"The Supervision Deficit: Redesigning Education, Industrial Policy, and Fiscal Incentives for AI-Driven Productivity Growth in South Africa

Postgraduate 1107

Introduction: The Credibility Gap and the Coordination Problem

The first Draft National Artificial Intelligence Policy in South Africa was retracted in April 2026 after the discovery of an internal audit revealing that the reference list had false citations, mostly probably fabricated through the use of artificial intelligence without verification (South African Government News Agency, 2026c). As stated by the Communications Minister, Solly Malatsi, this situation has “jeopardized the integrity and credibility of the draft policy” and demonstrated that the ministry was not able to achieve the standards expected of an institution tasked with leading the country’s digital policy environment (South African Government News Agency, 2026c). The irony here lies in the fact that while the policy aimed at regulating artificial intelligence, the policy itself became a victim of this regulation failure. The credibility gap here is not peripheral to the policy problem but central to it.

The AI Policy Framework of 2024 views AI as a technology that "promotes economic development and social well-being through a human-centered approach whereby the applications of AI are such that they 'complement rather than substitute human decision making'" (OECD AI Policy Observatory, 2026). However, structural unemployment remains unresolved in South Africa as the expanded unemployment rate stands at 44% for the second quarter of 2026 (Statistics South Africa, 2026). The question in South Africa is not whether AI should be utilized but how to ensure that AI complements and not substitutes labor and that the benefits of AI are reaped by the correct people.

This essay argues that South Africa requires institutional coupling; namely, educational reform to foster cognitive infrastructure, industrial policy to focus on complementarity, and fiscal policy to create employment incentives. This essay will confront the credibility problem directly: "Coordination is not possible without institutional change, and that is not possible without accountability."

Education: From Tool Training to Computational Infrastructure

Education in South Africa is now being hit from both sides. On one hand, the country produces graduates who have acquired skills that are not in demand on the market. On the other hand,

the country risks producing graduates with the skills that will become redundant way before the individual’s first promotion. It goes without saying that the problem needs to be tackled not through "tool training" but rather computational infrastructure and analytical skills.

The 2026 Budget prepared by the Department of Basic Education indicates that education constitutes the largest part of consolidated expenditures accounting for 23.7% (Department of Basic Education, 2026). This is the initial step in the process of developing a policy that will help develop AI-based skills among the population. As such, this point has already been stated in the "Capacity and Talent Development" Strategic Pillar of the Draft AI Policy (Department of Communications and Digital Technologies, 2024).

Artificial Intelligence Institute of South Africa (AIISA) is a multi-hub institute functioning from three universities and holds great promise of being a strategically aggregated resource for development of AI research locally. As per the UNESCO assessment, AIISA's role in "building talent, standards, and applied research" is seen as a good practice to adopt in forming an institution in a resource-constrained environment (UNESCO, 2026). The framework also acknowledges the significance of "localisation and language justice" by providing indigenous

language NLP services such that the services function in all official languages.

Reform of institutions alone cannot resolve the issue of educational inequality. Since the South African dualistic system includes well-resourced former Model C schools and under-resourced township and rural schools, there is a chance that AI education might worsen the already existing gap between them unless the curriculum is specifically developed in order to promote inclusion. As per the UNESCO analysis, since "the digital divide is social as much as technical", the country has an above 31% rate of female unemployment and many households are headed by women (UNESCO, 2026).

Industrial Policy: Balancing Between Displacement and Complementarity

Regarding the effects of AI on employment in South Africa, the current literature is not ambivalent anymore. The research carried out using structural vector autoregressive technique based on quarterly data between 2014 and 2024 shows "there is a direct and statistically significant decline in employment in the manufacturing industry," which is experienced in the short and medium run. "By tenth quarter, the effect of AI shocks represents

30 percent of manufacturing employment variance" (Nzama et al., 2025).

The risk distribution according to sectors is of particular importance when designing policies. According to research done by Old Mutual Investments, administration, customer service, data entry, junior financial analyst and elementary programming are the professions which are most vulnerable to being automated by artificial intelligence technologies (ITWeb, 2026). The impact will be most significant on young employees, between the ages of 20 and 30, who will face reduced possibilities to enter the workforce due to the increased automation of routine cognitive jobs by the firms. According to Hywel George, the director of investments at Old Mutual Investment Group: "One of the biggest risks that South Africa faces is that entry-level and junior positions are becoming obsolete. It is an important first step on the career ladder for many young people. Without that first step on the career ladder, mobility becomes impossible" (ITWeb, 2026).

