

Productivity Without Exclusion: A South African AI Bargain for Growth, Work and Fiscal Capacity

1. Introduction: South Africa cannot automate its way out of unemployment

South Africa is being asked to solve two economic problems at the same time. It needs faster productivity growth, yet it enters the artificial-intelligence transition with mass unemployment, weak labour-market absorption and deep inequalities in access to education, networks and technology. In the second quarter of 2026, the official unemployment rate reached 33.6 per cent and 8.5 million people were unemployed (Statistics South Africa, 2026). In such an economy, the relevant policy question is not whether artificial intelligence (AI) should be adopted. It is who captures the productivity dividend, which tasks are automated, which workers are complemented, and whether the fiscal system rewards firms for creating productive capacity or merely for reducing payrolls.

This essay argues for a South African “AI productivity bargain”. Education, industrial policy and fiscal incentives should be redesigned as one system rather than three separate policy silos. Education should build AI-complementary capabilities across schools, TVET colleges, universities and workplaces. Industrial policy should favour AI that expands output, exports, local technological capability and worker productivity rather than subsidising automation for its own sake. Fiscal incentives should reward measurable productivity gains only when firms also invest in workers, entry-level employment and domestic capability. The state should, in short, subsidise augmentation before substitution.

This distinction matters because the labour-market effect of AI is not predetermined. The ILO estimates that one in four workers globally is in an occupation with some generative-AI exposure but argues that job transformation is more likely than wholesale replacement because most occupations still contain tasks requiring human input (Gmyrek et al., 2025). For South Africa, however, even a temporary displacement shock is dangerous. Recent manufacturing evidence finds that a positive AI shock initially contracts employment (Mhlanga and Dunga, 2026). A country with unemployment above one-third cannot treat this as a side effect to be repaired later.

The proposed bargain is organised around an AUGMENT test: Additional productivity, Upskilling, Growth in output and employment, Made-in-South-Africa capability, Equity, New-worker pathways and Tax/public return. Public support for AI should become conditional on these outcomes. The objective is not to slow technology. It is to make technological change serve a labour-surplus economy.

2. The economic problem: productivity gains can coexist with exclusion

AI changes the economics of production because it can operate as both capital and a substitute for cognitive tasks. This creates two opposing channels. The first is an augmentation channel: workers use AI to perform tasks faster, make better decisions, reduce errors and produce more per hour. Lower unit costs can increase competitiveness, output and eventually labour demand. The second is a displacement channel: firms automate tasks previously performed by workers, reducing labour demand before new tasks or industries absorb those workers.

The difference is especially important in South Africa. IMF research using worker-level data, including South Africa, finds that highly educated workers and women tend to have greater occupational exposure to AI, while higher earners are also more likely to work in occupations where AI can complement them (Pizzinelli et al., 2023). Exposure is therefore not the same as vulnerability. A graduate with connectivity, software access and a workplace that trains staff may turn AI into a productivity multiplier. A graduate outside formal employment may experience the opposite: AI can raise the productivity of the already-employed worker while reducing the number of junior vacancies through which outsiders normally enter.

This “missing first rung” deserves more attention in South African policy. Entry-level analysts, administrators, paralegals, researchers, junior accountants and communications workers often learn through tasks that generative AI can now perform quickly. If firms remove those tasks without redesigning entry pathways, the country may produce qualified graduates who are technically educated but economically stranded. That risk is not abstract to marginalised graduates. As trans graduate with an Honours qualification may already confront discrimination, weak professional networks and uncertainty about whether a workplace will be safe or inclusive. AI can widen that distance if firms use it to shrink entry-level recruitment. But the same technology can reduce barriers if it provides low-cost analytical tools, translation, coding assistance, business support and access to markets that were previously available mainly through well-resourced institutions. The policy objective should therefore be to convert AI from a gatekeeper into a capability equaliser.

This is why a conventional “digital skills” response is too narrow. South Africa does not merely have a skills shortage; it has a matching, access and demand problem. Training another cohort in AI tools will not create jobs if firms have no incentive to hire entrants, if small businesses cannot afford computing capacity, or if public incentives reward capital deepening without employment spillovers.

3. Education policy: teach complementarity, not software fashion

The first redesign should move education away from training people for fixed occupations and towards building capabilities that remain valuable as tasks change. AI literacy should be treated as an economic capability, not as a specialist coding subject. At school level, learners need strong literacy, numeracy, statistical reasoning, digital research skills and the ability to interrogate machine-generated outputs. Coding remains useful, but judgement, verification and domain knowledge become more valuable when producing an answer is cheap and evaluating whether it is correct is scarce.

