Review

Navigating the AI revolution: A review of the transformative strategies for economic development in Africa's emerging economies

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Abstract: The introduction of artificial intelligence (AI) marks the beginning of a revolutionary period for the global economic environments, particularly in the developing economies of Africa. This concept paper explores the various ways in which AI can stimulate economic growth and innovation in developing markets, despite the challenges they face. By examining examples like VetAfrica, we investigate how AI-powered applications are transforming conventional business models and improving access to financial resources. This highlights the potential of AI in overcoming obstacles such as inefficient procedures and restricted availability of capital. Although AI shows potential, its implementation in these areas faces obstacles such as insufficient digital infrastructure, limited data availability, and a lack of necessary skills. There is a strong focus on the need for a balanced integration of AI, which involves aligning technological progress with ethical considerations and economic inclusivity. This paper focuses on clarifying the capabilities of AI in addressing economic disparities, improving productivity, and promoting sustainable development. It also aims to address the challenges associated with digital infrastructure, regulatory frameworks, and workforce transformation. The methodology involves a comprehensive review of relevant theories, literature, and policy documents, complemented by comparative analysis across South Africa, Nigeria, and Mauritius to illustrate transformative strategies in AI adoption. We propose strategic recommendations to effectively and ethically utilize the potential of AI, by advocating for substantial investments in digital infrastructure, education, and legal frameworks. This will enable Africa to fully benefit from the transformative impact of AI on its economic landscape. This discourse seeks to offer valuable insights for policymakers, entrepreneurs, and investors, emphasizing innovative AI applications for business growth and financing, thereby promoting economic empowerment in developing economies.

Keywords: artificial intelligence; developing economies; challenges; digital transformation; Africa; economic growth

1. Introduction

The global economy, a rapidly evolving landscape, faces both opportunities and challenges with the introduction of Artificial Intelligence (AI). This is particularly relevant in developing economies, where resources are often scarce and markets are not as developed. AI emerges as a critical catalyst for economic growth and innovation. Investment in AI research and development is essential for enhancing the capabilities of developing economies and driving their economic growth (Mannuru et al., 2023). For instance, the integration of AI in agriculture, through applications like VetAfrica, exemplifies how AI technology can transform business development. This

app enables farmers to diagnose and treat livestock diseases remotely, significantly reducing costs and improving access to veterinary services (Omolayo, 2015).

The advancements in digital technologies, especially AI, offer the potential to transform developing economies by addressing legacy issues such as limited access to capital and inefficient business processes. AI's ability to process vast amounts of data, identify patterns, and provide predictive insights can dramatically improve decision-making processes. This enhancement enables businesses in the developing world to compete more effectively on the global stage. For example, AI-driven financial technologies (fintech) can revolutionize how businesses access funding (Amankwah-Amoah, 2019; Strusani and Houngbonon, 2019).

However, integrating AI in these regions faces several challenges, including poor infrastructure, limited data availability, and a lack of expertise. Amankwah-Amoah and Lu (2022) specifically note the challenges faced by Africa, such as a shortage of specialized skills and restricted access to the latest global technology. Additionally, ethical considerations and the potential for economic displacement warrant a balanced approach to AI integration. A notable challenge is the reliability and cost of internet access, where data processing interruptions can lead to errors, and the high cost of internet access remains a significant barrier for many (Mannuru et al., 2023).

This paper aims to illuminate how AI is redefining traditional business models and improving access to financial resources, contributing to economic empowerment in developing economies. It seeks to demonstrate that AI is not just a technological innovation but also a crucial tool for economic development, offering valuable insights for policymakers, entrepreneurs, and investors. This paper will explore the roles AI can and should play in transforming business development and funding in these regions, providing a comprehensive analysis of AI's potential to bridge economic disparities and enable sustainable development. It will also examine the challenges and highlight innovative ways AI is leveraged for business development and funding in developing economies.

This paper is organized as follows: First, section 1 provides the overview of the review paper including the research gap and methodology used. Section 2 provides an overview of how AI is revolutionizing business development in developing economies, categorizing AI into descriptive, predictive, and prescriptive types while discussing its potential to transform traditional business practices. In section 3, the paper examines AI's impact on business development in developing economies, focusing on how generative AI can bridge the digital divide, the importance of investing in AI infrastructure for economic growth, and the role of AI in automating routine business tasks. Section 4 explores the potential of AI for economic transformation, highlighting its significant contribution to global economic growth and its role in revitalizing traditional and emerging sectors like agriculture, manufacturing, fintech, and healthcare.

Section 5 identifies the challenges and barriers to AI integration in Africa's emerging economies, including digital infrastructure limitations, connectivity issues, skill gaps in education and training, the absence of regulatory frameworks, and biases in AI data. In section 6, a comparative analysis of AI strategies in South Africa, Nigeria, and Mauritius is presented, along with a comparison between European and international guidelines and African legislative initiatives. Section 7 examines the

employment implications of AI in Africa and provides strategic recommendations, emphasizing the importance of investing in digital infrastructure, education, and skill development while developing regulatory frameworks and leveraging AI for inclusive economic growth. Section 8 acknowledges the limitations of the study, such as the focus on three African economies, qualitative methodology, and reliance on secondary data. The paper concludes in section 9 by summarizing the transformative capacity of AI in Africa's emerging economies and emphasizing the need for investments in digital infrastructure, education, and legal frameworks to achieve inclusive growth and technological leadership.

1.1. Research gap

The rapidly evolving nature of AI technologies necessitates continuously updated regulatory and ethical frameworks, an area that remains underexplored in current literature. Although policy documents guiding AI adoption exist, research has not fully accounted for upcoming shifts in policy and emerging regulatory challenges. Additionally, while existing research acknowledges the importance of digital infrastructure, education, and legal frameworks, it does not provide a comparative analysis of the unique challenges and opportunities that specific industries face in adopting AI.

Current studies also lack in-depth evaluations of the investment climate and challenges faced by AI startups, which are crucial for driving innovation in high-potential sectors like healthcare, fintech, and agriculture. Lastly, practical strategies for skill development and talent retention in AI remain underdeveloped, leaving a gap in understanding how to effectively close the skill gap in AI. This research aims to fill these gaps by providing a comprehensive analysis of AI adoption strategies, challenges, and opportunities in Africa's emerging economies. The study focuses on South Africa, Nigeria, and Mauritius to illustrate diverse approaches while highlighting areas that require further exploration, particularly the socio-economic impacts of grassroots AI initiatives.

