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2025 2nd International Conference on the Frontiers of Social Sciences, Education, and the Development of Humanities Arts (EDHA 2025)

Analysis of African State-Owned Enterprises Development and China-Africa Industrial Cooperation Under the "Belt and Road" Initiative

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Abstract: Africa, as one of the regions with the greatest potential for global economic growth, has seen its state-owned enterprises (SOEs) play a crucial role in economic development. However, African SOEs face challenges such as imperfect governance structures, shortages of capital and technology, and intense market competition. China's Belt and Road Initiative (BRI) has created new avenues for economic engagement between China and Africa, particularly in infrastructure, production capacity collaboration, and trade, particularly in infrastructure construction, production capacity collaboration, and trade and investment. This paper analyzes the current state of African SOEs and China-Africa industrial cooperation under the BRI, exploring the opportunities and challenges of such collaboration. The study finds that China-Africa industrial cooperation has made significant progress in energy, infrastructure, and manufacturing, but also faces issues such as political risks, cultural differences, and sustainable development. This paper offers theoretical foundations and policy recommendations for optimizing SOE reforms in Africa and deepening China-Africa cooperation, while also envisioning the long-term potential of this partnership and the further development of the BRI in Africa.

Keywords: African state-owned enterprises; Belt and Road initiative; China-Africa industrial cooperation; infrastructure

Received: 15 February 2025 Revised: 25 February 2025 Accepted: 08 March 2025 Published: 14 March 2025



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1. Introduction

Africa, with its abundant natural resources and young population, is regarded as one of the regions with the greatest potential for global economic growth. However, African countries face numerous challenges in their economic development, including inadequate infrastructure, low industrialization levels, and shortages of capital and technology. As a vital component of the African economy, SOEs play a key role in driving economic growth, providing public services, and promoting industrial upgrading. Nevertheless, many African SOEs suffer from issues such as poor governance, lack of funding, and weak competitiveness, necessitating reforms and transformations to enhance their efficiency and adaptability. Meanwhile, China's BRI has provided new opportunities for China-Africa cooperation, particularly in infrastructure construction, production capacity collaboration, and trade and investment. Since the launch of the BRI, China and African countries have engaged in substantial cooperation in energy, transportation, and manufacturing, contributing to Africa's economic development. This paper aims to explore the current state of

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African SOEs and China-Africa industrial cooperation under the BRI, analyzing the opportunities and challenges of such collaboration. Specifically, it seeks to answer the following questions: What are the current state and challenges of African SOEs in economic development? How does the BRI impact the development of African SOEs? What are the opportunities and challenges in China-Africa industrial cooperation? Through an indepth analysis of these issues, this paper aims to provide theoretical foundations and policy recommendations for optimizing SOE reforms in Africa and deepening China-Africa cooperation [1].

2. Current State and Challenges of African State-Owned Enterprises

2.1. History and Current State of African SOEs

The history of African SOEs dates back to the mid-20th century, when many newly independent African countries adopted nationalization policies to consolidate economic sovereignty and promote industrialization. Key industries such as energy, mining, transportation, and telecommunications were brought under state control to provide public services and drive socio-economic development. For example, Nigeria established the Nigerian National Petroleum Corporation (NNPC) in the 1970s to manage its oil resources, while South Africa's SOEs like Eskom and Transnet dominate the energy and transportation sectors. However, over time, African SOEs have faced numerous challenges. Despite their significant role in the economy, many SOEs suffer from inefficiency and low competitiveness, struggling to adapt to an increasingly market-oriented environment. According to the World Bank, many African SOEs rely on government subsidies and are plagued by poor governance, corruption, and mismanagement [2]. For instance, South Africa's Eskom has faced frequent power shortages due to mismanagement and financial crises, severely impacting the country's economic development. Nevertheless, SOEs remain indispensable in Africa's economy. They dominate sectors such as energy (oil, gas, and electricity), transportation (railways, ports, and aviation), and telecommunications. For example, Ethiopia's Ethio Telecom, the sole telecom service provider, has played a critical role in promoting digital transformation. In summary, while African SOEs have historically contributed to economic development, their current state is concerning. Facing challenges from globalization, marketization, and technological advancements, African SOEs must undergo reforms and transformations to enhance their efficiency and competitiveness [3].

