



Effect of Gender Deviants on Students' Academic Performance in English Language and Mathematics (ELM) in WASSCE in Public and Private Secondary Schools in Cross River State, Nigeria.

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ABSTRACT :

The research focused on comparative analysis of the effect of gender deviants on academic performance of secondary schools students' in ELM in West Africa Senior School Certificate Examination (WASSCE) from 2016 to 2021 in all public and private secondary schools in Cross River State, Nigeria. Literature review was carried out to explore information of other authors patterning to the study. The study adopted an ex-post facto research design. All the students that enrolled in WASSCE and sat for ELM constituted the target population for the study within the years under consideration and three hypotheses were formulated to guide the study. The data for the study was analysed using independent t-test and regression methods. It was found among others that; Gender: Across both private and public schools, gender does not have a significant impact on students' academic performance when it comes to attaining 5 credits or more in English, or in English and Mathematics combined since high p-values were above the 0.05 threshold indicating no significant differences between male and female students. School Type: The type of school, however, shows a significant effect on academic performance, students from private schools perform differently than those from public schools, as indicated by significant p-values below the 0.05 threshold in both categories of academic performance (5 credits including English and 5 credits including both Mathematics and English). Model Fit: The F-value and R-Square values from the regression analysis suggest that the models used to assess the impact of gender and school type on academic performance are statistically significant. The R-Square values indicate that the models explain 35.8% and 31.6% of the variance in student performance for English and for both Maths and English respectively. The research recommends inter alia; that policymakers and educational stakeholders should look into the characteristics that differentiate private and public schools, possibly investing more in the public school system to elevate the quality of education and resources available.

Keywords: Gender, Academic performance, ELM, Students, WASSCE.

Introduction:

Academic performance is a major goal in education thus it continues to interest educational researchers and practitioners alike, (United Nations International Child Emergency Fund, 2011). This implies that regularly, studies need to be conducted in order to find out factors that affect academic performance. However, performance in academics is vital but there exists a controversy in education as to what contributes to poor and good academic performance. According to (Ngulat, 2010) the ability of a learner to perform well in academics is often attributed to various factors some usually beyond the control of the learner, for example, type of family structure and school factors.

In Nigerian, academic performance in secondary schools in recent times, has experienced serious decline. Poor academic performance among students has been noted to be on the increase in Nigerian schools despite efforts at improving the school curriculum and quality of teaching. This has been a great source of worries and concern to stakeholders over the years. Reports of the (West African Examination Council and National Examination Council, 2014) show very poor performance of Nigerian students in almost all subjects.

The word "gender" is a generic term, normally used to indicate the distinction between humans on the basis of the masculinity/feminist dichotomy. It is commonly used interchangeably with "sex" to connote or denote the male-female divide in the society. It is also regarded as a socio-cultural construct that assigns roles, attitudes and values, considered appropriate for each sex. This stereotyping has also led to the dogmatic propagation of gender bias as an accepted pattern of behaviour, which has crept into all aspects of our lives, including education, (Obielumani, 2010).

In Psychology, gender deviants or differences are any variations between males and females in behaviour, cognition, emotion, or other psychological traits that are attributed to gender. All cultures interpret and elaborate biologically inherent differences in males and females into a set of social expectations about what behaviours and activities that are appropriate for them and what rights, resources and even power they possess. Gender gaps occur in treatment of males and females, which put females in a corner that has deterred their progress and performance in schools.

(Nworgu, 2005) and (Ukwungwu, 2002) discovered that either gender disparity as it exist in the schools on the part of the student or the teacher has great influence on student performance. The interactions, which may be direct or indirect, have a lot of influence on students' performance, (Okoye, 2009), (Elejere and Omeke 2018). Researches done by (Gisela, 2011) and (Elejere and Omeke, 2018) on students' academic performance shows that parents, peers and the society all influence the performance of male and female students.

Mathematics is one of the formal disciplines that help man lay a solid foundation for future survival. Scientific and technological developments are dependent on Mathematics. (Ginsburg, 2002), defines mathematics as a fundamental human activity-a way of making sense of the world. Because of its importance, Nigeria has made Mathematics compulsory in both primary and secondary School curriculum in order to give a sound basis for scientific and reflective thinking, and prepare students for the next level of education.

