How should South Africa redesign education, industrial policy, and fiscal incentives to harness artificial intelligence for productivity growth while limiting labour market disruptions?

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1. Introduction

Recent debate surrounding artificial intelligence (AI) has brought into question the future of employment and the ability of economies to adapt to technological change. Some argue that AI will make large parts of the workforce redundant, while others believe it will generate remarkable productivity growth and economic opportunities. Although both arguments have weight, neither recognises that the economic effects of technological change are not predetermined. The consequences depend largely on how governments, businesses and workers respond to its introduction. So, South Africa faces a particularly difficult position. The country must embrace technological development to remain internationally competitive, yet it already struggles with persistent unemployment, skills shortages and limited industrial growth.

This essay argues that South Africa cannot afford to resist AI adoption, but it shouldn't allow technological development to occur without direction either. AI should be integrated into a broader strategy of economic development, with education reform, targeted industrial policy and carefully designed fiscal incentives working together to encourage productivity growth while limiting labour-market disruption. Evidence from Japan, the Philippines and South Africa's citrus and business process outsourcing industries demonstrates that technological adoption can happen with employment growth when demand expands and workers possess complementary skills. However, experiences in Germany and South African mining and vehicle assembly illustrate the risks when automation replaces labour without sufficient opportunities for adjustment. Although AI may appear to threaten employment, the greater risk is allowing South Africa to fall behind technologically while failing to prepare its workforce for the inevitable changes ahead.

2. Understanding Artificial Intelligence and its Economic Implications

2.1 Artificial Intelligence

Artificial intelligence refers to computer systems capable of performing tasks commonly associated with human intelligence, including prediction, classification, language processing and image recognition. Unlike traditional machinery which generally performs predetermined physical tasks, AI can analyse large quantities of data, identify patterns and generate outputs that support decision-making (Organisation for Economic Co-operation and Development [OECD], 2024).

AI is used across industries, manufacturers apply it to quality control and equipment maintenance, farmers use it to monitor crops, and financial firms use it for fraud detection

and forecasting. These applications can improve efficiency, lower costs and increase output (Filippucci et al., 2024).

AI should however be distinguished from automation. Automation uses technology to perform tasks with less human intervention, whereas AI can undertake forms of analysis, prediction and decision-making. Much employment research examines industrial robots and automation rather than AI itself. Such studies help explain broader technological change, but their findings should not be treated as direct evidence of AI's effects (Merola et al., 2026).

2.2 Productivity and Employment

Productivity refers to the amount of output produced relative to the inputs used in production. AI can improve productivity by allowing businesses to produce more with existing resources, reduce inefficiencies and make more informed decisions (Filippucci et al., 2024).

The employment effects are more complex. Acemoglu and Restrepo (2019) identify a displacement effect, where technology replaces tasks and reduces labour demand, and a productivity effect, where lower costs and greater efficiency allow firms to expand output and demand more workers. Technological change can also create new tasks and occupations.

The important question is therefore not whether AI replaces workers, but whether the economic opportunities created by technological adoption are sufficient to offset the employment that may be lost. This depends on the industry, the rate of adoption, the demand for its products and the availability of workers with the skills required to complement the technology.

For South Africa, resisting adoption could leave firms less competitive, but adopting AI without preparing workers could deepen unemployment and inequality. Policy should therefore encourage technological progress while helping productivity gains generate wider economic opportunities.

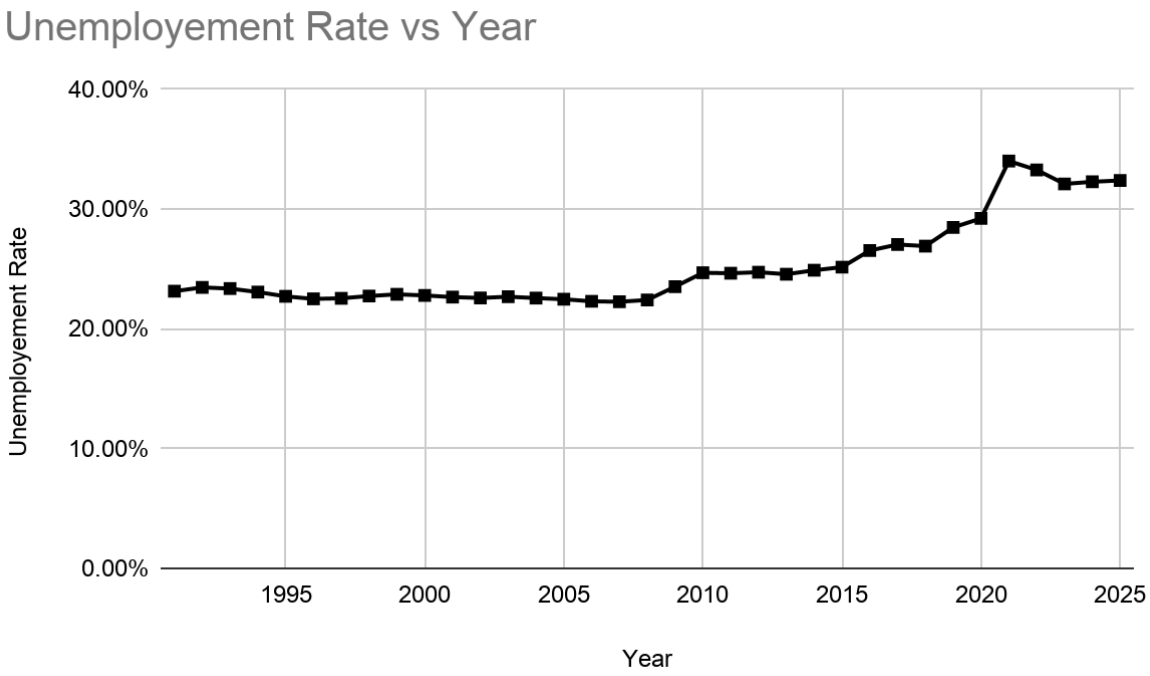
3. South Africa's Need for Technological Transformation

