

## Propensity to invest in manufacturing industry in developing countries: a literature review focused on the African case

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**Abstract:** It is known that industrial sector development leads countries to a structural change, promoting job creation, economic growth, and poverty alleviation. In Africa, a structural transformation is underway, but with a speed and a path divergent from industrialized countries and contemporary East Asia. Indeed, African countries are experiencing deindustrialization, and the manufacturing sector is still playing a marginal role in their economies. It is worth noticing that Africa global manufacturing share is smaller than in 1980, and the manufacturing share in Gross Domestic Product (GDP) is less than half of the average for all developing countries. The different industrial development between Africa and other countries is due to different background impacts, such as different technological contexts, a changing global marketplace, and natural resource availability. Despite this evidence, the manufacturing sector potential is also hindered by numerous obstacles. The major purpose of this paper is to provide a comprehensive literature review on the most significant constraints which have discouraged manufacturing settlements in developing African countries. This study can be valuable to expand a framework on the main country constraints, guiding and supporting manufacturing companies in choosing the proper territory to develop their industrial settlement. Support this process is a crucial step that can considerably reduce investment risk and boost opportunities. The analysis reveals that there are mixed factors that obstacle industrial growth, but a lot of evidence suggests that lack of infrastructure, adverse investment climate, skills gap, and political instability are the ones that negatively contribute the most.

**Keywords:** manufacturing development; obstacles; foreign direct investment; developing countries

### 1 Introduction

As a country begins its development process, a re-allocation of production factors from primary to secondary and tertiary sectors occurs (Naudé, 2016). This process, known as “industrialization”, mainly leverages on the manufacturing sector. The key advantage of manufacturing is the capacity to absorb a large workforce, creating productive and decent-paying job positions. Moreover, research activities in the manufacturing field are an essential technological development source, boosting innovation diffusion worldwide (Shen, 2007). Besides, the manufacturing sector creates positive spillover effects among other sectors, especially banking, transport, insurance, and commercial services (Mijiyawa, 2017). For all these reasons, analysing trends and obstacles in the manufacturing development in Africa, where most of the states are classified as less developed countries, is crucial. Historically, this sector has changed several nations, like France, Japan, and most recently China, creating structural changes, guiding development, reducing poverty and unemployment (Signé, 2018). By contrast, even if some structural changes have occurred, Africa's industrialization speed and path are entirely divergent from industrialized countries and contemporary East Asia. The African manufacturing sector underperforms both in terms of contribution to the Gross Domestic Product (GDP) and the Global Value Chains (GVCs), and most countries in the Sub-Saharan (SSA)

region have not experienced the traditional industrialization path (Ibrahim et al., 2019). Today, the region contributes 2% to the world manufacturing output, and it has a share of manufacturing in GDP of around 10% (Banga & Velde, 2018). Several initiatives have been proposed to strengthen the importance of industrial development, setting it as a priority to boost economic and social growth (African Union Commission, 2015) (African Development Bank-Group, 2017). Above all, the manufacturing progress is boost by foreign direct investment (FDI), especially from Multinational Enterprises (MNEs), which has always been an engine of growth, influencing numerous factors, such as income, production, prices, employment, and general welfare (Kok & Ersoy, 2009). In Africa, the lack of robust industrial development has been partially due to the incapacity of attracting FDI, especially in the manufacturing field. The investment flows into SSA have increased almost six times since 2000, achieving the highest value of US\$45 billion and guiding to a higher FDI stock in 2013. Anyhow, FDI into Africa is only a minimum portion of world FDI flows. Moreover, FDI in the manufacturing sector remains undiversified, focusing on low value-added activities, such as raw material processing or end-product assembly (Chen et al., 2015). Despite all the obstacles hindering manufacturing investments in Africa, prominent leaders and investors are looking at this region with growing attention. Indeed, Africa will reach 2 billion

people by 2050, becoming the most extensive labour pool in the world. In addition, Africa is attracting attention thanks to the low cost of labour and the abundance of natural resources (Sun, 2017). However, if strong initiatives will not occur in the following years, three-quarters of the new labour force will work in self-employment or microenterprises, and only 4 to 5% will find a job in manufacturing (Page, 2019). This paper aims to provide an in-depth literature review on the main obstacles that have discouraged the private sector in setting new manufacturing plants in Africa. Indeed, there is a need for an evidence-based framework to guide African government initiatives and private sector risk assessment strategies. The object is to provide a robust framework that could be used to analyse African countries strengths and weaknesses, analyzing which are the main obstacles that have discouraged manufacturing investments. The paper is structured as follows: Section 2 describes FDI trends directed in the African manufacturing sector, followed by the research methodology used in Section 3. Afterward, Section 4 discusses the findings and presents a list of discouraging factors. Finally, Section 5 provides conclusions for the research and limitations of this paper.

