



ABSTRACT

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 Economics students' performance in NECO 2013-2022 in North-East Geopolitical Zone of Nigeria. Two research questions and its corresponding hypotheses guided the study. The study adopted Ex-post factor research design. The population of study consist of all 18,882 students in the public senior

TREND ANALYSIS OF ECONOMICS STUDENTS' PERFORMANCE IN NECO 2015-2022 IN NORTH-EAST GEOPOLITICAL ZONE OF NIGERIA

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Introduction

The significant of trend analysis of Economics Students' performance in Senior Secondary Certificate Examination (SSCE) over time series cannot be over emphasis, especially in National Examination Council (NECO). **NECO is a Large Scale Assessment Body (LSAB) aimed at measuring students' cognitive performance in Nigeria using standardizes measuring scale (Galle, Ofomata & Ezeofor, 2022).** It is an examination body in Nigeria that conducts the Senior Secondary Certificate Examination and the General Certificate in Education. Education at secondary school level is supposed to be the bedrock and the foundation towards higher knowledge in tertiary institutions. It is an investment, as well as an instrument that can be used to achieve a more rapid economic, social, political, technological, scientific and cultural development in a country (Henry, 2018).

Globally, including Nigeria, there is a growing concern among educators and an unflinching debate on the factors that predict students' performance, especially in external examinations (Ramatlala & Nenty, 2014). Education is the bed rock of a nation's progress and sustenance. It is universally recognized as one of the most fundamental building blocks for human development and poverty reduction. It is the key to attaining the millennium development goals. Sequel to this, the critical



secondary schools Examination (SSCE/NECO) 2013-2022, and 2,443 students were used as a sample size for the study using multistage sampling techniques. Examination Records of Economics Students Performance (ERESP) was used as an instrument for data generation. The ERESP was valid and reliable which yielded 0.86 reliability indexes. Time series, percentage was used to answer the research questions while Regression analysis was used to test the hypotheses at 0.05 level of significance. The 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. Based on the findings, it was recommended that educational policy makers should employ more qualified Economics teachers, teachers should be encouraged by the school principals toward teaching learning Economics and teachers should be encouraged to allocate more time to the teaching learning of Economics in school time-table to enable full coverage of teaching syllabus.

Keywords: trend analysis, Economics, students' performance, SSCE/NECO, North-East Geopolitical Zone.

issue for educators and stakeholders is therefore to understand the factors which predict their performance and develop strategies for optimizing these factors for students' overall success. As canvassed by scholars, such predictor will allow one to ascertain the extent to which performance on a test is related to later performance that the test is designed to predict and enhance the testing of a subject or group of subjects for certain construct in order to compare them with the results obtained at some point in future. This then allows the prediction of future behaviours beyond the immediate school environment (Kpolovie, 2010; Ramatlala & Nenty, 2014).

The certificate obtained from the NECO is used to obtain admission into higher institution if the student's performed better, because Economics is one of the subject that gives many students advantage in pursuance of feature career, and the trend of the students' performance in Economics would shade light toward growth and Development in North-East Geopolitical Zone of Nigeria and to the world in general. The awarding of Senior Secondary School Certificate is one of the most important events in Nigerian academic calendar because of its economic and social importance and the opportunities for higher education those who possess such certificate (Kpolovie, Olalube & Ekwebelem, 2011).



Economics is concerned with human behavior such as how people earn their income and make choices between alternatives to satisfy their wants. Since Economics is concerned with human behavior, it is a social science, and like in any science subject, the procedure adopted in Economics is analytical and systematic, the validity of its various theories can be tested. Economics is one of the elective subjects studied at the Senior Secondary School (SSS) level as stipulated in the National Policy on Education, (2014). Yusuf (2015), identified the relevant topics essential for the performance of the set objectives, the structuring of the content was also based on the spiral spread thus making it possible for a concept to be learnt in its basic form. Economics came into the secondary school curriculum in 1966 (Obemeata cited in Galle, 2021). The objectives of studying Economics according to Asadu (2011) are:

To enable students to acquire knowledge for the practical solution of the Economic problem of Nigerian societies, developing countries and the world at large, to prepare and encourage students to be cautious and effective in the management of scarce resources, to equip students with the basic principle of economics necessary for useful living, to increase students respect for the dignity of Labour and their appreciation to Economic, cultural and social values of the society (p-21-31).