3.1 Unemployment and Industrial Capacity

South Africa's unemployment crisis makes AI's employment effects especially important. The Q2 2026 Quarterly Labour Force Survey recorded an official unemployment rate of 33.6%, representing approximately 8.5 million people (Statistics South Africa, 2026). This reflects more than skills shortages, weak growth, limited labour absorption, infrastructure constraints and insufficient demand also restrict employment. Training can't create sustainable jobs if firms and productive industries are not expanding (United Nations Industrial Development Organization [UNIDO], 2013).

AI adoption must therefore be connected to industrial development. Firms that fail to improve quality, reliability and cost efficiency risk losing markets and jobs, but adoption will have limited domestic benefits if large firms simply import technology and reduce labour costs without expanding local production. The objective should be to strengthen productive capacity, not just increase the number of AI systems purchased (Filippucci et al., 2024; United Nations Conference on Trade and Development [UNCTAD], 2025).

Unequal access to electricity, broadband, computing resources and digital skills also constrains adoption. Smaller firms may lack finance and expertise, while schools differ in access to devices and trained teachers. Without these foundations, AI could widen existing inequalities (World Bank Group, 2018; Filippucci et al., 2024).



Data from: Macrotrends Unemployment rate 1991-2025

3.2 Education and Skills

South Africa's education system is another barrier to technological readiness. Spaull (2023) reports that 81% of Grade 4 learners could not read for meaning in any language in the 2021 Progress in International Reading Literacy Study. Literacy and numeracy are the base for advanced learning, weak foundations make it harder for workers to adapt to digital occupations.

The country needs workers able to apply technology in agriculture, manufacturing, finance and healthcare. PwC (2025) identifies education, information and communication technology, and agriculture among sectors with demand for AI-related skills. South Africa must strengthen foundational education while developing the technical and professional capabilities required by changing industries.

One potential factor that may help South Africa in this area of education is to allow companies such as Starlink, who offered to invest about $28 million in free internet for more than 5,000 South African schools and could reach 2.4 million pupils annually, to operate in South Africa. This however would require amendment of the country's ownership laws. (Business Insider, 2026)

4. Why Resisting AI Is Not the Solution

Slowing technological adoption to protect existing jobs may be counterproductive. Firms that fail to modernise can lose market share to more productive competitors, reducing output and potentially causing further job losses. Evidence from France illustrates this risk, Acemoglu, Lelarge and Restrepo (2020) found that firms adopting industrial robots increased hours worked by 10.9%, while competing non-adopting firms experienced employment losses. Koch et al. (2021) similarly found that robot adoption in Spain shifted employment towards adopting firms.

AI-specific evidence also points to potential gains, although they may be uneven. Babina et al. (2024) found that US firms investing more in AI experienced faster sales and employment growth, but gains were concentrated among larger firms and associated with greater industry concentration.

For South Africa, this means adoption should not be left entirely to market forces. Larger corporations may invest first, while smaller businesses and their workers fall behind. The government should widen access to technology, strengthen domestic capabilities and help workers participate in the opportunities created.

5. Lessons from Peer Economies

5.1 Japan's Manufacturing Industries

Japan provides an important example of how technological adoption can support industrial growth and employment and although it is about robotics and automation, it provides useful insight into the future with AI.

