (ED) and B.Sc students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022

MATERIAL AND METHOD

Design

This study adopted Ex-post factor research design for the study. This is because is a type of research design in which the investigation start after the fact has already occurred without interference from the researcher, there is no manipulation of the independent variable with intention of seeing the result on the dependent variable (Anikweze, 2015).

Population, Sample and Sampling Technique

The total population of the study comprises of all 5, 700 econometrics students from Nasarawa State University 2018-2022 academic year and 1,750 Economics students (800 are B.Sc (ED) and 950 are B.Sc) where used as a sample size for the study through purposive sampling techniques.

Instrumentations

Examination Scores Records of Students Performance in Econometrics (ECO327, 414) (ESRSPE) 2018-2022 were used as an instrument. The ESRSPE was valid and reliable. Time series, mean was used to answered the research questions while One-Way-ANOVA was used to test the hypotheses at the 0.05 level of significance.

RESULTS

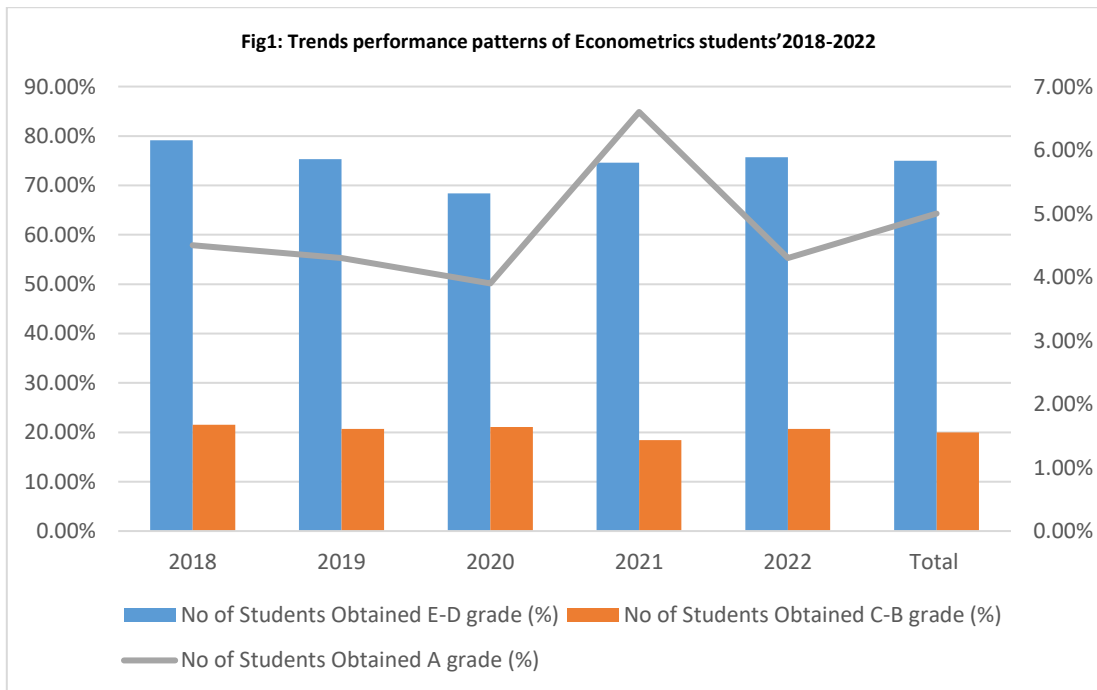
Research Questions/Null Hypotheses

RQ 1: What are the percentage trend of Econometrics students' that obtained E-D grade, C-B grade and A grade in 2018-2022 Nasarawa State University Keffi, Nigeria?

Table 1: Shows Percentage of Econometrics Students that Obtained E-D grade, C-B grade and A Grade in 2018-2022 Nasarawa State University Keffi, Nigeria

Year's	NO of Students Sat	No of Students Obtained E-D grade (%)	No of Students Obtained C-B grade (%)	No of Students Obtained A grade (%)
2018	352	79.1%	21.5%	4.5%
2019	348	75.3%	20.7%	4.3%
2020	351	68.4%	21.1%	3.9%
2021	349	74.6%	18.4%	6.6%
2022	350	75.7%	20.7%	4.3%
Total	1,750	75%	20%	5%

Table 1 shows percentage trend of Econometrics students' that obtained E-D grade 75%, C-B grade 20% and A grade 5% in Nasarawa State University Keffi, Nigeria 2018-2022 academic session. The results showed normally distribution with weaker students' grade. The time series plot represented in Figure 1 showed non-stationary trends in performance patterns of Econometrics students'2018-2022 academic session below. Drawing inferences from Ho1, was tested using ANCOVA and the result are presented in Table 2.



