Institutional Policies Affecting Needs-Driven Research in Automobile Engineering and Technology in Bayelsa State, Nigeria

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ABSTRACT

The study investigated institutional policies that affects needs-driven research in Automobile Engineering and Technology in Bayelsa State. The study adopted a descriptive survey research design. The study was guided by two purposes, two research questions and two null hypotheses were formulated to guide the study at 0.05 level of significant. The population of the study consists of 64 lecturers from 4 Higher Institutions in Bayelsa State. Data were collected using a structured questionnaire on five-point rating scale with a total of 32 items. The questionnaire was validated by three experts to ensure its content validity. To establish reliability of the instrument, the Cronbach Alpha test was used and the reliability coefficients was 0.82, indicating that the instrument was highly reliable. Mean and Standard Deviation were used to answered the research questions. The findings revealed, among other things, that, misalignment of research objectives with societal and industrial demands and bureaucratic inefficiencies were significant barriers hindering needs-driven research in automobile engineering and technology in Bayelsa State, Nigeria. Based on the findings, the study recommended that the government should establish national research priorities that align with industry and academia across institutions.

Keywords: Automobile Technology, Engineering and Technology, Needs-Driven Research, institutional Policy Barriers.

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INTRODUCTION

An Automobile is a self-powered vehicle designed for transporting passengers and goods across land surfaces. It is described as self-propelled because the energy necessary for movement is generated internally. Automobiles play an essential role in virtually all areas of social and commercial life, particularly within engineering and technology (Poripo, 2024, 2020). The discipline of automobile engineering and technology applies scientific principles to the design, material selection, construction, operation, and maintenance of motor vehicles. According to Poripo (2025), Automobile Technology constitutes one of the key trades within industrial technical education. The goal of

automobile technology programs in tertiary institutions is to train skilled technologists across various areas of automotive practice (Poripo, 2024).

The National Board for Technical Education (NBTE, 2003) defines an Automobile Technologist as an individual who can test, diagnose, service, and fully repair faults within a vehicle's major systems and components according to manufacturer specifications. Similarly, Poripo, et al, (2020) emphasize that an automobile technologist applies scientific knowledge in all aspects of vehicle engineering from design and material selection to maintenance and repair. Poripo (2024) further notes that teaching and learning in automobile engineering involve transmitting scientific knowledge, technical ideas, and practical skills necessary for the intellectual and professional development of students in the industrial and engineering sectors.

Engineering and Technology are central to modern development, serving as catalysts for innovation that improve productivity, quality of life, and societal progress. Technology refers to the practical use of knowledge and the application of tools, techniques, systems, and organizational methods including the creation of tangible products like clothing (Paul, et al, 2018). Historically, technology emerged when early humans began shaping natural materials into functional tools. Major milestones such as the control of fire which enhanced food resources and the invention of the wheel which transformed transportation represent crucial phases of technological evolution (Ekpiwhre, 2008). Thus, technology has always enabled humans to adapt to and influence their natural environment. Engineering, in turn, is closely linked to development and sustainability. It involves applying scientific and mathematical knowledge to design, manufacture, and operate systems or products while considering economic, environmental, and societal factors. Engineering has been vital to technological progress, economic growth, and cultural transformation ((Paul, et al, 2018)). Although engineering processes depend on natural resources and may generate environmental waste, they are fundamental to societal advancement and improved living conditions. Achieving sustainability within engineering practice is therefore crucial for global development. As Paul, et al, (2018) note, nations that have successfully turned technological innovations into economic gains have relied on robust science, engineering, and technology policies. According to the Federal Republic of Nigeria (FRN, 2014), the objectives of the National Policy on Education include developing manpower in engineering, applied science, technology, and commerce at all professional levels, while also imparting technical and vocational skills essential for economic growth. However, Nigeria's polytechnic education system remains undervalued and underfunded. Victor, (2009) argues that while vocational and technical education flourish elsewhere, Nigeria continues to neglect this crucial sector, leading to a shortage of skilled technicians needed for industrial and economic progress.