1.2. Methodology

This paper employs a structured literature review to explore transformative strategies involving AI in Africa's emerging economies. The methodology consisted of identifying relevant studies through a systematic search across various academic databases and government archives, such as Google Scholar, PubMed, JSTOR, IEEE Xplore, and websites of pertinent ministries. The search incorporated terms like "Artificial Intelligence AND Africa" and "AI challenges AND Africa" to ensure broad and relevant coverage.

Inclusion criteria were strictly followed, encompassing English-language studies, articles, and reports from 2019 to 2024, focused on AI strategies, business development, and challenges specific to Africa's emerging economies. Conversely, exclusions were made for studies outside this scope or region, non-AI-related publications, or those lacking substantial empirical contributions. Data extraction was meticulous, capturing authorship, publication year, study focus, geographic coverage, key findings, and proposed frameworks from the literature. This comprehensive

approach not only synthesized the existing literature on AI's role in economic development but also provided actionable insights for policymakers, researchers, and stakeholders aiming to leverage AI for sustainable growth in Africa.

2. Overview of AI in business development

The world is witnessing a rapid evolution, epitomized by the advancements in AI. Since the early days of computing, achieving human-like intelligence in machines has been a major goal. From Theseus, a robotic mouse navigating simple mazes in the early 50s, to Perception Mark 1, a neural network capable of distinguishing visual cues, technology has made significant leaps. A milestone was reached with AlexNet, a 'deep learning' system. Today, we have technologies like ChatGPT, which possess image and language recognition capabilities nearly on par with humans, coupled with the ability to analyze vast amounts of data (Roser, 2023).

AI can be categorized into descriptive, predictive, or prescriptive. Descriptive AI analyzes historical data to understand past events. Predictive AI uses this data to forecast future outcomes, while prescriptive AI suggests actions to achieve goals or solve problems. An example of prescriptive AI is the algorithms used by apps like TikTok to enhance user engagement (Jung et al., 2021). Numerous studies underscore AI's revolutionary role in business, altering how companies operate, innovate, and compete globally (Amankwah-Amoah and Lu, 2022; Houde et al., 2020; Mannuru et al., 2023). AI's data analysis capabilities lead to better-informed decisions, cascading into improved customer satisfaction, investment, and product innovation. This, in turn, reduces risks and enables companies to seize opportunities (Edilia and Larasati, 2023).

Businesses in developing economies that harness AI gain competitive advantages by accessing vast information pools for informed decision-making and responding swiftly to market challenges and opportunities. Ethical AI automation of routine tasks allows businesses to allocate human resources to strategic tasks, enhancing productivity and efficiency. Edilia and Larasati (2023) demonstrate that efficiency gains are not solely about cost reduction but also involve strategically reallocating resources towards impactful business initiatives, driving growth. AI also enables personalized customer experiences, potentially increasing sales revenue and customer satisfaction (Bang et al., 2023). The adoption of AI in business is not merely a trend but a paradigm shift, akin to the mobile technology revolution. Businesses failing to adapt to risk obsolescence, are overshadowed by competitors leveraging AI's benefits.

3. AI's impact on business development in developing economies

3.1. Bridging the digital divide

In the area of business development within developing economies, the advent of generative AI stands as a transformative force. Generative AI, with its advanced algorithms and capabilities, is uniquely positioned to revolutionize the job market by dismantling longstanding barriers to employment. As demonstrated by Mannuru et al. (2023), this technology offers a promising solution to language obstacles, deficiencies in digital literacy, and the need for efficient task automation.

Specifically, tools such as ChatGPT exemplify the potential of generative AI to

significantly enhance language education for job seekers, aiding in translation across online platforms and bolstering grammar, language, and writing proficiencies (Jiao et al., 2023). Moreover, these AI-driven innovations extend their utility by providing intuitive guidance for digital tasks, exemplified by assisting users in managing complex digital repositories like GitHub, thereby making strides toward closing the digital literacy gap (Choi et al., 2020; Lund et al., 2023). Additionally, by equipping individuals with AI skills, countries can drive innovation, enhance employability, and foster entrepreneurship in AI sectors, promoting economic growth. Governments are encouraged to invest in robust digital infrastructure, including high-speed internet connectivity, cloud computing facilities, and data centers, to support this evolution (Mhlanga, 2021).

However, fostering a conducive environment for AI integration involves not only investments in digital infrastructure but also efforts to reskill and upskill the workforce, adapting to the changing job landscape influenced by AI technologies. These measures are essential for closing the digital divide and promoting inclusive access to AI benefits, ensuring that advancements in AI technology lead to widespread economic and social improvements across developing economies (Rafique and Mujawunkindi, 2023). A notable example of such strategic investment is China's considerable expenditure on infrastructure to bolster emerging AI technologies, aiming to position itself as a global leader in AI development and reduce dependence on international technologies (Ding, 2018).

3.2. Investing in AI infrastructure

Building upon the foundational role of AI in enhancing employment opportunities and bridging literacy gaps, its potential extends to catalyzing comprehensive economic growth within developing economies. The realization of this growth is contingent upon the strategic development of digital infrastructure, substantial investments in educational resources, and the formulation of conducive policy frameworks. According to Houde et al. (2020), directing investments toward an AI-driven economy promises to alleviate poverty, bolster infrastructural capabilities, and foster economic stability. This economic upliftment is further complemented by AI's capacity to facilitate international trade, enhance knowledge exchange, and promote economic diversity, thereby broadening the horizons for developing economies on the global stage (Mannuru et al., 2023).

3.3. Business automation through AI

Furthermore, the integration of AI into business operations revolutionizes efficiency, productivity, and innovation. By automating routine tasks, businesses can allocate human resources towards more strategic roles, optimizing decision-making processes and fostering innovation (Bang et al., 2023; Rudolph et al., 2023). Generative AI technologies also play a pivotal role in enhancing customer experiences. Through personalized interactions facilitated by advanced technologies such as facial recognition and tailored marketing campaigns, businesses can achieve a deeper connection with their customers. Additionally, AI's capability extends to supporting public service organizations by streamlining processes like telehealth

services, passport issuance, and the efficient disbursement of government subsidies, notably by identifying discrepancies such as ghost workers (Crawford, 2021; Tacheva and Ramasubramanian, 2023). The collective impact of these advancements underlines the critical role of generative AI in driving business development and economic progress in developing economies.

