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Work Culture and Academic Staff Productivity: Evidence from Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria

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Abstract
This study examined the impact of work culture on the productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State of Nigeria. The study focused on collaborative leadership, inclusion, and psychological safety as work culture factors affecting productivity in Nigerian polytechnics. Using the cross-sectional survey research design, questionnaire was administered to 234 academic staff in the Polytechnic and analyzed with the use of ordinal logistic regression. The Cronbach's alpha value showed an excellently consistent and therefore reliable research instrument. Findings revealed that whereas collaborative leadership strongly and positively impacts on productivity of academic staff, inclusion and psychological safety are weak determinants of productivity. The study concluded that work culture has a strong effect on productivity of academic staff in the polytechnic. Hence, it, recommended adequate and careful consideration of ideas of all staff, irrespective of their cadre or level, in managerial decisions of the Polytechnic. The study showed that while small or moderate changes in psychological safety may not matter much, very high levels can significantly improve productivity outcomes in Polytechnics.

Keywords: Work culture, collaborative leadership, inclusion, psychological safety, productivity

Introduction
The importance of work culture in performance and productivity of academic staff- those whose output can break or solidify the foundation of any economy- cannot be overemphasized. On-going management practices can create a culture that foster or hinder staff performance or productivity (Longeneckor & Scazzero, 2016 in Omonzejele & Agu, 2023). A positive work culture has been

said to shape not just the physical environment but also the social and psychological environment of an organization, fostering a sense of belonging and commitment among employees (Pandey, 2023).

Collaborative leadership, inclusion, and psychological safety have been found to be aspects of work culture determining productivity in the workplace (Omonzejele & Agu, 2022; Gilbert et al, 2023; Tongo et al, 2023; and Almalin & Nodwahab, 2023). While collaborative leadership fosters innovation through diverse input and co-creation; inclusion involves creating an inclusive culture that values and respects all individuals in question, ensures equity, and provides opportunities for growth and development. Psychological safety encourages employees to take chances, collaborate effectively, and share their ideas openly, ultimately leading to better morale, job satisfaction, and improved productivity (Gilbert et al, 2023; Yermolayeva, 2023; and Almalin & Nodwahab, 2023)

This study paid particular attention to how collaborative leadership, inclusion, and psychological safety as factors of work culture each impact academic staff productivity in Nigerian polytechnics, with particular reference to Delta State Polytechnic, Ogwashi-Uku, Delta State of Nigeria. This study holds both theoretical and practical significance. Theoretically, it contributes to the growing body of literature on organizational behavior and higher education management by empirically evaluating the roles of collaborative leadership, inclusion, and psychological safety in shaping academic staff productivity in a Nigerian polytechnic setting. Practically, the findings offer valuable insights to institutional leaders and policymakers seeking to improve productivity through intentional cultural reforms. By identifying which cultural components have the strongest influence on academic performance, the study provides a data-driven basis for enhancing managerial strategies. Ultimately, this research underscores the importance of fostering a healthy and inclusive work environment as a strategic tool for achieving institutional goals and improving overall educational quality.

Statement of Research Problem

Studies allude to the decline of polytechnic education in Nigeria, with some noting poor research output and lack of innovation due to lack of positive work culture as major issues (Chiameke et al, 2009; Halima & Wilson, 2018; Omonzejele & Agu, 2022; and Omonzejele & Agu, 2023). 'Polytechnics in Nigeria were set up to fortify the frontiers of the Nigerian economy through advancement in science and technology. Polytechnic products are supposed to be innovative, creative, and self-reliant thus improving industrialization in the economy, driving it from a poor developing to a developed country, and competing on the same level with world renowned industrialized economies (Omonzejele & Agu, 2023). Graduates of polytechnics first demonstrate their ability to fulfil the core mandate of the polytechnic through their research output (both at the ND and HND level). The quality of these research works, which should cater for the specific technological needs of the country, further demonstrates the ability and performance of the academic staff of the polytechnic.

