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## Editorial

This edition of *NIU Journal of Educational Research* touches on Digitalized Citizenship Education, Open Education Systems, Multimodal Literacy in Higher Education, University Health Education and the Role of Academics in Democratic Movements.

One of the papers, in this issue, reveals that the practice pattern of University Health Education students is either good or poor. Moreover, While the exercise behaviour, regular behaviour, health risk behaviour and life appreciation were statistically significantly different by gender, nutrition, health responsibility, social support and stress management were not statistically significantly different by gender. It is, therefore, suggested that the poor practice pattern of the students in healthy lifestyle indices can be improved through sensitization of the students by their lecturers on indices in which they reported poorly.

Another paper also reveals that that when thoughtfully implemented, multimodal literacy can enhance student engagement, academic performance, and digital competence. However, infrastructural limitations and uneven faculty readiness remain key challenges. The paper therefore, recommends increased investment in digital infrastructure, targeted faculty development, and the inclusion of structured digital literacy programmes within university curricula.

On the whole, this issue of *NIU Journal of Educational Research* features many empirical and theoretical based articles which can be of great benefit to every reader.

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## Practice Pattern of Healthy Lifestyle Indices of University Health Education Students

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**Abstract.** Unhealthy lifestyle is increasing at alarming rates with University students being one of the drivers of the lifestyle. The study was undertaken to determine the pattern of practice of healthy lifestyle indices of the students. One research question and eight hypotheses were verified at 0.05 level of significance. The survey research design of a cross-sectional approach and the 201 Health Education students who were successful in the 2022/2023 Academic Session were used for the study. A sample of 138 made up of 109 females and 29 male students were randomly chosen using disproportionate stratified sampling technique. An adapted 'Healthy Lifestyle Scale' which was validated and reliability established at 0.798 was used to collect data from the students. Data were analysed using descriptive and inferential statistics. Results revealed that the practice pattern of University Health Education students is either good or poor. Moreover, while the exercise behaviour, regular behaviour, health risk behaviour and life appreciation were statistically significantly different by gender, nutrition, health responsibility, social support and stress management were not statistically significantly different by gender. It was recommended from the findings that the poor practice pattern of the students in healthy lifestyle indices can be improved through sensitization of the students by their lecturers on indices in which they reported poorly.

**Keywords:** University, Health Education, healthy lifestyle, students, good, poor, exercise behaviour.

### 1. Introduction

A healthy lifestyle connotes a living pattern devoid of onset of illness or premature death. A number of authorities have provided several indicators of

lifestyle such as regular physical activity, good sleep habits, proper dietary patterns, controlled caffeine intake, proper use of screens, avoidance of substance use and reduced feeling of anxiety and these generally are assumed to be crucial for increased academic outcome (Mahfouz et al. 2024; Sánchez-Hernando et al. 2021). Apart from increased academic outcomes, those indicators are also expected to foster healthy lifestyle patterns for male and female University Health Education students

Healthy lifestyle appears to vary between male and female individuals with some significant and not significant gender differences found in literature. For example, James et al. (2022) provided an indication of this seemingly difference highlighting females' behaviour concerning diet and water intake to be worthwhile compared to males and with males leading in physical exercise and sleep pattern. James and colleagues emphasized that the gender difference and healthy lifestyle behaviours was statistically not significant. Similarly, smoking by males was 24.5 percent of the individuals and no significant difference was found between them (Feraco et al. 2024).

The place of Health Education in the promotion of healthy lifestyle cannot be underrated. Its place in healthy lifestyle promotion continually attracts not only international attention, but also national and local attention. One example of such attention is the 'Healthy Lifestyles Programme (HeLP)', an obesity avoidance initiative (Lloyd & Wyatt, 2015). Yet, the number of Health Education students seeking health care services for avoidable lifestyle ill health, in the University health facility is sometimes alarming. This is evident in the millions of individuals with unhealthy lifestyle suffering metabolic illness, skeletal issues,

high blood pressure, overweight, violence, disability and even death (Farhud, 2015). The researcher was worried and wanted to know if the knowledge gained from exposure to Health Education Programme influenced the healthy lifestyle of recipients of the programme. Efforts were, therefore, intensified to assess the pattern of practice of healthy lifestyle of University Health Education students. A determination of whether each index of healthy lifestyle (exercise behaviour, regular behaviour, nutrition behaviour, health responsibility, health risk behaviour, stress management, social support and life appreciation) differed by gender of the students was also done.

## 2. Research Methodology

The survey research design of a cross-sectional approach was used in the study. The population of the study consisted of the 201 Full Time University Health Education students in the Department of Health, Safety and Environmental Education, University of Benin during the 2022/2023 Academic Session. These were 154 females and 47 males who were successful in the sessional examination. A sample of 138 made up of 109 females and 29 males were randomly chosen using disproportionate stratified sampling technique from the University Senate approved results. After a determination of the sample size by gender, the required number from each level were picked starting from the 1<sup>st</sup> serial number until the need sample size of 138 was realized.

The researcher adapted the 'Healthy Lifestyle Scale for University Students' developed by Wang et al. (2012) with slight language change. Although, the psychometric properties of the instrument were established with a split-half correlation coefficient of 0.841 and 33-expert content validity confirmation (Wang et al. 2012), the researcher re-established the validity and reliability of the adapted instrument from an English Language expert and with a split-half correlation, a coefficient of 0.798 was obtained. The response options of the original instrument were unaltered still ranged from 'always', 'usually', 'sometimes', 'rarely' and 'never' and were scored as 5, 4, 3, 2 and 1 respectively for positive items and the reverse for negative items. A total score of 1-38, 39-77, 78-116, 117-155 and 156-190 were assigned to the 'never', 'rarely', 'sometimes', 'usually' and 'always' respectively.

Data were analysed using descriptive statistics of frequency counts, percentages, mean and standard deviation. The t-test inferential statistic was used to verify the hypotheses at 0.05 level of significance. All

analyses were done with Statistical Package for Social Sciences (SPSS) Version 14.0. The decision benchmark for the frequency counts of each item was based on the highest percentage obtained in the item. All highest percentages that fell under 'never', 'rarely', 'sometimes' and 'usually' were qualified as 'poor' practice pattern and all highest percentages that fell under 'always' were qualified as 'good' practice pattern.

## 3. Results

Data in Table 1 (see Appendix) is the frequency counts and percentages of the practice pattern of healthy lifestyle of University Health Education students. Precisely 21.7%, 26.1% and 31.9% of the students reported they never, rarely and sometimes and with 11.6% and 8.7% usually and always respectively, reporting participating in vigorous exercise of thirty minutes thrice weekly. Similarly, It is poor that majority of them reported they sometimes participate in vigorous exercise of thirty minutes thrice a week. Precisely, 17.4%, 18.8% and 20.3% of the students reported they never, rarely and sometimes but with 21.0% and 22.5% usually and always respectively, reporting warm up before vigorous exercise. It is good that majority of the students reported they always warm up before vigorous exercise. Participation in brisk walking, bicycling, aerobic dancing, stair climbing and/or other mild/moderate physical activity was reported done by 11.6%, 8.7% and 31.9% of the students who never, rarely and sometimes respectively, did. Moreover, 14.5% and 33.3% of them reported they usually and always respectively, participate in the mild/moderate physical activity of that nature. It is also good that majority of the students reported they always participate in brisk walking, bicycling, aerobic dancing, stair climbing and/or other mild/moderate physical activity. Thirty minutes after meals, 50.7%, 29.0% and 8.7% of the students reported they never, rarely and sometimes respectively, indulge in vigorous exercise. Similarly, 7.3% and 4.3% of them reported they usually and always respectively, indulge in the exercise after meals. It is also poor that majority of the students never indulge in vigorous exercise thirty minutes after meals. Therefore, the exercise behavior of the students is partly good and poor.

Precisely, 10.2%, 10.2% and 21.7% of the students reported they never, rarely and sometimes respectively, consume breakfast each day. Similarly, 21.7% and 36.2% of the students reported they usually and always respectively, consume breakfast each day. It is good that majority of them reported they always consume breakfast each day. Precisely, 10.2%, 13.0%

and 37.7% of the students reported they never, rarely and sometimes respectively, eat three meals daily at specific times. Additionally, 14.5% and 24.6% of them reported they usually and always eat three meals daily at specific times. It is poor that majority of the students reported they sometimes eat three meals daily at specific times. Specific study and resting times was reported as never, rarely and sometimes observed by 4.3%, 16.0% and 37.7% of the students respectively. Moreover, 17.4% and 24.6% of them reported they usually and always respectively, observe specific study and lecture times. It is also poor that majority of the students reported they sometimes observe specific study and lecture times. Precisely, 8.7%, 13.1% and 21.7% of the students reported they never, rarely and sometimes respectively, take enough sleep daily. Similarly, 18.8% and 37.7% of them reported they usually and always respectively take enough sleep on daily basis. It is also good that majority of the students reported they take enough daily sleep each day. Therefore, the regular behavior of the students is also partly good and poor.

Precisely, 7.2%, 23.2% and 30.4% of the students reported they never, rarely and sometimes respectively, consciously replaces fluids during exercise. Similarly, 16.0% and 23.2% of them reported they usually and always respectively, did. It is poor that majority of them reported they sometimes consciously replace fluids during exercise. Again, 5.8%, 14.5% and 29.7% of the students reported they never, rarely and sometimes take in at least 800ml/5 disposable paper cups of water daily and with 18.9% and 31.2% usually and always respectively, reporting in the same way. This means it is good that majority of the students reported they always take in at least 800ml/5 disposable paper cups of water daily. Precisely, 1.5%, 8.7% and 32.6% of the students reported they never, rarely and sometimes and with 34.1% and 23.2% usually and always respectively, reporting the consumption of food high in fibre such as fruits and vegetables. It is poor that majority of the students reported they sometimes consume food high in fibre such as fruits and vegetables. 11.6%, 17.4% and 30.4% of the students reported they never, rarely and sometimes and with 14.5% and 26.1% usually and always respectively, reporting the consumption of carefully selected food low in saturated fat, salt and/or cholesterol. It is poor that majority of the students reported they sometimes carefully select food low in saturated fat, salt and/or cholesterol. Therefore, the nutrition behavior of the students is poor.

Precisely, 92.8% of the students reported they never and with 1.4%, 2.9% and 2.9% rarely, usually and always respectively, reporting the intake of alcohol in

excess take in alcohol in excess. It is good that majority of the students never take in alcohol in excess. In another item, 88.4% of the students reported they never and with 2.9%, 7.3% and 1.4% rarely, sometimes and always respectively, reporting the use tobacco or marijuana. It is good that majority of the students reported they never use tobacco or marijuana. 7.3%, 13.0% 26.1% of the students reported they never, rarely and sometimes and with 21.7% and 31.9% usually and always respectively, reporting the use of headphones for at least thirty minutes. It is poor that majority of the students reported they always use headphones for at least thirty minutes. Above Twenty-seven percent (27.5%), 17.4% and 23.2% of the students reported they never, rarely and sometimes and with 17.4% and 14.5% usually and always respectively, reporting reading or using computer consistently for at least one hour. It is, therefore, good that majority of the students reported they never read or use computer consistently for at least one hour. Therefore, the avoidance of the health risk behavior of the students is good.

The percentages of the students who reported they never, rarely and sometimes visit the physician promptly in case of uncommon signs and symptoms are 20.3%, 26.1% and 26.1% respectively. For those that reported they usually and always did, their percentages are 5.8% and 21.7% respectively. It is poor that majority of the students reported they rarely and sometimes visit the physician promptly in case of uncommon signs and symptoms. 7.3%, 8.7% and 18.8% of the students reported they never, rarely and sometimes respectively, comply with physician advice/treatment. However, 29.0% and 36.2% of the students reported they usually and always respectively, did. It is good that majority of the students always comply with physician advice/treatment. Precisely, 2.9%, 4.4% and 36.2% of the students reported they never, rarely and sometimes brush their teeth or use floss after eating but with 21.7% and 34.8% reporting they usually and always respectively, did. It is poor that majority of the students reported they sometimes brush their teeth or use floss after eating. 1.4%, 5.8% and 11.6% of the students reported they never, rarely and sometimes and with 17.4% and 63.8% reporting they usually and always respectively, wash their hands before eating. It is good that majority of the students always brush their hands before eating. 4.4%, 1.4% and 5.8% of the students reported they never, rarely and sometimes but with 14.5% and 73.9% reporting they usually and always respectively, cover mouth and nose when sneezing/coughing. It is good that majority of the students reported that they always cover mouth and nose when sneezing/coughing. Precisely, 4.4%, 7.3%

and 4.4% of the students reported that they never, rarely and sometimes keep classroom, library and/or laboratory clean but with 18.9% and 63.8% reporting they usually and always respectively, did. It is good the majority of the students reported they always keep classroom, library and/or laboratory clean. Therefore, the health responsibility of the students is good.

The students that reported never, rarely and sometimes help their classmates in trouble promptly is represented by 18.8%, 33.3% and 29.0%, but with 7.3% and 11.6% of them reporting usually and always respectively. It is poor that majority of the students reported they are rarely prompt to help their classmates in trouble. 7.3%, 23.2% and 27.5% of the students reported they never, rarely and sometimes respectively, enjoy visiting relatives. However, 27.5% and 14.5% of them reported they usually and always respectively, enjoy visiting relatives. It is poor that the students reported they sometimes and usually enjoy visiting relatives. 11.6%, 18.8% and 24.6% of the students reported they never, rarely and sometimes and with 29.0% and 16.0% usually and always respectively, getting involved in group work with classmates. It is poor that majority of the students reported they usually involve in group work with classmates. The percentage of students that reported they never, rarely and sometimes discuss trouble with people are 15.9%, 23.2% and 27.5% respectively. For students that reported they usually and always discuss trouble with people are represented with 15.9% and 17.8% respectively. It is poor that majority of the students reported they sometimes discuss trouble with people. 8.7%, 21.7% and 21.7% of the students noted that they never, rarely and sometimes pay attention to people when tackling affairs but with 21.7% and 26.1% of them reporting they usually and always respectively, did. It is good that majority of the students reported they pay attention to people when tackling affairs. 23.2%, 21.7% and 17.4% of the students reported never, rarely, sometimes but with 16.0% and 21.7% usually and always respectively, reporting expressing feelings in inoffensive ways. It is poor that the students reported never expressing feelings in inoffensive ways. Therefore, the social support of the students is poor.

Above eleven percent (11.6%) of the students reported they never and with 14.5%, 21.7% and 27.5% rarely, sometimes and usually respectively, reporting making out time to relax on daily basis. 26.8% of them reported they always make out time to relax daily. It is poor that majority of the students usually make out time to relax daily. The percentage of students that reported they never, rarely and sometimes but with 18.8% and 24.6% usually and always respectively,

reporting accepting things that cannot be changed. It is good that majority of the students reported they always accept things that cannot be changed. To make effort to monitor emotional changes, 4.3%, 16.0% and 31.9% of the students never, rarely and sometimes and with 27.5% and 20.3% usually and always respectively, reporting making effort to monitor emotional changes. It is poor that majority of the students sometimes make effort to monitor emotional changes. 2.9%, 17.4% and 30.4% of the students reported that they never, rarely and sometimes and with 30.4% and 18.9% usually and always respectively, reporting scheduling study/lecture activities. It is poor that majority of the students reported they sometimes and usually schedule study/lecture activities. Responding calmly to frustration and remaining unruffled was reported by 10.1%, 18.9% and 26.1% of the students as never, rarely and sometimes but with 21.7% and 23.2% usually and always respectively, did. It is poor that majority of the students reported they sometimes respond calmly to frustration and remain unruffled. Therefore, the management of stress as reported by majority of the students is poor.

Precisely, 13.1%, 21.7% and 18.9% of the students reported they never, rarely and sometimes respectively, take new experiences and issues with pleasure. However, 21.7% and 24.6% of them reported they usually and always respectively, did. It is good that majority of the students reported taking new experiences and issues with pleasure. Another 7.3%, 14.5% and 24.6% of the students reported they never, rarely and sometimes but with 23.2% and 30.4% usually and always respectively, reporting feeling satisfied. It is also good that majority of the students reported always feeling satisfied. 11.6%, 16.0% and 18.8% of the students never, rarely and sometimes respectively, take interest and challenges in daily studies and life, but 30.4% usually and 23.2% always did. It is poor that majority of the students reported they usually take interest and challenges in daily studies and life. To feel growth in positive ways, 5.8%, 16.0% and 26.1% of the students reported they never, rarely and sometimes respectively, feel growth in positive ways but with 18.8% usually and 33.3% always did. It is good that majority of the students reported they always feel growth in positive ways. 13.1%, 18.8% and 21.7% of the students reported they never, rarely and sometimes and with 16.0% and 30.4% usually and always respectively, clarifying own learning purpose. It is also good that majority of the students reported always clarifying own learning purpose. Therefore, the life appreciation as reported by majority of the students is good.

In summary, therefore, the practice pattern of University Health Education students in healthy lifestyle indices is at the midpoint, half way good and

half way poor. This means that the practice pattern is either good or poor.

**Table 2:** t-test Statistics of the Indices of Healthy Lifestyle and Gender of University Health Education Students.

Index of Healthy Lifestyle	Gender	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
Exercise behaviour	Female	109	10.30	3.812	-5.051	136	.000
	Male	29	14.31	3.743			
Regular behaviour	Female	109	14.76	4.098	2.794	136	.006
	Male	29	12.38	4.013			
Nutrition behaviour	Female	109	13.95	3.792	.333	136	.740
	Male	29	13.69	3.855			
Health responsibility	Female	109	23.40	3.739	1.873	136	.063
	Male	29	21.86	4.627			
Health risk behaviour	Female	109	16.42	1.983	4.048	136	.000
	Male	29	14.76	1.902			
Social support	Female	109	18.43	4.831	-.829	136	.408
	Male	29	19.24	4.024			
Stress management	Female	109	17.03	3.745	.487	136	.627
	Male	29	16.66	3.309			
Life appreciation	Female	109	17.02	4.342	-3.175	136	.002
	Male	29	19.86	4.068			
Total	Female	109	129.67	17.196	-.826	136	.411
	Male	29	132.62	16.760			

Data in Table 2 is the t-test statistics of the indices of Healthy Lifestyle and gender of University Health Education students. The results showed that the exercise behaviour of male University Health Education students is statistically significantly better ( $14.31 \pm 3.74$ ) compared to the females ( $10.30 \pm 3.81$ ),  $t(136) = -5.051$ ,  $p = .000$ . Therefore, the exercise behaviour of University Health Education students is statistically significantly different by gender with the males having better exercise behaviour than the females. Results revealed that the regular behaviour of female University Health Education students is statistically significantly better ( $14.76 \pm 4.10$ ) compared to the males ( $12.38 \pm 4.01$ ),  $t(136) = 2.794$ ,  $p = .006$ . Therefore, the regular behaviour of Health Education students is statistically significantly different by gender with the females having better regular behaviour than the males.

Results indicated that the nutrition behaviour of female Health Education students appears to be different ( $13.95 \pm 3.79$ ) compared to the males ( $13.69 \pm 3.86$ ) but the difference is not statistically significantly different,  $t(136) = .333$ ,  $p = .740$ . Therefore, the nutrition behaviour of Health Education students is not statistically significantly different by gender. Results depicted that the health responsibility of female Health Education students is not statistically significantly better ( $23.40 \pm 3.74$ ) compared to the males ( $21.86 \pm 4.63$ ),  $t(136) = 1.873$ ,  $p = .063$ . Therefore, the health responsibility of Health Education students is not statistically significantly different by gender.

Results also showed that the health risk behaviour of female Health Education students is statistically significantly higher ( $16.42 \pm 1.98$ ) compared to the males ( $14.76 \pm 1.90$ ),  $t(136) = 4.048$ ,  $p = .000$ . Therefore, health risk behaviour of Health Education students is statistically significantly different by gender with the females taking high health risk than the males. Results also revealed that social support for male Health Education students appear to be better ( $19.24 \pm 4.02$ ) compared to the females ( $18.43 \pm 4.83$ ),  $t(136) = -.829$ ,  $p = .408$ . Therefore, the social support for Health Education students is not statistically significantly different by gender. Results also depicted that the stress management of male Health Education students is not statistically significant ( $16.66 \pm 3.31$ ) compared to the females ( $17.03 \pm 3.75$ ),  $t(136) = .487$ ,  $p = .627$ . Therefore, the stress management of Health Education students is not statistically significantly different by gender. Results also indicated that life appreciation of male Health Education students is statistically significantly better ( $19.86 \pm 4.07$ ) compared to the females ( $17.02 \pm 4.34$ ),  $t(136) = -3.175$ ,  $p = .002$ . Therefore, life appreciation of Health Education students is statistically significantly different by gender with the males reporting appreciating life better than the females.

#### 4. Discussion of Findings

Findings revealed that the practice pattern of University Health Education students in healthy lifestyle is at the midpoint, half way good and half way

poor. Finding could be attributed to the Health Education experiences which they have been exposed to.

Findings also revealed that the exercise behaviour of University Health Education students is statistically significantly different by gender with the males having better exercise behaviour than the females. Finding is consistent with that of James et al. (2022); Ghanim et al. (2022) who noted that male students at the Institute of Rural Development Planning Dodoma performed significantly better in strength and endurance exercise than females.

Findings showed that the regular behaviour of University Health Education students is statistically significantly different by gender with the females having better regular behaviour than the males. One such regular behaviour is breakfast consumption, which differed by gender. Finding is congruent with that found that adult women eat breakfast regularly than other individuals (Ashraf & Ali, 2018).

Findings indicated that the nutrition behaviour of University Health Education students is not statistically significantly different by gender. In some of the variables assessed (that is, daily water intake, alcohol intake per week), significant differences were found between males and females (Feraco et al. 2024). Findings obtained from the present study, though in one dimension, is inconsistent with results showing significant gender difference in eating habits and diet with females opting for healthier foods such as vegetables while males like red and processed meat (Feraco et al. 2024; European Institute for Gender Equality, 2025).

Findings depicted that the health responsibility of University Health Education students is not statistically significantly different by gender. Finding is at variance with evidence that found significant gender differences were documented in health promotion lifestyle profile II values and health responsibility with women having high values and men lower values (Ghanim et al. 2022). This finding is somewhat inconsistent with the result of Thompson et al. (2016) in one domain of health responsibility in which a significant between-effect main effect of gender with females reporting visits to physician to a higher level than males for health issues.

It was also found in the present study that health risk behaviour of University Health Education students is statistically significantly different by gender with females taking high health risk than males. Finding is two dimensions of health risk behaviour (that is, drinking and smoking) is somewhat not in line with

European Institute for Gender Equality (2025) which noted that the male folk are more prone to smoking and drinking than the female folk. However, the present finding is congruent with the result of Kim et al. (2018) who found that significant differences in mean between men and women were found in all health risk dimensions, including general health, environment and lifestyle with men's perception being lower than women's in self-risk factors.

For social support, findings revealed that University Health Education students is not statistically significantly different by gender. This finding is not consistent with the assertion that boys have the tendency to overlook girls' contributions in small group project (Seifert & Sutton, 2024). Finding is similarly inconsistent Nelson et al. (2018)'s finding that women reported lesser level of social support from family. It is also incongruent with results reflecting socialization patterns existing significantly for gender perspective with females perceiving greater extent of parent's involvement (Garcia-Mendoza et al. 2018).

Stress management of University Health Education students was found not to be statistically significantly different by gender. The finding is different from that indicating that stress was significantly high in female individuals than males in the event of disease pandemic such as COVID-19 (Zhao et al. 2022).

Findings also reflected that the life appreciation of University Health Education students is statistically significantly different by gender with the females reporting appreciating life better than the males. Finding in one aspect of the life appreciation is in line results showing significant gender differences with female individuals reported greater level of feeling satisfied in life than males across educational standing, income and job groups (Joshnloo & Jovanovic, 2020).

## 5. Conclusion

The practice pattern of healthy lifestyle indices of University Health Education students is either good or poor. Their life appreciation, exercise, regular, and health risk behaviour were statistically significantly different by gender while the nutrition, health responsibility, social support and stress management were not significantly different by gender.

## 6. Recommendations

The poor practice pattern of the University Health students can be improved by ensuring that they are more sensitized by the Health Education lecturers

especially in the indices where they reported poorly. For example, usage of headphones for at least thirty minutes.

Male and female University Health Education students should be encouraged and sensitized by guest speakers in Health Education during seminars, workshops and conferences that gender equity is crucial in life appreciation, exercise, regular and health risk behaviours. The females can be encouraged to take up sports on equal basis with males.

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APPENDIX

**Table 1:** Frequencies and Percentages of the Practice Pattern of Health Lifestyle of University Health Education Students

S/N	Healthy Lifestyle	Never (%)	Rarely (%)	Sometimes (%)	Usually (%)	Always (%)	Total (%)	Remark
<b>Exercise behavior</b>								
1	Vigorous Exercise of thirty minutes thrice weekly	30(21.7)	36(26.1)	44(31.9*)	16(11.6)	12(8.7)	138(100)	Poor
2	Warm up before vigorous exercise	24(17.4)	26(18.8)	28(20.3)	29(21.0)	31(22.5*)	138(100)	Good
3	Participates in brisk walking, bicycling, aerobic dancing, stair climbing and/or other mild/moderate physical activity half to one hour thrice weekly	16(11.6)	12(8.7)	44(31.9)	20(14.5)	46(33.3*)	138(100)	Good
4	Vigorous exercise 30 minutes after meals	70(50.7*)	40(29.0)	12(8.7)	10(7.3)	6(4.3)	138(100)	Poor
<b>Regular behavior</b>								
5	Daily breakfast consumption	14(10.2)	14(10.2)	30(21.7)	30(21.7)	50(36.2*)	138(100)	Good
6	Eat three meals daily at specific times	14(10.2)	18(13.0)	52(37.7*)	20(14.5)	34(24.6)	138(100)	Poor
7	Observe specific study and resting times	6(4.3)	22(16.0)	52(37.7*)	24(17.4)	34(24.6)	138(100)	Poor
8	Enough daily sleep	12(8.7)	18(13.1)	30(21.7)	26(18.8)	52(37.7*)	138(100)	Good
<b>Nutrition behavior</b>								
9	Consciously replaces fluids during exercise	10(7.2)	32(23.2)	42(30.4*)	22(16.0)	32(23.2)	138(100)	Poor
10	Daily intake of at least 800ml/5 disposal paper cups of water	8(5.8)	20(14.5)	41(29.7)	26(18.9)	43(31.2*)	138(100)	Good
11		2(1.5)	12(8.7)	45(32.6)	47(34.1*)	32(23.2)	138(100)	Poor
12	Consume food high in fibre (fruits, vegetables) Careful choice of food low in saturated fat, salt and/or cholesterol	16(11.6)	24(17.4)	42(30.4*)	20(14.5)	36(26.1)	138(100)	Poor
<b>Health risk behavior</b>								
13	Excessive alcohol intake	128(92.8*)	2(1.4)	-	4(2.9)	4(2.9)	138(100)	Good
14	Tobacco or marijuana usage	122(88.4*)	4(2.9)	10(7.3)	-	2(1.4)	138(100)	Good
15	Usage of headphones for at least thirty minutes	10(7.3)	18(13.0)	36(26.1)	30(21.7)	44(31.9*)	138(100)	Poor
16	Read or use computer consistently for at least one hour	38(27.5*)	24(17.4)	32(23.2)	24(17.4)	20(14.5)	138(100)	Good
<b>Health responsibility</b>								
17	Prompt visit to a physician in case of uncommon signs and symptoms	28(20.3)	36(26.1*)	36(26.1*)	8(5.8)	30(21.7)	138(100)	Poor
18	Comply with physician advice/treatment	10(7.3)	12(8.7)	26(18.8)	40(29.0)	50(36.2*)	138(100)	Good
19	Brush teeth or use floss after eating	4(2.9)	6(4.4)	50(36.2)	30(21.7)	48(34.8*)	138(100)	Good
20	Wash hands before eating	2(1.4)	8(5.8)	16(11.6)	24(17.4)	88(63.8*)	138(100)	Good
21	Cover mouth and nose when sneezing/coughing	6(4.4)	2(1.4)	8(5.8)	20(14.5)	102(73.9*)	138(100)	Good
22	Keep classroom, library and/or laboratory clean	6(4.4)	10(7.3)	6(4.4)	26(18.9)	88(63.8*)	138(100)	Good
<b>Social Support</b>								
23	Promptly help classmates in trouble	26(18.8)	46(33.3*)	40(29.0)	10(7.3)	16(11.6)	138(100)	Poor
24	Enjoy visiting relatives	10(7.3)	32(23.2)	38(27.5*)	38(27.5*)	20(14.5)	138(100)	Poor
25	Involve in group work with classmates	16(11.6)	26(18.8)	34(24.6)	40(29.0*)	22(16.0)	138(100)	Poor
26	Discuss troubles with people	22(15.9)	32(23.2)	38(27.5*)	22(15.9)	24(17.8)	138(100)	Poor
27	Pay attention to people when tackling affairs	12(8.7)	30(21.7)	30(21.7)	30(21.7)	36(26.1*)	138(100)	Good
28	Express feelings in inoffensive ways	32(23.2*)	30(21.7)	24(17.4)	22(16.0)	30(21.7)	138(100)	Poor
<b>Stress Management</b>								
29	Make out time to relax daily	16(11.6)	20(14.5)	30(21.7)	38(27.5*)	37(26.8)	138(100)	Poor
30	Accept things that cannot be changed	18(13.1)	28(20.3)	32(23.2)	26(18.8)	34(24.6*)	138(100)	Good
31	Make effort to monitor emotional changes	6(4.3)	22(16.0)	44(31.9*)	38(27.5)	28(20.3)	138(100)	Poor
32	Schedule study/lecture activities	4(2.9)	24(17.4)	42(30.4*)	42(30.4*)	26(18.9)	138(100)	Poor
33	Respond calmly to frustration and remain unruffled	14(10.1)	26(18.9)	36(26.1*)	30(21.7)	32(23.2)	138(100)	Poor
<b>Life Appreciation</b>								
34	Take new experiences and issues with pleasure	18(13.1)	30(21.7)	26(18.9)	30(21.7)	34(24.6*)	138(100)	Good
35	Feel satisfied	10(7.3)	20(14.5)	34(24.6)	32(23.2)	42(30.4*)	138(100)	Good
36	Take interest and challenges in daily studies and life	16(11.6)	22(16.0)	26(18.8)	42(30.4*)	32(23.2)	138(100)	Poor
37	Feel growth in positive ways	8(5.8)	22(16.0)	36(26.1)	26(18.8)	46(33.3*)	138(100)	Good
38	Clarify own learning purpose	18(13.1)	26(18.8)	30(21.7)	22(16.0)	42(30.4*)	138(100)	Good
	Overall	-	-	21(15.2)	103(74.6*)	14(10.2)	138(100)	Poor

**Key:** \*highest % accepted as benchmark for decision making



## Intellectuals as Patriots: Contributions of Nigerian Academics to Democratic Movements (1999–2023)

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**Abstract.** The role of intellectuals in shaping democratic governance has been a subject of global scholarly inquiry, yet the contributions of Nigerian academics to democratic movements in the Fourth Republic (1999–2023) remain underexplored. This study examines how Nigerian intellectuals, through activism, policy advocacy, and public engagement, have influenced the trajectory of democracy in the country. Using a multidisciplinary approach that combines historical analysis, political theory, and qualitative interviews, the research highlights key moments where academics have acted as patriots challenging authoritarian tendencies, advocating for electoral reforms, and promoting inclusive governance. The paper traces the evolution of academic participation in Nigeria's democratic struggles, from early resistance to military autocracy to more recent interventions in electoral accountability and social justice campaigns. It identifies pivotal contributions by university-based think tanks, civil society organizations, and individual scholars in fostering political consciousness and mobilizing grassroots participation. While acknowledging the constraints of institutional decay, brain drain, and political co-optation, the study argues that Nigerian academics have played a dual role: as critics of state inefficiencies and as architects of reformist ideas. The research concludes by exploring the prospects of intellectual engagement in an increasingly digitalized public sphere, emphasizing the need for sustained scholarly advocacy to strengthen Nigeria's democratic institutions.

### 1. Introduction

The relationship between intellectuals and democratic governance has long been a focal point of within our polity. In Nigeria, academics have historically served as a major propelling force for social and political change, particularly in challenging authoritarianism and advocating for reforms towards self-rule and total inclusive governance. With the transition to democratic governance in 1999, the role of Nigerian academics graduated from resistance to active participation in institutionalising democratic institutions and processes. Their contributions evolved from theoretical frameworks and policy advocacy to direct involvement in governance and electoral reforms. This study seeks to examine the multifaceted role of Nigerian intellectuals as patriots who have contributed majorly to the sustenance and advancement of democracy in the Fourth Republic (1999–2023).

The problem as Identified, despite Nigeria's return to democratic rule in 1999, has been inundated with challenges, such as electoral malpractices, weak institutions, and governance deficits. While the contributions of civil society and political actors have been extensively studied, the role of academics in shaping democratic processes remains underexplored. However, Nigerian intellectuals have engaged in various capacities, from critiquing undemocratic practices to driving reforms such as the Electoral Act amendments of 2010, 2022, and the advocacy for digital election processes. Academics' impact,

motivation and the challenges they face in this role are so far insufficiently documented, leaving a gap in understanding the intellectual's place in Nigeria's democratic consolidation. Hence, necessitated this research paper.

The objectives of this paper are; to analyse the contributions of Nigerian academics to electoral reforms and democratic processes between 1999 - 2023, to evaluate the involvement of academics in governance and policy advocacy within the fourth republic and to assess the challenges faced by Nigerian intellectuals in their roles as patriots and advocates for democratic consolidation.

The followings are the thematic questions designed to solicit responses from the respondents; what contributions have Nigerian academics made to electoral reforms and the democratic process during key political moments between 1999 - 2023, how have academics influenced governance and policy advocacy in the Fourth Republic, and what challenges do Nigerian intellectuals face in their efforts to advance democratic governance?

This paper underscores the critical role of intellectuals in fostering democratic governance, highlighting their contributions to electoral reforms and policy advocacy. In documenting the interventions of Nigerian academics, the paper provides a comprehensive understanding of how intellectuals shape political discourse and reform. However, the findings are expected to assist the policymakers, scholars, and civil society organizations seeking to strengthen democratic institutions and practices in Nigeria. In the same vein, this study is expected to contribute to global scholarship on the intersection of intellectualism and patriotism in postcolonial states.

## 2. Thematic Review of Related Literature

Academic Contributions to Electoral Processes (1999 - 2024) Nigerian academics have played pivotal roles in key electoral moments. Aside Justice Ephraim Akpata the then Chairman of Independent National Electoral Commission (INEC) who was from Judiciary arm of government, the subsequent chairmen are from the academics. This ranges from Prof. Maurice Iwu (2007), Prof. Attahiru Jega (2011-2015) and Prof. Mahmud Yakubu (2023).

Professor Maurice Iwu served as the Chairman of the Independent National Electoral Commission (INEC) from 2005 to 2010, a period marked by significant challenges and efforts toward electoral reform in Nigeria. While his tenure was controversial, it also included some notable contributions to the electoral

process. Below are key areas of his contributions: Technological Innovations such as; Introduction of ICT in Election Management and Biometric Voter Registration (BVR), Electoral Legal Framework such as; Advocacy for Electoral Reforms and Political Parties and Campaign Financing, Stakeholder Engagement such as; Inclusion of Civil Society and Collaboration with International Bodies, including Voter Education and Awareness.

Professor Attahiru Jega, as Chairman of the Independent National Electoral Commission (INEC) from 2010 to 2015, played a pivotal role in advancing electoral reforms in Nigeria. His leadership marked a turning point in the country's electoral process, focusing on transparency, credibility, and inclusiveness. Below are key contributions to electoral reform under his tenure: Introduction of the Biometric Permanent Voter Card (PVC), Deployment of Smart Card Readers (2015), Improved Voter Registration Process, Institutional Reforms within INEC, Transparent Election Result Collation Process, Promotion of Electoral Legal Reforms, Engagement with Stakeholders and Credible 2015 General Elections (Osayi, 2024).

