Pak. j. life soc. Sci. (2024), 22(2): 24536-24543 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences

www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2024-22.2.001754

RESEARCH ARTICLE

A Commentary on Economic Diversification in Brics Countries: Strategies for Reducing Dependence on Commodity Exports

Kehinde Segun[1], Chinonye Moses[2], Borishade Taiye[3], Kehinde Oladele[4], Olaleke Ogunnaike[5], Mukar Itai[6], Simon ILogho[7], Tola Kehinde[8]

[1,2,3,4,5,6]Department of Business, Management, Covenant University

[7]Faculty of Management Sciences, Tshwane University of Technology

[8]History and International Studies, Redeemer's University

ARTICLE INFO

Received: Jul 19, 2024

Accepted: Sep 7, 2024

Keywords

Economic Diversification, BRICS Economies, Commodity Dependence, Global Market Fluctuations, Regional Integration

***Corresponding Author:**

romeocamposjr1@gmail.com

ABSTRACT

The reliance on commodity exports has long been a defining feature of many BRICS nations' economies. While natural resources have fueled significant growth and development, this dependence also exposes these countries to the volatile nature of global commodity markets. Fluctuations in prices can lead to economic instability, hinder long-term growth, and exacerbate socio-economic challenges. Given these risks, economic diversification has emerged as a critical strategy for BRICS countries seeking to reduce their vulnerability and achieve more sustainable development. This commentary examines the challenges these nations face in their diversification efforts and explores strategies that can help them transition from resource-dependent economies to more resilient and diverse economic structures.

INTRODUCTION

Economic diversification has emerged as a pressing imperative for the BRICS nations—Brazil, Russia, India, China, and South Africa—as they seek to enhance their resilience against the volatility of global commodity markets. Historically, the economic growth of these nations has been heavily reliant on the export of commodities such as oil, natural gas, minerals, and agricultural products. While this dependence has delivered substantial revenue and fueled development, it has also exposed these economies to significant risks [4]. Fluctuations in global commodity prices, driven by factors beyond the control of any single nation, have often resulted in economic instability, fiscal deficits, and social unrest. For example, the 2014 collapse in oil prices had a devastating impact on Russia's economy, leading to a sharp contraction in GDP and significant budget deficits. Similarly, Brazil's over- reliance on agricultural exports has made it vulnerable to fluctuations in global demand and adverse weather conditions [21]. The COVID-19 pandemic further highlighted the fragility of commodity-dependent economies, as disruptions in global trade and demand led to sharp declines in export revenues for many BRICS nations. The issue of economic diversification is particularly relevant in the current global economic landscape, where uncertainties related to geopolitical tensions, climate change, and technological disruptions continue to shape market dynamics. For BRICS nations, which collectively account for over 40% of the world's population and nearly a quarter of global GDP, the stakes are high [6]. The ability to diversify their economies and reduce reliance on commodity exports is not only crucial for their long-term economic stability but also for their collective influence in global economic governance. As the global economy transitions towards sustainability, driven by innovations in technology, energy, and finance, BRICS countries must adapt by developing sectors that are less susceptible to external shocks and more aligned with the future trajectory of global growth [11]. To understand the challenges and strategies associated with economic diversification in BRICS countries, a thorough background research on the historical and contemporary factors that have shaped their economic trajectories was conducted. For instance, Brazil's economy has long been tied