Ho1: There is no significant different is the percentage trend of students that obtained E-D grade, C-B grade and A grade in Nasarawa State University Keffi, Nigeria 2018-2022

Table 2: ANCOVA Tests of Between-Subjects Effects on percentage trend of students that obtained E-D grade, C-B grade and A grade in Nasarawa State University Keffi, Nigeria

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	E-D Grade Students	.000 ^a	0	.	.	.
	C-B Grade Students	.000 ^b	0	.	.	.
	A-Grade Student	.000 ^a	0	.	.	.
Intercept	E-D Grade Students	27528.200	1	27528.200	1753.389	.000
	C-B Grade Students	2000.000	1	2000.000	1333.333	.000
	A-Grade Student	111.392	1	111.392	96.694	.001
Error	E-D Grade Students	62.800	4	15.700		
	C-B Grade Students	6.000	4	1.500		
	A-Grade Student	4.608	4	1.152		
Total	E-D Grade Students	27591.000	5			
	C-B Grade Students	2006.000	5			
	A-Grade Student	116.000	5			
Corrected Total	E-D Grade Students	62.800	4			
	C-B Grade Students	6.000	4			
	A-Grade Student	4.608	4			
a. R Squared = .000 (Adjusted R Squared = .000)						
b. R Squared = .000 (Adjusted R Squared = .000)						

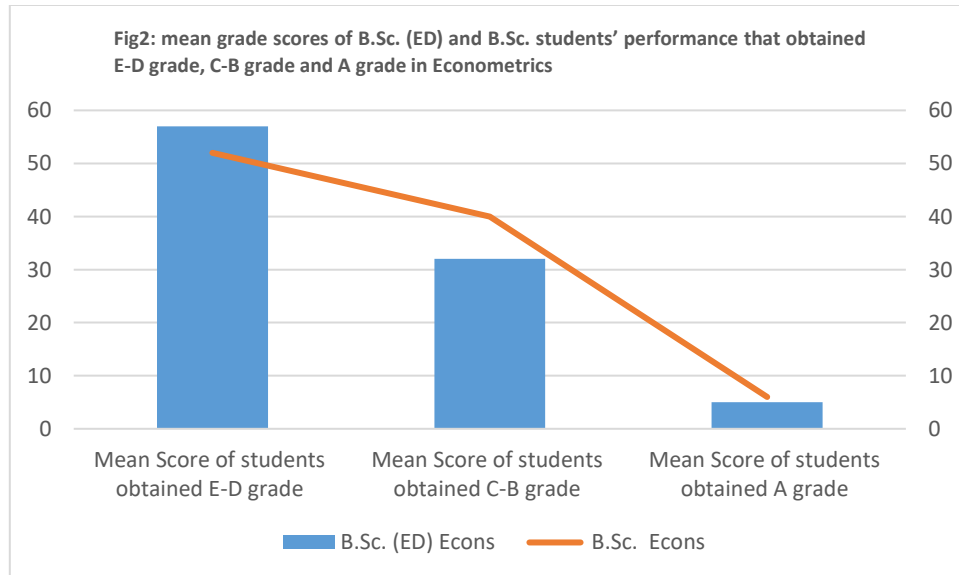
Table 2 shows ANCOVA Tests of Between-Subjects Effects on percentage trend of students that obtained E-D grade, C-B grade and A grade in Nasarawa State University Keffi, Nigeria. The results showed $df=1,4$, F-value 96.694, $Sig(P) .001$ at 0.05 level. The result indicated that 0.05 level is greater than $Sig(P)$, that is $(0.05 > p)$. The H_01 was not retained, hence, there is a significant different is the percentage trend of students that obtained E-D grade, C-B grade and A grade in Nasarawa State University Keffi, Nigeria 2018-2022.

RQ2: What is the difference in the mean grade scores of B.Sc. (ED) and B.Sc. students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022?

Table 3: Summary of the Mean Grade Scores of B.Sc. (ED) and B.Sc. Students' Performance that Obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022

Category of Degree	Mean Score of students obtained E-D grade	Mean Score of students obtained C-B grade	Mean Score of students obtained A grade
B.Sc. (ED) Econs	57.17	32.16	5.17
B.Sc. Econs	52.12	40.13	6.15

Table 3 show summary of mean grade scores of B.Sc. (ED) and B.Sc. students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022. The mean grade for B.Sc. (ED) that obtained E-D grade is 57.17, C-B grade 32.16 and A grade 5.17 while B.Sc. students that obtained E-D grade is 52.12, C-B grade 40.13 and A grade 6.15 respectively. This is shown in bar chart Figure 2. This further showed that there slightly difference in the mean of B.Sc. (ED) and B.Sc. students' performance in Econometrics 2018-2022. Drawing inference from Ho2, was tested using paired samples correlations/t-test and the result are presented in Table 4 panel a & b.