The competitive landscape for firms across the globe is increasingly defined not just by traditional assets such as human and financial resources, but also by their capacity to harness AI (Amankwah-Amoah and Lu, 2022). This shift marks a significant departure from conventional business strategies, with AI now playing a pivotal role in redefining the rules of commerce and facilitating transformative changes across national economies (Webb, 2021). The ability to effectively leverage AI technologies has become critical to success, offering businesses unprecedented opportunities for innovation, efficiency, and market expansion (Schmidt and von der Oelsnitz, 2020).

4. The potential of AI for economic transformation in Africa's developing economies

The economic impact of AI on a global scale is profound, with projections indicating a substantial contribution to the world economy in the coming decade. A report by PricewaterhouseCoopers (PwC) (2019) estimates that by 2030, AI could add approximately $15.7 trillion to the global economy. This staggering figure is attributed to gains in productivity worth around $6.6 trillion and an additional $9.1 trillion stemming from consumption-related effects associated with AI. Such projections underscore the transformative potential of AI, not only as a driver of business development but also as a catalyst for broad economic growth (Amankwah-Amoah and Lu, 2022). Through enhancing productivity and fostering new consumer experiences, AI is set to play a central role in shaping the future economic landscape, offering developing economies an opportunity to leapfrog into new phases of growth and development (Travaly and Muvunyi, 2020).

The integration of AI into the economic fabric of developing countries presents a significant opportunity to revitalize both traditional and emerging sectors. Industries ranging from manufacturing and farming to automotive, electronics, and pharmaceuticals stand to benefit substantially from the adoption of AI technologies (Amankwah-Amoah and Lu, 2022). This transition not only promises to enhance operational efficiencies and productivity but also opens the door to innovation and competitiveness on a global scale. The transformative impact of AI in these sectors underscores the vast potential for nations to harness these technologies for economic development and industry reform.

Travaly and Muvunyi (2020) highlight the unique position of the African continent in leveraging AI to spearhead its participation in the 4th Industrial Revolution. The application of AI in Africa exemplifies how developing economies can utilize these technologies to achieve accelerated growth and substantial improvements in various sectors, positioning themselves as leaders in the adoption of digital innovation. Schmidt et al. (2021) further emphasize the strategic advantage conferred by AI's superior capabilities in observing, evaluating, and responding to

events more accurately and promptly than humanly possible. This capability is not just a boon for large enterprises but extends its advantages to small and mid-sized businesses as well, democratizing the benefits of AI and enabling a wider spectrum of companies to compete effectively in the global market.

The inclusive potential of AI technologies signifies a pivotal shift in the business landscape of developing economies. By embracing AI, these regions can unlock new avenues for economic growth, enhance their industrial competitiveness, and ensure broader participation in the benefits of the digital revolution (Amankwah-Amoah and Lu, 2022). The ability of AI to transcend scale, offering valuable tools for businesses of all sizes, marks a critical step towards inclusive economic development and the empowerment of a diverse array of industries within developing economies. In the last two decades, Africa has made significant strides toward embracing digital transformation, showcasing exponential growth in mobile phone adoption and access to smartphones (Solomon and van Klyton, 2020). This digital leap signifies not just a shift towards modern communication technologies but also sets a foundation for innovative business practices and economic development across the continent. Despite its wealth in natural resources and human capital, Africa has faced challenges in maximizing the full potential of these modern technologies to spur comprehensive economic growth and development (Amankwah-Amoah and Lu, 2022). The burgeoning digital economy in Africa, as highlighted by the International Finance Corporation (2020), presents a promising avenue for business development in the continent's developing economies. The projected increase of Africa's digital economy to $180 billion by 2025, accounting for 5.2% of the continent's GDP, and its expected growth to $712 billion, or 8.5% of the GDP by 2050, illustrates the significant impact of digital technologies on economic expansion. This growth trajectory offers a glimpse into the future, where digital technologies, powered by AI, become central to unlocking economic opportunities and enhancing business development within Africa's diverse economies.

Amankwah-Amoah and Lu (2022) demonstrate that Africa's engagement with digital technologies and AI not only provides a pathway for businesses to innovate and compete globally but also addresses critical development challenges through enhanced connectivity, improved access to information, and streamlined business operations. The integration of AI into various sectors from agriculture and manufacturing to services and digital commerce can catalyze business development, driving efficiency, productivity, and sustainability (Eli-Chukwu, 2019). As African economies continue to harness these digital tools and AI capabilities, the potential for transformative business development that leverages the continent's rich resources and human capital becomes increasingly attainable.

In financing and funding, AI has introduced new and transformative changes, streamlining and enhancing various processes. AI technologies, especially through advanced algorithms and natural language processing capabilities, have significantly simplified routine tasks such as data entry, reconciliation, and financial analysis (Rane, 2023). The automation of these tasks reduces the time and effort required for data processing, consequently lowering the risk of human error and increasing the accuracy of financial records. This precision enables financial professionals to concentrate on strategic decision-making (Bharadiya, 2023).

Furthermore, AI's predictive analytics play a crucial role in strategic planning for businesses. These systems can accurately forecast trends, stock prices, market dynamics, and investment opportunities (Rane, 2023). This capability is particularly beneficial for businesses in Africa seeking funding and financing. Traditional institutions, which might otherwise overlook investment opportunities, can leverage these tools to accurately analyze investment prospects, potentially leading to increased investment in the continent.

VetAfrica is a great example of how AI technology can have a massive impact on one of Africa's most vital sectors. VetAfrica is a mobile application that aids African veterinarians and farmers in diagnosing livestock diseases. Developed by the Scottish-based company Cojengo Ltd., the platform includes VetAfricaHub, an online data management dashboard that allows users to review, share, and act on live surveillance data (Beyene et al., 2017; Beyene et al., 2018; Engineering for Change, 2024).

The application's software is developed at Cojengo's headquarters in Glasgow, while testing was conducted in Kenya and Ethiopia. In Ethiopia, the research and development of the app received support from the International Development Research Centre (IDRC) (Engineering for Change, 2024). VetAfrica offers significant benefits and has the potential to make a profound impact on the agricultural sector. The AI-powered diagnostic tools help veterinarians and farmers identify livestock diseases more accurately, leading to better treatment outcomes and reduced mortality rates (Javaid et al., 2023). This has the potential to significantly improve animal health and increase agricultural productivity (Singh, 2020). Additionally, the application enables early detection of disease outbreaks through real-time data collection and analysis, allowing for rapid response to emerging threats and reducing the spread of diseases (Beyene et al., 2017; Beyene et al., 2018).