In developing countries like Nigeria, a persistent gap exists between academic research and industrial or societal needs, limiting the contribution of research to national development (Ayoade & Abimbola, 2020). To bridge this divide, needs-driven research

aligned with developmental and industrial priorities has become essential (Aina, 2010). As developing nations confront global economic pressures and climate challenges, sustainable industrialization has become an urgent goal (Bozeman & Sarewitz, 2011). International organizations such as UNESCO (2021) & OECD (2019) stress the importance of aligning research with societal demands to achieve sustainable progress. The philosophy behind needs-driven research asserts that scientific inquiry should directly respond to societal challenges rather than exist in academic isolation. Bozeman and Sarewitz (2011) emphasize that research effectiveness increases when it addresses public needs, promoting broader societal impact. Similarly, Clark (2007) highlights the consequences of disconnecting academic research from real-world demands, which leads to inefficient knowledge transfer. In engineering and technology, aligning research with national priorities enhances development outcomes (Etzkowitz & Leydesdorff, 2000). Empirical evidence shows that countries with coordinated research strategies experience stronger industrial growth. For instance, South Korea's rapid economic development has been largely attributed to government-backed R&D investments aligned with industrial policy (Lee & Lim, 2001).

The relevance of needs-driven research is also recognized in the framework of the United Nations Sustainable Development Goals (SDGs). Achieving goals such as clean energy, resilient infrastructure, and sustainable industrialization requires context-specific engineering solutions. Schot & Steinmueller (2018) argue that meeting these challenges demands both technical innovation and alignment with each country's socio-economic realities. These perspectives underscore the strategic necessity of linking engineering and technological research with both national and global development agendas (Lee & Lim, 2001). The theoretical foundation of needs-driven research rests on the notion that knowledge generation must be problem-oriented and context-sensitive rather than abstract. Bozeman and Sarewitz (2011) contend that traditional curiosity-driven research is often insufficient to address urgent societal needs. They argue that research should target well-defined challenges to achieve tangible outcomes. Clark (2007) similarly notes that the gap between academic research and industrial practice limits innovation and delays the application of scientific discoveries. These inefficiencies are especially harmful in developing countries where resources are limited and research investment must yield significant impact. Evidence from developed economies supports this view. Lee and Lim (2001) demonstrate that South Korea's coordinated R&D policies were central to its industrial success. Within the global sustainability discourse, engineering research is increasingly tied to the SDGs, particularly those related to clean energy (SDG 7), resilient infrastructure (SDG 9), and climate action (SDG 13). Schot & Steinmueller (2018) further argue that innovation must be transformative creating new systems of production and consumption rather than merely optimizing existing ones. Consequently, the success of engineering and technology research in promoting sustainable development depends on its responsiveness to national needs and global objectives (National Research Foundation, 2020).

Institutional policy barriers can be defined as a policy challenges that affects the progress of needs-driven research and institutional goals. Institutional policy barriers refer to the rules, regulations, and procedures that hinder the effectiveness and efficiency of any programme (Birch & Jacobson, 2015). Ostrom, (2005) further explains that institutional policy barriers can arise from the interaction between formal and informal institutions, leading to conflicting rules and norms that hinder collective action. Knill, et al, (2023) & Fernandezi-Marin, et al, (2023) emphasized that these barriers can limits access to resources, create bureaucratic delays, and stifle research innovation. These challenges include inadequate funding, bureaucratic inefficiencies, inconsistent policy enforcement, and weak institutional capacity. Institutional resistance to change is a recurring theme in literature examining, sustainability integration in Nigerian higher education. According to Agu, et al, (2021), many university faculty members lack the training and incentives to adopt sustainability-oriented curricula. Furthermore, administrative inertia, often characterized by rigid hierarchical decision-making, limits responsiveness to global educational trends. Studies also note that sustainability programs are often fragmented and driven by individual faculty or departments without institutional commitment, leading to a lack of coherence and sustainability in the long term (Ofor-Douglas, 2022). Additionally, facilities and resources required for the practical implementation of needs-driven research, sustainability education, such as green infrastructure, ICT tools, and innovation labs, are typically insufficient in most institutions. While Nigeria has adopted educational policies that make reference to sustainability, these policies are often generic, lacking specific, actionable frameworks. Bello (2020) highlights the disconnection between federal education policy objectives and institutional implementation capabilities. This misalignment results from inadequate stakeholder engagement during policy formulation, and weak policy monitoring and evaluation mechanisms. Moreover, policy execution is frequently disrupted by political interference, inconsistent leadership in the education ministry, and an absence of data-driven planning (Okagbue et al., 2023). These governance challenges are exacerbated by funding uncertainties, where budget allocations are irregular or insufficient to support long-term institutional reforms.