Mathematics application in other disciplines, mostly in sciences are appreciative and without it, knowledge of the Sciences remains superficial. However a considerable number of students have inadequate understanding Mathematics, mathematical concepts and skills. Mathematics and English are used as basic entry requirement into any of the prestigious courses such as medicine, architecture and engineering among other degree programs. Despite the important role that Mathematics and English plays in the society, there has been poor performance in Mathematics in Nigeria National Examinations. Several factors have been attributed to poor performance in English Language and Mathematics among which are poor methods of teaching, (Harbour-peters, 2001), poor interest in Mathematics.

Academic performance is used broadly to describe different factors that may influence student success in school. These factors fall into three primary areas: Cognitive skills and attitudes (e.g., attention/concentration, memory, verbal ability), Academic behaviours (e.g., conduct, attendance, time on task, homework completion), Academic performance (e.g. grades). It is commonly assessed using grades. In this research, academic performance is based on individual students WASSCE grades of in English Language and Mathematics (ELM).

This research is necessitated by the high incidence of examination failure in ELM as reported by the WASSCE and the link between this problem and gender deviants. The research therefore investigated effect of gender deviants on academic performance of secondary schools students' in ELM in WASSCE from 2016 to 2021 in all public secondary schools in Cross River State, Nigeria.

1.2 Statement of the Problem

In Nigerian, academic performance in secondary schools in recent times, has experienced serious decline. Poor academic performance among students has been noted to be on the increase in Nigerian schools despite efforts at improving the school curriculum and quality of teaching. This has been a great source of worries and concern to stakeholders over the years. Reports of the (West African Examination Council and National Examination Council, 2016) show very poor performance of Nigerian students in almost all subjects.

Reports of the West African Examination Council and National Examination Council 2016 show very poor performance of Nigerian students in almost all subjects. The report indicated appreciable failure, especially in the core subjects: English Language and Mathematics. The report shows that in Cross River State, out of a total of 39,506 (Thirty Nine Thousand, Five Hundred and six), constituting 20,418 males and 19,088 females candidates that registered for the examination in all public Secondary schools in 2016, only 28,790 (14,595 males and 14,195 females) obtained credits and above including English Language, only 25,156 (12,903 males and 12,253 females) obtained five subjects and above, including Mathematics, only 23,051 (11,812 males and 11,239 females) obtained five subjects and above, including English Language and Mathematics, (National Bureau of Statistics, 2021). The result shows that the students who sat for this examination, like any other year, did not perform well. Such record of abysmal performance can be attributed to numerous factors, but it is easily understandable to imagine that adjustment is a contributory factor.

Gender deviants of the learners cannot be wished out of the investigation for poor grades of learners. From available literatures, much of the studies is being done on gender differences and students' academic performance. In the light of the forgoing, this research shall focus on a comparative analysis of the effect of gender deviants on academic performance of secondary schools students' in ELM in WASSCE from 2016 to 2021 in public Secondary Schools in Calabar, Cross River State, Nigeria. The research sort inter alia; to answer questions whether or not gender deviants affects academic performance of students in ELM in WASSCE from 2016 to 2021 in the research area?

1.3 Objectives of the Study

The main objective of the research is carry out a Comparative Analysis of the effect of Gender Deviants on Students' Academic Performance in English Language and Mathematics (ELM) in WASSCE from 2016 to 2021 in public and private Secondary Schools in Cross River State, Nigeria. Other specific objectives include to determine:

- i. Whether male students perform better than their female counterparts in ELM in WASSCE from 2016 to 2021 in public Secondary Schools in Cross River State.
- ii. Whether male students perform better than their female counterparts in ELM in WASSCE from 2016 to 2021 in private Secondary Schools in Cross River State.
- iii. Whether there is any significant difference in academic performance of male and female students' in ELM in WASSCE in public and private Secondary Schools from 2016 to 2021 in Cross River State?

1.4 Research Hypothesis

- i. There is no significant difference in male and female students' academic performance ELM in WASSCE from 2016 to 2021 in public Secondary Schools in Cross River State.
- ii. There is no significant difference in male and female students' academic performance in ELM in WASSCE from 2016 to 2021 in private Secondary Schools in Cross River State.
- iii. There is no significant difference in academic performance of male and female students' in
- iv. ELM in WASSCE in public and private Secondary Schools from 2016 to 2021 in Cross River State?