Despite the increasing recognition of the role of work culture in enhancing organizational performance, there is limited empirical understanding of how specific cultural elements—such as collaborative leadership, inclusion, and psychological safety—individually and collectively influence the productivity of academic staff in Nigerian polytechnics. In institutions like Delta State Polytechnic, Ogwashi-Uku, where productivity is a critical driver of educational outcomes and national development, work culture can either promote or hinder the performance of academic staff. However, existing management practices may not be fully harnessing these cultural

dimensions to optimize staff output. There is, therefore, a pressing need to examine how these elements of work culture contribute to or detract from the productivity of academic personnel within the polytechnic context.

There are several studies on collaborative leadership, inclusion and psychological safety on productivity of staff across organizations around the world (Omonzejele & Agu, 2022; Omonzejele & Agu, 2023; Arlindo & Andri, 2023; Gilbert et al, 2023; Dudek, 2023; Tongo et al, 2023; Yermolayeva, 2023; Odazie et al, 2024; Dickson & Oyeinkorikiye, 2023; and Zhang, 2024). However, none of these known studies has shown the interplay of these variables in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria. This study filled this gap in literature.

Objectives of the Study

The main objective of the study was to investigate the impact of work culture on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.

The specific objectives were:

1. To ascertain the impact of collaborative leadership on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.
2. To determine the impact of inclusion on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.
3. To examine the effect of psychological safety on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.

Research Hypotheses

In line with the study's objectives, the following hypotheses were formulated for empirical testing:

Ho_1: Collaborative leadership has no significant impact on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.

Ho_2: Inclusion has no significant impact on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.

Ho_3 Psychological safety has no significant impact on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.

Theoretical Framework/ Empirical Literature

Theoretical Framework

There are several theories that explain the various aspects of work culture highlighted this study- collaborative leadership, inclusion, and psychological safety- and their relationship with staff productivity. These include Resource Based Theory, Dynamic Capabilities Theory, Institutional Theory, Trait Activation Theory, Leadership Theory, Social Exchange Theory, Job Embeddedness Theory, Person-Organization Fit Theory, Social Identity Theory, and Agency Theory (Marshall et al., 2024). However, this study is hinged on the Schein Organizational Cultural Theory. The Schein Organizational Cultural Theory was propounded by Edgar H. Schein (1985) in his book 'Organizational Culture and Leadership' (Schein, 2004).

Schein proposed that organizational culture exists in three levels: Artifacts (surface level)- visible elements such as dress code, office layout, rituals and ceremonies which are easy to observe but often difficult to interpret; espoused values (middle level)- the stated values and beliefs of the

organization, examples include mission statements, goals, ethical codes which guide behaviour but may not always align with actual practices; and basic underlying assumptions (deepest level)- unconscious, taken for granted beliefs, perceptions and feelings which shape how members think, feel and act, but difficult to change. Schein viewed culture as something that develops over time, as people in the organization learn what works and what does not in terms of solving problems, and adapting to external and internal pressures.

The Schein theory has been criticized for its complexity in application, distinguishing between levels (especially assumptions) can be difficult in practice. It has limited dynamism in that it does not fully capture how culture evolves in fast-paced modern environment. It has top-down bias as it emphasizes leadership influence, potentially underplaying grass-root cultural shifts. Lastly, it has measurement challenge as cultural assumptions are hard to quantity or study in empirical manner. Despite the above criticisms, the Schein Organizational Cultural Theory is comprehensive in structure. It offers a layered in- depth understanding of culture. It has practical applications in that it helps leaders to diagnose culture and identity misalignment. It focuses on deep charge by addressing not just the visible practices but underlying beliefs. It is orderly accepted as a foundational model in organizational behavior and human resources studies. Hence, its usefulness to this study.