Ho2: There is no significant difference in the grade scores of B.Sc (ED) and B.Sc students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022

Table 4_{panel-a}: Paired Samples Correlations Difference in the grade scores of B.Sc (ED) and B.Sc students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022

	N	Correlation	Sig.
Pair 1 B.Sc (ED) and B.Sc Economics	2443	.571	.000

Table 4_{panel-A} shows paired samples correlations for significant different in the grade scores of B.Sc (ED) and B.Sc students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022, yielded 0.571 correlation, Sig(P) .000 at 0.05 level of significant. Further result in Table 4_{panel-B} shows t-test of significant difference, df=1,749, t=15.441, Sig(P) .002 at 0.05 level of significant. Ho2 was not retained, hence, there is a significant different is the percentage trend of males and females Economics students' performance in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022.

Table 4_{panel-B} : Paired Samples Test of Significant Difference of Male and Female Students Performance in NECO/SSCE Economics 2013-2022

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Male Students - Female Students	-18.57143	4.9499	.10015	-18.76781	-18.37505	15.441	1749	.002

Discussion of Findings

Findings from Table 1 shows percentage trend of Econometrics students' that obtained E-D grade 75%, C-B grade 20% and A grade 5% in Nasarawa State University Keffi, Nigeria 2018-2022 academic session. The results showed normally distribution with weaker students' grade. The time series plot represented in Figure 1 showed non-stationary trends in performance patterns of Econometrics students' 2018-2022 academic session below. Drawing inferences from Ho1 in Table 2 revealed there is a significant different is the percentage trend of students that obtained E-D grade, C-B grade and A grade in Nasarawa State University Keffi, Nigeria 2018-2022. This finding is in agreement with of Abdulmajeed (2020) findings revealed that there was a significant different in the trend of B.Sc (ED) and B.Sc students' performance in Econometrics 2011-2017 by grade, and most of the B.Sc (ED) and B.Sc students obtained E to D grade performance was stochastic with random walk. Further results indicated that 75% of students passed Econometrics with D-C while 25% passed with A-B grade. In the same

way Galle, Sabo and Akawu (2023) findings revealed that the trend of students' performance in SSCE/NECO Economics 2013- 2022 was stochastic with random walk and there is a significant difference in the percentages of males and females' students' performance that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO Economics 2013-2022.

Finding from Table 3 show summary of mean grade scores of B.Sc. (ED) and B.Sc. students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022. The mean grade for B.Sc. (ED) that obtained E-D grade is 57.17, C-B grade 32.16 and A grade 5.17 while B.Sc. students that obtained E-D grade is 52.12, C-B grade 40.13 and A grade 6.15 respectively. This is shown in bar chart Figure 2. This further showed that there slightly difference in the mean of B.Sc. (ED) and B.Sc. students' performance in Econometrics 2018-2022. Drawing inference from Ho₂ in Table 4 panel a & b indicated that there is a significant difference in the grade scores of B.Sc. (ED) and B.Sc. students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022. This finding corroborated with that of Galle and Kukwi (2020) finding reveals that formative assessment reduced anxiety level and significantly increased econometrics academic achievement of the University students. Bell & Bell (2001) revealed statistically significant negative relationship between test anxiety scores and undergraduate nursing students' academic level ($r = -0.144$, $p = 0.01$) which explain that undergraduate nursing students in higher academic level experience less test anxiety. Pearson's R revealed a negative none statistically significant relationship ($r = -0.090$, $p = 0.157$) between test anxiety scores and undergraduate nursing students Grade Point Average. Onanuga, and Saka results showed that students performed well in the selected STEM subjects in the years under review. Furthermore, the study revealed that while performance in other subjects will continue to improve steadily, performance in mathematics will dwindle between 2016 and 2018 and then will begin to steadily improve from 2019 to 2020.

Conclusion

The study concluded that, the trend of students' performance that obtained E-D grade, C-B grade and A grade in n Econometrics Nasarawa State University Keffi, Nigeria 2018-2022 was stochastic with steadily progressive and normally distributed, there is significant different is the percentage trend of students that obtained E-D grade, C-B grade and A grade in n Econometrics Nasarawa State University Keffi, Nigeria 2018-2022. It was further concluded that, there is a significant difference in the grade scores of B.Sc (ED) and B.Sc students' performance that obtained E-D grade, C-B grade and A grade in Econometrics 2018-2022.

Recommendations

Based on the findings of this study, the following are recommended:

1. National University Commission should employ more qualified Econometrics lecturers
2. Lecturers should be encouraged to allocate more time in teaching learning of Econometrics in University enable full coverage of teaching syllabus.

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