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Higher Education in BRICS Countries Committed to the Sustainable Development Goals: Community Engagement and Research Practices

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Abstract. The Sustainable Development Goals (SDGs) are a set of 17 social, economic, and environmental goals to be achieved by the year 2030. World leaders have committed to the 17 SDGs because there is an urgent need to shift the world onto a more sustainable path. Education for sustainable development (ESD) is necessary if BRICS nations are to achieve the SDGs and their targets by 2030. Higher educational institutions (HEIs) play an essential role in achieving sustainability as they nurture future leaders, policymakers, business owners, and professionals. Although the SDGs have been reported on in the scholarly literature, there is a call for more studies that explore how HEIs in developing countries, such as BRICS nations, contribute to the SDGs. Employing a qualitative document analysis of 60 documents, grounded in the principles of grounded theory, the purpose of this study was to explore how BRICS nations such as Brazil and South Africa have aligned their community engagement and research practices to contribute to the 17 SDGs. The findings revealed that HEIs should not limit the implementation of the SDGs in their community engagement and research practices. The curriculum content and teaching pedagogy should also be aligned with the ESD and the 17 SDGs. Further improvement will require adopting a holistic approach towards ESD in all core activities.

Keywords: sustainability; sustainable development; Sustainable Development Goals; education for sustainability; BRICS; community engagement; research practices

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1. Introduction

The sustainable development goals (SDGs) are a set of 17 goals, 169 targets and 232 indicators aimed at improving society's social, economic and environmental conditions (Moyer & Steve, 2020). This set of goals (SDGs) is a global partnership between countries affiliated with the United Nations (UN), and they are commonly used as development criteria in national planning of countries and strategic plans of Higher Education Institutions (HEIs). The SDGs are an ambitious set of objectives, as their formulation was not limited to the perspective of national governments. Instead, they include wide-ranging perceptions of the public, industry and research practitioners. Unsurprisingly, the heightened expectations raised questions about whether such ambitious development was attainable with available resources, especially in developing nations (Reimers, 2024). The SDGs were constructed to nurture global equality and sustainability by the year 2030 (Pareek et al., 2024).

Cheng and Yu (2022) called for all citizens and institutions to have an interest in and a renewed commitment to economic, social and environmental stewardship. HEIs, with extensive resources and unique expertise, have a crucial role to play in achieving the SDGs through their community engagement and research practices (Pareek et al., 2024). The same authors inform that the role of HEIs in achieving the SDGs has received increased attention in scholarly literature and policy, which has intensified the efforts HEIs globally have made to contribute to the SDGs. Chankseliani and McCowan (2020) explained that the core activities of HEIs evolved, as they initially operated solely as institutions that provide education.

In recent years, HEIs assumed the role of knowledge production and adopted a third mission, namely community engagement. They also noted that, in 2019, the Times Higher Education University Impact Rankings included the social and economic impact of universities as part of their ranking criteria, which, to an extent, made it mandatory for HEIs to contribute to the SDGs. In fact, the same authors stated that HEIs in Brazil were acknowledged by the Times Higher Education University Impact Rankings for their commendable efforts made towards fighting poverty (SDG 1).

Chankseliani and McCowan (2020) called for more studies related to the SDGs and HEIs, especially in developing countries such as Brazil and South Africa (SA). In addition, HEIs globally have realised that now, more than ever, the global population requires quality education, community engagement and research practices that have the potential to nurture intelligence, expertise, actions and principles that facilitate action towards sustainable development (SD). Against this backdrop, employing methodical document analysis, this study highlighted the attainment of the 17 SDGs through community engagement and research practices in two BRICS countries, namely Brazil and SA. The choice of selecting these two countries is grounded in the fact that both countries exhibit potential and challenges in addressing the SDGs through their HEIs.

Brazil, being the largest country in South America, has a diverse range of community engagement initiatives and research practices aimed at social

development. Meanwhile, SA is a key player in the African continent, with unique socio-economic issues that require focused research and community engagement. The study provides valuable insights into how HEIs in Brazil and SA align their practices with the SDGs, enabling the identification of best practices that can be shared globally. Selecting two BRICS nations ensured that the purpose of the study was achievable, and each nation could be explored thoroughly.

By highlighting the importance of community engagement and research practices in achieving sustainability, the findings may inform policies that encourage HEIs to take a more active role in advancing sustainable development. The main research purpose was to explore how Brazilian and South African HEIs align their community engagement and research practices with the 17 SDGs. The following research questions guided the study:

RQ1: How do Brazilian and South African higher education institutions align their community engagement with the 17 sustainable development goals?

RQ2: To what extent are the research practices of Brazilian and South African higher education institutions aligned with the 17 sustainable development goals?

Before revealing the findings and results and concluding remarks, the literature review, which was the research methodology used, is presented.

2. Literature Review

The literature review explored the background to the SDGs, the role of BRICS member states in achieving the SDGs and the recent challenges and development in Brazil and SA.

2.1 Background to the 17 Sustainable Development Goals

The concept of SD gained prominence in 1969 after an oil spill in Santa Barbara, California, which severely impacted the ecosystem and wildlife. This event led to the passing of the National Environmental Policy Act. Initially, SD focused primarily on environmental issues, often neglecting social and economic dimensions (Novo-Corti et al., 2018; Stofleth, 2016). In 1972, SD became more widely accepted during the United Nations Stockholm Conference, where it was emphasised that long-term economic growth should not harm the natural environment.

