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Editorial

This edition of *NIU Journal of Educational Research* touches on Emotional Regulation, Peer Influence, Parenting Styles, Social Support, Artificial Intelligence in Mechanical Technology, Teachers' Motivation and Job Effectiveness as well as Sleep Quality and Athletic Performance.

One of the papers, in this issue, provides important insights for educators, policymakers, and parents, particularly in socio-economically disadvantaged regions, and underscores the need for a holistic approach to addressing the factors that contribute to academic achievement in secondary education.

Another paper also reveals that artificial intelligence in mechanical technology improves learning experience and learning outcome, increases productivity, improves design accuracy, reduces production labour cost, reduces material wastage, saves time and improves environmental health. The paper therefore, recommends that artificial intelligence tools should be incorporated into mechanical technology delivery systems in institutions of learning where mechanical technology is offered and in mechanical technology industries for sustainable development under economic uncertainties in Edo State, Nigeria.

On the whole, this edition 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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Emotional Regulation, Peer Influence, Parenting Styles, Social Support, and Socio-Economic Status on Academic Performance among In-School Adolescents in Osogbo, Nigeria: A Structural Equation Modelling Approach

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Abstract. Academic performance is a critical determinant of student success and overall educational outcomes. Understanding the factors that influence academic achievement is essential for developing effective strategies to improve educational practices and support student success. This study investigated the influence of emotional regulation, peer influence, parenting styles, social support, and socio-economic status on academic performance among secondary school students in Osogbo, Osun State, Nigeria. Using a quantitative research design, the study involved 420 students from different academic streams (Science, Arts, and Commercial) in Senior Secondary 2 (SS2). A multi-stage sampling procedure was employed to ensure a diverse and representative sample. Data were collected through self-administered questionnaires, and academic performance data were obtained from school records. Structural Equation Modelling (SEM) was used to analyse the relationships between these factors and academic performance. The results indicated a significant predictive relationship between emotional regulation, peer influence, parenting styles, social support, socio-economic status, and academic performance. Specifically, emotional regulation had a moderate positive relationship with academic performance ($\beta = 0.45$, $p = 0.001$), while peer influence also showed a significant positive effect ($\beta = 0.32$, $p = 0.002$). Parenting styles and social support were both found to significantly influence academic performance, with estimates of $\beta = 0.28$ ($p = 0.002$) and $\beta = 0.40$ ($p = 0.001$), respectively. Additionally, socio-economic status (SES) was a significant predictor of academic success, with a positive relationship ($\beta = 0.35$, $p = 0.000$). Furthermore, the study found a significant interaction between these factors, which suggests that academic performance cannot be attributed to one factor alone but is instead shaped by the combined effects of emotional

regulation, peer influence, parenting, social support, and socio-economic factors. The findings highlight the importance of considering the complex interplay of these variables in promoting academic success. This study provides important insights for educators, policymakers, and parents, particularly in socio-economically disadvantaged regions, and underscores the need for a holistic approach to addressing the factors that contribute to academic achievement in secondary education.

Keywords: Emotional Regulation, Peer Influence, Parenting Styles, Social Support, Academic Performance

1. Introduction

Globally, academic performance remains a fundamental aspect of educational research due to its critical role in shaping the future of individuals and societies. Academic success is associated with better economic opportunities, improved social mobility, and overall well-being (OECD, 2020). However, the factors that contribute to academic performance are multifaceted and vary significantly across different contexts. In developed countries, educational achievement is often tied to individual cognitive ability, access to resources, and quality of teaching. In contrast, in developing regions, including sub-Saharan Africa, external factors such as socio-economic conditions, mental health, and social support structures play a more pronounced role in shaping educational outcomes (UNESCO, 2019). Thus, a broader understanding of these contextual factors is essential for addressing the disparities in academic performance seen in different regions.

In Africa, the challenge of improving educational outcomes is compounded by socio-economic instability, inadequate infrastructure, and the rapid growth of the student population. According to the African Union (2021), despite progress in education, many African nations still struggle with high dropout rates and low levels of academic achievement. The educational landscape is often marked by large class sizes, poorly resourced schools, and limited access to mental health services, which in turn negatively affect students' academic performance (Akinyemi & Aremu, 2018). In particular, psychological factors, such as emotional regulation and peer influence, have emerged as crucial determinants of academic success, as they directly affect students' ability to concentrate, engage in learning, and manage academic stress (Gross, 2015; Parker & Salovey, 2020). Therefore, understanding how these factors intersect to influence educational outcomes in African contexts is key to developing effective intervention strategies.

Nigeria, as the most populous country in Africa, faces its own set of educational challenges. The country's education system is characterised by significant disparities between urban and rural areas, with rural areas often facing more severe educational disadvantages (Omopo, 2024). The academic performance of students in Nigeria is frequently affected by issues such as overcrowded classrooms, poor teaching quality, and limited access to educational resources, including textbooks and technology (Fehintola & Akinyemi, 2022). Moreover, socio-economic inequalities contribute to a large gap in educational opportunities. In regions such as Osun State, where Osogbo is located, the disparities in educational access are particularly stark, despite the state's urban status. These disparities create a complex environment in which students' academic success is influenced not only by individual ability but also by external psychological, social, and environmental factors.

In Osogbo, the capital of Osun State, socio-economic and psychological factors have a significant influence on the academic performance of students. The city, though urban, struggles with issues like high poverty rates, limited mental health support, and familial stress, which directly impact students' well-being and academic success (Akinyemi et al., 2018). Peer influence, as well as parenting styles, plays a major role in shaping students' educational trajectories. Research has shown that adolescents in urban settings like Osogbo are heavily influenced by their peer groups, with both positive and negative consequences for their academic motivation and outcomes (Ukpabi & Akinyemi, 2021). Negative peer pressure, such as

distractions from academics, and exposure to substance abuse or truancy, can significantly lower academic achievement, whereas supportive peer relationships can foster higher motivation and engagement in schoolwork (Quadri, Omopo, & Ukpere, 2025).

Furthermore, psychological well-being, particularly emotional regulation, is critical in determining how students perform academically. Studies have shown that students with high levels of emotional intelligence and effective emotion regulation strategies tend to experience better academic performance, as they are able to manage stress and emotional setbacks more efficiently (Parker & Salovey, 2020). In Osogbo, as in many Nigerian cities, students face significant emotional challenges due to social pressures, family stress, and economic hardship, which can negatively affect their academic engagement and performance (Omopo, 2024). Interventions focused on enhancing emotional regulation may therefore be crucial in improving academic outcomes in such contexts. Given the growing recognition of the importance of mental health in education, programmes aimed at improving emotional regulation could offer a promising avenue for boosting students' academic performance in Osogbo.

Parenting styles also have a profound impact on academic outcomes. The influence of authoritative parenting, which is characterised by warmth, support, and clear expectations, has been consistently linked to better academic performance, while authoritarian and permissive parenting styles have been associated with poorer academic outcomes (Fehintola & Akinyemi, 2022). In Osogbo, family structures and parenting styles vary widely, with some students benefitting from highly supportive and involved parents, while others face challenges due to the lack of parental guidance or engagement. Research suggests that children from families with high parental involvement are more likely to demonstrate positive academic behaviours, such as consistent study habits and goal-setting, which are essential for success in school (Akinyemi & Aremu, 2018). Understanding the role of parenting in shaping academic performance in Osogbo is therefore crucial for the development of localised interventions aimed at enhancing students' academic outcomes.

In addition to psychological and social factors, social support networks including family, peers, and teachers serve as key determinants of academic success. Students with strong support systems are better able to navigate the challenges of school and perform well academically (Omopo, 2025). In Osogbo, where many

families face economic strain and psychological stress, the role of social support is particularly significant. Research indicates that students with access to emotional support from family members, friends, and teachers show higher levels of resilience, motivation, and academic success (Akinyemi et al., 2018). Therefore, exploring how social support systems influence academic outcomes in Osogbo can offer valuable insights into the development of targeted educational interventions that could help at-risk students overcome their challenges and improve their academic performance.

Lastly, socioeconomic status (SES) remains one of the most influential factors affecting academic performance. In Osogbo, as in many Nigerian cities, there is a marked disparity between students from wealthy and low-income backgrounds. Students from lower SES households often face multiple barriers to academic success, such as inadequate access to learning materials, poor living conditions, and higher rates of absenteeism due to financial pressures (UNICEF, 2020). However, studies have shown that while SES significantly influences behaviours, its effects can be mitigated through the provision of adequate emotional support and the cultivation of skills such as emotional regulation and resilience (Gross, 2015; Quadri et al., 2025). Understanding the intersection of SES with other psychological and social factors in Osogbo is vital for developing effective strategies to improve academic performance, particularly for students from disadvantaged backgrounds.

Given the complexity of these factors, Structural Equation Modelling (SEM) offers an appropriate analytical approach to explore the interrelationships between them and academic performance. SEM allows for the examination of direct and indirect pathways through which various factors, including peer influence, emotional regulation, social support, and socio-economic status, affect academic outcomes (Kline, 2016). Applying SEM in the context of Osogbo will provide a comprehensive understanding of the mechanisms that underlie academic performance in the region, offering valuable insights for the design of interventions aimed at improving educational outcomes in Osogbo and similar Nigerian contexts.

1.1 Purpose of the Study

The purpose of this study is to examine the factors influencing academic performance among secondary school students in Osogbo, Osun State, Nigeria. Specifically, it aims to explore the roles of emotional

regulation, peer influence, parenting styles, social support, and socio-economic status in shaping academic outcomes. The study will employ Structural Equation Modelling (SEM) to analyse the relationships between these factors and academic performance. Specific objectives of the study are:

- To examine the relationship between emotional regulation and academic performance among secondary school students in Osogbo.
- To assess the impact of peer influence on academic performance among students in Osogbo.
- To analyse the role of parenting styles in shaping students' academic performance in Osogbo.
- To explore the effect of social support networks on academic performance in Osogbo.
- To determine the relationship between socio-economic status and academic performance among students in Osogbo.
- To develop a Structural Equation Model (SEM) to predict academic performance based on the identified factors.
- To provide recommendations for educational policies and interventions aimed at improving academic performance in Osogbo.

1.2 Hypotheses

The following hypothesis were tested at 0.05 level of significance:

- There is no significant relationship between emotional regulation and academic performance among secondary school students in Osogbo, Osun State.
- There is no significant correlation between peer influence and academic performance among students in Osogbo, Osun State.
- There is no significant link between parenting styles and students' academic performance in Osogbo, Osun State.
- There is no significant relationship between social support networks and academic performance in Osogbo, Osun State.
- There is no significant relationship between socio-economic status and academic performance among students in Osogbo, Osun State.
- There is no significant predictive relationship between emotional regulation, peer influence, parenting styles, social support, socio-economic status, and academic performance in Osogbo, Osun State.

- There is no significant interaction between emotional regulation, peer influence, parenting styles, social support, socio-economic status, and academic performance in Osogbo, Osun State.

2. Theoretical Framework

This study was grounded in Ecological Systems Theory (Bronfenbrenner, 1979), which posits that individual development, including academic performance, is influenced by multiple, interconnected layers of environmental factors. These layers include the microsystem (immediate environments such as family and school), the mesosystem (interactions between these immediate environments), the exosystem (broader social structures such as community and media), and the macrosystem (the overarching societal and cultural influences). According to this theory, academic outcomes are not determined by individual traits alone, but are shaped by the dynamic interactions between a student and their various environmental contexts. This holistic view allows for the exploration of how personal, familial, social, and structural factors converge to impact students' educational success.

In applying this theory to the context of Osogbo, Osun State, the study recognised that students' academic performance was shaped by a combination of emotional regulation, peer influence, parenting styles, social support, and socio-economic factors. For example, emotional regulation, situated in the microsystem, can affect a student's ability to manage stress and engage in academic tasks effectively, while peer influence within the mesosystem can impact motivation and academic behaviour. Parenting styles, another microsystem factor, influence students' attitudes toward education and their capacity for self-discipline. Moreover, socio-economic status (SES), located within the macrosystem, affects access to educational resources, the quality of schooling, and even family involvement in academic activities. By utilising this framework, the study examined how these interrelated factors influenced academic outcomes in Osogbo, an urban area with distinct socio-economic challenges.

Bronfenbrenner's ecological approach also allowed for a broader understanding of the exosystem and macrosystem influences on academic performance, particularly in the context of the socio-political and educational structures in Nigeria. National educational policies, local government support, and community-level resources directly impact students' learning opportunities and outcomes. The interplay between

these factors, personal capabilities, family dynamics, peer groups, and the socio-economic environment shapes students' educational experiences in Osogbo. Using Structural Equation Modelling (SEM), this study explored the relationships between these multiple systems to offer insights into the combined effects of emotional regulation, peer pressure, parenting styles, social support, and SES on academic performance. This ecological perspective helped provide a comprehensive framework for understanding how various environmental influences interact to shape students' success in secondary education.

Methods

The study utilised a quantitative research design with a multi-stage sampling procedure to select 420 secondary school students from Senior Secondary 2 (SS2) in Osogbo Local Government Area (LGA), Osun State, Nigeria. In the first stage, 10 secondary schools were randomly selected from a list of both public and private schools in Osogbo. In the second stage, stratified sampling was employed to divide the students by their academic stream (e.g., science, arts, and commercial), ensuring that each academic stream was represented proportionally. From each stream, 42 students were randomly selected, yielding a final sample of 420 students. This method ensured a diverse and representative sample of SS2 students from various schools and academic backgrounds, making the findings generalisable to the larger population of secondary school students in Osogbo.

The data collection process involved the use of standardised instruments to measure the key variables in the study. The Emotional Regulation Questionnaire (ERQ) developed by Gross and John (2003) was used to assess students' emotional regulation skills, which are essential in coping with academic stress. Peer influence was measured using the Peer Influence Scale (PIS), a validated instrument that evaluates the extent to which peers affect academic behaviours and choices. Parenting Styles were assessed using the Parenting Styles and Dimensions Questionnaire (PSDQ), which categorises parenting into authoritative, authoritarian, and permissive styles. To measure social support, the Social Support Questionnaire (SSQ) developed by Sarason et al. (1983) was employed, evaluating the perceived support from family, friends, and teachers. Socio-economic status (SES) was assessed using a composite index based on family income, parental education level, and occupation, a widely used measure in educational research. Students' academic performance was obtained from official school records, which provided objective and up-to-date information on their

grades. The data were then analysed using Structural Equation Modelling (SEM) to test the hypothesised relationships between emotional regulation, peer influence, parenting styles, social support, SES, and academic performance. Ethical considerations were

prioritised, ensuring informed consent was obtained from students and their parents, and participants' anonymity and confidentiality were maintained throughout the study.

3. Results

Demographic Representation of the Participants

Table 1: Demographic Characteristics of Participants

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	198	47.1
	Female	222	52.9
Age Range	15-16 years	136	32.4
	17-18 years	168	40.0
	19-20 years	116	27.6
Grade Level	SS2 Science	129	30.7
	SS2 Arts	139	33.1
	SS2 Commercial	152	36.2
Socio-Economic Status	Low SES	160	38.1
	Middle SES	179	42.6
	High SES	81	19.3
Total		420	100.0

The demographic characteristics of the study participants are outlined in Table 1. The sample consisted of 420 secondary school students from Osogbo, Osun State. The gender distribution was slightly skewed, with 47.1% male participants (198 students) and 52.9% female participants (222 students). The age distribution revealed that 32.4% of the students were between 15-16 years old, 40.0% were between 17-18 years, and 27.6% were in the 19-20-year age range. Regarding academic streams, 30.7% of the participants were from the SS2 Science stream, 33.1% were from the SS2 Arts stream, and 36.2% came from the SS2 Commercial stream. The socio-economic status of the students was also diverse: 38.1% were from low socio-economic backgrounds, 42.6% were from middle socio-economic status households, and 19.3% were from high socio-economic status households. This distribution ensures that the study captured a broad representation of students from varying socio-economic conditions. The balanced representation across gender, age, grade level, and socio-economic status enables the findings to reflect the experiences of a wide range of secondary school students in Osogbo, Osun State, ensuring the results are generalizable to the larger student population in the region.

Hypothesis 1: There is no significant relationship between emotional regulation and academic performance among secondary school students in Osogbo, Osun State.

Table 2: Emotional Regulation and Academic Performance

Path	Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	P-Value	Conclusion
Emotional Regulation → Academic Performance	0.45	0.12	3.75	0.001	Significant

The SEM analysis indicated a significant positive relationship between emotional regulation and academic performance ($\beta = 0.45$, $p = 0.001$). This suggests that students with better emotional regulation are likely to perform better academically. The significant positive coefficient indicates that the ability to manage emotions like stress, anxiety, and frustration can enhance focus, motivation, and engagement in academic tasks, ultimately leading to better academic outcomes.

In line with Bronfenbrenner's Ecological Systems Theory, emotional regulation is seen as a skill developed within the microsystem, the student's immediate environment, including their family, school, and peers. Emotional regulation

aids in managing the stresses and challenges that students face in these environments, particularly within the educational context. Students who can regulate their emotions are better able to deal with academic pressures and setbacks, which enhances their resilience and persistence. According to Bronfenbrenner's model, the microsystem directly impacts students' development, including their academic performance, as the way students emotionally respond to external challenges in their immediate environment can directly influence their engagement and academic success. Additionally, emotional regulation aligns with Bronfenbrenner's idea of self-regulation in learning, where students are better able to engage in academic tasks when they are emotionally balanced. The microsystem (family and school) provides the foundation for developing emotional regulation, and this skill enhances the student's ability to manage academic pressures and engage with the learning process. This is consistent with research by Parker et al. (2020), which found that students with higher emotional regulation tend to perform better academically due to their ability to manage stress and stay focused on their tasks.

This result corroborates Goleman's (2006) work on emotional intelligence, which emphasized that emotional regulation is a key factor in academic success. Fehintola and Akinyemi (2021) also found that students with better emotional regulation performed better academically because they were less distracted by stress and emotional upheaval. In the context of Ecological Systems Theory, these findings support the view that students' emotional experiences and their ability to regulate them are shaped by their immediate environments and significantly impact academic performance.

Hypothesis 2: There is no significant correlation between peer influence and academic performance of students in Osogbo, Osun State.

Table 3: Parenting Styles and Academic Performance

Path	Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	P-Value	Conclusion
Peer Influence → Academic Performance	0.32	0.10	3.20	0.002	Significant

The SEM analysis revealed a significant positive relationship between peer influence and academic performance ($\beta = 0.32$, $p = 0.002$). This indicates that peer groups, especially those with a strong academic orientation, significantly contribute to students' academic behaviours and performance. Peer influence in this study likely reflects the role of both academic motivation and the shared academic behaviours that are fostered within peer groups.

This finding supports Bronfenbrenner's Ecological Systems Theory, which places a strong emphasis on the mesosystem, the interactions between different environments, such as school and peer groups. In this case, peer influence reflects how social interactions within the peer group can impact academic motivation and performance. Peer groups provide a space where students adopt social norms, including those related to academic behaviours. Students who associate with academically motivated peers are more likely to engage in positive academic behaviours, such as studying, attending class, and setting academic goals. The mesosystem interaction between peers and the school environment creates a shared academic culture that can positively influence academic achievement. According to Bandura's Social Learning Theory, students are likely to model the behaviours of their peers, and when they are surrounded by motivated and engaged students, they are more likely to perform well academically. This underscores the importance of fostering supportive peer networks within educational settings, as positive peer pressure can encourage academic success.

This result aligns with *Wentzel's (2010)* research, which emphasized the importance of peer influence in academic achievement, particularly when students are part of peer groups that value academic success. Similarly, Aremu and Akinyemi (2019) found that students who had positive peer relationships showed better academic performance, as they were encouraged and motivated to excel academically. The role of peer influence is further validated by Ukpabi and Akinyemi (2021), who demonstrated that students in academically supportive peer groups tend to perform better due to shared motivation and academic collaboration.

Hypothesis 3: There is no significant link between parenting styles and students' academic performance in Osogbo, Osun State

Table 4: Social Support Networks and Academic Performance

Path	Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	P-Value	Conclusion
Parenting Styles → Academic Performance	0.28	0.09	3.11	0.002	Significant

The SEM analysis indicated a significant positive effect of parenting styles on academic performance ($\beta = 0.28$, $p = 0.002$). This suggests that the way parents interact with and support their children plays a significant role in shaping their academic outcomes. Authoritative parenting, characterized by warmth, structure, and clear expectations, has a particularly strong impact on students' academic success.

In line with Bronfenbrenner's Ecological Systems Theory, parenting styles are a critical element of the microsystem, directly influencing students' academic behaviour and performance. Authoritative parents, who provide both emotional support and clear expectations, create an environment that fosters academic motivation and self-regulation in their children. These students are more likely to be self-disciplined, have a positive attitude toward learning, and exhibit higher academic performance. In contrast, authoritarian or permissive parenting styles can result in lower levels of academic engagement and self-control, negatively impacting academic outcomes. Moreover, Bronfenbrenner's model emphasizes that the interactions within the microsystem such as between parents and children are crucial in shaping a child's development. In the academic context, these interactions provide the foundation for building self-regulation and academic competence. As such, the study highlights the importance of parental involvement in the educational process, supporting the idea that positive parenting directly enhances students' academic performance.

This finding is consistent with Fehintola and Akinyemi (2022), who found that authoritative parenting was associated with higher academic achievement in Nigerian secondary school students. Similarly, Berk (2013) demonstrated that authoritative parenting fosters academic success by providing a supportive and structured environment. Additionally, Akinyemi et al. (2018) highlighted that students with supportive, involved parents tend to outperform their peers due to greater emotional and academic support, aligning with the results of this study.

Hypothesis 4: There is no significant relationship between social support networks and academic performance in Osogbo, Osun State

Table 5: Social Support Networks and Academic Performance

Path	Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	P-Value	Conclusion
Social Support → Academic Performance	0.40	0.11	3.64	0.001	Significant

The SEM analysis revealed a significant positive effect of social support on academic performance ($\beta = 0.40$, $p = 0.001$). This suggests that students who have strong social support networks, including support from family, friends, and teachers, are more likely to perform better academically. Social support plays a crucial role in enhancing students' emotional well-being, reducing academic stress, and boosting motivation.

Social support operates within the microsystem and mesosystem by influencing students' immediate environment and interactions with family, peers, and educators. According to Bronfenbrenner's Ecological Systems Theory, these interactions are vital for students' academic and emotional development. Social support provides the emotional resources needed to cope with academic challenges and stress, which in turn enhances academic performance. Students who feel supported by their families, friends, and teachers are more likely to stay engaged with their academic work and overcome obstacles that may impede their success. Moreover, social support helps buffer the negative effects of stress, a critical factor in academic performance. Students with strong support systems tend to exhibit higher resilience, as they are better equipped to manage setbacks and continue pursuing academic goals. This is consistent with the stress-buffering model, which suggests that social support reduces the impact of stress on academic performance, fostering a more positive and productive learning environment.

This result aligns with the work of Omopo (2025), who found that social support positively affected academic performance by improving students' emotional well-being and motivation. Similarly, Sarason et al. (1983) highlighted that social support helps reduce academic stress, leading to better performance. Additionally, Akinyemi et al. (2018) confirmed that social support networks were essential for improving students' academic outcomes by enhancing their resilience and motivation to succeed.

Hypothesis 5: There is no significant relationship between socio-economic status (SES) and academic performance among students in Osogbo, Osun State.

Table 6: Socio-Economic Status (SES) and Academic Performance

Path	Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	P-Value	Conclusion
Socio-Economic Status → Academic Performance	0.35	0.09	3.89	0.000	Significant

The SEM analysis showed a significant positive relationship between socio-economic status (SES) and academic performance ($\beta = 0.35$, $p = 0.000$). This indicates that students from higher socio-economic backgrounds are more likely to perform better academically, likely due to better access to educational resources and a more stable home environment that supports their learning.

Socio-economic status, as part of the macrosystem in Bronfenbrenner's model, affects students' access to resources, quality of education, and family involvement. Students from higher SES backgrounds tend to have more access to learning materials, extracurricular activities, and tutors, all of which contribute to better academic outcomes. Additionally, these students often come from families with higher educational aspirations and more involvement in their children's schooling, providing further academic support. Bronfenbrenner's theory suggests that socio-economic factors shape the broader environment in which students learn. For students in lower SES households, the lack of resources and stability may limit their ability to focus on academics, leading to poorer performance. Conversely, students in higher SES households benefit from enriched environments that support academic success, as they are provided with the necessary resources to thrive academically.

The findings align with UNICEF (2020), which highlighted that students from higher SES backgrounds have better academic outcomes due to greater access to resources and support. Similarly, Akinyemi et al. (2018) found that socio-economic factors significantly influenced academic performance, with higher SES students having better educational opportunities. This study further supports the notion that SES continues to be a major determinant of academic success, particularly in contexts with significant disparities in access to education.

Hypothesis 6: There is no significant predictive relationship between emotional regulation, peer influence, parenting styles, social support, socio-economic status, and academic performance in Osogbo, Osun State.

Table 7: Predictive Relationship between Emotional Regulation, Peer Influence, Parenting Styles, Social Support, Socio-Economic Status, and Academic Performance

Path	Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	P-Value	Conclusion
Emotional Regulation, Peer Influence, Parenting Styles, Social Support, Socio-Economic Status → Academic Performance	0.38	0.10	3.80	0.000	Significant

The SEM analysis showed a significant predictive relationship between emotional regulation, peer influence, parenting styles, social support, socio-economic status, and academic performance ($\beta = 0.38$, $p = 0.000$). This indicates that when combined, these factors significantly predict academic performance among students in Osogbo, Osun State. The relationship between these variables collectively demonstrates a moderate-to-strong effect on students' academic outcomes, implying that emotional regulation, peer influence, and other socio-environmental factors are important predictors of academic success. In line with Bronfenbrenner's Ecological Systems Theory, the significant predictive relationship supports the idea that a student's academic performance is shaped by multiple, interacting systems within their environment. Emotional regulation, peer influence, parenting styles, and socio-economic status operate at various levels of the microsystem (family, school), mesosystem (peer interactions), and macrosystem (societal and economic factors). These interconnected factors influence how students engage with their academic environment, manage challenges, and ultimately perform in school. Emotional regulation allows students to manage stress, while positive peer influence encourages academic motivation, and supportive parenting styles promote self-regulation and goal-setting.

Furthermore, socio-economic status provides access to resources and stability, which can positively affect academic focus and persistence. The combined predictive effect of these factors on academic performance suggests that academic outcomes cannot be attributed to a single factor but rather to the dynamic interplay of emotional, social, and environmental influences. This holistic view aligns with Bronfenbrenner's framework, which emphasizes the importance of the interactions between various systems in shaping a child's development, including their educational success.

This result is consistent with the findings of Parker et al. (2020), who demonstrated that emotional regulation and social support together predict academic success in students. Similarly, Goleman (2006) highlighted the role of emotional intelligence and external factors like peer support in influencing academic outcomes. Fehintola and Akinyemi (2022) also found that parenting styles and socio-economic status had a combined predictive effect on students' academic performance. These studies support the notion that academic success is the result of a complex interaction between personal, familial, social, and environmental factors.

Hypothesis 7: There is no significant interaction between emotional regulation, peer influence, parenting styles, social support, socio-economic status, and academic performance in Osogbo, Osun State.

Table 8: Interaction between Emotional Regulation, Peer Influence, Parenting Styles, Social Support, Socio-Economic Status, and Academic Performance

Path	Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	P-Value	Conclusion
Emotional Regulation, Peer Influence, Parenting Styles, Social Support, Socio-Economic Status ↔ Academic Performance	0.27	0.08	3.38	0.001	Significant

The SEM analysis revealed a significant interaction between emotional regulation, peer influence, parenting styles, social support, socio-economic status, and academic performance ($\beta = 0.27$, $p = 0.001$). This finding suggests that these factors do not independently affect academic performance; instead, they interact in a way that collectively influences students' academic outcomes. The significant interaction highlights the dynamic relationships between these factors, emphasizing that students' academic success is influenced by the combined effects of these interrelated variables.

Bronfenbrenner's Ecological Systems Theory provides a framework for understanding these findings by highlighting how the various systems surrounding a student the microsystem, mesosystem, and macrosystem interact to shape their academic development. The interaction between emotional regulation, peer influence, parenting styles, and socio-economic status underscores the complexity of the academic experience. For example, a student with strong emotional regulation skills may perform better academically, but their academic success may also depend on the quality of their peer group or the socio-economic resources available to them. This interaction effect suggests that a holistic approach, considering multiple environmental and personal factors, is essential for understanding academic performance. Moreover, the interaction between these factors supports the view that no single variable can be treated in isolation when assessing academic outcomes. Instead, the collective influence of these factors, as they interact with each other, plays a critical role in shaping students' academic trajectories. Emotional regulation may buffer the effects of socio-economic stress, while peer influence can enhance or diminish the impact of parenting styles. The combined effect of these interwoven factors provides a more

comprehensive understanding of academic performance.

The finding aligns with research by Wentzel (2010), who emphasized that the interaction of social and emotional factors such as peer relationships, emotional regulation, and parental support plays a critical role in academic success. Similarly, Omopo (2025) highlighted that students' academic performance is influenced by a combination of peer support, emotional intelligence, and socio-economic resources. Akinyemi et al. (2018) also found that the interaction of parental involvement and socio-economic status significantly shaped academic outcomes, suggesting that a multifaceted approach to academic achievement is essential for understanding the various influences that come into play. These studies further validate the significant interaction between the identified factors in predicting academic performance.

4. Conclusion

This study highlighted the significant roles that emotional regulation, peer influence, parenting styles, social support, and socio-economic status play in shaping academic performance among secondary school students in Osogbo, Osun State. The results from the Structural Equation Modelling (SEM) analysis demonstrated that these factors are not independent but interact with each other to collectively impact students' academic success. Emotional regulation, peer influence, and social support were found to have the most substantial influence, emphasizing the importance of fostering supportive, emotionally regulated, and academically motivated environments for students. The study's findings suggest that interventions aimed at improving these factors could lead to better academic outcomes, particularly in socio-economically disadvantaged contexts.

5. Limitations

Despite the valuable insights provided, this study had several limitations. First, the sample was limited to secondary school students in Osogbo, Osun State, and may not be generalizable to other regions or educational settings in Nigeria or beyond. Second, the cross-sectional nature of the study restricts the ability to draw causal inferences between the variables. Third, self-reported data on emotional regulation, peer influence, and social support could introduce response biases, as students may have underreported or overreported certain behaviours or perceptions. Additionally, the study did not explore other potential factors, such as teacher-student relationships or school-specific variables that could also affect academic performance.

6. Recommendations

Based on the findings of this study, several recommendations can be made for improving academic performance among secondary school students in Osogbo, Osun State:

First, schools should implement programmes focused on developing emotional regulation skills, as they are crucial for managing academic stress and improving focus and engagement.

Second, creating peer support networks and fostering positive peer influence in the school environment could enhance motivation and academic achievement.

Third, parental involvement in students' education should be encouraged through workshops and community initiatives that promote authoritative parenting styles.

Finally, socio-economic support structures should be strengthened, particularly for students from disadvantaged backgrounds, to provide equal opportunities for academic success. Policymakers and educators should consider these factors.

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Teachers' Motivation and Job Effectiveness in Public Senior Secondary Schools in Edo State, Nigeria

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Abstract. This study examined teachers' motivation and their job effectiveness in public senior secondary schools in Edo State. The research design adopted was a descriptive survey. Three (3) research questions were raised. The population of the study comprised 309 school principals and 6180 teachers from the 309 public senior secondary schools in the state. The sample size was 31 principals and 309 teachers representing 10% and 5% respectively. A multi-stage sampling technique was adopted to select the sample size, Data was analyzed, using Mean and standard Deviation to answer research questions 1 and 2, and Pearson Product Moment Correlation Coefficient (r) was used to answer question 3. The findings revealed that the teachers were motivated to a high extent; their job performance level was high and there was a positive correlation between teachers' motivation and their job effectiveness in public senior secondary schools in Edo State. It was therefore recommended that Edo State Government should continue to motivate its teachers by sustaining and improving on the incentives given to them.

Keywords: Teacher, motivation, job, effectiveness, salary, professional development, facilities.

1. Introduction

In recent times, the condition under which teachers perform their jobs in secondary schools in Nigeria, Edo State in particular, has been widely hazarded as a result of motivational factors. This is premised on myriads of reactions from journal publications, literature, newsletters, teachers, students, researchers amongst others in the society. Nevertheless, these could be mere suppositions upon which final inferences could not be made. It is on this basis that

this study was carried out in Edo State public secondary schools.

Motivation offers the impetus, fortitude and serenity to provide human needs and accomplish motives. Motives propel individuals to provide their needs. It relates to the inner state that drives and sustains behaviour, and this could be intrinsic or extrinsic. According to Turner (2017), intrinsic motivation is meant to satisfy internal goals while extrinsic motivation is geared towards satisfying external objectives like rewards and prestige. Individual work values are of different pleats, beginning from the lower to the higher-level needs. It becomes pertinent that responses to and fulfilment from any work is anchored on how the job is seen as satisfying these unique drives. Motivation drives curiosity and creativity, igniting the craving for efficiency and effectiveness in individuals and organizations. For organizations to realize its set goal, workers' motivation must be put into consideration. In educational organizations, for school administrators to manage the system effectively, motivation mechanisms must be entrenched. According to Msoroka (2010), motivation' is the most crucial aspect in ensuring teachers' job effectiveness and students' academic performance. Similarly, Nyakundi (2012) viewed it as the process of showing educators that their efforts are not just valued but also appreciated, and that the means are justified by the outcomes. According to Otaru and Omokide (2019), motivation is the core of the teaching and learning process that boosts teachers, students and human behaviour; it is what facilitate good performance among students, teachers and the community at large; without it, teachers may not put in their best and it may lead to dissatisfaction and high turnover rate; it is also that which triggers the response to certain internal (psychological) and external

(environmental) stimulation. They added that individuals' motivation differs as a result of differences in needs, personalities, status and goals. Simply put, motivation could be viewed as a process in which a leader empowers and propels his employees to increase organizational output in an efficient and effective manner.

Factors of motivation could be seen as those set of work supplies and work environment, terms and condition of service that positively or negatively contributes to teachers' job in the school system. Some of them include: rewards like salary; work environment; job security; freedom; health care provision; job schedule; achievement; loans; work hours; interpersonal relationship; leave; promotion; class size; professional development opportunities; facilities; welfare package; leadership styles (Mustafa and Othman 2010) amongst others. Others could be intangible in the form of a teacher taking part in decision making, representing his school in fora, thereby gaining social recognition. It is expedient that administrators consider these factors in order to motivate and retain teachers. Principals, though, may not be able to influence salaries and fringe benefits, of teachers, but could encourage them by instituting positive work culture.

In developed climes, like United State of America (USA). United Kingdom (UK), Australia, Canada, machineries for motivating teachers are set on motion, hence, motivation in these places could be higher as this is often reflected in their students' academic outcomes (Otaru and Omokide (2018). In Nigeria, teachers in secondary schools once enjoyed such motivational structures put in place. But in recent times, it has been widely speculated that these factors are now poorly attended to. This could be seen in the poor management of teachers at all levels from the Ministry of Education to education in the schools and poor remuneration that has grossly affected their social status. As a result, there is a mounting consensus as regard the overhauling of these poor and inflexible motivational structures in the system for effective job performance which could ultimately enhance students' outcome. Of the factors that have been mentioned earlier, salary; professional development and facilities would constitute the focus of this study.

Salary is the regular payment made to an employee for the work done over a specific period, typically monthly or weekly. Usually, it is determined by comparing the prevailing market pay rates for workers doing similar jobs in similar organizations in same locale (Adekanmbi & Ukpere, 2021). Teacher's salary refers to the payment given to educators in exchange

for their efforts. Payment of teachers' salary as at when due propels them to perform effectively. salary also known as remuneration could be defined as the monetary and non-monetary reward given to employee by the employer as a result of services rendered, usually in the form of pay, wages, salaries, including allowances, benefits, cash incentives, and bonuses (Oyeleye, 2017). Salary is an important instrument of motivation that keeps the system in order, and when it is regular, it becomes the most important motivational tool that boost the teachers' morale and increase their job effectiveness in schools. Ofojebe & Nnnebedum (2016) opined that salary not only add to teachers' effectiveness, but also contributes to their job satisfaction. In a study done by Adekanbi and Ukpere (2021) on the influence of minimum wage and prompt salary payment on teachers' effectiveness in public secondary schools in Oyo State, findings showed that prompt salary payment had significant independent and joint influence on teachers' effectiveness in public secondary schools in the state. In another study carried out by Obionu, Uju and Obiagwu (2024) on Staff Remuneration as a Correlate of Teachers' Job Satisfaction in Public Secondary Schools in Anambra State, it was revealed that salary payment and fringe benefit positively and significantly related to teachers' job satisfaction in public secondary schools to a high extent.

Teacher professional development alludes to the practice of continually refining one's approach to teaching by way of research and experimentation. It is designed to develop manpower resources in the educational system. Hervie & Winful, (2018) opined that professional development programme is an organized improvement of knowledge, behaviour and skills needed by a staff to function effectively in area of specialty. According to Bonney, Amoah, Micah, Ahiamenyo, and Lemaire (2015), it is important for educators to continue their professional development in order to keep up with the demands of today's curricula, incorporate the latest findings from educational research, and satisfy the evolving wants and needs of their students. Effective teachers develop their skills and knowledge unrelentingly. Teachers' effectiveness can be greatly improved through participation in professional development courses as they could upgrade their knowledge, abilities (self-confidence and mastery), and methods of teaching. For schools to realize its set objectives, teachers must be encouraged, mobilized and stimulated towards maximal productivity. According to Asita, Masikirikwe, Austin & Ikubor, (2019), there are three types of professional development programmes which include: professional training, learning and assistance.

Professional training relates to short term courses, seminars, workshops and conferences largely focused on skills and practices. Professional learning has to do with long term courses when there is need to move to a new position, with emphasis on research and theory-based knowledge. It avails the teachers the opportunities to discover principles, practices, rules, and ideas that will enhance their job effectiveness. Professional assistance entails job entrenchment skills, symbolizing the real classroom practice. Nnorom, Chinenye & Ezeanolue (2020) highlighted some professional development programmes to include: job orientation, tutoring, rotation and self-improvement evaluation. Job orientation is usually done for newly employed teachers to induct them into the system and familiarize them with the norms, principles and standards of the organization. Job tutoring is an on-the-job formal training designed for teachers. Job rotation is the movement of staff from one schedule to another within the same system to build all round competence. Self-improvement is a desire to develop self through personal efforts.