Adachi et al. (2024), examining four decades of data, found that falling robot prices increased both automation and employment in Japanese industries. The effect was particularly strong in export-oriented sectors such as automotive manufacturing and electrical machinery, where

increased productivity reduced costs, strengthened international competitiveness and expanded exports. Interestingly, hours worked per employee declined, suggesting that technological adoption also allowed work to be distributed across a larger number of employees. The findings indicate that employment can increase when the expansion in production outweighs the displacement of workers through automation.

However, Japan's experience should not be applied directly to South Africa. Japan has a well-developed industrial base and produces much of its own robotics technology. Its experience demonstrates the importance of expanding output and developing domestic technological capabilities, rather than proving that automation will automatically generate employment in developing economies.

5.2 The Philippines' Business Process Outsourcing Industry

The Philippines is a useful comparison because it has an established information technology and business process management (IT-BPM) industry. In 2025, the sector added approximately 80,000 jobs, bringing employment to around 1.9 million (Cacho-Laurejas, 2026). Meanwhile, 67% of industry member firms reportedly used AI tools (Ta-Asan, 2026).

Employment effects have been mixed, some firms reported lower employment, while others recorded gains through new roles such as AI fine-tuning and data annotation (Ta-Asan, 2026).

South Africa’s BPO industry should therefore move beyond low-cost, routine customer service towards higher-value services and occupations combining human judgement, customer engagement and AI capabilities.

6. South African Industries: Where AI Can Support Employment Growth

6.1 Citrus and Agricultural Exports

South Africa's citrus industry provides an encouraging example of how technological investment can exist alongside employment growth. South Africa is a major global citrus exporter, with the industry supporting approximately 140,000 direct jobs at farm and packhouse level in 2025 (TimesLIVE, 2026). Direct employment increased from approximately 56,902 jobs in 2009 to 125,000 in 2017, while the area planted with citrus also expanded (The Conversation, 2020; Daily Maverick, 2025).

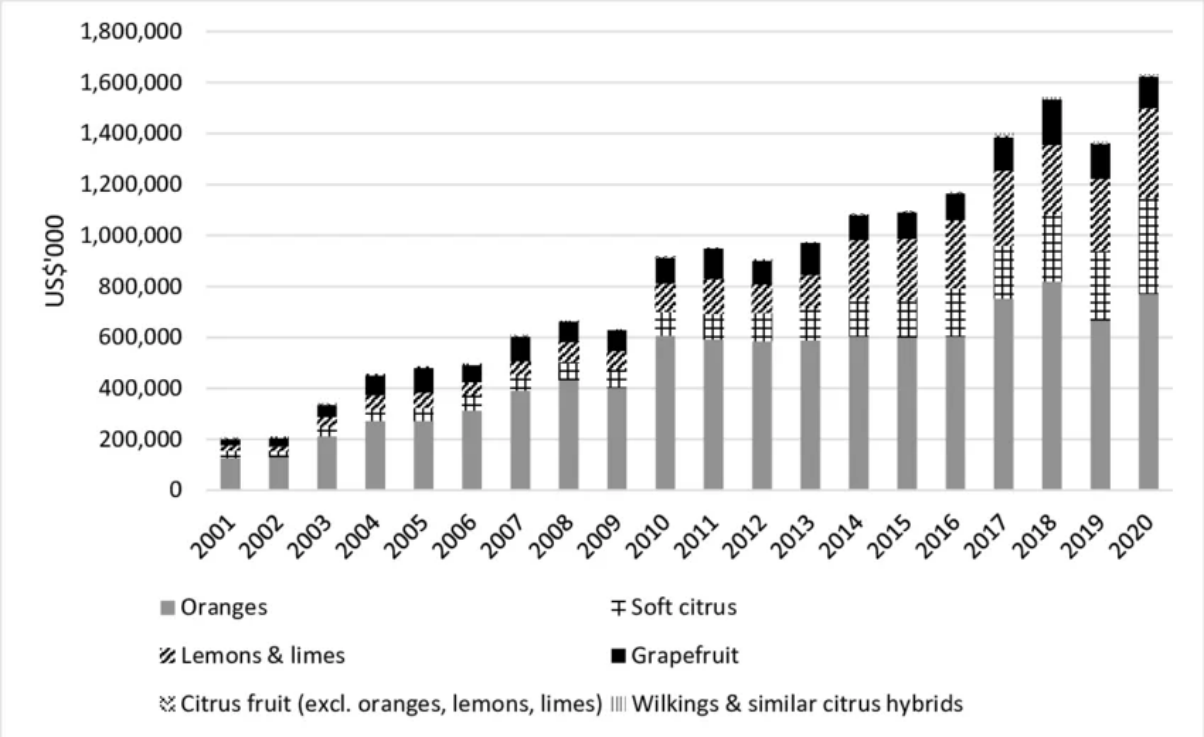
Technology has played an increasingly important role in the industry's development. Aerobotics, a South African technology company, uses drone and satellite imagery combined with machine learning to help farmers identify pests, monitor crops and estimate yields. The company employs more than 80 people and provides services to farmers in 18 countries (African Business, 2021). In packhouses, automation has also increased production capacity.