In 1987, the Brundtland Commission issued a report, conventionally known as Our Common Future, which conceptualised SD and outlined a route countries globally could consider achieving sustainability (Halkos & Gkampoura, 2021; Jarvie, 2021; Stofleth, 2016; WCED, 1987). The Brundtland Commission formally conceptualised SD as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Halkos & Gkampoura, 2021; Moura et al., 2019; WCED, 1987). Since the year 1987, multiple definitions of SD have emerged. However, the definition provided by the Brundtland Commission remains popular and relevant.

The groundwork of the Brundtland Commission set off a trend of transformation in global environmental policies (Jarvie, 2021; UNESCO, 2014). For instance, the UN Conference on Environment and Development, commonly known as the Rio Summit, brought leaders from 179 countries together. At the summit, world leaders agreed to Agenda 21, the Conference of the Parties on Biological Diversity and Climate, and the provision for the implementation of the Kyoto Protocol (Cardoso et al., 2017). Between the years 1992 and 2000, the UN devoted increased attention to the social and environmental realms of sustainability.

The UN chaired numerous summits and conferences with their member states, discussing topics such as human rights, social development, population development, the condition of women, urban development issues, and racism and discrimination (Cardoso et al., 2017; Jarvie, 2021). In 2000, after the Millennium Summit of the UN, hosted in the city of New York, the UN executives framed eight Millennium Development Goals (MDGs) to be accomplished by the year 2015 (Cardoso et al., 2017; Halkos & Gkampoura, 2021; UN, 2021). Subsequently, in 2005, UNESCO's director, General Koïchiro Matsuura, launched the decade of Education for Sustainable Development (ESD) in New York (UNESCO, 2014).

Sawant (2023) informs that the UN Secretary-General (Ban Ki-moon) was devoted to submitting an annual report (UNESCO, 2013) on the MDGs to the UN General Assembly. In his report of 2013, the UN Secretary-General raised environmental, social, and economic concerns regarding climate change, increasing emissions of carbon dioxide during production, land degradation due to the development of infrastructure, ocean acidification, the loss of species and forests, and persisting societal inequalities (Sawant, 2023). On a positive note, the UN Secretary-General revealed that significant progress was made in meeting the targets of the MDGs. For instance, Halkos and Gkampoura (2021) and UNESCO (2013) revealed that since the implementation of the MDGs, the number of people living in poverty was cut in half as was the number of undernourished citizens, and access to health and education had improved.

However, the concern was that one in eight people globally did not have access to food. In addition, 2.5 million people lacked basic sanitation facilities (UNESCO, 2013). Considering the power of global cooperation in achieving goals, the success it brought and the challenges that still manifest in society, UN Member States renewed their commitment to meet the MDGs' targets. Although not all the MDGs were achieved, the report on the MDGs revealed that there is great power in setting and collaborating to achieve global goals. As a result, a high-level summit was held at the UN General Assembly in September 2015 to adopt a new set of goals which built on the achievements of the MDGs (World Bank, 2021). These were the 17 SDGs and their 169 targets to be achieved by 2030, based on five important areas of importance, the so-called 5 Ps: people, prosperity, peace, partnerships, and the planet (Pazos et al., 2023).

Embracing the SDGs signified heightened attention to promoting collaboration in SD. Compared to their predecessor, the MDGs, the 17 SDGs are more ambitious, extensive and demanding (Reimers, 2024). Halkos and Gkampoura (2021)

explained that the SDGs built on the progress of the MDGs and addressed the goals that were incomplete. These authors explained that the SDGs benefited from the lessons learnt during the implementation of the MDGs. The difference between the SDGs and the MDGs is that the latter mainly focused on poverty in developing nations. On the other hand, the SDGs have more goals, targets and indicators that focus on the global context and include more components of SD (Halkos & Gkampoura, 2021). UN Secretary-General, Ban Ki-moon, stated that "[t]he seventeen Sustainable Development Goals are our shared vision of humanity and a social contract between the world's leaders and the people" (World Economic Forum, 2020).

Zooming in on the role of education: after the concept of SD was proposed, the UN issued a series of programmes and recommendations dedicated to sustainability in which education was considered one of the important approaches (Cheng & Yu, 2022). The Decade of ESD was recently renewed with the International Decade of Sciences for Sustainable Development (Kidman & Chang, 2024). However, it is important to note that ESD has been around since long before The Decade of ESD. According to Adams et al. (2023), there is a history of 11 global declarations, charters and partnerships for sustainability in HEIs, dating back to 1990.

Education is, without a doubt, one of the main pillars of sustainability because of its potential to provide opportunities for people to acquire the knowledge, competencies, values and attitudes that empower them to contribute to SD (Pazos et al., 2023). In its Global Action Programme on Education for Sustainable Development, UNESCO (2014) states that "[p]olitical agreements, financial incentives, or technological solutions alone do not suffice to grapple with the challenges of sustainable development. It will require a wholesale change in the way we think and the way we act."

In this regard, scholarly literature called for education to play a crucial role in changing the way citizens think and act (Cheng & Yu, 2022). Education for sustainable development is the education sector's response to the urgent and dramatic challenges that the planet faces (UNESCO, 2014). According to Hensley (2017), the long-term goal of sustainability will require education systems (from all faculties) to equip students with the expertise to take action and stewardship of the world and its inhabitants.

It is imperative for education to undergo a transformation that is aligned with empowering individuals to make well-informed choices and engage in personal and collective efforts to reshape society (Toro-Troconis et al., 2023). O'Malley (2019) is convinced that none of the SDGs can be achieved without HEIs' contributions. Although ESD has grown as a research field, its adoption and implementation in education systems require increased attention (Adams et al., 2023).