The objectives discussed tend to suggest that the study of Economics is a form of learning in which knowledge, skills and habits of a group of people are transferred from one generation to the next through teaching, training or research. Learning is simply described as a change in behaviours as a result of experience (Maduewesi, 2019). The national office of each member countries administers the examination within its own territory. NECO grading system is as follows, A1 (Excellent), B2 (Very Good), B3 (Good), C4 (Credit), C5 (Credit), C6 (Credit), D7 (Pass), D8 (Pass, F9 (Fail). The choice of NECO/SSCE results was due to its credibility and acceptance by tertiary institutions for Higher learning (Sakiyo and Badau, 2015). The awarding of Senior Secondary School Certificate is one of the most important events in Nigerian academic calendar because of its economic and social importance and the opportunities for higher education those who possess such certificate (Kpolovie, Olalube & Ekwebelem, 2011).

However, the trend analysis is the method of collecting data and identifying a pattern or trend (upward or downward shift) in the data. For instance, Zalmon and wonu (2017), the trend of students performance in NECO/SSCE in 2010 out of 1,351,557 number of candidate that registered in Nigeria only 33.55% are able to obtained credit (A1-C6) 66.45% obtained (D7-F9). In 2011 the population of registered student is 1,540,259 and only 38% obtained credit (A1-C6), 61.05% got (D7-F9), 2012 also has a population o 1,675,224 registered candidate for the WASSCE in which in this case 49%of the population obtained credit (A1-C6) and 51% obtained (D7-F9). 2013 has 1,543,683 number candidate that registered and



31.30% credit mathematics (A1-C6) and 64% had (D7-F9), in 2014 1,692,435 sat the exams 31% had credit in mathematic 68% has pass and fail (D7-F9). 2015-2016 has population of 1593,442 and only 34.18% had (A1-C6) while 65% got (D7-F9). Ganah, (2018) trend revealed performance of males and females student crediting Economics has been unstable from in 2011-2012 there is a little rise of 38.93% and 49% but in 2013 the performance of student drop to 36% and 31.30% in 2014 while in 2015 and 2016 is 34.18% and 38% respectively with respect to gender.

Gender is one of the factor to be consider, it is defined as the behavioral, cultural, or psychological traits typically associated with one sex. Galle, Atiku and Gado, (2019) stated that gender is a socially constructed term depicting the system of relations between males and females, and designates behaviors, attitudes, roles, status and other processes that govern the relationship among sexes in a given educational, socio-economic and political context. Based on these alarming results the research deemed it fit to analyse the trend of student's performance in Economics North-East Geopolitical Zone of Nigeria which comprises six States.

Statement of the Problem

Over time series, the fluctuating students' performance in Economics NECO/SSCE 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. Economics is a truthful way of finding solution to problems, these problems abound in our everyday life activities. The knowledge of Economics 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. If students' performance in this subject is not encouraging, then is has to be a thing of concern to all stakeholders of education.

Research Questions

The following research questions will guide the study:

1. What are the percentage trend of Economics students' that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022?
2. What are the percentage trend of male and female Economics students' that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022?