The VetAfricaHub platform allows for seamless data sharing among veterinarians, farmers, and government agencies, enhancing collaboration and supporting the development of targeted disease control strategies. By providing accurate diagnostic services at a fraction of traditional costs, VetAfrica makes veterinary care more accessible to small-scale farmers, reducing the need for costly laboratory tests and encouraging preventative care practices (Ahngar et al., 2022). Furthermore, the platform offers training modules that help veterinarians and farmers improve their diagnostic skills, contributing to capacity building in the agricultural sector and promoting sustainable livestock management practices (Beyene et al., 2017; Beyene et al., 2018).

With better disease management and improved animal health, farmers can achieve higher yields, increasing their income and contributing to overall economic growth in the agricultural sector (Ahngar et al., 2022). The data collected through VetAfricaHub also provides valuable insights that can inform policy development, enabling governments to design and implement effective livestock health programs and allocate resources more efficiently.

5. Challenges and barriers to AI integration in Africa's developing economies

The integration of Artificial Intelligence (AI) in Africa's developing economies faces numerous challenges. This section examines the significant obstacles posed by insufficient digital infrastructure, the skills and education gap, and the regulatory and ethical considerations that hinder the effective adoption of AI in business development.

5.1. Digital infrastructure challenges for effective AI use

One of the principal barriers to AI implementation in Africa's developing economies is the limitations of digital infrastructure. These challenges are not solely technical but are deeply embedded within the socio-economic framework of the continent, highlighted by a lack of access to essential resources such as education, employment, income, and healthcare (Arakpogun et al., 2022). Particularly in Sub-Saharan Africa, the existing digital infrastructure is markedly deficient, posing a significant barrier to AI integration (UNDP, 2021, 2022).

The integration of AI in business development in Africa is impeded by the high upfront costs of infrastructure development and access, compounded by limited high-speed internet access. In regions where reliable internet is only accessible to those who can afford its prohibitive costs, the majority are excluded from leveraging the digital tools necessary to benefit from AI's proliferation in business. In some areas, the cost of necessary hardware and software can equate to a month's wages for the average worker (Ernst et al., 2019; Lund, 2021, 2022). Houde et al. (2020) underscore the challenges arising from these economic barriers, which exacerbate perceived disparities and complicate participation in the global digital economy.

The digital infrastructure's inadequacy also complicates the integration of AI into small and medium enterprises (SMEs), which are often heralded as growth and innovation engines in Africa and are vital to the economic landscape, accounting for 63% of total employment in the Organization for Economic Co-operation and Development (OECD) countries (Abisuga-Oyekunle et al., 2020). Yet, these entities frequently lack the resources to transition to AI-driven processes (OECD, 2021; Wei and Pardo, 2022).

5.2. Connectivity and power stability

The digital divide is further deepened by connectivity challenges and power instability, critically limiting the widespread deployment of AI. The issue of electricity instability cannot be overstated, with energy prices rising due to the war in Ukraine and the COVID-19 pandemic's impact, resulting in a 4% increase in the number of people living without electricity since 2019. As of 2022, approximately 43% of Africa's population, over 600 million people—primarily from Sub-Saharan Africa—lacked access to electricity (IEA, 2022). South Africa exemplifies the challenge of power supply, experiencing an unprecedented increase in load shedding—the deliberate shutdown of power system components to prevent damage and avert a national blackout. Although not unique to South Africa, the frequency, severity, and duration of rolling blackouts have reached unprecedented levels there, with 332 days

of load shedding recorded in 2023 (Rodganger, 2023).

5.3. The skill gaps in education and training for AI and related technologies

The advancement of AI and related technologies necessitates a workforce equipped with diverse skills, ranging from basic digital literacy to advanced competencies in data science, AI app development, and machine learning (Anton et al., 2020). Despite the development of numerous curricula across various locations by researchers, only a few nations have officially incorporated AI instruction into their educational programs. A recent UNESCO report reveals that just eleven countries have government-approved AI curricula, with an additional four in the process of developing K-12 AI curricula (UNESCO, 2021). However, notably absent from this list are African nations, highlighting a significant skills gap in machine learning, a key driver of AI capability development (Sanusi et al., 2022).

This skills gap poses substantial challenges for entrepreneurs and the general workforce in Africa. The scarcity of skilled workers, including those in management knowledgeable about AI, restricts entrepreneurs' ability to innovate and leverage AI for business development (Arakpogun et al., 2021). A 2017 McKinsey survey of 116 executives from large firms identified skills as one of the top ten challenges facing their companies, with nearly two-thirds of respondents expressing this concern. Only 7% of participants believed their organizations were prepared to address the anticipated skills shortages within the next five years. The study identified three primary challenges to preparing for the skills gap: over 50% of respondents lacked a clear understanding of how future automation and digitalization would impact skill needs; almost 40% reported a lack of resources or expertise to assess the value of reskilling their workforce (Ellingrud et al., 2020).

5.4. Challenges of AI regulation in Africa

AI integration in business development and funding necessitates careful consideration of the regulations governing its use and application, alongside the ethical considerations inherent in technological advancements. The rapid advancement and convergence of modern technology have made enforcing regulations increasingly difficult, costly, and complex for governments (Arakpogun et al., 2021). Businesses must navigate an uncertain legal landscape, where rules regulating AI are often unclear or non-existent.

According to the 2022 Government Artificial Intelligence Readiness Index, Mauritius (ranked 57th), Egypt (ranked 65th), South Africa (ranked 68th), Tunisia (ranked 70th), and Morocco (ranked 87th) are the top five African countries in terms of AI readiness. These nations' high rankings are attributed to their performance in the "government" pillar, which includes having a national AI strategy, developing online services, implementing privacy and data protection laws, and establishing cybersecurity plans (Jaldi, 2023). Conversely, the majority of the 49 countries in Africa have little to no regulations governing AI and data protection, presenting a significant challenge to the continent's integration of AI technologies.

5.5. Combating biases in AI data

When addressing ethical considerations in AI, it is crucial to examine bias and discrimination, transparency, accountability, and the impact on employment. Challen et al. (2019) highlight that AI can exhibit biases due to the data it is trained on, leading to biases in areas such as hiring practices where gender bias might result in fewer women being hired for specific positions. Similarly, racial biases in facial recognition software can result in misidentification of individuals from certain racial groups (Huriye, 2023). Krishnapaya et al. (2020) identify two ethical issues with bias in AI: firstly, biased AI systems have the potential to reinforce and amplify existing societal prejudices and discrimination; secondly, their application may lead to unfair treatment of individuals (Okolo et al., 2023). Research indicates that facial recognition systems tend to exhibit higher error rates for individuals with darker skin tones compared to those with lighter skin tones (Roselli et al., 2019). Businesses must consider these aspects and implement AI solutions that are fair and equitable.