2.2. Challenges Facing African SOEs

Despite their importance, African SOEs face multiple challenges that hinder their efficiency and competitiveness. Firstly, poor governance structures are a core issue. Many SOEs suffer from mismanagement, lack of transparency, and corruption, leading to resource waste and inefficiency. For example, in some countries, SOE executives are politically appointed rather than selected based on merit, resulting in political interference and poor decision-making. Additionally, the lack of effective oversight and accountability mechanisms exacerbates corruption. For instance, Nigeria's NNPC has faced challenges related to financial transparency and management inefficiencies, impacting its credibility and operational efficiency. Secondly, insufficient funding and outdated technology are major bottlenecks. Many SOEs lack the capital needed for infrastructure development, equipment upgrades, and technological innovation, making it difficult to meet modern production demands. For example, South Africa's Eskom has faced challenges in maintaining its aging infrastructure and ensuring stable power supply amid financial constraints. Moreover, technological backwardness limits SOEs' innovation capabilities and competitiveness in the global market. Thirdly, SOEs face increasing competition from private and international players. Many SOEs are inefficient, costly, and provide poor-quality services, making it difficult to compete in the market. For instance, state-owned telecom companies in some African countries have been outperformed by private and foreign competitors. Additionally, the monopolistic position of SOEs often stifles innovation, further weakening their competitiveness. Fourth, inadequate policy environments and legal frameworks pose challenges. In some countries, frequent policy changes and weak legal enforcement create uncertainty for SOEs. For example, governments may cut subsidies or implement unfavorable policies due to fiscal pressures. Moreover, weak legal frameworks make it difficult for SOEs to enforce contracts, protect intellectual property, and resolve disputes. Finally, SOEs face social and political pressures. They are often required to provide public services and employment at below-cost prices, straining their finances. For example, some SOEs are mandated to supply electricity, water, or transportation services at a loss. Additionally, SOEs face resistance from labor unions and political groups, making it difficult to implement necessary reforms. In conclusion, African SOEs face multiple challenges that hinder their efficiency and overall economic development. To address these issues, African countries must promote SOE reforms, improve governance, introduce market competition, and strengthen policy and legal support. International cooperation, particularly in funding, technology, and management expertise, will also play a crucial role in supporting the development of African SOEs [4].

2.3. Reforms and Transformations of African SOEs

To address these challenges, African SOEs are actively exploring reforms and transformations to enhance their efficiency and competitiveness. The core objectives of these reforms are to improve governance, introduce market competition, and strengthen international cooperation for sustainable development. Firstly, privatization and mixed-ownership reforms have become key strategies. By introducing private capital and strategic investors, SOEs can alleviate funding shortages and benefit from private sector management expertise and technology [5]. For example, Kenya's Safaricom, through privatization and international management, has become one of Africa's most successful telecom companies, with its M-Pesa mobile payment service being a global innovation. Mixed-ownership models, combining state and private capital, have also been adopted in some countries to enhance competitiveness while retaining state control over key industries. Secondly, improving governance structures is critical. Many African countries are enhancing SOE management by establishing independent boards, improving transparency, and introducing international management teams. For example, South Africa's "Corporate Governance Act" requires SOEs to establish independent boards and audit committees to ensure transparency and accountability. Thirdly, international cooperation plays a vital role in SOE reforms. Collaborations with foreign companies, international financial institutions, and multilateral organizations provide funding, technology, and management expertise. For instance, China's BRI has supported infrastructure projects in Africa, improving transportation and energy conditions while offering technical assistance to local SOEs. Additionally, institutions like the World Bank and IMF provide loans and technical support for SOE reforms. However, SOE reforms face challenges such as regulatory hurdles, social concerns, and interest group dynamics. For example, privatization may lead to job losses and public discontent, while governance reforms may encounter opposition from vested interests. Therefore, governments must adopt cautious and flexible strategies to ensure successful reforms. In conclusion, the reform and transformation of African SOEs are essential for enhancing their competitiveness and driving economic development. Through privatization, improved governance, and international cooperation, African SOEs can achieve sustainable development in a globalized economy. However, the reform process requires overcoming significant challenges, necessitating concerted efforts from governments, enterprises, and society [6].