Conceptual Clarifications

Academic Staff Productivity

Brimah and Oduwole (2024) viewed productivity as a concept comprising effectiveness and efficiency; that which converts inputs (human, financial, and material resources) into outputs (services or tangibles related to service delivery) to meet organizational goals and objectives at a low cost. Productivity includes commitment, effectiveness, and efficiency (Faith, 2021 in Brimah & Oduwole, 2024). Efficiency is the degree and calibre of service that is produced with the specified number of resources, while effectiveness shows the right combination of the appropriate resources (Brimah & Oduwole, 2024). Relating this to academic staff, Faremi et al (2023) defined academic staff productivity as the effectiveness and efficiency with which faculty members contribute to teaching, research and community service.

Emeka (2024) argued that productivity "is a multi-dimensional construct shaped by a complex interplay of internal and external factors including institutional factors such as organization culture and opportunities for career development which determine how staff carry out administrative tasks with scholarly output. leadership style, availability of research funding, workload distribution and infrastructure; Personal attributes such as motivation, job satisfaction and professional qualification, external factors such as government policies, societal expectations and technological advancement shape academic engagement". They concluded that a positive work environment, fair evaluation systems and collaborative networks enhance productivity, while bureaucratic constraints and limited resources may hinder it.

Iro-Idoro and Jimoh(2022) summarized the determinant/measures of academic staff productivity when they said that academic staff productivity was commonly assessed through contributions to teaching, research and service. In teaching, productivity is measured by course loads, student evaluations and curriculum development; while in research, productivity is typically grouped through publications in peer-reviewed journals, books, conference papers, citations and successful grant applications. The quality, impact and quality of scholarly work are key indicators. In terms of service, involvement in administrative duties, community engagement and participation in

organizations reflect broader contributions to the academic institution and society (Iro-Idoro & Jimoh, 2022).

Quantitative measures such as the number of classes taught, or papers published provide clear benchmarks but may overlook qualitative aspects like innovation, mentorship or inter-disciplinary impact. Hence, institutions often use a combination of quantitative and qualitative indicators to form a comprehensive evaluation (Emeka, 2024). Metrics must align with institutional goals and disciplinary standards, recognizing that productivity may vary across fields. Increasingly, measures also include collaboration, internationalization and digital scholarship. Overall, effective evaluation of academic productivity requires a balanced, transparent approach that appreciates both measurable outcomes and the contextual contributions of academic staff. (Iro-Idoro & Jimoh, 2022).

Work Culture

Pandey (2023) defined work culture as shared values, beliefs, attitudes and practices that shape the social and psychological environment of a workplace. It reflects how employees interact, make decisions and approach their tasks, significantly influencing organizational performance and employee satisfaction. They asserted that a positive work culture promotes collaboration, innovation and well-being, while a toxic or rigid culture hinders motivation and productivity. They listed leadership style, communication patterns, recognition systems and the degree of autonomy granted to employees by management as key elements of work culture. Leaders play a critical role in shaping culture through their behavior, policies and the work environment they create. Open communication, mutual respect, and inclusion foster trust and engagement among staff, contributing to a supportive atmosphere (Pandey, 2023).

Work culture is dynamic and evolves with changes in leadership, workforce demographics and external pressures such as globalization or technological advancements. As organizations strive for sustainability and innovation, cultivating a healthy work culture become essential. It not only enhances employee morale and retention but also drives overall organizational success (Pandey, 2023). Therefore, understanding and managing work culture is a strategic imperative for leaders and human resource professionals aiming to build resilient and high performing teams. From the concept of work culture, collaborative leadership, psychological safety, and inclusion are key elements that define positive culture, determining staff productivity. This is the trust of this study.

Collaborative Leadership

According to Arlindo and Andri (2023), collaborative leadership is an emerging leadership paradigm that emphasizes collective action, shared responsibility and inclusive decision making. Unlike traditional hierarchical leadership models that rely on authority and control, collaborative leadership promotes shared vision, purpose and partnership, mutual respect and open communication among stakeholders to achieve common goals (Gilbert et al, 2023). It has gained increasing relevance in today's interconnected and dynamic environments such as education, healthcare, corporate organizations and public governance.