Transparency and accountability in the deployment of AI for business development and funding also stand out as key ethical considerations (Okolo et al., 2023). Regarding accountability, as highlighted, AI systems generate results based solely on the provided datasets, meaning AI cannot be held accountable for decisions derived from these datasets, as they do not possess legal or moral agency (Raji et al., 2020). Kim et al. (2020) emphasize the importance of creating transparent and accountable AI systems, particularly for text analytics, as a significant contribution to the field. Businesses must ensure that decisions made by AI systems are understandable to all stakeholders and establish mechanisms to review these decisions.

6. Comparative analysis of AI strategies in Africa's emerging economies

AI is rapidly gaining traction in Africa, with each region, country, and organization employing unique transformative strategies (CIPIT, 2023; Gikunda and Kute, 2024). In the realm of policy-making, for example, different regions have shown varying degrees of progress. South Africa for example has been proactive in establishing robust policy frameworks to regulate AI deployment. Conversely, according to Kiemde and Kora (2020), other regions are still grappling with ill-equipped policy frameworks, leaving AI deployment largely unregulated. To regulate AI deployment This comparative analysis aims to highlight these diverse approaches and their impacts on the respective economies.

6.1. South Africa

South Africa has been proactive in establishing robust policy frameworks to regulate AI deployment (CIPIT, 2023). In April 2024, the Department of Communications and Digital Technologies (DCDT) launched the Artificial Intelligence Planning Discussion Document (Bhagattjee and Stephens, 2024; OECD, 2024). The DCDT, working with an AI Expert Advisory Council which will be staffed by "AI Experts", will work to define the AI strategy to be constituted in the national AI policy. In essence, these steps and documentation are intended to initiate discussions between the public and private sectors to facilitate AI innovation in South

Africa and foster government-led AI initiatives, and a proposed regulatory framework to guide the use and development of AI (DCDT, 2023).

The key proposals include the use of AI to further economic growth with a particular focus on key South African sectors such as manufacturing, agriculture, military capabilities, energy transition, healthcare, and the automotive sector. Importantly, it also aims to deal with key ethical considerations such as anti-competitive behaviour driven by a concentration of AI technology between a small number of technology companies. Social risks arising from job losses, existential risks resulting from a loss of control of AI models, and any increased criminality that may arise from the use of AI (Bhagattjee and Stephens, 2024; Mashishi, 2023).

AI implementation can greatly assist in the healthcare context, where in 2019, South Africa had a doctor-patient ratio of 0.8 doctors per 1000 people, compared to 2.3 in Brazil, 2.2 in China, and 3.3 in France (World Bank, n.d.). This is likely to be even lower in rural areas, making it even more difficult for people in these regions to get the medical services they may need. South Africa employs a private-public mix of healthcare, as it does not have universal healthcare, 80% of the population relies on the public system, which paradoxically only employs 20% of the doctors in South Africa (Marrie et al., 2023). Although AI systems in healthcare are in their infancy in South Africa, their implementation can address many problems, including the lack of medical staff, unequal access to healthcare, and the rise of diseases like tuberculosis.

By the year 2030 the market is expected to have grown to $950 million from only $40 million in 2022, this shows massive potential (Vora, 2023). Some of the key players currently in the industry are IBM Watson Health, and GE Healthcare which are international companies, some local players are Vantage Health Technologies, Envisionit Deep AI, and the Vodacom Group. Envisionit Deep AI for example received $1.65 million as recently as February 2023 to expand access to medical imaging (Vora, 2023).

In addition to the growth in the healthcare market, there are plenty of AI startups that are making significant contributions. Some examples include DarkMatter which designed a machine learning platform that simplifies learning model deployment that helps businesses get the maximum value for their data. Siyavula is another example, they focus on education-based AI technology which personalizes interactive online courses according to the individuals' academic level and proficiency. Seamless AI solutions offers customised services like facial and speech recognition systems suited for computing at scale.

6.2. Mauritius

Mauritius' AI strategy sets out the government's approach to making AI the cornerstone of the country's next development model. The strategy provides a roadmap defining key considerations for developing the right ecosystem to enable Mauritius to adopt new technologies as enablers of growth. Ranked 57th globally and 1st in Africa in the 2022 Government AI Readiness Index, the country has outperformed its continental counterparts due to its comprehensive and forward-thinking AI strategy (National Computer Board, 2018; Rogerson et al., 2022). Mauritius has implemented a comprehensive national AI policy aimed at fostering

innovation, improving governance, and enhancing the socio-economic impact of AI applications. The policy framework focuses on promoting Research and Development (R&D), building a robust digital infrastructure, enhancing data governance and security, and developing AI literacy and skillsets through education and training. Significant investments have been made to build high-speed internet connectivity, cloud computing facilities, and data centers (Hendawy and Ansari, 2023). The framework however is devoid of measures that would enable data subjects to properly exercise their rights, and it is noteworthy that "data portability", a critical component included by other data protection laws like the EU's General Data Protection Regulation (GDPR), is not regulated. Overall, there are concerns regarding the Act's strict application, particularly inside the government. For instance, civil society points out that the government has access to CCTV footage and that mobile data customers must now re-register, although it is unclear how or why the state will keep this information (Diallo et al., 2024; Voigt and Von dem Bussche, 2017).

The government has also promoted partnerships between the public and private sectors to accelerate digital infrastructure growth. Moreover, the Data Protection Act (2017) aligns Mauritius with international data privacy standards (Eke and Omankhanlen, 2019). The Mauritius Artificial Intelligence Council (MAIC) oversees the ethical use and governance of data (Commonwealth Secretariat, 2021). Mauritius emphasizes developing an AI-skilled workforce by incorporating AI education at various levels. A K-12 AI curriculum builds foundational skills, university programs specialize in AI and data science, and the government collaborates with international institutions for research partnerships (Oyelere et al., 2022). Additionally, several reskilling and upskilling initiatives have been launched to prepare the existing workforce for AI integration. To foster innovation, Mauritius provides incentives and grants to startups and SMEs (Madhou et al., 2022). Technology parks and innovation hubs are being developed to attract global tech companies and venture capital investments.

