

POLICY INNOVATION: PANACEA FOR ENHANCING WORKERS' PRODUCTIVITY IN INDUSTRIAL ESTABLISHMENTS IN TARABA STATE, NIGERIA

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Abstract

Workers' productivity in industrial establishments remains a persistent challenge in Taraba State, Nigeria, compounded by weak policy frameworks and limited institutional capacity. This paper examines how policy innovation can enhance workers' productivity in industrial establishments in Taraba State, adopting a Systematic Literature Review methodology guided by PRISMA reporting standards. A total of 50,441 records were initially identified across Google Scholar, Scopus, and Web of Science databases, screened down to 20 peer-reviewed studies for qualitative synthesis. Drawing on Institutional Theory, the paper finds that labour policy innovation, technological policy frameworks, governance reforms, and economic development policies collectively and significantly drive workforce efficiency and industrial competitiveness. Evidence reviewed confirms that technology-driven firms record productivity gains of up to 25% above industry averages, while innovative workplace policies consistently improve both employee well-being and organisational output. This paper contributes to the literature by systematically applying global and African evidence to the underemployed context of Taraba State, Nigeria, offering an evidence-based framework for policy makers, industrial managers and institutional actors seeking to address persistent deficits in Nigeria's north-eastern industrial corridor. The paper recommends that the government develop innovative labour policies, industrial establishments adopt technology-driven strategies, institutional reforms strengthen governance and accountability, and policymakers design frameworks supporting sustainable industrial development.

Keywords: *Policy Innovation, Workers' Productivity, Industrial Establishments, Taraba State, Institutional Theory*

Introduction

Policy innovation has become one of the most important tools that governments use to drive industrial development and improve how workers perform in the modern economy. Across developed and emerging economies, there is growing recognition that outdated policies cannot sustain productivity in rapidly changing industrial environments. Mairesse et al. (2025) affirm that the empirical literature consistently shows a positive relationship between innovation and productivity, with firms in OECD countries that adopted technology-driven policies recording productivity gains of up to 20% above industry averages. Van Reenen (2020) argues that well-designed innovation policies rank among the most powerful instruments governments can deploy to boost productivity. Hall and Mohnen (2013) further establish that innovation explains a significant share of cross-country productivity differences. Tresselt and Scarpetta (2004) show that combining labour market reforms with innovation adoption accelerates productivity by reducing operational inefficiencies. In China, Chen et al. (2024) document that the Made in China 2025 industrial policy improved firm-level innovation performance considerably, while Zheng et al. (2025) report that place-based industrial relocation policies increased firm innovation output by approximately 15%. Noland (2007) further confirms that Japan's

transition from traditional industrial policy to innovation-centred strategies produced sustained improvements in productivity and competitiveness.

Africa's industrial sector continues to face deep structural challenges that limit workforce productivity and slow economic transformation despite some progress recorded in recent years. Weak institutions, poor infrastructure, and low investment in research and development remain recurring obstacles to effective industrial policy across the continent. The World Bank (2020) reports that productivity growth in sub-Saharan Africa lags far behind global averages, with total factor productivity contributing less than 30% to economic growth in many African countries. UNIDO (2022) similarly notes that fragmented industrial development policies and poor implementation have severely limited Africa's productivity potential. Sime and Tadesse (2025) provide firm-level evidence from selected African countries showing that innovation significantly drives labour productivity and employment creation, reinforcing the need for deliberate innovation policy frameworks. Mackintosh et al. (2007) argue that bridging the gap between innovation, productivity, and poverty reduction remains a critical challenge for African policymakers. Ngoc and Tien (2023) demonstrate from Vietnam's industrial province experience that targeted human capital development policies substantially improve workforce efficiency, offering useful lessons for African economies seeking to translate policy innovation into real and measurable industrial productivity gains across various sectors.

Nigeria's industrial sector has consistently underperformed in terms of workers' productivity, largely because of systemic policy weaknesses and poor implementation of existing frameworks. The National Bureau of Statistics (2024) reveals that labour productivity in Nigeria's industrial sector declined by approximately 3.2% between 2019 and 2023, reflecting the compounding effects of poor infrastructure, inadequate skills development, and weak regulatory systems. Basant (2018) observes that exploring the linkages between industrial innovation and public policy presents both serious challenges and real opportunities, especially in economies where institutional capacity is still developing. Rodrik (2022) argues that industrial policy must be redesigned to prioritise good quality jobs, a concern that is particularly urgent in Nigeria given its persistent unemployment challenge. Al Raei et al. (2017) show empirically that innovation policy variables including education investment and research and development expenditure are significant drivers of labour productivity growth, suggesting that Nigeria's low productivity partly reflects inadequate policy innovation. Varsha and Dhanaraj (2025) affirm that strategic industrial policies play a decisive role in advancing technological innovation, while Bai (2024) specifically links strong industrial policy to human capital development and better research outcomes, both of which remain critically weak within Nigeria's current industrial policy environment.