Teachers need to be motivated to participate in these training exercises as it will update them in trendy ideas, rationale and area of specialty investigation. It will also enhance promotion of excellence among themselves, within them and the students and in their work environment (Adigun & Dairo, 2021). According to Maclean (2018), staff development is a dynamic function which involves inspiring teachers to enhance teaching-learning situation usually, through seminars. The essence of teachers' professional development is to ensure effectiveness in classroom management in order to boost students' academic outcome. Osamwonyi (2016) added that teachers' participation in the programmes will expose them to innovation and also keep them abreast of changes in curricula and methodology. In a study done by Maclean (2018) on how in-service education affected the professional effectiveness of teachers in Rivers State public high schools, findings revealed that the teachers had above-average ratings for learning, growth, collaboration, job performance and in-service training. Edet, Imo and Nkama (2013) studied how staff development courses impacted secondary school teachers' performance in Uyo Metropolis, Nigeria. It was found that teachers who took part in development activities performed better in their jobs than those who did not. This was true across measures of content knowledge, classroom management, teaching strategies, and student work evaluation. The research also showed that teachers who regularly attended workshops and seminars had higher levels of job satisfaction.

School facilities entail all the available resources provided by the school to facilitate teaching and learning process. It includes buildings, classrooms, libraries, cafeteria, assembly halls, parking lots, sickbays, restrooms, instructional materials, dormitories, administrative offices, fields, water, security facilities, farms, transportation, furniture, electrical equipment, and technology. According to Herwan, Aswandi, and Chiar (2018), facilities consist of classroom buildings and technology like computers and textbooks. Edison (2015) posited that educational facilities are the heart of a school system as they aid teachers in achieving a level of instructional effectiveness that surpasses what is obtainable when they are not provided.

Teachers may find their work environment uninteresting and unsatisfying when the needed facilities are not available. Smith (2021) affirmed that inadequate infrastructure like outdated classrooms, insufficient resources, and limited technology adversely affects learning environment, hindering teachers' effectiveness and students' engagement. A well-lit and ventilated classrooms, adequate and comfortable furniture, and good acoustics can create a conducive teaching-learning environment. Technology like computers, projectors and whiteboards can help teachers deliver lessons more effectively. It can lead to better engagement with students, improved learning outcomes, and ultimately better job performance. facilities like sport fields, music rooms, and art studios can motivate teachers to encourage students to participate in extracurricular activities. This can help develop an all-round education for students, resulting in better academic performance and teachers' satisfaction. Safety and security facilities like cameras, secured entrances, and well-trained security personnel can help create a safe learning environment. This can help teachers focus on their jobs without worrying about safety. Adams and Williams (2020) in their study examined the impact of facilities on teachers' job performance and it was shown that teachers who were dissatisfied with the work environment, including the facilities were found to be ineffective in their job performance. In the same vein, Martinez and Dave (2021) investigated the role of facilities in attracting and retaining effective and qualified teachers. They found that schools with well-equipped modern facilities had more qualified and effective teachers, stressing the importance of investing in facilities as an approach in motivating effective service delivery teachers.

At the core of the educational system lies the teacher who translates educational policies into practices and the way these practices are performed goes a long way

in determining the school's success or failure. An effective teacher is one who is capable of producing the desired result of high level of students' academic performance rated by standardized examinations, promotion and graduation. By being effective, a teacher can achieve its goal and make positive impact in the teaching field. Teacher effectiveness relates to its personal attributes like traits, values, beliefs and motivation that interact with the contextual factors to influence productivity. it could also be seen as the extent to which a teacher is able to engage and impact on students' learning (Oriaku & Adeniji, Oloja & Elumaro, 2025). Teachers' job effectiveness therefore refers to ability to accomplish tasks in attaining the schools' goals. This could be achieved when the needed resources in the right atmosphere are provided. According to Mulang 2021, a highly motivated teacher will strive to complete tasks and accomplish goals. He added that motivation and learning environment significantly impacted on teachers' job performance. In the same vein, Demir (2020) argued that highly driven teachers have positive views of their students' work. The teachers' job is branded by lesson planning and delivery, subject mastery, use of teaching aids, classroom management, students' assessment and feedback, competence, dedication, leadership, supervision, amongst others (Duse as cited in Egboka & Alika, 2018). Assessing teachers' job effectiveness level entails evaluating performances and ascertaining the extent to which schools' goals are attained.

Studies have shown that when teachers are well motivated, they are likely to perform effectively and efficiently. To buttress this, in a study done by Sulyman, Lawal, Ajadi and Aloba (2019) on teachers' compensation as a correlate of job performance in Kwara State, findings attributed the poor state of the teachers' job performance to lack of fringe benefits, and facilities, irregular and inadequate salary payment. In another study done by Ogheneovo and Asiyai (2023) on motivational factors and teachers job engagement in public secondary schools in Edo State, it was revealed that orientation, welfare and health packages as motivational factors improved teachers' job engagement to a high extent.

In light of the aforementioned review, there seems to be a synergy between motivational indices and teachers' job effectiveness. Though, teachers' motivation has been studied in order to ascertain its influence on job effectiveness, but not all the indices here have been delt with in a study. This study therefore investigated the relationship between motivational factors of salary, professional development programmes and school facilities and

teachers' job effectiveness in public senior secondary schools in Edo State.

1.1 Statement of the Problem

In recent times in Edo State, Nigeria, there has been a consistent concern as regard the decline in senior secondary school students' academic performance in external examination conducted by West African Examination Council (WAEC) and National Examination Council of Nigeria (NECO) (Areghan, 2021, National Bureau of Statistics, 2021). As a result of this, educational stakeholders are worried and this has generated the impetus as to what could be responsible. However, based on the carps from some parents, students, teachers, government officials, researchers field observation, including data gathered from principals of public senior secondary schools in the State, it appears that teachers are ineffective in their job performance, indicating lack of commitment, lateness to school, irregular class attendance, improper planning of lesson and utilization of teaching aids, non-marking of assignments, lack of classroom management skills amongst others despite efforts by the state government to improve education quality. in line with the above assertion, the researcher also observed that some teachers come late to class, engage in other business activities during school hours, demonstrate lack of commitment and unprofessional attitude towards classroom control. Though research has shown that teachers in the state are motivated through the provision of orientation, welfare and health packages, yet, their job performance still seems ineffective due to the persistent poor academic performance of students in the state public senior schools. could this then be as a result of some other motivational elements of salary, professional development programme and facilities that have not been extensively looked at. This study therefore investigated the relationship between teachers' motivation and their job effectiveness in public senior secondary schools in Edo State.

1.2 Purpose of Study

The study investigated the relationship between teachers' motivation and their job effectiveness in Edo State public senior secondary schools.

1.3 Research Questions

The following research questions were raised:

- To what extent are the public senior secondary school teachers in Edo State

motivated to accomplish their job effectively?

- What is the level of teachers' job effectiveness in public senior secondary schools in Edo State?
- Is there a relationship between teachers' motivation and job effectiveness in public senior secondary schools in Edo State?

1.4 Hypothesis

There is no significant relationship between teachers' motivation and job effectiveness in public senior secondary schools in Edo State.

2. Methodology

The study employed the descriptive and correlational survey with an *ex-post-facto* design. The study population comprised 309 school principals and 6180 teachers from the 309 public senior secondary schools

in the state. The sample size was 31 principals and 309 teachers representing 10% and 5% respectively. Sample was selected from the 18 local government area across the 3 senatorial districts of Edo State. A multi-stage sampling technique was adopted to select the sample size. Data was collected, using a structured questionnaire consisting of 2 sections and a checklist consisting of 2 sections. The questionnaire was used to obtain information about teachers' motivation while the checklist was used to get information on teachers' job effectiveness. Data was analyzed, using Mean ($\bar{x}$) and standard Deviation (SD) to answer research questions 1 and 2, and Pearson Product Moment Correlation Coefficient (r) was used to answer question 3. The correlation between the explanatory variable and the criterion variable was at 0.05 level of significance. Any computed mean larger than 2.5 was considered high, while any calculated mean less than 2.5 was considered low, serving as the decision rule for the study questions.

3. Presentation of Results

Research Question 1: To what extent are the public senior secondary school teachers in Edo State motivated to accomplish their job effectively?

Table 1: Mean and standard deviation showing teachers' motivation and job effectiveness in public senior secondary schools in Edo State

S/N	Item	N	Mean	SD	Remarks
1	Teachers are paid salary promptly	77	2.35	1.156	Low
2	Teachers get fringe benefits beside salary	77	3.42	.767	High
3	There are provisions for professional training	77	3.09	.920	High
4	Teachers are given opportunity to participate in the professional development programmes	77	2.75	1.028	High
5	Teachers have comfortable staffrooms	77	2.86	1.097	High
6	The teachers have sufficient teaching aids	77	2.25	1.090	Low
Cluster			2.75	0.13	High

Note: SD (Standard Deviation), N (Sample Size)

Table 1 showed the influence that teachers' motivation has on their job effectiveness in public senior secondary schools in Edo state, in response to research question 1. Items 1 and 6 were assessed as low extent by the respondents, with mean ratings of 2.35 and 2.25, whereas items 2, 3, 4 and 5 were rated as high extent, with mean ratings of 3.42, 3.09, 2.75 and 2.86. The above mean scores indicate that teachers' motivation influences their job effectiveness to a high extent in public senior secondary schools in Edo State.

Research Question 2: What is the level of teachers' job effectiveness in public senior secondary school in Edo state?

Table 2: Mean and standard deviation showing level of teachers' job effectiveness in public senior secondary schools in Edo State

S/N	Item	N	Mean	SD	Remarks
1	Teachers teach with lesson plan	77	3.47	.502	Low
2	Teachers have good mastery of subject matter	77	3.64	.583	High
3	Teachers use teaching aids to teach	77	2.71	1.062	High
4	Teachers can control noise level while teaching	77	3.45	.940	Low
5	Teachers give assignment after class work	77	3.68	.697	High
6	Teachers mark assignment	77	3.48	.641	High
7	Teachers evaluate students' performance	77	3.70	.515	High
8	Teachers give parents feedback	77	2.88	1.235	Low
Cluster			3.38	0.27	High

Note: SD (Standard Deviation), N (Sample Size)

The data analysis in research question two revealed the level of teachers' effectiveness in public senior secondary schools in Edo State. The respondents gave items 1-8 high ratings across board, with mean ranging from 2.71-3.70 and standard deviations from 0.502-1.235. The above mean showed that the level of teachers' job effectiveness in Edo state public senior secondary schools is high.

Table 3: Pearson r showing the significant relationship between teachers' motivation and job effectiveness in public senior secondary schools in Edo State

Variables	N	$\bar{x}$	SD	r	p-value	Decision
Teachers' Motivation	77	2.50	0.43	.195	.006	Significant
Job Effectiveness		2.78	0.55			

The analysis in Table 3 showed the significant relationship between teachers' motivation and job effectiveness in public senior secondary schools in Edo state. The data analysis indicated that mean of 2.50 and 2.78, as well as standard deviation of 0.43 and 0.55 were obtained for teachers' motivation and job effectiveness respectively. The Table also showed that the correlation coefficient of .195 is positive and weak. Since the p-value of .006 is less than 0.05, hence the null hypothesis was rejected. This therefore connotes a significant relationship between teachers' motivation and job effectiveness in public senior secondary schools in Edo state.

4. Discussion of Findings

Basically, research question one finding showed that teachers in public senior secondary schools in Edo State are motivated to a high extent in accomplishing tasks effectively. This finding aligns with the studies done by the following researchers: Maclean (2018), Adekanbi & Ukpere (2021), Ogheneovo & Asiyai (2023) and Obionu & Obiagwu (2024), where it was revealed that teachers' motivation relates positively and significantly with job effectiveness to a high extent. This implies that teachers' motivation cannot be undermined in accomplishing tasks effectively. It

therefore indicates that the teachers were found to be effective to a high extent probably because they were motivated by prompt salary payment, professional development opportunities given and availability of facilities.

Research question two showed that the level of teachers' job effectiveness in Edo State public senior secondary school is high. this finding disagrees with the researcher's observation and the general notion that teachers in Edo State seem to be ineffective in accomplishing tasks. This is consistent with the finding of Demir (2020) who argued that well driven teachers have positive views of their students' works. It presents that when teachers are motivated as regards prompt payment, provision of opportunities for professional development and work facilities, performance increases. It is obvious that achievement is an upshot of incentives received from the system, which ultimately enhances productivity and students' outcome.

The hypothesis test showed that teachers' motivation significantly correlated with job effectiveness in public high schools in Edo State. This is an indication that the factors that motivate teachers are prompt salary payment, professional development opportunity, and available school facilities. When

teachers are motivated, they are more likely to be engaged, committed, enthusiastic and innovative, which can positively influence students' academic outcome. This finding agrees with Mulang, 2021 who stated that a highly motivated teacher will strive to complete tasks and accomplish goals. It is also in tandem with the study done by Ogheneovo & Asiyai (2023) where it was shown that motivational factors improved teachers' job effectively.

5. Conclusion

This study investigated the relationship between teachers' motivation and job effectiveness in public senior secondary schools in Edo State. It examines the factors that motivate job effectiveness. Clearly, the findings proved that there is a correlation between teachers' motivation and job effectiveness. Their effectiveness was found to be influenced by factors of salary, professional growth opportunities and available facilities. It was therefore concluded that motivation plays a significant role in how well public high school teachers carry out their tasks in Edo State, Nigeria.

6. Recommendations

Based on the findings of this study, it was therefore recommended that:

- The government should therefore not relent in its effort in motivating the teachers as regard prompt salary payment, providing in-service training and the needed facilities.
- The teachers should remain committed and dedicated to their job performance as this would also encourage the government to continue in providing the needed motivation.

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Artificial Intelligence in Mechanical Technology: A Leverage for Sustainable Development in the Prevailing Economic Uncertainties in Edo State, Nigeria

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Abstract. This study investigated how artificial intelligence in mechanical technology can leverage sustainable development in a period of economic uncertainties in Edo State, Nigeria. Four research questions guided the study and one hypothesis was tested at 0.05 level of significance. The study adopted a descriptive survey research design with a population of 80 respondents, which consisted fifty-three (53) technical teachers from five public technical colleges and twenty-seven (27) managers of mechanical technology industries in Edo State. The entire population was used as the sample because it was of manageable size. A structured questionnaire with twenty (20) items arranged in clusters was used as instrument for data collection. The instrument was validated by three experts from the department of Vocational and Technical Education, University of Benin, Benin City. Cronbach alpha statistical formula was used to test the reliability of the instrument and it yielded a coefficient of 0.85. The findings of the study revealed that artificial intelligence in mechanical technology improves learning experience and learning outcome, increases productivity, improves design accuracy, reduces production labour cost, reduces material wastage, saves time and improves environmental health. Based on the findings, it was recommended, amongst others, that artificial intelligence tools should be incorporated into mechanical technology delivery systems in institutions of learning where mechanical technology is offered and in mechanical technology industries for sustainable development under economic uncertainties in Edo State, Nigeria.

Keywords: Artificial Intelligence, Mechanical Technology, Economic Uncertainties and Sustainable Development

1. Introduction

Vocational and Technical Education is a form of education that combines skill acquisition with general educational knowledge (FRN, 2014). While the primary purpose of vocational education is to prepare people for employment in a recognized occupation, technical education is considered a post-secondary vocational training programme whose major purpose is the production of technicians (Momoh, cited in Osuyi et al, 2024). The authors further explained that while the term vocational education refers to skill-based programmes which are designed for skill acquisition at lower level of education, technical education, is designed to prepare people for entry into recognized occupation at a higher level. Technical education is the inclusion of basic technical and scientific knowledge with the skill-based programme. Reko and Maxwell (2016) sees technical education as the training of technically oriented personnel who are to be the initiators, facilitators and implementers of the technological development of a nation, as it is the practical application of scientific knowledge for the invention of things for man's benefit. Some of the major areas of specialization in technical education includes woodwork technology, building technology, electrical/electronics technology and mechanical technology.

Mechanical Technology is an integration of two different areas of specialization in technical education. It is a combination of Automobile Technology and

Metalwork Technology (Lemo & Olatokun, 2017). Automobile technology equips recipients with knowledge and skills in automobile engine maintenance and repairs, troubleshooting, engine cleaning, lubricating auto systems, engine tune-up, brake system service and repair, auto electricity, auto air-conditioning, auto body repair, auto shop management, service station management, spray painting, auto interior upholstery, chassis repair, vulcanization, radiator repair, crankshaft cutting, engine building/service, wheel alignment and tyre balancing, auto instructing job, the use On-Board Diagnosing machine and motor driver-mechanic. Motor driver-mechanics are motor drivers who are trained to carryout basic automobile diagnosis and maintenance on their vehicles, where the attention of an expert mechanic is not required, or is not readily accessible (FRN, 2000). In addition, metalwork technology equips recipients with skills and knowledge in forming, cutting, joining, machining, fitting job, welding analysis, metallurgy, welding shop management, foundry work and fabrication jobs such as metal door, window and protector construction (Tani & Kalus, 2019).

The method of teaching and service delivery in technical education in general, and in mechanical technology in particular, has largely remained traditional in Nigeria. It involves the use of hand-held tools, devices and equipment such as pliers, screwdrivers, jack, spanners, metal punch, scriber, chisel and other tools used for metal fabrication. The use of these tools leaves the technician physically drained and tired with very little output to show for the energy expended. The twentieth and twenty-first centuries have seen advancements in science and technology, in which cutting-edge technology, using computerized systems and applications, has been used to carry out production more easily and speedily (Ogbebor & Osuyi, 2024). One of such cutting-edge technology is Artificial Intelligence.

Artificial intelligence (AI) is one of the most important global issues of the 21st century. Artificial intelligence refers to the ability of a computer system to perform human tasks, such as thinking and learning, that can usually be accomplished only through human intelligence. Artificial Intelligence, commonly referred to as AI, is already providing a degree of flexibility and customization that was never before possible in education (Sadiku et al, 2021). Sadiku et al further revealed that the modern field of artificial intelligence came into existence in 1956 when the term “artificial intelligence” (AI) was coined by John McCarthy. AI is the branch of computer science that deals with designing intelligent computer systems that mimic human intelligence, as visuals perception,

speech recognition, decision-making, and language translation. The ability of machines to process natural language, to learn, to plan makes it possible for new tasks to be performed by intelligent systems. The main purpose of AI is to mimic the cognitive function of human beings and perform activities that would typically be performed by a human being. Without being taught by humans, machines use their own experience to solve a problem. Although the original vision for artificial intelligence was to simulate human intelligence, research effort has gradually shifted to autonomous systems that compete with people. Today, AI is integrated into the daily lives of humans in several forms, such as personal assistants, automated mass transportation, aviation, computer gaming, facial recognition at passport control, voice recognition on virtual assistants, driver-less cars, companion robots, academic research assistants and several others. Despite its advantage and ability to leverage sustainable development, many modern vocational and technical education scholars know relatively little about artificial intelligence. (Xi, 2021)

Sustainable development refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (Schaefer & Crane cited in Mensah, 2019). Furthermore, Abubakar (2017) sees sustainable development as a global development concept that provides the mechanism through which society can interact with the environment while not risking damaging the resource for the future. Thus, it is a developmental concept that brings about the improvement in the living standards of people without causing environmental challenges such air and water pollution, deforestation, climate change amongst others (Browning & Rigolon, 2019). This implies that sustainable development is an effort at guaranteeing a balance amongst economic growth, environmental integrity and social well-being. Basically, proper decisions on sustainable resource management will bring about sustainable growth for sustainable society (Yang, 2019).

Hence, mechanical technology skills that can leverage sustainable development are those that booms the economy, improves social life and standard of living and protects the environment (United Nations, 2018). Artificial intelligence systems guarantee improved teaching and learning outcome, increased productivity, improves design accuracy, saves cost of labour, optimizes material usage, saves time and supports environmental protection through efficient energy consumption and combustion processes (Sadiku et al, 2021).

Currently, the nation grapples with many challenges that could make living difficult. One of such challenge is economic uncertainties. Economic uncertainties refer to a situation in which future economic environment is difficult to predict (Osuyi & Ogbebor). One major event that brought economic uncertainty globally, and to Nigeria in particular, is the covid-19 pandemic (Osuyi & Uwaifo, 2023). The measures taken to contain it, such as lock-down, social and physical distancing, amongst others, resulted in significant economic uncertainties. Osuyi and Ogbebor are of the view that other sources of economic uncertainties in Nigeria in recent times includes the re-design of the naira in 2023 which lead to cash crunch; the total removal of subsidy on petrol by the Federal Government, whereby prices of petroleum product is determined by market forces; the floating of Nigerian currency (naira) exchange rate in the Foreign Exchange (FOREX) market; and frequent cases of civil unrest, such as hash tag #ENDSARS protest of 2020 and #ENDBADGOVERNANCE protests of 2024. These protests snow balled into looting, with grocery, grains and beverage businesses worse hit. All of which led to rapid price fluctuations and a geometric increase in the cost of goods and services (Osuyi & Ogbebor, 2024). The authors further stressed that at such times of economic uncertainties, vocational and technical education comes handy as a veritable tool to ensure economic stability and sustainable development.

For the purpose of this study, mechanical technology industries refer to industries that renders services in various areas in automobile technology and metalwork technology such as automobile maintenance, metal smelting, turning, milling drilling, metal sheets manufacturing, amongst others.

1.1 Statement of the Problem

Nigeria in general, and Edo State in particular, is currently going through a period of difficulties in which future economic environment is difficult to predict. Several researches have revealed that a system of education that equips individuals with skills is a veritable tool for achieving economic stability and sustainable development. One of such education aid skill acquisition is technical education with mechanical technology as one of the areas of specializations.

Currently, the system of delivering and acquiring of mechanical technology relies heavily on use of hand-held tools which is becoming irrelevant due to advancements in science and technology. Around the world, cutting-edge technology, such as artificial

intelligence, are being deployed in various fields of specializations to enhance speed and accuracy in production and maintenance processes. The researchers are therefore worried that if the use of hand tools in the training of students in institutions of learning, particularly in technical education, continuous the recipients might not be equipped with trending process of using modern technology, such as artificial intelligence, in production processes in the industries. Consequently, this could lead to worsened economic uncertainties and the expected sustainable development could become a mirage. This necessitated the current study.

1.2 Purpose of the Study

The main purpose of this study is to determine the extent to which artificial intelligence in mechanical technology can lead to sustainable development under prevailing economic uncertainties in Nigeria.

Specifically, the study determined:

- The extent to which economic uncertainties impact sustainable development in Edo State.
- The extent to which artificial intelligence systems is used in training mechanical technology students in technical colleges in Edo State.
- The extent to which artificial intelligence systems is being used in mechanical technology industries for service delivery in Edo State.
- The extent to which the use of artificial intelligence in mechanical technology leverage sustainable development under prevailing economic uncertainties in Edo State.

1.3 Research Questions

The following research question was raised to guide the study:

- To what extent does economic uncertainties impact on sustainable development in Edo State?
- To what extent are artificial intelligence systems being used in the training of mechanical technology students in technical colleges in Edo State?
- To what extent are artificial intelligence systems being used in mechanical technology industries for service delivery in Edo State?
- To what extent does the use artificial intelligence in mechanical technology leverage sustainable development under

prevailing economic uncertainties in Edo State?

1.4 Hypothesis

One null hypothesis was tested at 0.05 level of significance.

H₀: There is no significant difference between the mean responses of technical teachers and managers of mechanical technology industries on the extent to which artificial intelligence in mechanical technology leverage sustainable development under prevailing economic uncertainties in Edo State.

2. Methodology

The descriptive survey research design was used for this study. Descriptive survey is a research design that uses a representative sample of the population to describe the opinion, beliefs, attitude of the people about a particular phenomenon (Manjunatha, 2019). The result obtained from the sample could be used to generalise for the entire population. This design was found to be suitable for this study because a representative sample of technical teachers and managers of mechanical technology industries were used to generalise for the entire technical teachers and managers of mechanical technology industries in Edo State. Artificial intelligence in mechanical technology was the independent variable, while sustainable development was the independent variable.

The population of the study consisted 80 respondents. This was made up of 53 technical teachers from five public technical colleges and 27 managers of mechanical industries registered with Edo State Government. The data was obtained from Edo State Ministry of Business, Trade and Cooperatives and the Board of Technical and Vocational Education, Edo State. The entire population was used as the sample because it was of manageable size.

The instrument for data collection was a questionnaire titled Artificial Intelligence in Mechanical Technology

Questionnaire (AIMTQ). The instrument was made up of two sections, A and B. Section A elicited respondents' bio-data such as occupation, while section B contained 20 item statements arranged in clusters according to the number of research questions. Items for each cluster contains four response category each. The response categories were Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) rated 4, 3, 2 and 1 respectively. The instrument was validated by three experts in the department of Vocational and Technical Education, Faculty of Education, University of Benin, Benin City, Edo State, Nigeria.

In order to establish the reliability of the instrument, it was administered once to twenty respondents made up of 10 technical teachers and 10 managers of mechanical technology industries in Delta State. The data obtained was subjected to Cronbach alpha statistics and it yielded a coefficient of 0.85.

The questionnaire was thereafter administered to the respondents in the public technical colleges and mechanical technology industries in Edo State. The researcher was assisted by 9 research assistants who were briefed on how to administer the instrument. The research assistants administered the instrument to the respondents and retrieved same 100% in seven days.

The data collected were analysed with the aid of Statistical Package for Social Sciences (SPSS). The research questions were answered with Mean ($\bar{X}$) and Standard Deviations (SD) statistics while Z-test statistics was used to test the hypothesis at 0.05 level of significance. The decision rule was based on the criterion mean of 2.50. Therefore, any calculated mean value equal or greater than 2.50 was regarded as high extent, whereas mean value less than 2.50 was considered as low extent. For Z-test, a p-value equal or less than 0.05 alpha means that the hypothesis was rejected whereas p-value greater than 0.05 alpha means that the hypothesis was retained.

3. Presentation of Results

Research Question: To what extent does economic uncertainties impact on sustainable development in Edo State?

Table 1: Mean and Standard Deviation showing the Extent to which Economic Uncertainties Negatively Impact Sustainable Development in Edo State

S/N	Item	N	Mean($\bar{X}$)	SD	Remarks
1	Economic uncertainties make businesses fold up	80	2.83	0.961	High Extent
2	Economic uncertainties cause poverty and starvation	80	2.93	0.930	High Extent
3	Economic uncertainties results in social protection downturn	80	2.88	0.951	High Extent
4	Economic uncertainties lead to environmental degradation as citizens results to unwholesome economic activities for survival	80	2.89	0.940	High Extent
5	Economic uncertainties compromise the possibility of satisfying the economic, social and environmental needs of future generations	80	2.90	0.933	High Extent
Cluster Mean			2.87	0.100	High Extent

Note: SD (Standard Deviation), N (Sample Size)

Table 1 showed the extent to which economic uncertainties impacts on sustainable development in Edo State. The respondents rated items one to five as High Extent, with a mean rating ranging from 2.83 to 2.93 while the standard deviation also ranges from .930 to .961. The cluster mean showed a mean of 2.87. With these results, the respondents agreed that economic uncertainties impacted negatively on sustainable development to a high extent in Edo State.

Research Question Two: To what extent are artificial intelligence systems being used in the training of mechanical technology students in technical colleges in Edo State?

Table 2: Mean and standard deviation showing the Extent to which Artificial Intelligence systems are being used in Mechanical Technology Training in Technical Colleges in Edo State

S/N	Item	N	Mean($\bar{X}$)	SD	Remarks
6	Use of virtual training simulators	80	1.78	.826	Low Extent
7	Use On-Board Diagnosing machine	80	1.88	.891	Low Extent
8	Use of CNC milling machine	80	1.80	.863	Low Extent
9	Use of CNC lathe machine	80	1.80	.818	Low Extent
10	Use of Condition-Based Maintenance system for predictive maintenance	80	1.79	.837	Low Extent
Cluster Mean			1.81	0.03	Low Extent

Note: SD (Standard Deviation), N (Sample Size)

Table 2 reveals the extent to which artificial intelligence systems are being used in mechanical technology training in technical colleges in Edo State. The respondents rated items six to ten as low extent with a mean rating ranging from 1.78 to 1.88 while the standard deviation ranges from .818 to .891. The cluster mean indicated a mean of 1.81. The results depicts that the extent to which artificial intelligence systems, such as virtual training simulators, on-board diagnosing machine, CNC milling machine, CNC lathe machine and condition-based maintenance systems are being used in mechanical technology training in technical colleges in Edo State was low.

Research Question Three: To what extent are artificial intelligence systems being used in mechanical technology industries for service delivery in Edo State?

Table 3: Mean and standard deviation showing the extent to which artificial intelligence systems are being used in Mechanical Technology Industries for Service Delivery in Edo State

S/N	Item	N	Mean(X)	SD	Remarks
11	Use of Quality Control systems such as on-board diagnostic systems	80	2.31	0.963	Low Extent
12	Use Computer Aided Design Systems, such as Autodesk Inventor	80	2.18	0.965	Low Extent
13	Use of Computer-Aided Manufacturing systems, such as CNC lathe machine, CNC laser cutting machine and CNC milling machine	80	2.33	0.991	Low Extent
14	Use predictive maintenance systems, such as condition-based maintenance machine.	80	2.30	1.060	Low Extent
Cluster Mean			2.28	0.050	Low Extent

Note: SD (Standard Deviation), N (Sample Size)

Data in Table 3 revealed the extent to which artificial intelligence systems are being used in mechanical technology industries for service delivery in Edo State. The table showed that the respondents rated items eleven to fourteen as low extent with a mean rating ranging from 2.18 to 2.33 while the standard deviation also ranges from .963 to 1.060. The cluster mean showed a mean of 2.28. It means that the extent to which mechanical technology industries use artificial intelligence system in Edo State was low.

Research Question Four: To what extent does the use artificial intelligence in mechanical technology leverage sustainable development under prevailing economic uncertainties in Edo State?

Table 4: Mean and Standard Deviation Showing the Extent to which the use of Artificial Intelligence in Mechanical Technology Leverage Sustainable Development Under Prevailing Economic Uncertainties in Edo State

S/N	Item	N	Mean (X)	SD	Remarks
15	Increased productivity as large scale production is achieved within a short period of time	80	2.56	1.112	High Extent
16	Improved Design and production accuracy	80	2.63	1.129	High Extent
17	Reduced labour cost, as lesser hands is required to get the job done	80	2.69	1.001	High Extent
18	Reduced material wastage, as use of available material is maximized	80	2.74	0.928	High Extent
19	Time saving	80	2.65	1.137	High Extent
20	Supports environmental safety through optimization of combustion processes	80	2.80	0.916	High Extent
Cluster Mean			2.68	0.070	High Extent

Note: SD (Standard Deviation), N (Sample Size)

Table 4 reveals that artificial intelligence in mechanical technology can leverage sustainable development under prevailing economic uncertainties in Edo State. The respondents rated items fifteen to twenty as high extent with a mean rating ranging from 2.56 to 2.80. The standard deviation ranges from 0.916 to 1.180. The cluster mean indicated a mean of 2.68. The above mean scores showed that the use of artificial intelligence in mechanical technology can leverage sustainable development in Edo State to a high extent under the prevailing economic uncertainties.

Hypotheses One: There is no significant difference between the mean responses of technical teachers and managers of mechanical technology industries on the extent to which artificial intelligence in mechanical technology leverage sustainable development under prevailing economic uncertainties in Edo State.

Table 5: Z-test analysis showing mean difference between the mean responses of technical teachers and managers of mechanical technology industries on the extent to which artificial intelligence in mechanical technology leverage sustainable development under prevailing economic uncertainties in Edo State.

Respondents	N	Mean($\bar{X}$)	SD	df	z-value	p-value	Decision
Technical Teachers	53	2.65	0.44	78	1.090	.055	H ₀ Retained.
Managers of Mechanical Technology Industries	27	2.68	0.30				

Value Significant at 0.05 level (Reject Hypothesis) SD: Standard Deviation. df: degree of freedom

The result in Table 5 reveals the mean score of the mean responses of technical teachers and managers of mechanical technology industries on the extent to which artificial intelligence in mechanical technology leverage sustainable development under prevailing economic uncertainties in Edo State. Technical teachers had a mean of 2.65 and managers of mechanical technology industries had a mean of 2.68 while their corresponding standard deviations were 0.44 and 0.30 respectively. With a z-value of 1.09, and testing at df of 78 and probability value of 0.05, the null hypothesis was accepted since the p-value was greater than alpha value. In other words, the null hypothesis which states that there is no significant difference between the mean responses of technical teachers and managers of mechanical technology industries on the extent to which artificial intelligence in mechanical technology leverage sustainable development under prevailing economic uncertainties in Edo State is retained.

4. Discussion of Findings

The finding of research question one showed that the extent to which economic uncertainties negatively impact on sustainable development is high. The finding is in line with that of Osuyi and Ogbekor (2024) who are of the view that economic uncertainties make living difficult and makes future economic environment difficult to predict, thereby negatively impacting on sustainable development.

The result of research question two showed that the extent to which artificial intelligence systems, such as virtual training simulators, on-board diagnosing machine, CNC milling machine, CNC lathe machine and condition-based maintenance systems are being used in mechanical technology training in technical colleges in Edo State was low. This finding is in line with the opinion of Xi (2021) which stated that modern vocational and technical education scholars know relatively little about artificial intelligence and that they still follow the traditional teaching model based on traditional experience and skills. Also, Sadiku et al

(2021) had agreed that artificial intelligence is already providing a degree of flexibility and customization that was never before possible in education generally, and technical education, to which mechanical technology belongs, should not be left out.

The finding in research question three revealed that the extent to which artificial intelligence such as quality control systems, computer aided design systems, computer-aided manufacturing systems and predictive maintenance systems, are being used in mechanical technology industries for service delivery in Edo State was low. This finding supports that of Xi (2021) who said modern vocational technologies has hardly been involved in the use of artificial intelligence.

The finding of research question four indicated that the extent to which artificial intelligence in mechanical technology can leverage sustainable development under economic uncertainties was high. The findings showed that artificial intelligence in mechanical technology can lead to increased productivity, improved design and production accuracy, reduced cost of production and material wastage, saves time and supports environmental safety through optimal and efficient combustion processes. The finding is in agreement with that of Sadiku et al (2021) who outlined the benefits of using artificial intelligence systems to include cost reduction, improved efficiency amongst others.

The finding of hypothesis one revealed that there is no significant difference between the mean responses of technical teachers and managers of mechanical technology industries on the extent to which artificial intelligence in mechanical technology leverage sustainable development under prevailing economic uncertainties in Edo State. The null hypothesis is, therefore, retained.

5. Conclusion

Based on the findings of the study, it was concluded that artificial intelligence in mechanical technology

can leverage sustainable development under economic uncertainties in Edo State since it has the capacity to enhance students training, improve design and production accuracy, reduce cost of production and material wastage, saves time, increase productivity and support environmental safety through optimal and efficient combustion processes.

6. Recommendations

Based on the findings, the following recommendations are made:

To achieve sustainable development under economic uncertainties, Government at all levels and school Administrators where technical education is being taught should incorporate artificial intelligence into their teaching and learning system to provide a good training foundation for students in this emerging technology.

Government at all levels and the Private Sector who are into production and service delivery in the field of mechanical technology should urgently incorporate artificial intelligence into their processes due to its enormous benefit on the economy and the environment.

Owing to the overwhelming leverage of artificial intelligence driven mechanical technology systems on sustainable development, especially under economic uncertainties, more citizens are encouraged to acquire artificial intelligence driven skill.

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Sleep Quality and Athletic Performance among Athletes of University of Benin

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Abstract. The purpose of this study was to find out sleep quality and athletic performance among athletes of the University of Benin. Four research questions were raised in this study and four corresponding hypotheses were formulated at 0.05 level of significant. This study adopted correlation research design. The population of this study consisted of 244 student-athletes of the University of Benin, 145 male and 99 female. The sample size of this study was made up of 122 University of Benin student-athletes. The simple random sampling technique of selection without replacement was used to select the sample. The Pittsburgh sleep quality index questionnaire was the instrument that was used in this study. It is a 19 item self-report questionnaire, comprising of both fixed choice and open-ended questions, evaluating several aspects of sleep, which included, subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances. Component scores range from 0 (no difficulty) to 3 (severe difficulty) and their sum produces a global score ranging from 0-21, with higher values indicating poorer sleep quality. A PSQI score greater than 5 considered indicative of poorer sleep quality, based on its high sensitivity and specificity in identifying patients with sleep complaints. The data collected were analysed using Pearson product moment correlation coefficient to analysed hypotheses 1 to 4 at 0.05 alpha level. Findings revealed that there is a significant relationship between sleep latency and athletic performance, it was therefore concluded that, there is a significant relationship existing among sleep latency, duration efficiency and athletes' performance in University of Benin. It was therefore recommended that sports managers should incorporate sleep management strategies into their training programs because it is a vital for athletes seeking to optimize both physical and cognitive performance

Keywords: Sleep quality, sleep latency, sleep duration, sleep efficiency, athletes' performance

1. Introduction

High quality sleep, sufficient sleep is often presumed to be necessary for multiple factors contributing to sports performance, such as promoting physical and mental recovery from rigorous training regimens, minimizing

the risk of injury and preventing in-game fatigue and lapses in concentration. The term sleep is a naturally recurring state of mind and body, characterized by altered consciousness, inhibited sensory activity and reduced muscle activity (Hirshkowitz et al., 2015). It is a reversible behavioral state of reduced responsiveness to external stimuli and relative inactivity (Nayak & Anikumar, 2023). Sleep quality is defined as an individual's self-satisfaction with all aspects of the sleep experience, such as; sleep efficiency, sleep latency and sleep duration. (Nelson et al., 2022).

According to Singh et.al (2015), sleep efficiency is calculated as the proportion of time spent asleep relative to the time spent in the sleep environment. Athletes typically require more sleep than the average adult due to the physical and mental demands placed upon them. However, the mere number of hours spent in bed does not necessarily equate to high-quality restorative sleep. Studies demonstrate that athletes often report difficulties in initiating and maintaining sleep, thereby diminishing sleep efficiency (Haskell et.al, 2025). This inefficiency can be attributed to factors such as heightened training loads, travel schedules, and stressors related to competition.