Mauritius and South Africa both have comparatively comprehensive AI strategies, however, unlike South Africa, Mauritius is not hampered by infrastructural challenges (Rodganger, 2023). Both have excellent institutions developing talent, however, South Africa is suffering from a brain drain as they struggle to keep skilled AI professionals, a problem that Mauritius does not have to contend with (Mlambo and Adetiba, 2019). Based on the Finextra report, a comparison of companies specializing in AI in Africa shows a significant number of such companies in South Africa, totaling 726 businesses (Alikhan, 2023). Nigeria and Mauritius, the latter being rated first in the Government AI Readiness Index in Africa, have 456 and 35 companies respectively (Rogerson et al., 2022). These figures highlight the fertile ground and market capitalization opportunities available in Africa (Government AI Readiness Index, 2022).

6.3. Nigeria

Nigeria, the most populous country in Africa, is increasingly being recognized as a regional powerhouse for technological innovation (Arakpogun et al., 2021). Despite lacking a comprehensive national AI policy, Nigeria has made significant strides in

the tech sector. However, challenges remain, particularly in infrastructure and education (Rodganger, 2023). Despite the current lack of a national AI policy, the Ministry of Communications and Digital Economy is developing a Digital Economy Strategy that includes plans to harness the potential of AI. This strategy focuses on promoting digital literacy, improving digital infrastructure, and encouraging innovation in the tech sector (Federal Ministry of Communications and Digital Economy, 2019).

Much like in South Africa, internet connectivity remains inconsistent, particularly in rural areas (Obododike and Okekeokosisi, 2020). However, mobile penetration has increased significantly, providing an opportunity for digital services to thrive. The government has launched several initiatives to improve digital infrastructure, such as the National Broadband Plan (2020–2025), which aims to provide broadband access to 90% of the population by 2025 (Federal Ministry of Communications and Digital Economy, 2020). Despite these efforts, significant gaps remain in high-speed internet connectivity and data governance. Nigeria has a growing tech sector but lacks coordinated national initiatives for AI education and talent development (Arakpogun et al., 2022). Nevertheless, the private sector has stepped up to fill this gap. Multiple tech hubs, coding academies, and training programs are being established in cities like Lagos, Abuja, and Port Harcourt (Atiase et al., 2020). Organizations like Andela and CcHub are playing a significant role in developing tech talent (Ramachandran et al., 2019). Universities are also beginning to offer specialized programs in AI and data science, although this remains limited. Additionally, the government is working with international organizations to improve digital literacy and develop training programs (Oyelere et al., 2022).

Nigeria's tech ecosystem is rapidly growing, with a surge in the number of tech startups and venture capital investments, second behind only South Africa in the number of AI-focused companies. Lagos, in particular, has emerged as a significant tech hub in Africa (Atiase et al., 2020). Despite the absence of a comprehensive AI strategy, Nigeria has seen considerable investments in financial technology, health technology, and education technology. The government provides limited incentives for tech companies, primarily through the National Information Technology Development Agency (NITDA).

It is estimated that by 2030 Nigeria is projected to gain USD 59.0 billion in economic benefits from AI, leading Sub-Saharan Africa, while South Africa follows closely with USD 52.2 billion. Nigeria's strength is particularly pronounced in the Consumer, Retail & Hospitality sector, where it is expected to generate USD 14.6 billion compared to South Africa's USD 9.4 billion. In the Agriculture & Food sector, Nigeria's projected gains of USD 18.2 billion far exceed South Africa's USD 3.4 billion due to its substantial agricultural base and potential for AI to enhance productivity (DCDT, 2023).

However, South Africa surpasses Nigeria in the Manufacturing sector, with an estimated USD 9.3 billion compared to Nigeria's USD 7.8 billion, leveraging its advanced industrial infrastructure to optimize production. Similarly, South Africa leads in Financial Services with projected gains of USD 6.8 billion versus Nigeria's USD 5.6 billion, reinforcing its status as a regional financial hub. In Education & Training, Nigeria's advantage is notable, with an expected USD 2.6 billion compared

to South Africa's USD 0.7 billion, driven by a larger youth population and growing demand for skill development (DCDT, 2023).

Overall, Nigeria leads in total AI economic value, but South Africa demonstrates a more balanced sectoral distribution, particularly excelling in Manufacturing, Financial Services, and Healthcare. Both countries have significant opportunities to harness AI across various sectors, which will profoundly shape the economic landscape of Sub-Saharan Africa by 2030 (Department of Communications and Digital Technologies, 2023).

6.4. Comparative analysis: European and international guidelines

European Union (EU) AI Legislation: The EU's Artificial Intelligence Act (AIA) and the General Data Protection Regulation (GDPR) are leading examples of comprehensive AI legislation globally. The AIA categorizes AI applications into risk levels and sets forth obligations for developers and users, while the GDPR emphasizes data privacy and user consent. Adopting similar frameworks could significantly improve AI governance in Africa (European Parliament, 2024; European Parliament Research Service, 2020).

Risk-based approach: Africa can benefit from a risk-based approach similar to the AIA, categorizing AI systems based on their potential harm and implementing strict requirements for high-risk applications.

Data protection principles: Aligning data protection principles with GDPR standards, such as obtaining explicit user consent and ensuring data portability, would strengthen user privacy (European Parliament Research Service, 2020).

OECD AI principles: The Organization for Economic Co-operation and Development (OECD) has established the OECD AI Principles, focusing on transparency, accountability, and robustness. These principles could serve as foundational guidelines for developing comprehensive AI legislation in Africa (OECD, 2020).

Transparency and Accountability: The OECD AI Principles emphasize the need for transparent and accountable AI systems. African nations could adopt similar principles to ensure that AI systems are explainable and that stakeholders understand the rationale behind AI decisions.

Robustness, security, and safety: The OECD's emphasis on robustness, security, and safety aligns with the requirements for trustworthy AI. Developing similar standards can help mitigate risks associated with AI applications, particularly in critical sectors like healthcare and finance (OECD, 2020).

Regional legislative initiatives in Africa: Mauritius' Data Protection Act (2017) aligns with international data privacy standards, emphasizing the principles of data minimization, purpose limitation, and individual rights. The MAIC oversees the ethical use and governance of data, setting a regional example (Commonwealth Secretariat, 2021). South Africa's DCDT is developing a comprehensive AI strategy through the Artificial Intelligence Planning Discussion Document. This initiative aims to balance innovation with ethical considerations, providing a framework that can guide other nations in the region (DCDT, 2023). Nigeria is developing a Digital Economy Strategy that incorporates AI adoption. The government is working with

organizations like the National Information Technology Development Agency (NITDA) to refine regulatory guidelines for AI applications (Federal Ministry of Communication and Digital Economy, 2020).