At the state level, Taraba State in north-eastern Nigeria presents a particularly instructive case of how absence of structured policy innovation suppresses industrial workforce productivity. The state hosts an estimated 847 registered micro, small, and medium industrial establishments, predominantly agro-processing enterprises, artisanal manufacturing units and small-scale industrial clusters concentrated in Jalingo, Wukari and Bali Local Government Areas (Taraba State Bureau of Statistics, 2023). These establishments collectively employ an estimated 62,000 workers in the formal and semi-formal industrial sectors, yet operate at an average capacity utilization rate of below 45%, far beneath the national average of 54.8% reported by the National Bureau of Statistics (2024). Workers in these establishments consistently record low productivity levels, largely because of the poor working conditions, insufficient training

opportunities, limited access to modern technology, energy shortages and the absence of structured labour welfare policies. Liu and He (2024) establish that synergistic industrial agglomeration combined with new quality productive forces is essential for high-quality manufacturing development, a framework that is largely absent from Taraba State's industrial planning. Wang et al. (2023) further show that industrial agglomeration supported by innovation and institutional development significantly improves total factor productivity, suggesting that the dispersed and poorly organised industrial clusters in Taraba State are a major constraint on productivity. Kuzior et al. (2022) draw from the experience of Poland and the USA to show that deliberate policy-driven revitalisation of industrial facilities substantially improves workforce output, lessons that carry direct relevance to the industrial development needs of Taraba State.

The productivity challenges facing industrial establishments in Taraba State are deeply connected to weak policy innovation and poor implementation of labour, technological, and governance frameworks. Despite growing global and African evidence that policy innovation directly improves workers' productivity, industrial establishments in Taraba State continue to operate under outdated regulatory systems that do not encourage efficiency, technology adoption, or human capital investment. Oeij et al. (2012) and Pot et al. (2016) show that workplace innovation driven by intentional policy frameworks consistently improves both organisational performance and employee well-being, outcomes that remain largely absent in Taraba State's industrial context. Mazzucato and Rodrik (2023) further argue that industrial policy built on clear conditionalities and accountability structures produces far better productivity outcomes. This paper is therefore motivated by the need to explore policy innovation as a practical and evidence-backed solution to these persistent productivity gaps. The main objective of the paper is to examine how policy innovation can enhance workers' productivity in industrial establishments in Taraba State. The specific objectives are to: examine the role of labour policies in enhancing workers' productivity; assess the influence of technological policy innovation on workforce productivity; analyse the effect of institutional and governance policies on employee productivity; and evaluate how policy innovation can improve industrial efficiency and competitiveness in Taraba State. The paper is structured as follows: Section 2 presents conceptual clarifications and the theoretical Framework; Section 3 outlines the methodology; Section 4 presents findings and discussions; Section 5 identifies study limitations; and Section 6 provides conclusions and recommendations.

Literature Review

Policy innovation refers to the deliberate introduction of new or significantly improved approaches, instruments, and frameworks by governments and institutions to address developmental challenges and improve economic outcomes. It goes beyond simple policy reform by incorporating creative thinking, experimentation, and evidence-based redesign of governance systems to achieve better results. Varsha and Dhanaraj (2025) describe policy innovation as a structured mechanism through which governments stimulate technological advancement and industrial competitiveness, while Basant (2018) views it as a bridge between public governance and industrial performance, arguing that innovative policies create enabling environments for productivity and growth. Chen et al. (2024) demonstrate that policy experimentation, as seen in China's Made in China 2025 initiative, directly influences innovation performance at the firm level, showing that how policies are designed and tested

matters as much as what they intend to achieve. Mazzucato and Rodrik (2023) further argue that policy innovation must be accompanied by clear conditionalities and accountability structures to produce meaningful economic outcomes. Al Raee et al. (2017) add that innovation policy dimensions including research and development investment, education, and business-friendly regulation collectively determine how effectively policy innovation translates into labour productivity growth. Rodrik (2022) also stresses that policy innovation must be purposefully directed at creating quality employment and improving worker welfare within industrial systems.

Workers' productivity refers to the measure of output generated by an employee or group of employees relative to the inputs of labour, time, and resources invested in the production process. It is commonly measured through indicators such as output per worker, output per hour worked, and total factor productivity, all of which provide useful insight into how efficiently labour is being utilised within an organisation or sector. Hall and Mohnen (2013) explain that productivity is fundamentally linked to innovation, arguing that firms and economies that invest in innovation consistently outperform those that do not in terms of output per worker. Mairesse et al. (2025) further affirm that labour productivity growth depends significantly on the capacity of organisations and governments to sustain innovation activities over time. Sime and Tadesse (2025) provide empirical evidence from African countries showing that firm-level innovation positively and significantly raises labour productivity and employment levels. The World Bank (2020) reports that productivity growth is the single most important driver of long-term economic prosperity in developing countries, emphasising its centrality to industrial development. Oeij et al. (2012) also show that workplace innovation, when properly supported by policy, raises both employee well-being and organisational performance, confirming that workers' productivity is not merely a technical measure but a reflection of the broader policy and institutional environment within which workers operate.

