

BRICS' role in promoting sustainable energy development in Africa - examine the influence of BRICS investments in Africa's renewable energy sector and how these projects align with Africa's energy sustainability goals

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Abstract

Access to modern energy sources is one of the alimentary aspects of economic development. However, despite the growing emergence, Africa has faced significant changes in improving social and economic development through sustainable energy development. In this context, the primary objective of the study is to critically evaluate the role of BRICS in the renewable energy development in Africa. Therefore the study has implemented a systematic approach highlighting some of the key research questions to conduct a research in the right direction. The introductory chapter of the study has begun with the background discussion and aim and objective formulation. The literature review chapter has explored the existing concept and assumption regarding the subject matter from existing research. On the other hand, the research methodology chapter has highlighted the key research activity required to accumulate the relevant information based on secondary qualitative research methods. The discussion and findings chapter has presented the key finding from the overall research developing a profit conclusion of the topic.

Keywords: BRICS; Economic Development; Sustainable Energy; Renewable Energy; Social Development

1. Introduction

The BRICS (Brazil, Russia, India, China and South Africa) economy has a major role to play in contributing to the global contextual GDP (Gebert and de Mello-Sampayo, 2024). It is evident that in 2015, BRICS contributed to almost 23% of the GDP of the world (Gu et al., 2018; BRICS, 2017). Given this emerging relevance and significance, this study critically evaluates how the BRICS countries are contributing to sustainable energy development in Africa.

1.1. Objectives of the study

- To analyse the energy sustainability goals of Africa
- To evaluate the role and impact of the BRICS group in the renewable energies (RE) sector in Africa.
- To understand the contribution of BRICS to energy as “an enabler to achieve the Sustainable Development Goals” in Africa.
- To critically analyse the challenges and opportunities that could impact the long-term sustainability of the energy sector in Africa

1.2. Research Questions

- What are the energy sustainability goals of Africa?
- What is the role and impact of the BRICS group in the renewable energies (RE) sector in Africa?

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- What is the contribution of BRICS to energy as “an enabler to achieve the Sustainable Development Goals” in Africa?
 - What are the challenges and opportunities that could impact the long-term sustainability of the energy sector in Africa?
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2. Literature Review

The literature review chapter of the study has reflected on the investment policy of BRICS on the renewable energy sector of Africa including their contribution to the sustainable energy goals of this continent. In order to contribute to a comprehensive understanding of the subject matter the literature review chapter has emphasized three primary perspectives such as renewable energy trends in Africa, global energy diplomacy, and the role of BRICS in contributing to sustainable development.

2.1. BRICS Africa partnership for Renewable Energy development

It is evident from extant research that the BRICS-Africa partnership serves the common interest of the economies of the emerging markets (Gu et al., 2018). In addition, it plays an important role in developing a harmonious globe for lasting peace contributing to the common prosperity of each BRICS country. Studies have shown that BRICS has made an inordinate effort to contribute to the development of Africa through its UN “*Millennium Declaration and Millennium Development Goals*” (MDG) (Africaindia.org, 2024).

It has been observed that BRICS provides technical support and financial cooperation to Africa to minimize the consequences of the financial crisis in Africa (Gu et al., 2018). BRICS contributes to the technical development within the African countries in various areas. BRICS also pointed out the importance of addressing global and regional issues in the 4th BRICS summit in 2012. In particular, it has emphasized the sustainable development and climate change issues to contribute to the global economic recovery and sustainable development. While pointing out the growing emergence to address climate change issues and sustainable development goals, it has also approached the UN conference on the convention on biological diversity in India (Africaindia.org, 2024). Finally, it has also pointed out the political situation in North Africa and how it can be addressed with feasible policy considerations to contribute to renewable energy development.