One reported example found that increasing throughput from 30 to 100 bins per hour required approximately doubling staff alongside the introduction of additional automation (FreshPlaza, n.d.).

It is important not to attribute all employment growth in the citrus industry to technology. Expanding production, new orchards and growing international demand have been major contributors to job creation. Nevertheless, the industry demonstrates how technological investment can support and complement a growing, labour-absorbing export sector rather than simply replacing its workforce.

The role of industry coordination is also important. Chisoro-Dube and Roberts (2021) highlight how industry associations in the citrus sector have supported research, market access and shared capabilities. This suggests that the government should not focus exclusively on individual firms when designing AI policy. Supporting industry-wide research, training and collaboration can help smaller producers access technology and participate in expanding export markets.

Figure 1: South Africa's citrus exports



Source: Roberts, Simon & Chisoro, Shingie. (2021). Innovation and inclusion in South Africa's citrus industry.

6.2 Business Process Outsourcing: Opportunity and Exposure

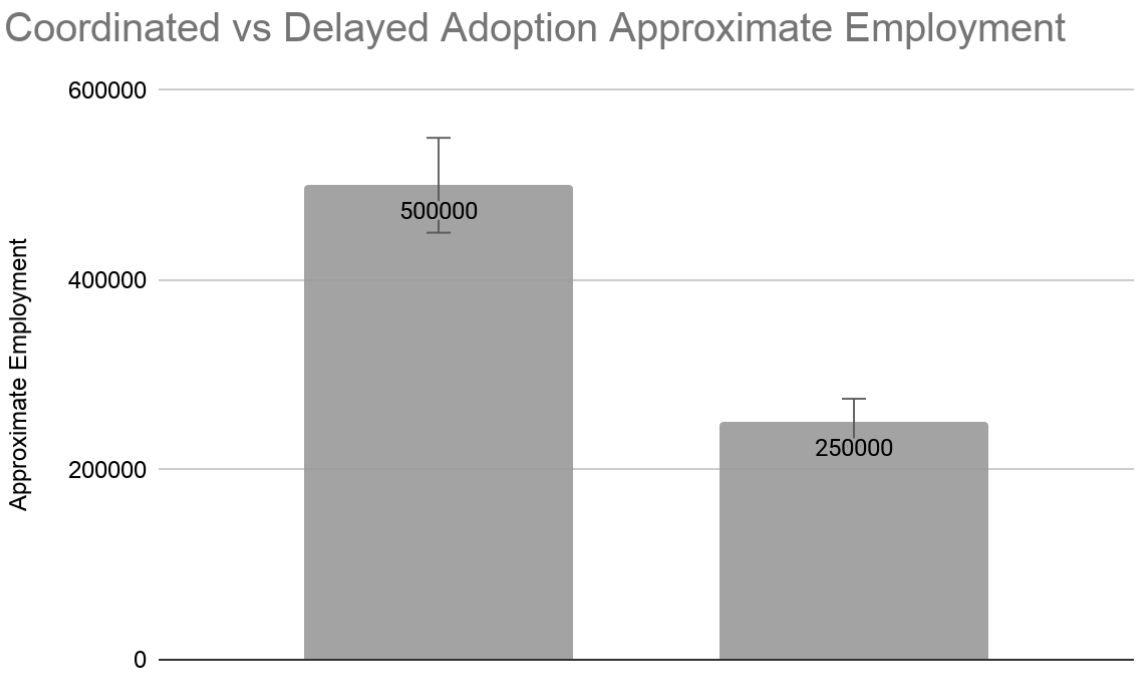
South Africa's global business services industry is an important employer of young people. In 2025, it created 26,346 jobs serving international clients, its strongest annual performance since 2018; nearly nine in ten went to people under 35 (Von Maltitz, 2026). The industry has added approximately 180,000 jobs over the past decade (Engineering News, 2026).

AI nevertheless threatens parts of its traditional model. Scott et al. (2025) estimate that AI could automate up to 40% of tasks in African BPO by 2030, particularly in customer experience roles.

Mohapatra et al. (2026) outlines two possible South African BPO employment scenarios for 2035. With coordinated AI adoption, combining human and automated work with investment in skills, employment could exceed 500,000. If South Africa falls behind competitors and entry-level work declines, employment could reach only 250,000–290,000.

These scenarios underline the importance of policy. Rather than trying to preserve routine call-centre work, South Africa should support hybrid roles in AI oversight, complex customer engagement, data analysis and problem-solving. Moving into higher-value services could strengthen competitiveness and create new opportunities.