Industrial establishments are organised economic units engaged in the production of goods, processing of raw materials, or provision of industrial services through systematic use of labour, machinery, technology, and capital. They range from large-scale manufacturing plants and agro-processing factories to small and medium enterprises operating within defined industrial clusters or economic zones. Liu and He (2024) describe industrial establishments as foundational units of modern economic systems, arguing that their performance directly determines the quality and sustainability of a country's productive capacity. UNIDO (2022) affirms that industrial establishments serve as critical engines of employment generation, skills development, and technological transfer, particularly in developing economies where formal employment opportunities remain limited. Kuzior et al. (2022) highlight that industrial establishments, when revitalised through deliberate policy interventions, contribute significantly to economic recovery, social inclusion, and regional development, as evidenced in post-industrial transformation experiences in Poland and the United States. Wang et al. (2023) further show that industrial establishments located within agglomeration zones supported by innovation and institutional policies record significantly higher total factor productivity than isolated firms. Falck et al. (2010) provide direct evidence that cluster-oriented industrial policies improve innovation outputs within establishments, reinforcing that the performance is deeply shaped by the policy environments and quality of institutional support available.

Linkages Between Policy Innovation and Workers' Productivity

a. Labour Policy Innovation and Workers' Productivity

Labour policy innovation refers to the redesign and improvement of regulations, standards, and institutional arrangements that govern the relationship between employers and employees within industrial settings, with the ultimate goal of improving worker motivation, welfare, and output. When labour policies are fair, consistently implemented, and responsive to the needs of workers, they create conditions that directly support higher productivity levels. Rodrik (2022) argues that industrial policy must be fundamentally reoriented toward generating good quality jobs, noting that poorly designed labour frameworks depress worker motivation and reduce industrial efficiency. Black and Lynch (2004) provide empirical evidence showing that workplace innovation driven by progressive labour policies contributes significantly to productivity growth, with innovative workplaces recording output improvements of up to 25% compared to traditional work arrangements. Oeij et al. (2012) further confirm that workplace innovation anchored in supportive labour policies consistently improves both organisational performance and employee well-being. Pot et al. (2016) add that labour-focused policy innovation creates environments where workers are more engaged, better trained, and more committed to organisational goals. Antonioli et al. (2010) specifically demonstrate in their study of small and medium enterprises that productivity outcomes are strongly shaped by the interaction between innovation strategies and industrial relations frameworks.

b. Technological Policy Innovation and Workers' Productivity

Technological policy innovation involves the deliberate design and implementation of policies that promote the adoption of new technologies, digital tools, automation systems, and digital transformation practices within industrial establishments, all aimed at making workers more efficient and production processes more competitive. Wang et al. (2025) establish that digitalisation and technological innovation together serve as powerful drivers of sustainability and productivity improvement across industrial sectors. Loukis et al. (2019) demonstrate that information and communication technology combined with organisational innovation significantly determines workplace productivity in the digital era, with firms embracing technology-driven policies consistently outperforming those that do not. Arvanitis (2005) provides evidence from the Swiss business sector showing that computerisation and workplace organisation improvements driven by technology policies raise skilled labour productivity measurably. Gao and Zhang (2023) show from Chinese state-owned enterprises that innovation incentive policies targeting knowledge workers significantly improve innovation performance and output quality. Tresselt and Scarpetta (2004) further argue that the productivity benefits of new technology adoption are amplified when complementary labour market policies are in place to support workforce adjustment. Costantini et al. (2017) also demonstrate that policy mixes combining regulatory instruments with incentive-based technological policies generate stronger eco-innovation outcomes, confirming that the design of technological policies matters greatly for the scale of productivity gains achieved within industrial establishments.

c. Institutional Governance Policies and Workers' Productivity

Institutional governance policies refer to the rules, regulatory structures, accountability mechanisms, and organisational frameworks that governments and industry regulators put in place to guide the conduct of industrial establishments and ensure that workers operate within environments that support efficiency and fairness. Strong institutional governance creates

predictability, reduces corruption, and establishes the conditions under which workers can perform at their best. Basant (2018) argues that the linkages between industrial innovation and public policy are significantly mediated by the quality of institutional frameworks, suggesting that weak governance systems undermine even well-intentioned productivity policies. Mazzucato and Rodrik (2023) contend that industrial policies built around clear conditionalities and strong accountability structures consistently deliver better productivity and innovation outcomes than those lacking institutional grounding. Falck et al. (2010) provide direct evidence that cluster-oriented industrial governance policies improve innovation outputs and firm-level productivity in regional economies. Chen et al. (2022) further demonstrate from China's industrial policy experience that local governance quality significantly determines how effectively industrial policies translate into productivity improvements at the firm level. Al Raei et al. (2017) add that government effectiveness is a statistically significant predictor of labour productivity growth, reinforcing that institutional governance is not merely a background condition but an active determinant of how well workers perform within industrial establishments across different economic contexts.

