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The Imperative of Knowledge-Sharing in Accelerating Innovation in Nigeria

Salihu Girei Bakari
International School of Business and Social Studies, Celje, Slovenia
sgbakari@yahoo.co.uk

Dušan Lesjak
International School of Business and Social Studies, Celje, Slovenia
dusan.lesjak@guest.arnes.si

Gregor Jagodič
International School of Business and Social Studies, Celje, Slovenia
gregor.jagodic@mfdps.si

Abstract

Knowledge sharing is a crucial link between knowledge creation and innovation. In Nigeria, knowledge exchange between higher education institutions and other key sectors of the economy is weak and inconsistent, resulting in knowledge waste and, consequently, a low level of innovation. This paper explores the importance of knowledge sharing in promoting innovation and driving economic development in Nigeria. Reviewing relevant literature and proposing strategies to improve knowledge flow among stakeholders, the paper emphasises the urgent need for policies and frameworks that facilitate open knowledge exchange, effective communication, and realigning research priorities to address societal challenges.

Keywords: Knowledge-sharing, innovation, economic development, knowledge waste, Academia, Nigeria.

INTRODUCTION

Education is essential for creating knowledge and a foundation for innovation. Today, innovation drives economic development and progress. Knowledge from education enhances innovative capacities as economies shift to knowledge-driven growth (Bakari, Lesjak & Jagodič, 2024). Thus, knowledge is vital for economic growth and job creation (Tocan, 2012). Notably, half of the wealth in developed nations stems from technology, research, and development (Ozor 2020 in Joseph-Raji & Amali 2023). Innovation accelerates through knowledge sharing between academia and other sectors. Knowledge gained from research is valuable when applied to solve societal challenges. If unused, knowledge loses significance, wasting invested resources. Therefore, for innovation to thrive, knowledge must reach end-

users who can apply it to solve existing problems. Innovation is essential for economic development and progress, relying on the knowledge that education provides (Tocan, 2012). Innovation accelerates through knowledge sharing between academia and various sectors of the economy. Consequently, for it to occur, knowledge must be shared with end-users who will apply it for the common good. A knowledge-based economy derives its value from intangible assets, where these assets' production, distribution, and utilisation drive economic growth.

This paper argues for enhanced knowledge-sharing between academia and other sectors of Nigerian society to facilitate the development and adoption of innovations essential for the country's overall progress. It emphasises the need for Nigeria to find effective ways to leverage its intellectual assets to address the complex challenges affecting its political, economic, social, and technological landscapes. The paper tackles two key questions through a literature review: (1) To what extent does a lack of effective knowledge-sharing behaviour contribute to Nigeria's low innovation index? (2) How can implementing knowledge-sharing mechanisms improve the utilisation of research outcomes and drive innovation in Nigeria? As of 2023, Nigeria ranked 109th in the Global Innovation Index (World Intellectual Property Organisation, WIPO, 2023), highlighting the significance of this paper.

NIGERIA'S DEVELOPMENT CHALLENGES

Nigeria faces significant development challenges in GDP growth, poverty reduction, healthcare, education, infrastructure, and technology. With nearly 200 million people, it relies heavily on oil for revenue (UNDP, 2018). The population is predominantly young, with a median age of 18 and 62% under 25, and growth exceeds 2.5%. Alarmingly, 62% live in extreme poverty (CIA, 2019). While youth employment is crucial (Kokovnik & Jagodič, 2017), the economy struggles to create jobs, as the oil sector accounts for about 90% of the GDP (Alkali, 2021). By 2024, Nigeria has 273 universities (125 public, 148 private), 216 colleges of education (138 private, 78 public), and 183 polytechnics (95 public, 88 private) (Bakari et al., 2024). However, it has failed to leverage these resources for a knowledge-based economy (Alkali, 2021).