to agricultural exports, particularly soybeans, coffee, and sugar. Russia, on the other hand, remains heavily dependent on oil and natural gas exports, which account for a significant portion of its government revenue [27]. India's economy, while more diversified than its BRICS counterparts, still relies on the export of textiles, IT services, and agricultural products. China, the largest and most diversified economy in the BRICS group, has made significant strides in moving up the value chain, yet it continues to depend on manufacturing and exports to sustain growth. South Africa's economy is largely driven by mineral resources, particularly gold, platinum, and diamonds, making it vulnerable to fluctuations in commodity prices [3]. Despite the diverse economic structures within the BRICS group, a common challenge they face is the "resource curse"—a phenomenon where countries with abundant natural resources experience slower economic growth, corruption, and conflict due to over- reliance on commodity exports. This curse has manifested in various forms across BRICS countries, contributing to economic inefficiencies, income inequality, and environmental degradation. For instance, Russia's dependence on oil exports has made it particularly susceptible to Western sanctions and fluctuations in global oil prices, leading to economic recessions in recent years [17]. Similarly, Brazil's reliance on agricultural exports has made it vulnerable to climate change and shifts in global demand, while South Africa's mining sector has struggled with labor unrest and declining productivity. Given these challenges, the central argument of this commentary is that economic diversification is not only a strategic necessity for BRICS countries but also a critical pathway for reducing their vulnerability to global commodity price fluctuations [35]. Diversification requires a concerted effort to develop non-commodity sectors such as manufacturing, technology, services, and green industries, which can drive sustainable and inclusive growth.

Despite these challenges, there are successful examples within the BRICS bloc that offer valuable lessons for economic diversification. China's experience is particularly instructive [9]. Over the past few decades, China has managed to transition from an economy heavily reliant on low-cost manufacturing to one that is increasingly driven by technology, innovation, and services. This transformation has been underpinned by massive investments in education, infrastructure, and research and development (R&D) [20]. China's success highlights the importance of a coordinated and sustained effort to build the necessary foundations for diversification. Additionally, the country's focus on fostering innovation and supporting the growth of high-tech industries has allowed it to move up the global value chain, reducing its reliance on low-cost exports and increasing its resilience to global market fluctuations [2]. Another strategy that holds promise for BRICS countries is regional economic integration. By fostering closer economic ties within the BRICS bloc, these nations can create new opportunities for trade, investment, and collaboration, thereby reducing their reliance on external markets. For instance, the New Development Bank (NDB), established by BRICS nations, aims to support infrastructure and sustainable development projects in member countries [24]. By financing key projects that enhance connectivity, energy security, and industrial capacity, the NDB can play a crucial role in promoting economic diversification within the BRICS bloc. Furthermore, deepening trade and investment links among BRICS countries can help create new markets for diversified exports, reducing dependence on traditional commodity markets in the West. However, regional integration alone is not enough. BRICS countries must also focus on enhancing their domestic economic structures []. This requires a multi-faceted approach that includes improving governance, strengthening institutions, and creating a more conducive environment for private sector growth. For example, reforms that streamline regulations, enhance property rights, and reduce corruption can help attract investment into non-commodity sectors, fostering diversification [18]. Another key strategy for economic diversification in BRICS countries include investment in education and skills development, fostering innovation and entrepreneurship, and enhancing infrastructure and connectivity. For instance, China's success in transforming itself into the "world's factory" was driven by massive investments in education, research and development, and infrastructure. India, with its burgeoning tech industry, has demonstrated the potential of leveraging human capital to drive economic diversification [25]. Brazil's efforts to diversify its energy matrix through the development of biofuels and renewable energy offer valuable lessons for other BRICS countries seeking to transition to a low-carbon economy [14]. However, these strategies must be tailored to the unique contexts and challenges of each BRICS nation, taking into account factors such as political stability, governance, and social cohesion. In analyzing the prospects for economic diversification in BRICS countries, it is also important to address the potential counterarguments and challenges. Critics may argue that diversification is difficult to achieve in the short term, given the entrenched interests and structural constraints within these economies [19]. Additionally, the global shift towards decarbonization and the rise of protectionist policies in key markets may pose challenges for BRICS countries seeking to diversify into new sectors. However, by addressing these challenges through targeted policies, strategic partnerships, and regional cooperation, BRICS nations can enhance their economic resilience and reduce their dependence on commodity exports [22]. As these nations seek to assert their influence in global economic governance, reducing their vulnerability to commodity price fluctuations will be essential for achieving sustainable and inclusive growth. Moreover, economic diversification offers a pathway for BRICS countries to align their development strategies with global trends such as digitalization, green energy, and sustainable development.