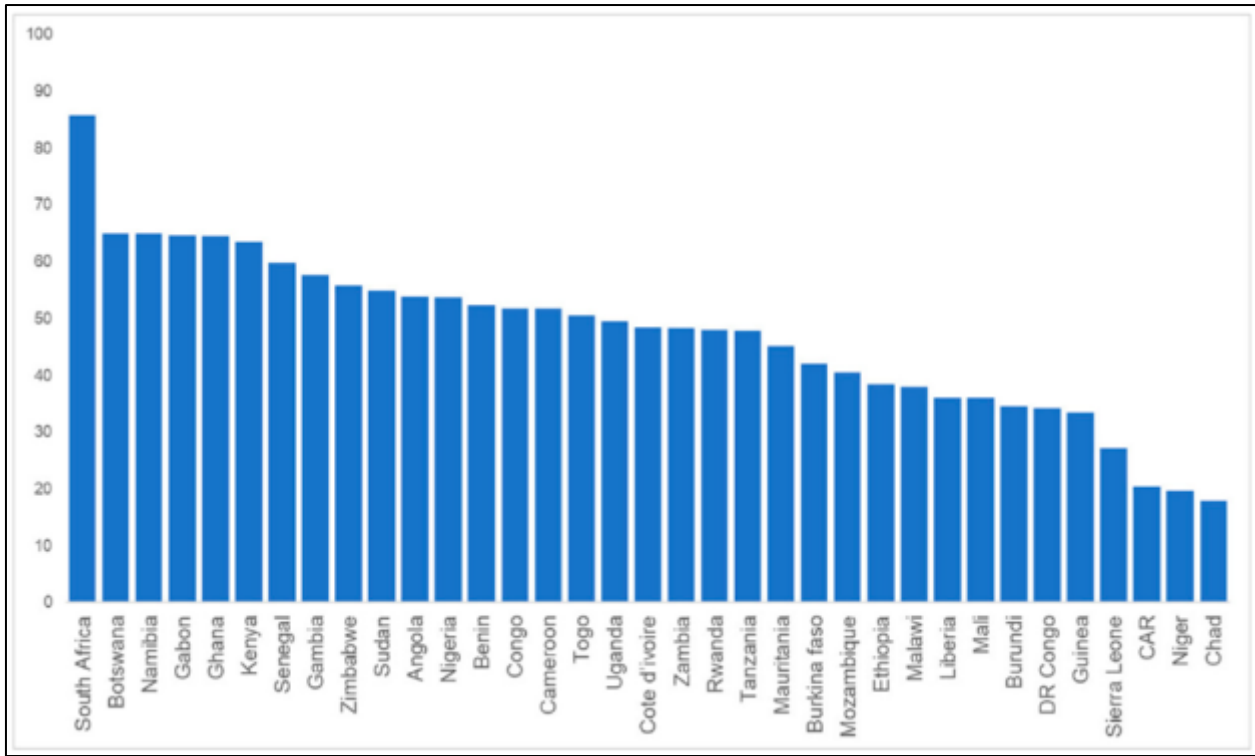
The role of BRICS in renewable energy development in Africa is prominent (Yao and Li, 2023). For instance, India has played an important role in renewable energy diplomacy with Africa through the “International Solar Alliance” or ISA facilitating solar energy deployment in the region. Likewise, China has also invested in renewable energy development through its “Belt and Road Initiative (BRI) (Africaindia.org, 2024). This initiative is particularly relevant to the financing for renewable energy infrastructure in the country contributing to the energy transition. On this note, while Brazil has also contributed to the bioenergy project to contribute to sustainable energy development in Africa, Russia has also shown its interest in the wind power project for further development.

Overall, BRICS reflected its consensus to remain engaged in a constructive and responsible manner with the developmental initiatives within the African region particularly in the field of renewable energy development.

2.2. Energy challenges and potential for renewable energy in Africa

The renewable energy sector in Africa is characterised by innovation, investment, and a commitment to diminishing carbon emissions and promoting reliable, affordable and clean energy for its people (Agoundedemba, Kim, and Kim, 2023).