Gilbert et al, (2023) posited that collaborative leadership is especially effective in environments characterized by complexity and rapid change. It facilitates; innovation through diverse input and co-creation; conflict resolution through inclusive dialogue and consensus building; organizational agility by empowering decentralized decision making; and stakeholder engagement that improves commitment and sustainability outcomes. In sectors like healthcare, it leads to better patient outcomes through multidisciplinary teamwork. In education, it fosters a sense of community

among staff, students, and parents. In business, it drives cross-functional collaboration and responsiveness (Arlindo & Andri, 2023); and Gilbert et al, 2023). Effective collaborative leaders balances inclusion with decisiveness and manage the dynamics of group collaboration skillfully (Arlindo & Andri, 2023); and Gilbert et al, 2023).

Inclusion

Inclusion as a concept has been seen as that which "requires a leveling of the playing filed and providing opportunities through organizational and managerial practices that offer real prospect of equal access to valued opportunities for employees who belong to social identity groups that experience greater discrimination" (Shore et al, 2018 in Dudek, 2023). It involves accommodating individual differences, giving each the opportunity to showcase their best and contribute meaningfully to organizational productivity (Dudek, 2023); and creating an inclusive culture that valued and respects and individuals, promotes equity, and provides opportunities for growth and development (Yermolayeva, 2023). It is 'the individual's sense of being a part of the organizational system in both the formal processes, such as access to information and decision-making channels, and the informal processes' (Mor Barak, 2017 in Dudek, 2023); or 'the degree to which an employee perceived that he or she is an esteemed member of the work group through experiencing treatments that satisfies his or her needs for belongingness and uniqueness' (Shore et al, 2011 in Dudek, 2023).

Dobusch (2014) in Dudek (2023) viewed inclusion from two different perspectives – normative perspective and analytical perspective. The normative perspective, according to them, refers to the desirable state where people, especially those belonging to historically discriminated groups, are welcomed and appreciated in the space they were previously excluded from. The analytical perspective posits inclusion and exclusion as inextricably linked and consequently exposes the exclusionary side effects of practices aiming to strengthen inclusion. Inclusive work is closely linked to diversity, aiming to maximize the benefits of diversity by ensuring equal rights and opportunities for employees. Inclusion improves the ability to market products globally, improve a company's reputation, fosters diverse perspectives, increase creativity and profits, and reduce employee turnover (Odazie et al, 2024). This is because it fosters a sense of belonging and recognition, increasing satisfaction and a company's overall performance and reputation – Tongo et al, 2023.

Psychological Safety

Psychological safety in the workplace is the 'feeling of comfort and freedom from fear when taking risks or speaking up'. It is a form of inclusion which "encourages employees to take chances, collaborate effectively, and share their ideas openly ultimately leading to better morale, job satisfaction, and improved individual, and organizational outcomes" (Almalin & Nodwahab, 2023). According to Dickson and Oyeinkorikiye (2023), psychological safety, constituted and popularized by Amy Edmondson in the late 1990's, refers to the shared belief within a team or group that the environment is conducive to interpersonal risk taking. The concept is said to have been rooted in organizational behavior and social psychology, emphasizing the importance of trust, respect and mutual support in group setting; and becoming foundational in understanding team dynamics, learning behavior and organizational performance (Dickson & Oyeinkorikiye, 2023). Psychological Safety plays a critical role in fostering innovation, collaboration and resilience in complex and dynamic environments. (Dickson & Oyeinkorikiye, 2023). It is, therefore, directly linked to employee performance and productivity.

In summary, SHRM (2025) opined that inclusion has a direct impact on employee engagement, satisfaction, and retention, and inclusive workplaces increase employee well-being (since employees feel valued and heard reduced recruitment and training costs) (since high talents are retained) create a culture of loyalty (since employees are more engaged, motivated, and committed to organizational success) and build resilient, adaptive organizations (since teams are better equipped to navigate disruptions and capitalize on opportunities. They emphasized that executive leadership plays a pivotal role in fostering and sustaining an inclusive culture by integrating inclusion into the company's core values and using data to track progress, society for Human Resource management.