**2. Review on FDI investment trends in Africa**

It is known that FDIs, particularly in the manufacturing sector, play a crucial role in boosting the industrialization process. Most importantly, they help the economic and social growth of a country by providing capital, generating new jobs, transferring technologies and skills, and creating spillovers (Prasad, et al., 2003). Nowadays, FDI in Africa is slowly expanding, mainly due to resource-seeking investments (UNCTAD, 2019). On the contrary, just a few countries are experiencing increasing manufacturing FDI (Chen et al., 2015). As it is possible to see in Figure 1, only a few countries have attracted investments in the past years. In 2019 Egypt was the largest FDI recipient in Africa, despite inflows decrease by eight percent. FDI related to Sub-Saharan Africa increased by 13 percent, mainly thanks to South Africa. In addition, FDI in Nigeria dropped in the last years, declining by 43 percent. Ethiopia remains the most significant FDI recipient in East Africa, which gives a high contribution to the manufacturing sector. The Congo reported the highest FDI levels in the region, with the volume of investments directed towards oil exploration and production.

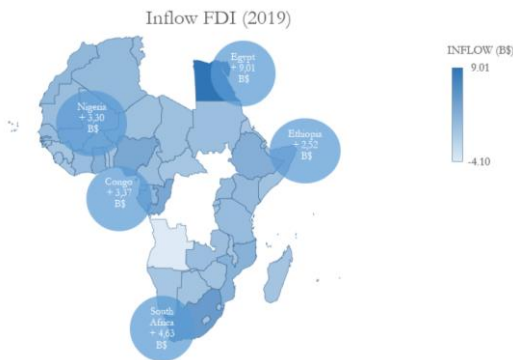


Figure 1: Inflow FDI in Africa, 2019 (UNCTAD, 2019)

The leading investors in African countries are shown in Figure 2. Netherlands, France, United Kingdom, and the USA are the largest foreign investors in Africa.

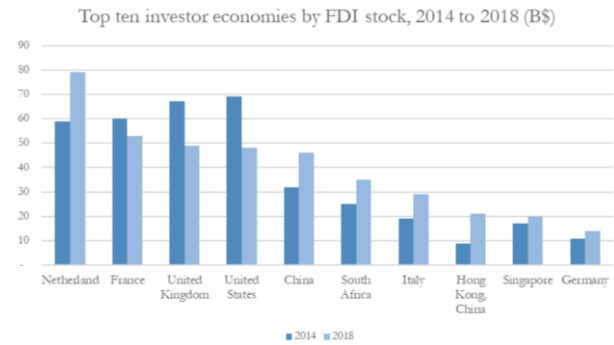


Figure 2: Top ten investors by FDI stock 2014 to 2018 (UNCTAD, 2019)

Besides, China FDI in Africa is continuously increasing. Indeed, between 2013 and 2017, they raised by more than 50 percent. More in detail, each country attracts FDI in various sectors. Manufacturing, as shown in Figure 3, is the most attractive investment sector in Ethiopia.

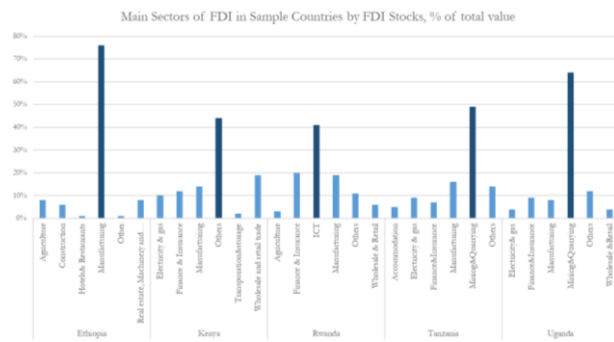


Figure 3: Main sectors of FDI in sample countries by FDI stocks (Guangzhe Chen, Michael Geiger, 2015)

Focusing on the manufacturing FDI, “metals and metal products” are the sector that contributes the most to job creation and greenfield projects. While the Textile and Clothing (TC) sector plays a key role in Ethiopia.