2.2 The role of BRICS member states in achieving the Sustainable Development Goals

In 2000, during the adoption of the MDGs, economists at Goldman Sachs researched trends in emerging markets. Their 2001 report, Building Better Global Economic BRICs, identified Brazil, Russia, India, and China as rapidly growing economies, collectively referred to as BRIC. The report predicted that these nations would significantly contribute to global economic growth (Goldman Sachs, 2024; Sawant, 2023). Thereafter, the term BRIC gained traction and sparked increased scholarly research.

Russia was instrumental in forming a coalition of emerging economies to challenge the Western-dominated Bretton Woods institutions, such as the IMF and World Bank (Kenny, 2024). The BRIC countries held their first meeting in St. Petersburg in July 2006, and the group was formalised as BRIC by September of that year (Sawant, 2023). The inaugural BRIC summit occurred in Yekaterinburg on 16 June 2009. The coalition became BRICS with South Africa's inclusion in September 2010 (Kenny, 2024).

To date, it has hosted 16 summits, the latest in Kazan, Russia, from 22 to 24 October 2024. New member states were added in January 2024, which include Iran, Egypt, Ethiopia and the United Arab Emirates, with Indonesia added in 2025 (Kapoor, 2025; Sharma, 2025). The 15th summit, hosted in Sandton, SA, from 22 to 24 August 2023, was themed "BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development, and Inclusive Multilateralism" (SDG Knowledge Hub, 2023). In their declaration at the 15th summit, BRICS leaders committed to enhancing partnerships for sustainable peace and development.

Niemczyk and De Beer (2022) noted that SD was on the agenda of all 15 BRICS summits. However, the authors highlighted that it was only from the 10th summit that SD strategies were attended to diligently. According to Niemczyk et al. (2021), synchronising the functioning of their economies and education systems is unique because of the size of the BRICS organisation. BRICS nations are an undeniable economic and political power in their respective continents and in the international community. Therefore, the group's initiatives and policies can bring major sustainable transformations, which is necessary when evaluating the current trajectory of the world towards achieving the SDGs.

According to the UN (2023), if current trends continue, by 2030, 575 million people will still be living in poverty (SDG 1). Meanwhile, the world is falling further behind in achieving SDG 4, quality education, as 84 million children and youth are predicted to be out of school by 2030. Zooming in on the environment, the world is facing the largest species extinction since the dinosaur age. It is to this end that BRICS nations need to strengthen their partnership and intensify their discussions on environmental, social and economic matters. The responsibility to direct the world onto a more sustainable path is delegated to BRICS nations for four reasons, as described hereafter. The first reason is that BRICS nations have the largest emerging economies. As revealed by Niemczyk et al. (2021), the BRICS nations combined, account for 27% of the world's GDP. BRICS member states

have considerable control over the world market, responsible for 16% of the world's trade (BRICS India, 2021).

Using their economic clout, BRICS countries can direct their investments towards the SDGs, serving as a role model to other developing nations. BRICS nations take up a considerable surface area (26%) and make up a large percentage of the global population (approximately 40%), which accounts for the second reason (Alcini, 2023). Therefore, the impact of sustainable initiatives in the BRICS nations has the potential to make a considerable contribution towards attaining the SDGs. More specifically, considering that BRICS nations have large populations and growing economies, their sustainable practices will have a considerable impact on production and consumption (Sawant, 2023).

The third reason, according to Koba (2015), is that BRICS nations are home to an abundance of natural resources that can be used sustainably to promote economic growth. All the BRICS countries are aiming for high economic growth, which will undoubtedly involve high energy consumption and CO2 emissions. In fact, the BRICS countries accounted for 41% of global CO2 emissions; thus, the responsibility to reduce them is high (Sawant, 2023). The fourth and last reason is that by pooling their resources, individual strengths and expertise, BRICS countries are well-positioned to advance knowledge and enhance innovation (Nature, 2021). BRICS nations have invested heavily in research that has the potential to develop new sustainable practices and contribute towards the attainment of the SDGs.

2.3 Higher education in BRICS nations

As noted by Sun and Yang (2021), the inaugural meeting of the BRICS Education Ministers took place in November 2013 at the 37th UNESCO General Conference in Paris, France. A primary focus of this initiative has been on higher education in BRICS countries. At present, two significant platforms for cooperation have been established: the BRICS Network University and the BRICS University League, which have facilitated various initiatives in research and talent development (Sun & Yang, 2021). BRICS higher education cooperation has resulted in several positive developments. For instance, there has been a surge of scholarly publications in these nations, which highlights the importance and benefits of higher education cooperation amongst nations.

Other salient developments as a result of collaboration include the development of innovative models for higher education collaboration (Khomyakov et al., 2020; Muhr & Azevedo, 2018; Li, 2018), the enhancement of developing nations' representation in global higher education discourse, and the collaborative approach to addressing the challenges posed by the internationalization and commercialization of higher education (Sun & Yang, 2021). In examining the status of cooperative efforts between BRICS nations, there has been an influx of international students in BRICS countries, and this trend is consistent and upward (Cheng, 2020), especially in China.

Furthermore, there has been a notable increase in the number of research papers co-authored by scholars from these countries each year (Sun & Yang, 2021). Consequently, there is a sense of optimism among researchers regarding the trajectory of BRICS higher education collaboration. Li (2018) was convinced that this cooperation is poised to lead to continued research productivity amongst the collaborating nations.