The physiological implications of sleep efficiency are profound. Sleep plays a vital role in various restorative processes, including the release of growth hormone (GH) and the synthesis of proteins essential for muscle repair and recovery. Research conducted by Rydzik et al. (2021) indicates that sleep efficiency significantly influences anabolic processes. Athletes with higher sleep efficiency benefited from increased GH release, which is critical for muscle recovery and adaptation to training stimuli. Conversely, those with lower sleep efficiency experienced impaired recovery and diminished muscle synthesis, ultimately impacting their athletic performance.

Moreover, sleep efficiency has an equally significant impact on cognitive functions, which are vital in sports requiring high levels of strategic thinking, decision-making, and reaction time. A study by Dong et.al (2024) pointed out that decreased sleep efficiency primarily impair attention networks and executive function. In high-stakes sporting environments, the ability to make

split-second decisions can mean the difference between victory and defeat. Therefore, optimizing sleep efficiency not only enhances physical capabilities but also sharpens cognitive functions, creating a well-rounded athlete. In addition to the physiological and cognitive aspects, the effects of sleep efficiency on mood and emotional well-being cannot be overlooked. Sleep deprivation and poor sleep quality have been linked to increased levels of stress, anxiety, and depression. Athletes who experience these negative psychological effects are less likely to perform at their peak. The emotional toll of sport can amplify the consequences of inadequate sleep; thus, maintaining high sleep efficiency is paramount for psychological resilience. Nevertheless, despite the overwhelming evidence advocating for the importance of sleep efficiency, many athletes struggle to prioritize their sleep needs. Factors such as busy training schedules, recovery demands, and social obligations often lead athletes to compromise on their sleep durations and quality. This scenario is troubling, as evidenced by research indicating a trend of sleep inadequacy among elite athletes (Walsh, et.al, 2021). It is essential for athletes, coaches, and sports organizations to recognize these challenges and implement strategies to promote better sleep hygiene.

On the other hands sleep latency, is the time it takes to fall asleep after going to bed. Sleep latency is a crucial aspect of sleep quality and has a significant impact on athletic performance. Athletes who can fall asleep quickly and efficiently are more likely to experience improved sleep quality and athletic performance. By establishing a consistent sleep schedule, creating a sleep-conducive environment, avoiding stimulating activities before bedtime and practicing relaxation techniques, athletes can improve their sleep latency and optimize their sleep quality and athletic performance. According to Bourdon et al (2017) posited that for athletes, impaired sleep can result in increased perception of effort, reduced motivation, and altered pain sensitivity, compromising their training efficiency and readiness during competitions. Mah et al (2018) suggested that sleep is essential for memory consolidation, where motor skills learned during the day are reinforced and stored, thereby enhancing performance.

More so, sleep duration, refers to the amount of time an individual spends sleeping each night. For athletes, the national sleep foundation recommends 7- 9 hours of sleep per night for optimal performance and recovery. Sleep duration is a crucial component of sleep quality and has a significant impact on athletic performance. Athletes who prioritize sleep duration and quality can optimize their physical and cognitive performance, reduce their risk of injury and gain competitive edge in any sport of their choice. According Lastella et al. (2016) inadequate sleep adversely affects metabolic functions, immune responses, and muscle repair mechanisms, thereby contributing to decreased physical

performance. Mah, et al (2018) examined collegiate basketball players over a period of two weeks, revealing that extended sleep duration averaging ten hours per night was positively correlated with improved sprinting and shooting accuracy, as well as heightened overall mood, noting that poor sleep can result in decreased physical performance capabilities and increased perceived exertion during physical activities. Thus, establishing a consistent sleep routine helps regulate circadian rhythms, enabling quicker sleep onset and improved sleep duration.

According to Scott et al. (2021), Sleep quality being critical for cognitive function and emotional regulation, suggesting sleep quality can lead to negative consequences on mental health. Scott et al maintained that 27.8% of athletes reported poor sleep quality. Swinbourne et al (2016) found that 50% of elite athletes were poor sleepers, as defined by a Pittsburgh Sleep Quality Index (PSQI) score greater than 5. The prevalence of poor sleep quality among university students in Africa varies by region, with the highest rates in South Africa (69.59%), followed by North Africa (62.23%), followed by East Africa (61.31%) and West Africa (54.43%) (Nakie et al., 2022).

Athletic performance is the ability to achieve specific goals in sport through a combination of strength, speed, endurance and skill. (Smith, 2006). Athletic performance is viewed as a complex task that relies on cognitive and motor processes such as decision-making, attention, coordination of complex actions and incorporating feedback (Haehl and Beckmann, 2022). It is also the result of training, skill development and mental preparation, indicating that preparation and mindset play crucial roles in achieving peak performance (Zachary, 2017). There is a strong positive association between sleep and athletic performance including sports-specific skill execution, strength, and anaerobic power (Walsh et al., 2021). Good quality sleep is essential for good health and well-being (Aminoff et al., 2019). However, lifestyle and environmental factors are increasingly causing difficulties in sleeping. Sleep is essential to optimal health and performance especially in athletes (Walsh et.al, 2020). Thus, athletes and coaches recognize the relevance of sleep for supporting performance and recovery. The timing to preferred sleep and wake times affects the circadian rhythm which affect sleep duration and quality and may affect athletic performance (Charest and Grandner, 2023) There is a strong connection between lack of sleep and accuracy as well as reaction time in sports like golf, dart throwing and tennis (Schwartz and Simon, 2015). Cognitive performance and the ability to learn are crucial to both athletic performance and development, and adequate sleep is required to reinforce learned material. Restricted sleep can hinder an athlete's athletic capacity by impairing new skill acquisition as well as interfering with flexible thinking and decision-making (Bird, 2013).

1.1 Research Questions

The following research questions were raised to guide the study:

- What is the relationship between sleep quality and athletic performance any athletes of University of Benin.
- What is the relationship between sleep efficiency and athletic performance among athletes of University of Benin.
- What is the relationship between sleep latency and athletic performance among athletes of University of Benin.
- What is the relationship between sleep duration and athletic performance among athletes of University of Benin.

1.2 Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance:

- There is no significant relationship between sleep quality and athletic performance among athletes of University of Benin.
- There is no significant relationship between sleep efficiency and athletic performance among athletes of University of Benin.

- There is no significant relationship between sleep latency and athletic performance among athletes of University of Benin.
- There is no significant relationship between sleep duration and athletic performance among athletes of University of Benin.

2. Methodology

This study adopted correlation research design. The population of this study consisted of 244 student-athletes of the University of Benin, 145 male and 99 female. The sample size of this study was made up of 122 University of Benin student-athletes. The simple random sampling technique of selection without replacement was used to select the sample. The Pittsburg sleep quality index was the instrument that was used in this study. It is a 19 item self-report questionnaire, comprising of both fixed choice and open-ended questions, evaluating several aspects of sleep, which included, subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances. Component scores range from 0 (no difficulty) to 3 (severe difficulty) and their sum produces a global score ranging from 0-21, with higher values indicating poorer sleep quality. A PSQI score greater than 5 considered indicative of poorer sleep quality, based on its high sensitivity and specificity in identifying patients with sleep complaints. The data collected were analysed using Pearson product moment correlation coefficient to analysed hypotheses 1 to 4 at 0.05 alpha level.

3. Presentation of Results

Hypothesis 1: There is no significant relationship between sleep quality and athletic performance.

Table 1: Pearson correlation statistics on relationship between sleep quality and athletic performance

Variables	N	Mean	SD	r-value	p-value	Decision
Sleep quality		52.42	3.809			
	122			0.518	0.000	Ho is rejected
Athletic performance		78.13	8.553			

The data in table 1 showed the r-value is 0.518 indicating there was a positive moderate relationship between sleep quality and athletic performance. The p-value of 0.000 which is less than 0.05 level of significance shows that the null hypothesis which states that there is no significant relationship between sleep quality and athletic performance is rejected.

Hypothesis 2: There is no significant relationship between sleep efficiency and athletic performance.

Table 2: Pearson correlation statistics on relationship between sleep efficiency and athletic performance

Variables	N	Mean	SD	r-value	p-value	Decision
Sleep efficiency		51.45	4.322			
	122			0.618	0.000	Ho is rejected
Athletic performance		78.13	8.553			

The data in table 2 showed the r-value is 0.618 indicating there was a positive moderate relationship between sleep efficiency and athletic performance. The p-value of 0.000 which is less than 0.05 level of significance shows that the null

hypothesis which states that there is no significant relationship between sleep efficiency and athletic performance is rejected. It therefore suggests that, there is a significant relationship between sleep efficiency and athletic performance. This implies that sleep efficiency influences athletic performance.

Hypothesis 3: There is no significant relationship between sleep latency and athletic performance.

Table 3: Pearson correlation statistics on relationship between sleep latency and athletic performance

Variables	N	Mean	SD	r-value	p-value	Decision
Sleep latency		51.34	4.187			
	122			0.373	0.000	Ho is rejected
athletic performance		78.13	8.553			

The data in table 3 showed the r-value is 0.373 indicating there was a positive weak relationship between sleep latency and athletic performance. The p-value of 0.000 which is less than 0.05 level of significance shows that the null hypothesis which states that there is no significant relationship between sleep latency and athletic performance is rejected. Hence, there is a significant relationship between sleep latency and athletic performance.

Hypothesis 4: There is no significant relationship between sleep duration and athletic performance.

Table 4: Pearson correlation statistics on relationship between sleep duration and athletic performance.

Variables	N	Mean	SD	r-value	p-value	Decision
Sleep duration		52.27	3.770			
	122			0.294	0.001	Ho is rejected
Athletic performance		78.13	8.553			

The data in table 4 showed the r-value is 0.294 indicating there was a positive weak relationship between sleep duration and athletic performance. The p-value of 0.000 which is less than 0.05 level of significance shows that the null hypothesis which states that there is no significant relationship between sleep duration and athletic performance is rejected. Hence, there is a significant relationship between sleep duration and athletic performance.

4. Discussion of Findings

The findings in hypothesis one showed that there was a significant relationship between sleep quality and athletic performance. In line with this, quality sleep has been linked to improved attention, decision-making, and reaction times, which are pivotal components in sports (Nedelec, 2020). Conversely, the effects of poor sleep may contribute to increased risk of injury or delayed recovery after injury in athletes (Dwivedi, et.al, 2019). Hausswirth and Mujika (2016) noted that athletes often experience sleep deficits due to rigorous training schedules, travel, and competition-related stress. This lack of sleep can negatively impact their performance, recovery, and overall well-being. Also in consonance with the finding was the study by Kölling, et.al (2022) who identified a direct relationship between sleep quality and mood states in athletes, emphasizing how emotional regulation fosters a positive performance environment. Additionally, a study by Pires et al. (2016) shows that sleep deprivation and poor sleep quality have

been linked to increased levels of stress, anxiety, and depression. Athletes who experience these negative psychological effects are less likely to perform at their peak. Reilly and Edwards (2020) posited that athletes who experience disrupted sleep may struggle with concentration and focus during critical moments of competition, leading to inferior performance outcomes. This indicated that, even a modest reduction in sleep quality can impair cognitive functioning and performance efficacy.

The findings of research question 2 in relation to hypothesis 2 revealed that there was a significant relationship between sleep efficiency and athletic performance. As regards this, it is noteworthy that sleep plays a vital role in various restorative processes, including the release of growth hormone (GH) and the synthesis of proteins essential for muscle repair and recovery. Research conducted by Rydzik et al (2021) indicated that sleep efficiency significantly influences these anabolic processes. Athletes with sleep efficiency benefited from increased GH release, which is critical for muscle recovery and adaptation to training stimuli. Conversely, those with lower sleep efficiency experienced impaired recovery and diminished muscle synthesis, ultimately impacting their athletic performance. In addition, studies demonstrated that athletes often report difficulties in initiating and maintaining sleep, thereby diminishing sleep efficiency (Reilly et al, 2019). This inefficiency can be attributed to factors such as heightened training loads, travel

schedules, and stressors related to competition (Watson & Preedy, 2017).

The findings in hypothesis 3 showed that there was a significant relationship between sleep latency and athletic performance. The findings aligned with Bourdon et al (2017) noted that athletes impaired sleep can result in increased perception of effort, reduced motivation, and altered pain sensitivity, compromising their training efficiency and readiness during competitions. Mah et.al (2018) suggested that sleep is essential for memory consolidation, where motor skills learned during the day are reinforced and stored, thereby enhancing performance.

The finding of hypothesis 4 showed that there was a significant relationship between sleep duration and athletic performance. Aligning with this is Lastella et al. (2016) demonstrated that inadequate sleep adversely affects metabolic functions, immune responses, and muscle repair mechanisms, thereby contributing to decreased physical performance. In conformity with this finding was another study by Mah et al (2018) examined collegiate basketball players over a period of two weeks, revealing that extended sleep duration averaging ten hours per night was positively correlated with improved sprinting and shooting accuracy, as well as heightened overall mood. This finding aligned with Lastella et al. (2016), poor sleep can result in decreased physical performance capabilities and increased perceived exertion during physical activities. Thus, establishing a consistent sleep routine helps regulate circadian rhythms, enabling quicker sleep onset and improved sleep duration

5. Conclusion

Based on the findings of the study, it was therefore concluded that, there is a significant relationship existing among sleep latency, duration, efficiency and athletes' performance in University of Benin.

6. Recommendations

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

- Student athletes can use technological devices capable of tracking sleep duration and quality can provide insights that facilitate better recovery strategies, ensuring that athletes receive adequate rest tailored to their individual needs.
- Handlers of student-athletes should ensure to optimize sleep efficiency as it not only enhances physical capabilities, but also sharpens cognitive functions, creating a well-rounded athlete.
- Sports managers should incorporate sleep management strategies into their training programs because it is a vital for athletes

seeking to optimize both physical and cognitive performance.

- Athletes should maintain a consistent sleep schedule, minimizing exposure to screens before bedtime, and creating a comfortable sleep environment devoid of disturbances.

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Relationship between Administrative Strategies of Human Resource Manager and Human Resource Job Performance in Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria

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Abstract. The study examined the relationship between administrative strategies of human resource manager and human resource job performance in Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The objective the study was to determine the relationship between conflict resolution strategy, delegations' strategy, delegations' strategy and human resource job performance in Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The hypotheses were tested at 0.05 level of significant. This study used a correctional research design. A correlational research design investigates relationships between variables without the researcher controlling or manipulating any of them. A correlation reflects the strength and/or direction of the relationship between two or more variables. The population of the study was made up of both academic and non-academic staff in the Department Education, and Department of Arts Education, University of Maiduguri, Borno State, Nigeria. The total population consists of 78 staff comprised of both academic and non - academic staff. The sample technique employed in the study is a simple random sampling technique because it ensures that each member of a population has an equal chance of being selected at random. However, the study used Krejcie & Morgan (1970) table for determining sample size to sampled 66 staff. The research instrument for this study was a structured questionnaire titled 'the relationship between the Administrative Strategies of Human Resource managers and Human Resource Job Performance (ASoHRMoHRJ)'. The findings of the study revealed that, there was a significant relationship between conflict resolution strategy, delegations' strategy, training development strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. Based on the findings of the study, it was concluded that, there was a positive significant association among conflict resolution strategy, delegations' strategy, training development

strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. Based on the finding of the study, the researchers concluded that since conflict resolution strategy, delegations' strategy, training development strategy were found to significantly related to human recourse job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. Therefore, staff in the department should adopt the strategies in management of personnel.

Keywords: Administrative Strategies, Human Resource Manager, Human Resource Job Performance

1. Introduction

Human resource (personnel) management is the dynamic powerhouse of every organisation. For any entity to function correctly, there is a need for a well-functioning human resource department that operates within such an entity. Human resources, according to Godwin, Uloma, and Desmond (2024), is the lifeblood of every organization. It is the most adaptive resource of the organization despite the advent of modern technology into organizational management. Human resources (HR) in combination with other resources like material, time and financial resources are used to lead strategies that help in achieving organizational objectives.

The human resources as an attribute of the organization enable the organization to make and implement decisions naturally and respond flexibly to the threats and opportunities both inside and outside the organization. In the 21st century, the organisation, very much dependent on its human resources for survival, is having a growing dependence considering the increasingly complex nature of the organisational environment. Human resource managers are responsible for hiring, training, motivating, and engaging

employees to maximize organizational effectiveness. The level of job performance of workers is operationalized as the extent to which human resource workers perform their jobs effectively and efficiently in accordance with their responsibilities and functions for achieving the company's goals. It includes both task performance (e.g., recruiting, training, employee relations and compliance) and contextual performance (e.g., behaviors that help maintain a favorable working climate, adaptability and strategic congruence with business goals) (Aguinis & Gabriel, 2022).

Furthermore, administrative strategies are a series of coordinated decisions and activities performed by public administrators to align organizational resources, structures and procedures with policy objectives and operational goals (Mazouz & Rousseau, 2016). Administrative strategies are purposeful administrative tactics used by school administrators or heads of department to organize, direct and control people and material resources in order to attain educational goals (Eze, Okechukwu & Uche, 2023).

The researchers have noted that a successful administrative plan is essential for the success of a Human Resource (HR) manager, as it improves efficiency, accountability and strategic alignment within the firm. It also gives HR managers a defined framework that helps them work more clearly so they can help the firm reach its bigger goals through careful planning, following the rules and strong performance management. A reasonable administrative plan dramatically increases the productivity of HR services by making them more efficient, eliminating unnecessary tasks and making better use of time.

According to Armstrong (2020), administrative strategy enables human resource managers to "deliver consistent outcomes in areas like recruitment, pay management, delegation of duties, effective communication, effective training and policy development as well as policy enforcement," thereby directly contributing to organizational performance. Furthermore, properly defined procedures and well-maintained documentation enhance consistent decision-making and openness in human resource activities. As a result, the Human Resources (HR) department's credibility improves and employee trust grows. According to Dessler (2020), accountability and consistency in administrative processes are critical in developing a dependable and successful human resource (HR) system.

According to the HR manager, employees are the organization's most valuable asset, and they must be handled appropriately. As a result, the Human Resource Manager (HRM) plays a more strategic role in accomplishing organizational goals (Abdullah 2017). HRM is so important that managers are assigned to handle HR in their organizations. Furthermore, building a favorable environment and fostering employee involvement are critical components of strategic HR

since they lead to job satisfaction and long-term retention (Sepahvand, Bagherzadeh & Khodashahri, 2021). The term "strategic HR manager" refers to a comprehensive and innovative strategy that positions HR as a strong strategic collaborator in the organization's success, recognizing the workforce's critical role in developing long-term competitiveness (Sinambela, Sinaga & Lubis, 2022).

It is important to note that, if a human resource manager employs effective administrative strategies for the employees within the organization, there will be a positive performance leading to effective and efficient achievement of the organizational set goals and objectives. However, if a human resource manager employs poor administration strategies among the organization's employees, there will be negative performance, hence the set goal and objectives of the organization will not be actualized.

Human resource management is one of the pillars that organizations rely on to ensure effective and efficient operations. The majority of human resource managers are responsible for hiring and managing personnel in order to meet company goals and objectives. However, despite the roles and activities of human resource managers, human resource job performance remains a source of concern for stakeholders and researchers across all sectors of education. These could be related to the unappealing aspect of the working environment, inefficient communication techniques, bad resource management strategies and a lack of effective dispute resolution and delegation strategies. These issues may have an impact on organizational performance, resulting in low turnover, a decrease in output rate and in some cases, legal ramifications within and between employees and organizations. Against this backdrop, the researchers investigated the relationship between human resource managers' administrative strategies and personnel job performance at the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

1.1 Objective of the Study

The objectives of the study were to determine:

- the relationship between, conflict resolution strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria,
- delegations' strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria,
- training strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

1.2 Hypotheses

The researchers test the following hypotheses at the 0.05 level of significance:

H₀₁: There is no significant relationship between conflict resolution strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

H₀₂: There is no significant relationship between delegations' strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

H₀₃: There is no significant relationship between training development strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

2. Literature Review

Adejare (2024) examined Conflict Management Strategies and Employee Performance in Selected Manufacturing Firms in Lagos State. The study followed a survey research design. The population of this study covers all employees of the manufacturing companies mentioned in Lagos state, with a total population of 3,195, of which 357 were chosen for the study using stratified random sampling. Respondents were divided into strata, and a sample was taken at random from each. The questionnaire serves as a data collection tool in the study. The data were subjected to Spearman rank order correlation analysis. The study discovered that there is a strong positive association between conflict management tactics (collective bargaining, compromise, and accommodation) and organizational goal achievement. The findings also revealed a strong association between conflict management (collective bargaining, accommodation, confrontation, and avoidance) and employee performance in a sample of Lagos manufacturing enterprises.

Augustine (2024) investigated the effects of conflict management strategies on employee performance at the University of Calabar Teaching Hospital in Calabar, Nigeria. To collect data for analysis, the study used a survey research design with a structured questionnaire. The study had 550 participants. Using the Krejcie and Morgan table from 1970, the study's sample size was 226. The idea was tested and assessed using a simple linear regression analysis model. According to the findings, the University of Calabar Teaching Hospital's personnel perform better when they use a conflict avoidance technique. There is a significant effect of conflict collaboration strategy on employees' commitment to achieving organizational goals. There is a significant relationship between conflict accommodation strategy and employees' motivation.

There is also a significant conflict mediation strategy involving employees at the University of Calabar Teaching Hospital, Calabar.

Usman (2024) investigated Conflict Management Strategies and Organizational Performance: A Study of the Federal Roads Maintenance Agency in Abuja, Nigeria. The study used a survey research approach with a sample of 567 employees divided into three groups. There are 58 top-level employees, 136 middle-level employees, and 373 lower-level employees. Taro Yamane's formula was used to get the sample size of 235 FERMA staff members. The study collected data using a closed-ended questionnaire. The statistical approach of choice for testing hypotheses was regression analysis. The study's findings provide solid empirical evidence for a favorable and significant association between conflict management approaches and organizational performance. The study's findings offered insight into how conflict management tactics and accommodating practices contribute to improved organizational performance and their applicability in varied conflict situations.

Amehule (2022) investigated Delegation of Duty and Employee Commitment in Hotels in Port Harcourt. The study employed a cross-sectional exploratory survey research approach. The survey included 353 registered hotels in Port Harcourt, with 224 office managers participating. This study's sample size was two hundred and twenty-four (224) office managers (heads of units/departments) from 28 registered hotels out of a total of 153 registered hotels in Port Harcourt. The above sample size was calculated using a random sampling technique. To do the univariate study, Spearman's Rank Order Correlation Coefficient was used; data were presented and analyzed using descriptive statistical tools such as mean and frequency tables. Spearman's (rho) correlation was utilized to assess the association between independent and dependent variables at $P < 0.05$ (two-tailed test). According to the study's findings, delegation of duties results in comparable performance of office managers in terms of affective commitment, normative commitment, and continuation commitment. The study discovered that delegation of duty influences employees' commitment in a hotel in Port Harcourt. Employees who do not delegate duties will struggle to fulfill their statutory responsibilities.

Al-Jammal (2015) investigated the impact of delegation of authority on employee performance at the Great Irbid Municipality in Irbid, Jordan. The study used a descriptive technique. The study's population was 1,500. The researchers picked a random sample of 200 employees and distributed them. (166) questionnaires were considered for retrieval, whereas (6) were deemed inappropriate for data analysis. The ultimate result was (160), which represented 80% of the study population. The study employed a questionnaire as its instrument. The data were analyzed using mean, standard

deviations, percentages, frequencies and T-test, which were calculated and extracted. The study's findings demonstrated that delegation promotes positive employee interactions. The study's findings indicate that the delegation of authority has a statistically significant impact on the efficacy, efficiency, and empowerment of employees' performance at the Great Irbid Municipality.

Adesola (2017) studied how staff performance at the Radisson Blu Anchorage Hotel in Ede, Osun State, was affected by training and development. A cross-sectional survey was used as the study's research design. Every employee of the Radisson Blu Anchorage Hotel, including those in the office, maintenance, food and beverage, IT, accounting, lodging, and security departments, made up the study's population. 68 workers of the Radisson Blu Anchorage Hotel comprised the study's sample size and sampling methodology. 68 employees were given a questionnaire as the data gathering tool. The mean and standard deviation were used as descriptive statistics to analyze the data. The study's conclusions showed that staff performance at the Radisson Blu Anchorage Hotel was impacted by appropriate business training and development. Nonetheless, management must examine the program to determine whether it applies to the employees' field of work. The study's findings showed that the Radisson Blu Anchorage Hotel has made investments in staff development and training.

A study on effective delegation and its effects on worker performance was carried out in Aba, Nigeria, by Ugoani in 2020. Exploratory research was the method used for the investigation. The study's population consisted of Nigerian bank management and staff. The study included 90 participants, of whom 60 were men and 30 were women. A questionnaire was utilized in the study to collect data. Using descriptive statistics, the data were examined. The study's conclusions showed that efficient delegation enhances worker performance. According to the study's findings, employee performance and efficient delegation are positively correlated.

Sothy (2019) studied how employee performance was affected by training and development in a private secondary school in Phnom Penh, Cambodia. From the target population of 220 employees, 74 respondents were chosen for the study's sample size of 90 respondents using a purposive and basic random sample technique. The questions were created to sample respondents' observations of the effects of training and development on employee performance, which allowed the school to maintain its competitive advantage, increase job satisfaction, improve employee performance to high levels, and encourage successful planning in line with school objectives. The study revealed a positive significant correlation between employee performance development and training.

Gourikar (2020) studied how training and development affected workers' performance at the Symbiosis Center

of Management Studies in India. The researchers' design was quantitative, and the population consisted of all people. The study's sample population consisted of 250 respondents, including employers, students, working employees, and retired professionals. A questionnaire was used to collect the study's data, and descriptive statistics were used to analyze the data from 251 respondents. According to the findings, staff members are happy with the managers' planned training and development.

3. Methodology

This study used a correctional research design. The study examined the relationship between the administrative strategies of human resource managers and human resource job performance, Department of Education, University of Maiduguri, Borno State, Nigeria. A correlational research design investigates relationships between variables without the researcher controlling or manipulating any of them. A correlation reflects the strength and/or direction of the relationship between two or more variables. The direction of a correlation can be either positive or negative (Esser & Vliegthart, 2017). The population of the study was made up of both academic and non-academic staff in the Department Education, and Department of Arts Education, University of Maiduguri, Borno State, Nigeria. The total population consists of 78 staff comprised of both academic and non - academic staff. The sample technique employed in the study is a simple random sampling technique because it ensures that each member of a population has an equal chance of being selected at random. However, the study used Krejcie & Morgan (1970) table for determining sample size to sampled 66 staff. The research instrument for this study was a structured questionnaire titled 'the relationship between the Administrative Strategies of Human Resource managers and Human Resource Job Performance (ASoHRMoHRJ)' in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. It comprises two sections, A and B. Section A comprises personal data of the respondents, like gender, working experience, and qualification. Section B consists of six (6) multiple-choice questions, giving respondents a choice from a range of answers based on a modified Likert-style rating scale. The validity of the instrument was subject to strict and thorough screening by the experts from Measurement and Evaluation and the Department of Social Science Education to ascertain whether or not the instrument would measure what it was supposed to measure. The corrections, comments, and suggestions were made to improve the validity of the instrument. The instrument was subjected to reliability using 5 academic staff and 5 non-academic staff to assess its reliability. Relationship between administrative strategies of human resource manager on human resource job performance in Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria, who were not sampled and were further

subjected to test and retest to obtain a coefficient of 0.74. The value indicates that the instrument is highly reliable. The questionnaire was accompanied by a letter to the Head, Department of Education, University of

Maiduguri, Borno State, Nigeria, to introduce the researcher to the respondents. In analyzing the data generated from the study, simple percentages, mean, and standard deviation were used.

4. Data Analysis and Results

H₀₁: There is no significant relationship between conflict resolution strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

Table 1: Correlational Analysis of Human Resource Management and Conflict Resolution Strategy in Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria

Variables	Mean	Std. Deviation	N	r-value	P-value	Remarks
Human Resource Management	20.5106	3.09187	66	0.375	0.009	significant
Conflict Resolution Strategy	19.7872	3.26334	66			

Table 1 tests the hypothesis that say there is a no significant relationship between conflict resolution strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The findings indicate that the r-value is 0.375 and the p-value is 0.009, which is less than 0.05 level of significance. This implies that there is a positive, significant relationship between conflict resolution strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. Hence, the hypothesis was rejected.

H₀₂: There is no significant relationship between delegations' strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

Table 2: Correlational Analysis of Human Resource Management and Conflict Resolution Strategy in Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria

	Mean	Std. Deviation	N	r-value	P-value	Remarks
Human Resource Management	20.5106	3.09187	66	0.444	0.002	significant
Delegation Strategy	20.7447	3.51684	66			

Table 2 tests the hypothesis that there is no significant relationship between delegations' strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The findings indicate that the r-value is 0.444 and the p-value is 0.002, which is less than 0.05 level of significance. This implies that there is a positive, significant relationship between delegations' strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. Hence, the hypothesis was rejected.

H₀₃: There is no significant relationship between training development strategy and human resource job performance in the Department of Arts Education and Social Science Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

Table 3: Correlational Analysis of Human Resource Management and Conflict Resolution Strategy in Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria

	Mean	Std. Deviation	N	r-value	P-value	Remarks
Human Resource Management	20.5106	3.09187	66	0.584	0.000	significant
Training Development Strategy	21.2979	2.52737	66			

Table 3 tests the hypothesis that there is no significant relationship between training development strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The findings indicate that the r-value is 0.584 and the p-value is 0.000, which is less than 0.05 level of significance. This implies that there is a positive, significant relationship between training development strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. Hence, the hypothesis was rejected.

5. Discussion

The finding of the study with respect to the first hypothesis which states that there is no significant relationship between conflict resolution strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The findings of the study revealed that, there was a significant relationship between conflict resolution strategy and human resource job performance in the Department of Education,

Faculty of Education, University of Maiduguri, Borno State, Nigeria. The findings confirm the results of Adejare (2024), Augustine (2024), Usman (2024) who found that, there was a significant relationship between conflict resolution strategy and human resource job performance.

The findings of the study with respect to hypothesis two which states that, there is no significant relationship between delegations' strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The findings of the study further revealed that, there was significant relationship between delegations' strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The findings in consonance with Amehule (2022) and Al-Jammal (2015) who indicated that, the delegation of authority has a statistically significant impact on the efficacy, efficiency and empowerment of employees' performance.

The findings of the study with respect to hypothesis three which states that, that there is no significant relationship between training development strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The finding of the study also revealed that, that there is no significant relationship between training development strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. The finding is inconsistency with the findings of Adesola (2017), Ugoani (2020), Sothy (2019) and Gourikar (2020) who revealed that, there was a positive significant correlation between personnel performance development and training.

6. Conclusion

Based on the findings of the study, it was concluded that, there was a positive significant association among conflict resolution strategy, delegations' strategy, training development strategy and human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. This implies that, conflict resolution strategy, delegations' strategy, training development strategy are significant determinant of human resource job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria.

7. Recommendation

Based on the finding of the study, the researchers recommended the following:

Since conflict resolution strategy, delegations' strategy, training development strategy were found to significantly related to human recourse job performance in the Department of Education, Faculty of Education, University of Maiduguri, Borno State, Nigeria. Therefore, staff in the department should adopt the strategies in management of personnel.

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Analysis of Psychological skills and Sports Performance of Club Hockey Players In North East Zone, Nigeria

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Abstract. This study was designed to analyze the Relationship of psychological skills against sports performance of club Hockey Players in North-East Zone, Nigeria. Two objectives were set, two research questions answered; and two hypotheses tested. The study utilized Carl Roger's theory of personality grew out of his client-centered approach to psychotherapy and behavior change. The study adopted Survey Research Method. Survey research is used for descriptive, exploratory and explanatory purposes. The population for this study comprised all club Hockey players from Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe states. Each state was represented by 36 club Hockey players comprising 18 male and 18 female. Quota sampling technique was used to select a sample of 180 club Hockey Players consisting of 90 male and 90 female. Research instrument used for the study was a 30-item self-developed Questionnaire and the statement were derived from literature in cognizance with the objectives of the study. These items constitute information on the demographic data of the respondents, information on flow; the performance is determined through a winning of matches which attract three (3) points. A draw attract (1) point while a loss attracts no point. Results showed that there was a Significant Relationship between Psychological skill and sport performance among club Hockey Players in North-East Zone, Nigeria. While there was no significant difference psychological skills and sport performance among male and female club Hockey players in North-East Zone, Nigeria. It was therefore concluded that psychological skills are positively related to sport performance that the higher the psychological skills, the higher the performance among club Hockey players in North-East Zone, Nigeria, and it was also recommended that self-concept is independent of performance, coaches should therefore be aware that self-concept is not a hindrance to sport performance among club Hockey Players in North-East Zone, Nigeria and should therefore not placed too much emphasize on it.

Keywords: Psychological Skills, Sports Performance, Flow State, Hockey Players, Gender Differences

1. Introduction

Attaining high standard performance in sports and physical activity is the desire of every athlete. Achieving high standard of sports performance depends on many factors, as training, skill acquisition, fitness level, total concentration, time transformation, emotional control and sports participation. Understanding the psychological factors that contribute to sports performance is very important for both coaches and sports psychologists. Knowledge of factors associated with the attainment of flow is important for those interested in the quality of athlete's experience and performance in competition. Flow is generally viewed as peak performance state, Jackson and Roberts, (1992); Mchman & Grove, (1991) and Private and Bundrick (1991) explained peak performance as a standard of accomplishment in sport performance, while flow is a psychological state. Achieving peak performance is an important goal for competitive athletes and coaches, and flow can facilitate the attainment of this. The mind-set accompanying flow tends to push a person to his/her limits, and thi is one reason why flow is so important to athletes seeking to do their best. As athletes and coaches know all too well, it is difficult to have the body perform to high levels when the mind is not focused (Csikszentmihalyi, 1990). Psychological skill (PS) is an individually designed combination of methods selected to attain psychological skill needs (Gill, 2000b). Weinberg and Gould (1999) stated that, the use of psychological skills such as goal setting, positive self-talk, imagery, visualization, self-efficacy and relaxation training have all been shown to help athletes to perform better. There is no single Idyllic Package; each programme is individualized based on the psychological state of the individual and the sport To assemble a successful Psychological Skill Training programme it is

important to distinguish between Psychological Skill Training (PST) skills and Psychological Skill Training methods. Psychological Skill Training skills are the psychological qualities or attribute that need to be developed (confidence, concentration). The Psychological Skill Training method is that tool that will be used to help improve the Psychological Skill Training skills (Calmesl, d'Aripe-Longueville, & Soulard, 2003). Much of the early research utilizing prescriptive Psychological Skill Training Programme used single Psychological Skill Training methods to examine their effect on performance (Martin, Moritz & Hall, 1999, Garza & Eltz, 1998): When implementing a Psychological Skill Training Programme, it is improbable that a single method will be employed by a sports psychologist. However, Thelwell and Greenless (2001) posited that it is more effective to employ a combination of mental skills that are related to the specific sports.

Self-confidence may be the most critical self-perception in sports psychology (Gill, 2000). The athlete must be confident that he can perform well when placed in competitive environment. Self-efficacy is a situation form of self-confidence or the belief that one is confident and can perform within a specific situation. Many studies have revealed that the most consistent difference between elite athletes and the less successful levels of self-efficacy, lies between confidence and efficacy may be emotion (Gill, 2000).

The importance of psychological skills to sports performance is well documented in the sport psychology literature such as Hardy, Jones and Gould (1996) and Williams & Krane, (1998); Thomas, Murphy and Hardy, (1999) who have developed a self-reporting instrument to measure athletes' Psychological skills and performance strategies. Eight areas were assessed including self-talk, emotional control, automat-city, goal setting, imagery, activation, negative thinking and relaxation. In general, it was expected that the more proficient athletes are at using psychological skills in their sports, the more likely they will experience flow by developing greater control over their thoughts and emotions during performance.

The relationship between flow and the two sets of psychological constructs, athletic self-concept and psychological skills were examined in this study in order to increase understanding of how these constructs may be associated with flow experiences. Flow is expected to demonstrate positive associations with performance assessments. Field Hockey is played on gravel, natural grass, sand-based or water-based artificial turf, with a small handball approximately [73mm] in diameter. The game is popularly among both males and females in many parts of the world including Nigeria. Meris Field Hockey has been played at each summer Olympic games since 1908 [Except 1912 and 1924], while women's field Hockey has been played at the summer Olympics since 1980. The club Hockey

players in the North-East Zone, Nigeria had participated in the National League Hockey Competition and National Sports Festival as far back as 1989 to date. Borno state came first^[1st] at the National League Competition held in Osun - Osun state in 2000 while Yobe desert Hockey team came 2nd at the National sport festival held in Port Harcourt in 2004. Adamawa flickers of Adamawa state came 3rd at the 2004 General Salihu Ibrahim Under 21 Hocke competition held in Abuja. This level of performances by the club Hockey players in the North-East Zone, Nigeria described as a state of being completely engrossed in the execution of a performance of the exclusion of everything else. The researcher was motivated to conduct this study on Hockey players in the North-East Zone, Nigeria because of the interest the researcher has in the game to thrive. Hockey teams in the North-East Zone, Nigeria have performed extremely well at both National Sports Festivals and International Competitions before, for example in the J.F. Kennedy Hockey Tournaments. However, over the years these clubs' performances have dwindled. Although other factors like economy support from host government could be responsible for the dwindling performance, the researcher determined the relationship among flow, self-concept, psychological skills and sports performance among club hockey players in North-East zone, Nigeria.

1.1 Objectives of the Study

- The objectives of this study were to determine:
- Type of psychological skills applied by Club Hockey players in North-East Zone, Nigeria.
- Level of performance of Club Hockey players in North-East Zone, Nigeria
- The relationship between psychological skills and sports performance among Club Hockey players in North-East Zone, Nigeria

1.2 Research Questions

The following research questions were answered:

- What are the psychological skills used among club Hockey players in North-East Zone, Nigeria?
- What is the level of performance outcomes among club Hockey teams in state and national competitions in North-East Zone, Nigeria?
- What is the relationship between psychological skills and sports performance in general?