The study highlights the insufficient coordination between regulatory agencies and the lack of investment incentives as major factors impeding needs-driven research progress. Such policies affect economic growth and technological advancement. Akpan & Chuku (2014), assert that technology facilitates the discovery of alternatives when resources become scarce and promotes efficient reuse of materials. In the context of Nigeria's economic challenges, institutional policy barriers significantly impede needs-driven research in automobile engineering and technology. Despite repeated efforts, Nigeria's progress toward sustainable development remains limited, reinforcing the idea that no nation can progress beyond the level of its technological capability (Paul & Allhassan, 2018). Historically, Nigeria experienced major opportunities during its agricultural, industrial, and oil booms, but inconsistent policies and weak economic strategies hindered long-term progress (Enebeli, 2010). The absence of continuity in technology and engineering policies has resulted in underdeveloped agricultural

technologies, declining manufacturing industries, and vulnerability to global oil market fluctuations. Esho (2008) argues that competitive advantage is never permanent; it must be sustained through continuous innovation in engineering and technology.

Statement of the Problem

The goal of automobile technology departments in Nigerian tertiary institutions is to produce automobile technologists with sound theoretical knowledge who can test, diagnose, service and repair faults relating to the conventional automobile assembly main units and systems to the manufacturers specification. The automobile graduates in Bayelsa State, Nigeria have the prospect of either being employed in industries, or setting-up their own business and becoming self-employed. However, these graduates of automobile technology prove to be ill equipped as most companies and industries spend money in training and retraining the graduates of automobile technology in Bayelsa State, Nigeria in other to meet the standard required by the companies and industries, instead of starting work immediately. The wide spread problem of graduate undergoing further training especially in automobile technology before being employed by industries, and inabilities to translate academic research to solve industrial and societal needs creates a gap and doubts about the policies in our institutions.

Research has shown a persistent gap remains between academic research outputs and the practical needs of industries and society. This disconnect significantly limits the contributions of research to meaningful national development outcomes. To bridge this divide, needs-driven research guided by pressing developmental, industrial, and societal challenges has emerged as a critical strategy. The persistent disconnect between academic research agendas and real-world demands often results in the inefficient translation of scientific knowledge into practical applications. However, in the fields of engineering and technology, especially automobile and metalwork technology, aligning research with national development priorities has proven particularly beneficial to nations. Hence, this study is to investigate the institutional policy barriers affecting needs-driven research in automobile engineering and technology for in Bayelsa State, Nigeria.

Purpose of the Study

The general purpose of this study is to investigate the institutional policies affecting needs driven research in Automobile Engineering and Technology in Bayelsa State, Nigeria. Specifically, the study seeks to:

1. Identify the misalignment between academic research and industrial policy needs in Automobile Engineering and Technology in Bayelsa State, Nigeria.
2. Institutional policies affecting needs-driven research in Automobile Engineering and Technology in Bayelsa State, Nigeria.

Research Questions

1. What are the misalignment between academic research and industrial policies needs in Automobile Engineering and Technology in Bayelsa State?
2. What are the institutional policies affecting needs-driven research in Automobile Engineering and Technology in Bayelsa State?