Figure 2: Graph of Coordinated vs Delayed Adoption and Approximate Employment



Data estimates from Mohapatra et al. (2026)

7. The Risks of AI Adoption

7.1 Germany's Manufacturing Industry

Germany provides a counterexample to the more positive cases. Dauth et al. (2021) found that each additional industrial robot was associated with the loss of approximately two manufacturing jobs. Between 1994 and 2014, robot adoption accounted for an estimated 275,000 manufacturing jobs lost.

Services-sector job creation offset manufacturing losses, so overall employment did not decline. However, adjustment was uneven: young labour-market entrants were particularly affected, while existing workers were more likely to remain employed.

The lesson for South Africa is that stable overall employment can conceal serious losses in particular industries and groups. Germany also has a more developed services sector and stronger labour-market institutions, so displaced South African workers may not be absorbed as easily.

7.2 South African Mining and Vehicle Assembly

South Africa’s mining history illustrates the employment risks of mechanisation. Mining employed close to 800,000 people in the 1980s, but technological improvements have enabled mines to raise productivity and safety while employing fewer workers (Maree, 2026). Failing to adopt new technologies threatens competitiveness, yet adoption without transition measures may deepen job losses.

Vehicle assembly provides a further example. Automation contributed to reductions in direct employment in parts of the industry after 1994, but component-manufacturing employment rose from approximately 60,000 in 1995 to 80,000 in 2019 (Mashilo, 2022). This highlights the importance of assessing the wider supply chain, not only factory employment.

Evidence from South Korea reinforces the distinction between productivity-enhancing adoption and labour-cost reduction. Jeong and Jo (2025) find that robotics used mainly to cut labour costs reduced employment and wages without substantial productivity improvements.

Technology should therefore be adopted to improve production, develop capabilities and expand output, rather than simply reduce headcount. The latter may lower individual firms’ costs without generating wider economic gains.

7.3 What the Evidence Means for South Africa

The international and domestic experiences demonstrate that there is no single employment outcome associated with technological adoption. Employment gains are more likely where businesses operate in expanding markets, productivity improvements allow output to grow and workers possess the skills required to complement technology. Conversely, displacement is more likely where technology is introduced primarily to reduce labour costs in sectors with limited growth.

There are also limitations to the available evidence. Much of the research examines industrial robots rather than modern generative AI, while the causal relationship between agricultural technology and employment remains less established. Positive findings at adopting firms also do not necessarily demonstrate that employment will increase across an entire industry. These limitations strengthen the case for targeted policy, rather than assuming that technological adoption will automatically benefit workers.

8. Redesigning Education, Industrial Policy and Fiscal Incentives

8.1 Education and Skills Development

Education reform must form the foundation of South Africa's AI strategy. However, it should begin with the basics. Advanced digital skills cannot be developed effectively without foundational literacy and numeracy. South Africa should therefore prioritise improving early-grade reading and mathematics, including through expanded teacher coaching and support. Spaull (2023) identifies teacher coaching as an important means of improving foundational learning outcomes.

At the same time, TVET colleges should expand programmes in areas such as mechatronics, robotics, agricultural technology, data analysis and industrial maintenance. These programmes should be developed in partnership with employers to ensure that training reflects the actual skills required by businesses.

Finally, existing workers must have access to affordable retraining opportunities. Short courses, recognised micro-credentials and workplace training can help employees move into occupations that combine human judgement with AI capabilities. South Africa's existing learnership tax incentive could be better aligned with AI-related training to encourage businesses to invest in their employees (BDO, 2024).

8.2 Industrial Policy Recommendations

Industrial policy should direct AI investment towards sectors where technological upgrading can strengthen domestic production and expand employment opportunities. South Africa should build on existing industry master plans, particularly in global business services, automotive manufacturing and agriculture, by incorporating explicit AI adoption and worker-transition strategies.

The citrus industry demonstrates the value of industry-wide coordination. The government should encourage partnerships between industry associations, universities, research institutions and businesses to develop shared research capabilities and improve access to technology (Chisoro-Dube & Roberts, 2021).

Support must also extend to small and medium-sized enterprises. If only large corporations can afford AI investment, technological progress may increase market concentration and weaken smaller domestic producers. The government should therefore support supplier development, shared technological infrastructure and affordable access to digital services.

The automotive industry provides an example of how investment in large firms can support wider supplier networks. Ford's Silverton expansion was accompanied by an estimated R5.5 billion in supplier tooling, expected to support approximately 10,000 supplier jobs (Dealerfloor, n.d.). Similar approaches could help ensure that AI investment strengthens local supply chains rather than remaining concentrated within a small number of businesses.