As Chairman of the Independent National Electoral Commission (INEC) since 2015, Professor Mahmud Yakubu has been at the forefront of implementing significant electoral reforms in Nigeria. His tenure has focused on leveraging technology, improving transparency, and addressing challenges in Nigeria's electoral processes. Below are his key contributions: Introduction of the Bimodal Voter Accreditation System (BVAS), Electronic Transmission of Results, Continuous Voter Registration (CVR), Introduction of the INEC Result Viewing (iReV) Portal, Advocacy for Electoral Legal Reforms, Improvement in Logistics and Election Operations, Engagement with Stakeholders, Promotion of Inclusion in Elections and Conduct of General Elections (2019 and 2023).

### 2.1 Academics in Governance

Beyond electoral processes, Nigerian academics have directly engaged in governance, serving as ministers, advisers, and members of reform committees. Notable examples include Ngozi Okonjo-Iweala, whose tenure as Minister of Finance saw significant economic reforms, and Oby Ezekwesili, who championed transparency initiatives.

Professor Yemi Osinbajo (Vice President, 2015–2023) who Played a vital role in economic policies, particularly the implementation of the Economic Recovery and Growth Plan (ERGP) during Nigeria's

recession, championed social investment programs such as TraderMoni, N-Power, and Conditional Cash Transfers, which targeted poverty alleviation and advocated for judicial reforms and good governance practices (Atakpa 2024).

Professor Charles Soludo (Governor, Anambra State, 2022–Present; CBN Governor, 2004–2009) As Governor of the Central Bank of Nigeria, introduced banking sector reforms, including the recapitalization of banks, which stabilized the financial sector and as Governor of Anambra State he focused on infrastructure development, economic revitalization, and governance reforms.

Professor Babagana Zulum (Governor, Borno State, 2019–Present) who implemented innovative governance strategies to address insurgency and humanitarian crises in Borno State and prioritized education, healthcare, and rebuilding communities affected by Boko Haram insurgency.

Professor Jerry Gana (Minister of Information, 1999–2001; Political Advisor) who advocated for national unity and democratic governance through public engagement and policy initiatives during Nigeria's transition to democracy in 1999.

Dr. Ngozi Okonjo-Iweala (Minister of Finance, 2003–2006, 2011–2015) who introduced the Debt Relief Initiative, leading to the cancellation of \$18 billion in Nigeria's debt by the Paris Club and Implemented economic reforms, including the creation of the Sovereign Wealth Fund and the establishment of the Integrated Payroll and Personnel Information System (IPPIS).

Professor Ibrahim Gambari (Chief of Staff to the President, 2020–2023) who provided strategic policy advice to the presidency, particularly in foreign relations and governance and advocated for democracy, peacebuilding, and human rights during his tenure as a diplomat and academic.

Professor Ruqayyatu Ahmed Rufa'i (Minister of Education, 2010–2013) who championed reforms in Nigeria's education sector, including the establishment of more federal universities and policies to improve access to education.

Professor Bolaji Akinyemi (Former Minister of External Affairs, Academic Advisor) who advocated for democratic reforms and Nigeria's leadership in African diplomacy and played advisory roles in constitutional development and democratic governance.

Professor Ali Pate (Coordinating Minister of Health and Social Welfare, 2023–present under Bola Tinubu) He is leading reforms to Nigeria's healthcare system, including efforts to strengthen primary healthcare and universal health coverage.

Professor Tahir Mamman (Minister of Education, 2023 – 2024 under Bola Tinubu) He focuses on restructuring Nigeria's education system, addressing funding, access, and quality of education, particularly in tertiary institutions.

Dr. Bosun Tijani is driving policies that promote digital inclusion, innovation, and the growth of Nigeria's technology ecosystem.

Professor Mohammad Mahmood Abubakar he worked on climate change adaptation, environmental protection, and the implementation of Nigeria's climate action plans.

Dr. Yemi Kale revolutionized Nigeria's data collection and reporting systems, providing reliable statistics that informed policy decisions in governance, economics, and development planning.

Dr. Jumoke Oduwole worked on reforms that improved Nigeria's ranking in the World Bank's Ease of Doing Business index, making it easier for businesses to operate in the country.

Professor Abubakar Rasheed oversaw major reforms in the accreditation of Nigerian universities and advocated for improvements in higher education quality and funding. These individuals exemplify how intellectuals translate academic expertise into practical governance solutions.

This body of literature reveals a rich tapestry of intellectual engagement in Nigeria's democratic journey.

### 3. Research Methodology

The population for this study consists of Nigerian intellectuals who are actively involved in advancing democratic governance. These individuals are typically found in academic, research, political, and civil society settings. The specific population are University Academics, Political Analysts, Civil society leaders, Journalist/media experts and Government Officials/Policy Makers. To ensure comprehensive and representative findings, a quantitative research design was employed, using survey questionnaires. Stratified random sampling technique was adopted in selecting population size of the study. Based on this, five (5) respondents were

selected from each Geo-Political zone consisting North East North Central, North West, South-South, South East South West.

### 3.1 Population of the Study

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### 3.2 Administration of questionnaires

Below are the areas covered during the administration of the questionnaires:

#### Universities

North Central - University of Ilorin (UNILORIN) – Kwara State

North East-Federal University of Technology (FUTY) – Yola, Adamawa State  
 North West-Bayero University Kano (BUK) – Kano State  
 South East-University of Nigeria (UNN) – Nsukka, Enugu State  
 South South-University of Calabar (UNICAL) – Cross River State  
 South West-University of Ibadan (UI) – Oyo State  
 Journalist/Media Experts  
 North Central - Leadership Newspaper (Abuja)  
 North East - The Scope Newspaper (Adamawa State)  
 North West - Daily Trust (Kaduna State)  
 South East - The Sun Newspaper (Anambra State)  
 South South - The Tide (Rivers State)  
 South West - The Punch (Lagos State)

#### Civil Societies

North Central - Centre for Transparency and Advocacy (CTA) – Based in Abuja (FCT)  
 North East - Borno State Civil Society Coalition (BOCISCO) – Borno State  
 North West - Kano State Civil Society Forum (KCSF) – Kano State  
 South East - Human Rights, Justice and Peace Foundation (HRJPF) – Enugu State  
 South South - Niger Delta Citizens and Budget Platform (NDCBP) – Rivers State  
 South West - Centre for Democracy and Development (CDD) – Lagos State  
 For the sake of anonymity, the details of the political analysts and government officials will not be revealed.

## 4. Analysis

**Table 1** showing Involvement in Discussions, Research, or Advocacy Related to Electoral Reforms in Nigeria

Respondent Group	Very Involved (1)	Somewhat Involved (2)	Not Involved (3)	Percentage Involved	Very Involved	Percentage Involved	Somewhat Involved	Percentage Involved	Not Involved
North East	2	3	0	40%	60%	60%	0%	0%	
North Central	1	3	1	20%	60%	60%	20%	20%	
North West	3	1	1	60%	20%	20%	20%	20%	
South South	1	3	1	20%	60%	60%	20%	20%	
South East	2	2	1	40%	40%	40%	20%	20%	
South West	3	2	0	60%	40%	40%	0%	0%	
Total	12	14	4	40%	46.7%	46.7%	13.3%	13.3%	

*Source: Researcher*

#### Key Insights:

North West and South West respondents showed high involvement in electoral reforms (60% very involved). North East and South East respondents had lower involvement, particularly with some not involved at all.

**Table 2:** showing Major Contributions of Nigerian Academics to Electoral Reforms (1999 - 2023)

Year Range	Significant Contribution (1)	Partial Contribution (2)	No Contribution (3)	Percentage Significant	Percentage Partial	Percentage No Contribution
1999 - 2004	10	10	10	33.3%	33.3%	33.3%
2007 - 2011	7	15	8	23.3%	50%	26.7%
2015 - 2019	8	14	8	26.7%	46.7%	26.7%
2023 to date	9	12	9	30%	40%	30%

Source: Researcher

**Key Insights:**

1999-2004 shows a balanced perception, with academics regarded as contributing significantly by 33.3% of respondents.

2007-2011 saw a larger portion of respondents viewing academics' contributions as partial (50%).

2023 shows a similar pattern, with 40% rating it as partial contribution.

**Table 3** showing Primary Areas of Focus for Nigerian Academics Regarding Electoral Reforms (1999 - 2023)

Focus Area	No Focus (1)	Partial Focus (2)	Significant Focus (3)	Percentage No Focus	Percentage Partial Focus	Percentage Significant Focus
Voter Education & Electoral Law	5	10	15	16.7%	33.3%	50%
Election Monitoring & Observation	4	8	18	13.3%	26.7%	60%
Electoral Transparency & Technology	6	9	15	20%	30%	50%

Source: Researcher

**Key Insights:**

The majority of respondents view Election Monitoring & Observation and Voter Education & Electoral Law Reform as having significant focus (50% and 60%, respectively).

Electoral Transparency & Technology was also regarded with significant focus by 50% of respondents, suggesting a major area of academic focus in recent years.

**Table 4** showing Impact of Research or Advocacy on Electoral Reforms

Impact Assessment	No Impact	Slightly Impactful	Highly Impactful	Percentage No Impact	Percentage Slightly Impactful	Percentage Highly Impactful
Total	5	12	13	16.7%	40%	43.3%

Source: Researcher

**Key Insights:**

A large proportion of respondents (43.3%) believe their research or advocacy has been highly impactful, while 40% rated it as slightly impactful.

A smaller portion (16.7%) felt their research had no impact, suggesting that while academics feel influential, challenges still exist.

**Table** showing 5 Level of Involvement of Academics in Governance and Policy Advocacy

Level of Activity	Very Active	Slightly Active	Not Active	Percentage Very Active	Percentage Slightly Active	Percentage Not Active
Total	8	18	4	26.7%	60%	13.3%

Source: Researcher

**Key Insights:**

Most respondents (60%) believe academics are slightly active in governance and policy advocacy, while 26.7% believe they are very active.

A small portion (13.3%) feels that academics are not active.

**Table 6** showing Challenges Faced by Nigerian Intellectuals in Advocating for Democratic Consolidation.

Challenge Area	Major Challenge (1)	Partial Challenge (2)	Not a Challenge (3)	Percentage Major Challenge	Percentage Partial Challenge	Percentage Not a Challenge
Political Instability	20	8	2	66.7%	26.7%	6.7%
Corruption in Government	25	4	1	83.3%	13.3%	3.3%
Censorship & Repression	15	10	5	50%	33.3%	16.7%
Ethnic & Religious Divisions	18	8	4	60%	26.7%	13.3%
Limited Access to Decision-makers	10	14	6	33.3%	46.7%	20%
Economic Constraints	22	6	2	73.3%	20%	6.7%
Lack of Public Interest	18	8	4	60%	26.7%	13.3%

Source: Researcher

**Key Insights:**

Corruption in government and political instability are regarded as the major challenges (83.3% and 66.7%, respectively).

Censorship and repression, and economic constraints also emerged as significant barriers to democratic advocacy.

**5. Discussion of Findings**

**Table 1: Involvement in Discussions, Research, or Advocacy Related to Electoral Reforms**

North West and South West displayed the highest levels of involvement, with 60% of respondents being very involved. This suggests stronger advocacy or research networks and possibly a more robust academic or civil society presence in these regions. North East and South East showed lower levels of involvement, with North East respondents entirely avoiding "Not Involved" responses. This could imply heightened interest but limited capacity or engagement opportunities in certain areas. The overall involvement statistics (40% very involved, 46.7% somewhat involved, and 13.3% not involved) reflect moderate participation, with room for more active contributions across all regions.

**Table 2: Contributions of Nigerian Academics to Electoral Reforms (1999–2023)**

1999–2004 shows a balanced perception with 33.3% each for significant, partial, and no contributions. This aligns with the nascent democratic processes post-military rule, where academic contributions may have been exploratory. The 2007–2011 period saw a shift, with 50% of respondents noting partial contributions, reflecting possibly the increased complexity of electoral issues during that time. 2015–2019 and 2023 to date show consistent trends, where significant contributions remain below 30%, and partial contributions dominate. This indicates persistent barriers preventing full academic involvement in electoral reform.

**Table 3: Primary Areas of Focus for Nigerian Academics Regarding Electoral Reforms**

Election Monitoring & Observation (60%) and Voter Education & Electoral Law (50%) emerge as dominant areas of focus. These findings highlight academia's role in promoting free and fair elections and educating the electorate. Electoral Transparency & Technology also received significant attention (50%), reflecting the growing importance of technology in combating electoral malpractice. The relatively high "partial focus" percentages suggest that while these areas are priorities, constraints such as funding, political environment, or technical capacity limit deeper academic engagement.

**Table 4: Impact of Research or Advocacy on Electoral Reforms**

43.3% of respondents rated their efforts as highly impactful, indicating that academic research and advocacy play a critical role in shaping reforms. However, 40% felt their contributions were only slightly impactful, which underscores challenges in translating research into actionable policy changes. The 16.7% with no perceived impact could reflect disillusionment or systemic barriers like political apathy, weak institutions, or limited access to decision-makers.

**Table 5: Involvement of Academics in Governance and Policy Advocacy**

60% of respondents consider academics slightly active, reflecting moderate involvement in governance and policy advocacy. The 26.7% rating academics as

very active indicates pockets of strong influence but highlights a need for more consistent engagement. The 13.3% identifying no activity points to barriers such as lack of resources, political interference, or weak networks for influencing governance.

**Table 6: Challenges Faced by Nigerian Intellectuals in Advocating for Democratic Consolidation**

Corruption in government (83.3%) and political instability (66.7%) are the most significant barriers, undermining efforts to promote transparency and accountability. Economic constraints (73.3%) also pose a major hurdle, limiting research funding and participation in advocacy activities. Censorship and repression (50%) reflect systemic threats to academic freedom and democratic discourse. Ethnic and religious divisions (60%) further complicate advocacy efforts, as these divisions often exacerbate political tensions. Limited access to decision-makers (33.3% major, 46.7% partial) highlights institutional bottlenecks that stifle direct academic contributions to policy formulation.

**Overall Insights**

**Moderate but Growing Involvement:** Academics are increasingly engaged in electoral reforms, but challenges like corruption, economic constraints, and limited policy influence hinder more significant contributions.

**Prioritization of Key Areas:** Research focus on voter education, monitoring, and technology aligns with Nigeria’s pressing electoral challenges, though broader engagement is needed.

**Impact of Efforts:** While many respondents see their efforts as impactful, a substantial portion indicates that systemic challenges diminish their effectiveness.

**Challenges as Bottlenecks:** Structural issues such as corruption, political instability, and repression remain significant obstacles that must be addressed to enhance the role of academics in democratic consolidation.

**6. Recommendations**

**Strengthen Academic:** Policy Linkages: Formal channels for academics to engage directly with policymakers should be established, ensuring that research findings and advocacy efforts translate into actionable reforms.

**Promote Collaborative Research and Advocacy:** Partnerships between academics, civil society, and electoral bodies should be encouraged to amplify the impact of electoral reform initiatives, especially in underrepresented regions like the North East and South East.

**Increase Funding for Electoral Research:** Resources should be allocated through government and international organizations to support studies on voter education, election monitoring, and electoral technology.

**Address Systemic Barriers:** Corruption, censorship, and economic constraints can be tackled through institutional reforms and the establishment of independent watchdogs to protect democratic advocacy.

**Expand Capacity-Building Initiatives:** Provide training and resources for academics to enhance their expertise in emerging areas such as electoral technology and transparency.

**Promote Inclusive Engagement:** Facilitate broader participation of academics across all geopolitical zones by addressing regional disparities in access to opportunities and resources.

**7. Conclusion**

The findings highlight the crucial role Nigerian academics play in advancing electoral reforms, particularly in voter education, election monitoring, and transparency. However, systemic challenges, including corruption, political instability, and limited access to decision-makers, hinder their full potential. Addressing these barriers through enhanced collaboration, funding, and institutional support will not only bolster democratic consolidation but also empower academics to contribute more significantly to Nigeria’s electoral Reform, policy advocacy and democratic consolidation.

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## Personalized Learning Paths in Open Education Systems

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**Abstract.** The concept of education reflected in open education systems and their personalized learning paths is future-changing. Here, learners meet their personalized learning content according to their needs, interests, and learning speed. The idea is supported by technology, using adaptive learning platforms, data analytics, and open education resources, to make experiences flexible, learner-centred, and enhance access and engagement. The potential for personalized learning pathways is huge in open education systems, which should provide quality and low-cost education to very diverse populations. However, successful personalized learning faces challenges on infrastructure, data privacy, quality of content, and digital literacy. The personalized learning paths in open education can further allow for improved learning outcomes, scalability, and increased learner autonomy by tackling a number of challenges in the presentation of recommendations for their effective implementation. Personalized learning paths-aided by adaptive technologies and collaborative learning strategies-support more inclusive, flexible, and equitable education systems, especially in areas where access to traditional education systems is at a minimum.

**Keywords:** Personalized learning paths, open education systems, adaptive learning, data analytics, educational technology, scalability, digital literacy

### 1. Introduction

Education nowadays is no longer confined to the traditional classroom and textbooks. Technological advancement has cast a question mark on the traditional "one-size-fits-all" approach to teaching. The emergence of technology has created new avenues for transforming learning. Of the different approaches

that have been highlighted and appreciated, personalized learning has been one strategy. Personalized learning, which involves education being offered based on individual needs, preferences, and learning styles of each student, is fast reshaping the educational landscape and enabling students to realize their full potential.

Personalized learning paths have become the cornerstone of modern education, especially within open education systems that emphasize accessibility and flexibility. These learning paths take into consideration the unique needs, goals, and abilities of individual learners and offer tailored educational experiences that promote deeper engagement and better outcomes. In a world where one-size-fits-all education is increasingly being regarded as anachronistic, personalized learning presents a different approach to meet diverse learners' needs, especially within open education frameworks that stress open and free learning opportunities (McKnight et al., 2016).

Open education systems, including MOOCs, OER, and open courseware, allow learners to access high-quality educational content without the constraints of traditional classroom settings (Miao 2015). These systems are inherently flexible, providing the perfect environment for personalized learning where learners can follow customized paths that align with their specific interests and pace of learning. Personalized learning paths are enabled by advancements in data analytics, machine learning, and adaptive technologies, which track learner progress and modify content to suit individual needs (Siemens, 2013).

Although the concept of personalized learning itself is far from new, its application to open education systems creates unparalleled potential to make

education more democratic. With support from learning management systems, adaptive learning platforms, and data-driven insights, these systems allow learners to take ownership of their learning process far more effectively (Bakia et al., 2012). This is in contrast to traditional models of education that tend to subject all learners to the same curriculum without considering learner variation or prior learning (Rose & Meyer, 2002).

In this regard, open education systems promise improved learner outcomes by providing more engaging, efficient, and relevant learning pathways. On the other hand, the adoption of such models has challenges such as ensuring data privacy, content quality, and scalability issues in large and diverse learner populations (Johnson et al., 2016). The paper examines the concept of personalized learning paths within open education systems, discussing the benefits, challenges, and technologies that enable them.

## 2. Concept of Personalized Learning Paths in Open Education Systems

The personalized learning concept has just lately emerged as one of the most important targets in the education system. In the history of personalized learning, long before now, John Dewey was the greatest advocate of putting the learner in the center in the early 20th century (Redding, 2016). It later started to take shape when some education reformers began to criticize the standardized approach to the industrialized education system and sought various methods to address student diversity (Redding, 2016). For instance, the Personalized System of Instruction proposed by Fred Keller in 1968, emphasizing student self-pacing, mastery-learning, and small-group tutoring, represents one of the first attempts at implementing personalized approaches to instruction and often is considered a precursor of PL (Keefe & Jenkins, 2008). While there are hints of more personalized approaches in a variety of areas, including special education, individualized instruction, and educational technology, the true premise of PL has remained fairly elusive at scale to date (Basham, Hall, Stahl, & Carter, 2017).

In the recent years, different education systems worldwide such as that of United Kingdom, United States, Finland, and Canada among others are adopting the usage of personalized learning techniques to increase the diversity of students alongside ensuring that all students undergo quality education, Peterson 2016.

In the United Kingdom, PL was introduced as official government policy as early as 2004; it focused on how teaching can be adapted to meet students' individual needs Campbell et al., 2007. The U.K. Department for Education and Skills (DfES; 2004) defined five broad components of PL: assessment for learning, effective teaching and learning, flexible curriculum and choice, student-centred school organizations, and activities beyond the school (Sebba, Brown, Steward, Galton, & James, 2007). In the United States, the most recent federal education law-Every Student Succeeds Act of 2015 (ESSA)-advances the ideal of schools ensuring more learners have access to rigorous, personalized learning. ESSA regulations bring forth the need for state and local education agencies to design innovative learning environments tailored to meet the needs of individual students through the use of modern technology and flexible instructional practices aligned with the Universal Design for Learning framework (ESSA, 2015).

Personalized learning paths in open education systems are paths that cater to the needs, preferences, pace, and goals of every learner within an enabling framework of open and accessible educational resources. Technologies such as adaptive learning, data analytics, and AI in learning paths grant learners the potential to control their learning trajectories, hence flexibility, inclusivity, and learner-centredness of education. Open education systems allow access to high-quality learning materials for free or at low cost and thus offer ideal platforms for personalized learning paths. Personalized learning is a teaching ideology, a Finnish version of the internationally well-known concept of reversed or 'flipped' learning. It is a theoretical framework that describes how every learner can be dealt with at an individual level practically, whereas schools usually have large classes with diverse students. The key conditions of learning are considered in the model, which involves motivation of the student, accompanied by the feelings of autonomy, ability, and relevance of the learning.

The ever-increasing demand for education reform has urged an increasing number of schools to move toward PL systems (Basham, Hall, Carter, & Stahl, 2016; Bingham, Pane, Steiner, & Hamilton, 2016). Therefore, the proponents of PL have held views that students can achieve much more in learning and accomplishments than is possible if they receive tailored instruction and support to meet the individual needs of a given student, while leveraging the strengths of that same student (Jones & Casey, 2015). PL purports to break from and disrupt conventional structures of education for an equitable learning opportunity for all. However, its practice and study

remain in an infant state." Contemporary concept of PL arises out of convergence and advances at the cross section between educational research-learning science-data & computer sciences, & techno cycling innovation - Basham et al 2017 & Zhao, Tavangar McCarren, Rshaid & Tucker, 2016. From each of these fields, scholars have pursued research independently, collaboratively, and interdisciplinary on both the design and possible effects of PL. Continued research and new insights have also helped underpin the ability for systems that implement PL across a range of diverse student populations in a variety of settings to be developed and scaled (Basham et al., 2016; Walkington, 2013). For example, Basham et al. (2016), as learning researchers, reported that PL environments across an entire reform district supported better-than-expected outcomes in student growth. Other examples include interdisciplinary studies by researchers on the use of an adaptive mathematics tutoring application embedded in strategies and system features to support higher levels of PL and meet diverse needs of students (Arroyo et al., 2014). The results of the Arroyo et al. (2014) study showed that learning outcomes, motivation, and metacognitive skills were improved for participants who used the system.

While various modern educational initiatives and policies call for researchers from different fields to collaborate closely and conduct interdisciplinary research on PL (U.S. Department of Education, 2016), little understanding is shared across these fields of research. This thus leads to a sharper view of the features of current PL research across disciplines, yielding new and broader insights for each discipline by pushing the research forward in collaboration. For instance, while most research in education and learning sciences focuses on interaction among learning environments, educators, and students, research in computer science is focused on advanced learning technologies, data, or machine learning systems that provide foundational elements of these interactions (Basham et al., 2017).

The personalized learning model presupposes that a student, by employing practical means, owns the learning. It is a tool for increasing motivation in which one's commitment to learning will be much greater since the students themselves know much about their capabilities and motivation to learn. The foundation of all these things is an individual learning path combined with self-assessment.

The concept of individual learning is easy to practice when one class teacher is left with the same group in an academic year. Classes have several teachers, most

specifically in major subjects, and usually large schools are always in deep and long-term learning strategies requires intimate co-operation of teachers.

The traditional model has nowadays been displaced in the dynamic landscape of professional growth, where standardized programs in training prevail over personalized learning. Personalized Learning Paths, which align individual professional growth with tailored learning needs, have gained significant attention according to the Institute of Data, 2023. These learning paths provide a structured approach to training, considering the particular needs, preferences, and goals of each learner beyond the one-size-fits-all model. It helps the employees reach their full potential while contributing to professional growth through customized learning experiences. Individualized learning is one thing that one can simply not afford to overlook in any training program. This is because the talent, knowledge base, and experience of each individual are different due to which the strategy of learning has to be prepared on an individualistic basis. In addition, by customizing the training to suit individual needs, an organization automatically improves participation, motivation, and the rate of retention and application of that information. Moreover, personalized learning allows learners to become owners of their professional growth by instilling in them the concept of lifelong learning. This will allow the learners some ownership of their lives in planning for themselves; thus, being more participative and committed toward personal development.

Traditionally, professional development has been conducted in a one-size-fits-all manner, with all employees taking the same courses irrespective of their roles, capabilities, or objectives. The Differentiated Instruction theory, proposed by Dr. Carol Ann Tomlinson (Tomlinson, 1999), recognized that every group has a different learning need; therefore, professional development should consider these needs. Personal Learning Paths take this a step further by considering the individual needs of each person along the path of development.

The development of an efficient learning path requires a look at distinct learning needs and differentiating every individual. These can be judged through self-assessment, performance appraisal, or interviews, where one gets to understand the strengths, weaknesses, and preferences of the learner. In that way, understanding these aspects enables organizations to configure training programs toward what every learner exactly wants. Such personalization would imply choosing relevant

content, appropriate instruction method, and offering feedback and support. Besides, personalized learning should allow the learners to set their objectives and decide at what sequence they cover learning tasks in order for them to progress with their learning in their own speed and to make concentration on whatever is most helpful to their job and career goals. Continuous monitoring and feedback are what make personalized learning successful. This article discusses personalized learning for professional development, its key elements, and the enormous advantages that are derivable from such learning.

Key Concepts Behind Personalized Learning Paths include:

**Individualized Learning Journey:** Personalized learning paths focus on adapting the content, structure, and pace of learning to each learner's specific needs. This includes accommodating different learning styles, abilities, and prior knowledge, ensuring that learners engage with content in a way that suits them best. For example, a learner struggling with a particular concept might be provided with additional resources or alternative explanations, while someone who has mastered a topic could be advanced to more challenging content.

**Learner Autonomy:** One of the central elements of personalized learning paths is the autonomy granted to the learner. In open education systems, learners are typically offered more control over when, where, and how they engage with learning materials. This autonomy allows them to pursue areas of interest, set personal goals, and learn at their own pace. Learners can select from a range of resources (e.g., videos, articles, quizzes) and choose the sequence in which they engage with them, fostering a more self-directed learning environment.

**Data-Driven Customization:** A personalized learning path is often powered by data. In open education systems, learner progress is tracked, and data analytics are used to understand each learner's strengths, weaknesses, and preferences. This data helps inform the adaptation of learning experiences. For instance, platforms might use learner interaction data (such as quiz results or time spent on topics) to suggest personalized resources or adjust the difficulty level of subsequent content.

**Adaptive Learning Technologies:** Adaptive learning platforms, powered by machine learning algorithms, can automatically adjust the learning experience based on real-time performance. These systems provide dynamic feedback to learners and adapt content delivery according to individual progress. For example, if a learner answers multiple questions correctly, the system may increase the difficulty of the

tasks, while providing remedial content for learners who are struggling.

**Open Educational Resources (OER):** Open education systems often rely on OER, which are freely accessible and openly licensed materials that can be used, adapted, and shared. Personalized learning paths within open education leverage OER to allow learners to explore subjects and topics in more depth, with resources that can be adapted to their specific needs. OER can include textbooks, videos, simulations, and assessments, all of which can be curated into personalized learning experiences.

### 3. Nigeria as a Case Study: Personalized Learning Paths in Open Education Systems

Nigeria, the most populous country in Africa with a fast-growing digital landscape, creates an interesting case study for implementation in open education through personalized learning paths. The general education system of the country is seriously suffering from various challenges like overcrowded classrooms, a lack of resources, and wide disparities in educational opportunities between urban and rural areas. That said, Nigeria is also trying to embrace digital technologies as means of addressing these issues to improve learning outcomes. This is especially true in terms of personalized learning paths within open education systems, which may well revolutionize the way learning happens across Nigeria, by catering to learners with very diverse learning needs.

The government of Nigeria, among other bodies, has begun embracing open education systems to help solve some of the lapses in Nigeria's education. With the establishment of programs such as the National Open University of Nigeria and the creation of Massive Open Online Courses, access to education has increased, especially for non-traditional learners. Being Nigeria's first and largest open and distance learning institution, NOUN has played an important role in the provision of accessible educational opportunities for students around the country with much flexibility (Ajadi et al., 2008).

MOOCs, especially those on platforms like Coursera, edX, and Nigeria's own Tuteria, have gained popularity over the last couple of years, especially among urban and tech-savvy populations. Many of these platforms are designed to incorporate adaptive learning technologies that can support personalized learning experiences, making them well-suited for Nigeria's diverse learner base. Further, the emergence of local platforms such as the Nigeria-based online learning platform, Ulesson, developing mobile-app-based customized learning content exemplifies

technology acting in harness to not only solve problems within the educational sphere but also give independence to learners.

Nigeria's increasing internet penetration, coupled with the growth of mobile technology, has laid the groundwork for the widespread adoption of personalized learning. According to the Nigerian Communications Commission (NCC), Nigeria has over 200 million mobile phone subscribers, with mobile internet access expanding rapidly, especially in urban areas (NCC, 2020). These technological advancements have enabled learners across the country to access online education, even in remote areas, where traditional educational infrastructure may be lacking.

With increased acceptance for data analytics, AI, and machine learning within Nigeria's education, it could lead to higher heights of access and quality through open education systems and personalized learning paths. Platforms such as Khan Academy and Duolingo, among others, have contents that blend into the features of adaptive learning. It is a feature with huge potential benefits in Nigeria's context. Meanwhile, some Nigerian ed-tech startups, like Andela and Tuteria, are considering personalized learning tools so as to enhance the learning experience for students at different levels and disciplines.

#### 4. The Need for Personalized Learning Paths in Nigeria

Critical challenges facing Nigeria's educational system include a lack of access to quality education, inadequate qualified teachers, and poor infrastructure. UNESCO estimates that approximately 10.5 million children in Nigeria are out of school, the largest number in the world (UNESCO, 2020). The country's education system also suffers from a high teacher-student ratio, with some classrooms containing over 100 students, which undermines individualized instruction (Okebukola, 2016). Considering these challenges, personalized learning pathways can be an alternative approach to making learning more effective, scalable, and accessible.

Open education systems may take care of the gap that exists between each particular learner's needs and the reality created by a classroom, which mostly includes just one size-one approach, by personalizing learning. Allowing for the individual rhythm of learning at the same time fosters more inclusion and participation, and this can have a greater value in contexts where the majority of methods adopted are simply inappropriate for a portion of students (Santos et al., 2020).

#### 4.1 Benefits of Personalized Learning Paths for Nigeria

Before one gets down to selecting whether personalized learning is the best strategy for online courses and programs, it is good to weigh its benefits and drawbacks. Let us look into some of the major benefits.

**(i) Increased Access to Education:** Personalized learning paths in open education systems can increase access to education by overcoming geographical and infrastructural barriers. Using mobile devices and access to the internet, learners in remote or underserved areas can now access high-quality, self-paced educational content that is tailored to their needs.

**(ii) Better Learning Outcomes:** By providing content suitable for individual learning speeds and needs, personalized learning can certainly help learners master concepts more effectively. This is very important in a setting like Nigeria, where students have to contend with huge class sizes and a lack of attention from teachers in conventional classrooms.

**(iii) Affordability:** Open education systems, especially the MOOC and OER, can reduce financial burdens on students by providing free or low costs for educational resources. Personalized learning, enabled by this system, may help students to concentrate their efforts upon those dimensions where they have low achievement, reducing the time and money wasted because of sections not needed.

**(iv) Competence Building among Workforce:** By encouraging tailored learning paths, each learner can learn courses that fall directly into career or professional development opportunities, thus becoming endowed with prospective employable labour market skills. Indeed, in those countries where high unemployment is identified to pose huge difficulties-namely Nigeria-personalised learning can help such youth acquire vital technical and vocational capacity amongst contemporary the workforce. World Bank, 2019.

#### 4.2 Challenges and Limitations

Despite the potential benefits of personalized learning, several challenges hinder its full implementation in Nigerian open education systems:

**(i) Cultural and Social Factors:** In some communities, especially in Nigeria, much preference is still shown for traditional, classroom-based learning. Some learners may resist personalized learning approaches which are out of their usual

formats or may lack the necessary skills to navigate a digital platform efficiently (Ribadu & Usman, 2021).

**(ii) Infrastructure and Internet Connectivity:** With the expansion of the internet, most rural areas still suffer from the problem of having either an unreliable or slow connection. The high cost of mobile data also limits the extent to which learners can afford to access personalized learning resources online. The infrastructure needed to support personalized learning, such as well-trained educators, digital learning platforms, and the technical support to maintain these platforms, is still inadequate in many parts of Nigeria. This gap poses a significant barrier to the widespread adoption of personalized learning models (Uwaifo, 2020).

**(iii) Digital Literacy:** Unsatisfactory digital literacy on the part of students and teachers stands out as an obstacle toward effectively implementing personalized learning. This may involve most educators lacking the requisite skills in embedding technology in pedagogic practices while students are often found incapable of holding a computer mouse and/or cannot be entrusted to apply basic digital competencies that online platforms call for (Adomi, 2012). While access to mobile phones and the internet has increased in Nigeria, there is still a great digital divide between urban and rural areas regarding this access, hence affecting access to online learning platforms. In addition, students in the rural setting do not have reliable means of accessing the internet or using devices to engage with personalized learning tools effectively (Adebayo, 2020).

**(iv) Content Quality and Localization:** Most open education resources are created with a global audience in mind, not really culturally relevant or appropriate for the Nigerian learners. For that reason, developing high-quality, locally relevant content in local contexts and languages is vital in ensuring effectiveness in personalized learning.

**(v) Data Privacy and Security:** The use of data analytics and AI for personalization of learning paths raises serious concerns about data privacy and security. Protecting learners' personal information against misuse is key to retaining trust in digital education platforms.

## 5. Conclusion

Personalized learning paths in open education systems hold great potential to transform education in Nigeria. Technology, data analytics, and adaptive learning platforms are capable of facilitating personalized learning that addresses issues of access, quality, and equity in Nigerian education. Simultaneously, such systems have a number of barriers to implementation: infrastructure, digital literacy, content localization,

and data security. With further investments in both technological infrastructure and capacity building, individualized learning routes may hold the key to the future of education in Nigeria. It will require a multi-media approach, which means investment in technology, training educators, assuring the quality of content, and attention to data privacy and security in implementing personalized learning paths within open education systems. If policymakers, educational institutions, and technology providers focus on these few recommendations, the learning environment can become more inclusive, flexible, and effective to meet the needs of all learners, especially in areas with very limited access to education. Together, this opens ways that personalized learning pathways could dramatically reshape the educational landscape and help learners around the world unlock their full potential.

## 6. Recommendations

For the implementation of personalized learning paths in open education systems, a number of recommendations are of paramount importance in guaranteeing success, inclusivity, scalability, and quality. These recommendations are in relation to the main challenges faced by educators and learners from technological, pedagogical, and infrastructural standpoints.

**(i) Improve Technological Infrastructure:** Truly, robust technological infrastructure is a pre-condition for successful personalized learning paths. Governments, schools, and organizations need to ensure that development and expansion of reliable internet access are a priority, especially within communities that remain under-resourced.

**(ii) Ensure Data Privacy and Security:** Personal learning requires a great deal of data created by a learner in order to track progress and tailor content; therefore, the security and privacy of data are of prime importance.

**(iii) Generate Culturally Relevant and High-Quality Content:** Pertinent, high-quality content is at the core of the effectiveness in personalized learning. It has to be consonant with learners' cultural backgrounds and interests and meet the serious educational requirements of the institutions in question.

**(iv) Digital literacy development should be encouraged, together with teacher training:** For the implementation of personalized learning paths, success requires that students and educators alike have the necessary digital literacy to navigate and use the technology effectively.

**(v) Ensure Scalability and Flexibility:** For personalized learning paths to prove their worth for large and diverse populations, they must be scalable and flexible enough to support different learning styles, speeds, and contexts.

**(vi) Encourage Collaborative Learning:** Even though personalized learning paths put the main focus on the individual's learning, collaboration can still serve to foster social interaction and deepen understanding.