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3. The "Belt and Road" Initiative and China-Africa Industrial Cooperation

3.1. Core Content and Objectives of the BRI

The Belt and Road Initiative (BRI), proposed by China in 2013, is a global cooperation framework aimed at promoting shared development and prosperity through enhanced infrastructure connectivity, trade and investment cooperation, and cultural exchanges among participating countries. The initiative derives its name from the "Silk Road Economic Belt" and the "21st Century Maritime Silk Road," with its core content encompassing five key areas: policy coordination, infrastructure connectivity, unimpeded trade, financial integration, and people-to-people bonds, collectively known as the "Five Connectivities." Firstly, policy coordination serves as the foundation of the BRI. By strengthening dialogue and coordination among governments, the initiative aligns development strategies and policy rules, creating a favorable political environment for cooperation. For example, China and African countries have signed multiple cooperation agreements under the BRI framework, clarifying collaboration directions in infrastructure, energy, and manufacturing. Secondly, infrastructure connectivity is a central component of the BRI. By constructing railways, highways, ports, airports, and energy pipelines, the initiative aims to physically connect participating countries, reduce logistics costs, and promote economic integration. In Africa, China has been involved in several landmark infrastructure projects, such as Kenya's Mombasa-Nairobi Railway, Ethiopia's Addis Ababa-Djibouti Railway, and Nigeria's Lagos Light Rail, which have significantly improved local transportation conditions and spurred regional economic development. Thirdly, unimpeded trade is another key objective of the BRI. By reducing trade barriers, simplifying customs procedures, and promoting e-commerce, the initiative facilitates trade among participating countries. China-Africa trade has grown rapidly under the BRI, with China becoming Africa's largest trading partner [7]. Additionally, China has established free trade zones and economic cooperation zones, providing African countries with more trade and investment opportunities. Fourth, financial integration is a crucial pillar of the BRI. Through institutions such as the Asian Infrastructure Investment Bank (AIIB), the Silk Road Fund, and multilateral financial mechanisms, the initiative provides funding for infrastructure construction and economic development in participating countries. In Africa, China has offered substantial financial support for energy, transportation, and communication projects through loans, investments, and aid. Finally, people-to-people bonds form the social foundation of the BRI. By enhancing educational, cultural, tourism, and grassroots exchanges, the initiative fosters mutual understanding and friendship among people. For instance, China has established numerous Confucius Institutes in Africa, promoting cultural exchange and language learning. In summary, the BRI aims to achieve shared development among participating countries through multifaceted cooperation. For African countries, the initiative not only provides funding and technical support for infrastructure development but also injects new momentum into their industrialization and economic growth. Through the BRI, China-Africa cooperation has made significant progress in energy, transportation, manufacturing, and the digital economy, offering important opportunities for sustainable development in Africa [8].

3.2. Impact of the BRI on African State-Owned Enterprises

The advancement of the BRI has had a profound impact on the development of African state-owned enterprises (SOEs), presenting both opportunities and challenges. As a vital component of the African economy, SOEs play a significant role in China-Africa cooperation under the BRI framework, while also facing pressures for reform and transformation. Firstly, the BRI provides African SOEs with funding and technical support, enhancing their capacity for infrastructure construction and industrial development. Through loans, investments, and cooperative projects, China has injected substantial capital into Africa's energy, transportation, and communication sectors. For example, China's involvement in the construction of Kenya's Mombasa-Nairobi Railway and Ethiopia's Addis Ababa-Djibouti Railway has not only improved local transportation but also facilitated technology transfer and talent development for related SOEs [9]. Additionally, Chinese investments in energy projects such as hydroelectric, wind, and solar power stations have helped African SOEs improve their energy supply capabilities and technical expertise. Secondly, the BRI promotes market-oriented reforms and governance optimization in African SOEs. Through collaboration with Chinese enterprises, African SOEs have gradually adopted modern management concepts and technologies, enhancing their operational efficiency and competitiveness. For instance, in some cooperative projects, Chinese enterprises have provided technical training and management expertise, helping African SOEs improve financial management and production processes. Moreover, China's establishment of economic cooperation zones and industrial parks in Africa has provided SOEs with platforms to integrate into international markets, driving their market-oriented transformation. However, the BRI also brings new challenges for African SOEs. With the participation of Chinese enterprises, African SOEs encounter increased market competition. In some sectors, Chinese enterprises, with their strengths in financing, technology, and operational efficiency, have introduced new market dynamics, fostering both competition and collaboration with SOEs, leading to structural adjustments within local industries. For example, in the telecommunications and manufacturing sectors, some African SOEs struggle to compete with Chinese enterprises due to outdated technology and inefficiency. Additionally, some cooperative projects have failed to meet expectations due to mismanagement or cultural differences, leading to dissatisfaction and skepticism among local communities. Furthermore, the BRI has prompted African SOEs to reconsider their social responsibilities and sustainable development strategies. In some projects, environmental protection and community development have become focal points of concern. For instance, certain energy and mining projects have faced protests from local communities and environmental organizations due to environmental damage or land acquisition issues. This requires African SOEs to prioritize environmental protection and social responsibility while pursuing economic benefits, ensuring sustainable development. In conclusion, the BRI has a dual impact on African SOEs. On one hand, it provides funding, technology, and management expertise, driving their reform and transformation. On the other hand, it introduces market competition and social responsibility pressures, demanding that SOEs enhance their capabilities and adaptability. In this context, African SOEs must actively address challenges, seize opportunities, and achieve sustainable development through reform and innovation. Simultaneously, China and Africa should strengthen communication and coordination to ensure the transparency and sustainability of cooperative projects, creating a favorable environment for the long-term development of African SOEs [10].