1.3 Hypothesis

The following null hypotheses were tested:

H₀₁: There is no significant relationship between psychological skills and sports performance among club Hockey players in North-East Zone, Nigeria.

2. Research Methodology

The design adopted for this study was the survey method. The survey method presents accurate description of an area of interest providing detailed information that describes a phenomenon (Nworgu, 1991). Survey is also well suited for gathering demographic data that describes the composition of the sample. Pinsonneault and Kraemer (1993) defined a survey as a “means for gathering information about the characteristics, actions or opinions of a large group of people”. (Bell,1996). Survey research is used for descriptive exploratory and explanatory purposes. Osuala (2001) described survey study as that which seeks to establish relationship between a number of qualifiable variables for making prediction. (Fajonyomi, 2012) reported that survey design is used for exploratory, descriptive and explanatory purposes. It seeks information from selected individuals to represent the larger group. He further remarked that the findings obtained from selected individuals called sample can be generalized to the larger group called population. Hence this study adopted the survey method since it determined the relationship among flow, self-concept,

psychological skills and sports performance among Hockey players of North-East zone of Nigeria.

2.1 Population and Sample

The target population for this study comprised all club Hockey players from Adamawa, Bauchi, Borno, Gombe and Yobe states. The total population for male was one hundred and seventy-five [175] while the female had a total population of one hundred and twenty-five [125]. The researcher selected a sample of eighteen [18] male Hockey players out of 35 registered players representing fifty-one-point four percent [51.4%] while eighteen [18] female Hockey players were selected out of twenty-five [25] representing seventy two percent [72%]. These male and female Hockey players were normally allowed to register for any competitive tournaments. Quota sampling techniques was used to select a sample of one hundred and eighty [180] club Hockey players consisting of ninety [90] females from the five [5] state. Quota sampling techniques is a method that ensured that a certain number of sample units from different categories with specific characteristics appear so that all these characteristics are presented. [Varke-Visser,1991].

Table 1: Sample selection and states (male team)

S/No	States	Registered players	Players selected	Percentage
1.	Adamawa flickers	35	18	51.4
2.	Bauchi flickers	35	18	51.4
3.	Borno flickers	35	18	51.4
4.	Gombe flickers	35	18	51.4
5.	Yobe Desert	35	18	51.4

Table 2: Sample selection and states (female team)

S/No	States	Registered players	Players selected	Percentage
1.	Adamawa flickers	25	18	72
2.	Bauchi flickers	25	18	72
3.	Borno flickers	25	18	72
4.	Gombe flickers	25	18	72
5.	Yobe Queens	25	18	72

Source: Borno state sport council, 2011.

2.2 Method of Data Analysis

The data collected for this study were analyzed using descriptive statistics of frequency counts and Percentage to describe the demographic information about the respondents. Pearson Product Moment Correlation Coefficient was used to test hypotheses 1, 2 and 3 while analysis of covariance was used to test hypothesis at 0.05 level of significance.

3. Results

Research Question 1: What are the psychological skills among Club Hockey Players in North-East Zone, Nigeria
Table 4.4a Psychological skills used among club Hockey Players in North-East Zone, Nigeria

Table 3: Psychological Skills

Item	Borno	Gombe	Bauchi	Adamawa	Yobe
	$\bar{X} \pm SD$	$\bar{X} \pm SD$	$\bar{X} \pm SD$	$\bar{X} \pm SD$	$\bar{X} \pm SD$
1.Maintain a positive attitude	3.72 ± 1.07	2.00 ± 0.01	2.50 ± 1.32	2.06 ± 1.39	1.82 ± 1.00
2.Level of self motivation	3.83 ± 1.15	2.00 ± 0.01	2.13 ± 0.81	1.63 ± 0.62	1.91 ± 1.06
3.Set high realistic goals					2.28 ± 0.88
4.Deal effectively with people	3.61 ± 0.97	2.00 ± 0.01	2.75 ± 1.18	2.00 ± 1.15	3.09 ± 1.48
5.I use positive self-talk					2.73 ± 1.12
6.I use positive mental imagery	3.28 ± 1.22	2.00 ± 0.01	3.38 ± 1.50	1.94 ± 0.78	3.23 ± 1.31
7.I manage anxiety effectively					2.00 ± 0.98
8.Manage our emotions effectively	4.11 ± 0.47	1.05 ± 0.23	1.43 ± 0.51	1.75 ± 1.00	1.55 ± 0.59
9.I always concentrate on my game	4.22 ± 1.00	1.05 ± 0.23	1.38 ± 0.50	1.87 ± 1.20	1.64 ± 1.09
10.I felt strong when playing			2.13 ± 1.26	1.75 ± 0.78	1.73 ± 0.88
11.I always imagine to play	3.78 ± 1.06	1.05 ± 0.23	1.93 ± 0.99	2.06 ± 1.18	1.91 ± 0.92
Total	$* 5.78 \pm 1.63$			$* 2.97 \pm 1.57$	$* 3.41 \pm 1.62$

*high performance psychological skills

Table 3 above shows the mean and standard deviation of each variable under psychological skills from which in Borno state and a total mean and standard deviation of 5.78 ± 1.63 , this indicates that Borno state team had a high level of psychological skills, while Gombe state team had a total mean and standard deviation of 2.87 ± 0.16 , this implies that Gombe state male team had a high level of psychological skills, this followed by Bauchi state male team which had a total mean and standard deviation of 3.56 ± 1.45 , Bauchi state team are having a high level of flow. Adamawa state team had a total mean and standard deviation of 2.97 ± 1.57 , this indicates that Adamawa

state male team had a high level of psychological skills. While Yobe state male team had a total mean standard deviation of 3.41 ± 1.62 which indicates that Yobe state team had a high level of psychological skills. To determine the level of performance in psychological skills [high or low] the researcher used the marks obtained on the response mode SA (5) A (4) UD (3) D (2) and SD (1). All mean and standard deviation of the response mode and the mean and standard deviation 2:00 and above indicate a high level of psychological skills while 2:00 and below indicates a low level of performance.

Research Question 2A: What is the level of performance outcomes among club Hockey teams, in state and national competition of players in North-East zone of Nigeria.

Table 4: Summary of state competition 2008

S/No	Teams	P	W	D	L	GF	GA	GD	PTS	PS
1.	Adamawa flickers	3						5	4	+
2.	Bauchi flickers	3				2	1	4	4	2
3.	Borno flickers	3		1		2		5	3	+2
4.	Gombe flickers	3				2		6	7	1
5.	Yobe Desert	3		2	1			8	5	+3

Table 4 indicates state male team competition played in 2008. The records show that Yobe Desert Male team from Yobe State came first (1st) from the three matches played. Borno flickers team of Borno State came second (2nd) while Adamawa flickers team of Adamawa state came third (3rd) Bauchi flickers team of Bauchi state came fourth (4th) and Gombe flickers team of Gombe state came fifth (5th).

Table 5: Summary of male state competition 2009.

S/No	Teams	P	W	D	L	GF	GA	GD	PTS	PS
1.	Adamawa flickers	3				2	3	+1	5	3rd
2.	Bauchi flickers	3			1	1	4	-1	4	
3.	Borno flickers	3	1		2		6	+2	6	1st
4.	Gombe flickers	3			2	1	7	+1	2	
5.	Yobe Desert	3	1	2		5	2	+3	5	2nd

Table 5 indicates state team played in 2009. The records shows that Borno flickers from Borno state came first ((1st) from the three matches played. Yobe Desert team of Yobe state came second (2nd) while Adamawa flickers team from Adamawa state came third(3rd).Bauchi state team of Bauchi state came fourth(4th)and Gombe flickers team of Gombe state came fifth(5th)There was no state competition in 2010.

Table 6: Summary of male state competition 2011.

S/No	Teams	P	W	D	L	GF	GA	GD	PTS	PS
1.	Adamawa flickers	3	1	1	1	3	2	+1	4	1 st
2.	Bauchi flickers	3	1	-	2	4	4	-	3	2 nd
3.	Borno flickers	3	2	-	1	5	4	+1	6	3 rd
4.	Gombe flickers	3	-	2	1	3	5	2	2	5th
5.	Yobe Desert	3	2	-	1	8	6	+2	6	1st

Table 6 Indicates state male teams played in 2011. The record shows that Yobe Desert male team from Yobe state came first (1st) from three matches played. Borno flickers team of Borno state came second (2nd) while Adamawa flickers team of Adamnawa state came third (3rd)Bauchi flickers team of Bauchi state came fourth (4th) and Gombe flickers team of Gombe state came fifth(5th)

Table 7: Summary of male state competition 2012.

S/No	Teams	P	W	D	L	GF	GA	GD	PTS	PS
1.	Adamawa flickers	3		2	-	5	3	+2	5	1 st
2.	Bauchi flickers	3	2	1	-	6	4	+2	7	2 nd
3.	Borno flickers	3	1	1	1	7	6	+1	4	4th
4.	Gombe flickers	3	-	2	1	8	7	+1	2	
5.	Yobe Desert	3	2	1	10		7	+3	7	1st

Table 7 Indicates state male teams played in 2012. The records show thatYobeDesert team male team from Yobe state came first (1st) from the three matches played. Bauchi flickers team of Bauchi state came second (2nd) while Adamawa flickers team of Adamawa state came third (3rd). Borno flickers team of Borno state came fourth (4th) and Gombe flickers team of Gombe state came fifth (5th)

Table 8: Summary of male state competition 2008-2012 Results.

S/N	Teams	P	W	D	L	GF	GA	GD	PTS	Position
1	El-Kanemi flickers	15	7	3	5	8	4	+4	24	3rd
2	Yobe Desert	15	9	4	2	10	3	+7	31	1st
3	Bauchi flickers	15	8	5	2	7	4	+3	29	2nd
4	Gombe flickers	15	6	3	6	6	6		21	4th
5	Adamawa flickers	15	5	4	6	5	7	-2	19	5th

Table 8 indicates the summary of matches played by each team from 2008-2012. The Records shows that Yobe Desert team from Yobe State came first(1st)from the 15 matches they played. Bauchi flickers team of Bauchi state came second while El-Kanemi flickers team of Borno state came third(3rd). Gombe flickers team of Gombe state came fourth(4th)and Adamawa flickers team of Adamawa state came fifth(5th)

NB:

P-Number of matches played

W- Number of matches won (a win attack 3 points)

D-Number of matches drawn (a draw attacks 1 point)

L-Number of lost matches (no print)

GF-Number of goals for (goals) scored by a team)

GA-Number of goals against (goals scored against an opponent)

GD-Differences in Number of goals for and against

PTS-Total Number of points a team has

PS-The overall position of a team in the competition

What is the relationship between psychological skills and sports performance in general?

Table 9: Summary of Pearson product moment correlation coefficient analysis between psychological skills and sport performance.

S/N	Variables	Flow	Sport performance	r	P-value	Decision
1	Adamawa flickers	29.5	19.0	0.726	0.008	*5
2	Bauchi flickers	26.1	29.00	0.632	0.038	*5
3	El-Kanemi flickers	27.8	24.0	0.981	0.004	*5
4	Gombe flickers	28.8	21.0	0.618	0.084	*5
5	Yobe Desert	25.7	31.0	0.935	0.480	*5

* Significant at 0.05

Table 9 reveals the mean scores of each of the five teams on psychological skills and sport performance. Pearson Product Moment Correlation Coefficient was used to determine the relationship between flow and sport performance. The calculated values of $r = 0.726, 0.632, 0.981, 0.618$ and 0.935 were obtained for the respective states at p -values of $0.008, 0.038, 0.004, 0.084, 0.480$ which is less than $p < 0.05$ level of significance. Since the calculated p -values are less than 0.05 , therefore, the null hypothesis was rejected which implies that there is significant relationship between psychological skills and sport performance.

4. Discussion

Understanding the psychological factors that accompany successful athletic performance is a priority for applied sport psychology with a major area of focus being mental links to optimal performance. This study examined specific links between self-concept, psychological skills and strategies and the optimal mental state of flow as well as relationship between flow and optimal Performance. The results of this study are the relationship between flow and sport performance shows that there was significant relationship between flow and sports performance among club Hockey players in North-East zone, Nigeria.

Flow is an optimal psychological state that occurs when there is balance between perceived challenges and skills in an activity (Csikszentmihalyi, 1990). It is a state of concentration so focused that it amounts to absolute absorption in an activity. Research on flow in sport and exercise has increased in recent years (example Jackson, 1992; 1995; Jackson, Kimiecik, Ford and Marsh, 1998; Jackson & Marsh, 1996; Kimiecik & Stein, 1992) and Csikszentmihalyi (1992) has encouraged application of flow theory to physical activity settings, which is where some of his initial research into flow began (Csikszentmihalyi, 1975). Theoretically, flow as an optimal mental state, would be expected to be associated with optimal athletic performance as well as providing an optimal experience.

Flow is generally viewed as a peak performance state and there is some support for this assumption (example, Jackson & Roberts, 1992; McInman & Groul, 1991, Correla on support for a positive relationship between ratings of flow performances of peak performance was obtained by Jackson and Roberts (1992) who asked athletes to reflect on their best performance and found

flow characteristics to be endorsed. McInman and Grove 1991; Privette and Bundrick (1991) have concluded that flow and Peak performance shared many similar characteristics, but should still be viewed as conceptually distinct. Privette and Bundrick (1991) distinguished between the two concepts by defining flow as an intrinsically rewarding experience and peak performance as optimal functioning. Jackson (1996) distinguishes between the two concepts by describing peak performance as a standard of accomplishment, while flow is described as a psychological state. According to Jackson, et al, (1998) correlation support was obtained for a relationship between self-reported flow state and ratings of perceived success with both measures taken after competitive event. Beyond identifying any associations between flow and peak performance, it is important to ascertain whether it is possible to promote the state of flow, that is there is a set of conditions or factors that are positively associated with athletes being able to attain flow?. Preliminary study that examined this question (Stein, Kimiecik, Daniels & Danies, 1995) failed to identify any substantive relationship between the psychological constructs, goals, competence and confidence, and statement of flow in three different sport settings during a weekend tennis tournaments, College basketball activity classes and amateur senior golf. Jackson et al (1998) did find associations between flow and three psychological variables: intrinsic motivation (Positive), perceived ability (positive), and cognitive anxiety (Negative) in general, the predictions made regarding the expected relationships between the factors assessed in this study were well-supported for example, where positive relationships were expected between flow and dimensions of the self-concepts and psychological skills measures, these were mostly found.

The results of this study on the relationship between psychosocial skills and sport performance show that there was significant relationship between psychological skills and sport performance among club Hockey players in North-East zone, Nigeria. This result is in line with the findings of Thomas, Murphy and Henry (1979) who reported that skills involved in regulating arousal processing information and managing emotions are potentially important for competitive athletes. These skills are targeted in training programmes and have been found to differentiate successful and unsuccessful athletes. Mahoney, Gabriel and Perkins, (1987) Thomas & Over, (1994). Flow is not an easy state to attain and getting into flow involves a certain level of psychological skills, such as ability to

control attention (Csikszentmihalyi, 1990). The importance of psychological skills to athletic performance is well documented in the sports psychology literature (Hardy, Jones & Gould, 1996; Williams & Krave, 1998). Thomas et al (1999) have developed a self-report instrument to measure athletes' psychological skills and performance strategies. Eight areas were assessed including self-talk, emotional control, automaticity, goal, imagery activation negative thinking and relaxation. It was expected that the more proficient athletes are at using psychological skills in their sport, the more likely they will experience flow due to developing greater control over their thoughts and emotions during performance. The psychological factors predicted to be related to flow experience were automaticity, the absence of negative thinking, goal setting imagery, activation, negative thinking and relaxation. It was expected that the more proficient athletes are at using psychological skills in their sport, the more likely they will experience flow due to developing greater control over their thoughts and emotions during performance. The psychological factors predicted to be the most related flow experience were automotives, the absence of negative thinking, goal setting, emotion control and relaxation, these skills were considered to be most conceptually relevant to the dimensions of flow from the eight psychological skills areas assessed by the Thomas et al (1999) instruments.

The result of this study on differences in psychological skills and sport performance between male and female club Hockey players in North-East zone of Nigeria shows that there is no significant difference in flow, self-concept, psychological skills and sports performance between male and female athletes. Psychological research has shown large gender difference in self-concept which is consistent with gender stereotype. For example, Duisek and Flaberty (1980) in their longitudinal study of adolescent self-concept found that males had higher self-concept in congeniality and social ability. Research with Australia samples indicates that males, compared to females, tend to have higher self-concepts of their physical abilities and mathematics, whereas females tend to have higher self-concepts in reading (Marsh, Barnes, Cairners & Tidman, 1984; Marsh, Parker & Barnes, 1985).

Share (2000) examined 620 high school and collegiate athletes of both genders to determine the relationship between goal orientation and sport confidence. The findings indicates that male and female athletes are significantly different in task orientation ego orientation and several factors related to the source of sport confidence such as skill performance, demonstration of ability physical/psychological preparation. In addition, the perceived sources of sport confidence were difference between high school and collegiate athletes of both genders.

5. Conclusion

Based on the results of the study, it was concluded that:

- The following are the mostly the psychological skills being used by the players; Manage our emotions effectively, I always concentrate on my game and I felt strong when playing;
- There was significant relationship between flow and sports performance among club Hockey players in North-East zone, Nigeria.
- There is significant relationship between psychological skills and sport performance among gender.

6. Recommendations

Based on the result of this study, the following recommendations were made:

- If level of flow is high among athletes' performance will also be high. Coaches should therefore ensure that their players attend a high level of flow during sport performance through organized competitions.
- If level of psychological skills is high among athletes' performance will also be high. Coaches should therefore ensure that their players attend a high level of psychological skills during performance.
- If the level of flow and psychological skills are high, the higher the performance among club Hockey players in North-East Zone, Nigeria. Coaches should therefore emphasize the attainment of flow and psychological skills during performance through competition and regular training.

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From Mission Schools to Private Universities: The Historical Trajectory of Christian Education in Nigeria

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Abstract. The history of Christian education in Nigeria reveals a complex trajectory that spans from the pioneering mission schools of the nineteenth century to the proliferation of faith-based private universities in the twenty-first century. Early mission schools established by the Church Missionary Society, the Wesleyan Methodist Mission, and the Roman Catholic Mission functioned as centers of literacy, evangelization, and social transformation, producing the first generation of Nigerian elites who later shaped politics, church leadership, and nationalist movements. However, the post-independence government takeover of mission schools in the 1970s, justified on grounds of standardization and secularization, eroded much of the moral and religious ethos embedded in Christian education, resulting in widespread concerns over declining standards and weakened character formation. The liberalization of the higher education sector in 1999 marked a new phase, leading to the establishment of private Christian universities such as Covenant, Babcock, Bowen, and Madonna Universities. These institutions sought to revive the integration of faith and learning while offering alternatives to overstretched public universities. Yet, tensions persist: questions of elitism, commercialization, and the extent to which private universities continue the legacy of holistic Christian education remain unresolved. This study critically examines the historical shifts, continuities, and contradictions within this educational trajectory, with particular attention to its philosophical, theological, and socio-political underpinnings.

Keywords: Christian Education; Mission Schools; Private Universities; Secularization; Evangelization; Neoliberalism; Nation-building

1. Introduction

The history of Christian education in Nigeria reflects a complex trajectory that has evolved from the establishment of mission schools in the nineteenth century to the proliferation of private universities in the twenty-first century. Christian missions, particularly the

Church Missionary Society (CMS), the Wesleyan Methodist Mission, and the Roman Catholic Mission, were among the earliest agents of Western education in Nigeria (Fafunwa, 1974; Ajayi, 1965). Their schools not only served as centers of literacy and religious instruction but also functioned as instruments of cultural transformation, producing the first generation of Nigerian elites who later played significant roles in politics, church leadership, and nationalist movements. Education thus became a vital tool for evangelization, civilization, and social reform in colonial Nigeria (Taiwo, 1980).

However, the post-independence period witnessed a dramatic shift. In the 1970s, following Nigeria's civil war, the federal and state governments took over mission schools, citing the need for standardization, secularization, and control of educational development (Adesina, 1977). This policy, while intended to democratize access, resulted in the erosion of the moral and religious ethos that mission schools had instilled. Reports of declining standards, indiscipline, and weakened moral formation in public schools became widespread (Nduka, 2006). Consequently, the Christian community perceived this takeover as a dislocation from the original vision of education as both intellectual and moral formation.

The return of some mission schools in the late 1990s, coupled with the liberalization of the Nigerian higher education sector in 1999, created the environment for the establishment of private universities, many of which are faith-based (Obasi, 2007). Today, private Christian universities such as Covenant University, Babcock University, Bowen University, and Madonna University have become significant players in Nigeria's educational landscape. They not only provide an alternative to the overstretched public university system but also claim to restore the integration of faith and learning that mission schools once embodied (Ojo, 2010).

Despite this remarkable trajectory, several problems remain. First, there is a historical disjunction between the ideals of mission schools and the realities of private Christian universities. While both claim to pursue holistic education, questions arise as to whether private universities have genuinely continued the legacy of character formation and moral discipline or have become elitist institutions accessible only to the wealthy (Okonkwo, 2012). Second, the commercialization of education has introduced tensions between profit motives and the missionary ethos of service. Third, there is insufficient scholarly attention to the continuity and discontinuity between the colonial mission school model and the contemporary Christian university enterprise. As a result, the historical narrative of Christian education in Nigeria risks being fragmented and misunderstood.

This study, therefore, seeks to critically examine the historical trajectory of Christian education in Nigeria, from the pioneering mission schools of the nineteenth century to the rise of private Christian universities in the twenty-first century. It interrogates the shifts, continuities, and contradictions within this trajectory, paying particular attention to the philosophical, theological, and socio-political underpinnings that have shaped Christian educational practices over time.

2. Conceptual Clarifications

2.1 Christian Education

Christian education may be broadly understood as the systematic process of cultivating intellectual, moral, and spiritual development in alignment with Christian principles. It transcends the narrow confines of religious catechism and instead emphasizes the integration of faith and learning as a holistic enterprise. Its ultimate goal is the formation of individuals who embody Christian virtues while also serving as productive members of society (Adeyemo, 2001). In the Nigerian context, Christian education historically functioned as a dual enterprise: it provided literacy and vocational training on the one hand, and on the other, it fostered moral rectitude and spiritual discipline. Thus, it became both an instrument of human capital development and a vehicle for moral transformation.

2.2 Mission Schools

Mission schools denote the educational institutions founded by Christian missionary agencies during the colonial era, particularly from the nineteenth to the early twentieth centuries. These schools were not mere academic centers but ideological instruments designed to transmit Western literacy, religious instruction, and cultural transformation (Taiwo, 1980; Nduka, 2006). While they expanded access to formal education, they also contributed to the marginalization of indigenous epistemologies, thereby reshaping the intellectual and cultural landscape of Nigerian society. Importantly,

mission schools produced the first generation of Western-educated elites—men and women who later spearheaded nationalist struggles, political reform, and indigenous church leadership. Their legacy thus embodies both empowerment and cultural displacement, making them contested sites in the discourse of postcolonial education.

2.3 Private Christian Universities

Private Christian universities refer to tertiary institutions owned and managed by Christian denominations or faith-based organizations, a phenomenon that gained momentum following the liberalization of Nigeria's higher education sector in 1999. Unlike mission schools, which were largely confined to the primary and secondary levels, private Christian universities represent an expansion of Christian educational vision into the realm of higher learning. They emerged as an alternative to the deteriorating conditions of public universities, positioning themselves as institutions committed to academic excellence, moral formation, and spiritual discipline (Obasi, 2007; Ojo, 2010). By claiming continuity with the moral ethos of the mission school tradition, they seek to integrate professional training with ethical responsibility, thereby presenting themselves as corrective spaces to the perceived moral and structural crises of Nigeria's public university system. Nevertheless, these universities raise critical questions regarding elitism, affordability, and the commercialization of Christian education, which complicates their claim to embody the missionary legacy in its original sense.

3. Christian Mission Schools and the Birth of Western Education in Nigeria

The history of Christian education in Nigeria is inseparable from the missionary enterprise of the nineteenth century. Missionary societies such as the Church Missionary Society, the Wesleyan Methodist Mission, and the Roman Catholic Mission pioneered schools that introduced formal literacy in English alongside basic arithmetic, vocational training, and Bible instruction (Fafunwa, 1974). These institutions sought to produce a literate Christian community that could sustain evangelization and embody Western values (Ajayi, 1965). In doing so, they became pivotal sites of cultural transformation, nurturing the first generation of Nigerian elites—figures such as Bishop Samuel Ajayi Crowther—who would later serve as clergymen, teachers, and political leaders. Mission schools thus facilitated the rise of a new consciousness that both sustained colonial governance and generated the intellectual resources for nationalist resistance (Ayande, 1966).

The introduction of Western education was neither neutral nor wholly benevolent. Mission schools must be understood as complex institutions whose aims were simultaneously pedagogical, evangelical, political, and

economic (Ajayi, 1965; Fafunwa, 1974). They produced catechists, teachers, and administrators who localized missionary curricula while also supplying literate intermediaries for colonial administration. Yet, paradoxically, they nurtured intellectual currents that later challenged missionary paternalism and colonial domination (Taiwo, 1980). The curriculum typically combined catechetical instruction with literacy, arithmetic, and vocational training, emphasizing discipline, moral formation, and communal responsibility. In sociological terms, these schools transmitted cultural capital—new forms of language, comportment, and literacy—that could be converted into occupational and political capital under colonial rule. This dynamic rendered mission education both a vehicle of social mobility and a mechanism of stratification, privileging those who mastered the linguistic and cultural codes valorized by missionaries and colonial officials.

The role of mission education was thus deeply ambivalent. On one level, it advanced the evangelizing agenda of missionaries and served the administrative needs of the colonial state. On another, the very skills cultivated in these schools—English literacy, organizational competence, and rhetorical ability—became resources for political mobilization and nationalist agitation. Mission education cannot, however, be portrayed as a totalizing agent of Westernization. Local actors, including parents, chiefs, and indigenous teachers, actively negotiated the form and scope of missionary education, sometimes resisting or adapting its elements. As a result, mission schools became arenas of cultural negotiation, producing hybrid religious, linguistic, and pedagogical practices rather than simple cultural displacement. Yet these negotiations occurred within asymmetrical structures of power, where Western epistemologies and languages were privileged and indigenous knowledge systems marginalized.

The reach of mission education was uneven across gender and geography. Provision for girls often emphasized domesticity and moral training over pathways to public authority, thereby reinforcing gender hierarchies even as it expanded female literacy. Regional disparities were also striking: mission education flourished in coastal and forest zones but remained limited in the predominantly Muslim north, where resistance to Christian missions curtailed access to formal schooling. These differences shaped divergent trajectories of elite formation and political participation across Nigeria.

The legacy of mission schools remains double-edged. They established institutional norms—discipline, formal curricula, examinations—that continue to structure Nigerian schooling. At the same time, they contributed to the devaluation of indigenous knowledge systems and entrenched new social inequalities. A balanced assessment of their role must weigh the

material benefits of expanded literacy and mobility against the cultural and epistemic costs of Western domination. Importantly, the ambivalent heritage of mission schools continues to shape contemporary debates on education, identity, and development, not least in the ongoing proliferation of faith-based universities and calls for the decolonization of knowledge in Nigeria.

4. Christian Education, Colonialism, and Nationalism

Christian education in Nigeria cannot be understood apart from its entanglement with colonial rule. Missionary societies such as the Church Missionary Society, the Wesleyan Methodist Mission, and the Roman Catholic Mission established schools in the nineteenth century with the stated aim of evangelization, literacy, and social reform (Ajayi, 1965; Fafunwa, 1974). Their curricula combined literacy, vocational training, and religious instruction with discipline and moral formation. However, colonial authorities quickly found in these schools a convenient tool for administration, as they produced clerks, interpreters, and lower-level officials necessary for governance. Thus, while missions framed education as an integrated project of “civilization” and evangelization, it also served the broader goals of colonial control.

Yet this same education became a catalyst for nationalism. Graduates of mission schools, such as Herbert Macaulay and Nnamdi Azikiwe, became leading critics of colonial domination and advocates of self-rule. The paradox is striking: the very institutions that inculcated obedience and Western values also cultivated the literacy, confidence, and political consciousness that later challenged colonial authority (Taiwo, 1980). This ambivalence reflects the dual role of education as both a technology of governance and an instrument of liberation, a tension that resonates with broader philosophical debates about the emancipatory and disciplining power of education.

Following independence in 1960, Christian mission schools remained dominant until the 1970s, when federal and state governments initiated a nationwide takeover. The official rationale was to ensure standardization, secularization, and equitable access, particularly given regional disparities and the politicization of education (Alabi & Okemakinde, 2010). However, the policy produced unintended consequences. The religious and moral ethos embedded in Christian education was gradually diluted, and scholars widely lament declining academic standards, indiscipline, and weakened character formation (Nduka, 2006). Philosophically, this moment revealed the deep tension between the state’s vision of a secular, unifying system and religious communities’ conviction that education must integrate faith, morality, and intellectual development.

A straightforward historical reading credits mission schools with producing Nigeria's first modern elites—teachers, clergy, bureaucrats, nationalists, and politicians—who occupied central roles in both church and state. Yet a more critical account reveals at least three interrelated dynamics. First, empowerment was ambivalent: mission schooling enabled upward mobility but often imposed alien values, linguistic practices, and epistemologies that distanced elites from their communities. Second, education operated as a technology of colonial governance, aligning with administrative needs and legitimizing the rhetoric of civilization while shaping subjects useful to both church and crown. Third, Christian education elevated Western frames of knowledge while marginalizing indigenous epistemologies, though Africans did not remain passive recipients. Instead, they selectively appropriated, adapted, and resisted missionary curricula—using them to advance communal purposes, sustain transformed indigenous institutions, and fuel nationalist aspirations.

The historical trajectory of Christian education in Nigeria therefore embodies a profound philosophical paradox. It illustrates how education can function simultaneously as a tool of domination and as a seedbed of liberation, how it can displace indigenous values while also providing resources for cultural renewal, and how it mediates the complex interplay of faith, power, and nation-building. The enduring significance of this history lies in its reminder that education is never neutral: it is always entangled with questions of identity, morality, and the struggle for freedom.

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5. The Liberalization of Higher Education and the Rise of Private Christian Universities

The collapse of Nigeria's public universities in the late twentieth century, marked by underfunding, frequent strikes, and overcrowding, created an urgent demand for alternatives. The 1999 liberalization of the higher

education sector by the Federal Government opened the door for private institutions, including those owned by Christian denominations. Leading examples include Babcock University (1999), established by the Seventh-Day Adventist Church; Madonna University (1999), founded by the Catholic Church; Bowen University (2001), owned by the Nigerian Baptist Convention; and Covenant University (2002), established by Living Faith Church. These universities presented themselves as a revival of the missionary tradition, combining academic training with spiritual and moral formation.

While their emergence appeared to continue the legacy of nineteenth-century mission schools, significant differences remain. Mission schools historically provided free or affordable education as a service to society, whereas the new universities are frequently criticized for elitism due to their high tuition fees, which limit access largely to students from affluent backgrounds. Nevertheless, these institutions have positioned themselves as corrective alternatives to the state-run system by promising academic excellence, discipline, predictable calendars, and global competitiveness.

A closer examination, however, complicates this narrative. The claim of continuity with missionary education is selective. Religious rhetoric and practices are visible, but the universities operate primarily as market-driven entities, sustained by tuition fees, donor support, and entrepreneurial ventures. This market orientation has enabled innovation but also introduced tensions, particularly where financial imperatives influence enrollment strategies or curriculum choices. Similarly, while private universities enjoy advantages such as stable calendars and administrative efficiency, evidence of superior academic outcomes remains uneven. Faculty research productivity, global rankings, and infrastructural quality vary considerably across institutions, reflecting differences in financial capacity rather than denominational distinctiveness.

Perhaps the most pressing concern lies in issues of equity and access. By catering predominantly to privileged social groups, private Christian universities risk entrenching socio-economic stratification, raising questions about inclusivity and the public purpose of higher education in Nigeria. They expand the system's capacity but do so in ways that may exacerbate inequalities rather than bridge them.

Overall, private Christian universities in Nigeria should be understood as hybrid institutions—faith-based in ethos, market-oriented in practice, and embedded in the broader struggles of the national higher education system. Their rise illustrates both the opportunities and contradictions of educational liberalization in Africa, where debates over access, equity, and the common good remain central.

6. Christian Education in Nigeria: Continuities, Ruptures, and the Dynamics of Change

The historical trajectory of Christian education in Nigeria reveals both continuities and ruptures that illuminate the interplay of religion, economy, and identity. From the establishment of missionary schools in the nineteenth century to the proliferation of private universities in the twenty-first, Christian education has served as a critical arena for negotiating moral formation, social mobility, and economic survival. At the heart of this development lies the dialectic between missionary ideals and market logics—a tension that continues to define the future of Christian educational institutions in Nigeria.

Missionary societies initially introduced schools as instruments of evangelization, moral discipline, and communal uplift (Ajayi, 1965). Yet financial sustainability was a challenge from the outset, as schools relied on a precarious combination of philanthropy, colonial subsidies, and local contributions. This early tension between mission and market persists today. Contemporary Christian universities are expected to embody service and moral leadership while simultaneously competing in a liberalized educational marketplace (Marshall, 2009). The structural question remains whether market imperatives inevitably corrode moral mission or whether economic viability is itself indispensable for sustaining that mission.

Historically, Christian schools produced Nigeria's earliest professional and political elites, granting access to careers in administration, medicine, law, and the church (Ayandele, 1966). While such institutions expanded opportunities for marginalized groups, they also entrenched new hierarchies of privilege. A similar paradox characterizes private universities, where high tuition fees restrict access even as scholarship schemes and community outreach attempt to mitigate exclusion. The unresolved question is whether these institutions democratize access or reproduce inequality beneath the rhetoric of benevolence.

Christian education has further functioned as a site of cultural encounter, mediating between Western epistemologies and indigenous knowledge systems (Sanneh, 1989). Although missionary schools often displaced local traditions, they also enabled the emergence of hybrid intellectual formations. Today, faith-based universities emphasize professional and scientific training while maintaining commitments to moral and religious instruction. The challenge lies in sustaining a Christian ethos without lapsing into dogmatism that undermines intellectual freedom. Their long-term credibility depends on the ability to foster holistic education that integrates moral and professional formation while remaining receptive to pluralism.

The rise of private universities has heightened the role of the National Universities Commission (NUC) in monitoring standards and enforcing accountability. Yet regulation presents a delicate dilemma: excessive oversight risks suffocating institutional creativity, while insufficient supervision fosters mediocrity. What is required is a reflexive regulatory framework that balances accountability with institutional distinctiveness. Debates on quality assurance must therefore extend beyond technical benchmarks to include the civic and moral contributions of Christian universities.

Contemporary Christian universities demonstrate continuity with missionary schools in their emphasis on moral formation, denominational patronage, and professional training in theology, education, and health sciences. They also represent rupture: unlike missionary institutions supported by colonial governments or foreign philanthropy, private universities function in a market-oriented educational economy characterized by managerial governance and global rankings (Slaughter & Rhoades, 2004). This transition from charitable provision to fee-based education has opened opportunities for innovation but also risks exacerbating inequality.

The geography of Christian education further reflects these dynamics. Missionary penetration was historically deeper in southern Nigeria due to coastal access and denominational rivalry, and private universities remain disproportionately concentrated in the south. Denominational competition—Anglican, Methodist, Baptist, Catholic, and Pentecostal—continues to fuel expansion, echoing nineteenth-century rivalries that once drove translation, teacher training, and schooling. The consequences remain ambivalent: Christian education opens pathways to social mobility while simultaneously reinforcing regional and class-based stratification.

Taken together, the evolution of Christian education in Nigeria illustrates a complex interplay of mission, market, mobility, identity, and regulation. These forces are mutually constitutive: mission sustains purpose but requires market viability; education facilitates social mobility yet risks reproducing inequality; curricula embody identity but must accommodate pluralism; regulation enforces standards yet must not stifle creativity. The future of Christian universities will depend on their capacity to navigate these tensions reflexively, ensuring that the imperative of service does not collapse under market pressures and that academic excellence remains anchored in education as a public good.

7. Tensions and Contradictions in Contemporary Christian Higher Education

The emergence of private Christian universities in Nigeria represents a paradox in the history of Christian

education. On one hand, these institutions embody a revival of the Christian ethos in higher learning, an ethos weakened after the state takeover of mission schools in the 1970s. By offering an alternative to public universities—often beset by industrial strikes, infrastructural decay, and declining standards—faith-based universities present themselves as spaces for cultivating disciplined, morally grounded, and intellectually competent graduates (Ajayi, Goma, & Johnson, 1996). Yet this apparent revival conceals contradictions that reveal philosophical, theological, and social dilemmas inherent in their operation.

Critics frequently highlight elitism, commercialization, and philosophical ambiguity as central challenges. High tuition fees restrict access primarily to affluent families, raising questions about justice, inclusivity, and the credibility of Christian claims to prioritize the marginalized. The perception that such universities function more like profit-oriented enterprises than missionary projects further complicate their identity (Obasi, 2007). Equally pressing are doubts about whether these institutions genuinely integrate faith and learning in the spirit envisioned by early missionaries or whether they have absorbed the neoliberal ethos of market-driven education (Nwagwu, 2017).

These tensions underscore the disjuncture between the moral-missionary ideals that guided colonial-era mission schools and the socioeconomic realities of contemporary private universities. While both models employ the language of holistic formation, the financial structures of present-day institutions often reproduce social exclusion rather than promote equity (Okonkwo, 2012). What was once a democratizing project that expanded literacy, civic responsibility, and moral instruction has become increasingly shaped by credentialism, revenue generation, and brand positioning. The danger is that Christian education may be reduced to rhetoric that conceals the underlying logic of the market.

The scholarly literature on these issues remains uneven, often treating colonial legacies, postcolonial state policies, and contemporary market forces in isolation rather than as interconnected dynamics. This lack of synthesis obscures the continuities and discontinuities that inform institutional ethos. Compounding the problem is financial fragility: since most private universities rely heavily on tuition, access for rural, low-income, female, and other marginalized groups remains constrained. Although scholarship schemes and donor funding offer some relief, they are typically insufficient and inconsistent, leaving unresolved the tension between financial sustainability and social inclusion. Reliance on merit-based scholarships alone risks reinforcing inequality, as disadvantaged students often lack the preparatory resources to qualify competitively.