A harmonized approach to AI legislation across Africa, drawing from European and international guidelines, could help establish a comprehensive legal framework for the continent. Implementing risk-based regulation, emphasizing transparency and accountability, and prioritizing human rights and inclusivity are crucial steps for fostering responsible and ethical AI development in Africa.

7. Employment implications and strategic recommendations

7.1. The employment landscape in Africa

The integration of Artificial Intelligence (AI) into Africa's economies necessitates a comprehensive understanding of the continent's employment dynamics. According to the International Labour Organization, Africa's unemployment rate stands at 6.6% as of 2023. However, this overarching figure masks regional disparities, with some areas experiencing significantly higher rates. For instance, South Africa's unemployment rate is at 28%, with youth unemployment reaching a staggering 48% (ILO, 2024). The advent of AI introduces the risk of further job displacement, especially as AI capabilities expand. The potential for social and economic upheaval is particularly pronounced given that blue-collar jobs, often held by the less educated and economically disadvantaged segments of the population, are at risk. These jobs constitute a substantial portion of the labor force in Africa (Moradi and Levy, 2020).

7.2. Recommendations and strategies

Digital Infrastructure: Substantial investments in digital infrastructure are crucial for the widespread adoption of AI across Africa. Improved internet connectivity, cloud computing facilities, and data centers are necessary to support AI applications. For example, in Nigeria, initiatives like the National Broadband Plan (2020–2025) aim to provide broadband access to 90% of the population by 2025, enabling AI-driven innovation in fintech and e-commerce. South Africa's Department of Communications and Digital Technologies (DCDT) is also emphasizing the development of digital infrastructure to support its national AI strategy. Strengthening digital infrastructure is crucial for enhancing AI adoption in Africa's developing economies. Major investments in digital infrastructure will facilitate AI integration across sectors. Addressing connectivity and power stability through public-private partnerships is essential for expanding high-speed internet access and ensuring a stable electricity supply in both urban and rural areas. Initiatives like Kenya's Last Mile Connectivity Program, aimed at extending electricity distribution, serve as models for continent-wide implementation (Global Infrastructure Hub, 2024).

Improving education and training: Investments in education and skill development are essential for building a workforce capable of implementing and managing AI systems. South Africa's AI startups, such as Siyavula and Seamless AI Solutions, are working on education-based technologies, but a more comprehensive national approach is needed. Mauritius offers a promising model by integrating AI

education into its K-12 curriculum and providing specialized university programs in AI and data science. Improving education and training by upgrading educational curricula and vocational training to incorporate AI and digital literacy is vital. Current educational systems do not adequately prepare students for the Fourth Industrial Revolution. Engaging in private-public partnerships, such as collaborations with tech companies for internships and project experience, can enhance practical learning. Ghana's Accra Digital Centre, which provides skills training and incubation for tech startups, exemplifies such initiatives (Ghanaian Department of Community Libraries, 2024).

Establishing regulatory frameworks and ethical guidelines: Developing clear regulatory frameworks and ethical guidelines will fill existing gaps and offer needed certainty. Addressing concerns related to data privacy, security, and ethical AI use is paramount. Establishing ethics boards to oversee AI deployment will help mitigate the negative impacts of AI, particularly those related to bias and job displacement. National and organizational comprehensive AI ethics programs, such as IBM's AI Ethics Board, are critical for promoting ethical development and deployment of AI technologies. A robust legal framework ensures that AI is used ethically and inclusively. South Africa's Artificial Intelligence Planning Discussion Document seeks to balance innovation with ethical considerations. Mauritius' Data Protection Act (2017) aligns the country with international data privacy standards, and Nigeria is developing its Digital Economy Strategy to incorporate legal frameworks guiding AI adoption.

Leveraging AI for inclusive economic growth: AI should be used to foster inclusive economic growth, particularly in sectors like agriculture, healthcare, and education, where it can have significant social impacts. Tailoring AI applications to local needs, such as precision agriculture tools and AI-driven telehealth services, can address key societal challenges. Supporting startups through funding and support programs, akin to the incubation hub in Accra, will stimulate positive social and economic advancements. Encouraging collaboration between the public and private sectors can accelerate the development of AI ecosystems. South Africa's DCDT, for instance, involves both government agencies and private entities in shaping its AI policy. In Mauritius, the MAIC oversees public-private initiatives, while in Nigeria, organizations like Andela and CcHub are working with government bodies to promote AI skill development.

These strategic recommendations underscore Africa's potential to not only participate in but also lead within the global digital economy. Commitment to creating a supportive environment for digital transformation and AI integration is crucial for achieving a technologically empowered Africa, where innovation, inclusivity, and sustainable economic practices drive business development.

7.3. Recommendations for policymakers, entrepreneurs, and investors

Policymakers should prioritize building regulatory frameworks that encourage AI adoption while safeguarding data privacy. Investing in digital infrastructure and skill development programs will create an enabling environment for AI-driven economic growth. South Africa's Department of Communications and Digital

Technologies (DCDT) is developing a comprehensive AI strategy through its Artificial Intelligence Planning Discussion Document. Mauritius offers valuable lessons through its Data Protection Act (2017), aligning the country with international data privacy standards. Nigeria is developing a Digital Economy Strategy to incorporate AI adoption, and policymakers can work with organizations like NITDA to refine regulatory guidelines.

Entrepreneurs should focus on sectors with significant growth potential, such as fintech, healthcare, and agriculture. For example, VetAfrica demonstrates how AI can transform agriculture by improving livestock disease diagnostics and increasing access to veterinary services. In South Africa's healthcare sector, startups like Envisionit Deep AI received USD 1.65 million to expand access to medical imaging, while Vantage Health Technologies contributes to the burgeoning AI healthcare market. In education, Siyavula and Seamless AI Solutions are developing AI-based technologies for personalized learning and facial recognition.

Investors should consider supporting startups in high-potential sectors like healthcare, fintech, and agriculture. South Africa's AI healthcare market is projected to grow from USD 40 million in 2022 to USD 950 million by 2030, presenting significant opportunities for investment. Envisionit Deep AI, Vantage Health Technologies, and the Vodacom Group are prominent players in this sector. VetAfrica provides a compelling case for investing in AI-driven agricultural solutions that address key challenges in Africa's livestock industry.