Statement of Hypotheses

Ho1: There is no significant different is the percentage trend of Economics students' that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022

Ho2: There is no significant different is the percentage trend of males and females Economics students' performance in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022

LITERATURE REVIEWS

Studies by Adebayo and Abdulmalik (2021) findings from the study showed that the population of students that sat for WASSCE in general mathematics increased by 147.76% after a period of 10 years and that improvement in achievement was significant with time. Adewale (2018) revealed 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. It is recommended that the government should continue to support teaching and learning of STEM subjects in all tiers of education. Olarewaju, Abdulrauf, Yusuf, Muraina (2019). the results revealed that the trend of male and females students' achievement in WASSCE Economics from 2007 to 2016 was stochastic with random walk steadily progressive and percentage of the students obtained credit ranged from 23.0 to 77.3; pass ranged from 18.2 to 72.2 and fail ranged from 0.0 to 25.8. Edith, and Arokoyu, (2018) revealed that male and females Economics performance in Nigeria has been persistently poor over the years, as less than 48% of the candidates passed at credit. Bitrus, Domiya, and Durkwa (2016) results of the analysis revealed that male students in senior secondary schools in Maiduguri metropolis have better grades than their female counterpart in economics for 2006-2010 sessions. The results further showed that there was no significant gender difference in the academic performance of students in SSCE, WAEC and NECO in economics, while SSCE, WAEC and NECO for 2006/2007 session in economics for 2008 to 2010 sessions showed consistent significant gender difference in the academic performance of students in favour of male students.

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). The researchers are only interested in the outcome of the Examination so as to study the



trend of performance of student in Economics from the sample that would be drowned from the population.

Population, Sample and Sampling Technique

The population of study consist of all 18,882 students in the public senior secondary schools Examination (SSCE/NECO) 2013-2022, in North East geopolitical zones of Nigeria comprises six states – Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe. And 2,443 students where used as a sample size for the study using multistage sampling techniques. In the first stage, all the students who sat for NECO Economics 2013 to 2022 in the zone selected using purposive sampling. At the second stage, all the six state Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe were selected using purposive sampling technique to select all senior secondary schools each across the states. At the third stage, simple random sampling was used to select five (5) senior secondary schools offering Economics each in the six states, making thirty (30) schools.

Finally, in the fourth stage, proportionate sampling technique was used to sample 2,443 Economics students from the thirty (30) senior secondary schools offering Economics each in the six states, Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe.

Instrumentations

Examination Records of Economics Students Performance (ERESP) was used as an instrument for data generation. The ERESP was valid and reliable which yielded 0.86 reliability indexes. descriptive statistics percentage and Time series was used for answering research question while Ho1 was test using ANOVA and Ho2 was tested using paired correlation/t-test statistics at 0.05 level of significance,

RESULTS

Research Questions/Null Hypotheses

RQ 1: What are the percentage trend of Economics students' that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE in North-East Geopolitical Zone of Nigeria 2013-2022?

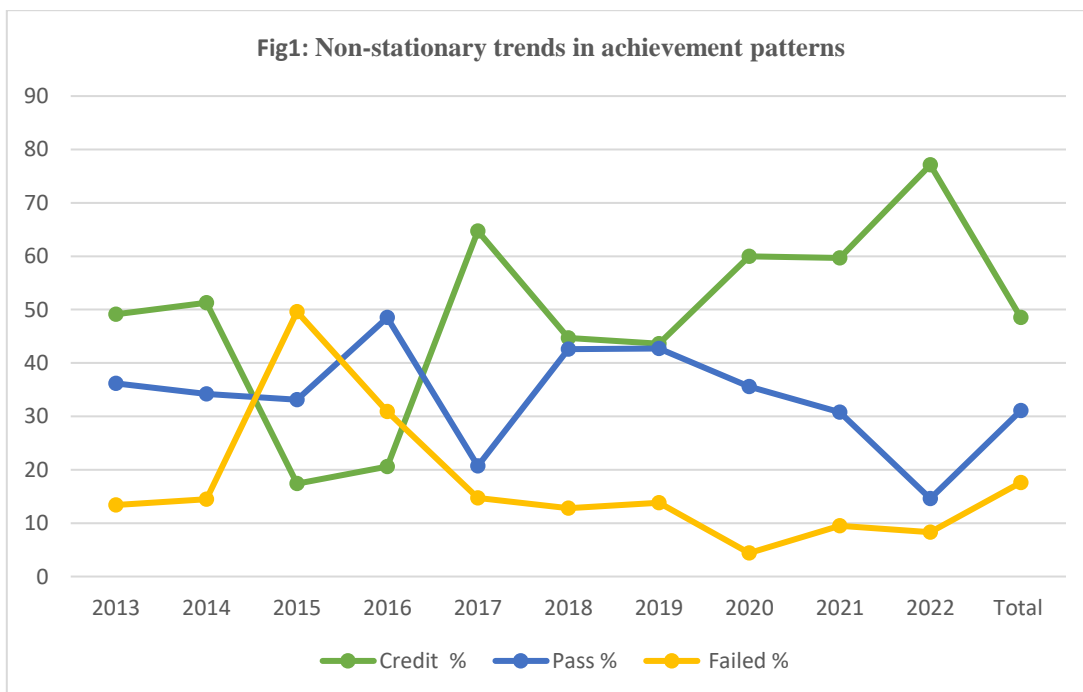
Table 1: Shows Percentage of Students that Obtained Credit (A₁-C₆), Pass (D₇ & E₈) and Fail (F₉) in NECO/SSCE f2013-2022