The distribution of risk across sectors has its macroeconomic dimension that is usually overlooked. "According to Patrice Rassou, even though occupations at risk from the generative AI technology make up just a fourth to a third of all employed people, the higher earnings make them more weighty in the

proportion of pay than that in South Africa" (Business Day, 2026). Thus, "the AI risk might crystallize among a smaller group of high-earning knowledge workers whose salaries support most of the discretionary spending" (Business Day, 2026). As more than half of economic growth of the GDP comes from consumption, the disappearance of high-earners might have stabilizing effects. The sectors that are immune to the substitution due to AI are the agriculture sector, the mining sector, utilities, the construction sector, and the hospitality sector that has many elements of personal interaction and these sectors make for one-quarter of the GDP, while about 20 percent consisting of logistics and retail front-end activities have very little exposure to the generative AI technology (Business Day, 2026). This imbalance is significant when one considers the matter from an industrial policy perspective, because the industries that cannot be substituted with AI are precisely those that benefit most from AI-induced increases in productivity.

This means that the policy interventions need to be geared towards augmented and not substituted use of AI technology. In fact, the idea of human monitoring in the Draft Policy can be considered as a normative standard as AI technology needs to be viewed as "augmenting rather than replacing human decision-making" (Department of Communications and Digital Technologies, 2024). The quality control and predictive maintenance of AI in manufacturing industry result in decreasing

defects and increase in the number of technicians and data analysts employed. Empirical studies recommend "linking workforce development policies with industrial policies that promote AI technology to complement labor force" (Nzama et al., 2025).

The proposed regulatory regime in the Draft AI Policy, namely the National AI Commission, the AI Ethics Board, the AI Regulatory Authority, and the AI Ombudsperson, is an institution through which differentiated incentive schemes can be managed (Department of Communications and Digital Technologies, 2024). However, the credibility issue, highlighted earlier on, becomes exceedingly relevant in this regard. How credible is a department that has forged references when it comes to managing complex incentive schemes? The "human-in-the-loop" policy itself becomes an ethical standard, through which corporations supported by the government can be asked to demonstrate their capability (UNESCO, 2026).

Fiscal Incentives: Going from Facilitating the Process to Acknowledging the Result

A tough fiscal situation is faced in South Africa. As per the 2026 Budget, economic growth will be around 1.6% while the country will be able to stabilize its debt at 78.9% of the GDP (South African Government News Agency, 2026a). The budget of 2026

is described by the finance minister Godongwana as being an important turning point for which the consolidated deficit will be reduced to 4% of the GDP (South African Government News Agency, 2026b). It helped make the country’s data infrastructure at par with electricity, ports, and transport systems, indicating that the country wants to be the innovation center on the continent.

In this light, the Draft Policy proposes various fiscal policies in the form of tax credits and AI Innovation Fund (Department of Communications and Digital Technologies, 2024). The Section 11D R&D Tax Incentive facilitates the deduction of 150% from the qualifying expenditure on R&D until 2033. Recently, certain changes have been brought to the measure permitting the claiming of expenditures on the qualifying software development for internal systems including ERP solutions, fintech, logistics engines, and internal AI (BDO South Africa, 2026a; BDO South Africa, 2026b).

At the same time, tax advisors at BDO note that the policy is "policy-driven and legislated". A project that is commercially significant, expensive, or technologically complex will "not necessarily be an eligible project, unless it meets the legislative requirements for R&D" (BDO South Africa, 2026a). The core issue is whether "the project is seeking to address an actual scientific or technological uncertainty". Simply incorporating AI into a process, no matter how complex, does not represent

technological advancement. According to BDO, "unless the work consists in developing something truly novel in terms of AI capabilities rather than implementing existing technologies, there is likely no technological advancement" (BDO South Africa, 2026a).

A more basic fiscal principle would connect incentives with multipliers of employment. Tax credits may be graduated with low rates offered to companies that substitute capital and high rates offered to companies that create new jobs or do a lot of training. This is not punishing automation; this is simply recalibrating the marginal incentives for investment.

However, as the tax advisors at BDO point out, the tax credit system "is policy-driven and driven by certain legislative criteria." Not every project, "which is commercially important or expensive or technically challenging, will automatically qualify if it does not meet the statutory conditions of R&D" (BDO South Africa, 2026a). The key question in this case is whether the company seeks "a true scientific or technological uncertainty." Using AI in the company's operations, however complicated, is not an advancement. As the specialists at BDO explain, "unless the project is about developing fundamentally new AI technologies rather than just implementing them, there is no technological advance" (BDO South Africa, 2026a).