**(vii) Mechanisms for Ongoing Monitoring and Feedback:** If personalized learning paths are to remain efficient and relevant to the learners, timely feedback is in order and the monitoring of progress must be constant.

**(viii) Accessibility:** Personalised learning pathways should be inclusive, catering to a wide range of learners from various walks of life, different socio-economic backgrounds, students with disabilities, and having different learning needs.

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## Promoting Critical Thinking Research Skills and Digital Citizenship among Students of Nigeria's Tertiary Institutions

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**Abstract.** The study is anchored on the importance of promoting critical thinking research skills and digital citizenship among students of Nigeria's tertiary institutions with special emphasis on universities in Delta State, Nigeria. Three research questions and three hypotheses guided the study. Descriptive survey research design was adopted for the study. The population for the study was 131,150 (one hundred and thirty one thousand, one hundred and fifty) tertiary institutions' students in Delta state. A self-structured questionnaire developed by the researcher and titled "Promoting Critical Thinking Research Skills and Digital Citizenship Questionnaire" (PCTRSDCQ) was used for data collection. This instrument was validated by three experts, two from the Department of Social Science Education and one from Measurement and Evaluation all from Delta State University, Abraka. Reliability coefficient of .74 was established using Cronbach Alpha reliability estimate. Mean with standard deviation were used to answer the research questions. T-test statistics was used in analyzing the hypotheses at .05 level of significance. The findings of the study among others revealed that universities' students in Delta State are not exposed to critical thinking research skills, and the concept of digital citizenship. The researcher therefore recommended among others that management of universities, and lecturers should encourage students to explore critical thinking research skills, and digital citizenship in their research writing. This will enhance quality research output among universities' students in Delta State.

**Keywords:** Critical Thinking, Research Skills, Digital Citizenship, Students, Nigeria' Tertiary Institutions, and Universities

### 1. Introduction

Quality research output is core to education all over the world. Education has become a very big enterprise all over the globe. It has become a microscope through which individual's potentials are detected and channeled appropriately. According to Ihienyemolor (2023), the importance of education, how education can be improved through promoting critical thinking research skills, and digital citizenship to every Nigerian citizen has also become a central issue for discussion in very many global forums, therefore the need for students to be exposed to, and explore critical thinking research skills and digital citizenship has become essential in education. The quality of any nation according to Nwangwu (2016) depends on the quality of research that its students in educational institutions are able to turn out after graduation. Where the quality of research turnout is weak, the country is bound to be weak, technologically, socially, economically, politically, and vice versa. The output quality of these pieces of research however, depends majorly on critical thinking, and the sustainability of digital citizenship.

Critical thinking research skills are skills embedded in a research that enables him or her to churn out quality, adequate, standard, and appropriate research outputs. The emphasis on the promotion of critical thinking research skills is fast growing especially in universities in Nigeria (Mezieobi, 2024). Critical thinking research skills are crucial research skills that students in tertiary institutions need to develop to succeed academically and in life (Yazidi, 2023). Therefore, teaching critical thinking research skills is a serious challenge in universities, and for educationists irrespective of areas of specialization, and the need to strategically develop

these critical thinking research skills in students abound. Critical thinking research skills emphasizes the identification of six specific strategies that have been proven effective in the promotion of the research skills which include: Socratic questioning, collaborative learning, inquiry-based learning, concept mapping, problem-based learning, and argument mapping (Yazidi, 2023; Rokhaniyah, 2016). In research, at all levels of educational endeavour, critical thinking plays an essential and critical role in a student's academic success and beyond. That involves critically, and reflectively analyzing information, identifying underlying assumptions and biases, evaluating arguments and evidence, and developing well-reasoned conclusions (Watt & Roundy, 2022; The Glossary of Education Reform, 2014). Critical thinking research skills enable researchers to make informed decisions, proffer solutions to problems, and communicate effectively in various research settings. Factors, such as the emphasis on rote memorization, lack of effective supervisor-supervisee relationship, lack of research materials, and standardized testing, result in a lack of opportunities for universities' students to develop critical thinking research skills (Facione, 2020). Moreover, universities' students in Delta state oftentimes lack the necessary metacognitive skills required for critical thinking (Halpern, 2014; Yazidi, 2023). This is the reason why educationists, researchers, students, and lecturers need effective strategies to promote the development of critical thinking research skills.

In research writing, critical thinking research skills involve the questioning assumptions and thinking creatively to develop innovative ideas and solutions to problems. By developing critical thinking research skills, universities' students are best equipped to think outside the box and come up with new solutions to complex issues. Critical thinking research skills develops effective communication (oral and written) skills in different research settings. It is the ability to effectively communicate ideas and arguments to others. Critical thinking research skills, equip students with the ability to articulate their thoughts and ideas in a clear, concise, and persuasive manner, both in writing and speaking. It further prepares universities' students for the real world and how to cope with real life situations. In today's complex and rapidly changing world, critical thinking research skills are essential for success in the school, workplace and in everyday life (Abrami, et al, 2018; Ennis, 2021). Even employers are looking for individuals who can think critically, proffer solutions to problems, and make informed decisions. By developing critical thinking research skills, students are better prepared for the

challenges they will face in the real world. In the universities, critical thinking research skills fosters in students independent thinking and the state of adopting an opinion and stance during research writing. Critical thinking research skills are skills that involve the ability to question assumptions, and challenge ideas. By developing critical thinking research skills, students-researchers are encouraged to think independently and develop their own opinions based on evidences and sound reasoning (Abrami, et al, 2018; Yazidi, 2023; Ennis, 2021). Furthermore, critical thinking research skills are prominently characterized in all the skills or abilities learners are expected to acquire through the type of education being provided. One, who cannot critically think, may not be able to proffer solutions even the minutest challenge. As human beings, we currently live in a world of problems – economic problem, social problem, ethnic problem, political problem, religious problem, educational problem, Science and technologically related problems to mention a few. It only takes an individual with a sound mind, a mind characterized with reflective thinking, which can engage in deep analysis, to come up with causes of the problem at hand and generate possible solutions or options to arrive at a decision; to solve a or get out of the problem (Adeyemi, 2012). The use of technology in carrying out or conducting research in Nigerian universities is fast increasing. Students in contemporary times utilize artificial intelligence (AI), and other online instruments in conducting pieces of research. This has reduced the critical thinking research skills' abilities of the students. In most cases, universities' students copy-and-paste materials downloaded online without critical evaluation of such materials, therefore plagiarizing someone else' work. This is not good for the development of education in Nigeria. Therefore, schools are obliged to expose the students to digital citizenship through digital citizenship education.

Digital citizenship is another important variable in this paper. It has to do with the strategic technological approach adopted to give a person or group of persons sense of belonging, exposing them to the enjoyment of privileges, and opportunities in a particular area. Most importantly, the widespread use of the Internet, digital space has now flooded the universities including universities in Nigeria. With the revolutionization of the educational system as a whole by the internet, particularly in twenty first-century education, it is widely accepted that the Internet facilitates education across geographic and temporal boundaries, thereby promoting digital citizenship among students (Harsasi, 2015; Kuntoro & Al-Hawamdeh, 2023; Prasetyo, et al, 2023). Because of the prevalence of the internet, the

learning culture has moved from face-to-face teaching and learning to online teaching/blended teaching and learning.

Prasetyo et al (2023) stated that in the digital-mediated world, students enroll in an online activity anywhere, everywhere. Every other activity within and around the university including teaching, learning, administration, and partnerships between parents and the university, the university and other education stakeholder are promoted and carried out online (Pannen, 2014; Sekarasih, 2016). Irrespective of the above, digital technology is constantly a double-edged sword (Hidayat & Listiawati, 2018). It has its benefits and risks for the students. Worthy of note is the fact that digital citizenship is critical to recognize the lecturers' and administrators' roles in anticipating opportunities and challenges associated with technology use in the university. In the university, lecturers play vital roles in ensuring students possess the critical research skills and attitudes in using technology responsibly.

For the purpose of addressing social issues that are associated with the use of technology among students in universities, lecturers' and administrators' proficiency with technology must be accompanied by a prompt of digital citizenship. Digital citizenship itself is a useful framework that is widely accepted as a foundation for acting responsibly when communicating with technology (Prasetyo et al, 2023). According to Ribble and Bailey (2016), students in the universities must develop a strong sense of digital citizenship to prepare and educate them to use technology effectively. Due to widespread Internet and teen-dominated digital citizens, Nigeria and other countries in the world have faced a number of challenges related with the use of technology in the universities, which include cyber-crime, widespread pornographic distribution, plagiarism, and cyber-bullying (Adinigrum, 2015; Paterson, 2019; Sulisty & Manap, 2018). Lecturers, and universities' management are expected to adequately address digital media behaviours for students in relation to managing to social media issues. Furthermore, most Nigerian universities' lecturers and management are less prepared to promote digital citizenship (Prasetyo et al. 2021) among students. When students engage in cyber-bullying and access pornographic websites, for example, universities' lecturers and management prefer to restrict Internet access and mobile phone use in order to address digital threats without jeopardizing student rights (Ruiz, 2019). In contemporary times, there are no significant policies that are supposed to be introduced in Nigeria in order to assist lecturers and students in resolving misuse and abuse of technology

and preparedness for digital citizenship education. Digital citizenship is a requirement that all lecturers must embrace to prepare students to use technology responsibly and safely.

University education is the level of education that comes after the secondary education (upper basic education level schools- JSS 1-3, and senior secondary schools- SS 1-3). It is the tertiary education that exposes students to professionalism, and specialization in one area or the other. University education occupies a prime of place that promotes national development, nation-building, national unity, national integration, national consciousness, and national re-orientation/value re-orientation. This is the reason why Otonko (2022) noted that the prime of place education occupies in the developmental effort of nations has never been doubted the world over. University education is an essential investment in human capital (Otonko, 2022; Mezieobi, 2024).

In the university, teaching, learning, research, and community services are the epicentre. A student's life in all ramifications is molded in the university. Critical thinking research skills and digital citizenship are important in the life of contemporary universities' students in Nigeria and all over the globe. Developing, and promoting critical thinking research skills, and digital citizenship among students of universities in Delta state, Nigeria is the core of this paper.

### 1.1 Statement of the Problem

The policy declaration of Federal Government of Nigeria (2013) in her National Policy on Education stated that the Federal Government of Nigeria has adopted education as an instrument per excellence for effective national development. By that policy declaration, it is evident that Nigeria believes in the efficacy of education as the vehicle for individual and national development.

Unfortunately, the belief has been turned down due to scarcity of research resources, and the influx of technology in education. In the 70s and 80s, after the take-over of schools by the government, Nigeria citizens believe that the government owned schools which include universities are basically the concern of the government, therefore the government should take care of the universities. It is also unfortunate that pieces of research carried out by universities' students are copy-and-paste. This entails that universities' students no longer utilize digital citizenship or they have abused their digital citizenship.

Pieces of research from Nigerian universities in the 21<sup>st</sup> century have lost innovation, creativity, and problem-solving tendencies. They are now a repeat of old issues that are obsolete, and outdated. This means that students no longer critically think during research-related activities.

Along the line, things started falling apart and the centre could no longer hold. The entire university education system has become deplorable. These deplorable conditions, therefore, has caused the researcher to want to look at the various ways of promoting critical thinking research skills and digital citizenship among students of Nigeria's tertiary institutions in Delta State, Nigeria which particular emphasis on universities.

### 1.2 Purpose of the Study

The study was set to investigate the various ways of promoting critical thinking research skills, and digital citizenship among students of Nigeria's tertiary institutions in Delta state with particular emphasis on universities. Specifically, the study sought to:

- Ascertain the extent of promoting critical thinking research skills among students of Nigeria's universities in Delta state.
- Determine the extent of promoting digital citizenship among students of Nigeria's universities in Delta state.
- Examine the extent of universities' management staff participation in promoting critical thinking research skills and digital citizenship among students of Nigeria's universities in Delta state.

### 1.3 Research Questions

The following research questions were posed to guide the study:

- What is the extent of promoting critical thinking research skills among students of Nigeria's universities in Delta state?
- What is the extent of promoting digital citizenship among students of Nigeria's universities in Delta state?
- What is the extent of universities' management staff participation in promoting critical thinking research skills and digital citizenship among students of Nigeria's universities in Delta state?

### 1.4 Hypotheses

The following hypotheses were formulated at .05 level of significance.

HO<sub>1</sub> There is no significant difference in the mean ratings of male and female students of Nigeria's universities on the extent of promoting critical thinking research skills in Delta state.

HO<sub>2</sub> There is no significant difference in the mean ratings of male and female students of Nigeria's universities on the extent of promoting digital citizenship in Delta state.

HO<sub>3</sub> There is no significant difference in the mean ratings of male and female universities' management staff on the extent of promoting critical thinking research skills and digital citizenship among students of Nigeria's universities in Delta state.

## 2. Research Methodology

The research survey adopted for this study was descriptive survey research design which x-rayed "promoting critical thinking research skills and digital citizenship among students of Nigeria's tertiary institutions in Delta State, Nigeria". Three research questions and three hypotheses guided the study. The population for the study was 131150 students representing 12 universities in Delta State. The sample size was 297 students selected through a random sampling technique. Data was collected using 19 item structured questionnaire developed by the researcher titled "Promoting Critical Thinking Research Skills and Digital Citizenship Questionnaire (PCTRSDCQ)". The instrument was of two sections; A and B. A is for bio data of the respondents while B addressed the research questions. The instrument was face and content validated by three experts; two from the Department of Social Science Education and one from Department of Educational Foundations (measurement and evaluation option), all from Faculty of Education, Delta State University (DELSU), Abraka. Reliability coefficient of .74 was established using cronbach Alpha reliability estimate. 297 copies of questionnaire were distributed using two research assistants who were briefed on the modalities for the distribution and retrieval. Out of the whole lot distributed, only 290 copies of the questionnaire were returned, giving a return rate of approximately 98%. Mean and standard deviation were used to answer the research questions while t -test statistics was used to test the hypotheses at .05 level of significance. The study also made use of  $n > 2.50$  as region of acceptance while  $n < 2.50$  as region of rejection for the research questions.

### 3. Analysis

The analysis was made using mean with standard deviation while t-test was used to test the hypotheses.

**Research Question 1:** What is the extent of promoting critical thinking research skills among students of Nigeria’s universities in Delta state?

**Table 1:** Mean responses of respondents on the extent of promoting critical thinking research skills among students of Nigeria’s universities in Delta state.

S/N	Items	Male Mean	Male SD	Female Mean	Female SD	Average Mean	Average SD	Decision
1	Allocated competent supervisors	3.00	.93	2.58	1.24	2.79	1.09	A
2	Guiding the students through the research process	3.27	.88	2.83	.94	3.05	.91	A
3	Supplying the students with adequate materials to aid their research	2.06	.83	1.67	1.07	1.87	.89	R
4	Encourage the students to always consult their supervisors	2.27	.88	2.42	1.08	2.35	.98	R
5	Give informed feedback	2.80	.87	2.83	.72	2.82	.80	A
6	Referred to literature that will facilitate their research writing	2.53	1.24	2.75	.97	2.64	1.11	A
7	Read through their write-ups	2.40	.91	2.17	.72	2.29	.82	R
	<i>Result</i>	2.62	.93	2.50	.96	2.56	.95	A

Table 1 above shows the mean responses of respondents (students) on the extent of promoting critical thinking research skills among students of Nigeria’s universities in Delta state. Notably, both male and female students accepted items 1, 2, 5, and 6 (allocated competent supervisors, guiding the students through the research process, received informed feedback, and referred to literature that will facilitate research writing). This is because their mean scores of 2.79, 3.05, 2.82 and 2.64 exceeded the judgement base of 2.5. Meanwhile, the respondents both rejected the items 3, 4, and 7 (supplying the students with adequate materials to aid their research, encourage the students to always consult their supervisors, and read through their write-ups). This is because their mean scores of 1.87, 2.35 and 2.29, were below the judgement base of 2.50. Notwithstanding these, the students generally accepted that it is very important to promote critical thinking research skills among students of Nigeria’s tertiary institutions in Delta State, Nigeria. This is because, the general mean score of the cluster is 2.56 which exceeds the judgement base of 2.50.

**Research Question 2:** What is the extent of promoting digital citizenship among students of Nigeria’s universities in Delta state?

**Table 2:** Mean responses of respondents on the extent of promoting digital citizenship among students of Nigeria’s universities in Delta state.

S/N	Items	Male Mean	Male SD	Female Mean	Female SD	Average Mean	Average SD	Decision
8	Provide institutional WiFi	2.07	.80	2.00	.74	2.04	.77	R
9	Provide log in details	2.00	.93	2.25	.87	2.13	.90	R
10	Enjoy uninterrupted internet services	2.13	1.06	1.83	.84	1.98	.95	R
11	Have access to the ICT centre	2.50	.83	3.25	.87	2.88	.85	A
12	Organize computer-based activities	2.13	.64	2.42	.79	2.23	.72	R
	<i>Result</i>	2.17	.85	2.55	.82	2.36	.84	R

Table 2 above shows the mean responses of respondents (students) on the extent of promoting digital citizenship among students of Nigeria’s universities in Delta state. Worthy to note is that, both the male and female students accepted only item 11 (have access to the ICT centre). This is because its mean score of 2.88 exceeds the judgement base of 2.5. Meanwhile, the general cluster rejected items 8, 9, 10, and 12 (provide institutional WiFi, provide log in details, enjoy uninterrupted internet services, and organize computer-based activities). This is because their mean scores of 2.04, 2.13, 1.98 and 2.23 did not reach the judgement base of 2.50.

**Research Question 3:** What is the extent of universities’ management staff participation in promoting critical thinking research skills and digital citizenship among students of Nigeria’s universities in Delta state?

**Table 3:** Mean responses of respondents on the extent of universities’ management staff participation in promoting critical thinking research skills and digital citizenship among students of Nigeria’s universities in Delta state.

S/N	Items	Male Mean	Male SD	Female Mean	Female SD	Average Mean	Average SD	Decision
13	Provide students with all needed materials to facilitate research writing	2.27	.80	2.75	.97	2.51	.89	A
14	Pay lecturers adequately to motivate them	2.07	.80	1.58	.90	1.83	.85	R
15	Provide laptops/desktops for lecturers and students’ use	2.33	.98	1.83	.84	2.08	.87	R
16	Safeguard available research materials	2.07	.88	2.08	1.31	2.08	1.69	R
17	Keep adequate records of pieces of research that are innovative	2.07	1.10	1.67	.99	1.87	1.05	R
18	Advertise and promote pieces of research that are innovative	2.27	.88	2.58	1.24	2.43	1.06	R
19	Sponsor students on research adventures	2.20	.86	2.00	.95	2.10	.96	R
	Results	2.18	.90	2.07	1.03	2.13	.97	R

Table 3 above shows the mean responses of respondents (students) on the extent of universities’ management staff participation in promoting critical thinking research skills and digital citizenship among students of Nigeria’s universities in Delta state. Worthy to note is that, both the male and female students accepted only item 13 (provide students with all needed materials to facilitate research writing). This is because its mean score of 2.75 exceeds the judgement base of 2.5. Meanwhile, the general cluster rejected items 14, 15, 16, 17, 18 and 19. This is because their mean scores did not reach the judgement base of 2.50.

Ho<sub>1</sub>: There is no significant difference in the mean ratings of male and female students of Nigeria’s universities on the extent of promoting critical thinking research skills in Delta state.

Table 4: t-test Analysis of male and female students of Nigeria’s universities on the extent of promoting critical thinking research skills in Delta state.

Status	N	Mean	SD	Df	t-value	t-cal	Decision
Male	155	2.62	.93	295	1.98	1.55	Do not
Female	142	2.50	.96				Reject H <sub>0</sub>

From the table, it can be seen that the t-cal 1.55 is less than the t-value 1.98, the researcher therefore does not reject the null hypothesis and states that, there is no significant difference between the mean ratings of male and female students of Nigeria’s universities on the extent of promoting critical thinking research skills in Delta state.

Ho<sub>2</sub>: There is no significant difference in the mean ratings of male and female students of Nigeria’s universities on the extent of promoting digital citizenship in Delta state.

Table 5: t-test Analysis of Male and Female students of Nigeria’s universities on the extent of promoting digital citizenship in Delta state.

Status	N	Mean	SD	Df	t-value	t-cal	Decision
Male	155	2.17	.85	295	1.98	5.55	Reject H <sub>0</sub>
Female	142	2.55	.82				

From the table, it can be seen that the t-cal 5.55 is greater than the t-value 1.98, the researcher therefore rejects the null hypothesis and states that, there is a significant difference between the mean ratings of male and female students of Nigeria’s universities on the extent of promoting digital citizenship in Delta state.

Ho<sub>3</sub>: There is no significant difference in the mean ratings of male and female universities’ management staff on the extent of promoting critical thinking research skills and digital citizenship among students of Nigeria’s universities in Delta state.

Table 6: t-test Analysis of Male and Female universities’ management staff on the extent of promoting critical thinking research skills and digital citizenship among students of Nigeria’s universities in Delta state.

Status	N	Mean	SD	Df	t-value	t-cal	Decision
Male	155	2.18	.90	295	1.98	1.39	Do not
Female	142	2.07	1.03				Reject H <sub>0</sub>

From the table, it can be seen that the t-cal 1.39 is less than the t-value 1.98, the researcher therefore does not reject the null hypothesis and states that, there is no significant difference between the mean ratings of male and female universities’ management staff on the extent of promoting critical thinking research skills and digital citizenship among students of Nigeria’s universities in Delta state.

#### 4. Discussion of Findings

On the extent of promoting critical thinking research skills among students of Nigeria’s universities in Delta state, it was revealed that students rejected items 1, 2, 5, and 6, and rejected items 3, 4, and 7. This is in line with Obi (2019) who asserted that allocating competent project supervisors to students will help them in getting, and accessing the adequate guidance needed for research writing success. Furthermore, the items rejected were in line with Nwangwu (2022), who reiterated that students do not get adequate encouragement during research writing. Some supervisors treat the students like subordinates, and do not give them the necessary attention. Also, students in most Nigerian universities do not have access to research materials that can aid their research writing. Nwakpa (2016) stated that if students are adequately supported by their supervisors, and other management staff in project writing, they will be able to be innovative, and creative.

On the extent of promoting digital citizenship among students of Nigeria’s universities in Delta state, the respondents accepted item 11 which is the fact that they have access to ICT centres, but rejected items 8, 9, 10, and 12. Nwakpa (2016) stated that digital citizenship entails giving individuals access to ICT facilities including WiFi services, uninterrupted internet access, and so on. He further stated that unfortunately, students do not have access to WiFi services, uninterrupted internet, within and around the university’s environment. He also noted that in some universities where log-in details are given to students, these log-in details are never functional until the students graduate from the university. This is not a good image from most Nigerian universities. According to Ugwuanyi (2023), reports have it that issues of interrupted internet services is due to epileptic power/electricity supply within and around the universities. Some Nigerian universities are located in rural areas, and it is difficult to have steady

electricity supply in such areas where the universities are located.

On the extent of universities’ management staff participation in promoting critical thinking research skills and digital citizenship among students of Nigeria’s universities in Delta state, item 13 was accepted, while items 14, 15, 16, 17, 18, and 19 were rejected. Emenala and Ibekwe (2023) opined that universities, the government, and management of universities are supposed to provide enabling environment to facilitate research, and research writing among students. They further noted that some factors hinder effective research writing by students such as lack of adequate encouragement of lecturers, lack of research writing sponsorship, lack of record keeping on pieces of research, and so on. Nakpodia (2023) on the issue critical thinking and digital citizenship noted that with proper universities’ management of students’ research, including students’ use of technology within and around the universities’ environment during research, students will be encouraged to use their critical thinking research skills, and innovation from students’ pieces of research can be used in the development of the nation at large.

#### 5. Conclusion

In conclusion, though the universities do not encourage students during research, the government, and other education stakeholders should begin to contribute towards encouraging pieces of research by students in tertiary institutions in Delta state in particular, and Nigeria in general. Students can always show commitment during research writing if they are encouraged through sponsorship, provision of the enabling environment, security of their lives, research materials, and their innovations adopted through their pieces of research.

#### 6. Recommendations

Based on the findings the following recommendations were made:

- Students should be encouraged to carry out, and write pieces of research using their critical thinking research skills.
- The universities’ management staff should create the enabling environment for students to carry out research. This will include

ensuring the safety of their lives, research materials, the environment-within and around, and the innovations that will be achieved from their research.

- Tertiary education trust fund (TETFUND) should also consider sponsoring students' research. This will serve as a source of encouragement to the students.
- Digital Citizenship is essential in research. Students should be encouraged to consult, and use online sources during the conduct of their research. They should also be encouraged to reference cited materials according to avoid plagiarism.

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## Impact of Boko Haram Insurgency on Educational Performance Indicators in Senior Secondary Schools in Borno State, Nigeria

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**Abstract.** The study assessed Impact of Boko Haram Insurgency on Educational Performance Indicators in Senior Secondary Schools in Borno State, Nigeria. Its determined impact of Boko Haram insurgency on students' enrolment rate before and during Boko Haram insurgency on students' attendance rate before and during Boko Haram insurgency on students' dropout rate before and during Boko Haram insurgency and students' completion rate before and during Boko Haram insurgency in senior secondary schools in Borno State, Nigeria. Ex post facto research design was used. The population of the study were all the sixty three (63) affected senior secondary schools in Borno State, Nigeria. Disproportionate stratified random sampling technique was used to sample forty eight (48) schools to collect data. Observation, and proforma were used to collect data for the study. The data collected were analysed using t-test of paired sample. The study found that there was a significant difference in students' net and gross enrolment rate before and during Boko Haram insurgency in senior secondary schools in Borno State, and the difference was in favour of insurgency period. There was a significant difference in students' attendance rate before and during Boko Haram insurgency in the year 2005 and 2011, 2007 and 2013 and total before and during and not in the year 2006 and 2012, 2008 and 2014 in senior secondary schools in Borno State, and difference was in favour of insurgency period. There was a significant difference in students' dropout rate before and during Boko Haram insurgency in the year 2007 and 2013, and total before and during and not in 2005 and 2011, 2006 and 2012, and 2018 and 2014, in senior secondary schools in Borno State, and the difference was in favour of insurgency period and

there was a significant difference in students' completion rate before and during Boko Haram insurgency in senior secondary schools in Borno State, and the difference was in favour of pre insurgency period for the first year and insurgency period for the remaining years. Based on the findings of the study, it is concluded that there was a positive impact of insurgency on students' net and gross enrolment rate, and completion rate in senior secondary schools in Borno State. It is also concluded that there was inconsistency in the impact of Boko Haram insurgency on students' attendance rate and dropout rate in senior secondary schools in Borno State. The study recommended among others that Borno State Government should provide free education up to secondary school as the study shows that students' net and gross enrolment rate in favour of insurgency period. Federal and Borno State Government should deploy security agents to provide protection to schools to avoid future attacks as the finding indicates that the students dropout rate increased during the insurgency period despite inconsistency in results, and most schools outside the Maiduguri Metropolis were destroyed and the Federal and Borno State Government should provide scholarship for continuous education as the study shows that students completion rate favour of insurgency period and most of their parents were internally displaced.

**Keywords:** Boko- Haram insurgency, net and gross enrolment rate, attendance rate, dropout rate, and completion rate.

## 1. Introduction

The insurgent group called Boko Haram have put Nigeria in a serious crisis which calls the attention of the international community and a subject of research interests for researchers focusing on crises affecting education. Education enables individuals to acquire appropriate knowledge, values and skills for personal development and contributes meaningfully to the development of society (Fafunwa, 1990). The Constitution of the Federal Republic of Nigeria (as amended) (CFRN, 1999) draws the attention of government to it in Chapter II as a Fundamental Objective and Directive Principle of State Policy. Education has been recognised as a human right since the adoption of the Universal Declaration of Human Right in 1948. Nevertheless, enrolling children into school is insufficient, since that alone does not guarantee the type of education that makes them to achieve their social and economic objectives. This does not assure that the pupils will get the awareness, values and attitudes that bring about reliable and diligent citizenship.

With the Nigeria's adoption of the Universal Declaration of Human Right in 1948, the right to education has been on the worklist of the international community, and it is regarded as central in achievement of growth and social transformation. Consequently, Education for All was developed and goals were determined at Jomtien, Thailand in 1990 and supported in Dakar, Senegal at the World Education Forum in 2000.

Nigeria's acceptance of the Declaration of Education for All (EFA), MDGs is committed to the total extirpation of illiteracy. Nigeria realising the importance of education to national development has continuously attempted to reorganise its education system to meet the challenge of the time. Nigerian government, both Federal and State have always given the education sector priority attention with a view to making education universally accessible. In pursuit of these goals, government came up with several policy strategies that would ensure access to education by all citizens. Hence, the position is clearly stated in the National Policy on Education (2014), that any existing contradictions, ambiguities, and lack of uniformity in educational practice in different parts of the federation should be removed to facilitate an even orderly development of the country. The policy further maintained that Nigeria is expected to be one of the free and democratic, just and egalitarian, united, strong and self-reliant, with a great dynamic economy and above all a land full of bright opportunities for all the citizens. The National Policy on Education defines

senior secondary education as the education children receive after successful completion of basic education certificate examination (BECE) and junior Arabic and Islamic studies certificate examination (JAISCE).

One of the significant areas of politics of secondary education in Nigeria was the witnessing of government taking over of secondary schools from the missionaries in 1976. After the government taking over of schools, there was an increased agitation from the community for more schools and the number of school age children increased and the few boarding schools were over populated. In March 1978, the National Council on Education (NCE) agreed on the encouragement of community efforts to cater for students in the neighborhood. This resolution apparently arose as a result of rising cost of maintaining boarding schools and felt the need to encourage more Nigerians to receive secondary education in order to raise a generation of people who would be able to think for themselves, respect the views and feelings of others, respect dignity of labour and appreciate those values specified under the national aims and lives as good citizen (NPE, 2014).

Educational performance indicators in the context of this study are net and gross enrolment rate, attendance rate, dropout rate and completion rate in senior secondary schools in Borno state.

Impact of insurgency on enrolment reported by Hamman-Tukur, Atsua and Nwachukwu (2014), Abdulrasheed, Onuselogu and Obioma (2015), Sababa and Mbahi (2016), Ngohi and Saidu (2016), Osunyanmi, and Iwu, (2017), William, and Istifanus (2017), Galtimari (2017), Muhammad and Mohammed (2019), Moses and Omede (2020), Edemenang, Garba, Mande and Msheliza (2021), revealed that Boko Haram insurgency had negatively affected the enrolment of primary and secondary school pupils/students. Similarly, Bilyaminu, Baba and Purokayo (2017) reported that Boko Haram have significant impact on education in Adamawa State.

Review on the impact of insurgency on students attendance, revealed that studies by SINA (2013), Valente (2014), Patrick and Felix (2013), NDHS (2013), Walz and Jeanne (2013), Hamman-Tukur, Atsua and Nwachukwu (2014), Abdullahi, Atsua, Amuda and Habu (2013), Susan, Sebastine and Joseap (2015), Anon (2015), Abdulrasheed, Onuselogu and Obioma (2015), Borno State Ministry of Education (2015), Akintunde and Selzing-Musa (2016), Pindar and Petrol (2016), Ngohi and Saidu (2016), Sababa and Mbahi (2016), Osunyanmi, and Iwu, (2017), William, and Istifanus. (2017), Bilyaminu, Baba and

Purokayo (2017), Muhammad and Mohammed (2019), Moses and Omede (2020), Usman and Dabai (2020) and Edemenang, Garba, Mande and Msheliza (2021) found negative effect of conflict on school attendance. Only Ministry of Education (2015), Abdurashed, Onuselogu and Obioma (2015), and Anon (2015) were on Basic Education which call more empirical study on the impact of insurgency on students' attendance rate in senior secondary schools in the state and is worse hit by the activities of the Boko Haram insurgents in the North-eastern part of the country. While (2014), UNESCO (2015), Postgilion, Jiao and Oliang (2012) found significant impact of insurgency on attendance rate irrespective of the countries where the studies were conducted.

Literature reviewed on the impact of insurgency on students' dropout rate revealed that studies by Education for All (2015), OCHA (2015), Nicolai, Hine and Wales (2015), found negative effect of conflict on students' dropout, although these studies were conducted outside Nigeria. Similarly, Hamman-Tukur, Atsua and Nwachukwu (2014), Abdurashed, Onuselogu and Obioma (2015), Sababa and Mbahi (2016), Ngohi and Saidu (2016), Osunyikanmi, and Iwu, (2017), Galitimari (2017), Muhammed, Modu and Isa (2020) and Mohammed, Kawi and Kanami (2020) found significant negative impact of Boko Haram insurgency on dropout as some of students voluntary withdraw from the school as a result of the Boko Haram insurgency. However, UNICEF (2015), UNESCO (2015), UNESCO (2015), UNESCO (2018), reported that conflict in sub-Saharan African, civil war in Syria and other countries affected by conflict resulted in increase in the dropout rate.

It can therefore be inferred from the studies conducted by Shemyakina (2011), Sarah (2014), Hamman-Tukur, Atsua and Nkwachuku (2014), UNICEF (2014), Ohiwerci, (2014), Ngohi and Saidu (2016), Sababa and Mbahi (2016), Osunyikanmi, and Iwu, (2017) and Edemenang, Garba, Mande and Msheliza (2021) found that insurgency decline, delayed and negatively affect completion rate. While Themner and Wallenstern (2013) and GMR (2019) found that school completion rate appears to be affected by the armed conflict irrespective of the countries where the study was conducted.

Senior secondary schools had experienced several attacks from the activities of Boko Haram insurgents which includes burning of schools, attacks on education personnel, teachers and students, occasional kidnaping of teachers and students, and threat to parents leading to the closure of schools and/or being used as army or IDP camps. The closure of such schools means pupils were not attending schools

because the schools were officially closed for several months by the government, (Borno State Government, 2015) this affected the operations of some schools in the rural areas, and subsequently, government had relocated schools in the rural areas to Maiduguri, the State capital, but facilities to accommodate the large number of students are inadequate as some schools have been converted to IDP camps. On the 24<sup>th</sup> June, 2013, Boko Haram attacked and killed nine students in Gamboru Ngala on their way to write examination. On the 7<sup>th</sup> April, 2014, Boko Haram attacked and killed a teacher in Gwange III primary school, on the 14<sup>th</sup> April, 2014 Boko Haram insurgent kidnapped two hundred and thirty four (234) girls in government secondary school, Chibok and burnt down the library, infrastructural facilities and teaching-learning facilities. Up to the year 2026, some of the Chibok school girls were yet to be released.

Investigation by the researchers revealed that prior to the Boko Haram insurgency, senior secondary schools in Borno State was operating successfully with most schools in good condition where students were attending classes regularly, while teachers were punctual to duty. Students' enrolment stood at 85.03% in 2007, 87.50% in 2008 and 78.62% in 2009, while students' attendance stood at 82.04% in 2007, 85.10% in 2008 and 77.11% in 2009 respectively. Students' dropout stood at 1.95% in 2007, 2.29% in 2008 and 2.50 % in 2009 while students' completion stood at 80.1% in 2007, 81.32% in 2008 and 68% in 2009 respectively (MoE, 2020).

The right to education guaranteed under the International Covenant on Economic Social and Cultural Right (ICESCR, 1966), Convention on the Right of Child (CRC, 1989), African Charter on the Rights and Welfare of Child (ACRWC, 1990) as well as other international instruments are not to suspended education in situations of armed conflict. Concerned about the consequences of brutal armed conflicts on education, Vernor Munoz, former special rapporteur on the right to education noted in his report that 'security in schools', meaning not only physical, psychological and emotional safety, but also an uninterrupted education in conditions conducive to knowledge acquisition and character development form part of the right to education. Hence, states have the obligation to respect, protect and fulfil the right to education whether or not an emergency situation exists. These concerns were raised and inform the study. The study tested the following hypotheses at 0.05 levels of significance

H<sub>01</sub>: There is no significant difference in students' enrolment rate before and during Boko Haram

insurgency in senior secondary schools in Borno State, Nigeria,

Ho<sub>2</sub>: There is no significant difference in students' attendance rate before and during Boko Haram insurgency in senior secondary schools in Borno State, Nigeria,

Ho<sub>3</sub>: There is no significant difference in students' dropout rate before and during Boko Haram insurgency in senior secondary schools in Borno State, Nigeria,

Ho<sub>4</sub>: There is no significant difference in students' completion rate before and during Boko Haram insurgency in senior secondary schools in Borno State, Nigeria.