Year's	Number of Students Sat	Number of students Obtained Credit (%)	Number of Students Obtained Pass (%)	Number of Students Obtained Failed (%)
2013	221	49.1%	36.2%	13.4%
2014	234	51.3%	34.2%	14.5%
2015	242	17.4%	33.1%	49.6%



2016	291	20.6%	48.5%	30.9%
2017	300	64.7%	20.7%	14.7%
2018	235	44.7%	42.6%	12.8%
2019	234	43.6%	42.7%	13.8%
2020	225	60.0%	35.6%	14.4%
2021	221	59.7%	30.8%	9.5%
2022	240	77.1%	14.6%	8.3%
Total	2443	48.5%	31.1%	17.6%

Table 1 shows percentages of students obtained credit (A_1-C_6), pass (D_7 & E_8) and fail (F_9) in NECO/SSCE Economics 2013-2022. The trends indicated upward and downward patterns over times. This implies that the trend of students' performance in NECO/SSCE Economics 2013-2022 was stochastic with random walk (steadily progressive). The total percentages of the students obtained credit 48.5%; pass 31.1% and fail ranged 17.6%. The results show normally distributed. Hence, the time series plot represented in Figure 1 showed non-stationary trends in performance patterns below. Drawing inferences from H_{01} , was tested using ANOVA and the result are presented in Table 2.



H_{01} : There is no significant different is the percentage trend of Economics students' that obtained credit (A_1-C_6), pass (D_7 & E_8) and fail (F_9) in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022



Table 2: One-Way ANOVA Test for Significant Difference of Students Obtained Credit (A₁-C₆), Pass(D₇-E₈) and Fail(F₉) NECO/SSCE Economics 2013-2022

		Sum of Squares	Df	Mean Square	F	Sig.
obtained credit (A₁-C₆),	Between Groups	8002.248	7	1143.178	37.159	.000
	Within Groups	74911.606	2435	30.765		
	Total	82913.853	2442			
Obtained pass (D₇ & E₈)	Between Groups	18025.808	7	2575.115	79.041	.000
	Within Groups	79331.474	2435	32.580		
	Total	97357.282	2442			

Table 2 shows ANOVA for significant difference in the mean of students in FCT that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE Economics 2013-2022. The results at df=7, 2442, F-value 37.159, 79.041, Sig(P) .000 at 0.05 level. The result indicated that Sig(P) is less than 0.05 level. (P<0.05). The H₀₁ was not retained, hence, there is a significant different is the percentage trend of Economics students' that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022.