8. Limitations of the study

Despite the comprehensive exploration of AI's transformative potential in Africa's emerging economies, this study acknowledges several limitations that may affect the generalizability and applicability of the findings. First, the comparative analysis study focuses primarily on three emerging economies in Sub-Saharan Africa, namely South Africa, Nigeria, and Mauritius, which limits the geographical scope of analysis. While these countries represent diverse economic and technological landscapes, their experiences with AI adoption may not fully reflect the challenges and opportunities across the entire continent. Further research is needed to explore AI strategies and implementations in other African nations, especially those with different socio-economic dynamics.

Although the paper includes a comparative analysis of AI adoption strategies between South Africa, Nigeria, and Mauritius, the methodology is primarily qualitative and relies heavily on secondary data sources. The lack of primary data collection and empirical analysis may limit the depth and accuracy of the comparative insights, particularly regarding the complex socio-economic and cultural factors influencing AI adoption in these countries.

The research is based on existing theories and literature related to AI adoption and economic development. However, the rapid evolution of AI technologies and their applications means that some theoretical frameworks may become outdated or less applicable. Additionally, the study's reliance on established theories does not account for the full range of innovative, context-specific strategies being employed at the grassroots level in different African regions. Due to limited data availability,

particularly for Mauritius, some of the quantitative analyses rely on projections and estimates that may not accurately reflect real-world scenarios. Moreover, discrepancies in data collection methods across various reports and studies can lead to inconsistencies in the comparative analysis.

The estimation of market potential for AI applications is based on predictive models that may not account for unpredictable socio-political and economic changes. These projections should thus be interpreted with caution, as they are subject to variances in government policies, technological advancements, and market dynamics. While this study provides an overview of the policy and regulatory frameworks guiding AI adoption in South Africa, Nigeria, and Mauritius, the rapidly evolving nature of AI regulation means that new policies and initiatives could significantly alter the strategic landscape. The study's reliance on current policy documents may thus overlook upcoming shifts and emerging regulatory challenges.

Despite these limitations, this study offers valuable insights into the transformative strategies for AI adoption in Africa's emerging economies and provides a foundation for future research to build upon. Further studies should aim to incorporate primary data collection, expand the geographical scope, and explore the socio-economic impact of grassroots AI initiatives to offer a more comprehensive understanding of AI's potential across Africa.

9. Conclusion

The integration of AI into the global economy marks the dawn of a new era filled with both opportunities and challenges. This is particularly pronounced in Africa's developing economies, where resources are often scarce or misallocated, and market dynamics differ significantly from those in more developed regions. AI stands out as a pivotal catalyst for economic growth and innovation, offering a promising route to surmount traditional hurdles such as limited access to capital and inefficient business processes.

In Africa's emerging economies, AI plays a multifaceted role in business development, demonstrating immense potential across various sectors, from agriculture to financial services. Innovations like VetAfrica highlight AI's capacity to deliver cost-effective solutions and enhance access to vital services, illustrating its transformative effect on traditional business models and the funding landscape. However, the journey toward AI integration is fraught with significant obstacles, including inadequate digital infrastructure, a pronounced skills gap, and the absence of comprehensive regulatory frameworks. These challenges underscore the necessity for a balanced approach to AI integration that carefully weighs both its advantages and potential pitfalls.

Comparative analyses of AI strategies in South Africa, Nigeria, and Mauritius reveal diverse approaches and challenges. South Africa has established robust policy frameworks through the Department of Communications and Digital Technologies (DCDT) to regulate AI deployment. Mauritius has created a comprehensive AI strategy and leads the region in government AI readiness, while Nigeria is developing a Digital Economy Strategy that includes AI adoption. Despite these efforts, significant gaps remain in digital infrastructure, education, and regulatory

frameworks.

Substantial investments in digital infrastructure are crucial for the widespread adoption of AI across Africa. Improved internet connectivity, cloud computing facilities, and data centers are necessary to support AI applications. Initiatives like Nigeria's National Broadband Plan (2020–2025) and South Africa's DCDT digital infrastructure strategy can serve as models for the region. Investing in education and skill development is essential for building a workforce capable of implementing and managing AI systems. Mauritius offers a promising model by integrating AI education into its K-12 curriculum and providing specialized university programs in AI and data science. South Africa's AI startups, such as Siyavula and Seamless AI Solutions, also contribute to education-based technologies.

Developing comprehensive regulatory frameworks and ethical guidelines will fill existing gaps and provide the certainty needed for AI adoption. South Africa's Artificial Intelligence Planning Discussion Document seeks to balance innovation with ethical considerations, and Mauritius' Data Protection Act (2017) aligns the country with international data privacy standards. Encouraging collaboration between the public and private sectors can accelerate the development of AI ecosystems. The MAIC oversees public-private initiatives, and organizations like Andela and CcHub in Nigeria are working with government bodies to promote AI skill development.

Policymakers should prioritize building regulatory frameworks that encourage AI adoption while safeguarding data privacy. Investing in digital infrastructure and skill development programs will create an enabling environment for AI-driven economic growth. Entrepreneurs should focus on sectors with significant growth potential, such as fintech, healthcare, and agriculture. VetAfrica demonstrates how AI can transform agriculture by improving livestock disease diagnostics. Investors should consider supporting startups in high-potential sectors like healthcare, fintech, and agriculture. South Africa's AI healthcare market is projected to grow from USD 40 million in 2022 to USD 950 million by 2030, presenting significant opportunities for investment.

AI's assimilation into Africa's emerging economies opens up substantial opportunities for revitalizing both traditional and emerging sectors. With its proficiency in data analysis for insightful predictions and automation of mundane tasks, AI provides businesses with tools for improved decision-making, operational efficiency, and customer satisfaction. Such technological leverage is crucial in positioning African enterprises for competitive success locally and internationally. Looking ahead, AI is poised to brighten the prospects for businesses operating within economically disadvantaged nations. The continued advancement of AI technologies is expected to deepen their integration across more industries, fostering efficiency, creativity, and economic growth. Achieving this vision necessitates coordinated efforts to bolster digital infrastructure, bridge skills and education gaps, and establish regulatory frameworks that stimulate innovation while addressing ethical considerations.

In conclusion, AI has the transformative capacity to fundamentally reshape Africa's developing economies. To fully unlock this immense potential, substantial investments in digital infrastructure, education, and legal frameworks are imperative. As these economies navigate digital transformation, AI not only alters the landscape

of business development and funding but also holds the promise of a future where technological innovation drives sustainable economic empowerment. By addressing skill shortages, regulatory challenges, and digital infrastructure hurdles, these economies can harness AI as a pivotal tool for economic development, setting the stage for inclusive growth and technological leadership on the global platform in the years to come.

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