2.4 Recent challenges and development in Brazil and South Africa

Rodrigues (2024) identified the UN Global Compact Brazil event as a key commitment to the SDGs. Ambassador Sérgio Danese highlighted SD as crucial in international politics and announced Brazil's initiative to launch the Global Alliance against Hunger and Poverty. Danese mentioned Brazil's environmental challenges, despite these efforts, pointing to recent floods in Rio Grande do Sul and ongoing fires as urgent reminders of the need for stronger climate action. The Brazilian government's (2024) commitment to climate change is evident in its second Nationally Determined Contribution under the Paris Agreement, aiming to reduce net greenhouse gas emissions by 59% to 67% by 2035 and achieve climate neutrality by 2050.

Grinfeldt et al. (2024) reported that Brazil struggles to implement effective environmental policies because of its unstable political landscape. The unique nature of governance in Brazil means that policy often reflects the priorities of political leaders, leading to abrupt changes. For instance, President Jair Bolsonaro, who served from 2019 to 2022, showed little interest in environmental issues, while the re-election of Luiz Inácio Lula da Silva signals a renewed commitment to environmental concerns and the SDGs. However, a lack of coherent policy coordination still hinders Brazil's progress towards these goals. Despite experiencing economic growth, this has resulted in significant environmental degradation and rising social inequality: economic SDGs are prioritised over social and environmental sustainability.

In SA, HEIs are committed to addressing key challenges while contributing to the SDGs. According to Maoela et al. (2024), South African HEIs do tackle issues such as inequality, climate change and unemployment. One Open Distance E- Learning HEI became the first South African university to adopt the United Nations Global Compact in 2007. The 2022 Times Higher Education Impact Rankings recognised the HEI for its strong performance in areas such as quality education (SDG 4) and gender equality (SDG 5), placing it in the top global quartile. Nhamo and Chapungu (2024) noted that the appointment of a new principal and vice-chancellor in 2020 at the same HEI was pivotal for advancing the SDGs. Under this leadership, 10 key focus areas aligned with the SDGs were established and faculties are now required to report biannually on their research in these areas, including marine studies (SDG 14), aviation and aeronautical studies (SDG 9), energy (SDG 7), and health studies (SDG 3).

The United Nations Development Programme (2024) analysed SA's Sustainable Development Goals Country Report, revealing a mixed picture of progress. While the country has made significant strides in education (SDG 4), health care (SDG

3), clean water and sanitation (SDG 6), and gender equality (SDG 5), it still faces major challenges with regard to poverty (SDG 1) and inequality (SDG 10). Many people remain in poverty despite social assistance programmes, and violence against women persists despite a strong legal framework. South Africa also grapples with climate resilience challenges (SDG 13) and governance issues such as corruption that undermine justice (SDG 16). During the SDG Summit in September 2023, the country reaffirmed its commitment to Agenda 2030, pledging to focus on equitable renewable energy transition, climate finance, digital equity, women's empowerment and biodiversity protection.

3. Methodology

The researcher employed a qualitative methodology, deemed the most suitable for probing the commitment of HEIs in BRICS nations towards the SDGs through research practices and community engagement. Leedy and Ormrod (2019) noted that qualitative research is particularly effective in uncovering participants' viewpoints and evaluating the impact of various policies, practices and innovations within defined contexts. In this study, qualitative document analysis was conducted to evaluate the commitment of HEIs in Brazil and SA concerning the SDGs.

Regarding the research paradigm, the current study was situated within an exploratory qualitative framework, influenced by a postmodern research ethos. According to Nieuwenhuis (2020), the primary objective of exploratory qualitative research is to enhance comprehension of a specific topic, group, process, or context. In this instance, the subject matter relates to the SDGs, the focal groups are Brazil and SA, and the context is higher education. Furthermore, Nieuwenhuis (2020) elaborated that exploratory research typically lacks a pre-defined theoretical structure; instead, it aims to develop an emergent theoretical framework through the process of simultaneous data collection and analysis. Consequently, researchers operating within this philosophical paradigm recognise the existence of multiple realities, rejecting the notion of a single perspective (Forghani et al., 2015; Hossienia & Khalili, 2011).

This research was initiated without a pre-established theoretical framework. Nieuwenhuis (2020) noted that qualitative research generally does not commence with hypotheses designed for testing and validation. Instead, in line with an inductive approach, theories may emerge throughout the processes of data collection and analysis. Therefore, this qualitative document analysis was grounded in the principles of grounded theory, as described by Strauss and Corbin (1990). Furthermore, Bowen (2009) highlights that, although many studies in grounded theory use interviews and observational techniques, research focused solely on document analysis can still draw effectively from grounded theory as a guiding framework.

3.1 Data Collection and Analysis

To collect data, a document analysis method, which is a systematic and structured examination of texts in documents to enhance one's understanding of the research topic, was employed (Bowen, 2009). Document analysis is adaptable, functioning

effectively as a complementary method alongside other data collection techniques such as interviews and surveys. However, it is also effective in advancing the knowledge frontier when employed as an independent approach. As Merriam and Grenier (2019) noted, employing a diverse array of documents, literature and reports, aligns well with the principles of grounded theory research.

One notable advantage of document analysis is its efficiency as it typically requires less time in comparison to traditional qualitative methods such as interviews and surveys. Nonetheless, document analysis presents certain limitations. Bowen (2009) and Medlock (2015) highlight that some documents may not provide sufficient detail, as they were not specifically created for the research purpose of a study. Access to particular documents may also be restricted, and there is a possibility that some information could be outdated or no longer be relevant. In addition, the processes of selecting and interpreting documents introduce a potential for bias. Despite these challenges, such limitations were mitigated through rigorous methodological practices and transparent reporting.