Empirical Review

Kasimu et al, (2024) carried out a study on work environment and academic staff performance in tertiary institutions in Nigeria. According to the researchers, work environment in an academic setting refers to a place or an environment that is characterized by culture, tone, feel, or the internal quality of an organization, encompasses rules, culture resources, working relationships, work location including teaching and learning resources. The study depended on secondary data collected from print and online publications. The result collected indicated that the work environment of tertiary institution influences academic staff job performance. It concluded that a good and conducive working environment enhances the job performance of academic staff in tertiary institutions. The paper suggested that the government and relevant stakeholders in the management of tertiary institutions in Nigeria should ensure that a conducive work environment be provided in all tertiary institutions across the country.

Abraham and Atalay (2023) studied 'Quality of work life and organizational commitment of the academic staff in Ethiopian Universities'. The main purpose of the study was to investigate factors related to the quality of work life and examine the effect of quality of work life on the academic staff organizational commitment in Ethiopia. The study employed an explanatory design and a quantitative approach. The data for the research was collected through a structured five-point likert scale questionnaire from 185 samples that were selected using a simple random sampling technique. Confirmatory Factor Analysis was employed to determine the relationship between the manifest and latent variables their fit each other. The structural equation modeling was used for analysis. The results showed that maintaining a more balanced work life through appropriate strategic HRM is critical to increasing academic staff work engagement and improving the university's equality of services.

Eric (2023), studied work related stress and performance of different categories of academic staff in Federal Polytechnics in Southeast Nigeria. Literature based self-structured questionnaire was the principal tool used in eliciting information from 315 respondents drawn from the study population. Descriptive statistics and paired statistics were used in testing the hypothesis. The value of t-statistic was 3,706 with a probability value of 0.0001 implying a significant difference on the effect of work-related stress among senior and junior lecturers. The study suggested that the management of polytechnics need to develop organizational policies that give individuals more control over their work activities, develop support systems, shared goals and directions. In this regard, older lecturers would find ways of delegating their jobs to younger assistants in order to reduce the effect of work stress.

Faremi et al (2023) investigated institutional culture and academic staff productivity in private universities in Ogun state. The study adopted the survey research design of the ex-post factor type. It adopted the multistage sampling procedure to select the sample. Simple random sampling

technique was deployed to select 50% (5) out of 10 private universities in Ogun state. Proportionate to size sampling technique was also used to select departments and the lecturers. A total of 212 out of 1054 lecturers were selected for the study. The research instrument being the questionnaire was designed to elicit responses from lecturers. The findings revealed that there is significant influence of leadership style, on academic staff productivity; there is significant between job technological changes on academic staff productivity; and there is a significant relationship between staff work environment and academic staff productivity. The study recommended that the owners of universities should ensure the right leaders are recruited and best style of leadership need to be adopted to oversee and to run the various institutions. Also, financial, material and moral support is accorded the lecturers who are willing to advance.

Omonzejele & Agu (2022) investigated the relationship between leadership quality and performance of Nigerian polytechnics, using Auchi Polytechnic, Auchi, as a case study. The spearman rank correlation statistics was used to test the relationship between the variables. The value of the correlation coefficient (r = - 0.99) revealed a strong inverse relationship between the variables, implying that an increase in leadership quality leads to decrease in the rank value of the Polytechnic and increase in performance. The study concludes that a proactive and visionary leadership is needed in Nigerian Polytechnics to help meet their mandates. The study recommended, among others, an individual with the requisite qualifications (academic and professional); and management skills to occupy the 'Rector' position in all Polytechnics across Nigeria, at any point in time.

Zhang (2024) studied shared Leadership and Academic Optimism among University Lecturers in Adamson University, China. The study explored the impact of shared leadership practices on academic optimism among educators and administrators, specifically examining the relationship between collaborative decision-making, distributed responsibilities and an optimistic out took in academia. The study surveyed 276 faculty members and employed the correlation research methods. The Pearson & Coefficient of 0.84 with a P-value of 0.000 signifies a strong positive and significant relationship between shared leadership and academic optimism. The results showed strong agreement across the domains of adaptability and engagement, shared vision and rationality, facilitating context, environment and empowerment and decentralization with the highest levels of agreement in the empowerment and decentralization domain. These findings have informed the development of a scheme to further these positive trends within academic institutions.