2.0 Literature Review

2.1 Conceptual framework

2.1.1 The concept of gender

The term "gender" refers to economic, social and cultural attributes and opportunities associated with being male or female, (UN-Habitat, 2003). In almost all societies, women and men differ in their activities and undertakings, regarding access to and control over resources, and participating in decision-making. (Ikechukwu, 2013) identified gender as a social institution, cultural construct and power tool. There is a danger to confuse "gender" with "women". (Soetan, 2003) posited that the concept of gender is not limited to the male or female species, but goes further to assess the relations between them as are constantly being renegotiated in the context of changing political, economic, social and cultural environments at the local, national and supra national levels.

Gender is a crucial term for the way in which societies organize sexual categories, sexual roles, sexual behaviour, and sexual identification, (Malti-Douglas, 2007). Unsurprisingly, in 1955 psychologist and sexologist John Money proposed the concept of a gender role to signify all those things that a person says or does to disclose himself or herself as having the status of boy or man, girl or woman, respectively. In African countries like Nigeria Gender roles are in most cases culturally and socially defined, (Hotchkiss & Pitts, 2007). (Afolabi, 2012) introduces a new insight into the meaning of gender by stating that the term has been variously used to refer to a collection of the characteristics that are culturally associated with maleness and femaleness. Also, (World Health Organization, 2020) defines gender as the roles, behaviours, activities and opportunities that any society considers appropriate for girls and boys, and women and men.

(Okoye, 2009) noted that male students tend to receive more encouragement in Mathematics and Science courses, while female students are nurtured more in reading and arts. The author further asserted that parents often inadvertently practice gender biases, which influence their performance. Gender-bias behaviour usually surfaces early in child's life where parents tends to buy their sons toys and books that are related to Mathematics and Sciences but that is not the case for their daughters.

(Nworgu, 2005) and (Ukwungwu, 2002) discovered that either gender disparity as it exist in the schools on the part of the student or the teacher has great influence on student performance. The interactions, which may be direct or indirect, have a lot of influence on students' performance, (Okoye, 2009), (Elejere and Omeke, 2018). Researches done by (Gisela, 2011) and (Elejere and Omeke, 2018) on students' academic performance shows that parents, peers and the society all influence the performance of male and female students.

2.1.2 Concept of academic performance in English Language and Mathematics

Mathematics is one of the formal disciplines that help man lay a solid foundation for future survival. Scientific and technological developments are dependent on mathematics. (Ginsburg, 2002), defines mathematics as a fundamental human activity-a way of making sense of the world. Because of its importance, Nigeria has made mathematics compulsory in both primary and secondary School curriculum in order to give a sound basis for scientific and reflective thinking, and prepare students for the next level of education. Its application in other disciplines, mostly in sciences, is appreciative and without it, knowledge of the sciences remains superficial. However a considerable number of students have inadequate understanding of mathematics and mathematical concepts and skills.

Mathematics is used as a basic entry requirement into any of the prestigious courses such as medicine, architecture and engineering among other degree programs. Despite the important role that mathematics plays in the society, there has been poor performance in Mathematics in Nigeria national examinations factors have been attributed to poor performance in mathematics among which are poor methods of teaching, (Harbour-peters, 2001), poor interest in mathematics, lack of appropriate instructional materials for teaching mathematics at all levels of education, (Gambari, 2010) and above all parental background in terms of their socio-economic status, (Qaiser, Ishtiaq, Zaitoon and Wahab, 2012).

Several studies have shown other indices that could affect pupils' Mathematics achievement. (Okoyeocha, 2005) in a comparative study of public and private Schools were better equipped than their private counterparts. The percentage of high level and low level students increased in both Primary and Secondary Education levels. The Governments of many countries are struggling in considering how to provide best mathematics education for their students. According to the report, students' ability in mathematics is deteriorating over their school years, as a student grows older, math competencies decrease. A country such as Chinese Taipei showed bimodal distribution on mathematic achievement with 2 peaks of high performance and high peak of low performance. This signifies that educational opportunities or resources are not equally distributed to all students, (Ker, 2013).

It is appropriate to say that families are different in terms of various factors - socioeconomic status, level of education, size, cultural background, parental involvement in both academic and extra-curriculum activities of the children, domestic issues, organizational and physical closeness, and so on - that affect student's academic performance. (Qaiser, Ishtiaq, Zaitoon and Wahab, 2012) noted that researches reveal that there are a variety of factors that account for the poor and unsatisfactory academic performance of students. According to them, such factors include illiteracy of parents, domestic issues and problems, large family size, lack of parent's attention and control, low socio-economic status and gender deviants.