In accordance with the recommendations made by Creswell (2009), this research employed a purposeful sampling strategy to address the potential inconsistencies and inconclusiveness that may arise from random document selection. According to Yavuz (2016), effective document analysis necessitates the availability of relevant data. Purposeful sampling was particularly effective, as it allowed for selecting cases (documents) that were rich in information and directly aligned with the study's objectives (Harsh, 2011). The study focused exclusively on official documents from each HEI. Only documents that included information about sustainability and those published in 2015 or later were deemed suitable for inclusion.

In this investigation, a total of 60 documents were selected. A total of 40 documents were obtained from the official websites of the eight South African HEIs and the eight Brazilian HEIs under study. In addition, 20 journal articles were collected (see Appendix A). The researcher employed content analysis as a qualitative methodology to systematically assess the set of purposefully selected documents. The analysis was conducted in accordance with a rigorous framework grounded in the principles of grounded theory. The 60 documents were analysed through a manual colour-coding process.

The study drew on data obtained from publicly available documents from 16 universities and applicable journal articles. Tripathy (2013) reminded researchers that the relevance of documents in data selection is essential, as the original documents were not specifically created to address the present research questions. Furthermore, Tripathy (2013) noted that document analysis is generally a low-risk study, as it involves limited ethical issues. When sources are accessible via the Internet, published works, or other public platforms, their use for analytical purposes is permissible, provided that appropriate credit is given to the original authors and sources.

In addition, ethical clearance was obtained from the official Research Ethics Committee to which the researcher was contracted. In accordance with the ethical clearance received, the names of the institutions under investigation were kept confidential. Hereafter, the results and findings of the document analysis are presented.

4. Findings

This qualitative study aimed to explore how the eight HEIs in Brazil and the eight HEIs in SA have aligned their community engagement and research practices to contribute to the 17 SDGs. The following subsections discuss the findings of the document analysis by zooming in on the contribution HEIs make towards the SDGs through their community engagement and research practices.

4.1 Infusion of Sustainable Development Goals in community engagement

Society and the state have rightly looked to HEIs to provide answers and engage in actions that can potentially improve humankind's future. In times of uncertainty, Brazilian and South African HEIs have strategically employed SD in their community engagement projects to foster graduates who have the potential to meaningfully contribute to their local and global communities. Community engagement in HEIs refers to collaborative efforts between universities and their surrounding communities, which is mutually beneficial.

Community engagement includes, but is not limited to, activities such as service learning, outreach programmes and research partnerships that address local needs while simultaneously enhancing student education and development. The purpose of community engagement is to nurture reciprocal relationships between HEIs and the communities hosting them. In doing so, HEIs aim to prepare students to become informed citizens who can positively contribute to their communities and society.

Considering their extensive financial and human resources, HEIs are responsible for engaging with the communities hosting them. New knowledge produced through research should be disseminated to local communities through community engagement projects. Community engagement is a public responsibility and should be employed as a tool to satisfy the needs of society. More specifically, sustainability in community engagement employs research findings to contribute to the hopes and needs of citizens; and this is mutually beneficial, as the students and staff employed at HEIs can learn from their interaction with citizens residing in the community. This also provides students and academics with the unique opportunity to learn from local challenges and to acquire knowledge through practical education and real-life contexts.

Concerning the advantages of community engagement, the benefits of knowledge production can be extended beyond an HEI through SD in community engagement. The analysed documents revealed that Brazilian and South African HEIs are aware of their responsibility to use their expertise and resources to benefit their host communities. Achieving the SDGs through community engagement projects is strategic and is commonly practised at the sampled South

African and Brazilian HEIs. The following five community engagement actions disclose the commitment to contributing to the SDGs.

Firstly, the three core activities (teaching, research and community engagement) in Brazilian HEIs are intertwined and inseparable. They have structured their core activities (including community engagement projects) to strategically contribute to the 17 SDGs. Secondly, Brazilian and South African HEIs are increasing their contribution to the SDGs in their community engagement by including all staff, students and faculties in community-based projects. For instance, one Brazilian HEI employed a data information system to record statistics from community engagement projects.

In 2017, the total number of community engagement projects was 2,390 in which approximately 2,000 lecturers and 4,000 students participated. Brazilian HEIs have been commended for their dedication to community engagement projects in the health arena (SDG 3). In fact, Brazilian HEIs boast hospitals located on and off their premises that serve close to five million Brazilian citizens. Although community engagement projects in Brazilian HEIs have grown, their projects are mainly linked to SDG 6, 7, 12 and 13, which are all environmental goals.

The focus on the environment can be attributed to the fact that the objective of more than half of the Brazilian HEIs under scrutiny is to improve their community engagement projects that are linked to the environment. Through community engagement, Brazilian HEIs link research practitioners and students with the local community, business leaders, policymakers, local citizens and medical practitioners to satisfy the relevant needs of society that cover several of the 17 SDGs.

Thirdly, the Covid-19 pandemic has not slowed down the community engagement activities of Brazilian and South African HEIs. The pandemic appeared to motivate South African and Brazilian HEIs to assume increased responsibility for achieving SDG 3. Faculties of Health at Brazilian HEIs have contributed to SDG 3 by providing facilities and resources to mitigate the pandemic. Some Brazilian HEIs donated to the fight against the pandemic by offering treatment and therapy to citizens affected by Covid-19. Community engagement in the context of Brazil addressed SDG 10 by contributing to an equitable society in the post-pandemic era.