METHODS

The study adopted a descriptive survey research design. A survey research design is the one by which the entire population or representative sample is studied by collecting and analyzing data from the group through the use of questionnaire and checklist (Wali, 2002). Hence descriptive survey research design is suitable for this study as it solicits information from respondents on institutional policy barriers affecting needs-driven research in automobile engineering and technology in Bayelsa State. The population of the study was 64 lecturers from 4 Technical and Vocational Education and Training (TVET) institutions in Bayelsa State. A simple random sampling technique was employed to select 16 Lecturers from each institution. Data were collected using a structured questionnaire titled Institutional Policy Barriers Affecting Needs-Driven Research in Automobile Engineering and Technology. The instrument was divided into two sections (A and B). Sections A addressed Misalignment Between Academic Research and Industrial Policy Needs with 16 items, while section B, addressed, Institutional Policies Affecting Needs-Driven Research with 16 items, making a total of 32 items on a four-point rating scale, ranging from Strongly Agreed = 4, Agreed = 3, Disagreed = 2 and Strongly Disagreed = 1. The instrument used for data collection was validated by three experts. Data obtained from respondents were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.0. The Cronbach Alpha reliability coefficient was used to determine the internal consistency of the questionnaire. The reliability coefficients for the two sections were 0.86 and 0.78, while the overall reliability index was 0.82, confirming that the instrument was reliable. Data analysis was performed using mean and standard deviation. Any item with a mean score of 3.50 or above was interpreted as strongly agreed or agreed and accepted, whereas items with mean scores below 3.50 were considered strongly disagreed, disagreed, and not accepted.

RESEARCH RESULTS

Research Question 1

What are the misalignments between academic research and industrial policy needs in automobile engineering and technology in Bayelsa State?

Table 1: Misalignment Between Academic Research and Industrial Policy Needs in Automobile Engineering and Technology

S/N	Misalignment Between Academic Research and Industrial Policy Needs in Automobile Engineering and Technology	M	SD	Decision
1	Issue of brain drain	3.61	0.68	Agreed
2	Non-cohesion between educational curriculum and industries	3.57	0.52	Agreed
3	Non-aligning research objectives with specific societal,	3.71	0.68	Agreed

S/N	Misalignment Between Academic Research and Industrial Policy Needs in Automobile Engineering and Technology	M	SD	Decision
	economic, and industrial needs			
4	Non-centering research activities on pressing local challenges	3.59	0.67	Agreed
5	Non stronger linkages between research institutions, industries, and policymakers	3.69	0.46	Agreed
6	The absence of cohesive national research strategies	3.80	0.61	Agreed
7	Undermining efforts to align research with development priorities and practical outcomes	3.79	0.34	Agreed
8	Curriculum not aligned with local challenges and opportunities	3.54	0.50	Agreed
9	Lack of deliberate alignment of research priorities with the socio-economic needs of the nation	3.69	0.46	Agreed
10	Lack of deliberate alignment of research priorities with the environmental realities of the nation	3.59	0.47	Agreed
11	The absence of cohesive national research policies	3.50	0.57	Agreed
12	Lack of innovation hubs and technology parks	3.71	0.82	Agreed
13	The gap between academic research and industrial application	3.67	0.70	Agreed
14	Lack of transformation of research outputs into commercially viable products and services	3.71	0.82	Agreed
15	Industry representatives frequently described academic research as overly theoretical and lacking immediate applicability	3.67	0.70	Agreed
16	Lack of continuity in needs-driven research	3.77	0.61	Agreed
grand Mean		3.67	0.61	Agreed

Note. M = Mean; SD = Standard Deviation, Source: Field Survey, (2025)

The results presented in Table 1 with grand mean 3.67 and standard deviation 0.61 indicates that the respondents agreed with all 16 items, identifying them as factors contributing to the misalignment between academic research and industrial needs in Automobile Engineering and Technology within Bayelsa State, Nigeria. The findings also highlight that the absence of strong linkages among research institutions, industries, and policymakers serves as a major factor responsible for the disconnection between academic research and industrial needs in engineering and technology programs across Nigerian institutions.