8.3 Fiscal Incentives

Fiscal incentives can reduce the financial barriers to adopting and developing new technologies. South Africa already has instruments that could be adapted to support AI investment.

Section 11D provides a 150% deduction for qualifying research and development expenditure and has been extended until 2033 (South African Revenue Service, n.d.). However, routine testing and ordinary quality control do not qualify, so firms purchasing existing AI systems may not benefit.

The Employment Tax Incentive supports the hiring of young workers, while the BPO industry receives sector-specific government support (BusinessTech, 2026; Business Process Enabling South Africa, 2023). These instruments offer a starting point for more targeted incentives.

Three reforms are proposed. First, the government could introduce a temporary AI adoption allowance, such as accelerated depreciation for qualifying systems and equipment. It should prioritise SMEs and be conditional on employee training and credible employment commitments. Second, the Employment Tax Incentive and BPO support programmes should encourage hybrid occupations and progression into higher-skilled roles, rather than measuring success only by the number of people hired. Third, workers in highly exposed industries should have access to training vouchers, retraining and appropriate short-term income support. This would help workers adjust without preventing firms from modernising.

Fiscal constraints mean the government cannot subsidise every AI purchase. Incentives should be targeted, time-limited and assessed against measurable outcomes. National

Treasury's (2026) tax expenditure statement provides a basis for evaluating whether additional investment, productivity and employment justify the fiscal cost.

9. Inclusion and the Distribution of Economic Gains

AI's benefits should be assessed not only through productivity or GDP growth, but also by how gains are distributed. Inequality in income, education and access to technology could limit the productivity benefits South Africa receives (PwC, 2025).

Smaller farmers, young people and lower-skilled workers are particularly vulnerable to exclusion. Farmers unable to afford drone technology and digital services may miss productivity gains, while displacement in BPO could disproportionately affect young people and women (Bell, 2021; Scott et al., 2025).

Workers cannot be expected to adapt to technological change when foundational education is weak and access to technology remains unequal. Inclusion must therefore be built into the strategy from the outset through wider access to education, training, infrastructure and technology.

10. Priority Industries for AI Adoption in South Africa

The evidence suggests that South Africa should prioritise industries where demand is expanding, technological adoption can strengthen competitiveness, and employment opportunities can be developed.

Table 1: Industry and AI implementation methods

Industry	AI Implementation
Horticulture and agro-processing	AI applications such as pest detection, crop monitoring and automated packhouse systems can support labour-intensive export industries. Ie. the citrus sector
Global business services	AI-enabled hybrid occupations could help South Africa maintain its position as a competitive BPO destination. Investment should focus on developing higher-value services and creating opportunities for workers to move beyond routine customer service.

Tourism	AI could support marketing, customer services, bookings and operational efficiency. Business Day (2026) reports that coordinated AI adoption could support approximately 1.28 million tourism jobs by 2030, compared with fewer than 1.19 million without it.
Automotive components	AI applications in quality inspection and predictive maintenance could improve the competitiveness of domestic suppliers and strengthen the wider automotive value chain.
Mining	AI should be introduced selectively to improve safety, predictive maintenance and operational efficiency, with explicit worker-transition strategies to limit displacement.
Healthcare and education	AI can support professionals through improved information processing, diagnosis and administrative efficiency. However, these applications should complement skilled workers rather than be treated as substitutes for professional judgement.

11. Conclusion

South Africa's unemployment crisis is structural, and artificial intelligence will neither solve nor worsen it on its own. The experiences of Japan, the Philippines and South Africa's citrus and BPO industries demonstrate that technological adoption can coincide with employment growth when output expands, workers possess complementary skills and businesses develop new opportunities. However, Germany, mining and vehicle assembly provide an important reminder that technological progress can also displace workers, particularly young people entering the labour market.

AI policy should therefore not be broad or unplanned. South Africa must redesign its education system to strengthen foundational skills and provide workers with access to

technical training and lifelong learning. Industrial policy should direct investment towards labour-absorbing and export-oriented industries, while supporting domestic suppliers and smaller businesses. Fiscal incentives should encourage technological adoption, research and development and employee training, with public support linked to measurable economic outcomes.

These policies must be accompanied by investment in infrastructure, worker consultation and appropriate transition support. The objective should not be to protect every existing occupation from technological change, nor to encourage businesses to adopt AI without considering its wider consequences. Rather, South Africa must ensure that technological investment strengthens its domestic industries and creates opportunities for workers to participate in a changing economy.

South Africa cannot afford to stand still while the rest of the world modernises. However, it must also recognise that productivity growth means little if the benefits are concentrated among a small number of businesses and individuals. Artificial intelligence should not just make South African businesses more productive, it should help make the South African economy more competitive, more inclusive and more capable of creating employment.