Resource Curse

The concept of the "resource curse" has been a focal point in the literature discussing the economic development of countries rich in natural resources. Often referred to as the paradox of plenty, the resource curse posits that nations endowed with abundant natural resources, particularly non-renewable resources like oil, gas, and minerals, tend to experience less/slower economic growth, poorer development outcomes, and weaker institutional structures compared to nations with fewer natural resources [12]. The resource curse manifests through several mechanisms, including the crowding out of non-resource sectors, volatility in revenue streams due to fluctuating commodity prices, and weakened institutions resulting from rent-seeking behaviors and corruption [33]. This counterintuitive phenomenon has profound implications for the BRICS countries—Brazil, Russia, India, China, and South Africa—many of which are heavily reliant on commodity exports to fuel their economies [7].

The theory behind the resource curse is deeply rooted in the dynamics of economic diversification and structural transformation. It suggests that the over-reliance on resource exports can lead to a concentration of wealth and economic activity in the extractive sectors, thereby stifling the growth of other sectors such as manufacturing and services [15]. This lack of diversification can make an economy particularly vulnerable to global commodity price fluctuations, leading to economic volatility and long-term stagnation. In the case of BRICS countries, this issue is particularly

ronounced in Russia and Brazil, where hydrocarbons and agricultural products dominate export revenues, respectively.

Scholars have examined the mechanisms through which the resource curse manifests. One prominent explanation is the Dutch Disease, a term coined to describe the economic symptoms that followed the discovery of natural gas in the Netherlands in the 1960s. The sudden influx of foreign currency from natural resource exports can lead to an appreciation of the national currency, making other export sectors less competitive on the global market [10]. This currency appreciation, coupled with a focus on the resource sector, can result in the deindustrialization of the economy, as manufacturing sectors shrink due to reduced competitiveness. In Russia, for instance, the dominance of the oil and gas sector has been linked to the underdevelopment of its manufacturing base, making the economy highly susceptible to oil price shocks. Another critical aspect of the resource curse is its impact on governance and institutional quality [23]. Resource-rich countries often experience weaker institutions, as the concentration of wealth and power in the hands of a few can lead to corruption, rent-seeking behavior, and political instability. The abundance of resources can create incentives for elites to maintain control over resource rents, rather than investing in broad-based economic development. This governance trap is particularly relevant to BRICS countries like South Africa and Brazil, where corruption and political challenges have impeded efforts to diversify their economies [14].

Moreover, the resource curse can exacerbate income inequality and social tensions. The unequal distribution of resource wealth can lead to disparities in income and access to opportunities, fueling social unrest and undermining social cohesion. In Brazil, for instance, the concentration of land and wealth in the hands of a few has been linked to persistent inequality and social challenges, despite the country's status as a major agricultural exporter [8]. However, studies also highlights that the resource curse is not an inevitable outcome. Some resource-rich countries have successfully avoided the curse by implementing effective policies that promote economic diversification and strengthen institutions. For example, Norway is often cited as a model for managing resource wealth through its sovereign wealth fund and robust governance structures [29]. This success underscores the importance of sound economic management and the development of strong institutions in mitigating the negative effects of resource dependence. In the context of BRICS countries, the challenge lies in leveraging their natural resource wealth to support broader economic diversification and sustainable development [32]. Strategies for overcoming the resource curse in these nations involve fostering innovation, investing in human capital, and promoting the development of non-resource sectors. For instance, China's efforts to transition from a resource-intensive growth model to a knowledge-based economy illustrate the potential for resource-rich countries to diversify successfully [26]. By investing in technology, education, and infrastructure, China has been able to reduce its reliance on resource exports and build a more resilient and diversified economy.