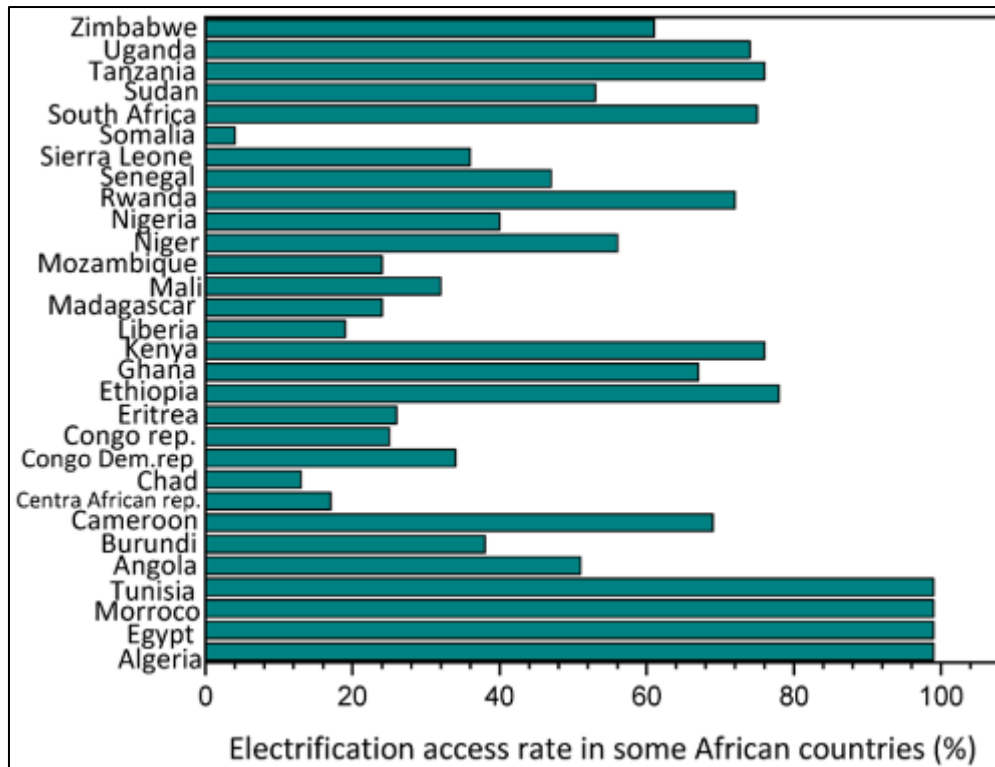
On this note, focusing on the “Social Clean Energy Access” (Social CEA) Index of 35 sub-Saharan Africa (SSA) has shown that Africa is transforming well in terms of renewable energy (Casati et al., 2023).



(Source: Agoundedemba, Kim, and Kim, 2023)

Figure 1 Final Social CEA Index scores

It is evident from the extant research that despite the abundant renewable resources, the energy potential in African countries is largely untapped. For instance, it has been observed that sub-Saharan Africa is characterized by significant poverty and economic underdevelopment because of the non-environmentally friendly energy uses. In addition, there is a limited source of modern energy resources. The current trends of renewable energy sources in Africa revolve around wind power, hydropower, biomass and geothermal energy. The findings from the empirical research show that almost 65% of the SSA population does not have access to electricity whereas almost 81% of the population relies on charcoal and wood as the energy source (Agoundedemba, Kim, and Kim, 2023; Amir and Khan, 2022).



(Source: Agoundedemba, Kim, and Kim, 2023)

Figure 2 Electrification access rate in African countries

Likewise, it has been found from the empirical reports that the electrification rate in West Africa is less than 25% and 58% in the rural areas and urban areas respectively (Nyarko, Whale, and Urme, 2023). Moreover, studies have revealed that the potentiality of solar irradiance in this region ranges between approximately 3 and 7 kWh/m² per day.

The wave power and wind speed ranges from 7 to 25 kW/m and 3 m/s to 10 m/s per site in island regions. Geothermal energy is also only developed in countries like Kenya and Tanzania. Based on this overall discussion it can be concluded that Africa has immense renewable energy potential.