References

Acemoglu, D., & Restrepo, P. (2019). Automation and new tasks: How technology displaces and reinstates labor. *Journal of Economic Perspectives, 33*(2), 3–30. https://doi.org/10.1257/jep.33.2.3

Acemoglu, D., Lelarge, C., & Restrepo, P. (2020). Competing with robots: Firm-level evidence from France. *AEA Papers and Proceedings, 110*, 383–388. https://doi.org/10.1257/pandp.20201003

Adachi, D., Kawaguchi, D., & Saito, Y. (2024). Robots and employment: Evidence from Japan, 1978–2017. *Journal of Labor Economics, 42*(2), 591–634. https://doi.org/10.1086/723205

African Business. (2021, April). Drones and AI move Africa's farmers on to greener pastures. https://african.business/2021/04/agribusiness-manufacturing/drones-and-ai-move-africas-farmers-to-greener-pastures/

Babina, T., Fedyk, A., He, A., & Hodson, J. (2024). Artificial intelligence, firm growth, and product innovation. *Journal of Financial Economics, 151*, Article 103745. https://doi.org/10.1016/j.jfineco.2023.103745

BDO. (2024, March 19). South Africa: Tax incentives in 2024 budget. https://www.bdo.global/en-gb/insights/tax/world-wide-tax/south-africa-tax-incentives-in-2024-budget

Bell, T. (2021, November 9). Make way for robots in the sky: How drones are transforming farming in South Africa. Daily Maverick. https://www.dailymaverick.co.za/article/2021-11-09-make-way-for-robots-in-the-sky-how-drones-are-transforming-farming-in-south-africa/

Business Insider. (2026, October 27).US ambassador says Elon Musk's $28 million Starlink offer for 5,000 South African schools remains stalled by ownership rules https://africa.businessinsider.com/local/markets/us-ambassador-says-elon-musks-dollar28-million-starlink-offer-for-5000-south-african/rvkmk2j

Business Process Enabling South Africa. (2023, November 15). Government allots R569m to propel SA's BPO sector. https://www.bpesa.org.za/news/industry-news/594-government-allots-r569m-to-propel-sa%E2%80%99s-bpo-sector.html

BusinessTech. (2026, August 20). New tax laws for South Africa come into effect. https://businesstech.co.za/news/government/871079/

Cacho-Laurejas, K. O. (2026, January 5). IT-BPM eyes $42B exports, near 2 million jobs in 2026. SunStar. https://www.sunstar.com.ph/amp/story/cebu/it-bpm-eyes-42b-exports-near-2-million-jobs-in-2026

Chisoro-Dube, S., & Roberts, S. (2021, November). Industry associations as growth coalitions: Lessons from South Africa's citrus industry. IDTT Policy Brief. https://static1.squarespace.com/static/52246331e4b0a46e5f1b8ce5/t/6225e50a7423b87f35921e91/1646650636731/IDTT4_PB_Industry_associations_as_growth_coalitions_202111.pdf

Dauth, W., Findeisen, S., Südekum, J., & Wößner, N. (2021). The adjustment of labor markets to robots. Journal of the European Economic Association, 19(6), 3104–3153. https://doi.org/10.1093/jeea/jvab012

Engineering News. (2026, October 21). Local contact centres highlight innovation to align with industry trends. https://www.engineeringnews.co.za/article/local-contact-centres-highlight-innovation-to-align-with-industry-trends-2026-10-20/

Filippucci, F., Gal, P., Jona-Lasinio, C., Leandro, A., & Nicoletti, G. (2024). The impact of artificial intelligence on productivity, distribution and growth: Key mechanisms,

initial evidence and policy challenges (OECD Artificial Intelligence Papers No. 15). *OECD Publishing*. https://doi.org/10.1787/8d900037-en

Jansen, C. (2024, July 19). South African-manufactured automation systems uplift supporting packhouse staff. FreshPlaza. https://www.freshplaza.com/north-america/article/9646198/south-african-manufactured-automation-systems-uplift-supporting-packhouse-staff/

Jeong, J. H., & Jo, H. J. (2025). The effects of artificial intelligence and robotics on employment and wages in Korean manufacturing firms. *Weizenbaum Journal of the Digital Society, 5*(2). https://doi.org/10.34669/wi.wjds/5.2.5

Koch, M., Manuylov, I., & Smolka, M. (2021). Robots and firms. *The Economic Journal, 131*(638), 2553–2584. https://doi.org/10.1093/ej/ueab009

Macrotrends. (n.d.). South Africa unemployment rate (1991–2025). https://www.macrotrends.net/global-metrics/countries/zaf/south-africa/unemployment-rate