2.2 Theoretical frame work

2.2.1 Functionalist theory

This theory was put forward by Talcott Parsons in the 1940s and 1950s. It posits that inequality in gender is a proficient way of creating division of labour towards the maximization of resources and hence increasing growth and development. Gender inequality is assumed to be complementing gender roles. For instance, while women are responsible for taking care of the home, men will be providing for the needs of the family, (Ewubare & Ogbuagu, 2017). This approach examines society from a broader perspective and generally pays attention to the social systems that form the society. This idea posits that different gender roles are an effective way to establish a specialization in society. For example, a particular part of the populace is answerable for specific labor doings, and another section has the task for other work activities.

Therefore, goals are achieved when each division contributes its quota. However, male domination in all social endeavors with little or no contribution of the female gender will undermine the former's ability and reduce the chances for progress and development in most societies. This means that besides from the fact that gender roles need to be recognized, society's division of roles is intended to function for the complex whole. This view has been heavily criticized for objectifying, rather than reflecting, gender roles. Gender roles according to the functionalist perspective, are beneficial in that they contribute to stable social relations, many still argue that gender roles are discriminatory and should not be sustained or supported. The feminist movement, which was on the rise at the same time that functionalism began to decline, are of the position that functionalism neglects the suppression of women within the family structure.

Theories of learning and performance.

Learning is usually defined as a relatively permanent change in the behaviour of an organism that results through practices or interaction with the environment, (Bolles, 1979, 1975); (Bernard, 1972), (Craig, 1975). Theories proposed over the years have concerned themselves with what actually determines human learning behaviour. Findings to this question have often been tied to the concept of motivation. The oxford dictionary defines a motive as that which moves or induces a person to act in a certain way; a desire, a fear or other emotion or a consideration of reason which influences or tends to influence a persons' volition.

Activation theorists such as (Hull, 1943); (Spence, 1956); (Lindsley, 1955) hold that motivation energized and facilitates behaviours by providing the general drive or arousal state, which interact with habitual response tendencies to produce behaviour. Their point is that motivational process as such does not control or guide specific forms of learning behaviour but influence such behaviour by energizing innate or associative tendencies to produce behaviour. The vigour, the persistence, strength and commitment of an individual behaviour or response to learning activities are to these theorists a result of the energy expended in the motivational process variations in behavioural vigour is a direct outcome of variation in energy mobilization. This implies that the greater the level of motivation, the suitor will be the energy and vigour available for individual to carry out relevant learning activities or performance.

Empirical frame work

(Peter and Adewale, 2022) investigated the trend of performance of students in selected Science, Technology, Engineering, and Mathematics (STEM) subjects in the Basic Education Certificate Examination (BECE) conducted by Ogun State Ministry of Education, Science and Technology, Nigeria. The study adopted an ex post facto research design to carry out the trend analysis of students' results in the examination from 2011 to 2015. All the students that enrolled and sat for the BECE examinations constituted the target population while the students that sat for the selected STEM subjects (Mathematics, Basic Science, and Basic Technology) within the years under review constituted the sample for the study.

The results of these students were collected and analysed using Microsoft Excel with its in-built trend line capabilities. The 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. It is recommended that the government should continue to support teaching and learning of STEM subjects in all tiers of education.

(Elejere and Omeke, 2018) analysed students' academic performance in West Africa Senior Secondary School Certificate Examinations in Mathematics and Physics in Nsukka Local Government Area based on gender. Two research questions and two null hypotheses guided the study. Ex-post facto research design was adopted for the study. All the public secondary school students who sat for WASSCE in 2014-2016 in Nsukka Local Government Area formed the population of the study while a sample of 1060 students were used for the study. Academic performance forms were used to gather students' performance in Mathematics and Physics for the years in considered. Data collected were analysed using mean and standard deviation to answer the research questions and t-test of independent samples to test the null hypotheses at 0.05 level of significance.

Findings of the study showed that there are significant differences in the mean performances of male and female students in WASSCE in both Mathematics and Physics in favour of the male students. The implication of this is that there is gender disparity in the performance of students in both Mathematics

and Physics in 2014-2016 WASSCE. Thus, it was recommended among others that efforts should be put in place by both mathematics and physics teachers in order to encourage active participation of female students in the learning of the subjects.