Questions of academic quality further complicate the picture. Despite infrastructural growth, many faith-

based universities struggle with heavy teaching loads, underdeveloped research infrastructure, and limited funding opportunities. These conditions weaken faculty development and postgraduate training, undermining the mission of Christian higher education to integrate intellectual, moral, and civic formation. When institutional incentives prioritize undergraduate enrollment and revenue generation, long-term scholarly productivity and the cultivation of critical inquiry are compromised.

Addressing these contradictions requires reforms that are both structural and philosophical. Policy frameworks could encourage sliding-scale tuition and targeted, means-tested scholarships to widen access without jeopardizing financial stability. Accreditation standards might incorporate obligations for community engagement, requiring universities to link their mission to measurable outcomes such as access indicators, outreach programs, and scholarship allocations. Governance reforms should mandate the transparent articulation of founding charters and regular public reporting to ensure consistency between stated ideals and institutional practice. Curricular innovation is equally crucial: alongside market-relevant disciplines, universities should embed civic and ethical formation through community-based practicums that embody the social mission of Christian education.

The historical trajectory of Christian education in Nigeria raises deeper philosophical and theological questions. One is the tension between faith and secularism: while mission schools and private universities advance a faith-driven vision of education, state interventions emphasize secular nationalism. Another is the dilemma of inclusivity versus elitism: Christian education once empowered marginalized groups, yet contemporary institutions often remain inaccessible to the poor. A third is the uneasy negotiation between evangelization and commercialization: the blending of Christian mission with market practices challenges the authenticity of spiritual identity.

These tensions illustrate the paradox of Christian higher education as both a tool of liberation and a potential instrument of exclusion. Its continued relevance depends on its ability to sustain the integration of faith, knowledge, and justice within the complex realities of modern Nigeria. Unless these challenges are confronted with courage and creativity, Christian universities risk undermining the very ideals of transformation and service that justify their existence.

8. Conclusion

From the era of mission schools to the present reality of private universities, Christian education in Nigeria has undergone profound transformation. The pioneering institutions of the nineteenth century did more than provide basic literacy; they fostered moral formation,

civic consciousness, and an educated elite that later spearheaded nationalist movements and socio-political reforms. These schools laid enduring foundations for Nigeria's intellectual and cultural development, even as they served the dual purposes of evangelization and cultural reorientation.

The government takeover of mission schools in the 1970s disrupted this legacy, eroding the moral and spiritual framework that had distinguished faith-based education in favor of a secularized, state-controlled system. This shift highlighted the perennial tension between faith and secularism in Nigeria's educational history. The re-emergence of private Christian universities from 1999 onward represents both a revival of religiously informed pedagogy and an adaptation to neoliberal economic realities. By combining academic excellence with faith-based values, these universities respond to the inadequacies of public institutions while appealing to the spiritual and cultural aspirations of their stakeholders.

Nevertheless, the rise of private Christian universities also raises critical concerns about accessibility, elitism, and the creeping commercialization of education. While they have reinvigorated the tradition of moral and spiritual formation, their high costs often restrict access to a privileged few, thereby deepening socio-economic inequalities. This reality underscores the paradox of Christian education in contemporary Nigeria: its ideals of inclusivity, service, and transformation are continually challenged by the pressures of market-driven education.

The historical trajectory of Christian education in Nigeria is therefore best understood as a story of continuity and rupture, resilience and compromise. It has evolved from being a missionary tool of evangelization and cultural transformation into a robust sector that now shapes intellectual, moral, and economic life. Its enduring significance lies in its ability to negotiate the delicate balance between tradition and innovation, faith and scholarship, and service and development. The challenge for the future remains how these institutions can preserve their Christian ethos while contributing inclusively and equitably to Nigeria's broader educational and national development.

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Microcredit and Gendered Pathways to Inclusive Growth: Evidence from Women Entrepreneurs in Rural and Urban Nigeria

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Abstract. Eliminating deep-rooted gender inequality in access to finance and productive resources is a key issue that requires consideration when promoting inclusive growth in Nigeria. This paper analyzes how microcredit has affected the entrepreneurial performance of women in rural and urban areas, with a specific focus on the generation of income, the survival of the business, and domestic welfare. Using a mixed-method design, which includes survey data collected in the microfinance institutions and a qualitative interview, the study examines the contextual variables, social networks, and institutional intermediaries that mediate the impacts of small-scale credit. The evidence shows that microcredit would enable women to expand their businesses, accumulate assets, and make independent decisions, especially in urban areas where market connectivity and financial literacy are relatively high. On the other hand, women in rural areas still face the structural disadvantages of a high cost of transactions, inefficient collateral, and inadequate institutional coverage that reduce the developmental advantage that should be enjoyed through microfinance. The comparison of these two opposing courses of action leads to the suggestion that inclusive growth cannot be achieved by simply providing credit, but rather by the creation of gender sensitive financial systems, enhancing rural infrastructure, and continuing institutional reforms. When placed within the larger context of development in Nigeria, the study provides novel empirical information on the gendered processes in which financial inclusion can revolutionize the economy regarding equity and sustainability.

Keywords: Gender, Inclusive Growth, Microcredit, Women Entrepreneur

1. Introduction

Microcredit has evolved into a pillar of global poverty-reduction and inclusive-growth strategies over the last three decades since its development as an experiment in the development field. It holds potential in

democratizing finance by offering access to capital for low-income groups, especially women, who are often disadvantaged by traditional banking institutions. To a significant number of developing economies, microcredit has become a viable path to women's empowerment, business growth and social mobility (Peter & Orser, 2024). However, even when it is a popular move, the signs of its transformative force are still uneven as local institutions, social conventions and structural inequality shape them. The concept of microcredit programmes is a means of inclusion and self-sufficiency. This is relevant in a country like Nigeria where women form almost half of the population and are still economically disenfranchised (Adebisi, 2020). The program provides rural and urban women traders, farmers and artisans with credit through community cooperatives and the micro-finance banks. Nevertheless, there are still drastic gender disparities in terms of income, scale, and the ownership of assets in businesses, which means that monetary accessibility is not the answer to inclusive growth (Akande, 2025). This raises a question about the effectiveness of microcredit, how so, and to whom it is effective.

As used in this study, inclusive growth extends beyond the aggregate growth of GDP and focuses on providing equal opportunities and results among genders, classes and geographies. The national financial inclusion strategy (NFIS) and Nigeria Vision 2050 are development frameworks in Nigeria that specifically acknowledge the role of women in entrepreneurship as a means of prosperity for the masses (Akande, 2025). Nevertheless, the channels by which women engage with and enjoy the financial system are highly gendered. The cultural structures, such as gender-biased lending processes, the limited security available and cultural barriers to movement, deep inequalities between rural and urban infrastructures, still hinder the full economic agency of women. Women in rural Nigeria often face challenges due to weaker institutional support, limited literacy, and inadequate market connections, which hinder entrepreneurship (Central Bank of Nigeria, CBN,

2019). Urban women, although working in increasingly dynamic markets, are faced with competitive pressure, high operational costs and inaccessible credit markets due to the presence of gendered biases (CBN, 2019). These differences suggest that the effects of microcredit cannot be described as monolithic and uniform, but are spatially and socially differentiated and therefore have a variety of gendered pathways through which women can transform access to finances into economic and social results.

Empirical studies of microcredit and women's empowerment support this complexity. South Asian and Sub-Saharan studies (Chowdhury, 2025; Dachi & Kasztelnik, 2024; Lyons et al., 2020; Murshid, 2020) have shown that microfinance may indeed increase income and business capital. The long-term impacts of empowerment are yet to be determined as they are usually mediated in through patriarchy, debt relationships, and unequal household power relations. This ambiguity is evident in Nigeria. Research has linked microcredit engagement to increased business expansion, family well-being, and greater autonomy in choice. In contrast, literature reports low or temporary results due to poor institutional design, high interest rates, and a lack of complementary capacity-building systems (Osuma et al., 2025). The unanswered questions include how such outcomes differ across rural and urban environments, as well as the role of microcredit in (or its lack thereof) contributing to inclusive growth. Gendered pathways can also be used as a means of analysis to unpack these processes and draw our attention to the ways access, use, and outcomes of credit are determined by overlapping logics like education, social networks, mobility limits, and domestic power relations. Whereas microcredit can enhance subsistence security and incremental welfare in rural regions, where the economy is less diversified and assets are accumulated, the situation may be different in the urban areas, where diversification and accumulation can occur (Olaleye, 2012). However, in both situations, women businesses are over-represented in low-value industries, where they cannot compete informally and where they cannot grow.

Nigeria is an empirically rich environment where these dynamics can be studied. It also provides one of the most significant and most gender-inclusive microfinance sectors in Africa, including cooperative societies, community banks, and specialized organizations like the LAPO Microfinance Bank or the Development Bank of Nigeria. According to Lui et al. (2025), a significant per cent of active borrowers are women, although their businesses are less valuable to the national output, employment, and formalization than those that men own. As the 2024 report by Moniepoint put it, "32% of businesses surveyed were created in the last year while female-led businesses accounted for 40% of businesses created... Of the surveyed MSMEs, 42 % were owned by women..." The report furthered that "Surveyed women-owned businesses were growing as

fast as male-owned businesses... Out of every 100 businesses in Nigeria, 39 are female-owned. This implies a 39% female business ownership rate in the country." (Nwonye, 2024:1) Despite this, female-owned business enterprises are still underrepresented in formal registration and in greater value financing. Such contradictions raise pivotal questions about the connection between financial inclusion and structural inclusion, a nexus that is the subject of this study. In this regard, the present study investigates the impact of microcredit on business performance and social empowerment of women entrepreneurs in rural and urban Nigeria and how the effects of microfinance can be transformed into the gendered means of inclusive growth.

2. Conceptual and Theoretical Framework

This study advances its conceptual foundation in three overlapping premises, which include gender and development theory, the inclusive growth paradigm, and the ability approach by Amartya Sen. These views give a multi-dimensional approach in explaining how microcredit has contributed to the economic agency of women and promoted their inclusive development both in rural and urban settings in Nigeria. Thus, microcredit is presented in this study as a social process mediated by gender relations, institutional frameworks, and contextual inequalities that precondition its changing power.

2.1 Microcredit and Women's Economic Empowerment.

Microcredit is one of the foundations of the microfinance movement, such as the small loan issued to people, especially women, who are not included in the formal financial system. Based on the experience of the Grameen Bank, which started to operate in the 1970s in Bangladesh, microcredit has since become one of the leading approaches to poverty alleviation that is used to promote self-employment and the development of small enterprises (Mahedi et al., 2025). Meanwhile, microcredit in Nigeria exists in different institutional forms, such as cooperative societies, microfinance banks, and rotating savings and credit associations, among government-based projects, such as the National Poverty Eradication Programme and MSME projects by the Development Bank of Nigeria (Adebisi, 2020). In feminist economics, microcredit has been traditionally seen as a way through which women can be empowered. According to Kabeer (1999), the process of empowerment refers to the widening of the ability of individuals to make strategic choices in life in situations where the ability to do so was previously limited. As a result, access to credit is not merely a financial resource, but it is a symbolic means of gathering material resources, and it is an indication of independence (Lwamba et al., 2022; National Empowerment Center, 2017). However, financial empowerment does not occur in a vacuum; it occurs in larger social and institutional

environments of gendered power relations, inequality of property rights, unequal access to education and markets.

Empirical studies in Sub-Saharan Africa (Akanke, 2025; Miled, 2022) confirm that microcredit often enhances women's income and enterprise visibility but may fail to translate into structural empowerment when male dominance over assets and mobility persists. For this reason, this study conceptualizes women's empowerment along three interlinked dimensions: access – women's ability to secure financial resources on fair terms; agency – the capability to make and act upon economic decisions; and achievements – the social and material outcomes derived from agency.

These dimensions map the sequential pathways through which microcredit can influence inclusive growth. Access gives the gateway to the financial system, agency defines the efficient employment of capital, and outcomes of development (better welfare, entrepreneurship, and community engagement) are measured by achievements (Fomum & Opperman, 2023). However, the mediation of such relations is influenced by contextual variables such as education, institutional trust, and gender norms, which determine whether credit can or cannot translate into real empowerment.

2.2 Inclusive Growth as a Development Paradigm

Inclusive growth emerged as a response to growth-oriented development theories that equated GDP growth with development, yet overlooked inequality and exclusion. Ideally, it is the broad-based, equitable and participatory growth. The World Bank (2023) states that inclusive growth enables every segment of society to participate in and gain economic growth. In contrast, the Organisation for Economic Co-operation and Development (OECD, 2018) insists on connecting productivity growth with social inclusion. In Nigeria, the National Development Plan (2021-2025) and the Financial Inclusion Strategy focus on the idea of inclusive growth by focusing on women and youth in terms of their access to finance as a means of economic empowerment (Development Research and Projects Centre, 2021). However, unrelenting disparities between males and females in earnings, property and enterprise formalisation indicate that macroeconomic growth in itself cannot be a sign of equity. Women continue to be under-represented in credit program beneficiaries and are also overrepresented in the low-value informal sector. This study, therefore, conceptualizes inclusive growth beyond aggregate economic measures to include economic participation in the form of gender responsive financial inclusion. In this way, microcredit will serve as a tool to increase productivity and redistribute opportunities, thereby empowering women in the value chain. The inclusion, however, comes with the condition of institutional design, i.e. interest rate regimes, loan durations, collateral framework, and training support. The weakly

organized credit networks can exacerbate vulnerability by driving women further into debt cycles or peripheral industries. Thus, inclusive growth, in this context, entails the access (who is included) and the equity (distribution of benefits) (OECD, 2024). Such a dual focus is shared with the gender and development approach, according to which financial inclusion is viewed as the issue of justice, rather than an efficiency objective.

2.3 Sen's Capability Approach

The capability approach by Amartya Sen is more evaluative, providing a more detailed way of looking at the world by emphasizing the freedoms people possess rather than the resources individuals have to exercise those freedoms meaningfully. Sen (1999) separates functioning, the beings and doings of a person's life, and capabilities, the real opportunities to fulfil these functions. Development is, then, concerned with increasing the fundamental freedoms of people to live lives that they consider to be important and not only raising income or assets. This strategy applies to microcredit because it emphasizes that access to loans does not necessarily result in well-being. Women can access credit; however, they often cannot mobilize it productively due to limited mobility, inadequate infrastructure, or gender-oriented barriers (Al-Maamari et al., 2025). To illustrate, a female entrepreneur in Lagos with access to digital payment systems and market networks can establish a business that grows dynamically. Logistical hiccups and social policing processes might limit her rural counterpart in Yobe, on the other hand. The model that Sen (1999) develops thus throws light upon conversion factors (both personal: skills, education, confidence, and structural: institutions, norms, infrastructure) that facilitate the conversion of the financial resources into the form of empowerment. It is also in line with feminist economist critiques that view empowerment as an extension of autonomy and self-determination, as opposed to engaging in market practices (Kim, 2025). This shift enables the study to move beyond limited economic indicators, such as profit margins or loan repayment, and focus on broader gains, including improved self-efficacy, social acknowledgement, and involvement in household or community decision-making.

2.4 Gendered Pathways to Inclusive Growth

By integrating these theories, the study's conceptualisation involves gendered processes that lead to inclusive growth through interplay, where women's access to microcredit has a broader economic and social impact. These pathways are structured on three interdependent domains, which include structural context, which considers the institutional and infrastructural environment: the concentration of microfinance institutions, access to digital finance, interest-rate regimes, and policy support that create space for financial inclusion; agency and capabilities,

which reflect the ability of women to regulate the use of credit, make investment choices, negotiated intra-household power, and enterprise risk management which strengthens or undermines inclusion through time (World Bank, 2025). In the rural setting, these roads are usually diluted by illiteracy, insufficient infrastructure, and patriarchal systems that limit financial independence (Kyeyune & Ntayi, 2025). Urban women, on the other hand, have the advantage of being close to markets, more exposed to training, and have more dense social networks, which leads to improved credit utilisation. The study perceives spatial and gendered difference to be core in underscoring how the same financial instruments can have different development results. Gender relations are found in these pathways; therefore, the framework highlights the concept of inclusive growth as not only about more participation but also about changing the terms of participation; that is, the distribution of power, knowledge, and opportunity within gendered spaces.

3. Literature Review

3.1 Global and African Perspectives on Microcredit and Women's Empowerment

The scholarship on microcredit and women's empowerment worldwide has undergone various phases of advancement, evolving from optimism to critical assessment in the latter days. Innovations driven by the experiment of the Grameen Bank in Bangladesh (Mahedi et al., 2025) presented microcredit as a revolutionary tool that can help alleviate poverty, encourage women to establish their own businesses, and achieve gender equality. These assertions were supported by empirical data in South Asia (Chowdhury, 2025; Lyons et al., 2020), which reported positive correlations between access to credit, self-employment, and household welfare. During this initial stage, the assumption of empowerment was mainly assumed to come naturally as a result of financial inclusion, as though the simple ownership of credit would be turned into autonomy and agency. However, towards the middle of the 2000s, such a linear narrative started falling apart. Scholars and professionals observed that the results were extremely unequal across different contexts. In Sub-Saharan Africa, where poverty and gender inequality are deeply structural, the influence of microcredit was found to be more confined and contingent. Empirical research carried out in Kenya, Uganda, and Ghana (Sackeyfio, 2021; Sarkodie & Maloma, 2025) proved that microfinance might increase the business revenues and household spending, and at the same time reveal the vulnerability of the systems in the form of high-interest rates, a lack of collateral and unprovable training services.

Other feminist economists, Lwamba et al. (2022) and Adera and Abdisaand (2023), redefined the issue by questioning the belief that access to finances equates to empowerment. They claimed that credit can only

enhance opportunities when it comes with restructuring of power relations, both in the homes, in the markets, and in the institutions. Otherwise, microcredit risks reproducing existing societal inequalities, thereby strengthening women's unpaid labour and placing them under debt control. As a result, the emphasis shifted from access to the quality of agency, that is, the measurement of the loan amounts and the rates of loan repayment, towards the analysis of whether women control and benefit from credit (Hoover et al., 2024). This theoretical shift formed the groundwork of a more subtle conceptualization of empowerment as a process, and not a product, a process which is socially constituted, temporally changing, and mediated by the institutions. In this broadened paradigm, African scholarship started questioning the way in which a local situation, informal markets, kinship ties, and regulatory conditions influence the economic performance of women.

3.2 Microcredit and Economic Outcomes of Women in Nigeria

Nigeria is a perfect example of dynamics to observe. Being the largest and one of the most unequal economies of Africa, the country has both a thriving microfinance industry and a culture of gender inequality in the accessibility of productive resources. The Central Bank of Nigeria (CBN, 20183) states that more than 40 per cent of adults have access to at least one financial service. However, women are grossly under-represented as formal bank account holders and borrowers. To address this, a microfinance system comprising microfinance institutions (MFIs), cooperative societies, and rotating savings groups has been established to fill the credit gap for women entrepreneurs. The effect of these interventions is inconsistent in empirical research. Initial studies by Olaleye (2012) showed that microcredit schemes with cooperation promoted the income and wealth accumulation of women in businesses in southwestern Nigeria. The same benefits were described by Ene & Inemesit (2015), who correlated the participation in microfinance with self-employment and better welfare. These works have been used to reinforce the hypothesis that access to small-scale finance can be utilized to bring about economic inclusion.

But later studies came with excellent qualifications. Adebisi (2020) demonstrated that microcredit not only enhanced liquidity among women traders but also revealed that the majority of business ventures were limited to low-value industries, such as food selling or petty trading. This trend indicates an organizational limit of profitability and scale. It was also noted by Dachi and Kasztelnik (2024) that institutional integrity and local governance are critical to the sustainability of the microfinance programmes. The net gain by women is eroded by weak monitoring systems, politicized disbursement of loans, and interest rates exceeding 30 per cent. Besides, gender relations still mediate financial

behaviour. Dachi and Kasztelnik (2024) discovered that not all women have complete control over the use of loans, with the decision to spend being made by their male partners or family members. The patterns can be used to highlight the difference between access and control over credit, which implies that nominal inclusion and substantive disempowerment can co-exist (Phan et al., 2023).

3.3 Urban-Rural Disparities in the Effect of Microcredit

Another critical aspect of the debate is the geography of empowerment. The rural-urban difference in Nigeria reflects the inequality of infrastructure, market integration, and institutional density. Lagos and Abuja represent examples of cities with a high density of microfinance networks, digital financial services and literacy, and face infrastructural neglect and absence of institutions, as well as patriarchal social structures that diminish women's mobility. The use of empirical comparisons supports this asymmetry. Lubem (2025) further added that women who conducted businesses in urban centres had higher success in terms of business expansion, reinvestment level, and support services compared to women in Benue and Kebbi states. The rural borrowers were accustomed to using informal cooperatives or thrift societies, which offered small, short-term loans at high interest rates, thereby limiting business expansion. On the same note, Dachi and Kasztelnik (2024) also observed that urban beneficiaries reinvested the microcredit more frequently to expand their business opportunities. Still, the rural beneficiaries utilized the funds as coping resources rather than investment ones for consumption or their children's education, indicating that credit serves as a coping mechanism rather than an investment tool. Regarding the capability approach of Sen (1999), these divergent patterns are of conversion factors. Urban women turn financial investments into economic achievements more efficiently since they have access to more resources, including networks, mobility, and information, than rural women, who, in their turn, have access to less because of low literacy levels, ineffective infrastructure, and social surveillance. This implies that qualitatively distinctive empowerment paths may emanate from the same financial instruments depending on spatial and cultural settings.

3.4 Gender Barriers in the Structure and Institutional Constraints

In addition to geographical determinants, gender barriers are structurally embedded, restricting the transformative capacity of microcredit. The Nigerian socio-economic life is deeply rooted in patriarchal traditions that determine property rights, the rules of inheritance, and the decision-making of the family. The concept of credit control, introduced by Goetz and Gupta (1996), is particularly relevant: women can have loans in their names but have no control over their use.

Most societies have established a culture in which women have to consult with male family members to obtain a loan or even scale up businesses (Shohel et al., 2021), thus affirming reliance and token inferiority. At the same time, institutional design is essential. Many microcredit programmes use models that are falsely gender-neutral, ignoring the particular limitations of women, e.g. seasonal incomes, caregiving, or time-poverty.

According to Kabeer (2012), the finance that is empowerment-focused should be able to incorporate credit in combination with training, literacy, and social support systems. In the absence of such integration, women continue to be confined to low-value, subsistence-level activities. This trend is supported by evidence in Northern Nigeria (Peter and Orser, 2024): even with an increase in participation in microcredit, a small number of women go from informal trading to registered firms or to value-added production. In addition, the cost of borrowing is high (usually between 20% and 45%), which reduces net profitability and discourages reinvestment (Olaleye, 2012). As the African Development Bank (AfDB, 2021) observes, women-owned businesses in Nigeria have a lower chance of surviving a credit crunch compared to male-owned ones, primarily because loan conditions often do not align with the cash flow patterns of small-scale trade. Low digital literacy also excludes women from fintechs that may make transactions cheaper and provide greater transparency. All these institutional and social obstacles, together, form a contradiction: microcredit is supposed to be the means of empowerment, but it may also support dependency and financial insecurity.

3.5 Linking Microcredit, Gender, and Inclusive Growth

Recent scholarship has been redirected towards considering the macro-level implications of micro-level empowerment, namely, the role that women's financial inclusion plays in inclusive growth. According to Kabeer (2012) and Lwamba (2022), gender equality enhances economic efficiency and social welfare, indicating that women's empowerment is both a moral imperative and a macroeconomic necessity. The significant role of women in the economy is closely tied to the increase in aggregate productivity and the expansion of growth benefits. The experience of Nigeria, however, shows to what a difficult task it is to make this ideal work. Despite the implementation of successive strategies for financial inclusion, gender gaps persist. The Central Bank of Nigeria (2019) shows that over 64 per cent of women have access to any financial service, as opposed to 77 per cent of men, indicating a significant disparity between the northern and southern states in the region. This form of unequal provision hinders the distributive capacity of economic growth by limiting women's participation in formal markets and enterprise development. Osuma et al.

(2025) observe that participation in microcredit programmes can raise incomes and generate employment opportunities. Still, unless there is an investment in infrastructure, education, and social insurance, such benefits are localized and prone to collapse. On the same note, Lahnech and Chami (2025) point out that microcredit can only help achieve inclusive growth when integrated in gender-sensitive governance and institutional reform. These results support the central thesis of this paper, which is that financial inclusion is an essential yet not a sufficient precondition of inclusive growth. Access is not the only thing, as it is the correspondence of financial mechanisms, gender equity, and structural opportunity that defines success. Based on the above, the literature reviewed jointly indicates that microcredit has a tremendous capacity to promote the economic empowerment of women. However, it is limited by structural, spatial, and institutional disparities that run deep. The rural-urban gap reveals disparities in the potential for financial access to translate into economic achievements, with institutional inadequacies and gender conventions continuing to influence credit utilization.

4. Methodology

4.1 Research Design

The study employed a mixed-method design, combining quantitative and qualitative methods to investigate the development of economic paths for women entrepreneurs in rural and urban Nigeria through microcredit. The quantitative part establishes relationships between the access to microfinance, business performance and income dynamics. Conversely, the qualitative element provides insights into how women feel, bargain, and redefine empowerment in day-to-day activities. These two strategies were used to increase the validity and interpretive strength.

4.2 Study Area and Population

To ensure spatial, four states in Nigeria were chosen purposely. Lagos and Kano are urban and semi-urban economies characterized by high population density, mature markets, and well-established microfinance institutions. Meanwhile, Ogun and Katsina represent the rural setting, in which female businesses tend to be more informal and access to credit is limited. The sample included women business owners who borrowed microcredit in less than three years through licensed MFIs, cooperative associations or savings groups. These women also work in different fields such as petty trade, agro-processing, tailoring, catering and crafts.

4.3 Sampling Technique and Sample Size

The multistage sampling process was employed. Two urban states and two rural states were selected

purposely. Meanwhile, in every state, two Local Government Areas (LGAs) were determined, one with a strong presence of MFI and one with a limited presence of formal credit institutions, to represent institutional diversity. Also, registered female borrowers were categorized based on the type of loan (individual or group) and business industry. Based on this frame, 400 respondents were chosen randomly; 100 respondents each per state. To ensure statistical reliability, the Cochran formula was employed. Moreover, 20 key informant interviews (KIIs) were carried out among MFI managers, leaders of the cooperatives and credit officers.

4.4 Data Collection Instruments

Two instruments were used. The first was a questionnaire which had five parts that included demographic, enterprise, microcredit (value, duration, form of repayment), business and income development, and empowerment (decision independence and ownership of assets). The questions were based on validated measures (Kabeer, 2001) and pre-tested to be contextually appropriate. The second measure was a semi-structured interview that was used to record the stories of women's motivations, limitations, use of credit and change of perception.

4.5 Data Analysis

SPSS (Version 27) was used to analyze the data. The description statistics were used to describe the socio-economic profiles of respondents. Inferential data analysis used paired t-tests to compare pre- and post-loan-received income and turnover; multiple regression models to test the impact of loan characteristics, education, and experience on that growth, ANOVA tests to test rural urban differentials in the outcomes of empowerment, and Pearson correlation tests to test a relationship among financial access, asset accumulation, and decision-making power. Dependent variables reflected economic empowerment (income growth, business growth, increased employment), whereas the independent variables reflected characteristics of the microcredit, as well as demographic factors. Meanwhile, NVivo 14 was used to analyze the interview transcripts thematically. Themes emerged on financial inclusion, empowerment, structural barriers, institutional trust, and adaptive strategies.

4.6 Validity, Reliability, and Ethical Considerations

The validity of the instrument was ensured through expert validation by specialists in gender and development economics. The pre-test employed 20 non-sample respondents to fine-tune the question and make it culturally relevant. The Cronbach's alpha was 0.84, which shows a high degree of reliability. Meanwhile, to ensure that ethical considerations were followed, the participants were made aware of the study's objectives,

confidentiality measures, and the possibility of withdrawing at any point. Where literacy was a limitation, the informed consent was granted verbally. Data anonymity was ensured, and the identifiers were eliminated from transcripts.

5. Results

This part outlines the empirical findings of the survey conducted on 400 women entrepreneurs, of which 392 filled in the questionnaires. This sample was composed of 198 rural and 194 urban representatives from the selected states. The analysis of data was conducted using SPSS version 27, employing both descriptive and inferential statistics, including paired tests, multiple regression, ANOVA, and Pearson correlation.

5.1 Demography of the Respondents

Table 1 describes the socio-demographics of the participants. A majority (61.5%) of the women were aged between 31 and 45 years, giving a mean age of 38.4 ± 8.6 . Household responsibility as a key motivating factor to entrepreneurship was captured in the sample by married women who made up 72.2%. Education-wise, 64.3 per cent of respondents had at least a secondary school education, with a significant rural-urban disparity (urban: 82%; rural: 47%). A large percentage (54.85%) were in the trading sector, then fashion and tailoring (18.95%), food processing (12.55%), and small-scale farming (13.85%).

Table 1: Demographic Profile of Respondents (n = 392)

Variable	Category	Frequency	Percentage (%)
Age (years)	18–30	74	18.9
	31–45	241	61.5
	46–60	66	16.8
Marital Status	Married	283	72.2
	Single	69	17.6
	Widowed/Divorced	40	10.2
	No formal	45	11.5
Education Level	Primary	95	24.2
	Secondary	151	38.5
	Tertiary	101	25.8
	Trade	215	54.8
Sector of Business	Fashion/Tailoring	74	18.9
	Food Processing	49	12.5
	Agriculture	54	13.8

5.2 Business Performance Before and After Microcredit Access

To determine the differences in the monthly business income and turnover before and after taking the loan, a paired-samples t-test was used to evaluate the changes. The findings in Table 2 indicate a statistically significant increase in income and turnover following the use of microcredit.

Table 2: Paired Sample t-Test for Business Performance (n = 392)

Variable	Mean (Before)	Mean (After)	Mean Difference	t-value	p-value
Monthly income (₦)	68,430	91,740	23,310	12.47	0.000***
Monthly Turnover (₦)	120,850	161,720	40,870	10.83	0.000***

p < 0.01

The statistically significant positive effect of microcredit on the performance of women's businesses is evident from the average increase of 34 per cent in monthly income (p < 0.01). This improvement, according to the respondents, was due to the growth of working capital, equipment purchases, and the availability of bulk purchases. However, qualitative evidence indicated that small loans and high interest rates put a limit on scale.

5.3 Accumulation of Assets and Creation of Employment

Post-loan asset acquisition analysis revealed that 58 per cent of the respondents had purchased at least one productive good, e.g. sewing machines, milling equipment or freezers. The acquisition rates were much greater in urban participants (71%), compared to rural ones (42%), as a chi-square test showed, $\chi^2 (1, N 392) = 16.84$, p < 0.01. In addition, 31.5 per cent of the respondents indicated that they had created new employment opportunities as a result of utilizing the loans. Nevertheless, this impact was spatially non-uniform: 44 per cent of urban businesspeople employed one more worker, compared to 19 per cent of employees in the country. Such differences are conditioned by urban benefits associated with access to markets and customer base.

5.3.1 ANOVA (Analysis of Variance)

A test of ANOVA was used to establish that there is a statistically significant rural-urban difference in the results of post-loan empowerment (F(1,390) = 8.71, p < 0.01), with urban respondents having a higher post-loan empowerment outcome

($M = 0.71$) as compared to the rural respondents ($M = 0.58$). This supports the contribution of locality in developing the transformative potential of microcredit.

5.4 Correlation Loan Characteristics Income Growth

To determine predictors of income growth, a multiple regression analysis was conducted to fit the variable, income growth, which is defined as a percentage increase in monthly income after receiving a microcredit. The independent variables that were included in the model were loan size, level of education, business experience, and location (rural and urban).

Table 3: Multiple Regression Results for Predictors of Income Growth

Predictor	β	Std. Error	t	p
Loan Size (₦)	0.436	0.081	5.39	0.000***
Education Level	0.214	0.073	2.94	0.004**
Business Experience (yrs)	0.171	0.065	2.63	0.009**
Location (Urban = 1, Rural = 0)	0.128	0.054	2.36	0.019*
Constant	-	-	-	0.000
R ²	0.47			
F (4, 387)	33.61			0.000

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The model explains 47% ($R^2 = 0.47$) of the income growth. The strongest predictor was found to be the loan size, followed by education and business experience, indicating that both financial and human capital together predetermined the performance after the loan. The positive coefficient associated with urban locations also shows the benefits of improved infrastructure and market connectivity.

5.5 Gendered Agency and Empowerment Outcomes

The outcomes of empowerment were determined by a composite index (between 0 and 1) that was developed based on three dimensions: (1) the control over financial resources; (2) the decision-making in the household and business; and (3) the involvement in the community or trade associations. The average score on empowerment rose to 0.65 ($SD = 0.18$) at the end of the loan compared to 0.42 ($SD = 0.16$) at the beginning of the loan, an average of 0.23 points ($t = 14.25$, $p = 0.001$). Disaggregated findings reveal that women in the cities (mean 0.69) were more empowered than women in the countryside (mean 0.58), with the difference being significant ($F(1, 390) = 24.73$, $p = 0.01$).

5.6 Correlation Between Financial Access, Asset Ownership, and Decision-Making Power

A Pearson correlation analysis was performed to examine interrelationships among key empowerment variables.

Table 4: Correlation Matrix ($n = 392$)

Variables	Loan Size	Asset Ownership	Decision-Making Power	Empowerment Index
Loan Size	1	0.62***	0.44***	0.51***
Asset Ownership	0.62***	1	0.49***	0.57***
Decision-Making Power	0.44***	0.49***	1	0.68***
Empowerment Index	0.51***	0.57***	0.68***	1

$p < 0.01$

Loan size had a significant positive relationship with asset ownership ($r = 0.62$, $p < 0.01$) and the composite empowerment index ($r = 0.51$, $p < 0.01$). This means that bigger loans will lead to greater asset accumulation and also increase autonomy in decision-making.

5.7 Inclusive Growth Results between Rural and Urban Areas

Analysis of variance (ANOVA) showed that there were statistically significant rural-urban differences in income growth ($F = 19.47$, $p < 0.01$), empowerment index ($F = 24.73$, $p = 0.01$), and acquisition of assets ($F = 16.02$, $p = 0.01$). Although both groups benefited from microcredit, urban entrepreneurs experienced a higher average return and greater empowerment.

Table 5: Rural-Urban Comparison of Key Indicators

Indicator	Rural Mean	Urban Mean	F-value	p-value
Income Growth (%)	27.8	40.2	19.47	0.000***
Asset Acquisition (%)	42	71	16.02	0.000***
Empowerment Index	0.58	0.69	24.73	0.000***

$p < 0.01$

These disparities mark the spatial inequalities in accessing infrastructure, market networks and training prospects. However, the same respondents in rural areas also reported feeling more financially confident, having better bargaining power, and receiving more recognition in their community, which is the social spillover of the effects of microcredit.

5.8 Result Summary

The quantitative data prove the hypothesis that microcredit has a beneficial impact on the business performance of women and their empowerment, but with a non-uniform distribution over space and institutional levels. According to the results, 34 per cent of respondents reported the amount of money earned after the loan ($p < 0.01$). The size of the loan, education, and experience are significant predictors of income growth, with a coefficient of determination of $R^2 = 0.47$. More notably, 58% of the respondents also made purchases of new productive assets, with urban women having the highest rate of uptake at 71%. The index of empowerment recorded a growth of 0.23 scores, but there were still enormous rural-urban inequalities. Loan size was significantly correlated with asset ownership and empowerment ($r = 0.62$, $p = 0.01$), indicating a strong relationship between financial access and empowerment. These two results support the opinion that though microcredit creates some involvement and a temporary economic enabling, there are endogenous factors, such as rural financial marginalization, underdeveloped infrastructures, and deeply rooted gender hierarchies, which influence pathways to inclusive growth.

6. Findings and Discussion

6.1 Findings

The quantitative analysis reveals that microcredit is a key factor in improving business performance, as indicated by the respondents. The urban women reported a higher increase in average monthly income, rising to 130,000 currency units on average, compared to the more modest increase of 60,000 currency units in rural regions. The claim that the availability of credit enables traders to buy in large quantities, increase market visibility, and create liquidity is supported by qualitative information from traders in Lagos. One of the respondents explained: "I used to make purchases on credit with wholesalers before the loan. I now make bulk purchases, saving both time and money. My profit margin is improved, and I will be able to hire an assistant". Conversely, women in rural areas, particularly in Ogun and Katsina, can stabilize their consumption by using microcredit to fund education. This is how one Katsina responds: "I spend part of the loan on food and the school of my children when planting is late or when the prices of food in the market are low. Then business, then come survival". This difference further indicates the dual economic and

social nature of female financial involvement, which aligns with Kabeer (2001), who argues that the effects of credit are mediated through local markets and household ideals.

The results also indicate that microcredit improves the agency of the households, particularly women. Both urban and rural inhabitants report having more control over household spending and their children's education, with rural women also citing greater bargaining power within their families. Most of the time, empowerment took the form of gradual legitimacy instead of open rebellion against patriarchal systems. As observed by one of the traders in Kano, "Since my husband is now trusting me with a portion of the business money, he is the one who used to be in charge of all the expenses. He observes that I am able to cope better". However, there was unequal empowerment. A similar phenomenon was observed among some rural respondents, whose responses were primarily driven by regression due to the backlash against economic progress. One of the Katsina women commented: feeling of revolt that arose with economic development. A Katsina woman observed, "Some men are threatened when a woman begins making more money. They claim that microcredit is teaching women how to defy their husbands". These findings shed some light on empowerment as a negotiated aspect, revisiting the results of Adera and Abdisa (2023) and Khuan (2024), who highlight that gendered power relations intermediate the transformational capability of financial inclusion.

Microcredit initiatives also enhanced social cohesion, especially in group lending; about 72 per cent of rural respondents were members of cooperatives as opposed to 45 per cent of urban women. These associations improved trust, exchange of information and support. One of the leaders in Ogun observed: "We do not lend money but we educate one other. In case business of a person fails, we assist her in resuming. It is not just the profit, but survival and sisterhood." These networks support the Hodgson (2025) theory of virtuous spirals, where social and economic gains support each other, because of the empowerment process, particularly in a weak institutional environment where informal groups form important inclusion mechanisms.