## 2. Research Methodology

The study used ex post facto research design. The population of the study were all sixty three (63) affected senior secondary schools in Borno state. Out

of which forty eight (48) affected schools were selected as sample using disproportionate stratified random sampling technique. The study used proforma as an instrument in collecting data for the study. Paired sample t-test was used to analyze the data for the study.

## 3. Results

The study tested hypotheses on impact of Boko Haram insurgency on enrolment rate, attendance rate, dropout rate and completion rate in senior secondary schools in Borno State. The results and discussion are organized around these issues.

Ho<sub>1</sub>: There is no significant difference in students' enrolment rate before and during Boko Haram insurgency in senior secondary schools in Borno State, Nigeria,

**Table 1:** Result of t-test of Paired Samples on Students' Net Enrolment Rate Before and During Boko Haram Insurgency in Senior Secondary Schools in Borno State

Pair	N	Mean NER	SD	DF	t-value	P-value	Remark
Enrolment rate before (2005)	36	.05	.04	35	-3.01	.005	Significant
Enrolment rate during (2011)	36	.08	.07				
Enrolment rate before (2006)	36	.06	.05	35	-3.13	.003	Significant
Enrolment rate during (2012)	36	.09	.07				
Enrolment rate before (2007)	36	.06	.04	35	-2.84	.007	Significant
Enrolment rate during (2013)	36	.08	.07				
Enrolment rate before (2008)	36	.07	.05	35	-2.50	.017	Significant
Enrolment rate during (2014)	36	.09	.07				
Total enrolment rate before (2005-2008)	36	.24	.18	35	-3.50	.001	Significant
Total enrolment rate during (2011-2014)	36	.34	.28				

Significant at P<0.05

The result of t-test of paired samples in table 1 indicates that there was a significant difference in students' net enrolment rate before and during Boko Haram insurgency in senior secondary schools in Borno State. The hypothesis is therefore, rejected and the difference was in favour of insurgency period.

**Table 1.1:** Result of t-test of Paired Samples on Students’ Gross Enrolment Rate Before and During Boko Haram Insurgency in Senior Secondary Schools in Borno State

Pair	N	Mean GER	SD	DF	t-value	P-value	Remark
Gross enrolment rate before (2005)	36	.09	.07	35	-2.18	.036	Significant
Gross enrolment rate during (2011)	36	.12	.10				
Gross enrolment rate before (2006)	36	.10	.08	35	-2.54	.016	Significant
Gross enrolment rate during (2012)	36	.13	.09				
Gross enrolment rate before (2007)	36	.11	.08	35	-2.57	.009	Significant
Gross enrolment rate during (2013)	36	.14	.09				
Gross enrolment rate before (2008)	36	.12	.09	35	-2.89	.007	Significant
Gross enrolment rate during (2014)	36	.16	.10				
Total gross enrolment rate before (2005-2008)	36	.40	.32	35	-2.89	.007	Significant
Total Gross enrolment rate during (2011-2014)	36	.53	.39				

Significant at  $P < 0.05$

The result of t-test of paired samples in table 1.1 indicates that there was a significant difference in students’ gross enrolment rate before and during Boko Haram insurgency in senior secondary schools in Borno State. The hypothesis is therefore, rejected and the difference was in favour of insurgency period.

H<sub>02</sub>: There is no significant difference in students’ attendance rate before and during Boko Haram insurgency in senior secondary schools in Borno State.

**Table 2:** Result of t-test of Paired Samples on Students’ Attendance Rate Before and During Boko Haram Insurgency in Senior Secondary Schools in Borno State

Pair	N	Mean AR	SD	DF	t-value	P-value	Remark
Attendance rate before (2005)	36	.09	.09	35	-3.29	.002	Significant
Attendance rate during (2011)	36	.12	.09				
Attendance rate before (2006)	36	.26	.99	35	.803	4.27	Not Significant
Attendance rate during (2012)	36	.12	.10				
Attendance rate before (2007)	36	.09	.09	35	-2.93	.006	Significant
Attendance rate during (2013)	36	.13	.11				
Attendance rate before (2008)	36	.10	.08	35	-1.64	.111	Not Significant
Attendance rate during (2014)	36	.12	.10				
Total attendance rate before (2005-2008)	36	.37	.33	35	-2.89	.005	Significant
Total attendance rate during (2011-2014)	36	.49	.39				

Significant at  $P < 0.05$

The result of t-test of paired samples in table 2 indicates that there was a significant difference in students’ attendance rate before and during Boko Haram insurgency in senior secondary schools in Borno State. However, the study further revealed that there was no significant difference in students’ attendance rate. The hypothesis is therefore, rejected for first and third years and total attendance rate and was accepted for and the second and fourth years of insurgency period. The difference was in favour of insurgency period.

H<sub>03</sub>: There is no significant difference in students’ dropout rate before and during Boko Haram insurgency in senior secondary schools in Borno State.

**Table 3:** Result of t-test of Paired Samples on Students’ Dropout Rate Before and During Boko Haram Insurgency in Senior Secondary Schools in Borno State

Pair	N	Mean DR	SD	DF	t-value	P-value	Remark
Dropout rate before (2005)	36	.09	.09	35	.910	.369	Not Significant
Dropout rate during (2011)	36	.13	.09				
Dropout rate before (2006)	36	.10	.09	35	-1.44	.158	Not Significant
Dropout rate during (2012)	36	.14	.10				
Dropout rate before (2007)	36	.10	.08	35	-2.31	.027	Significant
Dropout rate during (2013)	36	.14	.11				
Dropout rate before (2008)	36	.10	.08	35	-1.71	.097	Not Significant
Dropout rate during (2014)	36	.13	.11				
Total dropout rate before (2005-2008)	36	.22	.28	35	-2.41	.021	Significant
Total dropout rate during (2011-2014)	36	.29	.30				

Significant at P<0.05

Table 3 shows that there was no significant difference in students’ dropout rate for first, second and fourth years in senior secondary schools in Borno State. The hypothesis is therefore, accepted. However, the study also revealed that there was a significant difference in students’ dropout rate in the third year and total attendance rate before and during Boko Haram insurgency in senior secondary schools in Borno State. The hypothesis is therefore rejected. The difference was in favour of insurgency period.

Ho4: There is no significant difference in students’ completion rate before and during Boko Haram insurgency in senior secondary schools in Borno State.

**Table 4:** Result of t-test of Paired Samples on Students’ Completion Rate Before and During Boko Haram Insurgency in Senior Secondary Schools in Borno State

Pair	N	Mean CR	SD	DF	t-value	P-value	Remark
Completion rate before (2005)	36	.05	.07	35	-3.39	.002	Significant
Completion rate during (2011)	36	.04	.05				
Completion rate before (2006)	36	.05	.08	35	-3.28	.002	Significant
Completion rate during (2012)	36	.07	.11				
Completion rate before (2007)	36	.05	.08	35	-2.94	.006	Significant
Completion rate during (2013)	36	.08	.11				
Completion rate before (2008)	36	.06	.09	35	-2.03	.050	Significant
Completion rate during (2014)	36	.10	.11				
Total Completion rate before (2005-2008)	36	.41	.34	35	-3.04	.004	Significant
Total Completion rate during(2011-2014)	36	.53	.39				

Significant at P<0.05

Table 4 indicates that there was a significant difference in students’ completion rate in senior secondary schools in Borno State. The hypothesis is therefore, rejected for all the period and the difference was in favour of pre insurgency for the first year and insurgency period for second, third, fourth and the total before and during insurgency period.

#### 4. Discussion of findings

The finding on difference in students’ enrolment rate before and during Boko Haram insurgency revealed a significant difference in students’ net and gross enrolment rate before and during Boko Haram insurgency in senior secondary schools in Borno State and the difference was in favour of insurgency period. This finding concurred with Edemenang, Garba, Mande and Msheliza (2021) who reported that forceful recruitment of students as a child soldiers and suicide

bombers by insurgency lower enrolment. It also agreed with, Themner and Wallenstern (2013) study which hypothesises that conflict lead to a decrease in net and gross enrolment rate during conflict, as schools are unable to provide safe access to schooling for many children. It is also in agreement with UNICEF (2014) reports that in 2013, enrolment rate in secondary school are nearly one-thirds lower in conflict affected countries. Similarly, this finding corroborated the findings of William, and Istifanus (2017) who stated that many schools were closed down and this implies that there was no school enrolment during the period of the closure of the schools. Also Bilyaminu, Baba and Purokayo (2017), Abdulrasheed, Onuselogu and Obioma (2015) found that majority of the schools have been closed down indefinitely which affects pupils' enrolment. These significant differences in favour of insurgency period might be as a result of people not engaging in activities like farming and fishing as a result of the relocation of local government into the state capital.

With respect to the findings on difference in impact of Boko Haram insurgency on students' attendance rate in senior secondary schools in Borno State. The study found a significant difference in students' attendance rate before and during Boko Haram insurgency in the year 2005 and 2011, 2007 and 2013 and total before and during and not in the year 2006 and 2012, 2008 and 2014 in senior secondary schools in Borno State, and difference was in favour of insurgency period. These inconsistent differences might be as a result of displacement and relocation of the villages into the state capital. This is in agreement with findings of Moses and Omede (2020), UNESCO (2015), which revealed a negative impact of insurgency on school attendance rate in areas prone to Boko Haram attack. These findings were not in line with the result which revealed no significant difference before and during Boko Haram insurgency. This finding is consistent with that of Pindar and Petrol (2016), William, and Istifanus (2017), who reported that the state of insecurity as occasioned by the activities of Boko Haram insurgency have seriously affected school attendance among students of private schools in Maiduguri Metropolis. Similarly, the findings concurred with William, and Istifanus (2017) found that parents were afraid to let their daughters attend school because of fear and insecurity in public primary and secondary schools in the three senatorial zones of Adamawa State. Similarly, Abdullahi, Atsua, Amuda and Habu (2013) and Abdullahi, Atsua, Amuda and Habu (2013), Patrick and Felix (2014) found that level of school attendance under the crises situation in Maiduguri Metropolis has been low.

With regard to the findings on difference in students' dropout rate before and during Boko Haram insurgency in senior secondary schools in Borno State, the study found a significant difference in students' dropout rate before and during Boko Haram insurgency in the year 2007 and 2013, and total before and during, and not in 2005 and 2011, 2006 and 2012, and 2018 and 2014, in senior secondary schools in Borno State, and the difference was in favour of insurgency period. The finding which revealed significant difference is supported by Mohammed, Kawi and Kanami (2020), UNICEF (2015), UNESCO (2018), who reported that the activities of Boko Haram make parents to send their children away from the affected areas which resulted the children in becoming dropout of schools. The findings which revealed no significant difference is not in line with that of Ngohi and Saidu (2016) who stated that insecurity in Maiduguri Metropolis has a very devastating impact on secondary school education following voluntary withdrawal of students in secondary schools. However, the finding which revealed significant difference in students' dropout rate before and during Boko Haram insurgency agreed with Hamman-Tukur, Atsua and Nwachukwu (2014), Abdulrasheed, Onuselogu and Obioma (2015), Galtimari (2017), Osunyikanmi, and Iwu, (2017), who reported that Boko Haram insurgency had negative impact on pupils' dropout as a result of Boko Haram insurgency. Abdulrasheed, Onuselogu and Obioma (2015) further confirmed that since most of the people were internally displaced, their children/wards become dropout of schools in areas affected by the insurgency in Borno State, whereas, the finding that revealed no significant difference is not in line with the findings of Ngohi and Saidu (2016), Galtimari (2017), Osunyikanmi, and Iwu, (2017), Hamman-Tukur, Atsua and Nwachukwu (2014), and Abdulrasheed, Onuselogu and Obioma (2015).

Furthermore, the last finding revealed that there was a significant difference in students' completion rate in senior secondary schools, and the difference was in favour of pre insurgency period for the first year and insurgency period for the remaining years. This finding is in agreement with Themner and Wallenstern (2013), UNICEF (2014), Hamman-Tukur, Atsua and Nwachukwu (2014), Edemenang, Garba, Mande and Msheliza (2021) whose results indicated that insurgency had negatively affected the school completion. The finding contradicts with that of GPR (2019) who found that completion rate is improving with an estimated 4.9 million more children completing primary schools and 2.6 million more completing lower secondary schools over previous years in countries affected by fragility and conflict.

## 5. Conclusion

Based on the findings of the study, it is concluded that there was a positive impact of insurgency on students' net and gross enrolment rate, and completion rate in senior secondary schools in Borno State. It is also concluded that there was inconsistency in the impact of Boko Haram insurgency on students' attendance rate and dropout rate in senior secondary schools in Borno State.

## 6. Recommendations

The study recommended that:

- Borno State Government should provide free education up to secondary school as the study shows that students' net and gross enrolment rate in favour of insurgency period.
- Borno State Government should provide schools with infrastructural facilities and teaching-learning materials to accommodate learners' needs as the students' attendance rate in favour of insurgency period despite inconsistency results.
- Federal and Borno State Government should deploy security agents to provide protection to schools to avoid future attacks as the finding indicates that the students dropout rate increased during the insurgency period despite inconsistency in results, and most schools outside the Maiduguri Metropolis were destroyed.
- The Federal and Borno State Government should provide scholarship for continuous education as the study shows that students completion rate favour of insurgency period and most of their parents were internally displaced.

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## Assessing Multimodal Literacy in Higher Education: Impact on Student Learning Outcomes in Selected Universities in Edo State, Nigeria

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**Abstract.** This paper investigates the integration of multimodal literacy in Nigerian higher education and its impact on student learning outcomes. Grounded in Multiliteracies theory, the research explores how students' exposure to diverse communication modes—textual, visual, auditory, gestural, and digital—affects academic performance and digital proficiency. The paper also evaluates faculty adoption of multimodal teaching strategies and identifies institutional factors that influence implementation. A cross-sectional survey research design was adopted, involving 260 respondents (200 students and 60 faculty members) from three universities in Edo State: Benson Idahosa University, University of Benin, and Ambrose Alli University. Data was collected using a structured questionnaire and analysed using descriptive statistics, Pearson correlation, multiple regression, and ANOVA techniques via SPSS. Findings revealed a positive, non-linear relationship between multimodal literacy exposure and academic performance, with students in the medium-exposure group demonstrating the highest average GPA. Digital proficiency was also moderately associated with academic success. Faculty adoption of multimodal strategies was found to be moderate, with significant differences across institutions, largely influenced by digital infrastructure and support systems. The paper concludes that when thoughtfully implemented, multimodal literacy can enhance student engagement, academic performance, and digital competence. However, infrastructural limitations and uneven faculty readiness remain key challenges. This research contributes valuable insights to educational policy and curriculum development, advocating for strategic integration of multimodal literacy in higher education. Recommendations include increased investment in digital infrastructure, targeted faculty

development, and the inclusion of structured digital literacy programmes within university curricula

**Keywords:** Multimodal Literacy, Academic Performance, Digital Proficiency, Higher Education

### 1. Introduction

The rapid advancement of digital technologies has redefined literacy in the 21st century, prompting educational institutions globally to adopt more dynamic and interactive approaches to teaching and learning. One of such approaches is multimodal literacy, which refers to the ability to interpret, create, and communicate meaning through multiple modes of communication such as textual, visual, auditory, gestural, and digital (Kress, 2010). Unlike traditional literacy that emphasises reading and writing alone, multimodal literacy equips learners with the skills needed to navigate complex, media-rich environments and actively participate in knowledge creation in a digital age (Jewitt, 2008).

In higher education, multimodal literacy is increasingly recognised as a catalyst for enhancing students' academic performance, critical thinking, digital competence, and overall engagement in the learning process (Gee, 2012). The integration of digital tools, multimedia resources, and interactive platforms into curriculum delivery has been associated with improved student motivation, better knowledge retention, and more inclusive learning environments. In Nigeria, however, the integration of multimodal literacy into higher education could be viewed as inconsistent in that while some universities have embraced digital tools and online learning platforms,

many still grapple with conventional teaching methods, characterised by face-to-face lectures and text-based instruction (Olaniran, 2020). This variation in adoption has raised concerns about equitable access to quality education and the preparedness of Nigerian graduates to function in digitally driven societies and workplaces (Dada, 2024).

This paper focuses on three universities in Edo State to investigate these claims. These are Benson Idahosa University (BIU), University of Benin (UNIBEN), and Ambrose Alli University (AAU). The essence is to explore the extent of multimodal literacy integration and its effect on students' academic outcomes. These institutions represent a mix of private and public universities thus providing a balanced perspective on the diverse implementation strategies and challenges within Nigeria's higher education system.

Specifically, the paper assesses the extent to which multimodal literacy is integrated into teaching and learning in these institutions. It further investigates the relationship between multimodal literacy exposure and students' academic performance, particularly in terms of their digital proficiency and ability to synthesise knowledge across different modes. In addition, the study recognises that the role of faculty members is central to the successful implementation of multimodal approaches. Their perceptions, competencies, and willingness to adopt innovative teaching strategies greatly influence student learning outcomes. Therefore, this research examines faculty perspectives on the effectiveness of multimodal literacy in promoting student engagement and academic success.

Despite growing interest in multimodal teaching strategies, numerous barriers continue to impede widespread adoption in Nigerian universities with specific reference to those in Edo State. These include inadequate digital infrastructure, limited access to computers and unreliable internet. Others include insufficient training opportunities for educators, and institutional resistance to change (Adebayo & Salawu, 2021). The paper also explores the impact of digital infrastructure on multimodal literacy implementation and identifies institutional and pedagogical challenges that hinder its effective integration. The paper provides evidence-based insights into how multimodal literacy can be effectively implemented in Nigerian higher education. The findings are expected to inform curriculum design, policy development, and faculty training programmes, thereby contributing to the modernisation of teaching and learning practices in line with global educational standards.

## 1.1 Research Questions

This paper seeks to examine the adoption and impact of multimodal literacy in Nigerian higher education institutions by addressing the following research questions:

- To what extent is multimodal literacy integrated into the teaching and learning processes at Benson Idahosa University, University of Benin, and Ambrose Alli University?
- What is the impact of multimodal literacy on students' academic performance and digital proficiency?
- How do faculty members perceive the effectiveness of multimodal literacy in enhancing student engagement and improving learning outcomes?
- What institutional factors influence the adoption and effective implementation of multimodal literacy in Nigerian higher education institutions?

## 1.2 Research Hypotheses

To empirically examine the relationships proposed in the paper, the following hypotheses were formulated:

**H1:** There is a significant positive relationship between the adoption of multimodal literacy and students' academic performance.

**H2:** Students with greater exposure to multimodal literacy demonstrate significantly higher levels of digital proficiency compared to students with limited exposure.

**H3:** Faculty members who employ multimodal teaching strategies report higher levels of student engagement than those utilising traditional teaching methods.

**H4:** The availability of digital infrastructure significantly influences the level of multimodal literacy adoption in higher education institution

## 2. Literature Review

### 2.1 The Understanding of Multimodal Literacy

Multimodal literacy is the ability to read, interpret, create, and convey meaning through various modes of representations such as texts, images, sounds, gestures, or actions (Kress, 2010). Unlike traditional literacy that focuses on reading and writing, multimodal literacy takes into account the different ways people engage with information today, which includes through websites, videos, infographics,

podcasts, and even simulations. Jewitt (2008) claims that instruction in the 21st century needs to incorporate the ability to traverse and assimilate information across various modes, synthesising the content into a coherent whole. This has profound consequences for pedagogy and andragogy within the context of higher education, which increasingly considers academic achievement as reliant on the ability to navigate knowledge presented in diverse sources and formats.

## **2.2 The Application of Multimodal Literacy in Education and its Impact on Advanced Learning**

A rich array of learning outcomes such as improved academic results, enhanced digital literacy, and development of critical thinking skills can be achieved through the adoption of multimodal literacy (Gee, 2012). In Gee's view, multimodal approaches are more effective because they utilise multiple engagement mechanisms which enhance cognition, comprehension and retention at various levels. According to Mayer (2021), in the Cognitive Theory of Multimedia Learning, learners are more likely to grasp complex ideas when they are presented with appropriate instructional designs that mitigate cognitive overload. These concepts are further supported by Gunawardena et al.'s (2020), and Hobbs's (2018) empirical studies which show how expositions to interactive and multimodal learning environments enhances students' problem-solving capabilities, digital skills, and overall classroom engagement compared to students from text-centered classrooms.

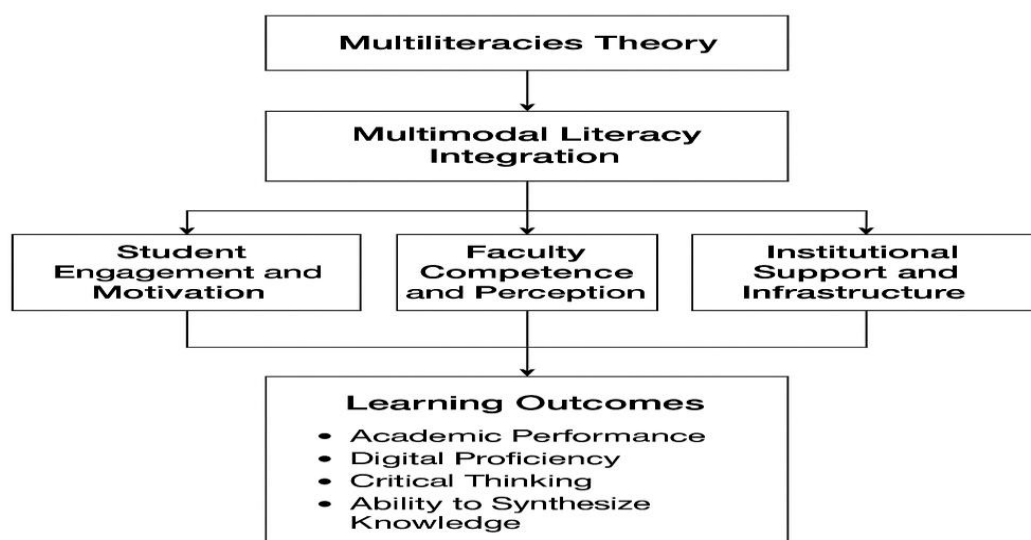
Multimodal literacy in higher education has a higher percentage chance of succeeding through the integration facilitated by the faculty. Faculty, according to Selwyn (2021), perceives multimodal learning as black boxed system where different digital tools and outcomes are placed; their perception, training, and willingness to disrupt the status quo influences the mobility of multimodal frameworks. Barriers to faculty adoption include lack of digital

training, time to redesign the course, and skepticism regarding the educational value of multimodal approach pedagogy (Bates, 2022). Faculty members possessing the necessary digital skills, and those with the belief, who begin using multimodal techniques, usher proactive student engagement and shift towards learner centered education.

## **2.3 Institutional Contexts and Multimodal Literacy Adoption**

The integration of multimodal literacy can be enabled or restricted by institutional context. The availability of the required infrastructure, access to the necessary digital technologies, internet availability, and the administrative backing are fundamental to the successful implementation of the aforementioned. (Adebayo & Olayemi, 2020). It is easier to integrate multiple teaching modalities for universities with developed ICT policies and investment in e-learning. On the other hand, universities lacking basic digital infrastructural facilities prove difficult to provide efficient and equitable multimodal education. The worst affected, are infrastructural policies that stifle ingenuity in teaching and learning approaches amid developing nations like Nigeria. In the Nigerian context, the implementation of multimodal literacy could be regarded as not uniform across institutions. While some federal universities and private institutions are digitising classrooms and integrating online class options, many state-owned and underfunded universities still use traditional lecture methods (Olaniran, 2020). Adebayo and Salawu (2021) cite insufficient funding of ICT facilities, lack of staff training programmes and absence of clear policies guiding digital teaching and learning as some of the systemic gaps. As a result, students in poorly funded universities are likely to have little exposure to multimodal resources which may negatively impact on their academic outcomes and digital readiness for employment.

## 2.4 Framework for Assessing Multimodal Literacy in Nigerian Higher Education



This framework sets out a clear approach for assessing the assimilation and effects of multimodal literacy in Nigerian higher education, especially concerning student learning achievements. It is based on the Multiliteracies theory which explains that literacy is not limited to reading and writing but also the use of various communication modes and technologies. A multiliterate person should be able to create and understand meaning in language through the textual, visual, auditory, gestural, and digital modes. The Multiliteracies approach forms the core of this framework because students need to be prepared to live and work in sophisticated multimedia environments. The framework is structured into five components which are, integration of multimodal literacy, student participation, faculty attitudes and skills, context, and identified learning outcomes.

Integration of multimodal literacy involves the incorporation of different technological devices and media into the teaching and learning processes. These devices include the use of computers, cell phones, videos, audio tools, and the internet. It also refers to the modes of communication employed, the level of technology application in the lesson plan and the teaching methodologies used, whether flipped classroom, interactive media, project-based learning, among others, which promote deeper learning. The aim is to ensure that both instruction and assessments provide a range of options to cater for the different types of learners through the incorporation of these various forms of representation and expression.

The second level of engagement concerns students' discipline and enthusiasm. These are factors which

motivate students to actively participate in class activities. It describes in broad terms the perspective of students as active participants aimed at completing tasks or activities in culturally responsive ways. It assesses the effects of active learning on students' interaction engagement in various formats thereby enhancing their creativity and critical thinking processes. It also assesses the degree to which multimodal platforms foster collaboration among peers. This offers a more comprehensive approach to learning that accommodates the preferences of digital learners.

The third component, which is faculty competence and perception, emphasises the consideration given to educators regarding their critical role in the adoption and effective use of multimodal literacy tools. It examines the educators' level of accessibility and availability of training and professional development opportunities on the use of digital and multimodal tools. It assesses their willingness to change from conventional teaching to more progressive methods, and their attitudes towards the value of these methods in improving learning. Faculty perception is one of the foremost factors which determines the value given to multimodal endeavours and whether they are largely ignored or minimally utilised within an institution. No less important is the dimension of institutional support and infrastructure, which considers the larger organisational context that enables or inhibits the adoption of multimodal approaches. It analyses the adequacy and dependability of digital infrastructure such as hardware, internet access, and multi-media resources, as well as institutional regulations that support or stifle creativity.

The scaffolding strategies for faculty which include accessing a learning management system (LMS), collaboration with an instructional designer, as well as other marketing technologist functions support the development of more sustainable multimodal systems.

In the end, the framework focuses on the assessment of learning results as the primary measure of efficiency. This dimension analyses the effects of multimodal learning on academic achievement, digital competence, critical thinking, and the synthesis and application of knowledge. It looks at more than just the marks students achieve; it examines the extent to which students are able to integrate information from different sources and modalities in a manner that prepares them for solving real-world problems in an advanced technologically driven society.

This framework essentially creates a single approach through which scholars, administrators, and policymakers can understand and respond to the application of multimodal literacy in the Nigerian higher education system. Addressing pedagogy and institutional framework within the context of the educational system enables the cultivation of graduates who are digitally literate, critically informed, and academically outstanding.

### 3. Methodology

This paper employs a cross-sectional survey research design to investigate the relationship between the adoption of multimodal literacy and academic performance among students and faculty members in selected Nigerian universities. The design was chosen for its suitability in capturing data from a large, diverse population at a single point in time, allowing for the analysis of existing relationships between variables without manipulating the study environment. A structured questionnaire served as the primary data collection instrument, facilitating the collection of quantitative data on multimodal literacy exposure, academic performance, digital proficiency, and faculty perceptions of multimodal teaching strategies.

The study's target population consist of undergraduate students and teaching staff from three universities in Edo State, Nigeria, namely Benson Idahosa University (BIU), University of Benin (UNIBEN), and Ambrose Alli University (AAU). These institutions were selected to provide a balanced representation of both public and private higher education contexts in Nigeria. To ensure fair representation across various faculties and academic disciplines, a stratified random sampling technique was utilised. Within each institution, respondents were grouped by faculty or

department, and participants were then randomly selected from each group. The final sample comprised 200 students and 60 faculty members, totaling 260 respondents. This sample size was deemed adequate for statistical analysis and generalisability within the scope of the study.

The structured questionnaire used in this study was designed to measure several key variables. For students, it captured data on their level of exposure to multimodal literacy, self-reported academic performance (including GPA and course grades), and digital proficiency, including frequency and types of technology usage. For faculty members, the instrument assessed their perceptions of multimodal teaching effectiveness, their level of adoption of such strategies, and the challenges they face in implementing multimodal approaches. The questionnaire items were developed based on existing literature and aligned with the study's objectives to ensure content validity.

To enhance the validity and reliability of the instrument, a pilot study was conducted with a subset of 50 respondents drawn from similar academic environments not included in the main study. The feedback obtained was used to refine question clarity, language appropriateness, and response format. Internal consistency of the questionnaire was evaluated using Cronbach's alpha coefficient, with a benchmark of 0.70 considered the minimum acceptable value for reliability. The results confirmed that the instrument demonstrated satisfactory internal consistency across the major scales. The data collection process involved both online such through the students' academic group WhatsApp platforms and physical distribution of the questionnaire to accommodate different levels of internet accessibility among respondents. Ethical approval was sought. Participation in the study was voluntary, and all respondents provided informed consent after being briefed on the objectives, confidentiality measures, and their right to withdraw at any time without consequence.

Following data collection, the responses were coded and analysed using Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics, including means, standard deviations, and frequency distributions, were used to summarise demographic and variable-specific responses. To test the hypothesised relationships between variables, Pearson correlation analysis was employed. In addition, multiple regression analysis was conducted to evaluate the predictive strength of multimodal literacy exposure on academic performance and digital

proficiency. An Analysis of Variance (ANOVA) was also used to examine significant differences in the adoption of multimodal literacy across the three institutions. In sum, the methodological approach of this study provided a rigorous and systematic process for evaluating the integration and outcomes of multimodal literacy in Nigerian higher education. It allowed for the generation of empirical insights that are statistically valid, ethically grounded, and contextually relevant to both researchers and practitioners.

#### 4. Results of Findings

The data collected from students and faculty across the three selected universities were analysed to assess the relationship between multimodal literacy exposure and academic performance. This section presents the key statistical findings derived from descriptive and inferential analyses. Emphasis is placed on patterns of student achievement, digital proficiency, and faculty adoption of multimodal strategies. The results provide critical insights into how multimodal literacy influences learning outcomes within the Nigerian higher education context.

#### Descriptive Statistics of Students' Data

Metric	Mean	Std Dev	Min	Max
GPA	2.98	0.47	1.69	4.36
Digital Proficiency Score	71.29	14.81	21.38	127.79
Multimodal Literacy Exposure (MLE)	64.14	9.94	40.28	95.79

The average GPA of 2.98 indicates that the overall academic performance of students falls within a satisfactory range, with variability present across individuals (SD = 0.47). The mean digital proficiency score of 71.29 and wide standard deviation suggest a diverse range of digital skillsets among students. This variability could be influenced by differing levels of prior exposure to digital tools or institutional support. Multimodal Literacy Exposure has a mean of 64.14 with a moderate spread (SD = 9.94), indicating that while some students are highly engaged with multimodal learning resources, others have considerably less exposure, highlighting an uneven distribution in access or implementation.

#### Descriptive Statistics of Faculty Data

Metric	Mean	Std Dev	Range
Multimodal Literacy Adoption (1–5)	3.3	1.11	1–5

The faculty’s average adoption score of 3.3 out of 5 suggests a moderate level of integration of multimodal teaching strategies. The standard deviation of 1.11 implies substantial variability in adoption—some faculty members are actively using diverse multimodal strategies, while others are not, likely due to differences in training, resources, or institutional emphasis. Most faculty adoption scores fall between 3 and 4, suggesting that a significant portion are receptive to or in the process of embracing digital and multimodal pedagogies.

#### GPA by Multimodal Literacy Exposure (MLE)

MLE Group	Avg. GPA	Std Dev
Low	3.067	0.191
Medium	3.226	0.137
High	3.139	0.190

The analysis shows that students in the Medium MLE group have the highest average GPA (3.23). This non-linear trend suggests that moderate exposure to multimodal resources correlates with the most effective learning outcomes. Excessive exposure (High MLE) still yields high performance, but not as strongly as the medium group. These results support pedagogical models that emphasise balanced integration of digital and multimodal content, avoiding

both underexposure and cognitive overload from excessive stimuli.

Differences in GPA across MLE Groups

F-statistic: Significant

P-value: 0.0000025 ( $p < 0.001$ )

The analysis reveals a highly significant difference in GPA across the MLE categories, with a very low probability that this pattern is due to chance. Statistically, this provides strong empirical evidence

that Multimodal Literacy Exposure influences academic performance, especially when adopted at optimised levels. These findings have direct implications for curriculum design and support the case for targeted interventions and structured digital literacy programmes within Nigerian higher education institutions.

## 5. Discussion of Findings

This paper examined the relationship between multimodal literacy exposure (MLE), digital proficiency, and students' academic performance (GPA) in three Nigerian higher education institutions: Benson Idahosa University (BIU), University of Benin (UNIBEN), and Ambrose Alli University (AAU). It also assessed the extent of faculty adoption of multimodal teaching approaches. The findings contribute to ongoing debates on the role of digital and multimodal literacy in contemporary education and offer unique insights into the Nigerian academic context.

The findings revealed a positive, non-linear (quadratic) relationship between Multimodal Literacy Exposure and GPA. Students with moderate to high levels of exposure achieved significantly higher average GPAs, with the medium MLE group recording the highest performance (avg. GPA = 3.23).

These findings suggest that balanced multimodal engagement where students interact with well-structured multimedia content can enhance comprehension, motivation, and retention. This aligns with Mayer's (2021) Cognitive Theory of Multimedia Learning, which emphasises that thoughtfully integrated multimodal formats can support deeper cognitive processing. However, the slight dip in GPA among students in the highest MLE group may reflect diminishing returns or cognitive overload, consistent with Cognitive Load Theory (Sweller, 1988). Unlike the earlier negative correlation (-0.134), the new group-based and regression analysis underscores that structured and optimised multimodal literacy is beneficial for academic performance, especially when not excessive or unregulated.

The study found a weak but positive correlation ( $r = 0.095$ ) between digital proficiency and GPA. While the relationship is not strong, it still indicates that students with better digital skills are slightly more likely to perform better academically. This is in line with studies by Hobbs (2018) and Ng (2019), who argue that digital fluency enhances students' ability to locate, evaluate, and apply information, especially in technology-enhanced learning environments.

However, the modest effect size in this study supports Eshet-Alkalai's (2020) position that digital proficiency alone is not sufficient for academic excellence—it must be complemented with critical thinking, time management, and information literacy skills to fully support learning.

Faculty members reported an average multimodal literacy adoption score of 3.3 on a 5-point scale, indicating moderate integration of digital and multimodal resources into their teaching. The standard deviation of 1.11 suggests substantial variability among instructors, reflecting differing levels of access, confidence, and training in digital pedagogy. Importantly, the significant ANOVA result ( $p < 0.05$ ) points to institutional differences in adoption levels. These disparities may stem from variations in digital infrastructure, policy support, and faculty development programmes across the three universities. These findings are supported by Selwyn (2021), Bates (2022) and Dada (2024), who emphasise the need for institutional readiness and leadership in promoting effective digital transformation in higher education.

## 6. Conclusion

This paper aimed to investigate the incorporation, effectiveness, and institutional barriers to multimodal literacy in Nigerian higher education using data from three universities located in Edo State: Benson Idahosa University, University of Benin, and Ambrose Alli University. Guided by Multiliteracies Theory, the study argued that students should be able to interact with different forms of texts, including visual, auditory, digital, as well as spoken and written, to create deeper learning experiences, enhance academic achievement, and gain proficiency in technology.

Based on the exposure to multimodal literacy, the participants were categorised into different groups: structured and balanced exposure and unstructured and unbalanced exposure. The findings demonstrate the clear relationship between structured and balanced exposure to multimodal literacy and improvement in academic performance. Moreover, students whose engagement with the resources was moderate to high showed enhanced performance and better digital skills compared to their peers. The overall adoption of multimodal teaching strategies by faculty members was found to be moderate with considerable differences between institutions. This indicates that less and more effective integration of multimodal techniques requires more training, pedagogical assistance, and institutional backing.

In addition, the digital infrastructure, technology availability, and policy support either enable or limit the use of multimodal literacy and these factors are institutional in nature. Faculty and student learning at different levels are affected in other universities which do not have the basic framework or written policies regarding the use of technology in education.