Kang et al (2023) studied improving work performance among Academic Staff through Transformational Leadership in University Putra Malaysia. The researchers agreed that transformational leadership has become necessary in management practices, and that in people-oriented organizations, the overall performance may largely depend on leadership styles. It was literature review research. It was shown that transformational leadership is effective in predicting various variables, including work performance in different contexts.

Abba et al (2016) researched Leadership Practices and Productivity of Academic Staff in Polytechnics in Nigeria. They were of the College of Education at the Kampala International University, Uganda. The study examined the influence of leadership practices on productivity of academic staff in Polytechnics in Nigeria. The study involved 285 respondents drawn from six polytechnics. Data were collected using a self-administered questionnaire which validity and reliability was confirmed through factor analysis and Cronbach Alpha test. The construct of leadership practices were examined. Descriptive analysis involved the use of means, while multiple regressions were used to test the hypothesis. The results revealed that transformational

leadership was a positive significant predictor of academic staff productivity. The conclusion was that transformational leadership was an important factor for enhancing staff productivity.

Angana, Ongeti, & Chioma (2023) carried out a study on conceptualizing and measuring collaborative leadership in an organizational context. The study conceptualized and investigated the impact of collaborative leadership on the performance of organizations by assessing authentic relationships, leaders' behaviour and top echelons' support as indicators. A quantitative approach employing a questionnaire survey of 217 managers from insurance companies in Kenya. Descriptive Statistics and ANOVA was used for the analysis. Findings revealed that authentic leaderships, leader behaviour and top echelons support being the most influential. The study underscores the significance of fostering employee mutual understanding and respect within organizations. These insights offer practical guidance for leaders and managers in organizations, aiming to elevate organizational performance by applying collaborative leadership principles.

Tongo et al (2023) studied the impact of workplace diversity and inclusion on organizational productivity, using the case of UBA Plc, Ikeja, Lagos State, Nigeria. The study employed the use of questionnaire, in data collection, analysing responses through descriptive statistics and regression analysis. Findings revealed that while diversity and inclusion are positively correlated; inclusion has a significant effect on organizational productivity; and participating in employee diversity and inclusion increases organizational productivity. The study recommended among others, that managers should create a healthy workplace for every employee to thrive and bring on board their inherent skills and talents, as this will eliminate a toxic work environment, struggling employees, high employee turnover, and low productivity.

Odazie et al (2024) examined diversity and inclusion technology on organizational performance in USA. The primary objective of the study was to investigate the relationship between the level and use of diversity and inclusion technology tools and organizational performance. The study employed the survey research design, using a purposive sampling, questionnaire (in google form) was administered to 550 employees in via linked in email, Whats App, X and Facebook. The responses were analysed through descriptive statistics and simple percentages. The findings revealed a connection between organizational performance and the perceived contribution of technology to diversity and inclusion initiatives. The study concluded that technology has contributed to the ability of organizations to cultivate diverse work forces and inclusive cultures. Thus, recommended that organizations in US should adopt tech-oriented solutions to D & I initiatives with an all-inclusive governance and monitoring structure to guarantee anticipated performance.

Almahri and Abdwahab (2023) carried out a conceptual study on the effectiveness of psychological safety on employee productivity in Malaysia. The purpose of the study was to ascertain if psychological safety could enhance creatively and employee productivity. Using thematic analysis, the study acknowledged psychological safety which it defined as the notion of people communication their thoughts, concerns, fears, and mistakes without fear of criticism, reprisal or humiliation, and other negative consequences as a fundamental concept influencing employee interaction with their jobs, encouraging collaboration, openness, and enhancing creativity and problem-solving abilities, which ultimately increase productivity.