2.3. BRICS and Sustainable Energy Goals of Africa

The restructuring of electricity in Africa in the current times has resulted in the emergence of a distinct national policy framework that can contribute to distributed and equitable electricity generation (Takase, Kipkoech, and Essandoh, 2021). The energy policies and sustainable framework in Africa revolve around the institution of renewable energy sources improving power supply reliability, availability and security aligning with the growing population of the region. Through this, the country aims to contribute to the social economic improvements while achieving its sustainable energy development objectives.

It has been found that the BRICS countries have potentially aligned their investment with the renewable energy sector of Africa focusing on the border energy sustainability goals of this continent. For instance, BRICS acknowledge the hydrocarbon oil and gas potential resources of Africa. In addition, it has been mentioned that equal accessibility to these energies can be profound for economic growth and social inclusion in Africa (Irena.org., 2024). BRICS, in this context, is aimed at providing a more affordable cleaner and sustainable energy system promoting accessibility to energy and energy-efficient technology in African countries. Moreover, it has been observed that BRICS has emphasized diversifying the energy mix of Africa by improving the contribution of renewable energy sources while encouraging more efficient use of fossil fuels and other energy sources.

Likewise, BRICS supports African countries in international cooperation as well in the field of energy efficiency. For instance, the use as well as production of biofuel technology that is generated mostly in Brazil has been considered to transfer to Africa facilitating the use of renewable energy. In particular, it has considered providing R&D and biofuels training along with other consultancy services to Africa. It has been found that effective projects like the "Lake Turkana

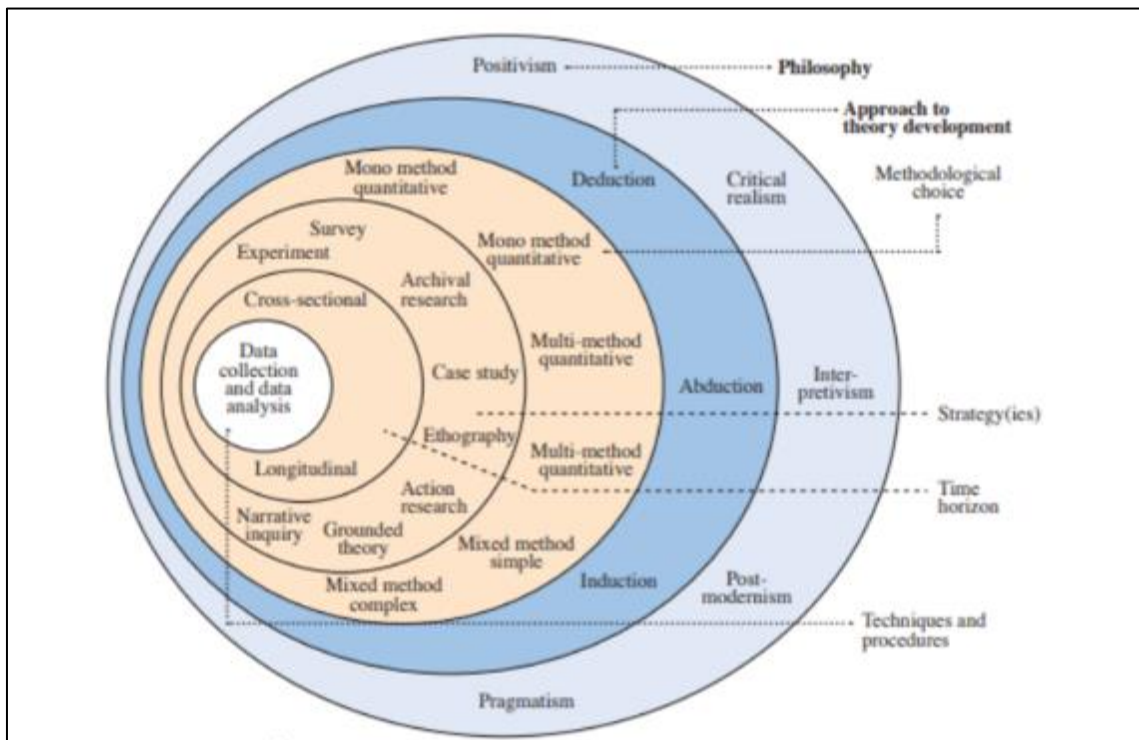
Wind Power Project” and the “Noor Ouarzazate Solar Complex” contribute significantly to reducing carbon emissions. There are other projects as well focused on hydropower generation in specific regions, such as Sondu Miriu and Turkwel Gorge playing significant roles in renewable energy development (Osano et al., 2020)