The study accepts that multimodal literacy, is face aid for overcoming educational shortcomings in Nigerian universities. Its impact is positive when applied with skill and transforms the outcomes into improved academic results as well as the ability to critically analyse, cooperate, and function in a digitalised environment. The investment needs in infrastructure, faculty recruiting, curriculum design and frameworks are undeniable in enabling students equal chances to overcome discriminatory standards heightened by the digital gap.

### 7. Recommendations

Curriculum planners at the national and regional levels need to incorporate a basic level of digital competency enabling students to learn and analyse information through wearing periphery volume recognition devices in handhelds.

Universities should prioritise the development of goal-oriented, high-quality multimedia resources that aid learning, rather than distract from it, as students are already overburdened with digital materials.

The differences in faculty adoption suggests the need for focused, ongoing professional development aimed at assisting lecturers in constructing and delivering multimodal instruction at all levels (Bates, 2022).

The stark differences in the students' levels of digital skills and their MLEs (which seamlessly integrate learning environments to foster enhanced creativity and collaboration) underscore the need to more fully fund equitable digital resources and support frameworks, especially among the most marginalised students.

This study is aware of the financial constraints faced by institutions which cuts across all levels of higher education in Nigeria and perhaps Africa. It therefore recommends that faculties and even departments should source funds through applying for grants from grants giving bodies, from technological organisations who are willing to mount their applications and devices freely as part of their organisational support system to educational development. Some grants have

provisions for such privileges as well, which could also be exploited.

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## Implementation of Total Quality Management in Secondary School Administration in Nigeria: Issues and Prospects

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**Abstract.** This paper explored the implementation of Total Quality Management (TQM) in secondary school administration in Nigeria, delving into its intricacies, challenges, and potential for fostering educational advancement. Secondary education serves as a pivotal stage in the academic journey of students, laying the foundation for their future endeavors. However, amidst the complexities of modern education systems, secondary schools encounter multifaceted challenges ranging from resource constraints to shifting pedagogical paradigms. In response to these challenges, administrators seek methodologies that not only address immediate issues but also cultivate a culture of excellence and innovation. TQM as a guiding philosophy and framework for school improvement, prioritizing quality, accountability, and student-centeredness, schools can transform themselves into vibrant learning communities that empower students to reach their full potential. It is essential for stakeholders to work collaboratively to overcome the challenges and leverage the prospects of TQM implementation in secondary schools. This may require investment in professional development, infrastructure upgrades, and stakeholder engagement initiatives.

**Keywords:** Total Quality Management, Implementation, School Administration.

### 1. Introduction

In the modern educational landscape, the pursuit of excellence in school administration has become paramount, mirroring the demands of an ever-evolving society. Secondary schools, as crucial institutions in nurturing the intellectual and personal development of young minds, are under increasing pressure to adopt efficient management practices that ensure the

delivery of high-quality education. One such management approach that has gained traction across various sectors is Total Quality Management (TQM).

The concept of Total Quality Management (TQM) revolves around the principle of continuous enhancement across all facets of an organization, emphasizing the importance of collaboration, data-driven decision-making, and stakeholder engagement. In the realm of education, its principles align closely with the pursuit of educational quality, student achievement, and institutional effectiveness. However, while the potential benefits of TQM in secondary school administration are evident, its implementation poses intricate challenges. Educational institutions operate within unique ecosystems characterized by intricate hierarchies, diverse stakeholders, and regulatory frameworks. Integrating TQM principles into this milieu requires a nuanced understanding of educational dynamics, coupled with strategic leadership and institutional commitment.

The pursuit of excellence in school administration stands as a cornerstone for fostering student success and societal progress. In secondary education, where the formative years of young minds are shaped, the imperative for effective management practices resonates with particular urgency. In response to the evolving demands of a dynamic educational landscape, administrators are increasingly turning to management methodologies that prioritize quality, efficiency, and stakeholder engagement. Among these methodologies, Total Quality Management (TQM) emerges as a compelling framework with the potential to revolutionize secondary school administration, transcending traditional paradigms to instill a culture of continuous improvement and excellence.

The implementation of Total Quality Management in education represents a paradigmatic shift in how secondary schools conceptualize and enact administrative practices. Beyond the traditional metrics of academic achievement and institutional prestige, TQM introduces a holistic approach that prioritizes the needs and aspirations of all stakeholders, from students and parents to teachers and administrators. By fostering a culture of collaboration, transparency, and accountability, TQM holds the promise of not only optimizing administrative processes but also nurturing a conducive environment for teaching, learning, and personal growth.

However, despite its potential benefits, the journey towards implementing Total Quality Management in secondary school administration in Nigeria is fraught with challenges and complexities. From resistance to change and resource constraints to cultural barriers and varying stakeholder expectations, administrators grapple with multifaceted obstacles that impede the seamless adoption of TQM principles. Nevertheless, amidst these challenges lie untapped opportunities for innovation, collaboration, and transformative change.

## 2. Theoretical Framework

This paper is guided by the Deming's Total Quality Management Theory propounded by Dr. W. Edwards Deming, an American statistician, engineer, and management consultant during the mid-20th century. Deming's Total Quality Management (TQM) theory is encapsulated in his famous "14 Points for Management," which outline key principles for achieving quality and continuous improvement in organizations. These points were developed by Deming as a guide for managers to transform their approach to management and foster a culture of quality throughout the organization. The theory posits the following points:

**Create Constancy of Purpose:** Deming emphasized the need for organizations to have a clear and unwavering commitment to quality and continuous improvement. This involves establishing long-term goals and objectives focused on customer satisfaction, innovation, and organizational excellence.

**Adopt the New Philosophy:** Deming urged managers to embrace a new philosophy of management based on the principles of TQM. This philosophy emphasizes the importance of customer focus, employee involvement, process improvement, and data-driven decision-making.

**Cease Dependence on Inspection:** Deming argued that relying solely on inspection to ensure quality is inefficient and ineffective. Instead, organizations should focus on preventing defects and errors from occurring in the first place by improving processes and systems. This shift from detection to prevention requires a proactive approach to quality management that involves identifying root causes of problems and implementing corrective actions.

**Deming cautioned against the practice of awarding contracts or business solely based on price, as it often leads to short-term cost savings at the expense of quality and long-term value.** Instead, organizations should consider factors such as quality, reliability, and service when selecting suppliers or contractors. By prioritizing value over cost, organizations can build lasting relationships with suppliers and enhance overall product and service quality.

**Deming advocated for a systematic approach to improving processes and systems continuously.** This involves identifying areas for improvement, implementing changes, measuring outcomes, and refining processes based on feedback and data analysis. Continuous improvement is essential for staying competitive, adapting to changing market conditions, and meeting evolving customer needs.

**Institute Training and Retraining:** Deming stressed the importance of investing in training and development to build employees' knowledge, skills, and capabilities. Continuous learning is essential for adapting to new technologies, improving performance, and fostering innovation.

**Institute Leadership:** Deming emphasized the critical role of leadership in driving quality improvement initiatives. Leaders must create a supportive and empowering environment that encourages innovation, collaboration, and continuous learning. Effective leadership involves setting a clear vision, communicating goals and expectations, providing resources and support, and fostering a culture of accountability and trust.

**Drive Out Fear:** Deming recognized that fear of reprisal or punishment can stifle creativity, innovation, and open communication within organizations. To foster a culture of quality, managers must create an environment where employees feel safe to voice their ideas, raise concerns, and take calculated risks. This involves addressing issues such as bullying,

harassment, and punitive management practices that undermine trust and collaboration.

**Break Down Barriers Between Departments:**

Deming emphasized the importance of collaboration and teamwork across organizational silos. Departments must work together seamlessly to achieve common goals and objectives. This requires breaking down barriers, sharing information, and aligning processes and systems to eliminate duplication, redundancy, and inefficiency. By fostering cross-functional collaboration, organizations can improve communication, coordination, and overall organizational performance.

**Deming cautioned against relying on slogans, exhortations, or arbitrary targets to motivate employees.** While well-intentioned, these tactics often fail to address underlying issues. Instead, organizations should focus on creating a supportive work environment that values employees' contributions, recognizes their achievements, and fosters intrinsic motivation.

**Eliminate Numerical Quotas and Management by Objectives:**

Deming criticized the use of numerical quotas and management by objectives (MBO) as counterproductive to quality improvement. Instead, organizations should focus on process improvement, customer satisfaction, and employee engagement as measures of success.

**Remove Barriers to Pride of Workmanship:**

Deming advocated for creating conditions that enable employees to take pride in their work and strive for excellence. By empowering employees to take ownership of their work, organizations can foster a sense of pride, ownership, and commitment to quality.

**Institute a Vigorous Program of Education and Retraining:**

Deming emphasized the importance of investing in education and training to develop employees' skills and capabilities continuously.

**Take Action to Accomplish the Transformation:**

Deming stressed that achieving the transformation to TQM requires concerted effort and commitment from all levels of the organization. This involves taking decisive action to implement the 14 points for management and drive cultural change. Managers must lead by example, engage employees, and provide the necessary resources and support to sustain the transformation effort.

**Deming's 14 Points principles for Management is relevant to this paper because it provides a comprehensive framework for achieving quality**

**and continuous improvement in secondary school administration.** By embracing these principles, secondary school administrators can foster a culture of excellence, innovation, and students focus that drives long-term success and sustainability.

**3. Concept of Total Quality Management (TQM)**

Total Quality Management (TQM) in secondary school administration in Nigeria embodies a holistic approach to enhancing the quality of education, organizational efficiency, and stakeholder satisfaction. Emerging from the principles of continuous improvement, customer focus, and employee involvement, TQM offers a comprehensive framework for addressing the multifaceted challenges facing secondary schools in Nigeria. In a country where educational reforms are crucial for socio-economic development and national progress, the application of TQM principles holds immense promise for fostering a culture of excellence and accountability within secondary education institutions.

At its core, TQM emphasizes the importance of meeting the needs and expectations of all stakeholders, including students, parents, teachers, administrators, and the broader community. In secondary school administration in Nigeria, this entails not only delivering high-quality educational services but also promoting inclusivity, equity, and social justice. By adopting a student-centered approach, secondary schools can tailor their programs, curricula, and support services to accommodate the diverse learning styles, backgrounds, and aspirations of Nigerian students, thereby promoting academic success and personal development for all.

Moreover, TQM underscores the significance of continuous improvement and innovation in driving organizational excellence. In secondary school administration, this involves the systematic assessment of administrative processes, teaching methodologies, and learning outcomes to identify areas for enhancement and implement evidence-based strategies for improvement. By fostering a culture of reflection, collaboration, and data-driven decision-making, secondary schools in Nigeria can adapt to evolving educational trends, address emerging challenges, and seize opportunities for innovation and growth.

Furthermore, TQM emphasizes the critical role of leadership commitment and employee empowerment in fostering organizational change. School leaders play a pivotal role in setting the vision, values, and

priorities for TQM implementation, providing resources, support, and direction to ensure its success. Moreover, TQM recognizes the expertise and contributions of all staff members, encouraging collaboration, teamwork, and shared decision-making. By empowering teachers and administrators to take ownership of their work and participate actively in quality improvement initiatives, secondary schools in Nigeria can tap into the collective wisdom, creativity, and dedication of their workforce, thereby enhancing organizational effectiveness and employee morale.

Additionally, the application of TQM principles in secondary school administration in Nigeria necessitates a strategic approach to stakeholder engagement and partnership building. Schools must actively involve parents, community members, and other external stakeholders in the educational process, soliciting feedback, fostering collaboration, and building trust and accountability. By forging strong partnerships with parents and the community, secondary schools can create a supportive ecosystem that reinforces learning both inside and outside the classroom, thereby enhancing student engagement, motivation, and overall academic success.

In a nutshell, TQM advocates for a culture of continuous improvement, emphasizing that excellence is not a destination but a journey. In secondary education, this translates into an ongoing process of review and refinement across all aspects of the school's operations. Curriculum design, instructional practices, assessment methods, administrative processes, and support services are subject to systematic evaluation, feedback, and enhancement (Bouyabrine & Haddaoui, 2021). By embracing a mindset of perpetual learning and adaptation, secondary schools can stay responsive to evolving educational needs and emerging challenges.

#### **4. Total Quality Management and Secondary School Administration in Nigeria**

Total Quality Management (TQM) principles can significantly impact secondary school administration in Nigeria, enhancing the quality of education and overall organizational effectiveness. Firstly, TQM emphasizes a customer-centric approach, which in the context of education, translates to prioritizing students' needs and ensuring their holistic development. Secondary schools can adopt TQM principles to tailor their educational programs, extracurricular activities, and support services to meet the diverse needs of students, fostering a conducive learning environment (Ogunlela, 2018).

Secondly, TQM promotes continuous improvement through the involvement of all stakeholders. In the case of secondary school administration, this entails engaging teachers, students, parents, and the local community in decision-making processes and feedback mechanisms. By soliciting input from various stakeholders, schools can identify areas for improvement, whether it's curriculum design, teaching methodologies, or infrastructure development, thus enhancing overall school performance and satisfaction levels.

Moreover, TQM emphasizes the importance of data-driven decision-making and performance measurement. Secondary schools in Nigeria can leverage TQM principles to establish robust monitoring and evaluation systems, tracking students' academic progress, extracurricular achievements, and satisfaction levels. By analyzing data on a regular basis, school administrators can identify trends, anticipate challenges, and implement targeted interventions to improve educational outcomes and stakeholder satisfaction.

Furthermore, TQM underscores the significance of leadership commitment and employee empowerment. Effective secondary school administration in Nigeria requires visionary leadership that champions TQM principles and fosters a culture of collaboration, innovation, and accountability among staff members. By empowering teachers and staff to take ownership of their roles and contribute to the school's improvement initiatives, administrators can harness the collective expertise and creativity of the workforce, driving sustainable change and excellence in education (Ejeh, 2022).

Lastly, TQM emphasizes the importance of strategic partnerships and collaboration with external stakeholders. In the Nigerian context, secondary schools can benefit from forging alliances with government agencies, educational institutions, NGOs, and industry partners to access resources, expertise, and best practices. By collaborating with external stakeholders, schools can enrich their educational offerings, expand students' learning opportunities, and address societal challenges, thereby fulfilling their broader mission of nurturing well-rounded individuals and contributing to national development agendas. In essence, the relationship between Total Quality Management and secondary school administration in Nigeria is symbiotic, with TQM principles providing a framework for continuous improvement and excellence in education.

## **5. Issues in the Implementation of Total Quality Management (TQM) in Secondary School Administration in Nigeria.**

Despite the potential benefits of TQM, the implementation of Total Quality Management (TQM) in secondary school administration in Nigeria is fraught with various challenges and obstacles. These issues stem from a combination of systemic factors, cultural dynamics, and resource constraints, which can hinder the effective adoption and sustainability of TQM practices within educational institutions.

### **5.1 Resource Constraints**

One of the primary issues in applying or implementing TQM in secondary school administration is the limited availability of resources. Resource constraints present a formidable challenge to TQM implementation in secondary schools (Adedoyin et al., 2021). Limited budgets often hinder schools from investing adequately in quality improvement initiatives, staff development, and infrastructure upgrades essential for TQM (Oginni & Adeyemi, 2020).

### **5.1 Inadequate Professional Development Opportunities**

Limited opportunities for professional development can impede the effective application of TQM in secondary school administration. Teachers require continuous learning and skill development. There is the challenge of professional development opportunities, such as workshops, seminars, and conferences to focused on TQM principles and practices.

### **5.2 Teacher Resistance to New Pedagogical Approaches**

Resistance among teachers to adopting new pedagogical approaches aligned with TQM principles can hinder quality improvement efforts. Addressing teacher resistance requires providing training and support (Ojewumi & Bamidele, 2020). Also, some administrators, and other stakeholders often resist new management approaches due to fear of the unknown, perceived threats to autonomy, or skepticism about the benefits of change.

### **5.3 Inadequate Stakeholder Engagement and Participation**

Limited stakeholder engagement can hinder the success of TQM implementation. Effective quality management requires active involvement and

collaboration among stakeholders. Moreover, soliciting feedback, addressing concerns, and recognizing and rewarding contributions from stakeholders can foster a sense of ownership and commitment to TQM initiatives (Bello & Adeyemi, 2022).

### **5.4 Ethical and Integrity Issues**

Ethical and integrity issues can undermine the principles of TQM. Addressing ethical issues requires clear policies and accountability mechanisms where schools can establish codes of conduct, ethics committees, and whistleblower policies to promote integrity and ethical behavior among students and staff. Additionally, fostering a culture of transparency, honesty, and respect can help prevent unethical behavior and maintain trust within the school community (Okeke & Igwe, 2023).

### **5.5 Student Disengagement and Apathy**

Student disengagement towards learning can undermine efforts to improve educational quality through TQM initiatives. Addressing student disengagement requires creating engaging learning environments. Schools can incorporate active learning strategies, project-based learning, and technology-enhanced instruction to increase student engagement. Moreover, fostering positive relationships between students and teachers, providing personalized support, and offering extracurricular activities can help cultivate a sense of belonging and motivation among students (Bello & Adeyemi, 2022).

## **6. Prospects of Total Quality Management (TQM) Implementation in Secondary School Administration in Nigeria**

Total Quality Management (TQM) offers several promising prospects for improving the quality of secondary school administration and enhancing educational outcomes. As schools continue to adapt to evolving educational landscapes and increasing demands for accountability and excellence, the principles and practices of TQM provide a framework for continuous improvement and innovation.

### **6.1 Efficient Resource Allocation and Management**

TQM principles promote the efficient use of resources and the elimination of waste in educational processes. By streamlining administrative processes, optimizing resource allocation, and prioritizing investments based on identified needs, schools can maximize the impact of available resources on educational outcomes. This

strategic approach to resource management enables schools to operate more efficiently, minimize costs, and allocate resources where they will have the greatest impact on student learning and achievement (Okeke, 2024).

### **6.2 Enhanced Teacher Professional Development**

TQM implementation provides opportunities for ongoing professional development and growth for educators. By fostering a culture of continuous learning and improvement, TQM encourages teachers to engage in reflective practice, collaborate with colleagues, and pursue opportunities for professional development. This focus on teacher learning and development enhances instructional quality, promotes pedagogical innovation, and ultimately improves student learning outcomes (Okeke, 2024).

### **6.3 Encouragement of Innovation and Creativity in Teaching and Learning**

TQM encourages teachers to embrace innovation and creativity in teaching and learning practices. This emphasis on innovation enhances the relevance, effectiveness, and engagement of teaching and learning experiences, preparing students for success in an ever-changing world (Bello & Adeyemi, 2022). As educational landscapes evolve and new challenges arise, TQM enables schools to identify and respond proactively to emerging needs, opportunities, and threats. This adaptability allows schools to remain resilient, innovative, and responsive to the dynamic needs of students, families, and communities (Ojewumi & Bamidele, 2020).

### **6.4 Improved Stakeholder Engagement and Participation**

By involving teachers, students, parents, and community members in quality improvement initiatives, schools can build trust, foster collaboration, and create a sense of ownership and shared responsibility for educational outcomes. Schools can engage parents through regular communication channels, such as newsletters, parent-teacher conferences, and school events (Olanrewaju & Ajayi, 2021). This collaborative approach enhances transparency, accountability, and effectiveness in school administration, leading to greater satisfaction and support from stakeholders (Ejeh, 2022). According to Onyesom, (2023) collaborative partnerships can provide additional resources, expertise, and support to schools. This approach helps in delivering high-quality education that meets the

diverse needs of students and families (Olanrewaju & Ajayi, 2021).

### **6.5 Promotion of Ethical Leadership**

TQM principles emphasize the importance of ethical leadership in driving organizational excellence. By promoting values such as integrity, transparency, and accountability, TQM fosters ethical leadership practices among school administrators. Ethical leaders inspire trust, empower others, and model ethical behavior, creating a positive school culture characterized by fairness, respect, and social responsibility (Olawoyin & Yusuf, 2021). This ethical leadership contributes to the overall effectiveness and success of TQM initiatives in secondary schools.

### **6.6 Cultivation of Student Leadership and Empowerment**

TQM principles emphasize the importance of empowering students as active participants in their educational journey. By promoting student voice, agency, and leadership opportunities, TQM cultivates a sense of ownership and responsibility among students for their learning and school environment. Empowered students are more engaged, motivated, and invested in their education, leading to improved academic performance and social-emotional well-being (Ojewumi & Bamidele, 2020).

## **7. Conclusion**

In conclusion, TQM holds tremendous promise for improving the quality of secondary school administration in Nigeria. By embracing its principles and practices, schools can create environments that foster excellence, equity, and success for all students. The journey towards TQM implementation may be challenging, but the rewards are well worth the effort. Together, we can build a brighter future for education in Nigeria.

## **8. Recommendations**

- There is need for school management to prioritize infrastructure improvement, such as classroom renovations, technology upgrades, and maintenance of facilities to enhance the implementation of TQM;
- Schools' management should prioritize investment in professional development programs tailored to TQM principles;
- Teachers' resistance to new pedagogical methods should be addressed by training and support;

- Improved stakeholder engagement should be encouraged by school management
- There should be promotion of values such as integrity, transparency and accountability;
- Schools should maintain active learning strategies, project-based learning and technology-enhanced instruction to increase student engagement.

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## Human Rights and the Use of Force: Examining the Nigerian Government's Response to the #EndSARS Protest

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**Abstract.** The current study investigates the human rights violations and use of force by Nigerian government in response to #ENDSARS protest which was a nationwide protest on police brutality (mainly through Special Anti-Robbery Squad or popularly called SARS) across the nation. The analysis explores the legal setting pertaining to force used by law enforcement, allegations of human rights abuses and the place of security agencies at the events of October 20, 2020 incident at Lekki Toll Gate. Building on comparative research into international standards, such as the United Nations Basic Principles on the Use of Force and Firearms by Peacekeepers or the African Charter on Human and Peoples' Rights; the research assesses Nigerian compliance with international norms on human rights. It pinpoints the shortcomings of accountability frameworks, chastising the inadequacy of Nigeria legal as well policy making in order to protect rights of protesters. The policy recommendations proposed in the study include, but are not limited to; legal reforms; better accountability mechanisms and human rights trainings for security forces to reduce the next time bias. Recommendations to incorporate oversight mechanisms and the enforcement of recommendations from Judicial Panel of Inquiry are vital for true justice and institutional accountability. Nigeria can promote a rights-based approach to protest management, by programming and aligning domestic laws with international best practice which would serve citizens better with more human protection and restore trust in law enforcement agencies in relation to public.

**Keywords:** Human Rights, Use of Force, ENDSARS protest, police brutality

### 1. Introduction

A core component of democratic governance and the essential outlet for citizens to air their grievances, seek accountability or effect change through peaceful protest. The #EndSARS movement in Nigeria, which became a worldwide issue in October 2020. It was one of the most visible civil protests against police brutality in any country on Earth. It focused on police brutality especially that which particularly conducted by the disbanded Special Anti-Robbery Squad (SARS) (Aidonojie, 2023; Aidonojie et al., 2022). The protest, which was initially launched through social media started to transform into one of the mass demonstrations on memory of Nigeria ruled by all sectors, youths, civil society organization and even international human rights body globally. It was a call for monumental change to the police force in Nigeria, justice for victims of extrajudicial killings and cessation of the human rights abuses perpetrated by security agencies (Antai and Aidonojie, 2024). While the reaction to this was neither constructive dialogue, the Nigerian government (among others) adopted extreme violence and a high-profile example thereof was the shooting at Lekki Toll gate by security forces on October 20, 2020 as they allegedly killed unarmed protesters.

The use of force by state actors, especially against civil protests is problematic as it concerns fundamental rights such as the right to life, freedom of expression,

peaceful assembly and association (Antai et al, 2024). Although having the responsibility of governing and maintaining public order, the Nigerian government must observe international human rights standards on the use of force limiting its application on grounds of necessity, prescription and responsibility used by police. The #EndSARS protest exposed deep fractures in our system of human rights protection, erosion of democratic institutions by the state and a culture where security agencies are often left unpunished for abuses (Mohammed and Lenshie, 2024). The response of the government to the protests also included mass repression—arbitrary arrests and detentions, repression of activists and on-line suppression against social media accounts, and financial platforms used to support the movement. The interventions triggered huge international and local condemnation serious engagement, in forums hosted by local government, Carnegie and SWANH but also others interstate bodies — on the capture of state security services at the interface between public order and national security. The analysis carried out in this research investigates the legal and policy norms on use of force by law enforcement in Nigeria against background of how each fit into international human rights standards and how this affects state building/repression. It will interrogate the reasons advanced by government for deployment of force, how well accountability institutions such as the panels of inquiry work and then read together with protests in a bigger picture to the governance & human rights observance issues in Nigeria (Anani et al., 2023; Zaman et al., 2024). Drawing on a comparative approach with international models of protest management, the research intends to offer a fine-grained assessment of the difficulties encountered in human rights protection in Nigeria and submit reforms that will lead to legal and institutional solutions addressing accountability or state capture, safeguarding of civil liberties preventing new abuses perpetrated by security agencies (Jufri et al., 2024; Haruna et al., 2024).

This research holds importance in that it adds to the policy literature on police reform, human rights compliance by governments and state institutions in crisis management. The relevance of this research to policy makers, human rights groups, scholars as well as international organisations interested in democratic governance and human rights protection in Africa goes without saying see the increasing international spotlight on police brutality/state repression of protests (Aidonojie et al., 2025). A critical examination of the response of government to #EndSARS movement in Nigeria suggests a rights-based approach for protest management, and the empowerment of judicial oversight mechanisms

through enshrining checks within the security apparatus (Antai et al, 2024). The study ultimately hopes to identify routes to more accountable, open and rights respecting police in Nigeria.

## 2. Conceptual and Theoretical Framework

To understand the study of human rights and use of force in the Nigerian context especially as embodied by how it was responded to during #EndSARS protest, one must have a clear idea of pertinent concepts and theoretical frameworks. Human rights, as defined by the international authoritative documents are principles of self-evident value that all humans hold simply because we are human. Those rights like the right to life, the freedom of speech and assembly are contained in global instruments such as the Universal Declaration of Human Rights (UDHR), International Covenant on Civil and Political Rights (ICCPR), African Charter on Human and Peoples' Rights (Agboti et al, 2024). The protection of human rights is closely linked to governance in democratic societies where rights ensure that state power be used only within the limits of law and human dignity. Yet the assertion of state power, especially by law enforcement actors inevitably raises questions regarding how much physical force may be used by a country to preserve the status quo and national security (Chinweze et al, 2024).

Force by state actors, namely security agencies refer to the use of physical compulsion to compel, confine and render harmless perceived threats. The tolerance of such force comes at least within the context of a legal framework for police practice (or not), coupled with due regard for the principles of necessity and proportionality and measured against international human rights standards (Ogu et al, 2024). Although international legal instruments acknowledge the role of the state to up-hold law and order they are also highly restrictive on the use of force, identifying three core preconditions for it to remain within the bounds of legality; that is that it has must be a proportionate necessity. The use of force by the Nigerian government on protesters as in #EndSARS protests, particularly the shooting of unarmed protesters by army at Lekki Toll Bridge calls to task the basic legality and ethics of how far state force can be legitimately flexed in protesting (Aidonojie et al, 2025).

Protests and civil disobedience are urgent part of democratic discourse through which citizens can communicate their dissatisfaction against governmental actions or with regards to policies. As unpicked protests can happen through demonstrations,

acts of civil disobedience such as sit-ins and marches, they are categorized internationally within the realm of human rights law. Civil disobedience (the wilful violation of some laws in a given society in order to force change to social ills) has been a long-time tactic in progress of social change. Protests being what they are — generally considered legitimate acts of expression, yet states tend to follow up with attempts at suppression that are usually pretty massive. The #EndSARS protest epitomizes the civil society counter-balancing of state repression in Africa, with young Nigerians tired of years of police atrocities venting their frustrations on the streets demanding change (Antai et al, 2024). With a government response involving the deployment of lethal force, mass arrests and digital repression, it reflects the dichotomy faced by the state and individual dissent in Nigeria's transition to democracy.

This study applies theory from Just War Theory, Social Contract Theory and the Law Enforcement Doctrine of Proportionality. Aside from that, Just War Theory (and by extension its two prongs Jus Ad Bellum and Lex in Bello) provide a portion in which the legality and restrictions surrounding state use of force can effectively be investigated. Commonly traced to the context of war, these doctrines are still considerably applicable to questioning if the use by Nigerian government against protesters was legitimate and if it did comport with international norms under law enforcement conduct. Whether the use of force was legal under Jus ad Bellum and justified under Jus in Bello that force was in fact necessary, and proportional with regard to minimum harm to civilians. Allegations of extrajudicial killing and cases of excessive use of force during #EndSars protest put these principles into a framework from which to ascertain legality and ethics in state action.

Social Contract Theory like that of philosophers such as Thomas Hobbes, John Locke and Jean-Jaques Rousseau is necessary to comprehend the law enforcement relationship between the state and its populace. It holds that peoples consent to be ruled in return for the protection of rights which keep them safe. However, when the state, by its security services punishes those who makes this fact and commits an act against social contract with its citizens, the flagellation of peaceful #EndSARS protesters, censorship of real-world dissent and the absence of government accountability to those whose rights have been violated through police brutality could be envisioned contraventions of this contract thus challenging the bona fide of state power (Umo et al, 2024). The protests themselves are taken as a kind of statement on behalf of the public's ability to assert itself and push for

accountability and reparation when state overstepped its obligations.

The fundamental principle under Doctrine of Proportionality in Law Enforcement means whether it is limited to the use of force of private security agencies. Any force used by law enforcement must be reasonably necessary, proportional to the threat, and the force that is least intrusive to achieve a lawful objective. All international human rights instruments and the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials are clear that in final resort, lethal force should only be used when there is an immediate threat to life (Aidonjio et al, 2024). The #EndSARS protest, especially after the Lekki toll road shootings have raised concerns over whether this principle was followed within in Nigerian governance. Interior Ministry reports from human rights NGOs indicate that protesters did not carry weapons and were unarmed and thus not a direct threat to police, calling into question claims of lethal force.

These conceptual and theoretical perspectives are a whole tool that can analyse the response of Nigerian government on #EndSARS protest. They cast the spotlight on the demand for legal and ethical appraisal of force as well as the state's responsibility in terms of human rights safeguarding as well as the wider consequences of repressive against protests on a democratic action. Through the application of these frameworks, this study seeks to contribute a critical examination of the intersection between police, law and state liabilities in Nigeria.

### 3. Literature Review

Human rights, use of force in the context of state responses to civil unrest has been the subject to considerable scholarly analysis. A lot of researches have been done in terms of statutes state using force and its laws of necessity/proportionality in general implications to democracy governance, human rights protection etc. Scholars like Donnelly (2014) highlight that human rights are universal and inalienable providing the core of contemporary democratic states. He claims any infringement, especially that performed in name of a state authority undermines the legitimacy of government power. Likewise, Dworkin (2013) studies the convergence of state security norms and individual liberty, stating that while governments are duty bound to protect the law, excessive force must be guarded politically, otherwise it can be weaponized for other ulterior purposes. His writings constitute an important starting point for the examination of state actions in response to protests, especially in situations where there are claims for excessive use of force.

In Nigeria, in the African context, scholars like Chukwu et al (2020) have extensively interrogated the history of police brutality and human rights abuse. He outlines the roots of Special Anti-Robbery Squad (SARS) and impunity culture, where law enforcement institutions have long been engaged in extrajudicial killings, arbitrary arrests, etc which constitute human rights violations. His research stresses the dysfunctional features in Nigeria policing such as a lack of accountability and judicial institutions at whim when it comes policing civilian violence, as further argued by Asogwa et al (2021) against police reform in Nigeria —where systemic corruption, weak oversight mechanisms and political interference has thwarted any real hope for police accountability. Etim et al (2023) also observes the difficulties of police reform in Nigeria which adds that systemic corruption structural challenges and political manipulation has impeded efforts to make sure that law enforcement bodies operate above the law as well. His results indicate that until we undertake transformative reforms, state violence against civilians will be reproduced and rule of law, democratic governance undermined.

Some studies look into protests and state accountability/civil rights advocacy as well. Tilly (2004) asserts that protests and civil disobedience are imperative strategies for the transformation, especially in authoritarian semi-democracies where there are weak institutional capacity and mechanisms for helping a diffuse society resolve its various complaints. Central to his work was the vital role of peaceful protest in consolidating democratic government, showing that state crackdowns on protests often mark a fall in governance and a breach of international obligations by states under human rights law. Ajayi (2021) doing a case study #EndSARS movement in Nigerian context as an expression of youth-driven activism against state repression. He notes the digital mobilization was critical in keeping the issue centralised and globalizing police brutality in Nigeria. His research helps us understand how the internet is rearranging the terrain of civil society, and how social movements online can upset state power directly. He mentions in passing some of the legal and institutional responses but not at length the role of judicial commissions and state led initiatives to address the strident to which the protesters have brought.

Extreme force by the state actors has also become a central focus in legal literature. International legal norms in the area of use of force, for example Risse et al (1999) contend that international norms help states

to be bound by the International Legal Instruments that govern Law Enforcement. This is as the UN Basic Principles on the Use of force and Firearms by Law Enforcement Officers, for example lays down exemplary guidance as to when and how force should be used. Adeyemi (2023) analyse these legal benchmarks in an African context, suggesting, for instance that multiple governments determine too much in the realm of African states particularly Nigeria is not truly targeting domestic law enforcement with international human rights standards. Their study shows some difficulties of implementing international legal norms at the national level, especially for states with deficient judicial systems and a wide net of impunity for security forces.

There is a lot of research on human rights, police brutality and state reprisals on protests but some voids are still present in several areas. For start, police brutality in Nigeria has been studied quite extensively though the #EndSARS protests ground and government response has not been much scholarly dissected. The vast majority of the literature located to date has predominantly examined police brutality as a broader phenomenon and has not delved deeply into the legal and policy implications of what took place in October 2020. Second, although a few scholars have written about digital activism in the #EndSARS movement, there are almost none looking at how the government response (financial and digital repression) influenced its path, and lasting effect of the movement. Lastly, the body of literature on how international legal norms governing the use of force are interpreted and implemented in the Nigerian context, especially during protest, is miniscule. Equally missing is a critical analysis of the efficacy of national judicial panels of inquiry established after similar protests, if they have adequately compensated victims of state violence. Lastly, studies focused on how other countries have responded to similarly protests may also provide useful comparisons for lessons learned in the US as far as best practices and disparate approaches to law enforcement during civil unrest. Pinning these down will be critical to a holistic conception of human rights and the use of force in Nigeria since the #EndSARS movement.

#### 4. Overview of the #EndSARS Protest

The #EndSARS movement was a reaction to years of police brutality, extortion and extrajudicial killings by the Special Anti-Robbery Squad (SARS), a controversial arm within Nigerian Police Force. The beginnings of the movement go back to some unpredictable online activism in 2017, when Nigerians harassed, tortured and detained countless people with

SARS Operatives on social media platforms. The hashtag #EndSARS eventually got normalized as a call to war with these oppressive unit and nationwide outrage was an effect. Even with many multiple promises by the Nigerian government on how to reform the police and if citizens had their concerns addressed, almost nothing happened as far as curtailing SARS officers excess professions. In October 2020, the pressure became too much when a video began circulating online purporting to show SARS officers gunning down a young man in Delta State. The incident reignited nationwide protests, with thousands of young people taking to the streets calling for instant and complete end to SARS, as well as wider police reforms (Antai et al, 2024).

Protests, which were originally both distributed and peaceful, soon grew as more Nigerians showed up to show their solidarity. Youths from the big cities of Lagos, Abuja, Port Harcourt and Enugu organized sit ins, roadblocks vigils and used social media to capture incidents on police brutality and raise fund for protesters. Uniqueness of the movement was its organization, no high chief leading the resistance and working as one, through hundreds of affiliated social media pages. Protesters articulated five major demands; disbandment of SARS institution, justice for victims of police brutality, establishment of an independent body to oversee the conduct of police, psychiatric test for ex-officers deployed from various parts of the country and increase on police officers' salaries to wean them from corrupt (Wakili et al, 2024). Initially, the Nigerian government responded to protests with disdain but President Muhammadu Buhari stated on October 11th that SARS would be disbanded as a result of intensifying protests. Yet scepticism remained high, given that similar statements had been made numerous times before for barely any substantive changes and protesters decided to stay out.