**3. Research methodology**

A systematic literature review to collect all the records fitting the pre-defined eligibility criteria has been conducted. As shown in Figure 4, the research has been done following the PRISMA approach (Moher, et al., 2015). The methodology is an evidence-based minimum set of items approach, used to report systematic reviews. Following the presented research question, a set of keywords have been defined, concerning the concept of manufacturing investments in developing countries, and included: “Manufacturing sector”; “Investments”; “Industrialization”; “Failure”; “Africa”; “Developing countries”; “Low industry”; “Investment promotion”; “Obstacles”. All the presented words have been searched with their synonyms.

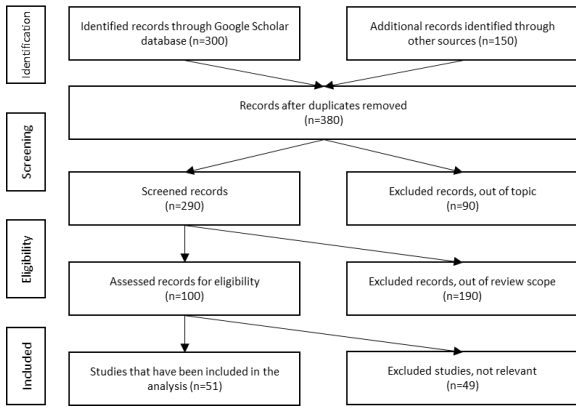


Figure 4: Flow diagram for the selection of literature reviewed based on PRISMA

The next step was to identify key papers proceed with a systematic review. Here, journal publications, books, company reports, and conference papers have been considered. As a result, 450 studies have been analysed. After removing duplicates, 380 research have been considered for the research. Then, 90 papers were excluded because considered out of topic. Subsequently, the title and abstract of the remaining works were screened, and 190 were further excluded because considered out of the review scope. In the last step, the full text of the remaining 100 papers has been carefully analysed. Among all, only 51 works were able to contribute to the research question [Appendix A]. In Figure 5 the literature research process is shown. Moreover, in Figure 6 the time distribution, typology, and citations of the considered works are shown.

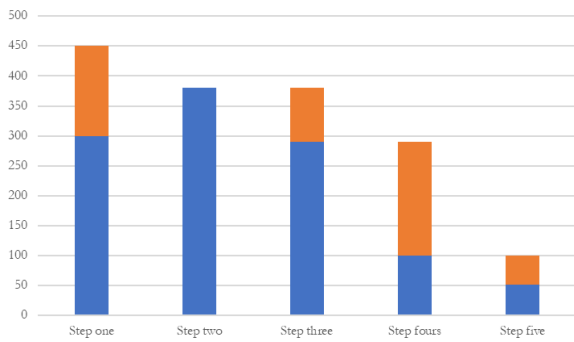


Figure 5: Literature research

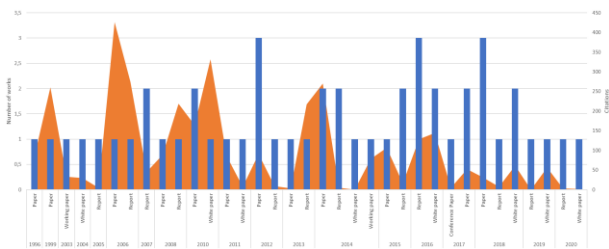


Figure 6: Publication volume and citations

#### 4. Classification of the key factors

The negative impact on investment choices in manufacturing field, ranges from economic, political, and social factors to cultural ones. After an in-depth literature

review, 36 factors that hinder manufacturing investments have been identified. Specifically, they have been grouped into eight categories: political factors; economic factors; local infrastructure factors; education and professional skills factors; health factors; environmental and territorial factors; legal factors and social factors. Those are analysed in the literature with different approaches and importance evaluations. Specifically, Figure 7 shows the number of times that each macro-category has been mentioned as an obstacle by a specific works out of the total analyzed articles. The main discussed obstacles are related to “Local infrastructure”, “Economic”, and “Educational and professionals’ skills”.