d. Economic and Industrial Development Policies and Workers' Productivity

Economic and industrial development policies encompass a broad range of government interventions, including investment incentives, subsidies, infrastructure development programmes, industrial cluster support, and trade facilitation measures that collectively create the structural conditions necessary for improving industrial productivity and workforce performance. These policies work by reducing the cost of production, expanding market access, improving physical infrastructure, and making it easier for industrial establishments to invest in technology and human capital. Mackintosh et al. (2007) argue that policies bridging innovation, industrial growth, and poverty reduction are especially important for developing economies, where productivity gaps are deepest and most persistent. Liu and He (2024) demonstrate that synergistic industrial agglomeration supported by purposeful development policies generates new quality productive forces that drive high-quality manufacturing performance. Wang et al. (2023) further show that industrial agglomeration policies, when reinforced by innovation support and reduced institutional distance, significantly raise urban total factor productivity. Shao et al. (2024) provide evidence that new quality productivity frameworks embedded in industrial structure policies improve economic output when complemented by environmental regulation. Zhao et al. (2023) also confirm that green fiscal policies promoting innovation investment significantly raise industrial productivity even in challenging economic periods. Uyarra and Ramlogan (2012) similarly find that cluster-based industrial development policies improve innovation performance, reinforcing that the design and implementation quality of economic and industrial development policies directly determines the level of productivity that workers within industrial establishments are able to achieve.

Theoretical Framework

Institutional Theory

Institutional Theory, originally developed by Meyer and Rowan (1977) and later advanced by DiMaggio and Powell (1983), provides a powerful explanatory framework for understanding how organisations shape and are shaped by the broader rules, norms, regulations, and cultural

expectations of their institutional environments. The theory argues that organisations do not operate in isolation but are deeply embedded in institutional contexts that influence their structures, behaviours, and performance outcomes. This theoretical lens is particularly relevant to the present study because it explains how policy innovation, as an institutional force, can reshape the behaviour of industrial establishments and improve workers' productivity. Three mechanisms of institutional isomorphism identified by DiMaggio and Powell (1983) are instructive for understanding how policy innovation diffuses across industrial establishments: coercive isomorphism, where establishments comply with new policy framework due to regulatory pressure; mimetic isomorphism, where firms adopt productive practices observed in successful peers; and normative isomorphism, where professional norms and standards shape industrial behaviour. Each mechanism can serve as a channel through which well-designed policy innovation reaches industrial establishments and shapes productivity outcomes. Basant (2018) supports this perspective by arguing that the linkages between industrial innovation and public policy are fundamentally institutional in nature, requiring governance systems that align regulatory frameworks with productivity objectives. Mazzucato and Rodrik (2023) further affirm that industrial policy effectiveness depends heavily on institutional conditionalities and accountability structures, both of which are core concerns of Institutional Theory. Applied to industrial establishments in Taraba State, the theory suggests that persistent productivity challenges reflect institutional weaknesses, including poor policy enforcement, weak regulatory oversight, and the absence of innovation-supportive norms. Chen et al. (2022) confirm that local institutional quality significantly determines how industrial policies translate into productivity improvements, reinforcing that strengthening institutional frameworks in Taraba State is a prerequisite for meaningful and sustainable workforce productivity enhancement.