3. Research Methodology

The research methodology chapter in this research paper is concerned with determining the methods of conducting the research activities. This research seeks to illuminate the role of BRICS in contributing to sustainable energy development in Africa.

3.1. Research philosophy

In order to evaluate the role of brakes in contributing to sustainable energy development in Africa the study has employed interpretivism research philosophy. The reason behind selecting the interpretivism research metrology is that it includes secondary qualitative research. In addition, it emphasizes the subjective understanding of the researcher emphasizing the importance of evaluating those understanding the context of social and cultural background (Lanka et al. 2020). Likewise, the interpretivism theory reflects on the fact that reality is biased and socially constructed depending on how people interconnect in their cultures (Carter et al, 2021). On this ground, this philosophical assumption is essential to evaluate how external variables associated with BRICS contribute to sustainable energy development in Africa.



(Source: Saunders et al., 2016)

Figure 3 Research onion

3.2. Research approach

The study has implemented the inductive research approach aiming to develop new theories parallel to the analysis of information related to BRICS's role in sustainable energy development. The study has particularly considered the inductive research approach for accumulating qualitative information from existing literature contributing to the generalisability of the research.

3.3. Research design

The study has employed the descriptive research design based on the case study method on the critical role of BRICS countries in developing sustainable energy in Africa. The rationale behind selecting this research method is to develop ideas to contribute to the foundation of the subsequent research activities without including any preconceived ideas.

On this note, the study has employed case study examples as well by collecting information and data related to the BRICS and Africa sustainable energy development program. It allowed the study to develop the junction between the selected phenomenon highlighting people and the context of the subject matter.

3.4. Data Collection Method

To understand how BRICS can contribute to sustainable energy development in Africa the study has employed the second data collection method based on various secondary data sources. The secondary data has been collected from various sources such as government reports, International organisations academic journals, books and many others. On this note, specific case studies of BRICS renewable energy projects have been integrated in order to evaluate the diversity of BRICS investment and their implication on energy sustainability in Africa. The study has considered the secondary data collection method as it is less time-consuming, unlike the primary data collection method (Taherdoost, 2021).

3.5. Data analysis method

The study has employed a secondary qualitative content analysis method to evaluate the exceptional role of BRICS in contributing to sustainable energy development in Africa. The study has considered the qualitative analysis method focusing on addressing the patterns and themes in the BRICS African energy partnership. For instance, the study has particularly reflected on the role of energy diplomacy and the challenges of projects on renewable energy capacity in Africa highlighting the project implementation in the region. It has helped the study to provide a greater insight into the topic based on the existing literature from empirical research (Squires, 2023).

3.6. Ethical considerations

Within scientific research, ethical consideration plays an important role in contributing to the data reliability and validity of the research process (Chervenak and McCullough, 2021). In this context, the study has considered complying with the ethical guidelines based on the GDPR. In addition, the study has ensured that under no circumstances the religious beliefs or values of the individuals will be harmed. Moreover, the study has ensured that the findings of this result will be secured with an encrypted password and will not be used for any kind of commercial purpose. Access to sensitive information regarding this topic will be given to the researchers only and will be deleted once the research process is complete.

3.7. Time horizon

The study has implemented the cross-sectional time horizon aiming to develop a short term research study. Selecting the cross-sectional time horizon has helped the study to complete the subsequent research activity within a shorter period of time.