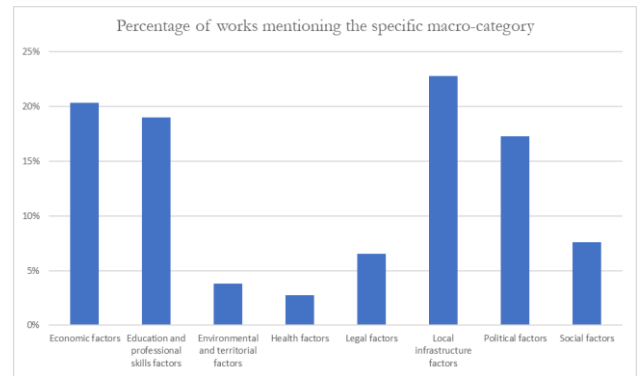


Figure 7: Macro-category occurrences

#### 4.1 Political factors

The “Political” category has been divided into four main factors: “political transparency”, “political instability”, “low government management skills”, and “corruption”. Political instability has the most influencing factor, negatively affecting the FDI flows (Kim, 2010).

#### 4.2 Economic factors

The “Economic” factors are mainly related to the limited “access to credit”, the “economic instability”, and the “competition” among other companies (Figure 8). Indeed, in developing countries, access to regulated financial services is still restricted, limiting investment in productivity and enhancing economic activities (Domeher & Abdulai, 2012).

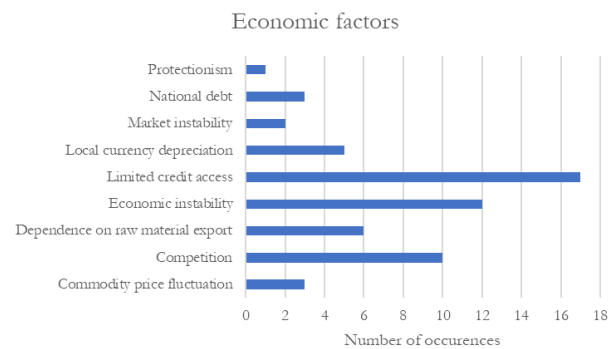


Figure 8: Economic factors

### 4.3 Local infrastructure factors

The “local infrastructure” section encloses various factors, such as the “low infrastructure reliability”, which has been identified as one of the most significant problems, the “low level of technological innovation”, and the “high cost of logistics” (Figure 9). Hence, foreign investors still consider infrastructure reliability one of the most critical factors (B. Moyo, 2013).

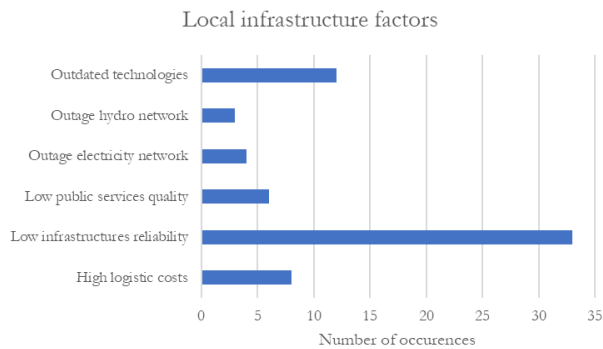


Figure 9: Local infrastructure factors

### 4.4 Educational and professional skills factors

The educational and professional skills gap is widely considered as one of the main constraints in industrial development. Indeed, it limits economic and social development, reducing the ability to get jobs and enhance living standard. From companies’ perspective, it also limits productivity, competitiveness, and growth. Therefore, the private sector needs to play an active role in reducing this gap (Dollar, 2016).

### 4.5 Other factors

In the literature review, four other categories have been identified: the “health” category, which includes the problems related to a high number of disease and the lack of a reliable health system; the “environmental and territorial” factors, involving the limited access to water resources and several geographic adversities; the “legal” category which covers all the problems related to the lack of regulatory standards and bureaucracy; and the “social” category which contains several issues such as “poverty”, lack of “social inclusion”, “gender inequality”, “crime”, and “civil unrest”.