Materials and Methods

This is a cross-sectional survey research design, employing the use of structured questionnaire as instrument of data collection. The questionnaire was administered to the academic staff of Delta

State Polytechnic, Ogwashi-Uku, Delta State, Nigeria to assess self-perceived performances on teaching quality, research output, and professional development. Though, this has the potential for self-report bias arising from overestimation or defensiveness, staff can provide details about their own outputs, challenges, and motivation. It also has the benefits of easier access, and ethical control.The study adopted the census approach since the population of academic staff of the Polytechnic was relatively small and accessible. This ensured a comprehensive coverage, eliminating sampling bias, and increasing the accuracy and reliability of findings.

Records from the Senior Staff Unit in the Registrar's office showed the following distribution of academic staff across the various schools of the polytechnic:

School	No of Academic Staff
Applied Science	48
Business Studies	55
Engineering	43
General Studies	39
Computer & Ict	39
Environmental	4
Art & Design	26
Total	254

Source: Senior Staff establishment office, Delta State Polytechnicc, Ogwashi-uku, 2025

The total number of academic staff was 254, and as such, 254 questionnaires were distributed to the academic staff. 200 questionnaires were retrieved, and therefore used for the study. The content validity was used, and was adjudged to be valid. The Cronbach's Alpha reliability test was used for reliability testing, and the result of the reliability test is presented below.

Variable	Cronbach's Alpha	Interpretation
Employee Productivity (EP)	0.82	Good
Psychological Safety (PS)	0.78	Acceptable
Inclusion (I)	0.85	Good
Collaborative Leadership (CL)	0.91	Excellent

Source: Author's Computation, 2025

The results indicated that all four variables have acceptable to excellent internal consistency. Collaborative Leadership has the highest alpha (0.91), indicating excellent internal consistency, while Psychological Safety has the lowest (0.78), which is still considered acceptable. The other two variables, Employee Productivity (0.82) and Inclusion (0.85), demonstrate good internal

consistency.

Results and Discussion

Results of Regression Analysis

Term	estimate	std.error	statistic	p.value	odds_ratio
x1.L	0.345515	0.860936	-1.23437	0.017063	1.190589
x1.Q	1.190589	0.141997	1.228531	0.219248	0.345515
x2.L	0.744119	0.980973	-0.30129	0.763196	0.744119
x2.Q	1.047169	0.166847	0.276246	0.782359	1.047169
x3.L	0.605275	0.752577	-0.66714	0.504684	0.605275
x3.Q	1.094335	0.129924	0.693842	0.007782	1.094335
SD|D	0.014292	2.015257	-2.10793	0.035037	0.014292
D|N	0.054997	2.004351	-1.44709	0.147873	0.054997
N|A	0.149191	1.998005	-0.95222	0.340988	0.149191
A|SA	0.75425	1.999993	-0.14102	0.887857	0.75425

Source: Author's Computation, 2025

The output presents the results of an ordinal logistic regression model examining the influence of three key predictors, collaborative leadership (CL), inclusion (INC), and psychological safety (PS), on employee productivity, measured as an ordinal outcome ranging from Strongly Disagree to Strongly Agree. Each predictor was included in the model along with its squared term (e.g., x1.Q) to account for possible non-linear effects.

Hypotheses Testing

Ho_1: Collaborative leadership has no significant impact on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.

The term x1 (collaborative leadership) has an estimate of 0.3455, indicating a positive relationship between collaborative leadership and the odds of higher employee productivity levels. However, the corresponding p-value is 0.0171, which is below the conventional 0.05 threshold, suggesting this linear effect is statistically significant. The odds ratio of 1.1906 implies that for every one-unit increase in the average collaborative leadership score, the odds of an employee reporting a higher category of productivity increase by about 19%. This shows that collaborative leadership may meaningfully enhance employee productivity. For the quadratic term x1.Q, the estimate is 1.1906 and the p-value is 0.2192, indicating that the non-linear (squared) effect of collaborative leadership is not statistically significant. Although the odds ratio is greater than 1 (suggesting a potential

accelerating effect), the lack of statistical significance means this cannot be confidently concluded. The implication is that the linear effect of collaborative leadership matters more than any curvilinear pattern.