At post-school level, South Africa should create an AI Skills Guarantee built around three routes. First, TVET colleges should establish sector-specific AI studios linked to manufacturing, logistics, agriculture, mining, health administration, tourism and renewable energy. Students should work on actual firm and municipal problems rather than generic software exercises. Second, universities should build interdisciplinary combinations such as economics and data science, law and computational systems, public administration and AI, or health and analytics. Third, every worker or unemployed graduate should be able to accumulate portable, accredited micro-credentials without leaving the labour market for another full degree.

The financing should not begin with a new bureaucracy. Government already spends heavily on education, while the 2026 Budget remains constrained by the need to stabilise public finances (National Treasury, 2026). The immediate reform should therefore redirect part of existing SETA, skills-development and industrial-support expenditure towards verified AI-complementary training. Funding should follow outcomes: completion alone is not enough. Providers should be assessed on employment, earnings progression, workplace adoption and enterprise creation after training.

A second reform should protect the first rung of the career ladder. Firms receiving AI-related public incentives should be required to create paid “AI apprenticeship” places for graduates and TVET students. The apprentice should not compete against AI by doing tasks the machine performs more cheaply; the apprenticeship should teach the worker to supervise, verify and apply AI in a sector. This is particularly valuable for graduates who are qualified but excluded by geography, disability, gender identity, race, class or weak professional networks. A public AI strategy should not assume that formal qualifications automatically translate into opportunity.

In the short run, the goal is rapid diffusion of practical AI capability among existing workers and job-seekers. In the long run, curriculum reform should produce graduates whose comparative advantage lies in combining technical tools with judgement, institutional knowledge and human interaction. South Africa cannot know which software will dominate in 2035. It can, however, educate people who can learn the next tool without becoming obsolete when the current one changes.

4. Industrial policy: from automation incentives to an AUGMENT test

Industrial policy should distinguish between private productivity and social productivity. Consider two firms making identical R20 million AI investments. Firm A automates administrative and quality-control functions, dismisses 200 workers and produces the same output with a smaller payroll. Firm B automates repetitive inspection, retrain workers for higher-value tasks, reduces defects, wins export orders and expands employment. Both firms may report higher labour productivity. Their social returns are not the same.

The state should therefore attach an AUGMENT score to AI-related industrial support. “A” measures additional productivity rather than technology expenditure. “U” measures accredited upskilling and worker redeployment. “G” measures growth in output, exports or employment. “M” measures local technological capability, procurement and R&D. “E” measures whether benefits reach smaller firms and historically excluded groups. “N” measures new-worker pathways such as apprenticeships. “T” measures the public return relative to the fiscal cost. The score would determine the generosity of grants, tax allowances and concessional finance.

This can be embedded in existing institutions. The dtic’s Manufacturing Support Programme already aims to improve competitiveness, create and sustain employment, promote transformation and localisation, and offers reimbursable support for qualifying investment (the dtic, 2026). An AI-Augmentation Window could add outcome conditions instead of creating another stand-alone fund. A manufacturer using computer vision to reduce defects while training machine operators should qualify more strongly than a firm purchasing generic software primarily to reduce headcount.

Sector choice also matters. South Africa should not imitate the industrial strategy of the United States or China by treating frontier-model development as the only measure of AI success. The country’s comparative opportunity lies in applying AI to sectors where it already possesses firms, workers, infrastructure or export capability: mining technology, advanced manufacturing, financial services, agriculture, logistics, business-process services, health systems, energy and public administration. The question is not how South Africa becomes Silicon Valley. It is how AI makes South African industries better at being South African industries.

In the longer run, government should use procurement to create domestic demand for trustworthy local AI solutions. Municipal maintenance prediction, fraud detection, multilingual public-service interfaces, hospital scheduling and logistics optimisation are potential markets. Procurement contracts should require interoperability, auditable performance, data protection and local skills transfer. This is also an anti-corruption design. AI procurement can become a new site of inflated contracts and politically connected intermediaries if technology is treated as mysterious. Publishing contract values, vendors, performance measures, training commitments and renewal decisions on an open dashboard would make industrial policy more contestable and reduce the space for rent extraction.

5. Fiscal incentives: no blank cheque for replacing workers

Fiscal policy should change the relative price of socially useful AI adoption. South Africa already uses the Employment Tax Incentive (ETI) to reduce the cost of employing qualifying young work-seekers. SARS states explicitly that the incentive exists because millions of young South Africans are excluded from economic activity; eligible firms can reduce PAYE while leaving the worker's wage unaffected (SARS, 2026a). The ETI is therefore a ready-made platform for an AI-era redesign.