## 5. Conclusion and future development

Industrial development is a fundamental path to lead countries into sustainable economic and social growth (Signé, 2018). In this context, the manufacturing sector plays a key role, absorbing a large workforce and creating productive and decent-paying job positions. Despite the African manufacturing potential, mainly based on the large low-cost workforce availability, most countries are still not experiencing the traditional industrialization path (Ibrahim et al., 2019). The contribution of the Foreign Direct Investment (FDI), especially by Multinational Enterprises (MNEs), is crucial, boosting the industrialization process (Prasad, et al., 2003). This study

has analyzed the industrialization path research in developing countries to describe the main factors that hinder manufacturing companies’ investment in those countries. This review provides a clear understanding of the phenomenon, providing key information on the current state of art. Results can be summarized around four main points:

1. “Local infrastructure” factors, “economic” factors, and “educational and professionals skills” factors are the main discussed obstacles among researchers and practitioners;
2. The “lack of professional skills” is the most discussed obstacle in literature, highlighting the importance of promoting initiatives to fulfil skill gaps in developing countries;
3. The “low infrastructure reliability” is the second mentioned obstacle in the review, demonstrating the importance of investing in the infrastructure in developing countries;
4. The “political instability” is also considered one of the main obstacles, which discouraged investors from unstable countries.

These findings also have practical implications, being helpful both for local institutions and the private sector. As a matter of fact, this literature review should be used to understand the key factors to focus on to promote private sector investments. Moreover, it should be useful for the private sectors for risk assessment analysis and location strategies. It must be noted that the presented work has some limitations: first, focusing on English works, authors have potentially excluded relevant publications; secondly, using a keyword-method approach instead of a semantic search, a set of relevant works may have been excluded. Future research authors will apply the same methodology to investigate the main obstacles hindering manufacturing development in other less developed countries not located in Africa. The approach will be useful to provide a comparative analysis between different territories.

## References

- African Development Bank-Group. (2017). *Industrialize Africa: Strategies, Policies, Institutions, and Financing*.
- African Union Commission. (2015). *Agenda 2063: The Africa we want*.
- Aggrey, N., & Ogwal, M. (2012). The Effects of Investment Climate on Manufacturing Firms’ Growth in Uganda By. *Investment Climate and Business Environment Research Fund*, 1–24.
- Albaladejo, M. (2015). *Industrial Realities in Nigeria : From Bad to Worse. QEH Working Paper Series – QEHWPS101 Working, 101*.
- Ayodele, T., & Sotola, O. (2014). *China in Africa : An Evaluation of Chinese Investment. Initiative for Public Policy Analysis*.
- Ayozie, D. O. (2011). The Role of Small Scale Industry in National Development in Nigeria. *Universal Journal of Management and Social Sciences*, 1(1), 23.