Meanwhile, nearly half of the interviewed stated that they had difficulties with collateral or guarantor conditions, and others mentioned high interest rates as an impediment to returning to borrowing. The rural female population suffered especially due to low financial literacy and limited access to formal identification. One of the microfinance officers in Ogun stated: "A lot of female users do not know how to repay and how to calculate interest. We attempt training them, but it is a huge obstacle of literacy." These limitations are indicative of the institutional bias and regulatory laxity that obscure the line between licensed MFIs and predatory moneylenders, causing harm to trust and continued vulnerability.

Women were limited in their effective utilization of credit by cultural expectations and care burdens. The rural respondents worked an average of five hours a day on unpaid care, as compared to the two hours of the urban women. A country businessman remarked: “I possess the loan and no time to concentrate. The day is lost between horticulture, cookery, and children.” These discoveries support the argument made by Aliga et al.

(2023) and United Nations (2024) that, without corresponding investments in childcare, infrastructure, and gender-responsive initiatives, financial inclusion will be incomplete and unsustainable. From the findings, a rural-urban distinction and gendered pathway to inclusive growth was developed (See Table 6).

Table 6: Rural–Urban Contrasts and Gendered Pathways to Inclusive Growth

Dimension	Urban Women	Rural Women
Average Loan Size	₦150,000	₦75,000
Income Growth	44% increase	23% increase
Asset Ownership	71% acquired new assets	42% acquired new assets
Business Diversification	54% expanded product range	29% diversified
Collective Agency	Moderate cooperative participation	Strong group cohesion
Decision-Making Autonomy	Higher financial independence	Moderate, family-bound influence

Findings show that urban women had better financial performance because of education, access to the markets, and institutional networks. The rural beneficiaries also exhibited low economic returns but high solidarity and collective empowerment. This contrast highlights the multi-dimensionality of inclusive growth, which is not confined to income but is also inclusive of equity, resilience, and social inclusion. The empirical evidence from this study supports institutionalist gendered views that even financial inclusion will not be sufficient to bring gender equity. The results support Kabeer’s (2001) conceptualization of the interplay between resources, agency, and achievements as empowerment, and conform to the complementarity hypothesis developed by Duflo (2012), which argues that all elements of empowerment necessitate convergence between financial, educational, and infrastructural enablers. Therefore, microcredit is not a mechanism but a lever in larger institutionalized ecosystems that define gendered economic forms of engagement.

6.2 Discussion

The findings show that microcredit empowers the female population in various but differentiated ways across the spatial setting in Nigeria. Despite rural and urban women enjoying increased income, asset ownership, and decision-making power, respectively, the level and character of these gains differ as per the existing social and institutional circumstances. This tendency is conducive to the triadic model of empowerment by Kabeer (2001, 2012), which presupposes resources, agency, and achievements. The availability of credit is also an asset. Still, it has been transformed into a substantive agency, depending on the place of women in household structures, local economies, and institutional systems. To many women in rural areas, microcredit serves as a vulnerability management tool rather than a path to entrepreneurship, contrary to the cautionary advice of Goetz and Gupta (1996), which suggests that credit can actually exacerbate gender inequalities in cases of underlying structural inequalities. The concept of context-

conditioned agency (Melin and Gaddefors, 2023) is also supported by the evidence provided, i.e., the decisions women make are the result of pragmatic adjustment to the phenomena of socioeconomic constraints instead of the expression of defiance.

The fact that rural respondents are more concerned about household stability than business growth suggests that empowerment is not merely about financial autonomy, but also about the ability to navigate crises. In this regard, the idea of empowerment should be redefined as a process of relationship based on the negotiation of power instead of merely being an economic self-sufficiency. The rural-urban divergence indicates that gendered outcomes of the channel of inclusive growth mediated by microcredit have a significant difference. In cities, women gain access to credit in highly condensed market ecosystems, which helps them grow their businesses faster and accumulate assets. On the other hand, achieving empowerment does not directly contribute to increased social capital, solidarity, and shared status among rural women due to specific improvements in profits, but rather as a result of enhanced social capital, solidarity, and status. This duality of space indicates the approach of development proposed by Sen (1999), whereby development increases freedom as opposed to the mere increase in income. Microcredit, therefore, boosts specific abilities, which differ based on economic freedom in urban centers and relational freedom in rural societies. The two dimensions are necessary in inclusive growth, albeit with a difference.

The findings above contradict the reestablishment of Mubiinzi and Mutumba (2025), who argue that economic results with respect to gender cannot be separated without a deeper understanding of the structural differences in access to education, infrastructure, and technology. The paper has revealed the weaknesses of the current microfinance structure in Nigeria, although microcredit has its own unique benefits. High interest rates, a lack of available training services, and limited loan terms are indicators of an institutional logic that prioritizes discipline in

repayment over long-term empowerment. This view is shared by Murshid (2020), who states that the neoliberal paradigm of microfinance often replaces poverty with a financialization rather than an emancipation locus. The consumption and education of rural women using credit is not an abuse, and it is a wise strategy for livelihood functioning in an unstable economy. However, such adaptive uses are punished by inflexibilities of the system, and thus provide an example of structural incompatibility between the formulation of the policy and experience.

Besides, the group-lending models are found to be effective in terms of repayment. Still, they are limited in their ability to scale and restrict women to the world of micro-enterprises, rather than allowing them to be promoted into higher-value industries. The empowerment of women observed in this study is not transformative or revolutionary; rather, it represents a negotiation with the existing patriarchal order, characterized by adaptive agency in patriarchal bargaining (Masika and Bailur, 2015). The female economic legitimacy manifests itself in less pronounced changes in home trust and independence, and does not revolt against male hegemony. This negotiated empowerment makes the mainstream discussion of credit access equated with emancipation tricky. Results can be explained by the virtuous spiral model, according to which individual power is enhanced by collective agency (Daskalopoulou and Karakitsiou, 2020). Therefore, microcredit is an influential source of empowerment not only in terms of capital but also in terms of social embeddedness, which is usually overlooked by standard financial inclusion indicators. Microcredit can only result in inclusive growth when it is embedded into an enabling institutional ecosystem, thus making equal access to opportunities to counter structural inequality (Khaun, 2024).

In the Nigerian context, this initiative aligns financial inclusion with its complementary policies in education, transport, access to digital media, and other child care, thus skewing the beneficiaries to rural women. The findings support Kim's (2025) claim that macroeconomic policy lacks gender-neutrality, as institutional assumptions, primarily based on male perspectives, are evident in interest rates, collateral requirements, and loan eligibility criteria. Similar to broader African discussions about the gendered politics of neoliberalism, the history of microcredit in Nigeria is an expression of those discourses. African feminist economists (Kelleher, 2019; Griswold, 2024) argue that microcredit is a palliative tool, as it puts the responsibility of reducing poverty on women but does not redistribute power. The arguments of this section therefore bear out this objection: microcredit can improve financial inclusion among women, but rarely puts into question the lack of childcare, health, or education facilities provided by a state. In this regard, the process of empowerment is privatized, and women are pushed to self-manage poverty by engaging in

entrepreneurship. It would require a re-crystallization of microcredit into an African feminist model of political economy that is based on structural justice, state responsibility, and social provisioning. Financial access should be combined with redistributive policy and institutional reform to bring about transformative inclusion, as Hodgson (2025) points out. This view makes the economic agency of women real, aligning with collective development rather than individual survival.

7. Conclusion and Recommendations

The paper explored the mediating role of microcredit on the relationship between inclusive growth and gender with respect to women entrepreneurs in rural and urban Nigeria. Based on empirical data collected in various socioeconomic settings, the results show that although microcredit increases female income, independence, and involvement in business, the overall effect of its growth has a limited scope due to structural inequities in finance, infrastructure, and politics. Microcredit, therefore, becomes an essential yet inadequate requirement for gender-inclusive growth. The facts emphasize that financial inclusion alone is not enough to break the structural barriers restricting the economic participation of women. The developmental impact of microcredit, however, is contingent on the presence of complementary systems, such as education, institutional capacity, and market availability, so that credit may serve as a tool of empowerment or a means of survival through debt. On the national level, the unequal distribution of financial infrastructure and the regulatory framework in Nigeria continues to create a two-tiered financial economy: formalized and capital-abundant in urban areas and informal and risk-based in rural areas. This imbalance recreates gendered dynamics of marginalization and restricts the ability of microcredit to drive any sustained growth or structural change. The paper has shown that microcredit has an impact not only on economic performance but also on social empowerment. The availability of credit also leads to the growth of the bargaining power of women, both in their households and in their freedom to make decisions and their participation in the community. These advantages take different forms in the geographical and social settings, however. Urban women tend to reinvest profits in education and business growth, whereas rural women use them to provide food security, healthcare, and meet societal demands. These divergent results again confirm the fact that empowerment is contextual and relational and cannot be reduced to financial terms. However, in the absence of structural enablers like education, access to the market, and infrastructure, empowerment is weak. Unless there is a systemic change, microcredit may be a source of dependency or debt stress. Sustainable empowerment thus demands a shift to production-based lending as opposed to consumption-based lending that is facilitated by business mentorship, digital literacy, and value chain integrations.

Based on these results, the inclusion-based growth path in Nigeria requires an integrated institutional structure that places microcredit within the larger context of development policy. Disjointed execution and policy inconsistency are the current dampening factors of effect. To solve this, several critical measures are required. Firstly, there is an urgent need to integrate microcredit into Nigeria's non-oil diversification agenda, specifically by targeting women-owned businesses in the agricultural, renewable energy, and creative sectors. Second, gender-disaggregated impact reporting by microfinance banks and donor agencies should be institutionalized to hold them accountable and enable them to learn. Third, a collaborative platform is to be instituted between the Central Bank of Nigeria and the Ministry of Women Affairs and SMEDAN, and seek to streamline the women-oriented financing programs and minimize overlaps. This kind of coordination would see microfinance as a disjointed anti-poverty tool being converted into a connected component of industrialization. In addition, it is suggested that the government in collaboration with the private sector, drive reform with a tiered approach to the regulation of interest markets that promotes moderation of interest rates, deposit insurance, and credit guarantees of gender-based lending. They must leverage fintech innovation to reduce geographic exclusion and improve risk assessment for informal women entrepreneurs, utilising mobile banking, digital savings groups, and blockchain-based micro-lending. Furthermore, they must institutionalize financial literacy and entrepreneurship education in the local government, and entrench it in the adult learning and vocational programs to increase economic resilience. These channels are self-reinforcing. Reforms of the digital ecosystem promote access; capacity building ensures more utilization; and financial ecosystem reform makes long-term inclusion. This feature enhances the relevance of the training to the region or the world, thereby facilitating a deeper understanding. It is a characteristic that increases the significance of the training to the region or the world, thereby enabling a better understanding of the subject.

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Art as Business Enterprise in Nigeria: A Discourse on the Challenges and Prospects in Emerging Painting Markets

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Abstract. The intersection of art and commerce is a compound space where creativity is capable of meeting market realities. This paper is a discourse of how artists (painters) and other stakeholder of the art industry perceive, negotiate, and assign value to artworks and make the business a sustainable venture of income in Nigeria's fuzzy economy. The study reveals that artists often struggle to balance their creativity with commercial feasibility. It emphasized that researchers' and policymakers must understand the critical influencers of the business of art in Nigeria, which include cultural authenticity, pricing and value perception, marketing dynamics, and policy or institutional structures. The study concludes that to solve this issue, stakeholders in the art industry must understand the behavior of art market in Nigeria requires an aesthetic and business lens, which offers implications for art practitioners, art educators, art managers policymakers in the economies of talent or creativity, in order to succeed economically, and also compete on the global art stage.

Keywords: Business Enterprise, Art Industry, Painting Market, Pricing and Value of Painting, Policy and Institutional Structures.

1. Introduction

In recent years, the art (painting) industry has significantly developed, and it calls for its aesthetic essence to transit into a potential economic and entrepreneurial engagement for human sustainability.

The global recognition of art is not just a mere creative quest but a perception of maximizing its potentials as a commercial venture. This has prompted a necessary attention towards understanding the optimistic models of painting which include market dynamics, price/value system, and sustainability potentials. However, in Nigeria, art particularly painting continuously face intense challenges in terms of its transition from creative practice to business enterprise. Though, Nigeria's painting industry is rich in talents, aesthetics and cultural expression, but inconsistent systems of valuation of the artworks still persists because of weak marketing structures, and limited outreach of stakeholders in the industry to integrate paintings into mainstream business and financial outlet.

The art ecosystem in Nigeria still informally operates in a "personality-driven manner" — whereby artists, art collectors, and gallery owners negotiate values of artworks through personal connections, individual status or artist reputation rather than following structured qualitative marketing mechanisms such as exhibition sales or auctions. However, in nations that are economically developed, art markets are institutionalized through galleries, auction houses, and art funds. The absence of standardized pricing models, insufficient government incentives, and minimal investments from private sectors has drastically hindered the formulation of formal art economy in African nations. This has resulted into many into many talented painters functioning as individual

entrepreneurs — navigating creation, marketing, and sales simultaneously, often without proper managerial or financial guidance.

Caves (2000) and Cheng (2024) posits that the “creative industries operate on principles that are absolutely distinct from conventional markets”. Arts, particularly painting resists from uniform valuation of its products because of its worth is intertwined with aesthetical emotion, artist reputation, and perception rather than production costs. Paradoxically, the painting markets in Nigeria reflect this vividly. While art pieces may immensely hold either cultural or intellectual value — the absence of a structured economic systems for the creative industry limits their translation into a financial gain. This challenge accentuates the urgent need to view art (painting) not merely as cultural or aesthetical capital but as feasible enterprise — one capable of generating employment, investment, and socio-economic impact.

Overtime, the few art galleries and auction platforms operating in urban areas of Nigeria such as Lagos, Abuja, and Port Harcourt have rigorously demonstrated that the commercialization of painting can be a sustainable business if clearly supported by synchronized policies and professional management of artists. Having observed these successes, yet they are often isolated and short-lived — largely due to inadequate infrastructure, limited awareness in art education, and lack of long-term marketing strategy.

Furthermore, another setback of these issues is the limited awareness of art as business opportunity/investment asset among the Nigerian elites and corporate bodies. Art patronage in most cases tends to be ceremonial — often tied to social events like exhibitions, political campaigns, or corporate image-making rather than grounded in a consistent marketing structure that values art as a long-term economic investment. As the United Nations Conference on Trade and Development (UNCTAD) highlights, it is necessary developing countries strengthen their creative sectors as engines of innovation and wide-ranging growth. To make this achievable, the painting market in Nigeria and other developing nations must be re-imagined as a “business ecosystem” with proper management, professional representation, and transparent valuation of creative works.

This paper shall explore the challenges confronting the commercialization of painting such as poor institutional structures, pricing inconsistency, and lack of investment — while also identifying the prospects that lie in professionalization, digital platforms, and global art networks. Ultimately, this discourse shall

also emphasize on the need for policy reforms, education, and capacitated building programs that can reposition art (painting) not only as medium of creative or aesthetic expression but also as a strategic component of individual financial status in Nigeria’s fuzzy economy.

2. The Business of Art and Cultural Value

The business of art in Nigeria is embodied by twofold identity — one that merges “aesthetic expression with the functionality of her economy”. Paintings are not only creative *objet d’art* but also economic commodities that hold both symbolic and material value. Within the landscape of broader creative economy, art functions as a language of culture and an instrument of investments (Byrnes, 2014). In recent times, stakeholders of the industry, which include artists, collectors, gallery owners and investors has gain greater recognition with the economic relevance of painting in Nigeria, by this — they increasingly acknowledge its role as an alternative avenue not only for cultural preservation but for financial sustainability and potential wealth creation.

Contextually, from a cultural perspective — art represents a repository of social memory and aesthetic idea (Hung, 2025). The depth of Nigerian painting is rooted in indigenous artistic practices and modern experimentation, mirror diversity, self-identity, and dynamism of the society that produces them. Yet, the cultural significance often overshadows their commercial potential, because the undervaluation of local art stems is obviously from weak institutional support, minimal state funding, and poor marketing structures. Consequently, artists frequently find themselves burdened with both creative production and self-management.

However, as agued by Chong (2009), the art market is literally a distinct form of business which is driven by symbolism rather than strict rationalized economics. This implies that the worth of a painting cannot be measured merely by production cost but as stated earlier in this study they depend on perception, artist reputation, aesthetics, and the emotional resonance it brings to the mind. The essence of symbolic economy explains why art collectors or investors purchase paintings not only for aesthetic pleasure but for their “Projected long-term financial appreciation”. In Nigeria, prominent art collectors and the elites have a habit of treating painting as a store of value, which is why they invest in the works and legislative artistic properties of high valued and celebrated artists such as Ben Enwonwu, Bruce Onobrakpeya, and Yusuf Grillo, whose artworks have remarkably fetched dazzling prices at international auctions.



Plate 1 — Eyo procession [Oil on canvas], 2010 by **Abiodun Kafaru**

An illustrative expression of this activity is carried out by male participants who are endowed with white-robed figures (agbadas) that looks flows like ocean waves, faces are covered with masks with tall hats on their heads, and each of the participant carries a strong and long staff (opabatà) and hold it firmly while parading throughout the streets, accompanied by music and dance. The staff is not just a ceremonial assessor but it signifies a symbol of authority, passage, and respect within Yoruba cosmology.

The market value of painting is a function of its cultural value. However, the artwork in plate 1 carries a narrative embedded in the Lagos State cultural heritage, and this narrative — when communicated effectively, it enhances desirability among art lovers, buyers, collectors and investors. In this scenario, art managers and galleries can serve as crucial intercessor that interprets and markets this cultural narrative in an engaging way that translates into a well-defined establishment and economic value. Kafaru *et al.* (2025) highlights, the lack of professional art management in Nigeria often leads to under-pricing and inconsistency in the perceptive and marketing of indigenous painting. In other to bridge his gap, it is required there is professionalism and adoption of human-resource-based strategies, including talent scouting, exhibition planning, and art branding, to position artworks as viable products while maintaining their cultural integrity.

Realistically, the art business in Nigeria is deeply tied to national development. Beyond individual gains of artist, it is capable of contributing to employment creation, cultural diplomacy, and as a venture of diverting her economy away from oil dependence. Additionally, art markets, exhibitions, and galleries if ventured into, could create value chains that employ artists, framers, curators, managers, and marketers. This would create networks that forms what scholars describe as “creative ecosystem,” where cultural

products or goods become vehicles for both identity and economic growth.

Hence, if considered — this idea would eradicate the local mentality of many artists who operates informally, also those who lack the business acumen or institutional support to maximize their creative output. To reposition art as a sustainable enterprise, Nigeria corporate bodies must promote collaborations between artists, art managers and policymakers such as Society of Nigerian Artists (SNA). Also, there is a pressing need for educational institutions to integrate business and art management into their curricula to train a fresh generation of art-entrepreneurs capable of blending creativity with smart strategy.

3. Pricing and Value Perception

Paradoxically, the idea of assigning a price or value to a creative work such as painting is fascinating. It is economically logical because it brings artistic worth (Chemalle & Spinola, 2024). Unlike most conventional goods whose price are dictated by their production costs or material inputs — the pricing or monetary value assigned to artworks particularly paintings are dynamic, which means it can be determined by several acumen i.e. it is not definite — it can be determined by symbolic, emotional, aesthetical, or reputational factors of the artist and his/her work. This implies that the market value of painting or any creativity work often surpass its

physical composition; its derivation is from how much meaning, prestige, and authenticity the buyer resonates with the artist and the artwork itself (Kafaru *et al.*, 2023).

In Nigeria, as far as art enterprise is concern, the process of assigning monetary value to a painting remains highly subjective and inconsistent. This is due to the fact that many developing/unrecognized artists (painters) operate independently because of the lack of structured management to standardize the pricing of artworks — leaving them vulnerable to undervaluation and exploitation. The absence of such professional structures in the art industry often leads to a situation where the monetary value assigned to an artist's work depends more on negotiation power or social connections rather than on established market metrics.

Art collectors and enthusiasts often attach greater value to artworks that communicate cultural identity or have emotional depth. Obviously, Nigerian painting is rich in traditional motifs and indigenous color symbolism which embodies a form of value that is both intangible and timeless. This perception explains why the works of pioneering artists (painters) like Ben Enwonwu, Bruce Onobrakpeya, and Yusuf Grillo will continue to appreciate economically in value even after decades of their creation. However, their pieces are not merely decorative; they propounded the use of artworks to teach historical narratives and cultural resonance, and this elevated their desirability in the art market.

Presently, the cultural valuation of art has not yet translated fully into a standard pricing system within Nigeria's art market. In many cases, artists still price their works based on intuition or immediate financial needs rather than making market research, rarity, or long-term investment potential. In contrary to that, The painting artwork in figure 1 by Ben Enwonwu titled “*Tutu*” was sold for over a million Euros at global auctions, the artwork is considered as the African *Monalisa* of the famous *Leonardo da Vinci's* (1503) painting — a prototype of such work in Nigeria are often sold for a fraction of their value due to limited awareness of the economic benefits of art and poor pricing agencies.

The perception of value of an artwork extends beyond the artwork itself to the artist's reputation (credibility of the artist), — in such situation, talent of the artist is sometimes underemphasized (Byrnes, 2014). Collectors and galleries tend to associate higher prices with famous artists who exhibit professionalism, consistent quality, and are visible in the public presence. As highlighted in the discourse on art management by (Kafaru *et al.* 2025), the principles of

western art markets employ structured valuation models supported by galleries, appraisals, and institutional collectors. This discrepancy has resulted in the under-pricing of emerging/infamous talented Nigeria painters artworks (paintings) in the global art landscape.



Figure 1: *Tutu* by Ben Enwonwu, 1974 Source: www.Obeliks

human resource management in art such as branding, visibility, and audience engagement — thus play a decisive role in how artworks are valued or in the assignment of monetary value to an artwork. When an artist or gallery develops a recognizable identity in the sight of the public, it influences buyers' willingness to pay premium prices. This dynamic reveals that “value perception in art is relational or associative” — it is constructed through the interaction between the artist, artwork, and specific audience.

Another important factor that influences the pricing of painting in Nigeria is the fuzziness in her economy. Nigeria economy is suffering from inflation, fluctuating exchange rates, and these challenges are constraining the purchasing power, therefore affecting how buyers and collectors perceive the affordability and worth of artworks. This means that whenever there

is economic instability, artworks tend to be undervalued and considered as immediate survival takes, which is a priority over investment for artists. Yet paradoxically, artworks can also serve as financial hedge — a tangible asset whose value appreciates overtime. Kafaru and Kelani (2025) notes that many elite collectors now regard paintings as a safer form of long-term investments just like real estate or stocks, especially within unstable national economies. This perception then repositions artworks not just as mere beauty or aesthetics but as instrumental properties that can yield substantial returns in the future.

To improve pricing consistency in Nigeria's art, the industry must embrace strategic marketing education and project management practices. Also, art managers, galleries, and educators should help artists understand market trends, buyer mindset, and pricing strategies that would reflect artistic merits in the market demands (Beri, 2024). Additionally, there must be transparency in the valuation systems — which can be supported by auctions, catalogues, and professional association such as the society of Nigerian artists (SNA), can also help in elevating the credibility of Nigerian art pricing in the global scenes.

Ultimately, for Nigeria's painting market to flourish, it must move far beyond a sentimental appreciation of both artists and their artworks to a structured understanding of art as both an emotional aesthetics and financial asset. If professional bodies of Nigerian artists such as (SNA) consider nurturing pricing standards, it will enhance artists' visibilities, and cultivate curiosity in the hearts of informed collectors — the reason specific artists works price are standardized, and would also encourage both upcoming and professional artists to keep working hard. Eventually, this would be a win-win situation for all stakeholders; together the nation can unlock the full economic potential in this branch of the creative industry.

4. Marketing Dynamics and Emerging Opportunities in Nigeria's Art (Painting) Sector

The business of art in Nigeria operates in a complex marketing scheme that is beyond normal comprehension and evaluation, encompassing from cultural, economic and tech impulses. Particularly, the painting sector stands out uniquely and intersects where creative value must be translated into marketable products through effective management, audience engagement, and strategic position. The comprehension of the marketing sector of art generally

is essential for taking control on how artworks move from the artist's studio into the marketing source.

Unlike mass-produced goods, artworks are emotionally charged products and non-substitutable, which requires specific marketing approaches that blend storytelling, symbolism, and prestige. As Kafaru *et al.* (2025) explains, are market are built on transparency, trust, perception, and reputation rather than the standard pricing, chain distribution, or mass demands of goods and services. This measure makes the Nigeria art economy both fuzzy and fragile but full of potential. Fuzzy and fragile, because the informal structures that dominate it often hinder a systematic growth; but full of potential, because the nation's heritage can be sustain artistically and expanded in the creative industry by positioning it as of Africa's promising economic venture.

Historically, the hustle of marketing painting in Nigeria directly relied on personal networks, art exhibitions, and word-of-mouth patronage. Artists often act as both the producers and marketers — they organize exhibitions, approach collectors, and also manage the visibility of their art produce and talent. However, this self-driven model in the art industry is reflective, because it stirs up the entrepreneurial spirit in artists but the expansion of market would be limited and less sustainable for artists. Although, few artists in Nigeria have access to professional collaboration such as gallery contracts that could help regulate the pricing of their pieces/artworks and give them significant exposure in the marketing space. This situation aligns with the findings from the recent research conducted by Kafaru and Kelani (2025) stating that "Painting can serve as an Investment Opportunity in a Developing Economy".

As time is evolving, new opportunities are emerging and strategically opening the eyes of marketers across all areas of phases of business — artist inclusively are now exposed to this fresh technological advancement of this 21st century and this ere has given all stakeholders in the creative art industry the privilege of selling or projecting their culture, innovation, creativity, talent, enthusiasm, and intuition to the wider audience both locally and internationally through online platforms, virtual galleries, and social media (Athique, 2013). This contemporary technological setup has begun to redefine how art can be marketed, sold, and appreciated. In fact, social media networks like Instagram, Facebook, Youtube, and art-focused website, has become a global marketplace, and it is actively been utilized as a swift social archive for the art market without relying solely on physical galleries (Deng, 2023).

The dynamics of marketing art in Nigeria are also influenced by urbanization in specific residence, wealth of rising middle-class people and tourism. Classic cities like Lagos and Abuja can boast of several creative hubs where exhibitions, fairs, art and residencies that create networks for artists, buyers, art lovers, and investors. For example, creative events such as “Art X Lagos and Lagos Biennale” have obviously promoted Nigerian art not only in Africa but on the international map, events like these brings the awareness of both artists, art lovers, tourists, researcher to advancement and be open minded to self-discoveries. As stated by Caves (2000), the “nexus between art and commerce” can only thrive when creative production and talents is linked to an organized distribution and audience participation is inclusive.

Nonetheless, significant challenges still persist, because the art sector still lacks formal marketing infrastructure, government support, and corporate/institutional investment. In Nigeria, Many art galleries operate on small budgets — this is because they struggle with poor patronage, high operational costs, and limited access to swift technology. Moreover, inadequate documentation of sales records and absence of regulatory agencies also make it difficult for track the market trends or build buoyant and reliable art indices. These are key components that must be intact to boost an investor’s confidence — without clear legal or financial policies guiding art ownership or art-entrepreneurship, taxation, and exportation in the Nigeria, the market will largely remain informal and vulnerable to exploitation. In essence, government bodies and stakeholder of Nigeria culture must consider this in their administration to promote the economy of the nation’s creative industry.

Yet, despite these structural weaknesses lie profound opportunities. This growing interest in art as an alternative means of investment is however reshaping the perceptions of the painting market. Wealthy Nigerian and international collectors now recognize that art can serve as a form of capital or financial asset. Paintings crated by modern Nigerian artists are now featured in global auctions, private collections, and museum acquisitions. This global recognition of Nigeria painters and their artworks have the potential to trickle down and encourage domestic investors, corporate sponsorships, and government intervention in creative enterprise development.

To harness these promising opportunities in Nigeria’s art market, it requires a deliberate integration of

brilliant business strategies into talent or any creative practice. Also, the marketing of art should move beyond traditional sales strategy towards a well-defined and structured value chains that involves branding, promotion, digital engagement, and international partnership. Moreover, it is also imperative for educational institutions should also reorient art curricula to include entrepreneurship, art marketing, and financial literacy.

5. Policy Support and Institutional Structure for the Nigerian Painting Market

The growth of Nigeria’s painting market relies not only on the creativity of its artist but also on the internal institutional and policy structures that is sustainable and can regulate the business models in the art industry. In most advanced countries, the economies of their art markets flourishes because of the well-defined frameworks and support of the agencies/body in charge of the management of their creative industries. These policies are driven by government bodies and councils assigned to art, culture and tourism — that ensures stability, funding, and professional development for all stakeholders in the art (painting) industry.

Policy support plays a decisive role in shaping the transitioning of art from just a cultural pursuit into a recognized business sector. Effective policies are capable of stimulating demand, enhancing visibility, protecting the rights of artists through copyright laws, art grants, and incentives (Ayko, 2023). This is a fundamental factor that Nigeria lack, which is therefore hindering the progress in the creative industry. However, while there are occasional government sponsored exhibitions or cultural festivals, the frameworks of the national agencies in control of the development of the visual arts and other creative activities are still inconsistent. This policy vacuum limits the access to funding, infrastructure, and long-term sustainability for painters and art managers.

The lack of art literacy and institutional coordination further widens the gap between art producers and their patronage. As observed in earlier findings, many artists perceive their works as extensions of identity and emotional aesthetics — what may be described as “value beyond the canvas”. However, without a well-defined and structured pedagogical campaigns or national art awareness programs, the broader public will fail to understand or appreciate the intrinsic worth of paintings. The disconnection between creative value and public perception calls for policy-driven art education initiatives that can elevate the appreciation

of art and integrate it into the national consciousness, such initiatives could be implemented through schools, museums, and community art centers, where cultural understanding could be linked to creative entrepreneurship (Nonaka & Takeuchi, 2011).

Furthermore, Nigeria's painting market would greatly benefit from this paradigm shifts i.e. institutional policies that balance creativity and commerce. The reason is because artists generally often struggle with the dilemma of maintaining the purity of their artistic practice and products (i.e. the richness and high-quality of their artworks) while seeking for economic survival. Gallery owners and art managers have a curial role of standing or serving as mediators between artistic integrity and market reality — helping to price artwork with logical terms and sustain confidence in the market. In order to strengthen the balance of creativity and commerce in the art industry, government policies should ensure that the role of galleries and public/private art organizations are formal and imperatively be legitimate business venture of Nigeria. This could include tax initiatives for art investments, registration guidelines for galleries, and funding schemes for any creative startups in the art industry. Ultimately, an effective policy for these issues should be multidimensional i.e. distinct sections of equal participation working in communion with a goal of promoting creativity, protecting the intellectual property of artists, and organizing entrepreneurship programs.

Another important institutional consideration is the technical role of professional associations such as the Society of Nigerian Artists (SNA) and the Visual Arts Society of Nigeria (VASNA). However, these bodies have historically promoted exhibitions, collaborations, and welfare initiatives for artists, but the major setback that is constraining the visions of these bodies is the lack of funds and less investments, the establishment of any project of these body largely depends on financially buoyant individual contributions. This associations need to be strengthened in other to thrive — legal backing, public/private partnership, and financial support of the government would their ability to advocate for artists' rights, enforce ethical standard, and promote innovation. When these policies align with practice, artists can then focus on creativity while enjoying the structural protection, sustainable income, and global competition.

6. Conclusion

This paper critically highlighted the business of art (painting) in Nigeria and the dynamic means of actualizing it for commercial purposes and industrial

development. At its core, the ecosystem of Nigeria art remains a lively space of creativity and preservation of her cultural heritage, if all stakeholders of the art industry can systematically battle the limitations or burdens that are hindering her economic potential in this business venture. Moreover, this paper achieved its essence — by exposing to readers, art lovers, enthusiast, and potential individuals that might have interest in art, that the value of any work of art, talent or creativity particularly in painting extends beyond the medium of expression (such as painting on canvas), each painting puts in a nutshell — an aesthetic of identity, memory, discoveries, and emotion. Which when properly managed, can translate into tangible financial and social capital for not only artists but those in procession of them.

In summary, the business of art in Nigeria represents both a challenge and promise — a call to reimagining creativity as a vehicle of economic development, youth empowerment, and national identity. Hence, when properly structured, supported, and managed, the art (painting) market will definitely transform into a dynamic and purposeful hub for investment, innovation, and cultural diplomacy.

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Zero-Waste Garment Pattern Cutting as a Sustainable Practice for Garment Construction Students in Tertiary Institutions in Lagos State, Nigeria.

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Abstract. The study was on Zero Waste Garment Pattern Cutting as a Sustainable Practice for Garment Construction Students in Tertiary Institutions in Lagos State, Nigeria. The area of study was Lagos State. Among three tertiary institutions in the state. Lagos State University of Education, Oto, Ijanikin, Yaba College of Technology, and University of Lagos, Yaba. The study design was a descriptive survey. Two objectives, two research questions, and two hypotheses guided the research. A questionnaire was the main instrument used for the study, containing 35 questions and a three-point Likert scale. Results reveal that out of 150 students, 123 (82) answered yes, wastes are created at every stage of garment construction. 132 (88) answered yes, this is as a result of irregular shape of pattern pieces. 150 (100) answered yes, student pattern makers need to be artistic by using creativity and ingenuity to eliminate waste. 86 (57) answered yes, students need to eliminate waste by drafting simple styles. 150, (100) answered yes, waste, if not properly handled or disposed of, pollutes the environment. 150 (100) answered yes, waste created in the cutting room can be converted to something new to create jobs. 132 (88) answered yes, working with design dimensions while sourcing for textiles prevents waste. 106 (71) answered yes, this prevents unnecessary embellishment. 141(94) answered yes, these practices are sustainable. In conclusion, zero-waste pattern cutting is a sustainable practice. Therefore, simple styles combined with creativity and ingenuity is recommended.

Keywords: Garment construction, garment pattern cutting, students, sustainable practices, tertiary institutions, zero waste.

1. Introduction

Zero waste pattern making is defined as a technique or method for creating patterns without any wasted textile fabric. Zero waste is discarding nothing in the creation of fashion. It can also refer to re-issuing left over fabric scraps or yarn to make new product. (Gel and Xiaohui, 2021, Centuary, 2019). Zero waste pattern making requires a thorough understanding of how to manipulate fabric folds and angles to create three dimensional forms, with little or no waste. It is a delicate balance between design creativity, mathematical precision and acute understanding of fabric behavior (Alana, Roberts and Kuznia, 2024, Anita, 2024, Grasheli, Ratna and Janyfer, 2023, Time, 2019).

Pattern cutting is the painter's brush for a skilled artist. It entails the transformation of a two-dimensional sketch into a tangible garment that adeptly conforms and moves with the wearer's three – dimensional form, the cutter needs to be able to manipulate the fabric to transform to the contours of the wearer's body using the pattern (Mithlesh, 2025, Steph, 2023, Katherine, 2021) Pattern making serves as the transformative process that turns a sample drawing into a consistent accumulation of garment. (Korri, 2024, Hegge, 2024, Rudd, 2020). Pattern can also be made from 3D form using software tools and also be obtained using the dress form. (Mithlesh, 2025, Shanhul 2024, Einas, Azzam and Zeinab, 2023). When drafting patterns for garments, there are lots of textile waste, this waste can be eliminated by adopting zero waste practice. Textile waste occurs within the fashion cycle either before or after consumer use. In the pre consumer stage, waste originates from fibre, yarns, fabrics and garments.

During manufacturing, and postconsumer fabric waste include, garment and discarded household items. (Mithlesh 2025, Nesma, Pammi and Julia, 2022, Naznin and Sammiya, 2022). There is also pre consumer textile waste generated during design and cutting processes (Meherr, 2025, Anita, 2024, Andre, 2017). The fashion industry is one of the creative industries that has developed in the world. High production in this industry result in waste in the form of chemical waste as well as fabric waste, this waste requires proper handling so as not to pollute the environment. As a result of releasing the latest brands by clothing brands and labels which ends up on landfills, incinerator, water channels as well as stack of unsold clothes or cloths no longer worn, increase the amount of fabrics waste that are thrown away causing environmental pollution. (Mithlesh, 2025, Nesma, Pammi and Julia, 2020, Naznin and Sammiya, 2022). One way of reducing this is by not throwing clothes into disposal by designing clothing patterns that leaves no fabric left which is zero waste pattern (Upama, and Rakifull, 2023, Esnart, Anna, Chanda, 2024, Hae, Jennifer, 2020, Dewi, Velthzal, Rismawati, Nurlally, Iwankuriawan and Mansyur, 2020). With the emergence of fast fashion and the increasing rate of fast fashion consumption in the fashion industry, this has impacted negatively on the environment, fashion designers are beginning to challenge the systems linearity and seeking to prevent waste through the elimination of fabric waste during cutting stage of garment manufacture. (Nesma, Pammi and Julia, 2022, Julia, Namkya and Julia, 2020, Lizhaywood, 2019). There is need to tackle the root cause by maximizing fabric utilization and minimizing waste by adopting zero waste design and also alleviate strain on other resources as well (SVEGEA, 2024, Meherr, 2023, Dewi, Velthzal, Rismawati, Nurlally, Iwankuriawan and Mansyur, 2020, Time, 2019). Traditionally, 15%-25% of fabric required for garment construction becomes wastage due to the well-established and intricate norms in garment design, pattern cutting and production methods, making the zero-method pattern unfeasible due to irregular shapes of pattern pieces (Gee and Younhee, 2023, Alana, Roberts and Kurznia, 2016). This wastage is due to garment style, pattern piece count, size and shape in relation to fabric width, quantity of garment sizes within a single marker, and market expertise. Whether manual or computer aided, in cutting zero waste pattern, the pattern maker needs to be artistic which demands the utmost creativity and ingenuity (Meherr, 2025, SVEGEA, 2024, Nesma, Pammi, and Julia, 2022, Time, 2019).