A temporary AI-Augmentation ETI could provide an additional credit where a firm hires a qualifying young worker into a role that includes accredited AI training and retains that worker for a minimum period. The incentive should be larger where the worker is entering a high-exposure occupation and the firm demonstrates that AI is being used to complement rather than remove the position. Conversely, firms receiving substantial AI investment allowances should face a clawback if they undertake technology-related retrenchments shortly afterwards without financing redeployment or transition support. This is not a tax on robots. It is a refusal to socialise the cost of capital investment while privatising the employment gains.

The National Minimum Wage provides another enforcement point. The statutory minimum rose to R30.23 per hour in 2026 (Department of Employment and Labour, 2026). SARS already disqualifies an ETI claim where minimum-wage requirements are not met (SARS, 2026b). AI incentives should use the same principle: no public subsidy for a firm that violates minimum-wage, PAYE, UIF or immigration-employment obligations. Compliance should be a gateway, not a box checked after payment.

To remain fiscally credible, the proposal should be substantially revenue-neutral in its first phase. The 2026 Budget withdrew a previously contemplated R20 billion tax increase and emphasises stability, growth and service delivery (National Treasury, 2026). Treasury should therefore reweight existing tax expenditures and industrial grants rather than launch an unlimited new subsidy. Every AI incentive should carry a sunset clause and an ex-post evaluation. If the investment would have occurred without support, creates no measurable productivity spillover or simply substitutes subsidised capital for unsubsidised labour, the state should stop paying for it.

A portion of savings from poorly performing incentives should finance portable Worker Transition Accounts. Workers displaced by verified technological restructuring could use these accounts for accredited training, job-search assistance, relocation or temporary wage insurance. Firms responsible for large displacement events should co-finance the accounts. The principle is simple: technological change can be efficient while its transition costs are concentrated. Fiscal policy should spread those costs without freezing the economy in its current technology.

6. Labour migration, informality and the politics of scarcity

AI policy will unfold inside a labour market already shaped by intense political conflict over jobs. In 2026, the March and March movement mobilised against undocumented immigration and announced recurring Thursday protests after its June demonstrations (EWN, 2026). The movement's visibility matters economically even where its causal claims are disputed: it reveals how quickly chronic unemployment turns competition for jobs and public services into a politics of scarcity.

The legal position is clear. Section 38 of the Immigration Act 13 of 2002 prohibits an employer from employing an illegal foreigner or a foreign national whose status does not authorise that employment, and places a duty on employers to ascertain status (Republic of South Africa, 2002). The Employment Services Amendment Bill introduced in 2026 also seeks stronger regulation and enforcement of foreign-national employment (Parliament of South Africa, 2026). Employers who deliberately evade immigration, minimum-wage, PAYE or UIF rules can create unfair competition by lowering labour costs outside the law. That problem should be treated as employer non-compliance and labour-market informality, not as a licence to generalise about migrants.

The distinction is important because the available evidence does not support the claim that immigrants as a group simply take South African jobs or fail to contribute fiscally. OECD/ILO research found immigration was not associated with lower native-born employment rates overall and estimated a positive fiscal contribution from immigrants; World Bank research similarly found positive historical effects on local employment and wages (OECD/ILO, 2018; World Bank, 2018). Undocumented employment is a real enforcement issue, but it is analytically different from lawful migration.

This matters for AI because the same politics can easily shift from “foreign workers are taking jobs” to “machines are taking jobs”. Both narratives can obscure the behaviour of firms and the design of institutions. A stronger response is a single labour-compliance architecture: employers benefiting from AI incentives should be digitally verified for PAYE, UIF, minimum-wage and work-authorisation compliance. This protects lawful workers, including migrants, while preventing firms from arbitraging between undocumented cheap labour, underpayment and subsidised automation. South Africa should enforce its labour and immigration laws, but migration control is not a substitute for a productivity strategy.

7. Inclusion as productivity policy, not an appendix

The distribution of AI capability should be treated as an economic variable. A policy that gives already productive firms and already connected workers better tools may raise measured productivity while widening the gap between insiders and outsiders. That would be a weak equilibrium for South Africa: higher output per worker alongside persistent exclusion from work.

For marginalised graduates, AI can change the cost of participation. A person who is qualified but excluded from conventional employment can use AI to undertake research, analyse data, draft business material,

translate, code, prepare financial models and reach clients at much lower cost than before. For a trans graduate who may have to evaluate not only salary but workplace safety and discrimination, this can create a route into consulting, entrepreneurship, remote work or specialised services. Yet access to a general-purpose AI chatbot is not enough. Productive use requires connectivity, data, computing, sector knowledge, credentials and access to markets.