- Banga, K., & Velde, D. W. (2018). Digitalisation and the Future of Manufacturing in Africa. In *Supporting economic transformation* (Issue March).
- Basani, B. & Tatenda, Z. (2015). Regional Industrialization Research project : Case study on Transport infrastructure value chain in South Africa and Mozambique 1 Basani Baloyi and Tatenda Zengeni CCRED Table of Contents. *CCRED, March*, 1–76.
- Bigsten, A., & Söderbom, M. (2006). What have we learned from a decade of manufacturing enterprise surveys in Africa? *World Bank Research Observer*, 21(2), 241–265.
- Buur, L., Mondlane T., & Baloi, O. (2012). The White Gold: The Role of Government and State in Rehabilitating the Sugar Industry in Mozambique. *Journal of Development Studies*, 48(3), 349–362.
- Chen, G., Geiger, M., Fu, M. (2015). Manufacturing FDI in Sub-Saharan Africa. *World Bank*, 1–55.
- Cruz, A. S., & Mafambissa, F. J. (2016). Industries without smokestacks Mozambique country case study. *UNU-WIDER*.
- Dollar, D., & Easterly, W. (1999). The search for the key: Aid, investment and policies in Africa. *Journal of African Economies*, 8(4), 546–577.
- Dollar, D. (2016). China’s Engagement with Africa From Natural Resources to Human Resources. *The John L. Thornton China Center at Brookings About*.
- Domeher, D., & Abdulai, R. (2012). Access to Credit in the Developing World: Does land registration matter? *Third World Quarterly*, 33(1), 161–175.
- Donahue, B. (2018). China Is Turning Ethiopia Into a Giant Fast-Fashion Factory. *BLOOMBERG BUSINESSWEEK*, 1–12.
- Dupasquier, C., & Osakwe, P. N. (2006). Foreign direct investment in Africa: Performance, challenges, and responsibilities. *Journal of Asian Economies*, 17(2), 241–260.
- Eze, O. R. (2014). Impact of fiscal policy on the manufacturing sector output in nigeria: an error correction analysis. *British Journal of Business and Management Research*, 1(2), 31–54.
- Fatoki, O. (2014). The causes of the failure of new small and medium enterprises in South Africa. *Mediterranean Journal of Social Sciences*, 5(20), 922–927.
- Giannecchini, P., & Taylor, I. (2018). The eastern industrial zone in Ethiopia: Catalyst for development? *Geoforum*, 88, 28–35.
- Goedhuys, M., Janz, N., Mohnen, P. (2008). What drives productivity in Tanzanian manufacturing firms: Technology or business environment? *European Journal of Development Research*, 20(2), 199–218.
- Goedhuys, M., & Sleuwaegen, A. L. (2010). High-growth entrepreneurial firms in Africa : a quantile regression approach. *Small Business Economics*, 34, 31–51.
- Guangzhe C., Geiger, M., (2015). Manufacturing FDI in Sub-Saharan Africa: trends, determinants, and impact. *World Bank Group*.
- Gui-Diby, S. L., & Renard, M. F. (2015). Foreign Direct Investment Inflows and the Industrialization of African Countries. *World Development*, 74, 43–57.
- Hausmann, R., Rodrik, D., Sabel, C. F. (2011). Reconfiguring Industrial Policy: A Framework with an Application to South Africa. *SSRN Electronic Journal*, HKS Working Paper No. RWP08-031
- Holt, T., Lahrichi, M., Mina, J., Santos da Silva, J. (2015). Insights into Pharmaceuticals and Medical Products; Africa: A continent of opportunity for pharma and patients. *McKinsey & Company*, April, 1–9.
- Ibrahim, G., Simbanegavi, W., Prakash, A., Davis, W., Wasike, W., & Patel, A. (2019). Industrial Development and ICT in Africa : Opportunities , Challenges and Way Forward. *G20 2019 JAPAN*, 29–43.
- Kim, H. (2010). Political Stability and Foreign Direct Investment. *International Journal of Economics and Finance*, 2(3), 59–71.
- Kok, R., & Ersoy, B. A. (2009). Analyses of FDI determinants in developing countries. *International Journal of Social Economics*, 36(1–2), 105–123.
- Kragelund, P. (2020). Using local content policies to engender resource-based development in Zambia: A chronicle of a death foretold? *Extractive Industries and Society*, 7(2), 267–273.
- Luiz, J., & Radebe, B. (2012). The strategic location of regional headquarters for multinationals in Africa. *ERSA Working Paper 276, March*, 29.
- Mathee, M., & Wim, N. (2007). The Significance of Transport Costs in Africa. *UNU-WIDER*, 5, 1–8.
- McCormick, D. (2006). *CHINA, INDIA, AND AFRICAN MANUFACTURING Framework for Understanding the Impact of Aid and Migration By*. October, 9–10.
- Mijiyawa, A. G. (2017). Drivers of Structural Transformation: The Case of the Manufacturing Sector in Africa. *World Development*, 99, 141–159.
- Moher, D., Shamseer, M., Clarke, D., Ghersi, A., Liberati, M., Petticrew, P. S., et al. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *BioMed Central*, 1–9.
- Moyo, B. (2011). Do water cuts affect productivity? case study of African manufacturing firms. *Water SA*, 37(3), 349–356.
- Moyo, B. (2012). Do Power Cuts Affect Productivity? A Case Study Of Nigerian Manufacturing Firms. *International Business & Economics Research Journal (IBER)*, 11(10), 1163.