Research Question 2

What are the institutional policy barriers affecting needs-driven research in automobile engineering and technology in Bayelsa State?

Table 2: Institutional Policy Barriers Affecting Needs-Driven Research in Automobile

Engineering and Technology

S/N	Institutional Policy Barrier Affecting Needs-Driven Research in Automobile Engineering and Technology	M	SD	Decision
17	Non implementation of innovation and developmental policies	3.82	0.85	Strongly Agreed
18	Dependence on foreign technology and expatriates	4.16	0.12	Strongly Agreed
19	Limited collaboration between academic institutions and industry partners results in research efforts disconnected from real-world applications and market needs	3.96	0.98	Strongly Agreed
20	Funding constraints among institutions	3.68	0.56	Strongly Agreed
21	Inadequate and poorly targeted financial support hampers the ability to conduct research addressing pressing national challenges	3.96	0.98	Strongly Agreed
22	Absence of cohesive national research strategies and policies	3.66	0.96	Strongly Agreed
23	Emigration of skilled researchers due to inadequate institutional support	3.91	0.78	Strongly Agreed
24	Career opportunities lead to diminished local capacity for innovation and scientific advancement	4.14	0.84	Strongly Agreed
25	Weak or inefficient systems for transferring research findings into commercial products	4.16	0.12	Strongly Agreed
26	Inefficient industrial processes prevent research from yielding tangible socio-economic benefits	3.94	0.70	Strongly Agreed
27	Private sector stakeholders express reluctance to engage with academic institutions	3.67	0.62	Strongly Agreed
28	Non implementation of reforms to foster a more dynamic and responsive research ecosystem capable of driving industrial innovation	3.79	0.34	Strongly Agreed
29	Non implementation of indigenous technology and locally produced products	3.69	0.46	Strongly Agreed
30	Non implementation of indigenous knowledge and skills	4.16	0.12	Strongly Agreed
31	Non implementation of indigenous methods for teaching modern science and technology curriculum	3.94	0.70	Strongly Agreed
32	Perceived inefficiencies and bureaucratic hurdles	3.66	0.96	Strongly Agreed
Grand		3.91	0.67	Strongly

S/N	Institutional Policy Barrier Affecting Needs-Driven Research in Automobile Engineering and Technology	M	SD	Decision
Mean				Agreed

Note. M = Mean; SD = Standard Deviation. Rating scale: Strongly Agreed (5), Agreed (4), Undecided (3), Disagreed (2), Strongly Disagreed (1).
Source: Field Survey, (2025)

Result in Table 2 above with the grand mean 3.91 and standard deviation 0.67 shows that respondents strongly agreed with all 16 items identified as institutional policy barriers impeding needs-driven research in Automobile Engineering and Technology within Bayelsa State, Nigeria.

Discussion

The findings of this study highlight the critical importance of needs-driven research in promoting industrial and national development. Nations that successfully align their research and development (R&D) strategies with broader socio-economic objectives tend to achieve stronger, more sustainable industrial growth. The results presented in Table 1 demonstrate that respondents agreed with all 16 items related to the misalignment between academic research and industrial needs in engineering and technology within Bayelsa State, Nigeria. This outcome aligns with the observations of Poripo, (2025) & Clark (2007), who emphasized the persistent disconnect between academic research outputs and the operational requirements of industry and policy-making. According to Poripo, (2025) & Clark, (2007), this gap leads to inefficient knowledge transfer and a delay in translating research into practical applications, ultimately impeding innovation and development outcomes. These inefficiencies are particularly harmful in low- and middle-income countries, where limited resources necessitate maximizing the impact of research investments.