Security forces started cracking down with excessive use of force to displace protesters. With reports of police brutality, arrests and attacks on protesters rising daily a meat market for collective rage. The situation got to a climax when military were deployed to Lekki Toll gate, Lagos on the 20th of October, 2020 to disband a peaceful batch of protesters who were gathered there. Information from witnesses and the video that were shared online showed that soldiers opened fire on peaceful protesters, eventually killing multiple others. The Nigerian government initially lied that nobody died until independent investigations by bodies such as Amnesty International confirmed Nigerian security forces opened fire on protesters, resulting in deaths and injuries. The Lekki Toll Gate shooting became emblematic of police repression and

was widely denounced within Nigeria and abroad. It subsequently heightened the level of violence in the country, rioting and property damage as well as attacks on government buildings began flooding reports from several states.

Civil society organizations supported his movement and spoke for what they will achieve. Not for profit human rights groups like Amnesty International, Socio-Economic Rights and Accountability Project (SERAP) and the Feminist Coalition provided legal aid, medical help and fund for protesting people (Antai et al, 2024). The Nigerian Bar Association likewise expressed grave concern on the use of force against protesters and demanded that an independent probe be performed into alleged police misconduct. The #EndSARS protests gained international recognition with global names in the social curve (Hillary Clinton, Jack Dorsey – former CEO of Twitter (now X) and other international organisations like Amnesty International stating that Nigerian government should grant respect human rights while US demanding justice for victims). The protests also led to international rumblings, with marches of solidarity held in major cities worldwide - London, New York, Toronto amongst others by members of the Nigerian diaspora. In statements, the UN, European Union and several Western Governments urged the authorities in Nigeria to uphold democratic processes and defeat police brutality against protestors.

With SARS cruelly disbanded during the protests, it is more critical than ever for police reform, accountability at the state level and human rights protection in Nigeria after the aftermath of the protests. The Nigerian government set up judicial commission of inquiry in different states to probe cases of police brutality and offer compensation to the victims. Yet doubts persist regarding the enforcement of these propositions as many activists say that the panels lack teeth to prosecute any person under any circumstance (Okpong and Antai, 2024). In addition, the movement drove home the importance of youth activism and digital mobilization in forcing governments to answer for their actions in Africa – not to mention Nigeria — as perhaps one of its most historical events. Yet, government response — arrests, asset confiscation and civic space suppressing responses — signalled that for human rights defenders and activists in Nigeria, there still are vigorous challenges. #EndSARS movement, in no way, only revealed the decay of Nigeria police agencies that are structured through law; but it also reignited discussions on governance and accountability along civil society check (Antai et al, 2024).

#### 4.1 The Nigerian Government's Response to the #EndSARS Protest

The response to the #EndSARS protest by the Nigerian government started with forceful repression and legal back-ups, followed also by post-protest administrative measures geared towards meeting protesters' demand and preserving state power. Almost right from the get go, the government's position was ambiguous as they first recognized the protesters grievances and stated that SARS would be disbanded, but also called in the security agencies for a pre-established dispersals of protesters via force. This response led to the Lekki violence (senseless killing) of 20 October 2020, where armed military personnel opened fire on unarmed protesters, allegations of human rights abuses including extrajudicial killings, torture and suppression of assembly. Numerous cases of excessive use of force, arbitrary arrest and harassment of human rights activists by security forces were documented by Amnesty International and Human Rights Watch, among other civil society organizations, casting serious doubts on the way that the government in Nigeria abided by international human rights obligations. While, there was a great international and domestic condemnation, the government largely refused to accept any level of fault in the violence with officials offering conflicting stories on what happened at Lekki, including denying that live rounds were fired (Aidonjoje et al, 2024).

Security forces use of force during the protests was seen in context of the complete legal background for use of force in Nigeria such as the 1999 Constitution of Nigeria, the Police Act, 2020 and international human rights treaties. Nigeria is also a signatory to treaties such as the International Covenant on Civil and Political Rights (ICCPR) or the African Charter on Human and Peoples' Rights which form an overall basis on the principles of proportionate use of force in police operations. The Right to Life provided for in Section 33 of the Nigerian constitution allows for use of force only in some cases, self-defence, suppression of riot and lawful execution of sentence. The Police Act 2020 set out the duties and obligations of police forces, with particular focus on the necessity of using reasonable force (proportionate and mandatory) but the #EndSARS protest uncovered fissures between legal prescriptions and their daily enforcement as security agents engaged in tactics inconsistent with generally accepted human rights norms such as unlawful arrests, widespread shooting at random and intimidation of peaceful protesters. At the same time the non-observance of the legal ramification on use of force further undermined the already derelict

accountability mechanisms in Nigeria's security (Kisubi et al, 2024).

The responses to the protests were led by security agencies in Nigeria with the Nigeria Police Force (NPF), Military and Department of State Security DSS all taking the field to suppress demonstrations. The police, especially the newly configured Special Weapons and Tactics (SWAT) unit which replaced SARS were called in to disperse crowds with baton rounds, tear gas, rubber ammo and water cannons. In some instances, police resorted to the use of unnecessary/violent force resulting in injuries and loss of life. The involvement of the military, especially during the attack on Lekki Toll Gate would be one of the most contentious sectors of the government response as soldiers of 81 Division (Nigerian Army) were sent despite the fact that the protests were peacefully organised. Accounts from eyewitnesses and forensic reports concluded that live rounds, not blanks fired by army units as initially stated, were being used to suppress those on the ground. According to media reports, the DSS — Nigeria's main security/intelligence agency — also monitored activists and froze the bank accounts of leading protest supporters while threatening others with arrest or intimidations if they donated money or logistical support. The actions of these security agencies are clear signals that the government intends to ensure dissent cannot persist via oppression rather than interactive dialogue (Antai et al, 2024).

After the protests, Nigerian government took consecutive judicial and administrative steps to address civil discontent and give back public confidence to justice system. An immediate response were judicial police brutality commissions set up in several states to probe the killings and outline measures for remedial actions (Antai et al, 2024). They will hear victim testimonies and assign damages in cases caused by police misconduct through these panels which were made up of lawyers, the communities and government agents. Although the panels gave victims a voice, critics said they were rendered useless due to delayed implementation, non-compliance of recommendations and political influenced. States have also at times refused to compensate victims of human rights violations recommended by the panels leading the public trust to dwindle. Other activists and organizers stood their own punishment with travel bans, targeted asset freezes and arbitrary arrests. The government, meanwhile, tried to implement some reforms such as police force restructuring and more law enforcement training budgetary allocations, but this was largely viewed as lacking in light of the systemic nature of

impunity and lack of accountability across the security sector (Aidonojie et al, 2024).

How the Nigerian government responded to #EndSARS protest, showed the persistency of governance challenges, human rights advocacy and security sector reform in the country. Some actions were taken to mitigate the needs of protesters, but the heavy-handedness with excessive violence, lack of accountability and silencing the dissent exemplified a commitment to change (Izevbuwa et al, 2024). The days of protest highlighted the dire necessity for overall police reform, improved accountability and better human rights norms on the part of its police forces. In light of the ongoing fight Nigeria is battling with police brutality and civil liberties, #EndSARS movement will forever be a great reminder to the pursuit of justice and human rights in country.

### 5. The Analysis of Human Rights Violations

Analysis of human rights abuse during #EndSARS protest reflects on the National Systemic Repression and Human rights abuse, primarily, right to life, freedom of assembly and association, freedom of expression, free from arbitrary arrest, detention & torture. The protesters were slaughtered in most especially the right to life as stipulated in both the Nigerian Constitution and international human rights treaties was practically not constituting during their protests; especially those associated with Lekki Toll Gate shootings on 20th of October, 2020. Eyewitness accounts, independent teams of reporters, and forensic investigations have led to a great degree of credibility for the fact live ammunition was being fired upon peaceful protesters by security forces—the majority of which was perpetrated by the Nigerian Army in high numbers leaving multiple casualties. The extrajudicial killings and the early government denial of live rounds used by Nigerian security forces were indications of the unaccountable nature of Nigeria security bureaucracy. While serious calls were made by domestic and international human rights organization for accountability on excessive use of force by authorities' superior have never been punished (Majekodunmi et al, 2024).

The #EndSARS movement was fundamentally about freedom of assembly and association under Section 40, 1999 Constitution of Nigeria (and ICCPR-Article 21) in tandem with Art. 14 National Assembly] and international laws that heavily subscribed on having collective space protected amongst the nation (Aidonojie et al, 2024). They used their right to peaceful assembly and gathered peacefully through terrorizing a police brutality; demand for law-on-law

enforcement was made in every part of the country. Still, state repression was physically violent and conducted largely through serious enforcement apparatus, coupled with arbitrary interference, unlawful use of force against protesters. They were brusquely attacked using physical violence, unlawful dispersals, and at times violent provocation by state-backed actors who were inside the protest. The lack of state protection to protect protesters of being harassed by non-state actors enforce more along the lines that the government wanted to suppress movement by every possible way (Antai et al, 2024). Assembly — beyond face-to-face clash, the digital realm also was suppressed and social media platforms that led the call were increasingly monitored for surveillance or threatened to be regulated by the government as a result of suppression.

Freedom of expression including press freedom was also killed by the government crackdown on #EndSARS campaign. That journalists were harassed, beaten and in some cases detained falsely was the cover of protests. Reports of protests were punished with fines and temporary shut downs of media outlets providing the extensive coverage. Multiple TV stations were disciplined by the National Broadcasting Commission (NBC) for the way their covering of the protests, accusing them to have broken broadcasting laws. While online activism that augmented the movement was counter-mobilized by the state through its censorship projects like cyber-attacks of crowd-funding pages related to protests and threats on social media interference. What the consequences of these actions bode were an effort to quash opposition and restrict the public's right of access in an unbiased manner to the actions of state. The crackdown on press freedom and online expression were not just in conflict with constitutional provisions as stipulated in Nigeria but also fell to international human right standards under the African Charter on Human and Peoples' Rights, and ICCPR (Aidonojie et al, 2024).

The abuses during and after the protests were extreme with unwarranted arrests, detentions, torture in the context of human rights. Protesters, activists as well as others were arrested en masse for nothing, many detained incommunicado and no access to an advocate. The movement relied on arrest and detain numbers to project strength, only adding to the intimidation tactics that were being utilized by security forces. There were also reliable accounts of abusive treatment including ill-treatment, torture and forced confessions in custody of detainees. A large number of key activists in the protest movement, including lawyers and social activists were subjected to targeted purges, travel bans and asset freeze as part of the whole

organisation of protests. The acts in violation of the clear provisions under domestic and international human rights law guaranteeing liberty from arbitrary detention. The establishment of judicial commissions of inquiry to look into human rights violations was not matched with actions to make perpetrators accountable, resulting impunity for many victims (Aidonojie et al, 2024).

The way Nigeria government responded to #EndSARS protest highlights a recurring pattern of grave violations against human rights that directly broke the national and international legal norms. The heavy police brutality, suppression of free assembly, stifling press freedom and numerous arbitrary arrests and torture reflected an infra-national regime that were state repression. The failure to hold security forces liable and the systematic mass surveillance of activists, journalists all point to a deep-rooted failure in upholding human rights norms. #EndSARS movement is a watershed in Nigeria's human rights history, as it represents wonderful society resilience and endless struggles for state-liable on human rights abuses (Antai, 2024).

## 6. International Standards on Protest Management

A comparison of global guidelines on protest management sets the stage for a critical analysis of how the Nigerian state has reacted to the #EndSARS protest. The UN Basic Principles on the Use of force and Firearms by Law enforcement officers specify crucial standards for the conduct of public demonstrations based on legality, necessity and proportionality. In light of these principles, police officers shall be guided to use non-violent means first and, when all else fails, duly restrained in their exercise of any force, with the least level of lethal where necessary. Lethal force can only be used in self-defence situations and all use of force must be underpinned by mechanisms for accountability in the unlawful use of force by law enforcement agencies. The extraordinarily brutal response of Nigerian security forces to the #EndSARSProtest, especially during incidents at Lekki Toll Gate on 20th October, 2020 that raised eyebrows as there was the use of live ammunition against unarmed civilian protesters.

The African Charter on Human and Peoples' Rights (ACHPR) serves also as a critical shield for protesters, with guarantees to the right to peaceful assembly, freedom of speech and prohibition of arbitrary violence perpetrated by the state against protesters according to international protections under this charter. The ACHPR mandates all of the above rights

in Nigeria and other African states, requiring that the manner conducted during protests must be in line with international human rights norm when law enforcement conducts their operations (Antai, 2024). Even so, the #EndSARS response by the Nigerian government was an abdication to these commitments where security bodies resorted to excessive use of force, mass arrest and interference of freedom of expression — mainly via media intimidation and digital surveillance.

Case study comparative in other countries reveals how different governments control protests as international law allows. It is worth noting that in protest instances elsewhere, the response by the targeted governments was within bounds of international law (though outside the temperance many), as with BLM (Black Lives Matter) protests in the United States after George Floyd was killed and tear gas, rubber bullets, and lethal force used by police during riots. Outside of Nigeria though, accountability mechanisms were not as weak as they were for U.S officers which several cops had charged or discipline for misconduct. In late 2018 and early 2019 civil unrest in France known as the Yellow Vest movement were met by police who threw rubber bullets and used batons with human rights organizations lambasting those actions. Still though the French government enabled at a higher level of mediation even though it was more visible media and judicial oversight settled for some cases of excessive use of force. The Lekki Toll Gate shootings have parallels to a massacre in South Africa at Marikana, 2012, when police killed 34 mining strikers while firing on workers during a legal but unprotected strike. The South African government eventually established a commission of inquiry and made some reparation to the families of victims, whereas in some way the post EndSARS accountability efforts in Nigeria have been more underwhelming without high-profile prosecutions of those responsible for human rights violations.

A comparative method, underlines the shortcomings of protest management in Nigeria and signals a critical time for legal and institutional reforms that would require bringing the country in line with international human rights standards. While accountability is increasingly being demanded of the public and by courts in other countries, Nigeria has shown no sign of holding accountable anybody for the #EndSARS protest or ending the impunity, impunity due process and repression. Solid accountability mechanisms build and enforce law enforcement agencies to take steps that would be needed to prevent future human rights violations during the demonstration (Edet et al, 2024).

## 7. The Legal and Policy Implications of Nigerian Laws on Protest Management and Use of Force

There are myriad legal and policy considerations of the Nigerian response to the #EndSARS protests with reference to whether existing laws on protest management/protest policing are effective in terms of laws against violence, accountability still remains an issue even with established channels such as Judicial Panels of Inquiry and the role of international human rights mechanisms in this regard (Antai et al, 2024).

Nigeria has statutes dealing with protest management and policing, drawn from the Public Order Act and Nigeria Police Force Order 237, amongst others. The Public Order Act compels anybody or section of a public to obtain written permits from police before they even undertake these acts (and has been harshly criticized as giving police authorities too much discretionary power which runs counter to the spirit of our constitution which is the right to peaceful assembly for anyone).

There is also the Nigeria Police Force Order 237 (Use of Firearms). Another problematic aspect of this order is that the broad language in it can sometimes be used to interpret police officers use of deadly force even in places they should not. It has, however, caused the worry on how its implementation would be abused and lead to violation of life of citizens (Antai et al, 2024).

Empirical evidence of how these laws were enforced evidenced by the #EndSARS protests revealed that the security agencies abuse of force for no reason. Like Lagos State Judicial Panel of Inquiry declared that there were 48 casualties mostly confirmed deaths from the 2020 Lekki Toll Gate incident on October 20, 2020 which includes 9 confirmed dead and 24 others wounded. The panel called this an assassination and underscored its finding that the lethal use of force on unarmed protesters was both excessive, as well as arbitrary and abusive. Taken on its own, this incident is indicative to the cesspool that the current legal framework is of non-action taken by law enforcement agencies and jeopardising civilians right during public demonstration (Kisubi et al, 2024).

Following the #EndSARS protests, lots of states in Nigeria chartered Judicial Panels of Inquiry (JPIs) to investigate police brutality and human rights abuses allegations. For example, the Lagos State panel received 235 complaints and amongst its various conclusions was the finding that security agencies misused force, pointing at the implicated officers committing the abuses. The panel also submitted

recommendations including the arrest and prosecution of the indicted officers as well as compensation for victims.

Unfortunately, recommendations have not been implemented in a uniform and swift manner. Some victims have received compensation but prosecutions of implicated security personnel wanted for their abuses are few. The discrepancy between the observations of the panels and subsequent action undertaken leads one to question the efficacy of current accountability mechanisms in policing systemic abuses perpetrated by police departments and delivering retribution to victims.

Significant response to the situation that led to #EndSARS protests was also brought by international human rights bodies. The United Nations (UN) and African Union (AU) declared that armed forces in Nigeria were overreacting and there must be thorough investigation on what happened. ECOWAS was equally disturbed and urged the Nigerian government to fulfil human rights obligations. International bodies have the ability to monitor and also raise concerns on human rights violations, provide technical support for reforms, and enforce through diplomatic pressure enforcement of international human rights obligations. But the influence these mechanisms have often rests on the Nigerian government's commitment to take unto its hands the recommended reforms and the relisting of perpetrators. Despite the lack of prosecutions for those allegedly responsible for abuses during the #EndSARS protests, it shows a recalcitrant international engagement and support is needed in order to bolster Nigeria's already-stalled accountability reform process (Aidonjio et al, 2024).

The #EndSARS protests have, however brought into sharp focus some major gaps of the legal and policy framework around protest & use of force in Nigeria by the Nigerian government. Current laws have not been effective at curbing abuses and accountability mechanisms have mostly falter to provide justice properly. While international human rights norms have played a crucial role of oversight and advocacy, they only work when the domestic political will to reform exists. Resolution of such challenges demand both broad based legal reforms, successful implementation of accountability mechanisms and continued interaction with the international human rights bodies to protect citizen rights during public engagements (Anifowose et al, 2024).

## 8. Conclusion and Recommendations

In the analysis of human rights and the force on which the #EndSARS protest was met with by the Nigerian government, it becomes apparent that serious breaches have been committed, sinister characteristics of our law enforcement and realize how crucial reforms in legal policy are so desperately needed. These protests were provoked by a citizen driven movement against police brutality created by the said (now defunct) Special Anti-Robbery Squad) but instead armed civilians received live fire, arbitrary arrests in detention and suppression of press freedom, the study concludes involved. The Lekki toll gate massacres on October 20th 2020, as an absolute example of these violations, are by credible reports, extrajudicial killings and injuries committed by security forces. These findings also reveal the deficiencies in Nigeria's legal structure for controlling the use of force and securing rights in relation to protest, as well missing accountability mechanisms that enables human rights violations to continue with impunity (Ekpenisi et al, 2024).

Walls need to be built to correct all that will require broad based human rights compliant policies and laws for law enforcement effectively comport with human rights standards. The obvious is requiring the repeal of laws (Public Order Act, Nigeria Police Force Order 237 to the fore among many) from around, that keep pace with the international standards so the fundamental right to peaceful assembly is clearly safeguarded and any use of force well regulated. Furthermore, an independent external regulatory mechanism can be created to check that security agencies respect human rights and any violation are subject to prompt spate and transparent investigations leading to repercussions. Another component for improving accountability mechanisms, and this time with respect not only to the actions of Judicial Panels of Inquiry, is to ensure that there is the full and unqualified implementation of their recommendations. This should involve prosecuting police officers who directly used excessive force and compensate victims of police brutality fully, with appropriate rehabilitation (Antai, 2024).

Human rights education and law enforcement training is also required to change the impunity culture among security forces. By integrating human rights principles; de-escalation tactics and non-violent civil resistance training into police and military schools, one would be able to teach officers with the capacity on how they are expected to respond without turning to disproportionate use of force. One other priority needs to be a public awareness campaign about

citizens' rights, law enforcement role and redress mechanisms to build accountability and citizen engagement (Akpanke et al, 2022).

Conclusively, the #EndSARS response animates a reform in how Nigeria is doing policing and protecting human rights. With legal reforms into place, oversight mechanisms strengthened and human rights education provided to both security personnel and the population at large the Nigerian government is taking steps in the right direction to ensure incidences of excessive force against civilians are things of the past. This is important not only for reinforcing democratic values but also to restore confidence by the public in law enforcement agencies and for shaping a society where human rights are complied, obeyed and protected.

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## **Innovative Pedagogies for the Twenty-First Century Learners and Global Citizenship of Primary School Pupils in Ikom Education Zone of Cross River State, Nigeria**

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**Abstract.** This study investigated the influence of innovative pedagogies for the twenty-first century learners on global citizenship of primary school pupils in Ikom Education Zone of Cross River State, Nigeria. The Survey design research design was adopted for the study. The population of the study was made up of one thousand, one hundred and nine (1,109) primary school teachers in Ikom Education Zone of Cross River State. *The simple random sampling technique was used to sample 292 primary school teachers in Ikom Education Zone.* A structured questionnaire titled ‘Innovative Pedagogies and Global Citizenship Questionnaire (IPGCQ)’ developed by the researchers was used for data collection. One-Way Analysis of Variance (ANOVA) was used for data analysis. Findings revealed that critical thinking and media literacy skills significantly influence primary school pupils’ global citizenship in Ikom Education Zone of Cross River State. Based on the findings, it was recommended among others that; innovative pedagogies such as critical thinking and media literacy should be encouraged at all levels of education, teachers should be provided the needed equipment to effectively implement media literacy pedagogy, teachers should always engage pupils in independent learning platform to enrich their critical thinking skills and team work among pupils.

**Keywords:** Innovative Pedagogies, Twenty-First Century, media literacy, Global Citizenship and Critical thinking

### **1. Introduction**

Innovative pedagogy is critical and is at the heart of ambition to improve education systems which is true for learning situations by children and young people. The global lifelong learning agenda calls for serious reimagining of the education landscape. Therefore, pedagogies especially the innovative pedagogies must be the key control attractive to any systematic transformation if twenty-first century skills are to be achieved. Educators have argued that the best way for schools to prepare young people for future success is to help them to develop a broad range of learning, work and life skills that they can deploy all over in their lives. This means using teaching and learning approaches that delve students deeply into subjects and also fostering a range of learning activities related to 21st century skills. At the core education system must move from prioritizing knowledge acquisition to prioritizing both knowledge acquisition and the development of skills needed to use that knowledge effectively. 21st century skills needed for problem solving and knowledge transfer, which deeply depends upon deep understanding for the attainment of global citizenship among learners (Gangly & Researcher, 2018).

Global citizenship is a term that includes social, political, environmental and economic actions of globally minded individuals and communities. Global citizenship implies that individuals are members of multiple, diverse, local and non-local networks. It is recognized that changes in the global context, for example, the establishment of international conventions and treaties, the growth of transnational

organizations, corporations and civil society movements and the development of international human rights frameworks that have significant implications for global citizenship. Global citizenship refers to a sense of belonging to a common humanity. It emphasizes political, economic, social and cultural interdependency and interconnectedness between the local, the national and the global.

A global citizen is considered to be an individual who:

- Is aware of the world and has a sense of their role in it.
- Respects and honors cultural diversity.
- Participates in communities at all levels (from local to state, national and global) and takes responsibility for their actions and interactions with members of community at the local, state, national and global levels.
- Is creative, flexible and proactive in seeking solutions to issues that affect humanity.
- Gets involved as members of the international community and is committed to building on this community in a meaningful and positive way.
- Demonstrates skills such as media literacy, problem solving, critical thinking, judgment and decision making.
- Values traditional knowledge with them and helps build interconnectedness to meet the challenges of the 21<sup>st</sup> century (Rajnish, 2021).

Global citizenship can be guaranteed through global citizenship education which seek to develop the knowledge, skills, values and attitudes that are required by an individual to participate fully in a globalized society and economy and to support initiatives aimed at building a more just, secure, peaceful, tolerant, inclusive and sustainable world. The GCED helps learners recognize the importance of understanding and resolving global issues in their social, political, cultural, economic and environmental dimensions. The general learning outcomes that are associated with GCED would include the capacity of the learners to acquire and demonstrate: critical thinking skills, media literacy skills, problem-solving skills, creativity, communication skills, coordinating/collaborating with others, among others (Rajnish, 2021).

Thus, in the broader sense, to meet the challenges of the 21 century, schools have to prepare well-informed and active citizens and it is impossible without promoting critical thinking (Islin & Turner, 2002). Now particularly youngsters are victims of this dilemma enchanted by the social media which require

the development of higher order thinking skills, such as critical thinking and media literacy. Foresman, Fasel and Watson (2017) are of the view that thinking productively is far better instead of memorizing or guessing the correct answers. So critical thinking is characterized as a fine skill, which focuses on thinking reflectively, productively and ultimately evaluating the evidence (Santrock, 2014). Similarly, Moreno (2015) opined that critical thinking is a process of systematically assessing the information and drawing an inference based upon evidence. Therefore, the major goal of global citizenship education is to teach how to think rather than what to think. The society which is facing vast amount of information that is just a click away from our learners, many students do not think critically even about the deceptive and unreliable information.

Schools spend much time to convince their students to reach at single correct answer rather than motivate them to develop critical thinking by coming up with new ideas (Santrock, 2014). Thus, Ross (2012) is of the view that classroom should be managed to teach critical thinking repeatedly and explicitly. Critical thinking or critical analysis, is logical and vivid thinking that involves critique. When school children are asked to give rationale or some supporting evidence to support their reasoning, they discuss controversial issues from different contexts (Wilkinson & Birmingham, 2012). In this way, they assess and question what other people say instead of accepting it as a truth. Critical thinking is an important dimension of global citizenship education which demands a dialogical, reflexive and socially embedded learning environment.

According to Iswara, Darhim and Juandi (2021), critical thinking involves (1) practical reasoning, (2) systemic thinking, (3) decision-making and (4) problem-solving skills. It is crucial that instructors and students recognize, acquire and comprehend 21st-century competencies. A person with the ability to think critically will be highly influential in his daily life, constantly making the correct and best choices. Critical thinking is rational and reflective thinking that focuses on deciding what to believe or do (Chukwuyenum, 2013). Thinking is a mental process that aids in issue formulation, resolution and decision-making. Critical and creative thinking are examples of distinct thinking talents. Pupils who can blend attitudes, knowledge and skills by the 21st century are stated to have the ability to think critically to create their surroundings better. It is a structured procedure that enables students to analyze the facts, assumptions, logic and language underlying the reasoning of others (Arifani, As'ari & Abadyo, 2017).

Critical thinking involves analyzing and evaluating information in order to form a well-reasoned judgment or conclusion. This skill is essential for the 21<sup>st</sup> century learners as it allows individuals to question assumptions, challenge existing ideas and generate new and creative solutions to problems (Zhao, 2021). The degree of critical thinking ability is linked to the spirit of adventure and innovative talents. In other words, critical thinking is an important foundation of creativity, an essential component of thinking quality and an essential ability for students' lifelong learning and development as a measure for the attainment of global citizenship (Ma, 2020). According to Spector and Ma (2019) critical thinking helps individuals to acquire new knowledge and skills, adapt to changing situations and solve complex problems.

Learners can become more independent for developing critical thinking skills and better equipped to navigate the challenges of the 21<sup>st</sup> century. Furthermore, Changwong, Sukkamart and Sisan (2018) opined that developing strong critical thinking skills can enhance the ability to generate and implement innovative ideas. At the same time, the rapid advancement of science and technology has also made critical thinking one of the 21<sup>st</sup> century's top educational priorities. Hence, developing critical thinking skills is crucial for learners to effectively analyze and solve problems, make informed decisions and contribute to the advancement of the society (Wang & Wei, 2018).

More so, in recent years, the phenomenon of globalization has expanded the definition of citizenship beyond national borders. While the concept of global citizenship has roots far back, recent trends toward globalization have continued to redefine notions of global community and connection (Ayo-Vaughan & Omiyefa, 2023). The widespread interaction with new media makes media literacy an innovative pedagogy for the twenty-first century learners to attain global citizenship. Erdem and Erişti (2022) argued that media is now an indispensable part of people's lives, making media literacy education pivotal as it empowers individuals to engage in a discerning and analytical assessment of the content they encounter across many media channels. Media literacy entails providing individuals with the essential information and competencies to proficiently navigate and interpret media messages (Neag, Bozdog & Leurs, 2022).

According to Leaning (2019), media literacy enables individuals to enhance their knowledge and critical analysis of media messages as consumers of media, facilitating informed decision-making and active

engagement for global citizenship. The cultivation of media literacy can be attained through educational endeavors, including the integration of media literacy into curriculum and the provision of resources and training for educators (Meehan, Ray, Walker, Wells & Schwarz, 2015). According to Simons, Meeus and T'Sas (2017), the media is now a global force that shapes the values, beliefs, behaviors and decisions of society and allows us to readily locate information, maintain social connections, create and share content.

The National Association for Media Literacy Education (NAMLE, 2020), opined that media literacy is the ability to access, analyze, evaluate, create and act using all forms of communication, it is the ability to encode and decode the symbols transmitted through media and synthesize, analyze and produce mediated messages. Media literacy promotes critical thinking skills that enable individuals to evaluate and choose different information sources and interpret news and information received through various channels for the enhancement of global citizenship (Mrisho & Dominic, 2023). Therefore, this study investigates the influence of innovative pedagogies for the twenty-first century learners on global citizenship of primary school pupils in Ikom Education Zone of Cross River State, Nigeria.

### 1.1 Statement of Problem

Global citizenship has become increasingly common in the 21<sup>st</sup> century with appreciation for diversity, global awareness and interconnectedness. Despite the fact that education in the 21<sup>st</sup> century is an investment that is expected to enhance the growth of the individual in society, the 21<sup>st</sup> century classrooms are still dominated by the traditional pedagogies where the students/pupils have to learn what they need to from the teacher which is highly outdated and of very little use in their future lives. It is observed that most schools continue to train the 21<sup>st</sup> century learners with essentially primitive methods because the classroom and learning environments in general are not yet adapted to the age of information communication technology to enhance pupils/students' attainment of global citizenship. It is also observed that the 21<sup>st</sup> century pupils/students can explore the internet and other social networks at their homes with their parents' devices (phone, laptop and or tablets) to attain global citizenship. Yet, the school system has not made improved efforts toward effectively training learners in this regard. Therefore, this study investigates the influence of innovative pedagogies for the twenty-first century learners on global citizenship of primary school pupils in Ikom Education Zone of Cross River State, Nigeria.

### 1.2 Purpose of the Study

This study is to investigate the influence of innovative pedagogies for the twenty-first century learners on global citizenship of primary school pupils in Ikom Education Zone of Cross River State, Nigeria. Specifically, this study sought to:

- Examine the influence of critical thinking on global citizenship of primary school pupils in Ikom Education Zone.
- Determine the influence of media literacy on global citizenship of primary school pupils in Ikom Education Zone.

### 1.3 Research Questions

The following research questions were developed to guide the study:

- What is the influence of critical thinking on global citizenship of primary school pupils in Ikom Education Zone?
- How does media literacy influence global citizenship of primary school pupils in Ikom Education Zone?

### 1.4 Statement of Hypotheses

The following hypotheses were formulated to guide the study:

- There is no significant influence of critical thinking on global citizenship of primary school pupils in Ikom Education Zone.

- Media literacy does not significantly influence global citizenship of primary school pupils in Ikom Education Zone.

### 1.5 Research Methodology

This study investigated the influence of innovative pedagogies for the twenty-first century learners on global citizenship of primary school pupils in Ikom Education Zone of Cross River State, Nigeria. The Survey design research design was adopted for the study. The population of the study was made up of one thousand, one hundred and nine (1,109) primary school teachers in Ikom Education Zone of Cross River State. The simple random sampling technique was used to sample 292 primary school teachers in Ikom Education Zone. A structured questionnaire titled 'Innovative Pedagogies and Global Citizenship Questionnaire (IPGCQ)' developed by the researchers was used for data collection. One-Way Analysis of Variance (ANOVA) was used for data analysis.

## 2. Results

**Hypothesis one:** There is no significant influence of critical thinking on global citizenship of primary school pupils in Ikom Education Zone.

The independent variable in this hypothesis is critical thinking (low, moderate and high influence); while the dependent variable is global citizenship. To test this hypothesis, global citizenship from critical thinking low, moderate and high influence were compared using One-Way Analysis of Variance (ANOVA). The result of the analysis is presented in Table 1.

**Table 1:** Summary data and one-way ANOVA of the influence of critical thinking on global citizenship of primary school pupils in Ikom Education Zone (N=292)

Critical thinking	N	$\bar{x}$	SD		
Low – 1	91	35.1538	3.06929		
Moderate – 2	109	36.6606	3.22668		
High – 3	92	36.3804	2.88171		
Total	292	36.1027	3.13001		
Source of variance	SS	df	Ms	F	Sig of F
Between group	122.947	2	61.473	6.512	.000
Within group	2727.971	289	9.439		
Total	2850.918	291			

\* Significant at .05 level, p-value =.000, df= 2, 289.

The result on Table 1 revealed that the calculated F-value of 6.512 is higher than the p-value of .000 at .05 level of significance with 2 and 289 degrees of freedom. With this result the null hypothesis was rejected. This result therefore implied that, critical thinking has a significant influence on global citizenship. Therefore, a post hoc analysis was employed using Fishers' Least Significant Difference (LSD) multiple comparison analysis. The result of the analysis is presented in Table 2.

**Table 2:** Fishers’ Least Significant Difference (LSD) multiple comparison analysis of the influence of Critical thinking on global citizenship  
LSD

(I) Critical thinking	(J) Critical thinking	Mean Difference (I-J)	Std. Error	Sig.
Low	moderate	-1.50670(*)	.43627	.001
	High	-1.22659(*)	.45424	.007
Moderate	low	1.50670(*)	.43627	.001
	High	.28012	.43497	.520
High	low	1.22659(*)	.45424	.007
	moderate	-.28012	.43497	.520

\* The mean difference is significant at the .05 level.

**Hypothesis two:** Media literacy does not significantly influence global citizenship of primary school pupils in Ikom Education Zone.

The independent variable in this hypothesis is media literacy (low, moderate and high influence) while the dependent variable is global citizenship. To test this hypothesis, global citizenship from media literacy influence of low, moderate and high was compared using One-Way Analysis of Variance (ANOVA). The result of the analysis is presented in Table 3.

**Table 3:** Summary data and one-way ANOVA of the influence of media literacy on global citizenship (N=292)

Media literacy	N	$\bar{x}$	SD		
Low – 1	38	35.5000	2.53356		
moderate – 2	157	35.7261	3.39610		
high – 3	97	36.9485	2.71712		
Total	292	36.1027	3.13001		
Source of variance	SS	Df	Ms	F	Sig of F
Between group	105.453	2	52.726	5.550	.000
Within group	2745.465	289	9.500		
Total	2850.918	291			

\* Significant at .05 level, p-value =.000, df= 2, 289.

The result on Table 3 revealed that the calculated F-value of 5.550 is higher than the p-value of .000 at .05 level of significance with 2 and 289 degrees of freedom. With this result the null hypothesis was rejected. This result therefore implied that, media literacy significantly influenced global citizenship of learners. Since media literacy had a significant influence on global citizenship of students, a post hoc analysis was employed using Fishers’ Least Significant Difference (LSD) multiple comparison analysis. The result of the analysis is presented in Table 4.

**Table 4:** Fishers’ Least Significant Difference (LSD) multiple comparison analysis of the influence of media literacy on global citizenship  
LSD

(I) Media literacy	(J) Media literacy	Mean Difference (I-J)	Std. Error	Sig.
Low	Moderate	-.22611	.55723	.685
	High	-1.44845(*)	.58986	.015
moderate	Low	.22611	.55723	.685
	High	-1.22234(*)	.39805	.002
High	Low	1.44845(*)	.58986	.015
	Moderate	1.22234(*)	.39805	.002

\* The mean difference is significant at the .05 level.

### 3. Discussion of findings

The result of hypothesis one revealed that the calculated F-value of 6.512 is higher than the p-value of .000 at .05 level of significance with 2 and 289 degrees of freedom. This result therefore implied that, critical thinking has a significant influence on global citizenship of pupils in the study area. In this regard, Moreno (2015) opined that critical thinking is a process of systematically assessing the information and drawing an inference based upon evidence. Therefore, the major goal of global citizenship education is to teach how to think rather than what to think. The society which is facing vast amount of information that is just a click away from our learners, many students do not think critically even about the deceptive and unreliable information. Also, Changwong, Sukkamart and Sisan (2018) opined that developing strong critical thinking skills can enhance the ability to generate and implement innovative ideas. The result of hypothesis two revealed that the calculated f-value of 5.550 is higher than the p-value of .000 at .05 level of significance with 2 and 289 degrees of freedom. This result therefore implied that, media literacy significantly influences global citizenship of learners in the study area. In line with the findings of this hypothesis, Erdem and Erişti (2022) argued that media is now an indispensable part of people's lives, making media literacy education pivotal as it empowers individuals to engage in a discerning and analytical assessment of the content they encounter across many media channels.