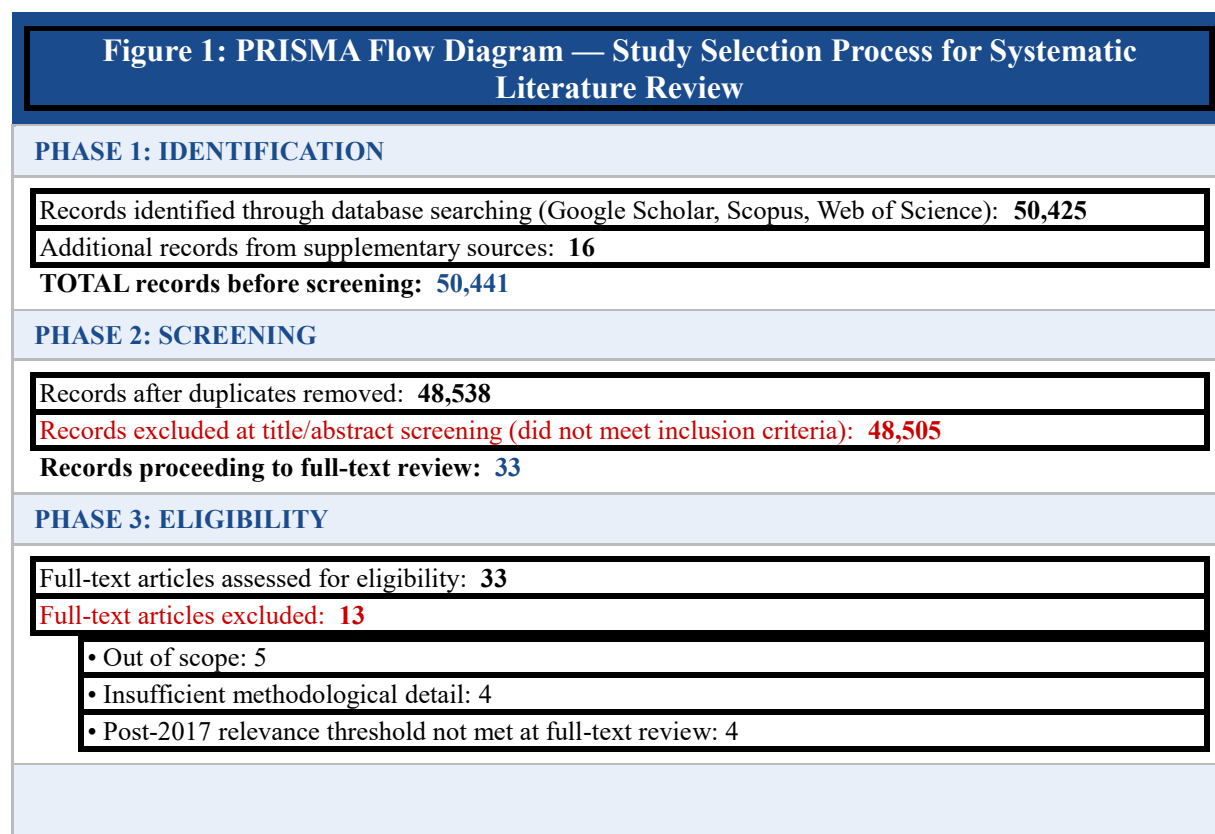
Methodology

This paper adopts a Systematic Literature Review (SLR) as its research design. This approach was chosen because it provides a rigorous, transparent, and replicable method for identifying, evaluating, and synthesising existing evidence on policy innovation and workers' productivity. Unlike a narrative review, the SLR follows a structured protocol that minimises selection bias and ensures that conclusions are grounded in the best available evidence. The review follows the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines to ensure transparency and methodological rigour throughout the study selection and reporting process. Mairesse et al. (2025) and Hall and Mohnen (2013) both rely on systematic review approaches to draw credible conclusions about innovation and productivity linkages across multiple country contexts, validating this methodological choice.

Data for this study were sourced from three major academic databases: Google Scholar, Scopus, and Web of Science. These databases were selected because they offer broad, credible, and peer-reviewed coverage of literature on industrial policy, innovation, and labour productivity across global, African, and Nigerian contexts. Google Scholar provided wide accessibility including grey literature, while Scopus and Web of Science supplied high-quality indexed journals with strong citation metrics. Reports from credible institutions including the World Bank (2020), UNIDO (2022), and the National Bureau of Statistics (2024) were also consulted to supplement academic sources with relevant policy and statistical evidence, ensuring both theoretical depth and empirical grounding across the review.

The search strategy employed specific keywords and Boolean operators to retrieve relevant studies systematically. Keywords used included "policy innovation," "workers' productivity," "industrial productivity," "labour policy reform," "technological innovation and workforce," "industrial development Nigeria," and "industrial establishments Taraba State." Boolean operators AND and OR were applied to broaden or narrow results where necessary. The search was conducted in January 2025 across all three databases. The combination was deliberately designed to capture literature across global, African, and Nigerian dimensions. As documented in Figure 1 below, the search across all three databases initially returned 50,425 records through database searches and an additional 16 records from other sources, giving a total of 50,441 records before the screening process commenced.

Clear inclusion and exclusion criteria were applied to ensure only relevant and high-quality studies were retained. Studies were included if they were published between 2004 and 2025; focused on policy innovation, industrial productivity, labour policies, or workplace innovation, and were peer-reviewed journal articles or reports from credible international institutions. Studies were excluded if they were; outside the thematic scope, lacking sufficient methodological or empirical details, duplicates across databases or failing to meet the post-2017 relevance threshold for policy innovation debates at Full text review stage. It should be noted that while the stated inclusion window begins from 2004, four studies falling within this window were excluded at full-text review because their empirical content did not adequately reflect contemporary policy innovation discourse relevant to this study's focus. The distinction is documented transparently in Figure 1 below.



PHASE 4: INCLUDED

Studies included in qualitative synthesis: 20

Inclusion rate: approximately 0.04% of total records identified. The high initial record count reflects the breadth of search terms applied intentionally across three major databases to ensure comprehensive initial coverage prior to structured screening.

A systematic quality appraisal process was applied to all 33 full text articles assessed for eligibility. Quality was evaluated using a five-criterion framework adapted from the Critical Appraisal Skills Programme (CASP) checklist, assessing each study on: clarity of research question, appropriateness of methodology, rigour of data collection or analysis, credibility and transparency of findings, and relevance to this study's core objectives. Only studies meeting satisfactory standards on at least three of the five criteria were retained. The review was conducted primarily by the first author as lead researcher, with supervisory oversight from the second author. The single-reviewer screening process is acknowledged as a methodological limitation, discussed further in section 5.