The pattern cutter must create a pattern for the garment that can equal or suppose a traditional fashion garment

without compromising the concept, fit or aesthetics (Gee and Younhee, 2023, Alana, Roberts and Kuznia, 2016). There are many ways to go about making a zero-waste pattern layout. Prototyping and experimentation are at the heart of zero waste pattern making, designers create prototypes to show how fabric manipulation technique influence the overall design. (Grasheli, Ratna and Janyfer, 2023, Sohail, Hernan and Georges, 2023, Century, 2019). Another way is to lay the pieces as close to each other so that fabric is not wasted, fit pattern pieces that are similar in shape next to each other, this process is called dovetailing (Upama and Rakifull, 2023, Naznin and Sammiya,, 2022, Dewi, Kelthzal, Rismawati, Nurlally, Iwankuriawan and Mansyur, 2020). A well-planned layout maximizes the use of fabric, minimizing waste. A method for crafting garment patterns is by interlocking elements such as pockets, sleeves, frills, cuffs, collars, gussets and trims like a jigsaw puzzle known as tessellation (SVEGEA,2024, Meherr, 2023,). In tessellation, designers fit pattern pieces together like a puzzle or repeating tiles leaving no gaps, exploring creativity using material at the same time becoming more sustainable (Gee and Younhee, 2023, Nesma, Pammi and Julia, 2022, Ellen, Sunhyimg, Ling, Rachel, Eulanda, 2020, Alana, Roberts and Kuznia, 2016). Tessellation uses numerical mathematics by counting everything in detail and figure out how all parts of the garment should go together. Draft basic block pattern from a set of measurements such as from a dress form, a standard measurements chart or your own body measurement. Using a production, sketching a quick sketch that can help work through the details of the design (Anita, 2024, Esnart, Anna and Chanda, 2024, Pammi and Rakifull, 2023, Nesma, Pammi and Julia, 2022, Andre, 2017, Lizhaywood, 2019). Geometric shapes, can be directly draped onto form models, adjusting the fabrics natural flow without cutting excess, used for fluid and organic garment designs like wraps or Kaftans, it does not conform to a strike rule but that no remnant must remain on the cutting floor after pattern cutting. This method is known as drape-based patterning (SVEGEA, 2024, Meherr, 2023), others start all the patterns on computer with computer aided design tools. The use of 3D digital clothing before cutting allow simulation of fabric usage and testing multiple layouts. These tools are known as digital patterning tools (Meherr, 2023, Grasheli, Ratna and Janyfer, 2023, Nesma, Pammi and Julia, 2022, Time, 2019, Alana, Roberts and Kaznia, 2016). There are the integrated design features by utilizing left over sections of the fabric to create pockets, straps, trims or decorative elements. (SVEGEA, 2024, Anita, 2024, Time, 2019, Andre, 2017). Seamless designing creates patterns that require minimal or no cutting by using

fabric width and length as it is ideal for Ponchos, capes or tube dress (Upama, and Rakifull, 2023 Centuary, 2019). Mathematical or modular patterning is based on mathematical calculations to ensure all parts fit within a specific fabric width common in contemporary fashion design with a focus on efficiency (Dewi, Velthzal, Rismawati, Nurtally, Iwankurniwan, and Mansyur, 2020, Sahail, Hernan, Georgi 2023, Centaury, 2019). Zero waste pattern can also use pattern layering technique this is by layering smaller pieces on large ones by overlapping fabric areas. Useful in creating multi-functional garment, (SVEGEA, 2024, Steph, 2023, Catherine, 2021). Designing for disassembly, create garment with minimal stitching or seams that can be easily deconstructed and reused. This technique supports circular fashion (Upama and Rakifull, 2023, Meherr, 2023, Lizhaywood, 2019). Shirring, technique is also zero – waste clothing method. (Inneta, Nadiia, Merija and Valentina, 2024, SVEGEA, 2024, Upama and Rakifull, 2023). In contrast when cutting zero waste pattern and fabric meticulously plan the layout of each piece of fabric ensuring that every inch is utilized. This approach can involve intricate designs, geometric shapes and innovative sewing to fit the pieces together like a puzzle resulting in garment that uses all the fabric with minimal to no waste, nor subjected to the conventional practice of pattern grading. (Inneta, Nadiia and Merija, 2024, Gasheli, Ratna, and Janyfer, 2023, Alan, Roberts and Kuznia, 2016)

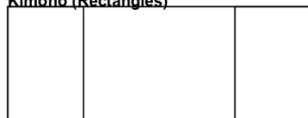
However, what makes zero–waste garment pattern cutting as a sustainable practice is that the fashion industry is notorious for its environment foot print from water consumption to carbon emission, the production of clothing has significant impacts on the planet. Zero waste pattern offers a practical solution to one of these issues which is fabric waste, by reducing fabric waste, the method helps in conserving resources. It means fewer raw materials are needed, reducing the demand for water, energy and chemicals involved in fabric production, additionally less waste means fewer textile ends up in landfills, decreasing environment pollution (Inneta, Nadiia and Merija 2024, Sohail, Hernan and George, 2023, Hea and Jennifer, 2020). Fast fashion over supplied large quantities of products to consumers and due to the mass production system of fast fashion, the vast amount of textile waste generated in the production

process also has a huge adverse effect on the environment, the industry had largely been blamed for the greenhouse gasses emissions of between 28% of the world’s total emissions. As a result, zero –waste pattern making will minimize waste generated in the production process by many designers (Gee and Younhee, 2023, Nesma, Pammi and Julia, 2022, Ellen, Sunhying, Ling, Rachael, and Eulanda, 2020) By simply reducing dumping of fabric waste in landfill or destroyed in an incinerator as well as encourage circular fashion, the health of the communities are protected. Zero waste supports local circular economy and creates job where one person “waste is a source for something new. Creating good green jobs as resources are endlessly recirculated through the economy, instead of being used once and then discarded reducing and reusing material create even more jobs such as repair and tailoring and reuse business, local money is spent on local jobs and stay within the community instead of leaving the community to buy imported product. It also results in fashion brands needing less Yardage of fabric to produce the same number of garment (Mithlesh, 2025, Md. Ahshan and Md. Shamsul, 2024, Einas, Azzam and Zeinab, 2023, Roberts, and Kuzinia, 20216). Zero waste techniques lead to substantial cost savings. Moreover, as consumers become more conscious of sustainability, there is growing market, for eco-friendly product brands that adopt zero waste practices which can attract environmentally conscious customers willing to pay a premium for sustainable fashion. This shift not only helps the planet but also makes good business sense. (SVEGEA, 2024, Meherr, 2023, Mart, 2016). Zero waste pattern cutting helps keep an open mind regarding the final outcome, with the same goal of making beautiful garments allow the designer to explore and invent new outcomes which is the space to create zero waste, the designer need to know the textile dimensions to be able to design the garment, likewise the design dimensions to source for the textile this is very vital for the designer, who needs to work with set of textile dimension to prevent creating unnecessary embellishment and compromise the design to increase and improve the garment sustainability. Zero waste pattern cutting represents a significant step toward the journey in challenging the status quo, pushing designers to think creatively and responsibly, (Anita, 2024, SVEGEA, 2024, Time, 2019, Andre, 2017).

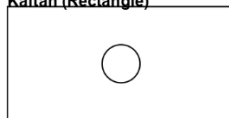
Zero Waste Garment Pattern Layouts

Simplified diagrams showing fabric-efficient garment styles

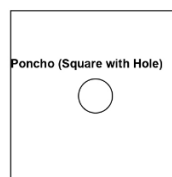
Kimono (Rectangles)



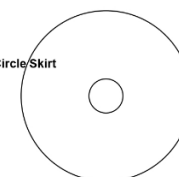
Kaftan (Rectangle)



Poncho (Square with Hole)



Circle/Skirt



Zero-waste styles



Patchwork
(Researcher's work 2025)



Drape style

1.1 Statement of the Problem

Garment construction students in the tertiary institutions in Lagos state are not aware that waste generated in the cut room during garment production are dangerous to the environment, the health of the community and can even be a source of income to others. Moreover, they are not aware of the techniques to use in achieving the zero-waste pattern cutting. Also, not aware that zero waste is a more sustainable practice than the traditional pattern cutting, this and many more is the focus of this research work.

1.2 Objective of the Study

The objective of the study was on zero waste pattern cutting as a sustainable practice for garment construction students in tertiary institutions in Lagos state, Nigeria. Specifically, the study sought to:

- Examine techniques to be employed in the cutting room during garment pattern cutting practice to eliminate waste by garment construction students in tertiary institutions in Lagos state Nigeria
- Examine the sustainability of zero-waste garment pattern cutting practice for garment construction students in tertiary institutions in Lagos state Nigeria.

1.3 Research Questions

Therefore, the following research questions were formulated:

- What are the techniques to be employed in the cutting room during garment pattern cutting practice to eliminate waste by garment construction students in tertiary institutions in Lagos State, Nigeria?
- What is the sustainability of zero waste garment pattern cutting practice for garment construction students in tertiary institutions in Lagos state, Nigeria?

1.4 Hypothesis

Hypothesis 1: There is no significant technique employed in the cutting room during garment pattern cutting practice to eliminate waste by garment construction students in tertiary institutions in Lagos state.

Hypothesis 2: There is no significant sustainability of zero waste garment pattern cutting practices for garment construction students in tertiary institutions in Lagos state

2. Methodology

Research Design: Descriptive Survey design was adopted for the study.

Area of Study: The area of the study was Lagos State, comprising three tertiary institutions where garment construction is taught. These are Lagos state University of Education, Oto/Ijanikin, Yaba college of technology and University of Lagos Akoka, Lagos.

The population of the study: consisted of 150 respondents. From the Home Economics Education department, Lagos state University of Education. 60 respondents, Yaba college of technology 50 respondents, fashion and design department, University of Lagos Home Economics Unit 40

Method of Data Collection: A structured questionnaire was the main instrument used in the collection of data for the research titled Zero – Waste Garment Pattern Cutting as a Sustainable Practice for

Garment Construction Students In Tertiary Institutions In Lagos State, Nigeria. In which respondents were to answer yes, no and undecided. The questionnaire was divided into two sections, section A and B. Section A was on the bio-data of the respondents, while section B had 35 questions, 15, were on techniques to eliminate waste in the cutting room, 20 were on zero waste pattern cutting sustainable practices, totaling 35 questions.

Validity: The questionnaire was given content and face validity by 2 experts in the course.

Method of data Analysis: All the responses were collected using Google form and analyzed using Chi-square and Friedman's test. The results are presented below.

Hypothesis 1: There is no significant technique employed in the cutting room during garment pattern cutting practice to eliminate waste by garment construction students in tertiary institutions in Lagos state.

Table 1: Techniques to eliminate waste in the cutting room

S/N	Statement (n=150)	Yes(%)	No(%)	u(%) Rank	Mean ue)	X^2 (p-val
1.	As a student when constructing garments, you draft pattern	150(100)	0(0)	0(0)	7.09	429.048
2.	Aware pattern drafting can turn a simple drawing into Accumulation of garment waste by students	129(86)	14(9)	7(5)	8.21	* (<0.001)
3.	These wastes are created at every stage of the garment construction stage by students	123(82)	14(9)	13(9)	8.70	
4.	They come as cut-off for garment created by students	111(74)	19(13)	20(13)	9.23	
5.	This is as a result of irregular shape of pattern pieces produced by students	132(88)	12(8)	6(4)	8.11	
6.	Student pattern makers need to be articles by using their creativity and ingenuity to eliminate wastes	150(100)	0(0)	0(0)	7.09	
7.	Student needs to eliminate waste by drafting simple style like Kaftan when constructing garments	86(57)	58(39)	6(4)	10.25	
8.	Student pattern cutters can draft fabric directly on a dress form to eliminate waste	98(65)	52(35)	0(0)	9.68	
9.	Technology can be used by garment construction students to plan pattern layout before cutting fabric	150(100)	0(0)	0(0)	7.09	
10.	Left over from fabric can be utilized to create some decorative element by students	150(100)	0(0)	0(0)	7.09	

11. Style requiring minimal or no cutting can be made using the entire length and width of fabric by students	124(83)	0(0)	26(17)	8.66
12. Styles for minimal stitching are appropriate to eliminate waste during construction by students	117(78)	13(9)	20(13)	8.95
13. Shirring techniques is also zero waste method for students	96(64)	26(17)	28(19)	10.10
14. Pattern layout practice must be calculated and precise by laying larger pattern before the smaller pieces	144(96)	0(0)	6(4)	7.45
15. Prototype of fabric manipulation must be made to be sure of the final garment design by student	144(96)	6(4)	0(0)	7.33

* Significant at 596 level; U=Undecided

The chi-square value ($X^2 = 429.048$, $p < 0.001$) from the Friedman's test shows that there are significant techniques employed in the cutting room during garment pattern cutting practices to eliminate waste by garment construction students in tertiary institutions in Lagos state ($p < 0.05$). These techniques include: drafting simple style like Kaftan, drafting fabric directly on a dress form, using technology to plan pattern layout before cutting fabric, utilizing left over from fabric to create some decorative element, using the entire length and width of fabric for style requiring minimal or no cutting, using styles for minimal stitching, use of shirring techniques, calculating pattern layout and be precise by laying larger pattern before the smaller pieces, and make use of prototype of fabric manipulation to be sure of the final garment design.

Hypothesis 2: There is no significant sustainability of zero waste garment pattern cutting practices for garment construction students in tertiary institutions in Lagos state

Table 2: Zero waste pattern cutting sustainable practices

S/N	Statement (n=150)	Yes(%)	No(%)	u(%)	Mean	X^2 (p-value)
				Rank		
	Aware that high production of garments result in waste for the environment	150(100)	0(0)	9.61	300.558	*(<0.001)
	The waste if not properly handled or disposed pollutes the environment	150(100)	0(0)	9.61		
	Aware the blocked channels of water Causing flooding	133 (89)	17(11)	10.60		
4.	The dyes can leak into drinking water causing health issues	141 (94)	0(0)	10.30		
5.	When incinerated causes climate change	132(88)	9(6)	10.8		
6.	zero waste clothing construction is one of the ways of eliminating waste by students	88(59)	9(6)	14.19		
7.	This reduces the number of wastes sent to Landfills by students	133	(89)	8(5)	9(6)	10.75
8.	It eliminates the number to be incinerated and reducing carbon emission	124(83)	0(0)	26(17)	11.57	
9.	Reducing carbon emission helps to protect the health of the communities	132(88)	0(0)	18(12)	10.96	
10.	By reducing fabric waste resources are also conserved by the students	142(95)	8(5)	0(0)	10.12	
11.	Waste created in the cutting room can be converted to something new by student creating jobs	150(100)	0(0)	0(0)	9.61	
12.	When jobs are created local money remains within the community	123 (82)	9(6)	18(12)	11.59	
13.	Fashion brand by garment construction student will need less yardage to produce the same number of garments	123 (82)	27(18)	0(0)	11.23	
14.	Resulting in less chemicals and water usage by garment industry	123 (82)	18(12)	9(6)	11.56	
15.	Zero waste garment pattern practice by students will help to create eco-friendly fashion products for the makers	132(88)	9(6)	9(6)	10.96	
16.	Zero waste garment pattern cutting practice allows garment construction	132(88)	18(12)	0(0)	10.72	

students to explore new outcomes				
17. Zero waste is working with design dimensions to source for textiles by students	132(88)		18(12)	0(0)
18. Zero waste is working with design dimensions to source for textiles by students	123 (82)	9(6)	18(12)	11.65
19. Working with textile dimensions prevent creating unnecessary embellishment by students	106(71)		18(12)	26(17)
20. All these practice makes zero waste pattern cutting by garments construction students sustainable.	141 (94)	0(0)	9(6)	10.30

* Significant at 596 level; U=Undecided

The chi-square value ($X^2 = 300.558$, $p < 0.001$) from the Friedman's test reveals that there are significant sustainability of zero waste garment pattern cutting practices for garment construction students in tertiary institutions in Lagos state ($p < 0.05$). Some of the sustainability practices are, waste created in the cutting room can be converted to something new, resources conservation, reduction in number of wastes sent to landfills, protection of the health of the communities, less yardage to produce the same number of garments, creation of eco-friendly fashion products for the makers, and exploration of new outcomes.

3. Discussion of Findings

Table I was on the techniques to eliminate waste in the cutting room all the 150 (100) respondents answered yes, as student when constructing garment they draft pattern. This is line with (Mithlesh, 2025, Korri 2024, Hegge, 2024,). 129 (86) answered yes, they are aware pattern drafting can turn a simple drawing into accumulation of garment waste by students, 14 (9) answered no, 13 (9) was undecided. As opined by (Korri, 2024, Hegge, 2024, and Rudd, 2020). 123 (82) answered yes, this waste crated at every stage of the garment construction by students, 14 (9) answered yes, 13(9) were undecided. As supported by (Meherr, 2025, Mithlesh, 2025, Anita, 2024, Nesma et al, 2022). 111(74) answered yes, they come as cut-off of garment created by students 19(13) answered no, 20(13) were undecided. As observed by (Meherr, 2025 Anita, 2024, Andre, 2017). 132 (88) answered yes, this is as a result of irregular shape of pattern pieces, produced by the students, 12(8) answered no, 6(4) were undecided as stated by (Gee and Younhee, 2023, Alana et al 2016). 150(100) answered yes, student pattern makers need to be artistic by using their creativity and ingenuity to eliminate waste, this is in line with, (Mithlesh, 2025 SVEGEA, 2024, Nesma et al, 2022, Naznin et al, 2022). 86(57) answered yes, students need to eliminate waste by drafting simple style like kaftan when constructing garments, 58(39)

answered no, 6(4) were undecided. this was supported by (Gee et al, 2023, Alana et al, 2016). 98(65) answered yes, student pattern cutters can drape fabric directly on the dress form to eliminate waste, 52 (35) answered no. As observed by (Mithlesh, 2025, Shansul, 2024 Einas et al, 2023). 150(100) answered yes, technology can be used by garment construction students to plan pattern layout before cutting fabric, this is in line with (Meherr, 2023, Grasheli et al, 2023, Nesma et al, 2022, Time, 2019, Alana et al, 2016). 150(100) answered yes, leftovers from fabric can be utilized to create some decorative elements by students. As noted by (SVEGEA, 2024, Anita, 2024, Time, 2019, Andre, 2016). 124(83) answered yes, style requiring minimal or no cutting can be made using the entire length and width of fabric by students. 26(17) were undecided as supported by (Upama et al, 2023, Centuary, 2019). 117(78) answered yes, styles for minimal stitching are appropriate to eliminate waste, during construction by students 13(9) answered no, 20(13) were undecided. As opined by (Upama et al, 2023, Meherr, 2023, Lizhaywood, 2019). 96 (64) answered yes, shirring techniques is also zero waste method for students, 26(17) answered no, 28(19) were undecided. As noted by (Inneta, et al, 2024, SVEGEA, 2024, Upama et al, 2023). 144(96) answered yes, pattern layout practice must be calculated and precise by laying larger pattern before the smaller pieces, 6(4) were undecided, as observed by (Grasheli, et al, 2023, Sohail et al, 2023, Centuary, 2019). 144(96) answered yes, prototype of fabric manipulation must be made to be sure of the final garment design by students, 6(4) were undecided. As supported by (Grasheli et al, 2023, Sohail et al, 2023, Upama, et al, 2023, Rismawati et al, 2020, Centuary, 2019).

Table 2, was on zero waste pattern cutting as sustainable practices. 150(100) respondents answered yes, they are aware, high production of garments result in waste for the environment as supported by (Mithlesh, 2025, Meherr, 2025, Anita, 2024, Naznin et al, 2022, Nesma et al, 2022). 150(100) answered yes, the waste if not properly handled or disposed pollutes

the environment. As noted by (Mithlesh,2025, Naznin et al, 2022, Nesma et al,2022). 113(89) answered yes, they are aware fabric waste block channels water causing flooding,17(11) answered no. In line with Mithlesh,2025, Naznin et al,2022, Nesma et al,2022).141(94) answered yes, dyes can leak into drinking water causing health issues, 9(6) were undecided. As opined by (Inneta et al 2024, Sohail et al ,2023, Hae et al,2020). 132(88) answered yes, when incinerated cause climate change,9(6) answered no, 9(6) were undecided. As supported by (Gee et al,2023, Nesma et al,2022, Ellen et al,2020). 88(59) answered yes, one of the ways of eliminating waste is by constructing zero waste clothing by students, 9(6) answered no, 53(35) were undecided. As supported by (Meherr, 2025, SVEGEA, 2024, Nesma et al, 2022, Time, 2019). 133 (89) answered yes, this reduces the number of wastes sent to landfills by students, 8 (5) answered no, 9 (6) were undecided, as observed by (SVEGEA, 2024, Meherr, 2023, Dewi et al, 2020, Time, 2019). 124 (83) answered yes, it eliminates the number to be incinerated thereby reducing carbon emission, 26(17) were undecided. As noted by (Gee et al, 2023, Nesma et al, 2022, Ellen et al, 2020). 132 (88) answered yes, reducing carbon emission helps protect the health of the community, 8 (21) were undecided. As opined by (Mithlesh, 2025, Md Ahshan and Md, Shamsul, 2024, Roberts et al, Kuzinia, 2016). 142(95) answered yes by reducing fabric waste resources are also conserved by the students, 8 (5) answered no. As noted by (SVEGEA, 2024, Meherr, 2023, Mart, 2016). 150 (100) answered yes, credited in the cutting room can be converted to something new by students creating job. As observed by (Mithlesh, 2025, Md. Ahshan et al, Ge et al, 2021, Centuary, 2017, Einas, 2016). 123 (82) answered yes, when jobs are created local money remains within the community 9(6) answered no, 18 (12) were undecided. As supported by Mithlesh, 2025, Md. Ahshan et al, 2024, Einas, et al, 2016). 123 answered yes, fashion brand by garment construction students will need less yardage to produce the same number of garments, 27(18) answered no. As noted by (Mithlesh, 2025, Md, Ahshan et al, 2024, Einas, et al, 2016). 123 (82) answered yes, this will result in less chemical and water usage by garment industry. 18(12) answered no, 9(6), were undecided as supported by (Inneta et al, 2024, Sohail et al, 2024, Hae et al, 2020). 132(88) answered yes, zero waste garment pattern practice by students will help to create eco-friendly fashion products for the makers, 9(6) answered no, 9(6) were undecided, as noted by, (SVEGEA, 2024, Meherr, 2023, Mart, 2016). 132 (88) answered yes, zero waste garment pattern cutting practice allow garment construction students explore new outcomes, 18(12) answered no, as noted by (Anita, 2024, SVEGEA,

2024, Time, 2019, Andre, 2017). 139(88) answered yes, zero waste is working with design dimensions to source for textile by students, 18(12) answered no. As opined by Inneta et al, 2024 Gasheli et al 2023, Alana et al 2016). 106 (71) answered yes, working with textile dimensions prevent creating unnecessary embellishment by students 18(12) answered no ,26 (17) were undecided, as noted by (Anita, 2024, SVEGEA, 2024, Time ,2019, Andre, 2017). 141(94) answered yes, all these practices make zero waste pattern cutting by garments construction students sustainable, 9 (6) were undecided. As observed by (Anita, 2024, Inneta et al ,2024 Grasheli et al, 2023, Sohail et al, 2023, Alana, et al, 2016).

4. Conclusion

Traditionally, garment construction becomes wastage due to intricate design patterns, cutting, and production methods as a result of irregular shapes of pattern pieces. There are various ways of reducing fabric waste. These include the use of technology, such as computer-aided design, prototyping, and experimentation, draping fabric directly on the dress form, placing larger pieces first before smaller pattern pieces, designing clothes with minimal stitching and seams, shirring, pleats, and designing simple styles.

5. Recommendations

- Zero-waste is a sustainable practice. As such, garment construction students in Lagos State tertiary institutions should:
- Buy the exact yardage needed for the style.
- Plan layout of pattern before cutting fabric.
- Make prototype of styles to be sure of the final garment design.
- Design styles with minimal stitching and seams.
- Students to be creative by using their ingenuity when cutting fabric
- Convert waste created in the cut room for something new.

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Examining the Nexus of Human Ecology and Functional Apparel among Home Economics Students in Tertiary Institutions in Lagos State, Nigeria.

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Abstract. This study examines the nexus between human ecology and functional apparel among Home Economics students in tertiary institutions in Lagos State, Nigeria. Human ecology emphasizes the dynamic relationship between individuals and their environments, while apparel serves as both a functional and expressive medium reflecting personal, cultural, and environmental values. The study adopted a descriptive survey design with a population of 300 respondents drawn from Lagos State University of Education, University of Lagos, and College of Education (Technical), Akoka. A structured online questionnaire was used to gather data on factors influencing apparel preference and the functionality of clothing to students' environments. Data were analyzed using Chi-square and Friedman's tests. Findings revealed significant factors influencing apparel choices, including values, cultural identity, peer group influence, institutional dress codes, climate, and fashion trends ($\chi^2 = 300.297$, $p < 0.001$). Similarly, apparel functionality, comfort, environmental adaptability, eco-friendliness, and suitability for academic and social activities was found to significantly affect students' environmental engagement and performance ($\chi^2 = 1311.781$, $p < 0.001$). The study concludes that Home Economics students' apparel preferences are shaped by a complex interaction of ecological, socio-cultural, and technological factors. It recommends the adoption of functional and eco-friendly clothing aligned with environmental conditions and institutional standards to promote comfort, identity, and professional development.

Keywords: Human Ecology, Functional Apparel, Home Economics, Lagos State, Tertiary Institutions, Fashion Trends, Eco-friendly Clothing

1. Introduction

Human Ecology is an interdisciplinary field that examines the dynamic relationship between humans and their environments encompassing cultural, social, economic and environmental dimensions (Roderick 2024), Sean and Ludomir, 2023, Wydawnicto 2013). It is a term used to describe a field of study whose guiding philosophy derives from an ecosystem perspective (Roster, 2024, Soo and Yoo-Kyound, 2019). Apparel refers to items worn to cover the body. Terms such as clothing and attire are synonymous. Apparels are worn for modesty, adornment and protection from the elements of the weather (Gilligan 2023). It transmits information about the wearer's systematically allowing individuals to communicate their personality, values, and identity to the world. Apparel when worn convey subtle cues about the wearer's cultural background, social status and lifestyle preferences, shaping the way others perceive and interact with the wearer. It is a powerful form of self-expression (Chola, Kanyati and Mwanza 2023). Apparels on the other hand can be functional when it transcends traditional clothing features to enhance performance, comfort and protection (Azonuche, 2024, Rosie Laure and Christ, 2021, Robio and Bye 2020, Ju and Jeongwha, 2013). It can be used to protect the wearer from the elements such as wind, sun or cold. For example, functional clothings are clothing that protects against extremely hazardous environments, provides thermal insulation, protect individuals against sun burns and wind damages.

Functional clothings are used for work, school, cooking or sporting activities (Hephzibah, Kehinde and Ugobodaga, 2024, Oladokun, 2024, Walaiye2023, Okeke, 2023, Meital 2023, Koricocha 2022). Suitable

clothing to a great extent determines functional clothing value by comfort to the wearer, mobility, protection from hazards, health and safety. Originally, clothing serves the purpose of protecting the wearers and expressing roles but specific garment function determines necessary clothing design and physical characteristic features that allow freedom and match motion (Xue, Lei and Xiangpang, 2024, Azonuche, Okomwa and Ogbongomi, 2022). Home Economics is an academic subject that prepares students for life skills related to sustainable lifestyles to students in Lagos State Tertiary Institutions. It is the field of research and education to be self-sufficient adults and covers cooking, finances, mending clothing, dress-making, fostering child development, interior design wood working and a host of others (Crain, 2023, Soyomba, 2023, Adebayo Oluwadare and Olubukola 2022, Jaana and Paivi, 2022). So understanding how students apparel align with their ecological environment is essential. There are certain factors influencing apparel preference in tertiary institutions in Lagos State. These include values, climate, socio-cultural identities, institutional dress codes, technological advancements in apparel design and fashion trends (Azonuche, 2024, Roster 2024, Sonali and Linda, 2017). The activities within this environment engaged by Home Economics students include academic, social and casual activities. Therefore, apparel chosen for these activities should act as a mediator between students and their academic, social environment (Adebayo, Oluwadare and Olubukola 2022, Jaana and Paivi, 2022).

Values are viewed as enduring beliefs about desired end-states or modes of conduct that guide human behavior. Personal values are theorized to influence attitudes and behaviors and they represent attitude towards tradition or foreign shopping behavior on clothing. Which may be due to environmental or socially conscious values such as buying eco-friendly apparel or recycled apparel (Roster 2024, Jin, Abdullah, Mohammed, Marvella, Norzalita, 2024, Jiddi and Niehm, 2017). Students of Home Economics have long recognized the significance of clothing as a signal to connectedness in order to distinguish themselves from others. They adopt styles of clothing that express their particular distinct identity for aesthetics and quality as well are core requirement, product composition, branding, price, style, fit and colour (Roster, 2024, Crain, 2023, Adebayo, Oluwadare and Olubukola 2022). Lagos State has a tropical climate. For students clothing to be functional, clothes and textiles should absorb stain, sweat and microbes to prevent increased odour generation and bacterial colourization during the hot season as well as protect individuals from cold during the cold weather

(Ubeleit-Nte 2024, Yinka 2024, Iwalaiye, 2023, Robin and Bye, 2020). Textile microorganism can cause staining, fabric deterioration and even physical irritation such as skin allergies or infections which affects emotional well-being and one self-esteem. Since textile and skin contact are an influential part of cutaneous environment therefore functional clothing are essential such as cotton. Unlike wool and synthetic fibres like polyesters and nylon that can worsen these conditions (Azonuche, 2024, Robina and Bye, 2020, Ju and Jeongwha, 2013). Hot climate can be very hot and uncomfortable, the type of clothes worn affects how well air circulates and heat and moisture evaporate then both skin temperatures and discomfort increase. Home Economics students should go for breathable materials like cotton, linen, chambray or jersey. For dresses, tops and skirts or trousers, skirts, shorts, made of this fabric. Avoid clothing from polyester, wool, rayon, nylon or silk because they are not breathable materials. They cause heat and retain body odours. Fabrics like pastels and lighter colours absorb less sun than dark colours. Dark colours trap heat and makes one feel hotter. Workout clothes should be made from breathable fabrics. Choose loose and flowing silhouette like kaftan, wide leg trousers, maxi dresses (Oladokun, 2024, Ubelejit-Nte, 2024, Okeke – Korieocha, 2022, Hephzibah, Kehidne and Ugboadaga, 2024). Comfortable shoes are a must for working out. Such as sandals, flip-flops or breathable walking shoes, wide brimmed hat or a cap to protect the wearer from the sun as well as sunglasses and sunscreen, a scarf or shawl can also be useful for covering up for protection against the sun or dust, rock light weight accessories for comfort (Arnob, Tareque, Reazuddin and Abubakar, 2024, Oladoun 2024, Zuberu 2019). During the rainy season hoodies are functional because they are thick enough to keep students warm. Shorts are ideal because of floods. Boots that are appropriate for walking on wet grass or muddy floor, students need one, put on crocs since they are plastic and waterproof, skinny jeans and boots are stylish combinations, they look chic (Oladokun, 2024, Okeke-Kerieocha, 2024, Iwalaiye, 2023). Darker colours such as black, brown, are usually preferred over light shades. Try brighter, bold colours, these can be mood boosting on those gray dreary days. Style shorts with sneakers and sandals. Get a raincoat but heels should be avoided, leather shoes, long skirts and dresses. Wear jellies – those solid rubber shoes, choose low maintenance fabrics and kimonos. Grab the most vibrant stuff in your closet and experiment with colour combinations.

A neutral pair of shoes will provide some balance. Choose stockings or skin socks that suit your skin tones (Okeke Okorieocha, 2024, Iwalaiye, 2023,

Zuberu 2019). Functional clothing is also influenced by the environment to showcase socio-cultural identity of students by incorporating elements like traditional Yoruba attire like gele, buba and iro for women, agbada, Sokoto and cap for men, with vibrant colours and traditional accessories like beads, coral necklaces or intricate designed gele (head wraps) add depth for cultural expression. Blending traditional elements into contemporary streetwear by incorporating aso-oke patterns into t-shirts or traditional motifs into casual wear shows unique Lagos Identity (Azonuche, 2024, Dairo, 2023, Ogundare, 2023). Students can wear to suit different occasions. Gender dynamics also play a role in the way student dress to conform, to blend in, to fix pre-convened moulds and to identify their social status and designed with activities and roles typically associated with each gender in mind. In tertiary institutions girls can wear short and trousers but boys cannot wear ladies' attire (Rabio and Penelope, 2024, Yinko, 2023, Ogundare, 2023, Okosa, 2023). The role of peer group environment as an influencing factor in purchasing decisions is well established among students in tertiary institutions, students feel comfortable and relaxed among their peers and are motivated in everything they do. The factors influencing peer groups affiliation as concerned clothing are brand, current fashion, self-satisfaction, ease of wear, attractive appearance, figure type, ease of task performance, activities, protection and safety (Anomche, 2024, Fabio and Penelope, 2024, Filade, Bello, Uwaoma, Anuanene and Nwangbunika, 2019, Fadare, Zarna, Fadare, Bademosi and Amanum, 2021). Tertiary institutions in Lagos State have attempted to define specific dress codes through various mechanisms such as laying down laws and considering evaluation to define specific dress code (Ubelejit-Nte, 2024, Yinka, 2024, Ogundare, 2023, Okosa, 2023). Wearing stylishly torn jeans, trousers, lowriding jeans, sagging dirty inner wears or attending lectures in pajamas with a pair of bathroom slippers may elicit strong social disapproval. In addition to conveying one's affiliation or orientation, clothes express people's distinction, social and personal traits (Moyosere and Abiodun, 2023, Ubelejit, 2024, Abiri, 2019).

Also wearing transparent, revealing or indecent clothing with obscene messages, extremely tight fitting, face cap and complete face covering, distracting shoes like stiletto heels are not functional (Ubelejit, 2024, Moyosere and Abiodun, 2023, Abiri, 2019). What is functional and appropriate for students include corporate wears, smart casual clothes, traditional prints such as Ankara and updated traditional styles like buba and Sokoto (Olaio, 2024, Tunbosun, 2023, Okosa, 2023, Dairo, 2023).

Customer behavior has changed across many sectors including that of Home Economics students as a result of fast development of digital technology, in the fashion industry. For fashion brands to market their goods, interact with customers and affect purchasing behavior, social media platforms have emerged as potential tools such as Instagram, Facebook, YouTube, Fashion influencers, Twitter, Pinterest, Fashion tendencies and sale using e-commerce and connecting fast to customers. The development of fashion technology in fashion from various angles. Sustainability is not only a trend but also a lifestyle choice for both students as consumers and the industry (Priya and Mehasoni, 2024, Islam, 2022, Deanna, 2021, Moyosere, Abiodun 2023). Technology has made a mark on the fashion industry. With the advent of online shopping, social media and virtual try-on technology, the way in which people purse and purchase fashion has changed exponentially. It has also created new fabrics and techniques leading to the development of innovative and sustainable fashion (Fiona, 2023, Islam, 2022, Deanna, 2021). Technology has enabled the creation of biodegradable plastics which can be used to create clothing and accessories that are more sustainable and environmentally friendly. Also allow the creation of recycled materials such as recycled clothing and accessories that are more sustainable in the context of e-commerce, an array of virtual try-on tools enables students to shop with greater assurance and efficiency and students can just buy anything (Claudia, 2025, Meital, 2023, Moyosere and Abiodun, 2023, Fiona, 2023). Fashion trends also influence apparel selection or purchase. Home Economics students love to wear trendy clothes and fashion trends keep changing student's wardrobe (Surana, 2020). It is important to select clothing items that cover figure flaws or camouflage aspects of the body that are problematic (Arubani, Awowede and Agadagba, 2024).

However, for Home Economics students to perform their duties as students and future professionals. Fabric and style chosen should be functional to conform to their activities within the school environment. This will have a greater effect on their perception of school climate making them feel a sense of belonging and autonomy with less anxiety and increase resilience and academic engagement (Xue, Lei and Xiangfang, 2024, Azonuche, 2022, Aaron, Michael, Bryant and Evin, 2020).

1.1 Statement of the Problem

Home Economics students in tertiary institutions in Lagos State are involved with lots of activities which include academics, social and casual activities.

Students can be influenced with choices of apparels for these activities by their values, cultural identity, peer group influence, university dress code, technology and fashion trend which will not necessarily be functional. Students are not also aware that, Home Economics students need to consider their activities, weather and environment by choosing functional apparels, even when apparels are bought offline or online, they must be eco-friendly and conform to the environmental requirements.

1.2 Objectives of the Study

- To examine the nexus influencing apparel preferences among Home Economics Students in tertiary institutions in Lagos State, Nigeria.
- To examine the nexus of the functionality of apparels to the activities of Home Economics in tertiary institutions in Lagos State, Nigeria.

1.3 Research Questions

- What are the nexus influencing apparel preferences of Home Economics students in tertiary institutions in Lagos State, Nigeria?
- What are the nexus of the functionalities of apparels to the environment of Home Economics students in tertiary institutions in Lagos State, Nigeria?

1.4 Research Hypotheses

Hypothesis 1: There is no significant factor influencing apparel preferences of Home Economic Students in tertiary institutions in Lagos state, Nigeria.

Hypothesis 2: There is no significant functionality of apparel to the environment of Home Economics students in tertiary institutions in Lagos State, Nigeria.

2. Methodology

Research design: Descriptive Survey design was adopted for the study.

Area of study: The area of the study was Lagos state university of Education, Ijanikin, University of Lagos,

Akoka and College of education, (technical), Akoka, Lagos state.

Population of the study: The population of the study consisted of 300 respondents. 120 from Lagos state university of Education, Oto/Ijanikin, 150 respondents from university of Lagos Akoka, 30 from College of Education (Technical) Home Economics students, totaling 300.

Method of data collection: A structured questionnaire was the main instrument used in the collection of data for the research titled Examining the nexus of human ecology and functional apparel among home economics students in tertiary institutions in Lagos state, Nigeria, in which respondents were to answer yes, no and undecided. The questionnaire was divided into two sections, section A and B. Section A was on the bio-data of the respondents, while section B had 20 items, 10, was on factors influencing apparel preferences of Home Economics Students, 10 was on functionality of apparels to the environment of Home Economics Students, totaling 20 items. It was an online questionnaire, using Google form.

Research Validity: The questionnaire was given contact and face validity by 2 experts in the research area.

Method of Data Analysis: All the responses were collected and analyzed using Chi-square and Friedman's test. The results are presented below.

Hypothesis 1: There is no significant factor influencing apparel preferences of Home Economic Students in tertiary institutions in Lagos state, Nigeria.