Similarly, South African HEIs deployed medical practitioners to volunteer at funerals, religious gatherings and clinics. This community engagement project was essential, as the pandemic can still be contracted after the death of those who have succumbed to it, leaving unaware citizens exposed to contracting the virus. Fourthly, legislation makes it mandatory for Brazilian HEIs to engage in community engagement. The National Education Plan stipulates that community engagement must be part of the curriculum for undergraduate courses. Community engagement is mandatory for all students, since they obtain marks for partaking in it.

Lastly, the HEIs under scrutiny align their community engagement projects strategically with the 17 UN SDGs. Brazilian HEIs define problems to be addressed through community engagement against the backdrop of the 17 SDGs. In SA, most of the universities under study have established a community engagement policy that provides direction for outreach programmes. Specific examples of this is that many institutions have developed fruit and vegetable gardens. The community is invited to attend training sessions on nourishment and cultivation and harvesting of plants, vegetables and fruits, which resonates with SDG 2 (zero hunger), SDG 4 (quality education) and SDG 11 (sustainable cities and communities).

Another commendable example of community engagement projects aligning with the SDGs is the installation of household biogas digesters that produce energy for food preparation. This project was valuable because it catered to the needs of an impoverished, rural community that relies on subsistence farmers. Through workshops (SDG 4), citizens were educated and encouraged to use renewable resources (SDG 7) instead of cutting down trees, which addresses climate change (SDG 13). In addition, the same rural community received sustainability lessons (SDG 4) on how to use cow dung for the biogas digester.

Subsequently, digestate slurry is produced and can be used for manure, which can aid soil fertility and improve food security (SDG 2). In turn, subsistence farmers in the community can produce surplus crops which can be sold for a profit, thus providing an income for families and reducing poverty (SDG 1). Community engagement at the sampled universities is strategically executed and tactically affiliated with the SDGs. South African HEIs stand to learn from the fact that, in Brazilian HEIs, community engagement projects make up 10% of course credits in undergraduate programmes. Meanwhile, Brazilian universities can aim to display the same exemplary commitment South African HEIs demonstrate as to the inclusion of the 17 SDGs into their community engagement.

Regarding similarities, according to the analysed documents, Brazilian HEIs focus primarily on health-related initiatives (SDG 3) and environmental sustainability (SDG 6, 7, 12 and 13). According to the scholarly writings of Galvão et al. (2024), Brazilian HEIs have demonstrated resilience and perseverance in their research and community engagement, despite enduring systemic pressures and budgetary constraints in recent years. The findings of the document analysis revealed that, regardless of the challenges presented by the pandemic, scientific productivity and innovation have been maintained. The findings also revealed that South African HEIs centre their community engagement on agricultural training and community health initiatives aimed at reducing poverty and food insecurity (SDG 1 & 2). Concerning the differences, both countries have put policies in place to encourage participation in community engagement projects among students, faculty and staff (Galvão et al., 2024).

Despite these commitments, the sustainability of these activities will require ongoing funding, which has proven to be challenging for Brazilian and South African HEIs (Galvão et al., 2024; Universities South Africa, 2024). Furthermore,

long-term impact will require community buy-in and alignment with local needs. With sustainability in mind, HEIs should consider fostering partnerships with local governments, businesses and civil society organisations to ensure long-term impact. Effective policy implementation and governance are crucial for the success of SDG initiatives. In this regard, the bureaucratic nature of society and HEIs has hindered the implementation process in Brazil (Grano et al., 2023). As the 2030 deadline for the SDGs approaches, community engagement projects will evolve by increasing collaboration across institutions and regions, incorporating interdisciplinary approaches and leveraging technology to enhance outreach and engagement efforts.

4.2 Infusion of Sustainable Development Goals in research practices

The production and dissemination of research focusing on SD plays an essential role in changing the population's attitude and behaviour towards the consumption of natural resources. Knowledge production plays a crucial role in mitigating challenges in a world that is becoming increasingly resource constrained. Inequalities (SDG 10) plague Africa and other countries located in developing nations. The HEIs under investigation use their research to cover themes related to all the SDGs. In this study, research practices refer to the systematic methods and procedures researchers employ to collect, analyse, and interpret data, and disseminate findings. Research practices provide the foundation for understanding and addressing complex global challenges such as poverty, inequality and environmental sustainability.

Focusing on Brazilian HEIs, the findings revealed that knowledge production is combined and allied with teaching, community engagement and policy. In Brazil, the needs of the local and global community are part of the criteria for selecting research topics. The HEIs located in Brazil conduct research that covers all 17 SDGs. Research themes include conservation and climate change (SDG 13), the hydrological cycle (SDG 14 & 15) and water resilience (SDG 6); sustainable cities (SDG 9 & 11) and sustainable exploitation of natural resources (SDG 12); educational and social transformation for environmental sustainability and human well-being (SDG 3 & 4); and sustainable food production (SDG 1 & 2).

The documents analysed in South African HEIs revealed that in the past two decades, the research productivity has almost doubled. In SA, research does not only show encouraging numeric progress – the social, environmental and economic impact of research has also grown. Knowledge production is aligned with the National Development Plan of the country. For instance, improving secondary education (SDG 4), the delivery of medical care to impoverished citizens (SDG 1, 3 & 10), urban growth (SDG 9), inequality (SDG 10) and sustainable development (SDG 7) were research themes in the analysed documents.

In addition, South African universities produced knowledge on gender inequalities (SDG 5) during Covid-19. The research on gender inequalities paid special attention to females in relation to food security, access to technology and early stages of parenthood to obtain a better understanding of the continuing

challenges that females face, which was intensified by the pandemic. Also in this regard, through scientific endeavour, universities located in Brazil have contributed to better understanding ways to mitigate the pandemic and the associated challenges. One South African HEI conducted research focused on the environment (SDG 6, 7, 11, 12, 13, 14 & 15) that has the potential to combat natural disasters.