Similarly, the results in Table 2 confirm that respondents agreed with all 16 items describing institutional policy barriers affecting needs-driven research in Automobile Engineering and Technology in Bayelsa State, Nigeria. The findings reinforce that institutional alignment with R&D policies and socio-economic priorities is essential for achieving resilient and sustainable industrial progress. This finding supports the argument by Schot & Steinmueller (2018), who proposed that comprehensive institutional reforms including stronger collaboration, enhanced accountability, and improved responsiveness within the research system are necessary to unlock the potential of innovation-driven development. In particular, engineering and technology faculties should be granted both autonomy and responsibility to focus research on national development priorities, such as renewable energy, resilient infrastructure, and digital manufacturing. Achieving this shift demands not only academic intent but also structural and strategic support aligned with national development agendas.

Moreover, this finding is consistent with the work of Etzkowitz & Leydesdorff (2000), who argued that governments and funding agencies play a vital role in creating a demand-responsive research environment. By offering targeted grants, establishing innovation clusters, and providing tax incentives for industry-academic partnerships, these stakeholders can foster a culture of practical innovation and applied problem-solving. Such mechanisms are essential for bridging the persistent gap between academic research and industrial needs across nations.

Conclusion

Needs-driven research in automobile engineering and technology serves as a key driver of industrial progress and sustainable national development, particularly in low- and middle-income countries. When research initiatives are effectively aligned with real-world challenges and national development priorities, they are more likely to yield meaningful innovations that enhance quality of life, increase productivity, and support the achievement of the Sustainable Development Goals (SDGs). To fully realize this potential, it is essential for countries to implement policy and structural reforms that promote stronger collaboration among academia, industry, and government. Such reforms should aim to create an enabling environment for innovation, ensure adequate funding mechanisms, and strengthen institutional capacity to sustain research and development activities. Without these deliberate and coordinated efforts, the transformative impact of engineering and technology will continue to remain largely underutilized.

Recommendations of the Study

To enhance needs-driven research in engineering and technology, particularly within the framework of sustainable development, the study recommends the following strategic measures:

1. The government should define clear research priorities that directly support national socio-economic and industrial objectives. Establish systems to assess the effectiveness and outcomes of funded research projects. Revise academic and institutional reward systems to encourage practical, solution-oriented research and Invest in professional development, training, and mentorship programs for researchers and technical staff.
2. Institutions should avoid policies that hinders needs-driven research and create consistent and transparent policies that facilitate research, innovation, and technology transfer. Encourage collaboration with regional bodies and international organizations to share expertise, resources, and best practices.

References

Aina, T. A. (2010). Beyond reforms: The politics of higher education transformation in Africa. *African Studies Review, 53*(1), 21–40.

Akpan, G. E. & Chuku, C. (2014). Natural resources, human capital and economic development in Nigeria: Tracing the linkages. *Journal of Economics and*

Sustainable Development, 5(21). http://www.iiste.org

Ayoade, O. B., & Abimbola, O. A. (2020). Industry–academia collaboration in Nigerian universities: Challenges and prospects. *African Journal of Science, Technology, Innovation and Development, 12*(4), 457–465.

Birch, E. L. & Jacobson, S. (Eds.). (2018). *The Routledge companion to planning in the global south* (1st ed.). Routledge.

Bozeman, B. & Sarewitz, D. (2011). Public value mapping and science policy evaluation. *Minerva, 49*(1), 1–23.

Clark, N. (2007). *Science, agriculture and research in Africa: A review of donor support* (IDS Working Paper 294). Institute of Development Studies.

Development, Security, and Cooperation. (2007). *Mobilizing science-based enterprises for energy, water, and medicines in Nigeria*. https://nap.edu/openbook.php?record_id=11997&page=1

Docquier, F. & Marfouk, A. (2006). Brain drain in developing countries. *World Bank Economic Review, 21*(2), 193–218.