Maree, M. (2026, July 9). Beyond jobs: Rethinking skills development in mining communities. Quarrying Africa. https://quarryingafrica.com/beyond-jobs-rethinking-skills-development-in-mining-communities/

Mashilo, A. M. (2022, August 16). Auto manufacturing is changing: How South Africa can adjust to protect workers and jobs. The Conversation (republished by Polity). https://polity.org.za/article/auto-manufacturing-is-changing-how-south-africa-can-adjust-to-protect-workers-and-jobs-2022-08-16

Merola, R., Ernst, E., Samaan, D., del Rio-Chanona, M., & Teutloff, O. (2026). Workers' exposure to AI: What indicators tell us—and what they don't. International Labour Organization. https://doi.org/10.54394/00033279

Mohapatra, R., Naidoo, R., Nair, K., & Porteous, R. (2026, May 22). AI won't kill SA's entry-level jobs—unless we let it. Business Day.

https://www.businessday.co.za/opinion/2026-05-22-ai-wont-kill-sas-entry-levels-jobs-unless-we-let-it/

Mtileni, N. (2026, April 10). SA citrus exports to China get boost as cold treatment rules ease. TimesLIVE. https://www.timeslive.co.za/news/south-africa/2026-04-10-sa-citrus-exports-to-china-get-boost-as-cold-treatment-rules-ease/

National Treasury. (2026). Budget review 2026: Annexure B—Tax expenditure statement. https://archive.treasury.gov.za/documents/national%20budget/2026/budgetReview.aspx

PwC. (2025, October). South Africa economic outlook: Are we on the brink of the fourth industrial revolution? https://www.africaprivateequitynews.com/p/pwc-south-africa-economic-outlook-8e9

Roberts, Simon & Chisoro, Shingie. (2021). Innovation and inclusion in South Africa's citrus industry.)https://www.researchgate.net/figure/South-Africas-citrus-exports_fig3_356391474

Roberts, S., Landani, N., & Chisoro-Dube, S. (2020, September 5). Small and medium growers and innovation are key to South Africa's citrus export growth. The Conversation (republished by Moneyweb). https://www.moneyweb.co.za/news/south-africa/small-and-medium-growers-and-innovation-are-key-to-south-africas-citrus-export-growth/

Scott, C. L., Natabaalo, G., Donner, J., & Beardsly, J. (2025, April 3). Preparing for AI in the BPO and ITES sector in Africa. Caribou Digital & Genesis Analytics, in partnership with the Mastercard Foundation. https://mastercardfdn.org/en/our-research/preparing-for-ai-in-the-bpo-and-ites-sector-in-africa/

South African Revenue Service. (n.d.). Research and development incentive. https://www.sars.gov.za/businesses-and-employers/my-business-and-tax/research-and-development-incentive/

Spaull, N. (2023, May 18). 10 main findings from PIRLS 2021 South Africa. https://nicspaull.com/2023/05/18/10-main-findings-from-pirls-2021-south-africa/https://nicspaull.com/2023/05/18/10-main-findings-from-pirls-2021-south-africa/

Statistics South Africa. (2026, August 11). Quarterly labour force survey, quarter 2: 2026. https://www.statssa.gov.za/publications/P0211/P02112ndQuarter2026.pdf

Stoddard, E. (2025, October 7). SA citrus sector to smash export records this year as new orchards blossom. Daily Maverick. https://www.dailymaverick.co.za/article/2025-10-07-sa-citrus-sector-to-smash-export-records-this-year-as-new-orchards-blossom/

Ta-Asan, K. (2026, January 4). GenAI reshaping IT-BPM industry. Philstar.com. https://www.philstar.com/business/2026/01/04/2498524/genai-reshaping-it-bpm-industry

United Nations Conference on Trade and Development. (2025). Technology and innovation report 2025: Inclusive artificial intelligence for development. United Nations. https://unctad.org/system/files?file=official-document%2Ftir2025_en.pdf

United Nations Industrial Development Organization. (2013). Industrial development report 2013: Sustaining employment growth—The role of manufacturing and structural change. https://www.unido.org/publications/ot/9658966

Von Maltitz, B. (2026, September 28). AI could reduce call centre job churn. IT-Online. https://it-online.co.za/2026/09/28/ai-could-reduce-call-centre-job-churn/

World Bank Group. (2018). South Africa digital economy assessment: Background paper series—Digital entrepreneurship pillar. https://documents1.worldbank.org/curated/en/699031586325347439/pdf/South-Africa-Digital-Economy-Assessment-Digital-Entrepreneurship-Pillar.pdfhttps://documents1.worldbank.org/curated/en/699031586325347439/pdf/South-Africa-Digital-Economy-Assessment-Digital-Entrepreneurship-Pillar.pdf