Tax policy that takes into account multipliers associated with the incentives associated with job creation is one example of a very fundamental tax policy. In this case, the tax rate will be influenced by the number of new jobs that are being created by the firm or the level of retraining involved. "The policy does not 'punish automation,' but changes the marginal investment incentive regime."

Public procurement is one way of achieving this through demand-side leverage. In this case, the draft policy’s concentration on "open standards, interoperability, and procurement processes that are transparent" to "facilitate SMME involvement and reduce vendor lock-in" (Department of Communications and Digital Technologies, 2024). Procurement of AI applications developed locally that meet the employment impact requirement will ensure constant demand for AI applications.

Coupling for the Purpose of Increasing Productivity: The Transmission Mechanism

The above three areas of policy reform are not distinct policies; the effect of these policies on productivity will depend on the degree to which they are coupled. The discussion here focuses on the transmission mechanism that results in productivity from the coupling of institutions.

The transmission mechanism consists of four stages. The first stage involves cognitive-infrastructure education increasing the marginal productivity of labor since it produces people who have the potential to manage, examine and improve AI technologies rather than use them. It is the primary stage because, without such people, the adoption of AI technologies becomes substitutive in South African firms.

Second, industrial policy to make AI complementary increases output per worker based on this skill set. In manufacturing where AI is used for quality control and predictive maintenance, fewer defects and downtimes occur, and these translate into increased output per worker while increasing demand for technicians and data analysts. The SVAR results show that without intentional steering toward complementarity, adoption of AI in manufacturing results in employment reduction without corresponding increases in productivity (Nzama et al., 2025). The role of the industrial policy, in this case, is to redirect the process of adoption from substitution to augmentation.

Third, fiscal incentives to create the employment multiplier effect direct the adoption process towards augmentation. Where tax credits are paid based on the number of new jobs created or retrainings provided by firms, the marginal incentive structure

encourages augmentation. Where credits are granted irrespective of job creation, substitution will be the rational firm strategy. Fiscal incentive design is not an additional redistributive effort; rather, it determines the adoption strategy of firms.

Fourth, the productivity gains free up resources to fund the transition programmes that provide assistance and aid in the transition process for those workers affected. Hence, another positive feedback loop can be created: productivity gains lead to transition assistance leads to social legitimacy, which then ensures sustainable AI adoption and productivity gains.

However, each of these links in the chain is weak. Education creating tool-operators means that the base is lacking. Industrial policy that does not guide but substitutes means that complementarity is never attained. Fiscal incentives that focus on capital formation rather than employment lead to substitution. Productivity gains that do not translate into fiscal space to fund transition programmes leads to transition assistance failures and loss of social legitimacy. Finally, as pointed out earlier, the credibility problem further complicates all these vulnerabilities since a government unable to cite the policies cannot implement the four-step coordination process effectively.

This is why institutional coupling is not an option but a necessity. Productivity, which is the objective, cannot be achieved through

a consideration of education, industry, and finance individually since they depend on one another, and it is the strength of the institutions in charge of harmonizing them that distinguishes success from failure.

Conclusion: From Credibility to Capability

What South Africa lacks is not just technology adaptation but institutionally coordinated approach. The scandal concerning the flip flop of its AI policy shows that the capability to provide credible evidence-based policymaking has been compromised. Any strategy to implement productivity gains via AI would have to begin with the accountability.

The facts speak for themselves: the short-term and long-term negative impact of the AI shocks on the manufacturing employment and specific vulnerability of the entry level and junior jobs along with demand side effect leading to macroeconomic instability (Nzama et al., 2025; ITWeb, 2026; Business Day, 2026). And the same should be expected from the policy reaction: education reform to build cognitive infrastructure, industrial policy to channel AI towards complementarity and fiscal policy to induce employment instead of investment. All these three are interconnected through a four step transmission

mechanism from skills to complementarity to productivity and fiscal capabilities for transition.

"Futures Triangle" from the AI Policy Framework offers an excellent instrument for analysis. The "Push of the Present" is represented by the productivity potential of AI. The "Pull of the Future" is the inclusive growth goal of the National Development Plan. The "Weight of the Past" is the digital divide, skill shortage, and scarring of structural unemployment (Department of Communications and Digital Technologies, 2024).

In the global race for AI, it might be that South Africa's position is unique instead of being on the frontier. However, the unique nature of the country's conditions, such as multilingualism, infrastructure deficit, and high rates of unemployment, makes South Africa need to find its own way of building up intelligence in order to achieve inclusive growth. It would depend on whether South Africa's institutions are to be corruptible or credible institutions, whether AI becomes the engine of inclusive productivity or another source of precarious employment.

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