Evidence and Logical Reasoning

In examining the economic diversification strategies within the BRICS nations, it is essential to ground our argument in empirical evidence and authoritative insights. The reliance on commodity exports has historically left these countries vulnerable to external shocks, a pattern evident across the BRICS nations [7]. FDuring the period from 2014 to early 2016, global oil prices fell sharply from over $100 per barrel to

than $30. This significant decline underscored Russia's over-reliance on hydrocarbon exports, which at the time accounted for approximately 68% of the country's total export revenue [36]. Such dependence highlighted the critical need for economic diversification to mitigate the risks associated with volatile commodity markets. However, since mid-2016, the hydrocarbon market has experienced a recovery [15]. Oil prices gradually rebounded, with occasional fluctuations due to global events, including the COVID-19 pandemic, which temporarily disrupted the market in 2020. Despite these disruptions, prices have largely returned to pre-crisis levels, particularly after 2021, driven by a combination of supply constraints and increased demand as economies reopened post-pandemic [1]. Moreover, the share of Russia's budget revenues derived from mineral exports has also evolved, especially following the geopolitical developments and economic sanctions post-2022. Recent data indicates that while hydrocarbon exports continue to be a significant contributor to the Russian economy, there has been a concerted effort to diversify revenue streams and reduce the economy's vulnerability to external shocks. Such dependence illustrates the critical need for diversification [34]. Similarly, Brazil's economy, heavily tied to agricultural commodities, suffered when global demand for soybeans and coffee declined, leading to a reduction in export revenues and a subsequent economic downturn [5]. Logical reasoning suggests that diversification into sectors less susceptible to external price fluctuations—such as technology, manufacturing, and services—can insulate BRICS economies from these vulnerabilities. China's economic transformation, driven by its strategic focus on manufacturing and technology, serves as a compelling case. By prioritizing investments in research and development, China has not only moved up the global value chain but also created a more resilient economic structure [12]. The growth of the Chinese tech giants such as Huawei, Tencent, and Alibaba exemplifies how focused investments can yield significant returns, driving both economic growth and technological self-sufficiency. This strategy also demonstrates that diversification is not merely a theoretical aspiration but a tangible pathway to sustained economic stability [31]. Moreover, the shift towards a green economy presents another logical avenue for diversification. The global transition to renewable energy offers opportunities for BRICS countries to leverage their natural resources differently [32]. Brazil's investment in biofuels, particularly ethanol derived from sugarcane, positions it as a leader in renewable energy. By 2019, nearly 18% of Brazil's energy matrix came from renewable sources, reducing its vulnerability to fossil fuel price volatility. The economic and environmental benefits of such diversification strategies are clear: reduced reliance on fluctuating commodity prices, increased energy security, and alignment with global sustainability goals [10]. However, evidence also points to significant challenges in implementing diversification strategies across BRICS nations. In South Africa, for example, efforts to move away from mineral dependency towards a knowledge-based economy have been hampered by structural issues such as poor education outcomes, inadequate infrastructure, and political instability [16]. Despite ambitious plans like the National Development Plan 2030, which envisions a more diversified and inclusive economy, progress has been slow. Addressing these structural barriers is crucial for realizing the full potential of diversification strategies.

Addressing Counterarguments and Alternative Views

While the need for economic diversification in BRICS countries is well-documented, it is important to acknowledge and critically examine counterarguments. One common critique is that diversification, particularly into high-tech industries, may not