Research Question 2: What are the percentage trend of male and female Economics students' that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022

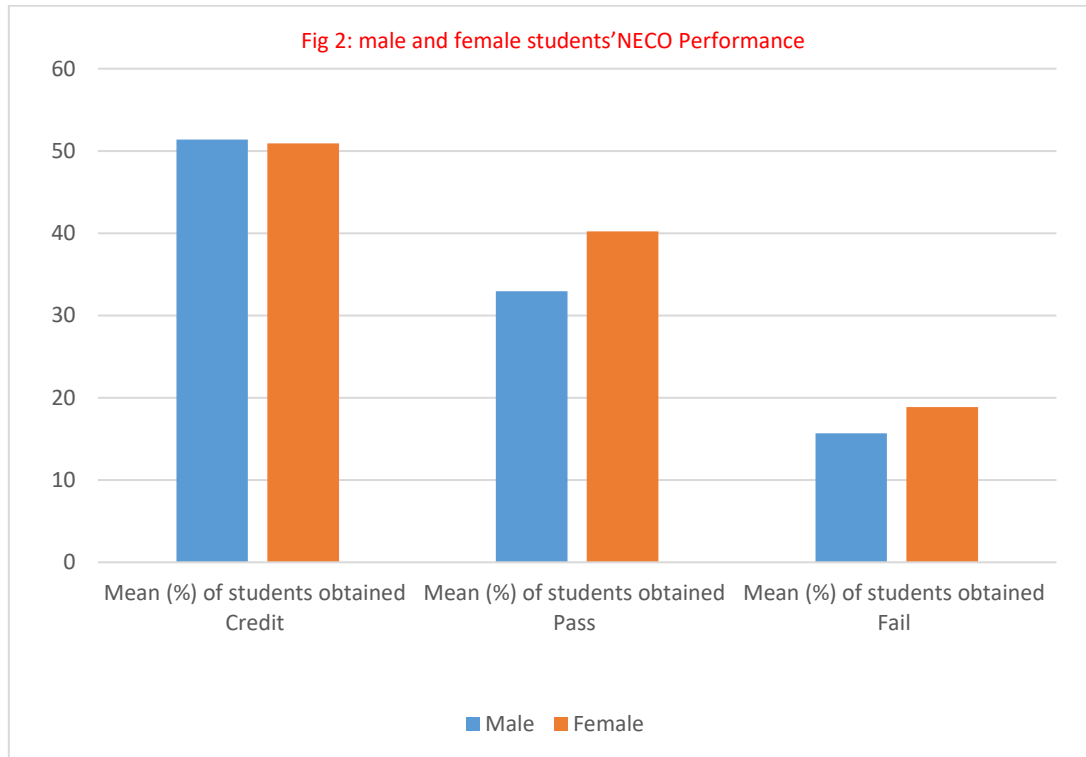
Table 3: Summary of Mean Percentages of Male and Female Students Obtained Credit (A₁ – C₆), Pass (D₇ & E₈) and Fail (F₉) in Economics NECO 2013 - 2022

Gender	Mean (%) of students obtained Credit	Mean (%) of students obtained Pass	Mean (%) of students obtained Fail
Male	51.37	32.96	15.67
Female	50.92	40.23	18.85

Table 3 show summary of mean percentages of male and female students obtained Credit (A₁ – C₆), Pass (D₇ & E₈) and Fail (F₉) in NECO/SSCE Economics 2013 – 2022. The summary percentage of male that obtained credit (A₁-C₆) was above average since the mean percentages of the students obtained credit were 51.37%, Pass (D₇ & E₈) 32.96% and Fail (F₉) 15.67% while female students that obtained Credit (A₁ – C₆), 50.92%, Pass (D₇ & E₈)



40.23% and Fail (F9) 18.85% respectively as shown in bar chart Figure 2. This further showed that there slightly difference in the male and female students' performance in NECO/SSCE Economics 2013 – 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 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-a}: Paired Samples Correlations Difference of Male and Female Students Performance in NECEO/SSCE Economics 2013-2022

		N	Correlation	Sig.
Pair 1	Male Students & Female Students	2443	.671	.000

Table 4_{panel-A} shows paired samples correlations for significant different is the percentage trend of males and females Economics students' performance in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022, yielded 0.671 correlation, Sig(P) .0.00 at 0.05 level of significant. Further result in Table 4_{panel-B} shows t-test of significant difference, df=2442, t-185.441, Sig(P) .0.00 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	-185.441	2442	.000