Table 1: Factors influencing apparel preferences of Home Economics Students

S/N	Statement (n=300)	Yes (%)	No (%)	U (%)	Mean Rank	χ^2 (p-value)
1	Environment determines what to wear	270 (90)	30 (10)	0 (0)	5.15	300.297 (<0.001)
2	I am influenced by my values in choosing apparel	270 (90)	0 (0)	30 (10)	5.25	
3	Because I want to stand out	270 (90)	30 (10)	0 (0)	5.15	
4	Climate determines the texture of fabric to purchase	300 (100)	0 (0)	0 (0)	4.65	5.75
5	Lagos State climate requires fabrics that allow moisture to evaporate	240 (80)	30 (10)	30 (10)	5.75	
6	Cultural identity influences apparel preference	270 (90)	30 (10)	0 (0)	5.15	
7	The peer group environment influences apparel preference	210 (70)	90 (30)	0 (0)	6.00	5.10
8	The university dress code does not allow to express individuality	270 (90)	30 (10)	0 (0)	5.10	
9	I buy clothes online	180 (60)	90 (30)	30 (10)	6.65	
10	I follow fashion trends	210 (70)	60 (20)	30 (10)	6.15	

* Significant at 5% level; U=Undecided

The Chi-square value ($\chi^2 = 300.297$, $p < 0.001$) from the Friedman's test implies that there are significant factors influencing apparel preferences of Home Economic Students in tertiary institutions in Lagos state, Nigeria ($p < 0.05$). Among these factors are values in choosing apparel, standing out, climate, cultural identity, peer group, university dress code environment, and fashion trend.

Hypothesis 2: There is no significant functionality of apparel to the environment of home Economics students in tertiary institutions in Lagos State, Nigeria.

Table 2: Functionality of apparels to the environment of Home Economics Students

S/N	Statement (n=300)	Yes (%)	No (%)	U (%)	Mean Rank	χ^2 (p-value)
1	What you wear must be functional to activities	300 (100)	0 (0)	0 (0)	4.75	1311.781 (<0.001)
2	The apparel must be comfortable for all activities	300 (100)	0 (0)	0 (0)	4.75	
3	These will allow to perform daily tasks well	300 (100)	0 (0)	0 (0)	4.75	
4	Fabrics that trap moisture in a hot climate cause body odour	300 (100)	0 (0)	0 (0)	4.75	6.65
5	I prefer light-coloured apparel	186 (62)	114 (38)	0 (0)	6.65	
6	Avoid dark colours as Home Economics Students	75 (25)	75 (25)	150 (50)	8.56	
7	Comfortable shoes are to be worn by Home Economics students	261 (87)	39 (13)	0 (0)	5.27	6.06
8	Dress codes are prescribed by the university authority to prepare us as professionals	225 (75)	36 (12)	39 (13)	6.06	
9	Apparel bought offline or online should be eco-friendly	300 (100)	0 (0)	0 (0)	4.75	
10	Apparel worn must be functional and conform to the environmental requirements	300 (100)	0 (0)	0 (0)	4.75	

* Significant at 5% level

The Chi-square value ($\chi^2 = 1311.781$, $p < 0.001$) from the Friedman's test indicates that there are significant functionalities of apparel to the environment of home economics students in tertiary institutions in Lagos State, Nigeria ($p < 0.05$). these functionalities include moisture trapping, comfortable shoes, eco-friendly, and conformity to environmental requirements.

3. Discussion of Findings

Table I was on the nexus influencing apparel preference among Home Economics students in Tertiary Institutions in Lagos State, Nigeria. Out of 300 respondents, 270 (90) answered yes, that environment determines what to wear, 30 (10) answered no. This is in line with (Crain 2023, Soyombo, 2023, Adebayo, Oluwa and Olubukola, 2022, Jaana and Paivi, 2022). 270 (90) answered yes,

they are influenced by their values in choosing apparel as noted by (Roster, 2024, Jin, Abdullah, Mohammed, Marvello, Norzalita, 2024, Diddi and Niehm, 2017). 270 (90) answered yes, because they want to stand out, 30 (10) answered no. As observed by (Roster, 2024, Crain, 2023, Adebayo, Oluwadare and Olubukola, 2022), 300 (100) answered yes, climate determines the texture of fabric to purchase as opined by (Ubelejit – Nte, 2024, Yinka, 2024, Iwalaiye, 2023, Robin and Bye, 2020), 240 (80) answered yes, Lagos state climate requires fabrics that allow moisture to evaporate, 30 (10) answered no, 30 (10) were undecided. As noted by (Azonuch, 2024, Oladokun, 2024, Ubelejit – Nte, 2024, Okeke – Korieocha, 2022, Hephzibab, Kehinde and Ubodaga 2024). 270 (90) answered yes, cultural identity influences apparel preferences. 30 (10) answered no. As noted by (Azonuch 2024, Dairo, 2023, Ogundare, 2023). 210 (70) answered yes, peer group environment influences apparel preferences, 90 (30) answered no as observed by (Anoruche, 2024, Fabio and Penolope, 2024, Filade, Bello, Uwaoma, Anwanene, and Nwangburuka, 2019, Fadare, Zarma, Bademosi and Amanum, 2021). 270 (90) answered yes, the university dress code does not allow students express their individuality, 30 (10) answered no. This is in line with (Ubelejit – Nte, 2024, Yinka, 2024, Ogundare, 2023, Okosa, 2023, Moyosere and Abiodun, 2023). 180 (60) answered yes, they buy clothes online, 90 (30) answered no, 30 (10) were undecided as noted by Priya and Nehasoni, 2024, Islam, 2022, Fiona, 2023, Deanna, 2021, Moyosere and Abiodun, 2023). 210 (70) answered yes, they follow fashion trends as opined by (Claudia, 2025, Meital, 2023, Moyosere and Abiodun, 2023, Fiona, 2023, Surana, 2020).

Table II was on the nexus of the functionality of apparel to the environment of Home Economics Students. 300 (100) answered yes, what you wear must be functional to the activities as observed by (Hephzibab, Kehinde and Ugbodaga, 2024, Oladokun, 2024, Iwalaiye, 2023, Okeke – Korieocha, 2023, Meital, 2023, Okeke – Korieocha, 2022). 300 (100) answered yes, apparel must be comfortable for all activities as noted by (Xue, Lei and Diangfang, 2024, Azonuche, Okonwa and Ogbonyomi, 2022). 300 (100) answered yes, this will allow students to perform their daily tasks well as opined by (Crain, 2023, Soyombo, 2023, Adebayo, Oluwadare, and Olubukola, 2022, Jaana and Paivi, 2022). 300 (100) answered yes, fabric that trap moisture in hot climate cause body odour as observed by (Oladokun, 2024, Ubelejit – Nte, 2024, Olaeke – Korieocha, 2022, Hephazibab, Kehinde and Ubodaga, 2024). 186 (62) answered yes, they prefer light – coloured apparel, 144 (38) answered no as noted by (Yinka, 2024, Oladokun, 2024, Hepzibab,

Kehinde and Ugbodago, 2024). 75 (25) answered yes, dark coloured apparel to be avoided by Home Economics students, 75 (25) answered no, 150 (50) were undecided. Probably because they are not aware dark colors trap heat. This is contrary to (Oladokun, 2024, Ubelejit – Nte, 2024, Okeke – Korieocha, 2022, Hephzibab, Kehinde and Ugbodaga, 2024). 261 (87) answered yes, comfortable shoes are to be worn by Home Economics Students, 39 (13) answered no, this is in line with (Arnob, Tareque, Reazuddin and Abdullar 2024, Oladokun, 2024, Zubeni, 2019). 225 (75) answered yes, dress codes are prescribed by the university authority to prepare students as professionals, 36 (10) answered no, 39 (13) were undecided. As noted by (Olaito, 2024, Tunbosun, 2023, Okosa, 2023, Dairo, 2023). 300 (100) answered yes, appatel bought offline or online should be eco-friendly as noted by (Priya and Nehasoni, 2024, Islam, 2022, Deanna, 2021, Moyosere and Abiodun, 2023). 300 (100) answered yes, appatel worn must be functional and conform to the environmental requirements. This is in line with (Oladokun, 2024, Kehinde and Ugbodaga, 2024, Okeke – Okorieocha, 2024, Iwalaiye, 2023, Aarun, Micheal, Byrand, and Evin, 2020)

4. Conclusion

The nexus of Human Ecology and functional apparel among Home Economics students in tertiary institutions in Lagos state, Nigeria is that, students are engaged in academics, social and casual activities in which their apparel are influenced by many factors such as values, cultural identity, peer group influence, university dress code, technology and fashion trends. However, clothes for the various activities can be selected to be functional within the school climate from the fabric and style to the accessories even with all these influences. These will make them feel a sense of belonging and autonomy with less anxiety and increase resilience with their academic engagements.

5. Recommendations

In view of the foregoing the following recommendations were made:

- Home Economics students should choose fabric texture that suits Lagos climate.
- Home Economics students should wear what is functional and appropriate for students within the university system.
- Clothes bought off line or on line should be eco – friendly.

- Accessories chosen should be comfortable and functional for Home Economics Students.

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Application of SWOT Analysis for Increased Secretarial Productivity

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Abstract. This work on Application of SWOT Analysis for increased Secretarial Productivity was approached from professional, rather than academic angle. The purpose was to highlight how honestly conducted SWOT analysis can increase productivity of secretarial staff in any organization. Relevant literature, personal experience and observation methods were adopted and various concepts in the topic reviewed. The article X-rayed the contents of each letter in SWOT and their effects on productivity of secretarial professionals. It was revealed that the strengths of secretarial profession lie on its indispensability in any organization, among others. Many weaknesses, like poor mindset, low esteem and inferior complex mostly generated by the practitioners and opportunities to improve the general outlook and efficiency of the practitioners abound in the external environment of secretarial practitioners were identified. Threats to the profession include: economic, technology and environment, among many others. It was concluded that to advance secretarial profession to a new pinnacle in Nigeria secretaries are to individually conduct honest and regular personal SWOT analysis. Secretaries must continually up-scale their strength, identify areas of their weakness and take proactive measures. They should leverage on technology in addition to other numerous readily opportunities in the profession as well undertake appropriate actions to mitigate the effects of threats as they unfold.

Keywords: Strengths, weaknesses, opportunities, threats.

1. Introduction

Secretarial profession plays vital roles in the administrative operation and continuity of any organization. The profession has undergone colossal transformation that have given greater expectations and new discourse to the profession. Currently, secretarial professionals have a multifunctional profile. In modern organizations, secretarial professionals are trained to guide the interdisciplinary work and activities such as managerial functions, articulation and logical reasoning leadership, management and administrative advice. Productivity is a measure of how efficiently a person completes a task. In secretarial profession, (Akasi, 2023) opines that productivity is the rate at which secretaries perform assigned and non-assigned tasks. Productivity is usually based on the amount of energy exerted, time and resources used to deliver secretarial services. In essence, secretaries' increased productivity entails greater output from the same or a smaller number of resources used.

1.1 Secretary and Greater Productivity

For any secretary to be adjudged productive within an organization, to be appealing to employers, the profession and likable to those who are exposed to

secretarial service delivery, the secretary must be full of vision. The secretary must constantly take steps to actualize the vision. Vision is a picture of the future. It describes the desired future position the secretary wishes to be in the organization and within the realm of the profession. One tested way to develop and achieve laudable vision, is the application of SWOT analysis. This means that personal assessment through SWOT analysis, is an essential step for increased productivity.

2. Definition of SWOT

The acronym SWOT, stands for Strength, Weakness, Opportunities and Threats. SWOT analysis is a simple but powerful tool for sizing up personal resources, capabilities, and deficiencies, opportunities and the threat to one's career success and the future, (Gurel & Tat 2017). In the context of the work, Strength and weakness are internal and personal attributes of secretaries, Opportunities and threat are external and attributes of the environment where the secretarial practice is being exhibited. Therefore, SWOT analysis is the strategic way to evaluate internal and external environment of where the secretary work and how things may affect productivity and subsequently the profession.

The essence of conducting personal SWOT by secretaries

SWOT analysis helps the secretary to identify strengths, reduce weaknesses and exploit the opportunities. It also helps to develop contingency plans to minimize threats. SWOT analyses are the major route to increased productivity. Aside increased productivity, the knowledge and application of SWOT analysis play very significant roles in personal

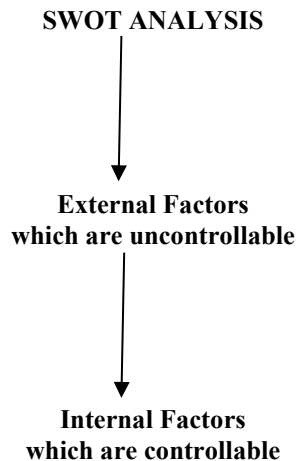
progress, career success, career growth, goodwill and job satisfaction of secretaries.

Honest conduct of personal SWOT analyses helps secretaries to learn more about themselves in the context of secretarial profession. This enables secretaries to focus on strengths and to take the greatest possible advantage of any opportunities available.

Through SWOT analysis, secretaries can identify personal weaknesses and threats that can hinder success in the profession. Further, the individual secretarial personnel is equipped with knowledge and the insights needed to make strategic decisions for improvements towards greater productivity and career success. As a result, conducting SWOT analysis enables the secretary evaluates his/her job performance and observed the profession from new directions.

At the end of sincere SWOT analysis, improved secretaries' engagements at work are envisaged. Secretaries would be motivated, resolved to commitment devoting to duties, loyalty, develop positive attitudes with strong emotional connection towards their work and ultimately contribute positively toward achieving the organizational goals. X-ray of components of SWOT analysis for increased productivity of secretarial professionals

The acronym SWOT, stands for Strength, Weakness, Opportunities and Threats. Strength and weakness are personal attributes of secretaries, Opportunities and Threat are external. They occur in the outside environment where the secretarial practice is being exhibited.



2.1 Opportunities

- Diverse avenues for professional development
- Networking: With CIPSSON
- Technology Skill for entrepreneurship

2.2 Strengths

- Indispensable professionals
- Knowledge of something about everything and everything about something.
- Creativity
- Resilience
- Multi-skilling: Better education than before

2.3 Threats

- Computer operators.
- Bosses with minimal typing skills
- Under-rating of secretary's initiatives:
- Automation and artificial intelligence
- Technology & health challenges
- Outsourcing of secretarial functions
- Secretary & Toxic relationships:

2.4 Weaknesses

- Secretaries' poor mindset, low esteem and inferior complex to other professions.
- Inadequate cooperation with CIPSSON: Competency and Technical Skills gaps

3. Strengths

Strengths are those inner qualities we have that will guarantee success at workplace. The strengths are Unique Selling Points (USP), those qualities that keep the professional relevant in their places of work. The strengths include:

Indispensability: indispensability made it hard if not impossible, for any organization, small or big, private or public, to succeed without professional secretarial services. Secretaries are the much sought after professionals. In this wise, secretaries take high percentage of the population of staff in any organizations.

Knowledge of something about everything and everything about something: The professional secretary is versatility in secretarial administrative and office duties; possesses a wide variety of skills, and can perform efficiently in all directions and all manner of organizations. He/she knows something about everything and everything about something in the

office. He is able to turn with ease, from one assignment to another and able to work, with little or no supervision. Good and effective business, groups, interpersonal and public communication skills are the hallmarks of professional secretaries. Secretaries, by training and exposure can perform the role of managers and administrators whereas the other officers cannot perform the role of the secretaries, though they sometimes meddle, and secretaries see them as interlopers.

Creativity: Professional secretaries are possessors of creativity. Creativity is the mental process undertaken by secretaries to anticipate needs and solve specific problems resulting in providing workable solutions to organizational and societal problems, (Folorunso, 2019). In the management of executives, colleagues, superiors, and the external individuals, secretaries do display high level of creativity. With creativity, the secretary helps to decrease bottlenecks, bureaucracy, poor mindset about their organizations.

Resilience: Resilience is the ability to be strong again after disappointment, or endangerment. Pessimists had asserted that due to economic and technological climates, there is no future for secretarial profession. They sent signals that with time, secretaries would be replaced and that the profession would no longer be required in employment. Despite the standpoint, secretarial profession has come to stay, waxing stronger, standing tall for the future and contributing effectively to the progress of organizations and national economy.

Multi-skilling: Secretaries are proficient in the performance of multiple roles or tasks. Secretaries do cover various administrative and management functions as needed within an organization. Multi skilling promotes increased efficiency, reduced waste, better resource utilization, enhances secretaries' job enlargement, engagement and job satisfaction as well as career success.

Better education than before: Gone are the days when secretarial positions were occupied by those without adequate and relevant education and training. That era was characterized by secretaries' unsatisfactory/poor job outputs and high level of poor public perceptions, The '*Secretaries*' then were merely tolerated by those who needed their services. The modern-day secretaries are better educated and well trained, most possessed National Diploma, Higher National Diploma, first and higher degree qualifications. They are equally experts in ICT office applications and office information system capable to meet the emerging needs contemporary world of work.

Secretaries perform their duties 24/7. On the whole, with the improvement in education, training and gaining certifications relevant to the field there have been remarkable improvements in the delivery of secretarial services in Nigeria.

3.1 What do you do with our strength?

Up-skilling and re-skilling: Akewusola (2021), opines that: *“The illiterate of the 21st century is not the man who cannot read nor write but the man who cannot learn, unlearn and relearn”*. It is naturally logical and pertinent for secretarial professionals to regularly update knowledge, competences and skills, through classroom, professional workshops and training programmes. Up-skilling and re-skilling is important for secretaries to perform differently, smartly and confidently; to keep abreast of what is happening in the profession; to maximally improve strength, dominance and standards of performance in office administration. Secretaries should never rest on our oars.

4. Weaknesses

Weakness is defined as a flaw, weak point. (Oxford dictionary, 2024) Weaknesses are those exhibited behaviours that are negatively affecting secretarial productivity and the profession. They are areas where individual secretary may be weaker than others, were others. They are individual secretary's human inabilities. At this point, each secretary has to be honest with him/herself Such weak areas include:

Secretaries' poor mindset, low esteem and inferior complex to other professions: It is very unfortunate to note that some secretaries have poor, negative mindset and low esteem about themselves and the profession. They develop and display poor outlook and mental behaviors; always look down the profession. They sometimes regret or blame God for locating them in the profession. They feel so inferior that they dare not speak outside the office, let alone participate in any public activity, just because they do not want to be identified as secretaries. The weaknesses could be because of low qualifications, poor skills, unfavourable home background, failed aspirations and the likes.

Inadequate cooperation with Professional Association: With the known and glaringly clear benefits accruable from membership of a professional body, many secretaries refused to be members. Many members are unfaithful and insincere to the vision and mission of the Association. This category of secretaries demoralizes others in and outside their

immediate offices and chapters from joining and participating the Association's activities. They go further de-market the aims and objectives of the institute in their environment. They blatantly refuse to cooperate with the association.

Competency and Technical Skills gaps: Despite avalanche of opportunities to acquire the needed skills, some secretaries continue to display their weakness in technology and professional competency and skills. This is a resultant effect of some secretaries' refusal to upgrade their academic and professional qualifications as well as competencies. Because of the deficiency and lack of confidence, many secretaries usually refuse posting to certain offices and avoid certain types of works.

4.1 What do you do with the weaknesses?

Human beings are not equally endowed. As a result, secretaries do not experience the same type and level of weakness. Therefore, addressing weakness in one's professional life requires appropriate steps such as:

Identification of the area(s) of weakness: Every secretary should personally take time to reflect on what exactly are their fears and weakness. in the profession. Understanding the areas is the first step towards overcoming the fears and weaknesses:

Set clear and achievable goals: The secretary needs to define clear professional goals and height wishing to achieve. Having a target in mind helps focus and work towards overcoming your fears and weaknesses. Take proactive measures: Invest in improving your skills, through training, workshops, courses and certifications. This can help building confidence and competency

Surround yourself with supportive colleagues, friends or family members who encourage and uplift you in your professional journey. Accept corrections and constructive criticism that can help growth and overcome the identified weakness.

Squarely face your weaknesses, confront your weakness gradually by stepping out of your comfort zone. Take on challenges that push you to growth professionally. Work on them personally, be disciplined, and seek help from more knowledgeable individuals. If needs be to consult CIPSSON at chapter, state, zonal or national level for more enlightenment, please do.

5. Opportunities

Opportunities are generally external. They are favourable circumstances in the environment and those people around. Opportunities are possibilities that secretaries can tap in to bring increased productivity. Opportunities around secretaries include:

Opportunities for professional development through additional training and qualifications available all around the secretary.

Networking: Networking is building connections with other professionals, (Folorunso, 2020). With professional body in place, greater opportunities than before exist for secretaries to meet and network with colleagues and other highly placed individuals across the world.

Networking

Gets you noticed

Opens doors to new opportunities

Provides a channel where you can gain more knowledge

You can receive instant career advice and support

Allows you to meet interesting people

Allows you find new mentors

Provides opportunities to help others

Results in long lasting professional relationships

Ultimately, career development and career success

Opportunities to Leveraging technology in enhancing entrepreneurship: Entrepreneurship is like a free ticket available to everyone. One can ignore and do nothing entrepreneurial. One can accept to use it for a while and stop at any time. One can use it and continue to do so for the rest of your life, (Cooper, 2015). Currently, skills and competencies in technologies are veritable sources of career success, job satisfaction and above all, entrepreneurship, (Aderounmu 2017). In this era of economic downward one viable way is to key in and be engaged in ICT related businesses. No doubt, if secretaries who leverage in technology would by moving ICT products and services fast and efficiently from Point A to Point B, chances of success are high.

Secretarial profession is knowledge based, ICT skills based and entrepreneurial based. These combined presents the greatest opportunity for career progression, career success and success in secretarial-based entrepreneurial activities.

5.1 What do you do with opportunities?

Appreciate them, invest into them, Create good relationships with them. Make good use of opportunities.

5.2 Threats

Threat is an environmental factor that is determined to inflict harm on secretarial profession. Threats include anything that can negatively affect the profession from the outside, The threat can be direct, indirect, veiled or conditional; some threats are:

Computer operators: The ubiquitous computer operators are everywhere. Most of them claim they can perform the duties of secretaries. Unfortunately, some secretaries patronize them for their secretarial jobs. Regrettably, some organizations employ such as secretaries.

Bosses with minimal keyboarding skills: Similarly, some executives/bosses erroneously believe that their own below the belt knowledge of keyboarding is tantamount to acquisition of secretarial skills; as if the only duty we carry out is to manipulate the keyboards. This kind of boss accords neither secretaries respect nor recognition. They are threats to secretarial profession.

Under-rating of secretary's initiatives: Despite secretaries' crucial roles, there are still some executives who believe that the profession is purely supportive rather than strategic. Such bosses continually dish out instructions on workplace activities they know little or nothing about. They hardly listen to professional advice offered by the secretary towards smooth running of the office in order to promote rancor free office environment. Others delegate some of the responsibilities primarily meant for secretaries to staff without secretarial background. In such a situation when things go wrong in the office, all fingers mostly point to the secretary. This consequently attracts low prestige and threats to secretaries.

Technology advancement and its health challenges: Modern office technologies and secretaries are inseparable. However, prolonged use of ICTs comes with numerous health challenges to the secretary. Computers, mobile phones, internet, copiers and similar gadgets contain *lead, cadmium, mercury* etc., which are toxicants. Nwabuzor's (2020) research findings on mental health issues in secretarial practice corroborate World Health Organization's (WHO) cited in Mahburbu (2011) submission that many diseases as possible are risks associated with the continuous exposure of secretaries to ICTs

Secretary and Toxic relationships: Secretaries, because of their training in human relations, accommodate people who, ordinarily, should be

jettisoned or avoided. As a result, secretaries are susceptible to toxic relationships among friends, families and colleagues. A relationship is toxic when the other person(s) speaks ill, utter negative, abusive, disrespect comments about secretary and the honorable profession. A relationship is toxic where our wellbeing/welfare is threatened emotionally psychologically and even physically through offensive and scandalous comments, just because we are secretaries. Toxic relationship devalues, depletes the profession and constantly makes secretary inferior, demeaned and looks worse.

5.3 What do you do with threats?

Assess and understand the threat, and undertake appropriate actions as the threats unfold. For example, learn to walk away from toxic relationships threatening your profession and your source of livelihood. Generally speaking, the bottom line to overcoming any threat in secretarial profession is education, competency and skill acquisition. Education is a liberator and passport to the future and tomorrow belongs to those who prepare for it today. Education and training will eliminate low esteem, skill gaps etc. Always strive to update your qualifications in order to be ready for the next level that you desire to be. This not only casts positive light on you but your coworkers and your boss as well. This will earn you recognition and highlight your participation.

6. Conclusion

The more secretaries realize their potentials and relevance in modern office situations, the prouder they should be and the more public recognition they will be creating for their profession.

The prestige accountancy, law, engineering, medicine, etc professionals enjoy today is a result of guided education, regulations, pride, positive mindset which have been ingrained into them over the decades. Secretarial profession is what it is today because most of secretaries in the profession looks down on themselves because they have not carried out and apply honest SWOT Analysis to the profession. The earlier they do, the better for the individual secretary and the secretarial profession.

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Impact of Work Experience on Utilization of Electronic Information Resources and Research Productivity among Academic Librarians in Northeast Federal University Libraries, Nigeria

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Abstract. This study investigated the impact of work experience on the utilization of electronic information resources (EIRs) and research productivity among academic librarians in North-East Federal University Libraries, Nigeria. Academic libraries increasingly rely on electronic information resources such as e-journals, e-books, licensed databases, institutional repositories, and discovery systems to support scholarship. While research has highlighted the importance of electronic information resources in improving access to current literature and enhancing research productivity, the extent to which work experience influences their use remains unclear. The study adopted survey research design, the study involved the entire population of 120 academic librarians across six federal university libraries in the region. Using census sampling procedure to sample all the respondents in the study. The data were collected through a validated self-developed questionnaire with reliability index of 0.70. Descriptive statistics (frequencies, means, percentages, and standard deviations) and while, t-test was used to identify if there exists a significant difference in types of electronic information resources used for research productivity among academic librarians based on year of work experience. Results revealed no statistically significant difference in the types of electronic information resources used for research productivity based on years of work experience. The study recommends sustained investment in electronic information resources, continuous professional

development, and the redefinition of work experience to include exposure to emerging digital tools, conference participation, and active involvement in professional networks.

Keywords: Work Experience, Academic Librarians, Electronic Information Resources (EIRs), Research Productivity and Federal University Libraries, Nigeria

1. Introduction

In recent years, academic libraries have refocused their work around electronic information resources (EIRs), such as licensed databases, e-journals, electronic books, institutional repositories, and discovery systems, because of their ability to simplify methods of searching, expand access, and simplify large-scale, multi-author scholarship. In research-intensive settings, academic librarians' ability to handle, teach, and strategically use electronic information resources has become an essential part of the library's support of institutional research goals. Research and publications from African and international sources consistently show that available and well-used electronic information resources enhance research productivity and self-perception of the quality of research by academics (Ani, 2015). However, in the library profession, the mechanistic links by which the attributes of academic librarians, in particular work experience, affect electronic information resources use and thereby research

productivity are not well articulated and are occasionally disputed (Hoffmann, Berg, & Koufogiannakis, 2017; Hoffmann, Berg, Brancolini, & Kennedy, 2023).

Work experience constitutes an important human capital factor which potentially may affect the use of electronic information resources in a number of ways, as for example, the development of tacit knowledge concerning search strategies and platforms, the development of more elaborate mental models of workflows of scholarly communication, and the establishment of professional networks facilitating troubleshooting and keeping up-to-date. Recent findings show that experience – sometimes combined with information literacy skills can predict the confidence with which library staff make selections, conduct searches, and teach with e-resources (Atanda, Luqman, & Maduekwe, 2024). Such a relationship is likely not strictly linear; in a high-turnover electronic information resources ecosystem, the recency of experience of training and platforms may matter more than years on the job. This suggests PoS of itself isn't the problem, but rather the repetition of IP at the workplace, which can encourage use, as opposed to knowledge, which can calcify into bad habits and choke on the move to newer tools (Kassim 2023).

Use of electronic information resources by academic librarians takes a number of forms across the spectrum, from frequency and depth of use (e.g., searching, alerting, analytics) to pedagogical integration (e.g., information literacy instruction, research consultations) and back-end stewardship (e.g., licensing, usage data analysis). Studies in the Nigerian and general African settings show that intensive exposure to and training in electronic information resources are associated with better perceptions of access to researchers, citing of current scholarship and ease of publication all of which would likely mediate improvements in traditional research metrics (Ani, 2015; Asongo, Agbaji, Vamwat, Jiya, Danboyi, Fagam, & Ojo, 2024). However, integration is influenced by infrastructural issues (i.e., bandwidth, authentication mechanisms), and the provision of training and role definition can assist or challenge the benefits associated with experience (Kassim, 2023).

The concept of research productivity for academic librarians typically measured as peer-reviewed publications, conference presentations, and additional scholarly works is a nuanced and evolving concept. Longitudinal bibliometric studies demonstrate changing trends in publications at the level of discipline areas through career stages (Blecic, Wiberley, De Groote, Cullars, Shultz, & Chan, 2017;

Wiberley, Blecic, & De Groote, 2023). What has also been illuminated from survey research are the many factors that enable or hinder professional development at the individual, peer, and institution levels (Hoffmann, Berg, & Koufogiannakis, 2017; Hoffmann et al., 2023). For example, elements of rank, credentials, mentoring, and research culture notably have an equivalent or greater impact than other demographics; direct effects of years of experience on productivity are inconsistent and contingent, even though the patterns are not clear (Hollister, 2016; O'Brien & Cronin, 2016).

The conceptual pathway from the proposed causal pathway work experience, electronic information resources use and research productivity. Although theoretically, the causal linkage work experience, electronic information resources use and research productivity might hold despite having had limited empirical attention in academic librarian populations, especially in Sub-Saharan Africa, where infrastructure constraints and swift platform churn might yield distinctive dynamics. There is some evidence that experience coupled with ICT-savoriness promotes higher use of electronic information resources which in turn may improve literature monitoring, methodological robustness, and sharing proximal progress of scholarly output (Atanda et al., 2024; Ani, 2015). In contrast, some research, particularly in health sciences and the Irish context, has shown that seniority is not a strong predictor of research productivity if organisational supports and research requirement issues are controlled for (Hollister, 2016; O'Brien & Cronin, 2016). This tension highlights the need to model experience both as a predictor and a moderator of the association between electronic information resources use and research productivity when controlling for context.

The study considers work experience as a multi-dimensional characteristic, years of librarianship, tenure in role, and use of electronic information resources platforms and proposes that these have positive indirect impact on research productivity through increased use of electronic information resources. The impact is additionally facilitated/moderated by training opportunities, peer networks, and workplace factors, the study also suggests. Through a combination of self-report and objective measures when possible, and embedding our work in the contemporary theoretical and empirical contexts available regarding academic librarians' research ecosystems, the study aims to disentangle the circumstances in which professional experience translates into productive and use of electronic

information resources fuelled scholarship (Hoffmann et al., 2023; Bleic et al., 2017).

1.1 Hypothesis

There is no significant difference in types of electronic information resources used for research productivity among academic librarians based on year of work experience in North-East Federal University Libraries, Nigeria.

2. Research Methodology

This research adopted survey research design, which is appropriate method for gathering data about a large population to make inferences about the population. The target population of the study consist of 120 academic librarians from the selected federal university libraries in North-East, Nigeria. The entire group of academic librarians from these libraries participated in the study through the use of a census sampling technique. The instrument adopted for this study was self-developed questionnaire. The questionnaire for the study was validated for face and

content validity. A pretest of the instrument, in the form of a pilot study was carried out to determine reliability coefficient of the questionnaire, using 30 academic librarians from Bayero University Kano. The reliability coefficient was determined using Cronbach's Alpha, and the reliability coefficient was 0.70, indicating that the instrument was reliable for use in the study. Data were analyzed using mainly descriptive statistics; frequency counts, percentages, means and standard deviations, while, t-test was used to identify if there exists a significant difference in types of electronic information resources used for research productivity among academic librarians based on year of work experience in North-East Federal University Libraries, Nigeria. All statistical analysis was performed using SPSS Version 22.

3. Results

There is no significant difference in types of electronic information resources used for research productivity among academic librarians based on year of work experience in North-East Federal University Libraries, Nigeria.

Table 4.1: Descriptive

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
0-5 yrs.	331	2929.20742		.03611	1.2194	1.3665
6-10 yrs	161	2187.18226		.04556	1.1216	1.3159
11-14 yrs	121	2500.17408		.05025	1.1394	1.3606
15-20 yrs	101	3500.18758		.05932	1.2158	1.4842
21-24 yrs	3	1.2500.22048		.12729	.7023	1.7977
25-30 yrs	9	1.4167.13176		.04392	1.3154	1.5179
31 and above	141	2917.15929		.04257	1.1997	1.3836
Total	971	2912.18755		.01904	1.2534	1.3290

The descriptive analysis shows that there are small differences in the average scores for using electronic resources between work experience groups, but these differences are quite minimal because the confidence intervals of 95% confidence interval overlap and the standard errors are similar. This suggests that academic librarians with varying years of work experience in North-East Federal University Libraries exhibit similar levels of electronic information resource usage for research productivity.

Table 4.2: Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Types	Based on Mean	.574	6	90	.750
	Based on Median	.451	6	90	.842
	Based on Median and with adjusted df	.451	6	73.214	.842
	Based on trimmed mean	.517	6	90	.794

The Tests of Homogeneity of Variances table presents Levene's test results, which determine whether the variance in electronic information resource usage for research productivity is consistent across groups of academic librarians with different years of work experience. The findings show that, based on the mean, the Levene statistic is 0.574 with a p-value of 0.750, indicating no significant difference in variances across the groups. Similarly, the tests based on the median (Levene statistic = 0.451, p-value = 0.842), the median with adjusted degrees of freedom (Levene statistic = 0.451, p-value = 0.842), and the trimmed mean (Levene statistic = 0.517, p-value = 0.794) all suggest that the

assumption of equal variances holds. Since all p-values exceed 0.05, it is concluded that the variance in electronic information resource usage across the different years of work experience is relatively equal, allowing further analyses to proceed without corrections for unequal variances.

Table 4.3: Summary of ANOVA results on types of electronic information resources used for research productivity among academic librarians based on year of work experience

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	.286	6	.048	1.387	.228	Retained
Within Groups	3.091	90	.034			
Total	3.377	96				

The null hypothesis states there is no significant difference in types of electronic information resources used for research productivity among academic librarians based on year of work experience in North-East Federal University Libraries, Nigeria. An ANOVA was conducted to compare the mean scores between the 7 groups. The F-test value is 1.387 with a p-value of .228. Since the p-value is greater than 0.05, fail to reject the null hypothesis. This indicates there is no statistically significant difference in the mean scores between the 7 groups. The ANOVA results show, it cannot reject the null hypothesis of no difference in between the 7 groups. The findings suggest there is no significant difference in types of electronic information resources used for research productivity among academic librarians based on year of work experience in North-East Federal University Libraries, Nigeria.

4. Discussions

There was no significant difference in the category of electronic information resources used and research productivity among academic librarians in terms of their years of library experience, suggests that regardless of the period of service, academic librarians use a particular class of electronic resources. They used the same category of electronic information resources. This may not be surprising as where the electronic information resources are located (academic environments such as online catalogs, databases, ejournals, ebooks, and discovery systems) are often standardized, which serves the interest of researchers in terms of generic initiatives across institutions (Aina, 2017). Ambiance materials were available to challenge users across all levels of experience at libraries with more mature ambiance resources in place were more often found to be included in the subscription or procurement structures of the institution resulting in more consistent use in libraries of both seasoned and less experienced users. Thus, junior librarians are quick to pick up how to use such resources as these are part of the warp and weft of research practice (Asare & Agyemang, 2017) with the more senior librarians often doing so, if only because

the same sources are so deeply interwoven into the fabric of research practice.

Resource use similarity may further be attributed to institutional training programmes and activities that encourage the use of specific electronic information resources. Some academic libraries offer them orientation exercises and on-the-job training for librarians on core e-resources to minimize personal experience having an effect on the resource chosen (Oduwale & Oladipo, 2019). This standardized training has allowed all librarians to have, when they are a minimum of 2 years in their position at their respective institution, the capability to access and use the major electronic resources that relate to their research and instructional duties. This uniformity of sign exposure and training yields a homogeneous practice of electronic information resources modalities and reduces the overall differences between the various years of experience.

In addition, research productivity per se-the successful use of basic electronic information resources is often a stimulus to initiative researchers to seek out similar resources to enable the achievement of research goals (Aina, 2017). Learning in higher education is very reliant on real sources (theory, empirical evidence, expert opinion), scholarly journals and e-books, and databases (Web of Science, Scopus), which presupposes use of resources more by databases than by skill level between learners (Asare & Agyemang, 2017). Therefore, it may be that, however recently a librarian has started in the role, or however long they have been working as one, their level of use of such foundational resources is relatively the same: Perhaps a function of to the extent research support services are applied, and their standards of application, being standard across academic libraries. This shared resource utilization hopefully will illuminate the degree that institutional azimuth and resource availability effects research behavior more than personal experience.

5. Conclusion

In conclusion, the study established that work experience does not significantly influence the types of electronic information resources utilized for research productivity among academic librarians in North-East Federal University Libraries, Nigeria. The ANOVA test results ($F = 1.387$, $p = .228$) revealed no statistically significant variation across different experience groups, indicating that whether librarians were relatively new or had many years of service, their patterns of electronic information resources use remained broadly similar.

6. Recommendations

The following were recommended based on the findings:

There is need for universities in North-East Nigeria to invest in infrastructure for effective use of EIRs such as high-speed internet connection, steady power supply, and modern digital equipment.

Furthermore, libraries need to develop professional development schemes for librarians, replete with consistent training on recent technologies and research devices.

Academic libraries need to establish a research-supportive climate to motivate librarians to produce research results. This could be done by providing protected research time and research grants and facilitating collaboration with faculty and researchers. Institutions can also encourage librarians to be productive researchers by acknowledging and rewarding their scholarship contributions.

The concept of work experience for academic librarians needs to be redefined to encompass professional development, conference participation, and experience with new research tools. Academic librarian would attempt to be in professional networks, attend trainings, and join in research-based activities too.

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