Data extraction was carried out thematically, with each of the 20 retained studies reviewed for key arguments, empirical findings, methodological approach, and relevance to the paper's four specific objectives. A thematic synthesis approach was adopted because it allows findings to be organised around recurring conceptual patterns across diverse country and sectoral contexts rather than simply summarising individual studies. Comparative analysis was also applied to identify convergences and divergences across studies drawn from developed, emerging, and African economies. Oeij et al. (2012), Sime and Tadesse (2025), and Chen et al. (2024) were among the key studies whose findings were thematically extracted and comparatively analysed to generate the paper's discussion, conclusions, and policy recommendations specifically tailored to industrial establishments in Taraba State.

Findings and Discussion

Policy Innovation and Industrial Productivity

The evidence from the reviewed literature consistently confirms that policy innovation is a significant and measurable driver of industrial productivity across different economic contexts. Chen et al. (2024) demonstrate that China's Made in China 2025 industrial policy experimentation produced notable improvements in firm-level innovation performance, with enterprises under the policy framework recording stronger research and development outputs and higher productivity ratios compared to non-participating firms. Zheng et al. (2025) further show that place-based industrial relocation policies in China increased firm innovation output by approximately 15%, confirming that where and how industrial policies are targeted matters considerably for productivity outcomes. Varsha and Dhanaraj (2025) affirm that strategic industrial policies advance technological innovation in ways that directly improve workforce efficiency, while Wang et al. (2025) establish that digitalisation combined with technological innovation serves as a powerful driver of productivity and sustainability improvements. Mairesse et al. (2025) provide broad empirical grounding by confirming that innovation activities consistently explain a significant proportion of productivity growth across firms and industries, reinforcing that policy innovation is not peripheral but central to industrial performance improvement globally.

The relationship between policy innovation and industrial productivity is however not automatic and requires deliberate institutional support to materialise into tangible workforce efficiency gains. Basant (2018) cautions that translating innovation-policy linkages into productivity outcomes depends heavily on the quality of institutional frameworks and the capacity of governments to implement policies consistently. Falck et al. (2010) provide direct evidence that cluster-oriented industrial policies improve innovation and productivity only when accompanied by strong regional governance and adequate resource allocation. Mazzucato and Rodrik (2023) argue forcefully that industrial policy without conditionalities and accountability mechanisms tends to produce rent-seeking behaviour rather than genuine productivity improvement, a particularly relevant warning for developing economy contexts. For Taraba State, whose approximately 847 industrial establishments operate at below 45% average capacity utilization, these findings suggest that targeted policy innovations in industrial clustering, technology adoption incentives, and labour reform can produce measurable productivity improvements, provided institutional capacity is deliberately built alongside policy design. Liu and He (2024) add that synergistic industrial agglomeration driven by coherent development policies generates new quality productive forces necessary for high-quality manufacturing performance. These findings collectively suggest that the productivity benefits of policy innovation are real but conditional on the institutional, governance, and implementation environments within which such policies operate.

Labour Policy Reforms and Worker Performance

Labour policy reforms occupy a central position in the broader conversation about workers' productivity in industrial establishments, with reviewed evidence consistently showing that the design and implementation quality of labour frameworks directly shapes employee motivation, commitment, and output. Rodrik (2022) argues that industrial and labour policies must be reoriented toward generating good quality jobs, noting that workplaces characterised by fair labour conditions consistently record higher productivity levels than those marked by exploitation and poor worker welfare. Black and Lynch (2004) provide compelling empirical evidence from the United States showing that innovative workplace practices driven by progressive labour policies improved productivity by up to 25% compared to traditional arrangements, confirming that labour policy reform is a concrete productivity intervention rather than merely a welfare concern. Oeij et al. (2012) similarly demonstrate that workplace innovation anchored in supportive labour policies reliably improves both organisational performance and employee well-being, with firms reporting better output metrics when workers feel secure, fairly compensated, and institutionally supported. Antonioli et al. (2010) further show from their analysis of small and medium enterprises that productivity outcomes are strongly shaped by the quality of industrial relations frameworks and innovation strategies operating simultaneously within firms.

Beyond motivation, labour policy reforms also shape worker productivity through their effects on skills development, workforce adaptability, and organisational learning. Pot et al. (2016) argue that labour-focused policy innovation creates environments where workers are more engaged, better trained, and more aligned with organisational productivity goals, suggesting that labour policy reform is fundamentally a human capital investment strategy. Vivarelli (2014) demonstrates that the relationship between innovation, employment, and skills in both advanced and developing countries confirms that labour policies supporting skills upgrading

consistently yield productivity dividends. Grolleau et al. (2022) add an important dimension by showing empirically that innovation activities within firms are positively associated with job satisfaction among workers, suggesting a virtuous cycle where labour policy-driven innovation improves worker satisfaction which in turn raises productivity. Ibrahim and Alhassan (2022) confirm that employee productivity and job satisfaction together mediate the relationship between service innovation and organisational performance. For Taraba State specifically, these findings indicate that labour policy reform must go beyond legislation to encompass active implementation, monitoring and structured workers engagement mechanisms, particularly in the agro-processing and artisanal manufacturing sectors where labour welfare compliance is weakest.