3.0 Methodology

3.1 Research Design

The study adopted an ex post facto research design to carry out a comparative analysis of male and female students' results in WASSCE from 2016 to 2021. An Ex post factor design is a quasi-experimental study that examines how an independent variable present prior to the study, affects a dependent variable. The design did not involve manipulation of the respondents and all the students that enrolled and sat for WASSCE within the years under consideration constituted the target population.

3.2 Study Area

The research area is the entire domain of Cross River State, Nigeria. Cross River State is one of the 36 States that make up the Federal Republic of Nigeria, bounded by latitude $4^{\circ}34''$ to $59^{\circ}99''$ N and longitude $8^{\circ}24''$ to $59^{\circ}99''$ E. The State is one of the States that make up the South-South geopolitical zone of Nigeria. The State has two broad ecological biomass, the forest biome to the South and the grassland/ savannas biome to the north.

The State is also blessed with several tertiary institutions both Federal, State, Private owned, including many private and public secondary schools. The people of Cross River State are predominantly Christians and like other patriarchal society, they enjoy a rich cultural heritage known as Efik culture which is elaborately manifested in their attires, traditional dance, festivals, marriages, customs, Carnival, Chieftaincy and age grade system etcetera whose performances attract a large number of tourists to the State.

3.3 Method of data collection/Analysis

The WASSCE results of all students that enrolled and sat for WAEC within the years under consideration (2016 to 2021) constituted the data for the study. Data was collected from stored WASSCE results records in National Bureau of Statistics (NBS), Nigeria and was analysed using independent t-test and regression Analysis methods.

3.4 Data Presentation

Table 1: WASSCE Private Candidate Examination Results 2016 to 2021 of Cross River State Nigeria

Years	Total Number Sat			5 Credits above + ENG.			5 Credits+ ENG & MATHS		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
2016	522	492	1,014	93	67	160	44	28	72
2017	428	434	862	50	44	94	15	6	21
2018	337	286	623	55	24	79	21	8	29
2019	9,805	10,000	19,805	7,525	7,883	15,408	8,199	8,637	16,836
2020	9,073	9,680	18,753	7,867	8,588	16,455	6,445	7,100	13,545
2021	8,555	9,037	17,592	7,783	8,441	16,224	7,575	8,242	15,817

Table 2: WASSCE Public Candidate Examination Results 2016 to 2021 of Cross River State Nigeria

Years	Total Number Sat			5 Credits above + ENG.			5 Credits + ENG & MATHS		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
2016	20,418	19,088	39,506	14,595	14,195	28,177	12,903	12,253	25,156
2017	20,200	19,028	39,228	12,345	12,064	24,409	10,951	10,570	21,521
2018	18,377	18,024	36,401	10,935	11,029	21,964	9,701	9,872	19,573
2019	7,766	7,733	15,499	5,298	5,498	10,792	5,011	5,225	10,236
2020	8,029	7,695	15,724	6,467	6,397	12,864	5,215	5,180	10,395
2021	8,160	7,970	16,130	7,457	7,477	14,934	7,300	7,314	14,614

Source: National Bureau of Statistics WASSCE Report 2016 to 2022.

4.0 RESULTS

1.4 Research Hypothesis

- i. There is no significant difference in male and female students' academic performance ELM in WASSCE from 2016 to 2021 in public Secondary Schools in Cross River State.
- ii. There is no significant difference in male and female students' academic performance in ELM in WASSCE from 2016 to 2021 in private Secondary Schools in Cross River State.
- iii. There is no significant difference in academic performance of male and female students' in ELM in WASSCE in public and private Secondary Schools from 2016 to 2021 in Cross River State?

Table 3: Result of Independent t-test analysis of the influence of gender on academic performance of students in Private Secondary Schools in Cross River State

	Gender	Mean	Standard Deviation	t-calculated	t-critical	P-Value	Remark
5 credits above and English	Male	3895.50	4196.54	-0.111	1.96	0.914	Not Significant
	Female	4174.50	4529.77				
5 credits above with Maths and English	Male	3716.50	4080.94	-0.117	1.96	0.909	Not Significant
	Female	4003.50	4399.34				

Table 3 presents the findings from an independent t-test study assessing the impact of gender on student performance in private high schools within Cross River State. The analysis is divided into two categories of academic achievement: the first category considers students obtaining at least five credits including English, and the second category includes students securing at least five credits with both Maths and English included.