4. Results and Discussions

The empirical findings of the study have revealed that BRICS play an important role in contributing to sustainable energy development in Africa. However, findings also reveal that there are potential challenges found while implementing renewable energy development in the region that need to be taken into account for long-term sustainability.

4.1. Contribution of BRICS to Renewable Energy in Africa

Findings have suggested that BRICS Nations have contributed to the renewable energy development of Africa substantially focusing on solar wind and hydro energy sectors (Nyarko, Whale, and Urmee, 2023). While China has made significant investments in the renewable energy development project, countries like South Africa, Brazil and Russia have also contributed to the project in alliance with the sustainable development goals of climate change. Contribution from these BRICS nations has helped African Nations to diversify their energy portfolios while meeting their sustainable development goal targets set by the United Nations. It has been observed that BRICS has recognised the growing significance of renewable energy as a means to address the growing climate change issues across the globe, particularly in Africa.

4.2. Challenges in the Renewable energy sources in Africa

The overall discussion has revealed that despite significant investment from the BRICS countries in the renewable energy sector of Africa, it still faces significant challenges because of poor infrastructural issues, financial problems and many others (Baptista and Plananska, 2017). For instance, it has been found that BRICS investments for ensuring meaningful technology transfer face challenges as most of the Projects in the African renewable energy sector heavily rely on effective and improved equipment and foreign expertise. Moreover, it has been observed that regulatory barriers are one of the prime reasons that slow down the overall developmental process within the renewable sectors. Therefore, the government must consider implementing a stable and consistent regulatory framework to ensure seamless operational efficiency of the energy projects funded by BRICS. Finally, financial instability is another crucial factor that impacts the sustainable development within the energy sector hindering the equitable distribution of electricity within the urban and rural areas of Africa.

4.3. Opportunities in the Renewable energy sources in Africa

However, the BRICS and African partnership reveals the substantial potential for further improvement in the renewable energy sector. Given the current development initiative and investment considered by brakes, integration of advanced technology such as breed integration, decentralizing solution and energy storage technology can be some of the promises in ways for father improvement. However, in this context, the renewable energy sector can contribute to the local economy by involving local individuals in the projects. This way the local involvement can also, in turn, contribute to the long-term sustainability impact in this region.

5. Conclusion

Based on the overall findings it can be established that BRICS commits to sustainable development as a core strategy in the international fight against growing environmental issues. BRICS therefore can be identified as an essential and fundamental forum that works as an instrument for addressing climate change as well as socio-economic issues in Africa. On this note, the partnership between BRICS and Africa has been developed on the common colony or backgrounds to address the structural problems of poverty inequalities and energy accessibility. BRICS is tied strongly to the African struggle to gain renewable energy development through technological support, and financial cooperation. Finally, the common problem existing in BRICS member states like Africa revolves around sustainable energy development which can be curbed by safeguarding renewable energy development such as hydro power, solar power, wind power and geothermal energy on priority.

Recommendations

The following are some of the key recommendations that can improve the effectiveness of BRICS investment in the renewable energy sector of Africa.

- Promoting technology transfer

In the context of renewable energy development in Africa emphasizing capacity building through technology transfer can be effective to ensure sustainable expansion of the renewable energy project in Africa.

- Implementing strict regulatory frameworks

The regulatory framework is one of the crucial aspects of sustainable development. Therefore the African government must emphasize a transparent and stable regulatory environment to attract potential investment from the BRICS countries.

- Investing in a decentralized project

African countries face significant challenges in accessing clear and equitable electricity (Osano et al., 2020). However, it has been observed that the rural areas are more affected because of the initial distribution of electricity compared to the urban areas. Therefore, focusing on decentralized renewable energy projects can be a cornerstone to directly contribute to energy accessibility in rural areas.

Limitations and future implications of the study

The study has focused on the secondary qualitative research method which lacks statistical findings of the subject matter. Therefore future research must consider reflecting on a miss method approach focusing on both quantitative and qualitative research methods to contribute to the quantifiable insights of the subject matter while contributing to the generalizability of the study.