be feasible for all BRICS nations due to their varying levels of industrial development and resource endowments [28]. For instance, Russia's efforts to develop a robust technology sector have been constrained by its historical reliance on energy exports, state-driven economic models, and limited access to Western technologies due to sanctions [11]. Critics argue that these structural constraints limit Russia's ability to diversify effectively, rendering it dependent on its existing economic model. However, such critiques overlook the potential of strategic partnerships and regional cooperation within the BRICS framework. By leveraging their collective strengths, BRICS nations can overcome individual limitations. For instance, India's expertise in information technology and services could complement Brazil's advances in agribusiness, while Russia's energy resources could support China's manufacturing and technological ambitions [3]. Collaborative initiatives such as the New Development Bank (NDB), which funds infrastructure and sustainable development projects across BRICS countries, demonstrate the potential for collective action to facilitate diversification. The NDB's investments in renewable energy projects across Brazil and India illustrate how financial collaboration can help overcome individual challenges, driving diversification efforts [13]. Another counterargument is the inherent difficulty of reducing dependence on commodity exports, particularly in economies where such exports have historically driven growth and generated significant revenues. Critics suggest that the path to diversification is fraught with risks, including potential short- term economic downturns and the displacement of traditional industries. For instance, the shift from coal to renewable energy in South Africa could result in job losses in mining communities, exacerbating social inequality and unrest [19]. However, these risks can be mitigated through well-designed policies that promote retraining and reskilling, ensuring that workers displaced by diversification strategies are integrated into new and emerging industries.

Furthermore, the global economic environment, characterized by rising protectionism and geopolitical tensions, presents additional challenges for diversification [26]. The U.S.-China trade war, for example, has created uncertainties in global supply chains, affecting BRICS nations that are integrated into these networks. Critics argue that these challenges make it difficult for BRICS countries to successfully diversify their economies [5]. However, the logical counter to this argument is that diversification itself reduces reliance on volatile international markets, thereby enhancing economic sovereignty [31]. By developing domestic industries and expanding intra-BRICS trade, these nations can mitigate the impact of external shocks and assert greater control over their economic destinies.

CONCLUSION

This commentary underscores the critical importance of economic diversification for BRICS nations as they navigate the complexities of the global economic landscape. The inherent vulnerabilities associated with reliance on commodity exports are evident, and the case for diversification into sectors such as technology, manufacturing, and green energy is compelling. The experiences of countries like China and Brazil demonstrate that diversification is not only possible but also essential for achieving long-term economic stability and resilience. By leveraging their collective strengths and pursuing strategic collaborations, BRICS nations can overcome individual limitations and build more diversified and robust economies.

While general reforms such as streamlining regulations, enhancing property rights, and reducing corruption are necessary, they must be complemented by targeted interventions tailored to the unique challenges faced by each BRICS country. For

nstance, China's success in transitioning towards a knowledge-based economy can be attributed to its substantial investments in technology, education, and infrastructure. These investments have enabled China to reduce its dependence on low-value manufacturing and natural resources, fostering a more diversified and resilient economy. In contrast, Russia has sought to insulate its economy from the volatility of global energy markets through the development of its sovereign wealth fund, which helps to stabilize government revenues and supports long-term economic planning. Similarly, Brazil's efforts to diversify its economy have focused on leveraging its agricultural strengths while simultaneously investing in social programs to reduce inequality and promote inclusive growth. The counterarguments to diversification, while valid, ultimately reinforce its necessity. The challenges associated with this transition—structural constraints, short-term economic risks, and external geopolitical pressures—are significant but not insurmountable. By implementing targeted policies, fostering regional cooperation, and committing to sustainable development, BRICS countries can successfully navigate these challenges. Moreover, by reducing their dependence on volatile global commodity markets, they can enhance their economic sovereignty, increase their influence in global economic governance, and contribute to a more balanced and stable world economy.

The policy implications of this study are profound. For policymakers, the findings shows the need for a proactive and coordinated approach to diversification that addresses structural barriers and fosters innovation. Effective diversification strategies must be tailored to the specific economic, social, and political contexts of each country. For researchers, this commentary highlights the importance of further study into the specific mechanisms and policies that can facilitate successful diversification in emerging economies. Ultimately, the pursuit of economic diversification in BRICS countries is not just a strategic necessity; it is a pathway to a more resilient and prosperous future. By providing a practical roadmap for achieving inclusive and sustainable economic growth, this commentary offers a vision of a future where BRICS nations, through strategic diversification, can achieve greater economic stability and global influence.