Ekpiwhre, G. (2008). *Utilising science and technology to drive Vision 2020*. Punch Newspaper Publications. (Speech delivered at Tinapa Resort, Calabar during Diaspora Day, July 2008.)

Enebeli, E. E. (2010). Causality analysis of Nigerian electricity consumption and economic growth. *Journal of Economics and Engineering, 4*, 80–85.

Esho, M. A. F. (2008). *Keynote address at the opening ceremony of the 4th International Conference of the Schools of Science, Engineering and Environmental Technology*, The Federal Polytechnic, Ede.

Etzkowitz, H. & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and "Mode 2" to a triple helix of university–industry–government relations. *Research Policy, 29*(2), 109–123.

Fayinka, F. A. (2004). *Food security in Nigeria: Challenges under democratic dispensation*. Federal Office of Statistics.

Federal Republic of Nigeria. (2014). *National Policy on Education* (Revised). NERC.

Fernández-i-Marín, X., Hinterleitner, M., Knill, C. & Steinebach, Y. (2023). Bureaucratic overburdening in advanced democracies. *Public Administration Review, 84*(4), 696–709.

Knill, C., Steinebach, Y. & Zink, D. (2023). How policy growth affects policy implementation: Bureaucratic overload and policy triage. *Journal of European Public Policy, 31*(2), 324–351.

Lee, K., & Lim, C. (2001). Technological regimes, catching up and leapfrogging: Findings from the Korean industries. *Research Policy, 30*(3), 459–483.

National Research Foundation. (2020). *Research for development: A framework for impact*.

OECD. (2019). *OECD science, technology and innovation outlook 2019*. OECD Publishing. https://doi.org/10.1787/9b3b9a24-en.

Ostrom, E. (2005). *Understanding institutional diversity*. Princeton University Press

Paul, B. N., Allhassan, A. N. & Andah, M. (2018). Engineering and technology for

sustainable economic development in a recessed economy. *JORIND, 16*(1), 94–108.

Poripo, J. (2025). Needs-driven research in automobile engineering and technology for sustainable industrial and national development in Bayelsa State, Nigeria. *NAU Journal of Technology and Vocational Education, 10*(2), 97–104.

Poripo, J. (2025). Impact of artificial intelligence (AI) in the teaching and learning of skill-based education in TVET institutions in Bayelsa State, Nigeria. *Journal of Centre for Technical Vocational Education, Training and Research (JOCETVETAR), 7*(1), 120–131.

Poripo, J. (2024). Impact of multiple stress management intervention on motivation and academic performance of automobile technology education students in universities in South-South, Nigeria. *Sagbama Journal of Science and Technical Education, 1*(2), 47–52.

Poripo, J. (2024). Impact of vocational facilities in the teaching and learning of vocational and technical subjects in vocational institutions in Bayelsa State, Nigeria. *International Journal of Tourism and Technology, 2*(1), 1–9.

Poripo, J., Ede, E. O., Nwaodo, S. I., & Youdiowei, B. T. (2020). Effect of multiple stress management intervention on stress and academic performance of automobile technology education students in universities in South-South, Nigeria. *Engineering and Applied Science, 15*(9), 2121–2127.

Poripo, J., Youdiowei, B. T., & Okardi, B. C. (2016). Development of an instrument for assessing students' practical skills in fault diagnosis and repairs of motor vehicles in technical colleges, Bayelsa State, Nigeria. *Journal of Issues in Professional Teacher Education, 11*(2), 130–149.

Schot, J., & Steinmueller, W. E. (2018). Three frames for innovation policy: R&D, systems of innovation and transformative change. *Research Policy, 47*(9), 1554–1567.

UNESCO. (2019). *Engineering for sustainable development: Delivering on the sustainable development goals*. UNESCO Publishing.

UNESCO. (2021). *UNESCO science report: The race against time for smarter development*. UNESCO Publishing.

World Bank. (2021). *The role of technology and innovation in economic development*. https://data.worldbank.org

World Bank. (2022). *World development indicators*. https://data.worldbank.org

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