Ho_2: Inclusion has no significant impact on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.

In the case of x2 (inclusion), the estimate is 0.7441 with a p-value of 0.7632. Despite a moderately high estimate, the p-value suggests that the effect is not statistically significant. The odds ratio is 0.7441, which would typically suggest that increased perception of inclusion is associated with lower odds of higher productivity, but again, due to non-significance, this effect should not be interpreted with confidence. The squared term x2.Q also lacks statistical significance ($p = 0.7824$), reinforcing the conclusion that inclusion, as measured, does not have a meaningful linear or non-linear relationship with employee productivity in this model.

Ho_3: Psychological safety has no significant impact on productivity of academic staff in Delta State Polytechnic, Ogwashi-Uku, Delta State, Nigeria.

For x3 (psychological safety), the linear term has an estimate of 0.6053 with a p-value of 0.5047, which again indicates a positive but statistically insignificant relationship with employee productivity. The odds ratio of 0.6053 is less than 1, hinting at a potential decrease in productivity odds with higher psychological safety, but given the high p-value, this result cannot be interpreted with confidence.

However, the squared term x3.Q is statistically significant with a p-value of 0.0078. The estimate of 1.0943 and corresponding odds ratio of the same value indicate that there is a significant curvilinear relationship, whereby higher levels of psychological safety, particularly at the upper range, are associated with increased odds of higher employee productivity. This suggests that while small or moderate changes in psychological safety may not matter much, very high levels can significantly improve productivity outcomes. The threshold terms (SD|D, D|N, N|A, A|SA) define the boundaries between the ordered categories of the dependent variable. These are not interpreted as predictor effects but help determine the model's structure for predicting categorical shifts in productivity levels. While their p-values vary, their primary role is structural and not the focus of substantive interpretation.

Conclusion

Based on the study objectives, hypotheses formulated/tested, and results of the findings, the study concludes as follows: Collaborative leadership positively and statistically affects academic staff productivity, as it fosters a sense of community among staff, students, and parents. driving cross-functional collaboration and responsiveness This stance was strongly held by Omonzejele & Agu (2022); Arlindo & Andri (2023); Gilbert et al (2023); and Zhang (2024)). Inclusion positively affects academic staff productivity. Though not statistically significant in its linear relationship, an inclusive culture that values and respects individuals, promotes equity, and provides opportunities for growth and development enhances productivity. Similar conclusions were drawn by Dudek (2023); Tongo et al (2023); Yermolayeva (2023); and Odazie et al (2024). Psychological safety positively and significantly improves academic staff producivity, as it fosters sharing innovative ideas openly ultimately bringing about better morale, job satisfaction, an improved individual, and organizational outcomes; as strongly held by Almalin & Nodwahab, (2023); and Dickson & Oyeinkorikiye (2023).

Recommendations

The study recommends as follows:

1. Management of Delta State Polytechnic, Ogwashi-uku, Delta State should clearly communicate the shared vision, mission, and purpose of the institution to its members from time to time, and how these contribute to National Policies on Education. This will help adequate and sound decision making and effective implementation of such.
2. Management should meet with the congregation at regular intervals to ensure the inclusion of the voices of all. They should seek opinions of academic staff on how to improve project supervision, for easy compliance of policies and increased productivity. They should refrain from using subtle means to punish those with contrary opinions. This will foster a psychological safe environment and improve staff engagement and productivity.
3. Finally, academic staff of the polytechnic should understand that by their performances, they can create a positive work culture; and either contribute to economic development or retard the growth of the economy. They should therefore, disengage from deeply entrenched practices that are inconsistent with the mandate of the polytechnic. To this end, they should adequately equip themselves in the use of disruptive technologies in teaching, research, and development to meet the mandate of polytechnic education in Nigeria.

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