### 4. Recommendations

Based on the findings, it was recommended among others that:

- Innovative pedagogies such as critical thinking and media literacy should be encouraged at all levels of education.
- Teachers should be provided the needed equipment to effectively implement media literacy pedagogy.
- Teachers should always engage pupils in independent learning platform to enrich their critical thinking skills, team work among pupils.

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## Sociological Correlates of Deviant Behaviour among In-School Adolescents in Lagos State, Nigeria

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**Abstract.** Where there is no law, there is no transgression is a popular saying but the human society is governed by series of laws through its various institutions. One of the hidden functions of education through its school agency is to instil conformity in learners for optimal societal functioning as law abiding citizens. Nonetheless, increasing number of adolescents are still bedevilled by social deviance. This study hence, examined the sociological correlates of deviant behaviour among secondary school students in Lagos state, Nigeria. Three hypotheses guided the study while the study adopted a descriptive research design. The study sample comprised two hundred and seventy (270) secondary school students drawn from the study population using simple random sampling technique. A self-designed questionnaire ( $r = 0.76$ ) was used in data collection while the formulated hypotheses were tested using regression analysis at 0.05 levels of significance. The study found that parental influence, social media and peer influence significantly predict deviant behaviour among secondary school students. The study hence, recommended among others that; Parents should provide a conducive home environment that would enhance good upbringing of their children and also be their role model. Parents should monitor the activities of their children and the kind of friends they keep, to discourage negative peer influence. Parents and the school system should regulate the contents of social media being accessed by adolescent students.

**Keywords:** Deviant behaviour, Parental influence, Peer influence, Social media.

### 1. Introduction

Social deviance is an issue of public concern as it is behind every form of social disorganization. No facet of the human society is insulated from social deviance

be it the home, the school or any organization. Merton (1957)'s typology of social deviance (cited in Ajuzie, 2011) remains one of the earliest submissions on the social problem as it was classified into innovation, ritualism, retreatism and excessive conformism. Deviant behaviour among in-school adolescents particularly, is a major challenge in the achievement of the school aims and objectives and by extension the national goals. Deviance is generally defined as any behaviour that does not conform to the established rules of a group of individuals or of the society at large (Idris, 2016). Deviant behaviour involves, not keeping to rules and norms of the society, or the school norms. It is characterised by violation of socially accepted norms that cause damage to individual themselves, their surroundings and the public welfare at large. Ditch (2016) opined that deviant behaviour is a behaviour that violates the laid down rules and regulation of an organisation or group.

Eremus (2015), observed that rules and regulations are not obeyed in our schools as there are many cases of examination malpractice, truancy, bullying, extortion, drug offences and porous behaviour. These are deviations from standard behavioural expectations of the students. Ibuchim (2016) identified common deviant behaviours within the educational system as; examination malpractice, bullying, truancy, stealing, lateness to school, cultism, drug abuse, sex offences, absenteeism and conflict with parents. Similarly, identified among secondary school students were common behaviours such as engaging in; cultism, sex offences, smoking and alcoholism, vandalism, fighting, aggressiveness, truancy, disrespect to constituted authorities and elders, stealing and examination malpractices.

Factors that may influence adolescents' behaviour can be found in the home and such home factors include;

family discord, poor parenting style, poor housing facilities with attendant overcrowding and poverty. Others include; rejection, hostility, sex differences, and large family size (Bannon, 2012). Some biological factors to the problem include issues of; psychopathy, brain damage. and Attention Deficit Hyperactivity Disorder (ADHD) among others.

Parental or family influence is critical in the life of every child and parents serve as role models to their children. If a parent acts in a negative way, the child is most likely to imbibe such negative attitudes as such may be generalised to the rest of the society (Carlson, 2012). Thus, parents have much influence over their children's behaviour. However, there are certain parenting techniques that have a greater impact on the adolescents' behaviour including; parental support. Barnes et'al (2006) posited that parental support is that behaviour towards the child, such as praising, encouraging, and giving affection which show the child that he or she is valued and loved. Parental support bond the adolescents to the family institution and build their self-control which hinder them from engaging in deviant acts (Barnes, Joseph and John, 2006). Furthermore, parents who do not reinforce positive behaviour and who do not effectively punish deviance are more likely to experience weak bonds with their children through which the child is more likely to participate in deviant behaviour (Nuredin,2017).

Peer influence refers to the influence exerted by peer group in encouraging an individual to change his or her attitude, values, or behaviour in other to conform to group norms. Adolescents socialise with peers and learn greatly from them (Nuredin, 2017). Most students indulge in deviant behaviour in school because of influence of peers (Agi, 2016). Peer influence is the term used to describe the impact that a group of peers has on an individual, urging them to alter their beliefs, attitudes, or behaviours in order to fit in with the group standards. According to Clasen (2005), peer influence refers to a social condition whereby a person is being influenced or pushed over by friends or age group to do something he or she does not wish to do. It is the pressure an individual feel to conform to in order to be part of the group and be accepted by his peers. Babatunde (2024) viewed peer pressure as a way that people of the same social group at in order to influence one another, often in negative ways. They can encourage each other to skip classes, steal, cheat during examinations, take drugs or involve in other risky behaviours that contravenes the school rules and regulations. Uwakwe et'l (2018), found that peer group dynamics play a crucial role, particularly in adolescence, where the desire to fit in and be accepted can lead to participation in activities like substance

abuse, bullying, and truancy. Milliward and Marisen (2016) found that students involved in deviant acts for the sake of conforming because they see their friends doing the same.

The social media appear to pose so much attraction to today's adolescents, technology being the current way of the world. There has been a growing concern regarding the relationship between various type of media and deviant behaviour among young people. Instilling violent attitude and behaviour pattern in young people for instance, may make the students regard each other as target of aggression and sexual predation. Makers of violent imagery undermine value that are perhaps essential to civilised society and make it difficult for schools to achieve their social expectation and civic aspiration.

Deviant behaviour among adolescent students has a wide array of impacts such as; affects teaching-learning process in the classroom, leads to poor academic performance of the deviants, causes poor parent-child relationships, as most parents may withdraw their love and care on deviant children, and threatens the safety of teachers, school authorities and parents and even destroys school properties (Agi, 2016). Furthermore, Odo (2016), found that students engaging in deviant behaviours had lower academic achievements compared to their well-behaved peers. The study reported that students involved in deviant behaviour had an average academic performance score of 45%, compared to 65% for well-behaved students. Also, Olagunju (2021), submitted that deviant behaviour leads to frequent disruptions in classrooms, making it difficult for teachers to maintain order and deliver effective instruction. Over 55% of teachers in the study reported that their teaching was regularly disrupted by student misconduct. Similarly, Onukwufor (2017), reported that 60% of teachers in their study, felt unsafe due to high levels of student violence and misconduct, which creates a climate of fear and negatively impacts the teaching and learning process. The disruptive impact that deviant behaviour has on the school system and the society at large makes it imperative that further investigation, be conducted on the social problem to mitigate it. It is against this background that this study examined the sociological correlates of deviant behaviour among in-school adolescents in Lagos Mainland Local Government Area, Lagos State, Nigeria.

### **1.1 Statement of the Problem.**

The issue of deviant behaviour among in-school adolescents has assumed a worrisome trend, in recent times, and education stakeholders appear to be in

dilemma. Observational evidence indicates that many students disobey school rules and regulation with impunity. This ranges from issues of unruly behaviour, truancy, bullying, sex offences, stealing, fighting, vandalism to examination malpractices. These acts have deleterious effects both on the adolescents, the school and the society at large. There are rising cases of school dropouts/out-of-school children, poor academic performance among learners and lot's more which extant research studies have partly attributed to deviant behaviour in schools. When deviant behaviour impact negatively on the school activities, psychosocial adjustment or academic performance of the students, it will in the long run negatively impact the quality of the societal workforce and national development. Many reasons have been advanced as being responsible for the problem of deviant behaviour among adolescents with solutions proffered. The problem still ravages as the proffered solutions have not yielded the needed result. This study hence investigated the sociological correlates of deviant behaviour among in-school adolescents in Lagos state, Nigeria.

### 1.2 Purpose of the Study

The purpose of this study is to examine the sociological factors that predict deviant behaviour among secondary school students in Lagos Mainland Local Government Area, Lagos state, Nigeria. The specific objectives are:

- To ascertain whether parental influence will predict deviant behaviour among secondary school students.
- To determine whether social media will predict deviant behaviour among secondary school students.
- To ascertain if peer influence will predict deviant behaviour among secondary school students.

### 1.3 Hypotheses

The study was guided by the following hypotheses:

- Parental influence will not significantly predict deviant behaviour among secondary school students.
- Social media will not significantly predict deviant behaviour among secondary school students.
- Peer influence will not significantly predict deviant behaviour among secondary school students.

## 2. Methodology.

### 2.1 Research Design

The descriptive research design was adopted for the study. This gives a true picture of a situation or population and therefore provides the basis for eliciting possible solutions for alleviating the problem under study.

### 2.2 Population of the Study

The population of this study comprised all the senior secondary school two students (SSII) in Lagos Mainland Local Government Area of Lagos State' Nigeria. The choice of this population is due to the fact that the students are not in an external examination class and they are not new in the school.

### 2.3 Sample and Sampling Technique

A sample of Two Hundred and Seventy (270) secondary school students was selected from the study population, using simple random sampling technique. A sample of thirty students was selected from each of the schools used in the study. An equal number of boys and girls were selected; fifteen male and fifteen female students from each of the schools, to allow for gender equity.

### 2.4 Research Instrument

A self-designed questionnaire titled, Correlates of Deviant Behaviour Questionnaire (CDBQ) was used in data collection. It comprised two sections, A and B. Section A comprised of items which sought personal information of the respondents while section B elicited information on the variables captured in the hypotheses. The instrument was validated through experts' opinions to ensure its face and content validity. The reliability of the instrument was established through a pilot study and the reliability coefficient obtained was 0.76 which was quite high and considered adequate for use.

### 2.5 Data collection and Analysis

The questionnaires were administered to the respondents in the selected schools and retrieved immediately after completion to ensure high return rate. The retrieved questionnaires were collated for data analysis. The postulated hypotheses were tested using Linear Regression Analysis at 0.05 level of significance.

**3. Results and Discussion.**

**Hypothesis One:** Parental influence will not significantly predict deviant behaviour among secondary school students.

**Table 1.1** Regression Analysis of Parental Influence on Deviant Behaviour

REGRESSION						
Model		Sum of Squares	df	Mean Square	F	F Sig.
1	Regression	1168.825	1	1168.825	56.550	3.89
	Residual	5539.282	268	20.669		.000
	Total	6708.107	269			
a. Dependent Variable: Deviant Behaviour						
b. Predictors: (Constant), Parental Influence						

Evidence from Table 1.1 shows that the F-calculated is 56.6 while the F-tab is 3.89. Given that the F-cal is greater than F-tab, this suggests that, the null hypothesis that states that parental influence will not significantly predict deviant behaviour among secondary school students is rejected. Therefore, parental influence significantly predicts deviant behaviour among secondary school students.

**Table 1.2:** Regression Coefficient table of Parental Influence on Deviant Behaviour

Coefficients							
Model		Unstandardized Coefficients		Standardized Coefficients	t	T-tab	Sig.
		B.	Std. Error	Beta			
1	(Constant)	7.952	.954		8.334		1.98
	Parental Influence	639	.085	.417	7.520		.000
a. Dependent Variable: Deviant Behaviour							

Table 1.2 revealed that the T-cal is 7.52 and the T-tab is 1.98, since the critical value is greater than the table value the null hypothesis is rejected. Therefore, these two tables (Table 1.1 and Table 1.2) indicate that the test was significant, parental influence is a predictor of deviant behaviour among secondary school students.

Hypothesis Two: Social media will not significantly predict deviant behaviour among secondary school students.

**Table 2.1:** Regression table of Social Media Influence on Deviant Behaviour

Regression						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	646.410	1	646.410	28.579	0.00
	Residual	6061.697	268	22.618		
	Total	6708.107	269			
a. Dependent Variable: Deviant Behaviour						
b. Predictors: (Constant), Social Media Influence						

Evidence from Table 2.1 shows that the F-cal is 28.6 while the F-tab is 3.89 which suggests that the null hypothesis that says that social media will not significantly predict deviant behaviour among secondary school students is rejected. Therefore, social media significantly predict deviant behaviour among secondary school students.

**Table 2.2:** Regression Coefficient table of Social Media Influence on Deviant Behaviour

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.502	.858		12.24	.00
	Social Media influence	.424	.079	.310	5.34	.00
a. Dependent Variable: Deviant Behaviour						

Table 2.2 revealed the Regression Coefficient table of Social Media Influence on Deviant Behaviour, its T-cal value is 5.34 and the T-tab is 1.98. These two tables indicate that the test was significant hence, social media influence is a predictor of deviant behaviour among secondary school students.

**Hypothesis Three:** Peer influence will not significantly predict deviant behaviour among secondary school students.

**Table 3.1:** Regression Analysis of Peer Influence on Deviant Behaviour

REGRESSION						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2889.442	1	2889.442	202.786	0.00
	Residual	3818.666	268	14.249		
	Total	6708.107	269			

a. Dependent Variable: Deviant Behaviour  
b. Predictors: (Constant), Peer Influence

Table 3.1 revealed that the obtained F-cal value of 202.8 is greater than the F-tab of 3.89. The null hypothesis that states that Peer influence will not significantly predict deviant behaviour among secondary school students is rejected. Hence, peer influence significantly predicts deviant behaviour among secondary school students.

**Table 3.2:** Regression Coefficient table of Peer Influence on Deviant Behaviour

Coefficients						
Model		Unstandardized Coefficients		Standardize Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.996	.661		9.074	0.00
	Peer Influence	1.042	.073	.656	14.240	.00

a. Dependent Variable: Deviant Behaviour

Table 3.2 shows the T-cal value to be 14.2 and the T-tab value to be 1.96. The two tables indicate that test was significant. Peer influence is hence, a predictor of deviant behaviour among secondary school students

#### 4. Discussion of findings

Hypothesis one showed that parental influence significantly predicts deviant behaviour among in-school adolescents. The reason for this may be due to the parenting style adopted by parents in raising their children which most often is neglectful or permissive. Carlson (2012) opined that parents directly influence deviant behaviour in their children through their parenting techniques and family structure. This finding supports Simons, Whitebeck, Conger and Conger cited in Carlson (2012) that if a parent acts in a negative way, the child is more likely to follow such negative attitude. Thus, parents have much influence over their children’s behaviour. Similarly, parental monitoring and knowledge of the adolescent’s whereabouts and the activities in which they are engaged are strong predictors of reduced deviant behaviour in adolescents (Criss et al. 2015). Hence, their lack of knowledge of the child’s behaviour promotes the adolescent’s deviant behaviour, specifically his or her misbehaviour at school, which includes truancy (Chinyakata, Roman and Donga, 2022). Also, some of the deviant behaviours of adolescents are a result of the parent’s inability to employ disciplinary methods that discourage inappropriate behaviour. Parental discipline is hence

critical in raising adolescents that will not engage in deviance.

Hypothesis two revealed that social media significantly predict deviant behaviour among adolescent students. The reason for this may be due to increased presence of adolescents on social media platforms such as; Facebook, Twitter (X), Whatsapp and Instagram, which they often use negatively. This finding corroborates Kento (2015), who opined that children's character development appears to be negatively impacted by wholesome mainstream media, rather than positively. The demands of their education, social lives, and careers are difficult for the students to adapt to. This finding also aligns with Muia (2016) who found that social media contributed to violence among the students in his study and as well influenced their sexual practices. Furthermore, it increased cases of molestation and cyberbullying among the students.

Hypothesis three revealed that peer influence significantly predicts deviant behaviour among adolescents. The reason for this may be due to the challenges associated with adolescence as a stage of development. Uwakwe, Okechukwu and Nweke (2018), found that peer group dynamics play a crucial role, particularly in adolescence, where the desire to fit in and be accepted can lead to participation in activities like substance abuse, bullying, and truancy. In line with this finding, is a study that investigated drug abuse concerns among students in Kenya, which found that students who use and abuse drugs seemed

to lack knowledge about their effects but wrongly rely on peers for such information. Negative peer influence was hence identified as the main factor that pushes students to use and abuse drugs (Gershon, 2024). Also, Ikediashi and Akande (2015) submitted that peer group membership leads to peer influence and anti-social behaviour. This finding further aligns with Hinnat and Alberti (2018), who concluded that adolescents who have more friends endorsing anti-social behaviours are more likely to engage in delinquent behaviour than those with non-deviant friends.

## 5. Conclusion

On the basis of the findings made, this study concludes that parental influence, peer influence and social media significantly predict deviant behaviour among in-school adolescents. The recommendations proffered in the study when fully implemented would assist in curtailing the problem of deviant behaviour among secondary school students.

## 6. Sociological Implications of the Findings.

This study has revealed that parental influence, peer influence and social media as key determinants of deviant behaviour among adolescents. This finding is critical given that it cuts across the major agents of child socialization; the family, the peer group and the mass media. The adolescents will continue to interact with these agencies. The agencies should hence, fulfill their social roles effectively as it pertains raising socially conforming adolescents that are in tune with their societal expectations. Should these agencies fail, then, social disorganization is inevitable. Parents should not only model the socially acceptable patterns of behaviour but should also adopt parenting practices that yield the desired societal outcomes. Adolescents will always treasure their peers but parents and significant others should assist the adolescents to sustain only the positive peer influence and eschew the negatives by monitoring the friends that their children keep. Also, technology is currently the way of the world and social media is a part of this new world order. Parents and teachers should regulate adolescents' social media usage.

## 7. Recommendations

Based on the findings of the study, the following recommendations were made:

- Parents should provide a conducive home environment that would enhance good moral upbringing and be a role model to their

children so that they will imbibe good behaviour.

- Parents and the school system should regulate the contents of social media being accessed by adolescent students.
- The parents and the school system should make rule and regulations that would discourage students from negative peer influence.
- Parents should take more interest in the welfare of their children, more especially as it concerns the type of friends they keep.
- The government should provide adequate personnel such as sociologists, psychologists, and vocational guidance counsellors in public secondary schools, to assist in dealing with cases of deviance in schools.
- Seminars and conferences should be organized to educate students on the dangers of deviant behaviour and the negative influence of social media.

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## The Need to Protect Public Health in Edo State, Nigeria

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**Abstract.** Health care facilities are established to provide treatment and safeguard the health of the people against conditions that pose risk or threat to health care providers, patients, waste handlers and the entire community. Health care activities are carried out to protect, restore health and save lives but paradoxically, they are known to generate wastes that poses obvious health risks either by direct infection or through exposure to dangerous chemicals and radiation materials. The purpose of the study was to determine the medical waste management practice in health care facilities in Edo State. Eight research questions were raised to guide the study while six hypotheses were formulated and tested at 0.05 level of significance. The population for the study comprised the 1,383 health care facilities in Edo State. A sample size of 276 respondents was selected using the multi-stage sampling technique. The instrument used was a validated Dichotomous scale format questionnaire with 29 items. The instrument's reliability was established using the test-retest method of estimating reliability and a co-efficient value of 0.68 was obtained. Data generated from the study were analyzed using descriptive statistics of frequency count, percentage and inferential statistics of binomial test and chi-square. The findings revealed that some health care facilities still do not fully comply with the dictates of approved practices specifically in the areas of segregation, incineration method, use of water proof floor with good drainage, treatment modalities and that there was no absolute difference in the urban and rural settings in terms of medical waste management. It was concluded that the immense benefits of proper waste management should be fully utilized in compliance with the approved practices to avert the possibility of accidents and disease outbreak that could result in loss of life and property. It was recommended that health care facilities should improve practices at all the stages of waste management. Therefore, all health care facilities owe a duty to protect the public

and the environment and should have peculiar responsibilities as regard the waste they produce in a sanitary manner to reduce infection and illness.

### 1. Introduction

Medical waste is an overwhelming public health problem that affects public health, social and economic well-being of the people. The management of medical waste has become a major challenge in most health care facilities all over the world especially in the developing countries and Nigeria in particular. The management of medical wastes is critically at suboptimal level reflecting especially in poor handling and ineffective disposal methods of medical wastes. These have a high propensity to expose human beings and the environment to potentially hazardous wastes. Medical waste constitute waste materials generated in health care facilities such as hospitals, clinics, health centres, blood banks, dental centres, veterinary clinics, research and laboratory facilities etc. (United States Environmental Protection Agency,2012). The contribution of medical wastes to environmental pollution and associated health risks due to their infectious nature and unpleasant sight and smell have generated increased public interest in both developed and developing nations of the world (Awodele, Adewoye and Oparah, 2016).

Generally, health care institutions and facilities are expected to take care of public health issues including medical wastes. These health facilities are considered unique environments that would provide health care to patients and ideal work environments for medical and other staff. Specifically, health care institutions apart from ensuring patient care, would also be expected to apply specific approaches to ensure clean and healthy environment for workers and the community at large. As a matter of fact, the Basel Convention Agreement reached by member states of the United Nations states that it is the responsibility of health care

establishments to treat and dispose wastes generated in such a manner as to ensure that there would be no adverse health or environmental risks (United Nations Environment Programme, 1999).

It has generally been observed that developed countries face challenges with the sheer volume of waste from the use of disposables on one hand, while on the other hand developing countries whose supplies are limited are dealing with the dilemma of sorting and disposing all types of medical wastes in sanitary manner (Globalisation), 2010. Health care activities all over the world are known to generate significant amounts of these hazardous medical wastes. It is believed that several hundreds of tons of medical wastes are deposited in open waste dumps and surrounding environments, often alongside non-hazardous solid wastes (Abah & Ohimain, (2010). Recent studies in Nigeria have estimated waste generation of between 0.562 to 0.670kg/bed/day and as high as 1.68kg/bed/day (Longe &William,2006; Olubunmi,2009).

The problem of medical waste is considered a huge one considering the fact that medical waste is the third largest source of waste in the United States of America and that in developing countries, the unsanitary disposal of medical waste has put millions of lives at risk. This is because dumping sites are often visited by scavengers for goods. In other words, these emerging countries face a myriad of health problems arising from the burning of waste as open dumping in unsanitary landfills and incinerators are still the main vehicles used to dispose medical wastes. It is paradoxical to note that health care activities that are expected to protect health, cure patients and save lives, are known to throw up wastes that pose obvious health risks either by way of direct infection or through exposure to chemical and radiation materials (International Committee of the Red Cross, 2011).

The problem associated with sanitary medical waste disposal in the developing world are also ascribed to poor funding and the lack of government regulatory laws which would serve as legal backing for proper waste management (United Nations Development Programme, 2014). The poor management of health care waste potentially exposes healthcare workers, waste handlers, patients and the community at large to infection, toxic effects, injuries and the risks associated with environmental pollution. The UNDP (2014) therefore advocated that it is essential for all medical waste materials to be segregated at the point of generation, appropriately treated and disposed off safely. The transmission of diseases and micro-organisms, defacing the aesthetics of the environment,

environmental pollution, as well as contamination of soil and underground water tables by untreated medical waste are some of the negative health and environmental impacts of medical waste (Manyela and Lyasenga,2010).

WHO, estimates that each year, there are about 8 to 16 million new cases of Hepatitis B virus (HBV), 2.3 to 4.7 million cases of Hepatitis C virus (HCV) and 80,000 to 160000 infectious cases of Human Immunodeficiency Virus (HIV) mostly due to very poor waste management systems particularly those involving disposal of unsafe infectious materials (WHO,1999). It was also observed that in many health care facilities in the developing world, the waste is not segregated but burnt in harmful incinerators, even in the open. Unfortunately, these methods of waste disposal further pollute the environment and spread diseases as Nigeria is not paying enough attention to the problem of medical waste. In most developed countries, a holistic approach to health care waste management has been adopted as an integral part of the national health care systems. These include the establishment of regulatory framework, development of national plans and the development of innovative approaches. In many developing countries like Nigeria, many health concerns are competing for limited resources, therefore, the management of medical waste has not received the attention and priority it deserves. Medical wastes are still handled and disposed together with domestic wastes in the same collecting bins at road sides and disposed in similar fashion. This practice was observed in some hospitals in Lagos by Awodele et al (2016) where medical waste are still mixed with municipal waste in their on-site storage facility. An initial visit to some health institutions in Benin city by the researcher also confirmed similar practices of mixing untreated medical wastes with municipal wastes in collecting bins and at dump sites and disposed of in residential waste landfills.

There may not be much difference in the way and manner medical wastes generated in various health care facilities are managed in Nigeria. Olubukola (2009) reported similarity in waste generated and health care waste management practices in two general hospitals as characterized by a lack of waste minimization or waste reduction strategies, poor waste segregation practices, lack of instructive posters on waste segregation and disposal of health care wastes with general wastes. A near total absence of institutional arrangement for health care waste in Nigeria has been reported by others (Coker, Sangodoyin and Ogunlowo,1998). WHO (2014) has always advocated that it is essential for all medical wastes materials to be segregated at the point of generation, appropriately treated and disposed off

safely. It is crucial to note that as long as modern medicine is constantly maintained and sustained to ensure quality of life and healthy well-being, the health sector is likely to generate by-products that would adversely affect people and the environment.

In Nigeria, the extent to which medical wastes are managed on the basis of government regulatory laws and policies, careful planning, sound organization, adequate financing and full participation by trained staff is not very clear. There is therefore, the urgent need to assess the medical waste management practices of health care facilities in Edo State as part of efforts to protect public health.

## 2. Essentiality to protect Public Health

Public health is concerned with protecting the health of entire populations and these populations can be as small as a local neighbourhood or as big as the entire country. It is the science of protecting and improving the health of families and communities through promotion of healthy lifestyles, research for disease and injury prevention, detection and control of infectious diseases (Centre for Disease Control and Prevention Foundation, 2016). The functions are to:

- Monitor health
- Detect and investigate health problems
- Conduct research to enhance prevention
- Develop and advocate sound public health policies
- Implement prevention strategies and promote healthy behaviours
- Foster safe and healthy environments
- Provide leadership and training

According to Wikipedia (2014) public health is the science and art of preventing disease, prolonging life and promoting health through organized efforts and informed choices of society, organizations, public and private, communities and individuals. It further stated that the focus of public health intervention is to improve health and quality of life through prevention and treatment of disease and other physical and mental health conditions which is achieved through surveillance of cases and promotion of healthy behaviours of which examples are: the promotion of hand-washing, breastfeeding, delivery of vaccinations and even distribution of condoms to control the spread of sexually transmitted diseases. Public health is about helping people to stay healthy and protecting them from threats to their health so that everyone would be able to make healthier choices regardless of their circumstances to minimize the risk and impart of illness.

Three core areas were identified as public health functions derived from Health Promotion and Disease Prevention technologies which are:

- Identifying health problems and priorities through assessment and monitoring of the health communities and populations at risk.
- Formulating public health policies, collaborating with community and government leaders designed to prioritize to solve the identified local and national health problems.
- Assuring that all populations have access to appropriate and cost-effective care, including health promotion and disease prevention services and evaluation of the effectiveness of that care.

CDC (2016) further said that public health differs from other professions because it is comprised of many professional disciplines such as medicine, dentistry, nursing, optometry, nutrition, health education, environmental sciences etc as its activities focuses on entire populations rather than on individual patients and that health care is vital to all of us some of the time but public health is vital to all of us all of the time.

Sharma and Zodpey (2011) indicated that the extent to which people are able to improve the health of the public depends largely upon the quality and preparedness of the public health workforce which in turn relies on the relevance and quality of its education and training. They also opined that public health education for long has been expected to find solutions to multitude of public health problems via building the capacity of public health workforce.

Pitt Public Health (2016) resolved that public health is a field for people who care about the greater good of human beings and that it is constantly evolving in response to the needs of communities and populations around the world. Pitt Public Health (2016) further said that the mission of public health includes not only the practice of public health policy but the research of public health issues and the education of future leaders who will eventually translate that research into practices and policies. This will improve the health of people worldwide as it has lasting positive effect on people, helps promote a healthy environment and serves as a moral and ethical imperative.

## 3. Methodology

### 3.1 Research Design

The descriptive survey research design was used for the conduct of this study. This was considered

appropriate because information about how medical waste is managed and its impact on human health and the environment were collected and described as they exist without manipulating their conditions.

### 3.2 Population of the Study

There are currently 1,383 (one thousand, three hundred and eighty-three) registered public and private health care facilities in Edo State (Edo

State Ministry of Health, 2016). They are located in urban and rural areas of the three senatorial districts of Edo State. Specifically, there are 182, 59 and 35 health care facilities in Edo South, Edo North and Edo Central respectively (Appendix II).

### 3.3 Sample and Sampling Techniques

A multi-stage sampling technique was used to obtain the sample size for the study. It involved stratifying the health care facilities in the eighteen local government areas into three senatorial districts, viz Edo South, Edo Central and Edo North. The systematic random sampling technique was used to select 10% of the health care facilities within each senatorial district. This was done by arranging the health care facilities alphabetically after which the first name and every other 10<sup>th</sup> names were selected in each Local Government Area making a total of 138 health care facilities as the target sample size. Purposive sampling technique was then used to select the officer in charge and the next ranking officer in each health care facilities to respond to the questionnaire. The purpose was to select officers who have adequate knowledge of the normative activities in the health care facilities and to help clarify where observations appear to be confounded. A total of 276 respondents were selected as sample size.

### 3.4 Research Instrument

The instrument for data collection is a questionnaire developed by the researcher (Appendix VIII). The questionnaire consists of two sections (A and B). Section A elicited information about the bio-data of the respondents while section B consist of 29 items eliciting responses on medical waste management in health care facilities. The response set was patterned along Likert scale format response of Strongly Agree, Agree, Strongly Disagree and Disagree. Responses from the respondents were graduated into levels of utilization. From 90%-100% were categorized as high, 80%-89% was medium, and 79% downward was categorized as low. In the same vein, for specific levels of usage, 90% to 100% were categorized as excellent

while 80% to 89% as good, 70 to 79% as average and 69% downwards was categorized as poor respectively.

### 3.5 Validity of the Instrument

The instrument was content validated by the researcher's supervisor and other two experts in the Department of Health, Safety and Environmental Education in the Faculty of Education, one from the Department of Nursing Services and the other from the Department of Waste Management, UBTH, Benin City, making a total of five validators. Their suggestions and corrections were effected and incorporated in the final draft of the instrument.

### 3.6 Reliability of the Instrument

The test-retest method of reliability was used in determining the reliability of the instrument. The instrument was administered to 36 respondents across the eighteen local government areas that are not part of the study. After an interval of two weeks, the same instrument was administered to the same group of respondents. The scores obtained from the two administrations were correlated, using Pearson Product Moment Correlation Co-efficient to establish the reliability of the instrument. A coefficient value of 0.68 was achieved which was deemed high enough for the study.

### 3.7 Method of Data Collection

Letters of introduction (Appendix iii) was obtained from the researcher's supervisor by the researcher. These were given to all the Directors/Administrators of the various selected health care facilities in Edo State. The instrument was administered to the respondents with the help of 5 trained research assistants who were briefed on how to be courteous and persuade the respondents to respond to the questionnaire. After completion, 276 questionnaire were retrieved.

### 3.8 Method of Data Analysis

The fully completed copies of the questionnaire were analyzed using descriptive statistics of frequency count, percentage, and inferential statistics of t-test, binomial test and chi square. These were done using the statistical package for social sciences (SPSS).

## 4. Findings

Findings revealed that despite the advantages inherent in the employment of proper medical waste management, some health care facilities in Edo State

still do not fully comply with the dictates of best practices. Specifically, the findings revealed that:

- Some health care facilities still do not segregate their medical waste at the source of generation despite being a major medical waste management practice.
- Some health care facilities still employ incineration method which is now being discouraged in emerging countries in an attempt to reduce the volume of waste.
- The use of water proof floor with good drainage is low in some of the health care facilities.
- In some of the health care facilities, treatment modalities of medical waste are generally poor. It was however established that there should be regular and proper waste management practices in these health care facilities.
- There is no absolute difference between the waste management practices of the medical centres in the urban setting compared to those on the rural setting.

## 5. Conclusion

In the light of the findings of this study, it is the conclusion of the researcher that the immense gains accruable from proper waste management should be fully utilized in compliance with the approved practices in the management of medical waste in the areas generation, collection, segregation, storage, transportation, treatment and disposal of waste thereby averting the possibility of accident and disease outbreak that could result in loss of life and property. Therefore, all health care facilities owe a duty to protect the public and the environment and should have essential responsibilities as regard the waste they produce in a sanitary manner, thereby reducing infection and illness. There should be awareness campaign for proper waste management.

## 6. Recommendations

Consequent upon the findings of the study, the following recommendations were made:

- That health care facilities in Edo State should improve practices in their waste management.
- There should be efficient segregation of different categories of medical waste at the source of generation as it is the key to achieving a sound medical waste management in these health care facilities.

- Medical waste should be effectively stored in water proof floor with good drainage in these health care facilities.
- There should be strict compliance of treatment modalities of medical waste in these healthcare facilities especially disinfection of waste.
- Transportation of medical waste should be secured if the benefits of segregation are to be realized in these health care facilities.
- There should be enabling laws and strict enforcement of these laws.

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## Relationship between Parents' Involvement and Children's Educational Attainment in Maiduguri Metropolis, Borno State, Nigeria

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**Abstract.** The study used a correlation design to determine the relationship between parental involvement and academic achievement of children in Maiduguri Metropolis, Borno Nigeria. The research population was composed of households from 15 electoral constituencies in Maiduguri, five of which were selected at random and represent 20 percent of the total population. In accordance with the Smith (1975) recommendation for smaller samples. A purposive sample technique was used to draw 200 households as sample size. Data were collected using a self-developed questionnaire called Parental Involvement and Educational Achievement (PIEA), which was validated by experts who focused on the validity of the face and content. In addition, a pilot study was conducted in two wards not included in the main sample to evaluate the reliability of the tool. The reliability was measured by Pearson correlation coefficient of 0.05. Both Pearson's moment correlation coefficient and multiple regression methods have been used to analyze the relationship between educational attainment and parental involvement. The results showed a significant correlation between children's educational attainment and parental involvement. It was therefore recommended that school authorities should organize occasional events such as PTA meetings, symposia, cultural days, teacher days and children's days in which parents are invited to discuss home environment variables related to children's educational attainment.

**Keywords:** Parents' Involvement, Parents' Educational Background and Educational Attainment.

### 1. Introduction

The nature and quality of the educational journey and growth of children are shaped by various elements, including governmental policies, community values, peer influences, and the educational institution itself. Nevertheless, two key entities that play a significant role in the upbringing and advancement of children are the family and the school. Additional influences from the broader society are reflected in the opportunities and experiences offered by these institutions.

The formation of a child's home or family environment is clearly an important and complex process, which has been examined mainly from the perspective of parental influence. Family plays an important role in children's educational attainment and school performance. It is widely believed to be the primary determinant of child development. The relationship between parent involvement and children's educational performance is attributed to a wide range of variables, as family influence is not simple (Walburg & Marjoribanks, 1976). It is not only characterised by the relationship between the child and the other household occupants, but is also complicated by a wide range of external influences. It is also considered to be a complex issue, involving social, cultural, economic and personal factors. As the primary socialization agent, the family provides a network of physical, social, and intellectual forces and factors that always influence the education and development of the child.

Parental involvement refers to the degree of parental involvement in the education of their child. It involves both parental commitment and active involvement in the school and the student. Vandergrift and Green (1992) identify two basic elements which together define the concept of parental responsibility. The first is the level of commitment to support the child, which may include actions such as motivation, empathy, comfort and understanding. The second component includes observable parental activities and involvement, such as tangible action taken. This combination of level of commitment and active involvement is what defines a committed parent.

While a strong direct relationship between Socio-Economic Status (SES) and education attainment is acknowledged, researchers claim that motivated families, regardless of their SES, can and do help their children attend higher level of education and improve school performance through several types of involvement. Research documenting the relationship between parental involvement at home and in school and school attainment concludes that differences in the achievement levels of working class and middle-class children is more explained by the nature of child-parent and parent-school interactions than by characteristics of SES (Conway & Houtenwille, 2008).