This motivates an AI Capability Account for unemployed graduates and qualifying TVET graduates. Instead of another once-off training workshop, the account would provide a time-limited bundle: accredited training, secure computing access, a modest cloud/AI credit, mentorship and a placement or enterprise pathway. Government could procure the bundle competitively and pay providers partly on verified outcomes. The design should include groups that conventional industrial incentives often overlook, including women, persons with disabilities, gender-diverse people and graduates from township and rural institutions.

The economic case is not charity. Exclusion wastes human capital that has already been partly financed by households and the state. If AI lowers the fixed cost of converting that human capital into marketable output, targeted access can increase labour-force participation and enterprise formation. Inclusion, in this sense, is productivity policy.

8. Governance: the credibility problem is already here

South Africa's AI strategy also faces a state-capacity problem. Cabinet approved a draft national AI policy for public comment in March 2026, with pillars including talent development, inclusive growth, responsible governance and human-centred deployment (The Presidency, 2026). A month later, the responsible minister withdrew the draft after fictitious references were discovered in its bibliography (SAnews, 2026). The episode is more than an embarrassment. It illustrates the exact governance risk that AI creates: institutions may adopt the language and outputs of AI faster than they build the capacity to verify them.

A credible strategy therefore needs institutions that can measure outcomes rather than simply announce programmes. Treasury, the dtic, SARS, the Department of Higher Education and Training and the Department of Employment and Labour should establish a small AI Productivity Unit with access to firm-level administrative data under strict privacy rules. Its task would not be to regulate every algorithm. It would evaluate whether publicly supported AI investments raise productivity, wages, output, exports, skills and employment, and publish anonymised results.

The unit should also run controlled policy trials. For example, one cohort of firms could receive the standard ETI, another an AI-Augmentation ETI tied to training, and outcomes could be compared over two years. South Africa has too many programmes whose success is inferred from money spent or people trained. AI policy should begin with a different culture: measure additionality, publish failure and scale only what works.

9. Short-run and long-run policy sequence

The short run should focus on preventing a disorderly transition. Over the next two years, government should establish the AUGMENT score; add an AI-Augmentation Window to existing industrial incentives; pilot an enhanced ETI for AI apprenticeships; enforce minimum-wage, tax and work-authorisation compliance as conditions for support; create Worker Transition Accounts for technology-related displacement; and launch AI Capability Accounts for unemployed graduates. Public procurement should begin testing local AI applications in a small number of measurable service-delivery problems.

The medium to long run should change the structure of capability. School curricula should strengthen quantitative reasoning, digital verification and AI literacy. TVET colleges should become applied technology institutions linked directly to regional industries. Universities should make interdisciplinary AI competence normal rather than exceptional. Industrial policy should deepen local supplier networks, data infrastructure and sector-specific AI capability. Treasury should gradually shift tax support away from technology expenditure itself and towards verified productivity spillovers.

The long-run test is not the number of AI firms, models or training certificates South Africa produces. It is whether total factor productivity rises, whether firms become more competitive, whether new workers can still enter occupations, whether wages and tax capacity expand, and whether technological rents are distributed widely enough to sustain political support for innovation.

10. Conclusion: bargain before disruption becomes backlash

South Africa does not need to choose between protecting workers and adopting AI. It needs to choose the rules under which adoption occurs. In a high-employment economy, rapid automation may be absorbed through labour mobility and new firm creation. In South Africa, where 8.5 million people were officially unemployed in mid-2026, assuming that displaced workers will simply move to new jobs is not a serious policy position.

The central proposal of this essay is therefore an AI productivity bargain. Education must create workers who can complement machines; industrial policy must direct AI towards expansion, localisation and productive capability; and fiscal incentives must pay for social returns rather than technology purchases. The AUGMENT test provides a practical discipline for doing so. It asks whether an AI investment generates additional productivity, upskills workers, expands output or employment, develops local capability, improves equity, opens new-worker pathways and produces a defensible public return.

The deeper objective is to prevent a two-speed economy in which a small group of firms and highly connected workers become dramatically more productive while millions remain outside the gate. AI should make a qualified but excluded graduate more economically capable, not make their first job disappear. It should make

a factory more competitive, not make a retrenchment cheaper for the taxpayer. It should help the state detect fraud and deliver services, not become a new vocabulary for procurement capture.

South Africa's scarce resource is not intelligence. It is the institutional ability to connect human capability to productive opportunity. If education, industrial policy and fiscal incentives are redesigned around that constraint, AI can become more than a labour-saving technology. It can become a tool for converting unused human potential into growth. That is the productivity dividend worth subsidising.

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