ACKNOWLEDGEMENT

The Authors would specially like to acknowledge the Covenant University Centre for Research Innovation and Discovery (CUCRID), and the Business Management Department of Covenant University for the Support and funding of this publication.

REFRENCES

Adams, D., Adams, K., Ullah, S., & Ullah, F. (2019). Globalisation, governance, accountability and the natural resource 'curse': Implications for socio-economic growth of oil-rich developing countries. *Resources Policy*, *61*, 128-140.

Agarwal, M., & Kumar, S. (2023). BRICS countries' increasing role in the world economy, including Institutional Innovation. *BRICS Journal of Economics*, *4*(2), 173- 191.

Ahmad, M., & Jabeen, G. (2024). Relating economic openness and export diversification to eco-efficiency: Is green innovation critical?. *International Journal of Finance & Economics*, *29*(3), 3203-3225.

Ahmad, W., Mishra, A. V., & Daly, K. (2018). Heterogeneous dependence and dynamic hedging between sectors of BRIC and global markets. *International Review of Financial Analysis*, *59*, 117-133.

Badeeb, R. A., Szulczyk, K. R., Zahra, S., & Mukherjee, T. C. (2023). Innovation dynamics in the natural resource curse hypothesis: a new perspective from BRICS countries. *Resources Policy*, *81*, 103337.

Basile, R., Parteka, A., & Pittiglio, R. (2018). Export diversification and economic development: a dynamic spatial data analysis. *Review of International Economics*, *26*(3), 634-650.

Cao, Y., & Xiang, S. (2023). Natural resources volatility and causal associations for BRICS countries: evidence from Covid-19 data. *Resources Policy*, *80*, 103165.

Canh, N. P., & Thanh, S. D. (2022). The dynamics of export diversification, economic complexity and economic growth cycles: Global evidence. *Foreign Trade Review*, *57*(3), 234-260.

Dai, S., & Du, X. (2023). Discovering the role of trade diversification, natural resources, and environmental policy stringency on ecological sustainability in the BRICST region. *Resources Policy*, *85*, 103868.

Ganda, F. (2022). The nexus of financial development, natural resource rents, technological innovation, foreign direct investment, energy consumption, human capital, and trade on environmental degradation in the new BRICS economies. *Environmental Science and Pollution Research*, *29*(49), 74442-74457.

Hinlo, J. E., & Arranguez, G. I. S. (2017). Export geographical diversification and economic growth among ASEAN Countries.

Hussain, M., Ye, Z., Usman, M., Mir, G. M., Usman, A., & Rizvi, S. K. A. (2020). Re- investigation of the resource curse hypothesis: the role of political institutions and energy prices in BRIC countries. *Resources Policy*, *69*, 101833.

Imran, M., Alam, M. S., Jijian, Z., Ozturk, I., Wahab, S., & Doğan, M. From resource curse to green growth: Exploring the role of energy utilization and natural resource abundance in economic development. In *Natural Resources Forum*. Oxford, UK: Blackwell Publishing Ltd.

Kehinde, S. I., Moses, C., Borishade, T., Busola, S. I., Adubor, N., Obembe, N., & Asemota, F. (2023). Evolution and innovation of hedge fund strategies: a systematic review of literature and framework for future research. *Acta Innovations*.

Li, Y. W., Zhang, W. W., Zhao, B., Sharp, B., Gu, Y., Xu, S. C., & Rao, L. L. (2023). Natural resources and human development: Role of ICT in testing the resource-curse hypothesis in N11 and BRICS countries. *Resources Policy*, *81*, 103400.

Li, Z., Rizvi, S. K. A., Rubbaniy, G., & Umar, M. (2021). Understanding the dynamics of resource curse in G7 countries: the role of natural resource rents and the three facets of financial development. *Resources Policy*, *73*, 102141.