In the first category, average scores were 3895.50 for males and 4174.50 for females. In the second category, these averages were 3716.50 for males and 4003.50 for females, respectively. From these averages, it appears that female students outperformed male students. The analysis yielded negative t-values of -0.111 for the first category and -0.117 for the second, indicating lower mean scores for males compared to females. The p-values for first category is 0.914 and 0.909 for the second, far exceeding the commonly accepted alpha level of 0.05.

The result indicated that there is no significant difference in academic performance between male and female students for either academic achievement category. The results suggest that there is no evidence of gender being a determining factor in the academic performance of students for the criteria tested in these schools, based on the data analysed.

Table 4: Result of Independent t-test analysis of the influence of gender on academic performance of students in Public Secondary Schools in Cross River State

Category	Gender	Mean	Standard Deviation	t-calculated	t-critical	P-Value	Remark
5 credits above and English	Male	9516.1667	3664.43580	0.035	1.96	0.973	Not Significant
	Female	9443.3333	3483.47061				
5 credits above with Maths and English	Male	8513.5000	3201.23300	0.063	1.96	0.951	Not Significant
	Female	8402.3333	2944.47555				

Table 4 presents the findings from an independent t-test study assessing the impact of gender on student performance in public high schools within Cross River State. The t-test for Male students in the first category shows a t-calculated value of 0.035, which is less than the critical t-value of 1.96. Additionally, the p-value of 0.973 is greater than the significance level of 0.05. Therefore, we do not have enough evidence to reject the null hypothesis. There is no significant difference in academic performance between Male students who achieve 5 credits above with English compared to Female students who achieve the same.

The t-test for Male students in the second category shows a t-calculated value of 0.063, which is less than the critical t-value of 1.96. Additionally, the p-value of 0.951 is greater than the significance level of 0.05. Therefore, similar to the previous category, we do not have enough evidence to reject the null

hypothesis. There is no significant difference in academic performance between Male students who achieve 5 credits above with Maths and English compared to Female students who achieve the same.

This result is in tandem with the findings (Fabunmi, 2004), (Diana, 2014) and Elejere, Ugochukwu Christian and Omeke, Ngozi E. (2018), that students' performance is not determined by gender in terms of the interaction of gender and treatment on students' academic achievement.

Table 5: Result of Independent t-test analysis of the influence of school type on academic performance of students in Secondary Schools in Cross River State

Category	School Types	Mean	Standard Deviation	t-calculated	t-critical	P-Value	Remark
5 credits above and English	Private	4035.0000	4165.69095	-3.504	1.96	0.002	Significant
	Public	9479.7500	3408.93479				
5 credits above with Maths and English	Private	3860.0000	4048.44381	-3.186	1.96	0.004	Significant
	Public	8457.9167	2932.98202				

Table 5 presents the findings obtaining at least five credits including English, and students securing at least five credits with both Maths and English included in both private and public secondary schools. In the first category the t-test value is -3.504, which is less than the critical t-value of -1.96. The p-value of 0.002 is less than the significance level of 0.05. Therefore, we reject the null hypothesis and conclude that there is a significant difference in academic performance between students in Private schools who achieve 5 credits above and English compared to those in Public schools.

For the second category, the t-test value is -3.186, which is less than the critical t-value of -1.96. The p-value of 0.004 is less than the significance level of 0.05. Therefore, similar to the previous category, we reject the null hypothesis. There is a significant difference in academic performance between students in Private schools who achieve 5 credits above with Maths and English compared to those in public schools.

This result agrees with the findings of (Afolabi, 2004), (Knudson, 2005), (Adebayo, 2009), (Philius and Wanjobi, 2011) and (Okon & Archibong, 2015) that reiterated that the type of schools, (single sex or mixed, private or public) has effect on the academic performance of students. This finding dispelled the rumour that private schools are just money-making schools without good academic standards. Indeed in this study, the mean difference shows that students' performance in private schools is a non-arguably better than in public school and support the words of Adebayo (2009) that regardless of whatever level of education (primary, secondary and tertiary) one considers, the trend seems to be the same.