Technological Policies and Workforce Efficiency

Technological policy innovation has emerged from the reviewed literature as one of the most potent mechanisms through which governments and industrial establishments can drive workforce efficiency in the modern industrial economy. Wang et al. (2025) establish that digitalisation and technological innovation together constitute powerful drivers of sustainability and productivity improvement, with firms operating under technology-supportive policy frameworks consistently recording superior output per worker ratios. Loukis et al. (2019) demonstrate that information and communication technology combined with organisational innovation significantly determines workplace productivity in the digital era, with technology-adopting firms outperforming non-adopters by measurable margins across multiple European contexts. Arvanitis (2005) provides evidence from the Swiss business sector confirming that computerisation and workplace organisation improvements linked to technology policies raise skilled labour productivity in ways that manual or traditional production arrangements cannot replicate. Gao and Zhang (2023) further show from Chinese state-owned enterprises that innovation incentive policies targeting knowledge workers significantly improve innovation performance and output quality, demonstrating that technology policy benefits extend beyond physical production to encompass knowledge-intensive industrial activities. Tressel and Scarpetta (2004) add that productivity gains from technology adoption are maximised when complementary labour market and training policies are simultaneously in place.

Despite the strong evidence supporting technological policy innovation as a workforce efficiency driver, the literature also raises important concerns about implementation gaps and uneven distribution of technology policy benefits across different types of industrial establishments. Costantini et al. (2017) show that the effectiveness of technology-related policy mixes depends critically on how regulatory instruments and incentive mechanisms are combined, suggesting that poorly designed technology policies can fail to generate the intended productivity improvements. Wu and Gao (2022) demonstrate from China's eco-industrial park experience that technology-supportive environmental policies improve urban green innovation, but only in contexts where institutional infrastructure exists to facilitate technology diffusion among firms. Ozgen (2021) adds that the economics of diversity in innovation reveals that technology policy benefits are unevenly distributed across different workforce segments, with less-skilled workers often being left behind unless technology policies are explicitly inclusive in their design. Hui et al. (2017) further confirm from Asian manufacturing food industry evidence that organisational learning combined with technology innovation drives

organisational performance, reinforcing that technology policy alone is insufficient without complementary human capital and learning frameworks. These nuances are critical implications for Taraba State, where the predominantly low-skill industrial workforce and limited digital infrastructure mean that technology policy must be carefully sequenced. Blanket digitalization initiatives without complementary skills development and infrastructure investment risk widening rather than closing the productivity gap in the state's industrial establishments.

Governance and Institutional Policies in Industrial Development

The reviewed evidence firmly establishes that governance and institutional policies are foundational determinants of industrial productivity, as they create the regulatory and accountability environments within which workers and organisations either thrive or underperform. Chen et al. (2022) demonstrate from China's local industrial policy experience that governance quality at the subnational level significantly determines how effectively industrial policies translate into productivity improvements, with better-governed localities consistently recording higher firm-level productivity gains than poorly governed counterparts. Mazzucato and Rodrik (2023) argue that industrial policy without strong institutional conditionalities and accountability structures generates rent-seeking behaviour rather than genuine productivity improvement, a finding that carries serious implications for developing economies with weak governance systems. Basant (2018) similarly contends that institutional frameworks linking innovation policy and industrial performance are critical mediating variables, suggesting that governance reform is a prerequisite rather than a complement to productivity-enhancing industrial policy. Al Raei et al. (2017) provide econometric evidence confirming that government effectiveness is a statistically significant predictor of labour productivity growth, reinforcing that institutional governance is an active determinant of how well workers perform within industrial systems rather than merely a background condition.

Beyond the direct effects of governance quality, institutional policies also shape industrial productivity through their influence on investment climate, regulatory certainty, and workforce management standards. Falck et al. (2010) demonstrate that cluster-oriented industrial governance policies improve innovation outputs and firm productivity in regional economies by creating coordinated environments that reduce transaction costs and promote knowledge sharing among firms. Uyarra and Ramlogan (2012) add that cluster policy effectiveness depends significantly on the governance mechanisms through which clusters are managed and supported, confirming that institutional design quality mediates the productivity outcomes of even well-intentioned industrial policies. Kuzior et al. (2022) draw from post-industrial revitalisation experiences in Poland and the United States to show that institutional policy frameworks governing the transformation of industrial facilities directly determine the scale and sustainability of productivity improvements achieved. Shao et al. (2024) further demonstrate that new quality productivity frameworks embedded in industrial structure policies produce better economic outcomes when complemented by regulatory instruments such as environmental regulation. The cumulative weight of this evidence suggests that improving governance and institutional policy frameworks in Taraba State is not optional but fundamentally necessary for any meaningful improvement in industrial workforce productivity.