Li, M., Ahmad, M., Fareed, Z., Hassan, T., & Kirikkaleli, D. (2021). Role of trade openness, export diversification, and renewable electricity output in realizing carbon neutrality dream of China. *Journal of Environmental Management*, *297*, 113419.

Lyubimov, I. (2019). Russia's diversification prospects. *Russian Journal of Economics*, *5*(2), 177-198.

Mahroum, S., & Al-Saleh, Y. M. (Eds.). (2016). *Economic diversification policies in natural resource rich economies*. London and New York: Routledge.

Naudé, W., & Rossouw, R. (2011). Export diversification and economic performance: evidence from Brazil, China, India and South Africa. *Economic Change and Restructuring*, *44*, 99-134.

Oliveira, H. C. D., Jegu, E., & Santos, V. E. (2020). Dynamics and determinants of export diversification in Brazil from 2003 to 2013. *Economia e Sociedade*, *29*(1), 29-51.

Qamruzzaman, M. (2022). Nexus between FDI and globalization-led energy diversification in BRICS: Fresh evidence from a newly constructed Energy diversification index. *Energy Strategy Reviews*, *44*, 100997.

Radulescu, I. G., Panait, M., & Voica, C. (2014). BRICS countries challenge to the world economy new trends. *Procedia economics and finance*, *8*, 605-613.

Shahzad, U., Doğan, B., Sinha, A., & Fareed, Z. (2021). Does Export product diversification help to reduce energy demand: Exploring the contextual evidences from the newly industrialized countries. *Energy*, *214*, 118881.

Sharma, R., Sinha, A., & Kautish, P. (2021). Examining the nexus between export diversification and environmental pollution: evidence from BRICS nations. *Environmental Science and Pollution Research*, *28*(43), 61732-61747.

Siddiqui, K. (2017). Globalization, trade liberalisation and the issues of economic diversification in the developing countries. *Journal of Business & Economic Policy*, *4*(4), 30-43.

Siswana, S., & Phiri, A. (2021). Is export diversification or export specialization responsible for economic growth in BRICS countries?. *The International Trade Journal*, *35*(3), 243-261.

Taylor, I. (2014). *Africa rising?: BRICS-Diversifying dependency*. Boydell & Brewer Ltd.

Udeagha, M. C., & Muchapondwa, E. (2023). Achieving regional sustainability and carbon neutrality target in Brazil, Russia, India, China, and South Africa economies: Understanding the importance of fiscal decentralization, export diversification and environmental innovation. *Sustainable Development*, *31*(4), 2620-2635.

Udeagha, M. C., & Ngepah, N. (2023). Towards climate action and UN sustainable development goals in BRICS economies: do export diversification, fiscal decentralisation and environmental innovation matter?. *International Journal of Urban Sustainable Development*, *15*(1), 172-200.

Ullah, F., Cai, H. H., Yuan, Q., & Ul-Haq, J. (2024). Plenty of resources and energy security risk nexus: Evidence from BRICS economies. *Resources Policy*, *92*, 104981.

Wen, J., Mughal, N., Kashif, M., Jain, V., Meza, C. S. R., & Cong, P. T. (2022). Volatility in natural resources prices and economic performance: evidence from BRICS economies. *Resources Policy*, *75*, 102472.

Vahalík, B. (2015). Analysis of export diversification development of the European Union and BRICS countries.

Yadav, S., Samadhiya, A., Kumar, A., Luthra, S., & Pandey, K. K. (2024). Nexus between fintech, green finance and natural resources management: Transition of BRICS nation industries from resource curse to resource blessed sustainable economies. *Resources Policy*, *91*, 104903.

Yakubu, I. N., Kapusuzoğlu, A., & Ceylan, N. B. (2022). The moderating effect of exchange rate volatility on export diversification and economic growth nexus in the G7 countries. *Journal of Research in Business*, *7*(1), 195-207.

Yilanci, V., Turkmen, N. C., & Shah, M. I. (2022). An empirical investigation of resource curse hypothesis for cobalt. *Resources Policy*, *78*, 102843.