4. Opportunities and Challenges in China-Africa Industrial Cooperation

China-Africa industrial cooperation has made significant progress under the BRI, injecting new momentum into the economic development of both sides. However, the collaboration also faces numerous challenges that require joint efforts to achieve mutual benefits and sustainable development. Firstly, the vast market potential in Africa offers broad opportunities for China-Africa industrial cooperation. With abundant natural resources and a young population, Africa is one of the fastest-growing regions in the global economy. As urbanization accelerates and the middle class expands, Africa's demand in energy, infrastructure, manufacturing, and consumer markets continues to grow. For example, Africa's power shortages and inadequate transportation infrastructure present significant opportunities for Chinese energy and construction enterprises. Additionally, Africa's agricultural and mineral resources provide a solid foundation for cooperation. Secondly, China's capital and technology exports provide crucial support for Africa's industrial development. Through the BRI, China has offered substantial loans and investments to African countries, helping them build infrastructure and develop industries. For instance, China has established multiple industrial parks and economic cooperation zones in Africa, creating job opportunities and facilitating technology transfer. Moreover, China's technological advantages in digital economy, renewable energy, and smart manufacturing have supported Africa's industrial upgrading and innovation. Thirdly, regional economic integration and industrial chain collaboration present new opportunities for China-Africa cooperation. The establishment of the African Continental Free Trade Area (AfCFTA) has facilitated trade and investment among African countries, creating a broader market for China-Africa collaboration. Through industrial chain integration, both sides can leverage their complementary strengths in manufacturing, agriculture, and services, promoting regional economic integration. Despite the promising prospects, China-Africa industrial cooperation faces several challenges. Firstly, political and policy risks are major obstacles. Political transitions and policy adjustments in some African countries may influence the implementation and operation of cooperative projects. For example, government transitions or policy adjustments could lead to project delays or contract breaches, increasing investment risks. Secondly, cultural differences and communication barriers need to be addressed. Differences in language, culture, and management styles between China and Africa may lead to misunderstandings and conflicts. For instance, communication gaps or cultural differences in project management could cause disagreements, hindering project progress. Thirdly, sustainable development and environmental protection have become focal points in China-Africa cooperation. Some projects have faced protests from local communities and environmental organizations due to environmental damage or resource overexploitation. For example, certain mining and energy projects have sparked social discontent and legal disputes due to inadequate environmental management. This requires both sides to prioritize environmental protection and social responsibility in their collaboration. Finally, inadequate infrastructure and human resources in Africa constrain the deepening of China-Africa industrial cooperation. Although China has invested heavily in infrastructure projects in Africa, poor transportation, power, and communication conditions in some regions still affect operational efficiency. Additionally, the shortage of technical and managerial talent in Africa limits its capacity for industrial upgrading and innovation. In conclusion, China-Africa industrial cooperation, driven by the BRI, demonstrates immense potential and opportunities. By strengthening infrastructure construction, promoting industrial upgrading, and fostering regional economic integration, both sides can achieve mutual benefits and shared development. However, challenges such as political risks, cultural differences, sustainable development, and human resource shortages must be addressed. To overcome these challenges, China and Africa need to enhance communication and coordination, improve cooperation mechanisms, and prioritize environmental protection and social responsibility to ensure the long-term sustainability of their collaboration. Through joint efforts, China-Africa industrial cooperation will inject new momentum into Africa's economic development and China's global strategy.

5. Case Study

Case: Kenya's Mombasa-Nairobi Standard Gauge Railway.