However, the overall findings of the study is crucial in terms of informing global leaders and policymakers regarding the urgency of creating equitable policies for sustainable energy development in the sub-African regions.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Africaindia.org, (2024). "Role of BRICS in Africa's Development: Common Synergies & Complementarities".[online]<https://africaindia.org/role-of-brics-in-africas-development-common-synergies-complementarities/>
- [2] Agoundedemba, M., Kim, C.K. and Kim, H.G., (2023). "Energy status in Africa: challenges, progress and sustainable pathways". *Energies*, 16(23), p.7708.
- [3] Amir, M. and Khan, S.Z., (2022). "Assessment of renewable energy: Status, challenges, COVID-19 impacts, opportunities, and sustainable energy solutions in Africa". *Energy and Built Environment*, 3(3), pp.348-362.
- [4] Baptista, I. and Plananska, J., (2017). "The landscape of energy initiatives in sub-Saharan Africa: Going for systemic change or reinforcing the status quo?". *Energy Policy*, 110, pp.1-8.
- [5] BRICS, (2017). "What is BRICS?" [online]. Available at: <https://brics2017.org/English/AboutBRICS/BRICS/>
- [6] Carter, S. M., Shih, P., Williams, J., Degeling, C., & Mooney-Somers, J. (2021). "Conducting qualitative research online: challenges and solutions". *The Patient-Patient-Centered Outcomes Research*, 14(6), 711-718.
- [7] Casati, P., Moner-Girona, M., Khaleel, S.I., Szabo, S. and Nhamo, G., (2023). "Clean energy access as an enabler for social development: A multidimensional analysis for Sub-Saharan Africa". *Energy for Sustainable Development*, 72, pp.114-126.
- [8] Gebert, I.M. and de Mello-Sampayo, F., (2024). "Efficiency of BRICS countries in sustainable development: a comparative data envelopment analysis". *International Journal of Development Issues*, (ahead-of-print).
- [9] Gu, J., Renwick, N. and Xue, L., (2018). "The BRICS and Africa's search for green growth, clean energy and sustainable development". *Energy Policy*, 120, pp.675-683.
- [10] Irena.org., (2024). "The Renewable Energy Transition in Africa". [online] Available at: https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2021/March/Renewable_Energy_Transition_Africa_2021.pdf
- [11] Lanka, E., Lanka, S., Rostron, A., & Singh, P. (2020). "Why we need qualitative research in management studies". *Revista de Administração Contemporânea*, 25, e200297.
- [12] Nyarko, K., Whale, J. and Urmee, T., (2023). "Drivers and challenges of off-grid renewable energy-based projects in West Africa: A review". *Heliyon*, 9(6).
- [13] Osano, A., Maghanga, J., Munyeza, C.F., Chaka, B., Olal, W. and Forbes, P.B.C., (2020). Insights into household fuel use in Kenyan communities. *Sustainable Cities and Society*, 55, p.102039.
- [14] Saunders, M., Lewis, P., & Thornhill, A. (2016), "Research Methods for Business Students". England: Journal of Futures Studies Pearson Education Limited.
- [15] Squires, V. (2023). "Thematic analysis. In Varieties of qualitative research methods: Selected contextual perspectives" (pp. 463-468). Cham: Springer International Publishing.

- [16] Taherdoost, H. (2021). "Data collection methods and tools for research; a step-by-step guide to choose data collection techniques for academic and business research projects". *International Journal of Academic Research in Management (IJARM)*, 10(1), 10-38.
- [17] Takase, M., Kipkoech, R. and Essandoh, P.K., (2021). "A comprehensive review of the energy scenario and sustainable energy in Kenya". *Fuel Communications*, 7, p.100015.
- [18] Yao, S., Li, T. and Li, Y., (2023). "Promoting sustainable fossil fuels resources in BRICS countries: Evaluating green policies and driving renewable energy development". *Resources Policy*, 85, p.103990.