Table 6: Regression Analysis of effect of school type and gender on students with 5 Credits above with English language and 5 Credits above with Mathematics and English language

Variables	5 Credits above with English language				5 Credits above with Mathematics and English language			
	Coefficients	Standard Error	t-value	P-value	Coefficients	Standard Error	t-value	P-value
(Constant)	-1564.375	3465.910	-0.451	0.656	-869.792	3219.024	-0.270	0.790
School Type	5444.750	1590.269	3.424	0.003*	4597.917	1476.989	3.113	0.005*
Gender	103.083	1590.269	0.065	0.949	87.917	1476.989	0.060	0.953
F-value= 5.863 P-Value=0.009 R-Square=0.358 or 35.8%					F-value= 4.847 P-Value=0.019 R-Square=0.316 or 31.6%			

* Significant at 5% level

Table 6 examines the impact of school type and gender on students who achieved 5 credits or above, specifically in English language and Mathematics combined, and separately in English language alone.

The analysis of Table 6 indicates that the type of school a student attends has a significant effect on their ability to achieve 5 or more credits in English and Mathematics combined, as well as in English alone. Specifically, the statistical significance is marked by p-values of 0.003 for English and 0.005 for combined English and Mathematics, indicating that school type is a strong factor in academic performance in these subjects.

On the other hand, the result indicated that gender is not a significant determinant in achieving 5 or more credits in either English alone or the combination of English and Mathematics. This is reflected in the high p-values of 0.949 for English and 0.953 for the combined subjects, which point to minimal average differences in performance between male and female students.

The model's adequacy in explaining the variation in student performance is evaluated through F-values, which are 5.863 for English and 4.847 for both English and Mathematics, confirming the model's statistical significance. The R-Squared values of 0.358 for English and 0.316 for both subjects indicate that approximately 35.8% and 31.6% of the variance in student performance is accounted for by the variables of school type and gender.

In conclusion, school type significantly affects students' academic performance in both English language and Mathematics when considering 5 credits or above, while gender does not show a significant impact.

4.2 Summary

The analysis from the independent t-tests and regression analysis across Tables 1, 2, 3, and 4 provides insights into the influence of gender and school type on academic performance in private and public secondary schools in Cross River State. The findings can be summarized as follows:

- i. **Gender:** Across both private and public schools, gender does not have a significant impact on students' academic performance when it comes to attaining 5 credits or more in English, or in English and Mathematics combined. This is consistently supported by high p-values (well above the 0.05 threshold) indicating no significant differences between male and female students.
- ii. **School Type:** The type of school, however, shows a significant effect on academic achievement. Students from private schools perform differently than those from public schools, as indicated by significant p-values (below the 0.05 threshold) in both categories of academic performance (5 credits including English and 5 credits including both Maths and English).
- iii. **Model Fit:** The F-value and R-Square values from the regression analysis suggest that the models used to assess the impact of gender and school type on academic performance are statistically significant. The R-Square values indicate that the models explain 35.8% and 31.6% of the variance in student performance for English and for both Maths and English respectively.

4.3 Conclusions

Based on the results of the analyses, the following conclusions can be drawn:

- i. Gender does not play a significant role in determining academic outcomes in the context of achieving 5 credits or more, in both private and public schools. The performance between male and female students is statistically similar according to the data provided.
- ii. School type is a significant factor in academic performance, with private schools showing different outcomes compared to public schools. This suggests that the school environment, resources, or other related factors inherent to the type of school may play a role in student achievement.
- iii. The proportion of variance in student academic performance explained by the models is significant but not complete, indicating that other unspecified factors may also contribute to academic outcomes.

4.4 Recommendations

Based on the findings, the following recommendations are suggested:

- i. Since school type influences academic performance, policymakers and educational stakeholders should look into the characteristics that differentiate private and public schools, possibly investing more in the public school system to elevate the quality of education and resources available.
- ii. Additional research is needed to identify other factors that contribute to the variance in student academic performance. This could include socioeconomic status, teacher qualifications, teaching methods, parental involvement, and more.
- iii. Although gender was not found to be a significant factor in academic performance in this context, it remains important to continue promoting gender equality in education to ensure that both male and female students have equal opportunities and support.
- iv. Schools, especially public ones, may benefit from adopting best practices from the private schools that might be contributing to their students' success. This might include curriculum design, teacher training, student support services, and extracurricular activities.

- v. Continuous monitoring and evaluation should be conducted by the educational authorities to assess the effectiveness of any new policies or practices implemented, ensuring that the desired improvements in academic performance are being achieved.

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