Discussion of Findings

Findings from Table 1 shows percentages of students obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE Economics 2013-2022. The trends indicated upward and downward patterns over times. This implies that the trend of students' performance in NECO/SSCE Economics 2013-2022 was stochastic with random walk (steadily progressive). The total percentages of the students obtained credit 48.5%; pass 31.1% and fail ranged 17.6%. the results show normally distributed, even though it fluctuated. Drawing inferences from Ho₁ in Table 2, was tested using ANOVA for significant difference in the mean of students in FCT that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE Economics 2013-2022. The results at df=7, 2442, F-value 37.159, 79.041, Sig(P) .000 at 0.05 level. The result indicated that Sig(P) is less than 0.05 level. (P<0.05). The Ho₁ was not retained, hence, there is a significant different is the percentage trend of Economics students' that obtained credit (A₁-C₆), pass (D₇ & E₈) and fail (F₉) in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022. This finding is in agreement with that of Studies by Adebayo and Abdulmalik (2021) findings from the study showed students that sat for WAEC/SSCE in general mathematics increased by 147.76% after a period of 10 years and that improvement in achievement was significant with time. Also, Adewale (2018) revealed 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.

Finally, Table 3 show summary of mean percentages of male and female students obtained Credit (A₁-C₆), Pass (D₇ & E₈) and Fail (F₉) in NECO/SSCE Economics 2013-2022. The summary percentage of male that obtained credit (A₁-C₆) was above average since the mean percentages of the students obtained credit were 51.37%, Pass (D₇ & E₈) 32.96% and Fail (F₉) 15.67% while female students that obtained Credit (A₁ - C₆), 50.92%, Pass (D₇ & E₈) 40.23% and Fail (F₉) 18.85% respectively. This further showed that there slightly difference in the male and female students' performance in NECO/SSCE Economics 2013 - 2022. Drawing inference from Ho₂, was tested using paired samples correlations/t-test and the result are presented in Table 4_{panel-A} shows paired samples correlations for significant different is the percentage trend of males and females Economics students' performance in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022, yielded 0.671 correlation, Sig(P) .0.00 at 0.05 level of significant. Further result in Table 4_{panel-B}



shows t-test of significant difference, $df=2442$, $t=185.441$, $Sig(P) .0.00$ at 0.05 level of significant. H_0 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. This finding corroborated that of Bitrus, Domiya, and Durkwa (2016) results of the analysis revealed that male students in senior secondary schools in Maiduguri metropolis have better grades than their female counterpart in economics for 2006-2010 sessions. The results further showed that there was no significant gender difference in the academic performance of students in SSCE, WAEC and NECO in economics, while SSCE, WAEC and NECO for 2006/2007 session in economics for 2008 to 2010 sessions showed consistent significant gender difference in the academic performance of students in favour of male students. Also, Olarewaju, Abdulrauf, Yusuf, Muraina (2019) revealed that the trend of male and females students' achievement in WASSCE Economics from 2007 to 2016 was stochastic with random walk steadily progressive and percentages of the students obtained Credit ranged from 23.0 to 77.3; pass ranged from 18.2 to 72.2 and fail ranged from 0.0 to 25.8. Edith, and Arokoyu, (2018) revealed that male and females Economics performance in Nigeria has been persistently poor over the years, as less than 48% of the candidates passed at Credit.

Conclusion

The study concluded that, the trend of students' performance in NECO/SSCE Economics 2013-2022 was stochastic with steadily progressive, normally distributed. there is a significant different is the percentage trend of Economics students' that obtained credit (A_1-C_6), pass (D_7 & E_8) and fail (F_9) in NECO/SSCE North-East Geopolitical Zone of Nigeria 2013-2022. It was further concluded that, the percentage of male that obtained credit (A_1-C_6) was above average than female students, 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.

Recommendations

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

1. That educational policy makers should employ more qualified Economics teachers
2. Teacher should be encouraged by the school principals toward teaching learning Economics and
3. Teachers should be encouraged to allocate more time to the teaching learning of Economics in school time-table to enable full coverage of teaching syllabus.

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