A review by Henderson & Paik (1997) of sixty-six studies on the subject of parental involvement concluded that the most accurate predictor of students' achievement in school is not income or social status, but the extent to which families are able to create a home environment that supports learning; communicate high and reasonable expectations for their children's achievement; and become involved in their children's schools. Programmes designed to foster linkages between families and schools have been shown to help compensate for limited family resources and effectively alter the traditional relationship between SES and school performance. This was corroborated by Flouri and Buchanman (2004) that parental involvement is a more powerful force than other family background variables such as social class, family size and level of parental education.

Gianzero (2001) reported that family practices of involvement is strongly related to socioeconomic background and there it is more important variable in determining whether and how students' progress and succeed in school. By encouraging their children and assisting on homework, parents can set example for their child, which is powerful and positive. Gianzero (2001) asserted that when schools work together with families to support learning, children tend to succeed

not just in school, but throughout life. When parents are involved in their children's education at home, they do better in schools. Conway & Houtenwille (2008) also found that parental involvement has a strong positive effect on student achievement.

Berthelsen & Walker, (2008), studied the nature of parental involvement in children's education in the early years of school as well as the relationship between parental involvement and children's learning competence. The analyses use Wave 2 data from Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC) for children in the kindergarten cohort, who were recruited at age 4 into the study. At the time of the Wave 2 data collection in 2006, these children were in Year 1 and 2 at school. Research findings on parental involvement revealed that there is variation in levels of parental involvement in children's learning at home and at school and is strongly influenced by family socio-economic status. Parents in families with lower SES often have fewer years of education and, possibly, have had more negative experiences with schools. They may feel unprepared to be involved. Parental involvement may also vary because of differences in ethnic and cultural backgrounds between parents and teachers.

Parental involvement in their children's learning positively affects the child's academic performance (Fan & Chen, 2001). Fennstein & Symons (1999) agreed with this and concluded that it works in both primary and secondary schools. Melhinsh et al., (2001) discovered that parental involvement in children's learning leads to higher academic achievement, greater cognitive competence, greater problem-solving skills, greater school enjoyment, better school attendance and fewer behavioural problems at school. In this context, this study seeks to determine the relationship between parental involvement and students' educational attainment in Maiduguri Metropolis, Borno State, Nigeria

### 1.1 Statement of the Problem

Despite the importance of education in shaping children's futures, many children in Maiduguri, particularly in semi-urban areas, still struggle academically. Research has consistently shown that parental involvement is a key factor in the performance of children. Many parents face barriers to involvement due to inadequate sensitization, limited educational resources and socio-economic constraints. It is therefore necessary to identify the specific aspects of involvement which determine children's educational attainment. The aim of this study is to determine the relationship between parental

involvement and children's educational attainment in Maiduguri Metropolis, Borno State, Nigeria

### 1.2 Objectives of the Study

The Objective of the study is to determine the relationship between parental involvement and children's educational attainment in Maiduguri Metropolis, Borno State, Nigeria

### 1.3 Hypothesis

The following null hypothesis was tested:

There is no significant relationship parental involvement and children's educational attainment in Maiduguri Metropolis, Borno state, Nigeria.

## 2. Literature Review

Several past researches have reported positive correlation between parental involvement and children educational attainment. For example, Erlendsdottir (2010) investigated how parental involvement at Combretum Trust School in Namibia affects the schooling and academic achievement of students. In this case study a qualitative research approach was used. Data was gathered by interviewing parents of seven students at Combretum Trust School in Windhoek. The main findings are that all the parents who were interviewed are highly involved with their children's education. They have high expectations towards their children's education and their future. In addition, they are all quite vocal about their expectations to their children. The parents all recognize the importance of staying involved with their child's education and participate fully.

Barnard (2004) looked at the association between parental involvement in elementary school and student success in high school and concluded that early parental involvement in a child's education promotes positive long-term effects. Conversely, Bronstein et al.. (2005) found a lack of guidance by parents of fifth grade students to be related to poor academic achievement. Hill & Tyson (2009) reported various types of parental involvement to be positively associated with academic achievement through a meta-analysis of 50 studies, with the exception of parental help with homework. Fan & Chen (2001) found that parental expectations for their child's educational achievement have the strongest relationship with students' academic achievement, while home supervision has the weakest relationship. The relationship between parent involvement and educational achievement was also found to be stronger

for global achievement indicators such as cumulative GPA rather than for subject-specific indicators (Pete & Neilson, 2009).

According to Hilton (1998) cited by Atta et al. (2014) "Parent participation has positive influence on students' educational attainments is so naturally appealing that it has considered an important ingredient for the remedy of many problems in education. A meta-analysis was conducted to produce the quantitative literature about the relationship between parental involvement and students' educational attainments, the findings expose meaningful relationship between parental involvement and educational attainments. Through moderator analysis, it was revealed that parental expectation for children's academic achievement has the strongest relationship with student's educational attainments. Furthermore, the effect of parental involvement (in terms of providing a home learning environment) on achievement and cognitive development has been explored in recent studies of English pre scholars (Melhuish et al., 2001). Sylva et al. (1999) ran a longitudinal study (The Effective Provision of Pre School Education Project, EPPE) to assess the attainment and development of children between the ages 3 to 7 years. More than three thousand children were recruited to the sample which investigated provision in more than 100 centers. A wide range of methods were used to explore the effects of provision on children's attainment and adjustment. The idea of a 'home learning environment' (HLE) was devised to describe a range of learning related provision in the home as reported by parents. HLE included reading, library visits, playing with letters and numbers, painting and drawing, teaching (through play) the letters of the alphabet, playing with numbers and shapes, teaching nursery rhymes and singing.

Atta et al., (2014) carried out a research work that focused on the "comparative study of parental involvement and private tuition regarding educational attainments of students at secondary school level". A sample of 80 students of 10th class from ten different secondary schools was taken. To analyze the results t-test was used. In this comparison it was conducted that parental involvement turn out significant effect on student educational attainments as compared to private tuition. On the bases of results researcher has analyzed that when parents involve in the studies of their children then their educational attainments are high as compared to private tuition.

Nyarko (2007), conducted a research in Ghana to investigate, (1) factors that predict parental involvement, (2) the relationship between parental home and school involvement and the educational

achievement of adolescents, (3) the relationship between parental authoritativeness and the educational achievement of adolescent students, (4) parental involvement serving as a mediator between their authoritativeness and the educational achievement of the students, and (5) whether parental involvement decreases as children reach adolescence. Two hundred and thirty-nine (239) students from diverse socio-economic backgrounds between the ages of 15 and 20 as well as their teachers took part in the study. The results indicated a positive and significant correlation between mothers and fathers' home involvement and the academic achievement of the students. Mothers' school involvement, but not the fathers' was also positively and significantly correlated with the educational achievement of the students.

However, with respect to stepparents, grandparents, and other guardians, their home and school involvement activities were found to be non-significant to the academic achievement of the students. Mothers' occupational status emerged as the best predictor of mothers' home involvement followed by nature of school, mothers' marital status, and program of study; whereas nature of school was the best predictor of mothers' school involvement, followed by mothers' occupational status, and program of study. Nature of school was the only factor that predicted fathers' home involvement. Furthermore, mothers and fathers' authoritativeness were positively correlated with the students' educational achievement whereas the authoritativeness of stepparents, grandparents, and other guardians were not significantly correlated with the school achievement of the students. Finally, parental involvement played a mediation role between their authoritativeness and the educational achievement of the students. The findings highlight the importance of parental involvement in adolescents' school success.

Moreover, Olatoye & Agbatogun (2009) investigated parental involvement as a correlate of pupils' achievement in mathematics and science in Ogun State, Nigeria. The descriptive survey research design was employed to carry out this study. Four hundred and eighty (480) pupils from thirty primary schools in Ogun State, Nigeria were randomly selected for this study. The results showed that parental involvement is

an important predictor of mathematics and science achievement. There exists a significant difference in the parental involvement of public and private primary school pupils ( $t = -9.68, p < 0.05$ ). Private school pupils enjoy more parental involvement than their counterparts in the public schools.

### 3. Methodology

A correlation research design was used to determine the relationship between parental involvement and children's educational attainment in Maiduguri Metropolis, Borno State, Nigeria. The population of the study consisted of households from 15 electoral districts in Maiduguri, and a simple random sampling technique was used to select 20 per district, resulting in the sampling of 5 districts. In line with the Smith (1975) recommendation for small groups, a total of 200 households were selected using purposive sampling technique. The primary data collection tool was a self-designed questionnaire entitled Parental Involvement and Educational Achievement (PIEA). This tool has been subjected to validation by experts, which focused on both the face and the content validity of the tool. In addition, a pilot study was carried out in two wards which were not part of the main sample to assess the reliability of the data. The reliability of the tool was determined by using Pearson's correlation coefficient of 0.05. The data obtained were analyzed by Pearson's correlation coefficient and multiple regression analysis. The Pearson correlation coefficient is recognized for its efficiency in quantifying the association of continuous variables and for providing insight into the strength and direction of those relationships.

### 4. Results

The hypothesis was tested using two statistical tools. These are: Multiple regression and correlation coefficient. Each hypothesis was tested at the significant level 0.05.

The hypothesis which states: *There is no Significant Relationship between Parental' Involvement and Children's Educational Attainment was tested as in the following:*

**Table 1:** Regression Analysis on Parental Involvement and Children’s Educational Attainment

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate	Change Statistics				
					R Change	Square F Change	df1	df2	Sig. F Change
1	.635 <sup>a</sup>	.403	.400	4.856	.403	133.828	1	198	.000

Table 1 above presented model summary on parental involvement and children’s educational attainment. The results indicated parental involvement accounted for 40% of the total variance in the children’s educational attainment (R<sup>2</sup> .403, p value 0.01). This showed that 40% of the variation in children educational attainment was determined and predicted by the parental involvement. The 40% variance is significantly greater enough to predict educational attainment by the children. The p value was 0.05 level of significance. Thus, the null hypothesis was rejected at <0.05 level of significance.

**Table 2:** Pearson Correlation on Parental Involvement and Children’s Educational Attainment

		Parental Involvement	Children’s Educational Attainment
Parental Involvement	Pearson Correlation	1	.635**
	Sig. (2-tailed)		.000
	N	200	200
Children’s Educational Attainment	Pearson Correlation	.635**	1
	Sig. (2-tailed)	.000	
	N	200	200

Table 2 presented Pearson correlation on parental involvement and the children’s educational attainment. The table showed that there was significant correlation between parental involvement and educational attainment of school age children in the study area. The correlation was significant at <0.05 level of significance. This confirmed the earlier rejection of the null hypothesis.

**5. Discussion**

The findings indicated strong relationship between parents’ involvement and children educational attainment at <0.05 level of significance. This means that children whose parents have time to participate in their children school activities tend to attain higher education than their counterpart. This is in line with the findings by Fasina (2011) who revealed that there is relationship between parental involvement and early childhood education. Henderson & Paik (1997) observed that the most accurate predictor of students’ achievement in school is not income or social status, but the extent to which families are able to create a home environment that supports learning; communicate high and reasonable expectations for their children’s achievement; and become involved in their children’s schools. Flouri and Buchanman (2004)

asserted that parental involvement is a more powerful force than other family background variables such as social class, family size and level of parental education. Gianzero (2001) reported that family practices of involvement is strongly related to socioeconomic background and there it is more important variable in determining whether and how students’ progress and succeed in school. Gianzero (2001) asserted that when schools work together with families to support learning, children tend to succeed not just in school, but throughout life. When parents are involved in their children’s education at home, they do better in schools.

Similarly, Conway & Houtenwille (2008) also found that parental involvement has a strong positive effect on student achievement. Berthelsen & Walker, (2008) found that there is variation in levels of parental involvement in children’s learning at home and at school and is strongly influenced by family socioeconomic status. Parents in families with lower SES often have fewer years of education and, possibly, have had more negative experiences with schools. They may feel unprepared to be involved. Parental involvement may also vary because of differences in ethnic and cultural backgrounds between parents and teachers. Melhinsh et al., (2001) discovered that

parental involvement in children's learning leads to higher academic achievement, greater cognitive competence, greater problem-solving skills, greater school enjoyment, better school attendance and fewer behavioural problems at school. Erlendsdottir (2010) in his study reported that all the parents who were interviewed are highly involved with their children's education. They have high expectations towards their children's education and their future. In addition, they are all quite vocal about their expectations to their children. The parents all recognize the importance of staying involved with their child's education and participate fully. Barnard (2004) concluded that early parental involvement in a child's education promotes positive long-term effects. Hill & Tyson (2009) reported various types of parental involvement to be positively associated with academic achievement through a meta-analysis of 50 studies, with the exception of parental help with homework.

In the same vein, Fan & Chen (2001) found that parental expectations for their child's educational achievement have the strongest relationship with students' academic achievement, while home supervision has the weakest relationship. The relationship between parent involvement and educational achievement was also found to be stronger for global achievement indicators such as cumulative GPA rather than for subject-specific indicators. Atta et al. (2014) asserted parent participation has positive influence on students' educational attainments is so naturally appealing that it has considered an important ingredient for the remedy of many problems in education. Nyarko (2007) found a positive and significant correlation between mothers and fathers' home involvement and the academic achievement of the students. Mothers' school involvement, but not the fathers' was also positively and significantly correlated with the educational achievement of the students. Olatoye & Agbatogun (2009) found that parental involvement is an important predictor of mathematics and science achievement. There exists a significant difference in the parental involvement of public and private primary school pupils. Private school pupils enjoy more parental involvement than their counterparts in the public schools.

## 6. Conclusion

Based on the findings of the study, it was concluded that parental involvement and education are important determinants of children's educational attainment. Children of supportive parents tend to achieve higher educational levels than their peers.

## 7. Recommendations

Based on the findings of the study, the following recommendations were made:

- School authorities should strengthen Parents-Teachers-Association (PTA) and should encourage stakeholders to allow parents benefits from sensitization packages issued to educate them on the influence of their relationship and behaviour toward the educational attainment of their children.
- National Orientation Agency should embark on sensitization and orientation of parents on the importance of their education to the success of their children.
- School authorities should organize occasional events such as PTA, Symposium, cultural day, teachers' day and children's day where parents are engaged in discussion about home environmental variables in relation to the children's educational attainment.

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## Digital Pattern Business Models as Sustainable Practices and Challenges faced by Student Fashion Entrepreneurs in Lagos State, Nigeria

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**Abstract.** The study was on digital pattern business models as sustainable practices and challenges faced by student fashion entrepreneurs in Lagos state Nigeria was conducted among 200 fashion design students from Yaba College of Technology, Yaba, Lagos. Two (2) research questions and two (2) hypotheses guided the study. It was a descriptive survey, the instrument for the data collection was a structured questionnaire containing 30 questions which was further subjected to face validity by two experts. The data collected was analyzed using mean, and Chi-square. The result revealed 192 (96) respondents answered yes, pattern cutting and marking has been digitized, 152 (76) answered yes, they have digitized their pattern production in case of pandemic. 194 (97) answered yes, there are digital business models for pattern cutters and markers. Majority answered yes, there is freemium, training and workshop, software, e-commerce, crowd funding etcetera. 197 (98.5) answered yes, there was lack of internet service. 160 (80) answered yes, soft and hardware were not available, and affordable. 156 (78) answered yes, lack of qualified technologists was a challenge. 128 (64) there was irregular power supply. 125 (62.5) answered yes, traditional model pattern cutting and marking were preferable. 196 (98) answered yes, this is the digital era. In conclusion, for digital business practice model to be a sustainable practice, the following were recommended. Production of soft and hardware for pattern cutting and marking should be made home grown, as well as good internet provider and constant electricity.

**Keywords:** Challenges, Digital Business Models, Entrepreneur, Pattern Cutters, Sustainable Practice

### 1. Introduction

Business Models are core logic of firms that creates and deliver value for its customers to give value for itself. It is a holistic perspective on the overall set up of the business and includes every process along the value chain. Involving changes in the value proposition, value delivery and value capture of the firm (Carol, 2025, Alex, 2025, Brian, 2024, Mathias, Gregersen and Jason, 2022, Lutz and Robin, 2020). However, digital business models have been understood to be models in which some or all what would be physical in a traditional organization has been digitized. (Jugindar, Kartar and Goh, 2023, Abu Saddat, Pammi, Al-Hussein and Tracy, 2021 Sascha, Carolin, Norbert, Friedrich, 2019). With the development and advancement in internet pattern makers and designers can explore various benefits offered by modern technologies such as E-Commerce strategies for Economics development and supporting social environment (Achla, 2025, Nzei 2022, Clara 2019). Pattern making is a vocational skill in garment construction that prepares students in entrepreneurship it serves, as a blueprint for clothing construction, transforming 2D sketches in 3D designs. Sustainable practices are business innovation and it is the process of incorporating element of sustainable development such as environmental, social and financial consideration into a business system through research and development. It is also a method that takes into account equity and environmental integrity (Sharifah, Mahyuddin, Nornazira, Nur, Irina, 2022, Noorzana, Chuzairy and Adibah, 2022). The traditional pattern cutter and marker production model has been increasingly unable to meet the consumer diversified and personalized needs, therefore the realization of the automated patterns production and distribution in very crucial especially in this technological age. The

problem statement is that most student pattern cutters and markers entrepreneurs are not aware of digitalization as a business model practice that can enhance performance and sustainability increasing competitiveness by providing valuable consumers, increased online visibility and generate revenue even during international crisis like COVID-19 pandemic. Moreover, pattern cutters and markers are not aware that there is various digital software available to enhance their business. However, student pattern cutters and markers entrepreneurs cannot adopt these models due to high cost of the soft and hardware. Other challenges include inadequate internet infrastructure, cybercrime, inadequate power supply, lack of qualified technologist to handle the soft and hardware. Pattern cutters and markets are unable to adapt to the changes in this era of digitalization in Lagos State, Nigeria.

There are several business model softwares as service (SAAS) for pattern cutting and marking. These include software such as Browzwear, Opitex, PAD system, Tukatech, Lectra, Gerber, Accumark, Adobe Illustrator, Corel Draw, Procreate, 3D rendering, GLO 3D. Browzwear is utilized for pattern cutting and marking and offers a superior fit with full pattern templates with accuracy. (Ahshan, 2024, Mazharul, 2023, Shuo and Xiaogu, 2022, Abu Sadat, Pammi, Al Hussein, Tracy, 2021, Adrian, Harwood, Simeon, 2020). Procreate software construct pattern, 3D rendering for actual physical production creation, Glo 3D is for visualization while Swatch book or Swatch pattern book is a library for patterns. Designers can explore patterns business models in a variety of ways such as subscription business model using this software. (Theren, 2023, Regesh, Nikita, Nikhil and Neha 2023, Pontus and Paavo, 2023). In this model pattern cutters and markers print volume proposition for a periodic recurring fee. (Ughade, 2024). The freemium model once popular for games, and many online services such as music, magazine, social networks and cloud services, is a combination of “free” and “premium”. A type of business model that offers a product or services to users at no cost and charges a premium for supplement or advanced features. (Troy, 2024, Yanying, Junfeng, Yamin, Ruochen and Peiging, 2024, Juho, Nicola and Jonna, 2020, Saso, Lidija and Martin, 2019). Market place model is a digital platform that acts as a market place where pattern cutters and markers can sell or share their digital pattern on commission from all website purchases. (Yaroslav, 2024, Jose, Abraham and Emiro, 2023, Maximillan 2020, Kawa and Walesiak, 2019). The custom design services model offers bespoke digital pattern cutting services to other designers, fashion brands or individual clients. (Jose,

Abraham and Emiro, 2023). There is the collaborative model in which collaborative platforms are used, pattern cutters and markers collaborate, share and co-create patterns. Revenue can be generated through membership fees, transaction fees or advertising (Frank, 2024, Benjamin, 2023, Marshall, 2023). In digital training and workshop model, expertise can be monetized by offering online courses, workshops and webinars on digital pattern cutting and marking using different platforms. (Manfred, 2023, Hafiz 2018). Licensing and Royalties model offers the opportunities to license their digital patterns to brands or their designs for a fee or a percentage of sales. (Will, 2024, Philip, 2024, Brian, 2020). Integration with E-Commerce platforms is another model that offers pattern cutters and markers an e-commerce strategy connecting them to marketing tools, sales, accounting or payment gateways and accurate data integration are managed accurately (Autumn, 2024, Teren, 2022, Brent, 2021). Crowd sourcing and crowd funding business model used to fund new pattern collections. Backers got early or exclusive access to digital patterns in exchange for their support. It offers the potential to transform small and medium sized enterprises with access to capital for research and development (R&D), hire skilled personnel and acquire the necessary resources to innovate. (Tahir, 2024, Wojciech, 2024). On demand manufacturing model works by some pattern cutters and markers integrating digital pattern cutting with on demand manufacturing allowing for small batch or custom pattern production (Ryan, 2024, Ronan, 2022, Brian, 2021). These business models would help enhance the social, economic and health of the pattern makers and their consumers in case of another international crisis like the COVID-19 pandemic.

However, the rapid pace of digital business model innovation has also introduced new barriers and challenges to students’ pattern cutters and markers in Lagos state, such as inadequate internet infrastructure also, adaptation of digital business models for pattern cutters and markers is still at its infancy making it to be slow. Furthermore, unstable power supply has been an issue for business owners (Ademola, 2023). There is high cost of hardware and software application and website related issues such as privacy and security. E-commerce has faced different kinds of security issues, ranging from hacking, fraud to virus attacks making customers reluctant to share personal information online. (Muhammed and Yusuf 2023, Sadiq and Hack - Polay, Fuller and Rahnan, 2022, Jugindar, Kartar and Goh, 2023, Bernard, 2023). Other barriers to users include lack of funding, outdated technologies, and business owners who cannot keep with the pace or lack interest working with obscure technology. (Christoph,

2023). Qualified talents are lacking, (Jugindar, Kartar and Goh, 2023, Bernard, 2023). Lack Of knowledge of new technology and updated new technology is making pattern cutters and markets skepticism in engaging in digital business model initiatives. There are also insufficient funds or loans and when they are available, they come with high interest. Moreover, the business owner has governance challenges which come from governance, better communication efficient coordination and cumulative vision for the business (Shettima and Sharms, 2020).

### 1.1 Objectives of the Study

The following objectives were formulated:

- To examine digital pattern business models as sustainable practices for student fashion entrepreneurs in Lagos State, Nigeria.
- To examine the challenges of digital pattern business model practices faced by student fashion entrepreneurs in Lagos State, Nigeria.

### 1.2 Research Questions

- What are the digital pattern business models as sustainable practices for student fashion entrepreneurs in Lagos State, Nigeria?
- What are the challenges of digital pattern business models practices faced by fashion entrepreneurs in Lagos State, Nigeria.

### 1.3 Hypotheses of the Study

**Hypothesis 1:** There is no significant of digital pattern business model practices for student fashion entrepreneurs.

**Hypothesis 2:** There is no significant challenge of digital pattern business models practices for student fashion entrepreneurs.

## 2. Methodology

**Design of the Study:** descriptive survey research design was adopted to enable the respondents go

through the questionnaire to give their personal opinions about the problem being investigated.

**Area of the Study:** The area of the study was Lagos state, Yaba College of technology, Yaba, Lagos,

**Population of the Study:** The population of the study constituted 200 respondents of fashion and design department, Yaba college of technology.

**Instruments for Data Collection:** A structured questionnaire was used for data collection titled: Digital pattern business models as sustainable practices and challenges faced by student fashion entrepreneurs in Lagos State, Nigeria. The first part contained demographic information of respondents while the second part with two sections containing 30 question items for responses from respondents based on specific objectives. Table I had 16 questions on digital pattern business models, table II had 14 questions on challenges of digital pattern business models practices for student fashion entrepreneurs.

**Validity and Reliability of the Instrument:** The instrument was given first validity by two fashion design lecturers and a lecturer from the department of statistics. Their constructive corrections were affected and test retest was used to determine the reliability and consistency of the instrument. This shows that the instrument was valid and reliable.

**Method of Data Collection:** The questionnaire was administered to 200 hundred respondents with the help of 2 research assistants from the department. All were retrieved.

## 3. Method of Data Analysis

Data were analyzed with mean and chi- square from the Friedman's test.

**Hypothesis 1:** There are no significant digital pattern business model as sustainable practices for student fashion entrepreneurs.

**Table 1: Digital Pattern Business Models as Sustainable Practices for Fashion Entrepreneurs**

S/N	Variable (N=200)	Yes (%)	No (%)	Mean Rank	$\chi^2$ (p-value)
1	As a student fashion designer, I use patterns in my business.	199 (99.5)	1 (0.5)	7.65	195.502* (<0.001)
2	Pattern cutting and marking has been digitized	192 (96)	8 (4)	7.93	
3	I have digitized my pattern production in case of a pandemic	152 (76)	48 (24)	9.53	
4	Digitization of patterns enhances business performance for fashion entrepreneurs	190 (95)	10 (5)	8.01	
5	There are digital business models to enhance pattern cutting and marking for sustainability.	194 (97)	6 (3)	7.85	
6	One of these business models is "Freemium" model	164 (82)	36 (18)	9.05	
7	There is "marketplace" to enhance pattern business performance for student fashion entrepreneurs	170 (85)	30 (15)	8.81	
8	Custom pattern cutting and marking design model practice is for bespoke fashion	159 (79.5)	41 (20.5)	9.25	
9	There is subscription based-content pattern model practice for fashion entrepreneurs	165 (82.5)	35 (17.5)	9.01	
10	Also, collaborative digital pattern model practice to enhance business for fashion entrepreneurs	178 (89)	22 (11)	8.49	
11	Training and workshop model on digital pattern business to enhance fashion entrepreneurs	198 (99)	2 (1)	7.69	
12	There is licensing and royalties' digital model for pattern cutters and markers for entrepreneur	165 (82.5)	35 (17.5)	9.01	
13	Pattern cutters and markers can use on-demand model for digital business practices.	171 (85.5)	29 (14.5)	8.77	
14	E-Commerce strategy is another pattern business practice model for sustainability	184 (92)	16 (8)	8.25	
15	Crowd sourcing and funding is a business practice model to use by student fashion entrepreneurs	172 (86)	28 (14)	8.73	
16	There are pattern cutting and marking software to be used as business models practices	191 (95.5)	9 (4.5)	7.97	

\* Significant at 1% level

The Chi-square value ( $\chi^2 = 195.502$ ,  $p < 0.001$ ) from the Friedman's test indicates that there are significant digital pattern business model as sustainable practices for fashion entrepreneurs ( $p < 0.05$ ). The table shows that pattern cutting and marking has been digitized, and the digitization enhances business performance. There are digital business models to enhance pattern cutting and marking production which include "Freemium business", subscription based-content, "marketplace" model, collaborative digital model, training and workshop digital business model, licensing and royalties' digital model, on-demand model, crowd sourcing and funding, E-Commerce strategy, pattern cutting and marking software model.

**Hypothesis 2:** There is no significant challenge of digital pattern business models practices faced by student fashion entrepreneurs.

**Table 2: Challenges of Digital Pattern Business Models Practices for Fashion Entrepreneurs.**

S/N	Variable (N=200)	Yes (%)	No (%)	Mean Rank	$\chi^2$ (p-value)
1	As a pattern cutter and marker internet service is a challenge for student fashion entrepreneur	197 (98.5)	3 (1.5)	6.45	424.451* (<0.001)
2	This is the digital era for pattern businesses	196 (98)	4 (2)	6.49	
3	Pattern cutters and markers are unable to adopt digital business models	183 (91.5)	17 (8.5)	6.94	
4	Software and hardware are not affordable for pattern entrepreneurs	160 (80)	40 (20)	7.75	
5	Qualified technologists to handle these devices are lacking for pattern cutters and markers	156 (78)	44 (22)	7.89	
6	Irregular power supply is a challenge for student fashion entrepreneurs	128 (64)	72 (36)	8.87	
7	Soft and hardware used to deliver pattern business services are not produced locally	114 (57)	86 (43)	9.36	
8	Digital pattern cutting and marking practices which would have helped in the confines of existing platforms is a challenge to fashion entrepreneurs	191 (95.5)	9 (4.5)	6.66	
9	Exchange of patterns in the digital world is a challenge to fashion entrepreneur	169 (84.5)	31 (15.5)	7.43	
10	Digital student pattern cutters and markers are unable to innovate	192 (96)	8 (4)	6.63	
11	Pattern cutters and markers are unable to integrate with the economic and social environment of the consumers	187 (93.5)	13 (6.5)	6.80	
12	Digital pattern business model can be a challenge to alleviate poverty even during international crisis for fashion entrepreneurs	151 (75.5)	49 (24.5)	8.06	
13	Pattern cutters and markers are unable to streamline design production for the real world	190 (95)	10 (5)	6.70	
14	The traditional business model practices by pattern cutters and markers are preferred by fashion entrepreneurs	125 (62.5)	75 (37.5)	8.97	

\* Significant at 1% level

The Chi-square value ( $\chi^2 = 424.451$ ,  $p < 0.001$ ) from the Friedman’s test implies that there are significant Challenge of digital business pattern models practices for fashion entrepreneur ( $p < 0.05$ ). Some of these challenges include, lack of access to internet facility, lack of qualified personnel to handle the devices, soft and hardware for pattern cutting and marking are not affordable, and epileptic power supply.

#### 4. Discussion of Findings

Table I was on digital pattern business models as sustainable practices for entrepreneurs, the table revealed that 199(99.5%) answered yes, as a student fashion designer, he or she uses patterns in his or her business, 1 (0.5%) answered no (Carol, 2025, Alex, 2025). 192 (96%) answered yes, pattern cutting and marking has been digitized 8 (4%) answered no (Brian 2024, Dragana and Sasa, 2023, Christoph, 2023, Maximillian, 2020, Sascha, Carolin, Norbert and Friedrich, 2019). 152 (76%) answered yes, they have digitized their pattern production in case of a pandemic, 48 (24%) answered no (Brian, 2025, Irina, 2022). 190 (95%) answered yes, digitization of pattern

enhances business performance for fashion entrepreneurs, 10 (5%) answered no. (Achala 2025, Yaroslov, 2024, Maximilian, 2020). 194 (97%) answered yes, there are digital business models to enhance pattern cutting and marking production for sustainability 6 (3%) answered no (Theren, 2023, Mazharul, 2023, Adrian, Harwood, James and Simeon, 2020). 164 (82) answered yes, one of this business models are “Freemium” for fashion entrepreneurs. 36(18%) answered no (Troy, 2024, Yanying, Junfeng, Yamin, Ruochoen and Peiging 2024, Juho, Nicolai and Jonna, 2020). 170 (85%) answered yes, there is marketplace to enhance pattern business performance for student fashion entrepreneurs, 30(15%) (Jose, Abraham and Emiro, 2023, Maximillian, 2020, Kawa and Walesiak, 2019). 159 (79.5%) answered yes custom pattern cutting and marking model practices is for bespoke fashion, 41 (20.5%) answered no (Jose, Abraham and Emiro, 2023). 165 (82.5%) answered yes, there is a subscription based-content design model practice for fashion entrepreneurs, 35(17.5%) answered no (Ughade, 2024, Theren, 2023, Regesh, Nikita, Nikhil and Neha, 2023, Pontus and Paavo, 2021). 128 (89%)

answered yes, there is a collaborative digital model practice to enhance business for fashion entrepreneurs, 22(11%) answered no. (Frank 2024, Marshall, 2023). 198 (99%) answered yes, there is training and workshop model on digital pattern business to enhance fashion entrepreneurs, 2(1%) answered no (Manfred, 2023, Hafiz, 2018). 165 (82.5%) answered yes, there is licensing and royalties' digital model for entrepreneurs, 35 (12.5%) answered no (Will, 2024, Philip, 2024, Brian, 2020). 171 (85.5%) answered yes, pattern cutters and markets use-on demand model for digital business practices, 29 (14.5%) answered no (Ryan, 2024, Ronan, 2022, Brian, 2021). 184 (92%) answered yes, E-commerce strategy is another pattern business model for sustainability, 16(8%) answered no (Autumn, 2024, Teren 2022, Brent 2021). 172 (86%) answered yes, crowd sourcing and funding is a business practice model used for student fashion entrepreneurs, 28 (14%) answered no (Tahir, 2024, Wojciech 2024). 191 (95.5%) answered yes, there are pattern cutting and marking software to be used as business model practices for fashion entrepreneurs, 9 (4.5%) answered no. (Mazharul, 2023, Abu Sadat, Pammi, Al-Hussein, Tracy, 2022, Adrian, Harwood and Simeon, 2020).

Table II was on challenges of digital pattern business model practices for student fashion entrepreneurs, the table reveals that out of 200 respondents 197(98.5%) answered yes, having internet service is a challenge for fashion entrepreneurs, 3(1.5%) answered no (Ademola, 2023). 196 (98%) answered yes, this is the digital era for pattern businesses 4 (2%) answered no (Jugindar, Kartar, Goh, 2023, Abu Sadat, Pammi, Al Hussein and Tracy, 2022, Maximillan, 2020, Sascha, Carolin, Norbet and Friedrich, 2019). 183 (91.5%) answered yes, pattern cutters and markers are unable to adapt to digital business models. 17 (8.5%) answered no (Ademola, 2023). 160 (80%) answered yes, soft and hardware are not affordable for pattern entrepreneurs. (Muhammed and Yusuff, 2023, Jugindar, Kartar and Goh, 2023, Bernard, 2023, Sadiq, Hack-Polay, Fuller and Rahnan, 2022). 156 (78%) answered yes qualified technologists to handle these devices are lacking for pattern cutters and markers, 44 (22%) answered no (Jugindar, Kartar and Goh, 2023, Bernard, 2023). 128 (64%) answered yes, irregular power supply is a challenge for student fashion entrepreneurs, 72(36%) answered no (Ademola, 2023). 114(57%) answered yes, soft and hard ware used to deliver pattern business services are not produced locally. 86(43) answered no (Ademola, 2023). 191 (95.5%) answered yes, digital pattern cutting and marking practices which would have helped in the confines of existing platforms is a challenge to fashion entrepreneurs. 9(4.5%) answered

no. (Christoph, 2023, Ademola 2023, Shettima and Sharms, 2020). 169 (84.5%) answered yes, exchange of patterns in the digital world is a challenge to fashion entrepreneurs, 31 (15.5%) answered no (Muhammed and Yusuff, 2023, Ademola, 2023, Bernard, 2023). 192 (96%) answered yes, digital student pattern cutters and markers are unable to innovate, 8 (4%) answered no, (Ademola, 2023). 187 (95.5%) answered yes, pattern cutters and markers are unable to integrate with the economic and social environment of the consumers, 13 (6.5%) answered no (Christoph, 2023). 151 (75.5%) answered yes, using digital pattern business model can be a challenge to alleviate poverty even during international crisis to fashion entrepreneurs. 49(24.5%) answered no (Christoph 2023, Shettima and Sharms, 2020). 190 (95%) answered yes, pattern cutters and markers are unable to streamline design production for the real world, 10 (5%) answered no (Ademola, 2023, Christoph 2023, Muhammed and Yusuff, 2023, Sadiq, Hack-Polay, Fuller and Rahnan, 2022, Jugindar, Kartar and Goh, 2023, Bernard, 2023, Shettima and Sharms, 2020). 125 (62.5%) answered yes, traditional business model practices for pattern cutting and marking are preferable by fashion entrepreneurs 75 (37.5%) answered no, (Ademola 2023, Muhammed and Yusuff, 2023, Jugindar, Kartar and Goh, 2023, Bernard, 2023, Christoph 2023s).

## 5. Conclusion

Majority student pattern cutters and markers are aware of digitization of pattern cutting and marking which has helped as a sustainable practice to enhance business performances. However, they face a lot of challenges in making it a reality, such as high cost of soft and hardware, qualified technologists are lacking, irregular power supply, lack of good internet providers, they are unable to integrate the economic environment with social environment as such are unable to promote poverty alleviation, making majority to prefer traditional model of pattern cutting and marking to the digital business model.

## 6. Recommendations

In view of the findings:

- Lagos state government to provide adequate infrastructure for student pattern cutters and markers.
- Student pattern cutters and markers should make themselves acquainted with modern business practices.
- Production of soft and hardware for student pattern cutters and markers should be made

home grown by the government to make it available and accessible.

- There should be good internet providers by operators for fashion student entrepreneurs
- Provision of regular and constant power supply is not a luxury but mandatory for fashion student entrepreneurs.
- Funds in form of loans and grants should be made accessible to pattern cutters and markers with no interests.

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