Implications for Industrial Establishments in Taraba State

The findings of this review carry direct and urgent implications for industrial establishments in Taraba State, where persistent productivity challenges reflect the very policy innovation deficits that the reviewed literature consistently identifies as productivity-suppressing. The National Bureau of Statistics (2024) documents a 3.2% decline in Nigeria's industrial sector labour productivity between 2019 and 2023, and subnational evidence suggests that states like Taraba, with average industrial capacity utilization below 45% and an estimated 62,000 workers in the formal and semi-formal individual sector faces productivity constraint significantly more severe than the national average, reflecting the compounding effects of weak policy frameworks, poor infrastructure and inadequate institutional capacity. The evidence from Chen et al. (2024), Zheng et al. (2025), and Varsha and Dhanaraj (2025) collectively demonstrates that deliberate policy innovation in the areas of industrial targeting, technology adoption, and labour reform produces measurable productivity improvements, outcomes that Taraba State's industrial policymakers can actively pursue by redesigning existing regulatory frameworks to be more innovation-supportive and productivity-oriented. Liu and He (2024) and Wang et al. (2023) further show that industrial agglomeration supported by coherent governance and innovation policies significantly raises total factor productivity, suggesting that Taraba State's dispersed and poorly coordinated industrial clusters represent a missed opportunity that structured industrial policy can address.

Beyond policy design, the reviewed evidence also highlights the critical importance of implementation quality and institutional capacity for translating policy innovation into real productivity gains in Taraba State's industrial context. Mazzucato and Rodrik (2023) stress that policy conditionalities and accountability mechanisms must be embedded in industrial policy frameworks to prevent resource wastage and ensure that productivity targets are actually met. Oeij et al. (2012) and Pot et al. (2016) demonstrate that workplace innovation anchored in supportive labour policies consistently improves worker well-being and organisational performance, outcomes that are urgently needed in Taraba State's industrial establishments, where poor working conditions continue to suppress employee motivation and output. Sime and Tadesse (2025) confirm from African evidence that firm-level innovation drives labour productivity and employment creation, directly validating the argument that policy innovation is not merely a theoretical prescription but a practical and evidence-backed pathway to industrial productivity improvement in contexts comparable to Taraba State. Kuzior et al. (2022) and Wu and Gao (2022) add that technology-supportive and institutionally grounded policies can revitalise even underperforming industrial environments, providing Taraba State with a clear and evidence-based roadmap for using policy innovation to drive sustainable improvements in workers' productivity and industrial competitiveness.

Conclusion Recommendations

Conclusion

This paper has examined policy innovation as a pathway for enhancing workers' productivity in industrial establishments in Taraba State, Nigeria, drawing on a systematic review of 20 carefully selected studies from global, African, and Nigerian contexts. The evidence reviewed confirms that policy innovation, spanning labour reforms, technological policies, governance frameworks, and economic development strategies, plays a decisive and measurable role in improving workforce efficiency and industrial competitiveness. Mairesse et al. (2025), Hall

and Mohnen (2013), and Van Reenen (2020) collectively establish that innovation is among the strongest predictors of productivity growth, while Chen et al. (2024), Zheng et al. (2025), and Varsha and Dhanaraj (2025) demonstrate that deliberately designed industrial policies translate into concrete firm-level productivity improvements. The Institutional Theory framework adopted in this paper further confirms that productivity outcomes in industrial establishments are deeply shaped by the quality of institutional environments within which policies are designed and implemented. For Taraba State, approximately 847 industrial establishments operate at below 45% average capacity utilization and the NBS (2024) documents declining industrial labour productivity, policy innovation is not a luxury but structural necessity. Its effectiveness however depends not only on policy design but equally on the strength of institutional frameworks, accountability structures, and implementation mechanisms that bring such policies to life within industrial establishments. This paper contributes to the literature by systematically applying global and African evidence to the underexplored subnational context of Taraba State and offers an evidence-based framework and industrial managers committed to sustainable productivity improvement in Nigeria's north-eastern industrial corridor. The following recommendations are offered to guide policymakers, industrial managers, and institutional actors in Taraba State toward evidence-based strategies for sustainable productivity improvement.

Recommendations

Based on the findings and conclusions of this paper, the following recommendations are put forward:

1. Governments at both federal and state levels should develop innovative labour policies that promote fair working conditions, competitive wages, skills development, and worker welfare. In Taraba State specifically, this should include enforcement of minimum wage legislation, introduction of sectors-specific skills development programmes and establishment of occupational health and safety standards tailored to agro-processing and artisanal manufacturing establishments.
2. Industrial establishments in Taraba State should actively adopt technology-driven policies and digital transformation strategies to improve operational efficiency. Given the predominantly low skill workforce and limited digital infrastructure technology adoption should be sequenced and complemented by targeted workforce training to ensure that productivity gains from technology are broadly shared.
3. Institutional reforms should be urgently pursued to strengthen governance, accountability, and regulatory oversight in industrial management across Taraba State, given that governance quality is a fundamental determinant of how effectively industrial policies translate into real productivity improvements at the firm and sector levels.
4. Policymakers in Taraba State should deliberately design and implement policies that support sustainable industrial development, including cluster development initiatives, infrastructure investment, and innovation incentive frameworks, as structured and institutionally grounded industrial development policies significantly raise total factor productivity and improve workforce performance across diverse industrial contexts.

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