With regard to the 17 SDGs, the findings are twofold. On the one hand, HEIs in the two contexts under investigation seek national and international partnerships (SDG 17) to achieve sustainability, which is confirmed by Galvão et al. (2024). Partnership with HEIs located in the Global North and South has the potential to strengthen research capacity. In fact, South African HEIs also partner with one another to investigate the vulnerability of children through the national lockdown. The findings of the study showed that 60% of children in the country live in poverty (SDG 1). This statistic was aggravated by the occurrence of the pandemic and the implementation of multiple lockdowns.

The findings revealed that the strategy with the most potential to shelter children from undernourishment (SDG 2) was through the already established social grant system. As per an international partnership, South African research practitioners collaborated with HEIs in the European Union and North and South America in a €11.5 million research project that assessed the current and imminent environmental risks posed by climate change (SDG 13), natural disasters and human activities.

On the other hand, the analysis of documents proved that South African HEIs strategically associate their research topics with the 17 SDGs goals. Three features of knowledge production at HEIs located in SA show their dedication to the SDGs in research. Firstly, the research topics of two South African HEIs are guided by the 17 SDGs, as the SDG symbols feature in their research-related documents. Consequently, much of the research conducted by the two South African HEIs is strongly linked with the 17 SDGs.

Secondly, research is conducted in a range of topics and fields, such as sustainable transportation (SDG 11); climate change (SDG 13); sustainable agriculture (SDG 1, 2 & 15); water (SDG 6 & 14); and air quality (SDG 15); sustainable institutions (SDG 16); and the ecosystem (SDG 14 & 15). Thirdly, research associated with the SDGs receives multi-, inter- and transdisciplinary attention. South African research practitioners have received global credit for their research findings on SDG 4, 9 and 16. In fact, one South African HEI has been placed in the top 200 (globally) for its commitment to SDG 3 and 17.

Moreover, HEIs located in Brazil stand to learn from the inclusion of the SDGs in South African HEIs, which appear to be methodically organised and affiliated with the 17 SDGs. South Africa's commitment to the 17 SDGs in research stems from the fact that this kind of research improves their position in the global rankings chart. In addition, the sampled South African HEIs are comprehensive universities that prioritise research in a manner that contributes to society and

improves their academic stature in a competitive environment. Knowledge production at Brazilian HEIs is commercialised and promotes economic growth and the health of citizens.

To improve their research capacity and their international research stature, it is recommended that Brazilian HEIs (a) strategically expand the number of research initiatives aligned with the 17 SDGs; (b) grow their research-related partnership with HEIs worldwide; and (c) make multi-, inter- and transdisciplinary research a component of funding conditions. Both countries actively pursue national and international partnerships to strengthen their research capacity. However, ensuring that such initiatives are sustainable requires embedding them in local contexts, fostering long-term collaborations and aligning them with the actionable outcomes of the SDGs. To maintain momentum, it is recommended that HEIs continuously monitor success and shortfalls, adapt their research strategies and integrate interdisciplinary research methods.

5. Discussion

The purpose of this study was to explore how Brazilian and South African HEIs align their community engagement and research practices with the 17 SDGs. Focusing on community engagement, the findings pointed out that Brazilian and South African HEIs recognize their responsibility to utilize institutional expertise and resources to benefit their host communities. Scholars agree that all levels of education have a role to play in achieving the SDGs (Fehlner, 2019; Ferguson & Roofe, 2020; Huang et al., 2024).

However, Filho et al. (2019) stated that HEIs are influential and must be delegated a leading role. Therefore, it was promising to note that community engagement in HEIs was well aligned with the UN SDGs. Despite the disruptions caused by the COVID-19 pandemic, scholarly literature (Arrais et al., 2021; Saidi, 2021) and the findings of this study revealed that Brazilian and South African institutions sustained, and in some cases intensified, their community engagement efforts towards the SDGs in the health sector.

Zooming in on research, knowledge production in HEIs has the potential to contribute to the generation of new ideas and to the mitigation of global challenges such as poverty, inequality, and environmental degradation. There is no doubt that the positive contribution that HEIs can make towards achieving the SDGs is powerful (Filho et al., 2019). HEIs possess the capacity, resources, and expertise to produce new, multi-, inter-, and transdisciplinary sustainability-related knowledge and disseminate their findings (Vargas-Merino et al., 2024). To this end, it is encouraging that the findings revealed that both Brazilian and South African HEIs have integrated sustainability into their research agendas, aligning their scholarly output with the 17 UN SDGs.

In the Brazilian context, research is closely intertwined with teaching, community engagement, and policy development. The selection of research themes is influenced by both local and global needs, ensuring that knowledge creation responds to societal priorities. In SA, the findings reveal a significant increase in

research productivity and impact over the past two decades, which was confirmed by the Department of Higher Education and Training (2021). Regardless of the commitment of Brazilian and South African HEIs towards the SDGs in their community engagement and research practices, Kamphambale et al. (2024) informed that currently, the curriculum content provides students with a narrow understanding of the SDGs and ESD.

6. Conclusion and recommendations

HEIs provide innovative strategies that have the potential to navigate progress towards the attainment of the SDGs. Thus, HEIs located in BRICS countries are responsible for fostering a large portion of the population that deliberately contributes to attaining the SDGs and serves as role models for other developing nations. Although the findings cannot be generalised, HEIs in other developing nations can learn from the commitment of the two BRICS nations towards the SDGs. We learn from the findings that, in BRICS nations such as SA and Brazil, commendable efforts have been made by HEIs to achieve the SDGs in research and community engagement.