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- Moyo, B. (2013). Power infrastructure quality and manufacturing productivity in Africa: A firm level analysis. *Energy Policy*, 61, 1063–1070.
- Moyo, B. (2017). Promoting Inclusive and Sustainable Industrialisation in Africa: A Review of Progress, Challenges and Prospects. *The 2nd Annual International Conference on Public Administration and Development Alternatives*, Botswana, July, 365–375.
- Mumo, N. (2010). Africa’s Industrialization Debate: A Critical Analysis Mumo Nzau. *The Journal of Language, Technology & Entrepreneurship in Africa*, 2(1), 146–165.
- Naudé, W. (2016). Entrepreneurship and the Re-allocation of African Farmers. *Agrekon*, 55, 1–33.
- Nebiyeleul, G. (2006). African Regional Implementation Review for the Commission on Sustainable Development (CSD-14) Report on the Review of African Sustainable Industrial Development. *African Regional Implementation Review for the Commission on Sustainable Development*, January.
- Nestlé. (2010). *L’impegno di Nestlé per l’Africa* (Report).
- Newman, C., Page, J., Tarp, F. (2013). *Made in Africa – the challenge of industrialization*, Knowledge Unlatched (KU).
- Newman, C. Page, J., Rand J., Shimeles, A., Söderbom, M., (2016). *Manufacturing Transformation: Comparative Studies of Industrial Development in Africa and Emerging Asia*, Oxford University Press.
- Okereke, O. C. (2017). Causes of failure and abandonment of projects and project deliverables in Africa. *PM World Journal*, VI(I), 1–16.
- Opoku, E. E., & Yan, I. K.-M. (2018). Industrialization as driver of sustainable economic growth in Africa. *The Journal of International Trade & Economic Development*, 7004558, 1–43.
- Ouédraogo, R., Sawadogo, R., Sawadogo, H. (2020). Private and public investment in sub-Saharan Africa: The role of instability risks. *Economic Systems*, 44(2), 100787.
- Oyelaran-Oyeyinka, B., Laditan, G. O. A., & Esubiyi, A. O. (1996). Industrial innovation in Sub-Saharan Africa: The manufacturing sector in Nigeria. *Research Policy*, 25(7), 1081–1096.
- Page, J. (2019). Harnessing Africa’s Youth Dividend: How industries without smokestacks can address Africa’s youth unemployment crisis. *Foresight Africa*.
- Prasad, E., Rogoff, K., Wei, S.J., Kose, M. (2003). *Effects of Financial Globalization on Developing Countries: Some Empirical Evidence*.
- Shen, J. (2007). Challenges facing U.S. manufacturing and strategies. *Journal of Industrial Technology*, 23(2), 2–10.
- Shepherd, M., & Duve, R. (2013). Factors Affecting the Internationalisation of Manufacturing SMEs in Zimbabwe. *IDRC*, October, 1–5.
- Signé, L. (2018). The potential of manufacturing and industrialization in Africa Trends , opportunities , and strategies. *BROOKINGS*, September.
- Söderbom, M., & Teal, F. (2000). Skills, investment and exports from manufacturing firms in Africa. *Journal of Development Studies*, 37(2), 13–43.
- Somé, J. (2018). Overview of Industrial Policy and Institutions in Africa. *Journal of Economics and Sustainable Development*, 9(22), 78–88.
- Sun, Y. I. (2017). The World’s Next Great Manufacturing Center. *Harvard Business Review Home*.
- Takahiro, F. (2004). International Competitiveness of Manufacturing Firms in sub-Saharan Africa. *Institute of Developing Economies Discussion Paper*.
- Tang, X. (2018). 8 Geese Flying to Ghana? A Case Study of the Impact of Chinese Investments on Africa’s Manufacturing Sector. *Journal of Contemporary China*, 27(114), 924–941.
- Tarp, H. B. (2016). Africa’s lions: growth traps and opportunities for six African economies. *Brookings Institution Press*.
- UNCTAD (2019). World investment report 2019. In *United nations conference on trade and development*.
- UNIDO (2007). *Action Plan for the Accelerated Industrial Development of Africa*. 379(I).
- UNIDO. (2016). *Implementation of the Third Industrial Development Decade for Africa*.
- Urquhart, G. (2015). *Investment brief*. 4, 7164.
- Wamae, W., & Kungu, J. K. (2014). Pharmaceutical manufacturing in Kenya : key trends and developments. *Acts*, 3, 1–6.
- Wangwe, S., Tibandebage, P., Mhede, E., Israel, C., Mujinja, P., Mackintosh, M. (2014). Reversing Pharmaceutical Manufacturing Decline in Tanzania: Policy Options and Constraints. *Policy Research for Development*.