The Mombasa-Nairobi Standard Gauge Railway (SGR) is a flagship project of China-Africa industrial cooperation under the Belt and Road Initiative (BRI) and a model of infrastructure development in Africa. Constructed by China Communications Construction Company (CCCC), the 480-kilometer railway connects Kenya's largest port city, Mombasa, with its capital, Nairobi, and was officially opened in 2017. As Kenya's largest infrastructure project since independence, the SGR is a critical component of the East African railway network, playing a significant role in regional economic development. The project was initiated to address Kenya's urgent need to improve its transportation infrastructure and drive economic growth. The country's colonial-era railway system was outdated and inefficient, severely hindering the movement of goods and people. To address this, the Kenyan government launched the "Vision 2030" plan, aiming to transform the economy through infrastructure development. China, with its technical expertise and financial support in railway construction, became a key partner. The project's total investment was approximately \$3.8 billion, with 90% financed by loans from the Export-Import Bank of China and 10% funded by the Kenyan government. CCCC was responsible for the design, construction, and operation of the railway, providing comprehensive railway technology, including locomotives, signaling systems, and communication equipment. During construction, Chinese companies employed over 30,000 local workers and provided technical training, enhancing Kenya's railway construction capabilities. The completion of the SGR has improved Kenya's transportation conditions and contributed to regional economic development, though its long-term financial sustainability remains a subject of discussion. Firstly, the railway has greatly enhanced transport efficiency, reducing the travel time for goods from Mombasa to Nairobi from 24 hours to 8 hours and lowering logistics costs by 40%. This has not only facilitated trade and investment in Kenya but also provided landlocked countries like Uganda and Rwanda with more efficient access to the sea. Secondly, the SGR project has created numerous job opportunities and stimulated related industries. During construction, the project directly and indirectly generated over 46,000 jobs and trained thousands of local railway technicians. Additionally, economic activities and real estate development along the railway have flourished, driving regional prosperity. Finally, the SGR project has served as a case study for China-Africa cooperation, illustrating both achievements and challenges. Through this project, Chinese enterprises have demonstrated their technical prowess and management capabilities in infrastructure construction, earning the trust and recognition of African countries. At the same time, the project exemplifies the win-win principle of China-Africa cooperation, laying the groundwork for future collaborative projects. Despite its success, the SGR project faced several challenges. Firstly, its financing model sparked controversy. As the Kenyan government took on a substantial loan to finance the project, concerns emerged regarding its long-term fiscal sustainability and repayment challenges. Secondly, the project faced criticism regarding environmental protection and social responsibility. For instance, the railway's construction affected some wildlife habitats, drawing attention from environmental organizations. From the SGR project, the following lessons can be drawn:

- 1) Localization and Talent Development: By hiring local workers and providing technical training, the project not only enhanced Kenya's railway construction capabilities but also increased community involvement and support.
- 2) Environmental Protection and Social Responsibility: Future projects should prioritize environmental conservation and community interests to minimize negative impacts on ecosystems and local residents.
- 3) Optimized Financing and Risk Management: Diversified financing models and robust risk assessment mechanisms should be explored to ensure the financial sustainability of projects.

The SGR project is a successful example of China-Africa industrial cooperation under the BRI, showcasing the immense potential of collaboration in infrastructure development. Through this project, Kenya has improved its transportation network and boosted economic growth, while Chinese enterprises have gained trust and recognition in the African market. However, the project also highlights the need to prioritize environmental protection, social responsibility, and risk management to ensure the long-term sustainability of cooperation. The SGR experience offers valuable insights for future China-Africa collaboration and injects new momentum into the deepening of the BRI in Africa.

6. Conclusion

This paper has analyzed the current state of African state-owned enterprises (SOEs) and China-Africa industrial cooperation under the BRI, revealing both opportunities and challenges. The study finds that African SOEs play a crucial role in sectors such as energy, transportation, and telecommunications but face challenges such as poor governance, funding shortages, and market competition. The BRI has provided African SOEs with funding, technology, and management expertise, driving their reform and transformation, while also introducing pressures from market competition and social responsibility. China-Africa industrial cooperation has made significant progress in energy, infrastructure, and manufacturing but must address political risks, cultural differences, and sustainable development issues. This research provides theoretical foundations and policy recommendations for optimizing SOE reforms in Africa and deepening China-Africa cooperation. In the future, both sides should strengthen communication and coordination, prioritize environmental protection and social responsibility, and explore diversified cooperation models to achieve mutual benefits and sustainable development. Through joint efforts, China-Africa industrial cooperation will inject new momentum into Africa's economic development and the further advancement of the BRI.

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