Their commitment to aligning community engagement and research practices with the SDGs is linked to social and environmental stewardship becoming a part of global ranking criteria. Similar to the MDGs, it is unlikely that all the SDGs and their targets will be achieved by 2030. However, BRICS nations such as SA and Brazil have the potential to make a substantial contribution to their realization. In this regard, HEIs should not limit the implementation of the SDGs in their community engagement and research practices.

The curriculum content and teaching pedagogy should also be aligned with the ESD and the 17 SDGs. Further improvement will require adopting a holistic approach towards ESD in all core activities. Aligning all three core activities (teaching and learning, community engagement and research practices) of HEIs with the SDGs will increase the potential to develop upcoming leaders, business experts and responsible citizens who can direct the planet onto a more sustainable route.

In this regard, Brazilian and South African HEIs should align their research with local needs, engage in interdisciplinary research projects, involve community members in research, and partner with local organisations. Community engagement should also incorporate service learning, engage in community workshops and training, and establish local advisory boards and volunteer programmes. It is important to note that the qualitative nature of the findings does not allow the findings to be generalised, and that the findings were not triangulated, which future studies could address. In addition, future research should explore how HEIs implement ESD and the SDGs in their curriculum content and teaching pedagogy.

7. Conflict of Interest

No conflict of interest.

8. References

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Appendix 1: Purposefully selected documents

Details of documents purposefully selected for this research study

Document	Title of the document	Date of collection
BR1-DOC-1	Sustainability Report	2018
BR2-DOC-1	Strategic plan 2018-2021	2018
BR2-DOC-2	Mission and vision statement	2021
BR2-DOC-3	Research strategy	2021
BR2-DOC-4	Institutional Development 2019-2028	2019
BR3-DOC-2	Mission and vision statements of faculties	2021
BR4-DOC-1	Magna Charter	2018
BR4-DOC-2	Strategic framework 2016-2020	2016
BR5-DOC-1	Institutional development plan 2021	2021
BR5-DOC-2	Sustainable management plan 2020 Volume I	2020
BR5-DOC-3	Institutional development plan Volume II	2021
BR5-DOC-4	Guide for circularization of extension activities in undergraduate courses	2017
BR5-DOC-5	Institutional development plan	2021
BR6-DOC-1	Institutional development plan	2021
BR6-DOC-2	Institutional Development Plan 2018-2023	2018

BR7-DOC-1	Institutional Development Plan	2010
BR7-DOC-2	Research strategy	2018
BR8-DOC-1	Institutional development plan	2018
BR8-DOC-2	Annual activity report	2021
BR8-DOC-3	Annual report	2021
JA-DOC-1	The environmental sustainability of Brazilian universities: barriers and pre-conditions	2015
JA-DOC-2	Sustainable development policies as pre-conditions and indicators of sustainability at universities	2018
JA-DOC-3	Education for sustainable development in South Africa: a model case scenario	2016
JA-DOC-4	Engineering education for sustainable development	2020
JA-DOC-5	How green is Brazilian accounting students perception	2019
JA-DOC-6	Promoting sustainable development implementation in higher education: Universities in South Africa	2017
JA-DOC-7	Implementation of the SDGs at the University of South Africa	2019
JA-DOC-8	Some of the challenges in implementing ESD: perspectives from Brazilian HEI students	2019
JA-DOC-9	The importance of international conferences on sustainable development as higher education institutions strategy to promote sustainable development: a case study in Brazil	2017
JA-DOC-10	Ranking the performance of universities: the role of sustainability	2021
JA-DOC-11	A review of education for sustainable development and global citizenship education in teacher education	2017
JA-DOC-12	A decade of Finnish engineering ESD	2019
JA-DOC-13	A pilot study for ESD in the Romanian economic HE	2018
JA-DOC-14	Academic staff engagement in education for sustainable development	2015
JA-DOC-15	Becoming a competent teacher in education for sustainable development	2019
JA-DOC-16	Catalysing change in HE for SD	2017
JA-DOC-17	Competencies in ESD: emerging teaching and research strategies	2020

JA-DOC-18	Competencies in ESD: exploring the student teachers views	2015
JA-DOC-19	Promoting sustainable development in HEIs: top down, bottom up or neither	2020
JA-DOC-20	(Does sustainability reporting promote university rankings: Australian and New Zealand evidence)	2020
SA1-DOC-1	University Vision for 2040	2011
SA1-DOC-2	Research report	2019
SA1-DOC-3	Teaching and learning review	2020
SA1-DOC-4	Teaching and learning review	2014
SA2-DOC-1	Strategic plan 2025	2011
SA2-DOC-2	Strategic objectives 2014-2025	2014
SA2-DOC-3	Teaching and learning report	2016
SA2-DOC-4	Annual report	2020
SA3-DOC-1	Strategic planning framework 2016–2020	2016
SA3-DOC-2	Research report 2019-2020	2019
SA3-DOC-3	Teaching and learning strategy 2017	2017
SA3-DOC-4	Research report	2018
SA4-DOC-1	Vision 2040 and strategic framework 2019-2024	2019
SA4-DOC-2	Annual integrated report	2019
SA4-DOC-3	Teaching and learning strategy	2017
SA4-DOC-4	Research report	2019
SA5-DOC-1	Strategic framework 2010-2022	2010
SA5-DOC-2	Research report	2019
SA5-DOC-3	Learning and teaching plan	2020
SA5-DOC-4	Annual report	2020