Nigeria has adequate higher education institutions (HEIs) to support economic development, yet its system faces challenges. Its main goal is to produce skilled human resources and drive national development. However, a lack of connections with private and government sectors limits its effectiveness. A comprehensive policy is needed to leverage the capabilities of academia. By aligning these sectors, Nigeria can foster innovation and develop solutions to its challenges. The government recognises the link between scientific research and economic development, as noted in Nigeria's Vision 20:2020, emphasising agriculture and trade research. Reforms in Technical and Vocational Education and Training (TVET) aim to prepare a skilled workforce. The 2017 Economic Recovery and Growth Plan highlighted the need for funding agricultural research and enhancing R&D capacity in manufacturing and trade. Moreover, the 2013 National Education Policy outlines that universities must allocate significant budgets to R&D in science and technology, reserving at least 80% of placements for technology and agriculture programmes.

UKAID (2019) highlights that critical government sectors have established policies that notably influence research activities. For example, health research is guided by the National Health Act of 2014, the National Health Policy of 2016, and the National Strategic Development Plan II. The relevant ministry is tasked with coordinating these research activities. However, despite some alignment with national development priorities, various competing sector policies and strategies and ineffective

implementation mechanisms negatively impact the research system. This situation leads to overlapping policies, fragmented activities, and an inability to achieve synergies with national objectives.

The UKAID (2019, p. 4) study revealed interviewees' concerns that, despite the rhetoric, research is not indeed regarded as a national priority. They noted that a lack of funding is widening the gap between policy and practice, increasing Nigerian researchers' dependence on international research funding, and making them more attuned to international agendas rather than national priorities; for instance, in 2018, international collaborations accounted for 46% of Nigeria's research outputs, a figure that has been steadily rising over the past decade. Additionally, there seem to be no sectoral research policies or strategies that convert the general objectives of the Science, Technology, and Innovation (STI) policy into more specific sectoral policies. Interviews conducted at the Nigerian Institute of Medical Research (NIMR) indicated that health research organisations often base their research on immediate needs (e.g., disease outbreaks) or international policy priorities instead of adhering to a long-term strategy to improve public health.

INNOVATIVENESS AND KNOWLEDGE

Knowledge and innovation are linked, fostering continuous improvement. Research generates and updates knowledge that spurs innovation, while innovation creates new knowledge. This interaction frames innovation as a social learning process that nurtures fresh ideas (Alkali, 2020). It is essential for human development and national progress. As Lesjak (2019) states, research leads to advancements in science, technology, economic growth, cultural change, and health sustainability. Furthermore, innovation fuels economic development, job creation, and improved access to healthcare and education (Porter, 1990; Mulgan, 2014; Moreira, Navaia, & Ribau, 2024). It also supports sustainability efforts in clean energy and resource management to mitigate climate change (OECD, 2018). Alkali (2020, p. 34) defines innovation as "the implementation of a new or significantly improved product, process, marketing method, or organisational method," enhancing efficiency and competitiveness (OECD, 2018). Schilling (2016) adds that it develops new ideas and technologies to create value and address challenges. Depending on the degree of change, it can be classified as incremental, radical, or disruptive (Christensen, 1997; OECD, 2018). Alkali (2020, p. 34) notes the concept includes various economic, social, political, and organisational factors affecting innovation.

Innovation is both a process and an outcome, generating ideas and products that push human progress. Key types include process innovation (Tidd & Bessant, 2020), product innovation (Drucker, 1985; Alkali, 2020), organisational innovation (OECD, 2018), market innovation (Smith, 2005 in Alkali, 2020), and social innovation. Product innovation drives change through significant updates, while process innovation improves production methods. Organisational innovation enhances business practices and relationships, and marketing innovation focuses on creative product design, packaging, and strategies. Innovations are categorised as internal (product and process) or external (marketing and organisational), underscoring their interconnected impact on success (Moreira et al., 2024). The innovation process starts with ideation, involving idea generation through research and collaboration (Tidd & Bessant, 2020). Godin (2006, p. 3) states, "Innovation can take many forms, including adaptations of products and incremental improvements to processes."

Innovation models are primarily classified as 'closed' or 'open' (Kerry & Danson, 2016). In the closed model, companies handle everything from idea generation to product marketing and distribution, relying on internal R&D (Kerry & Danson, 2016). Conversely, open innovation involves intentional knowledge

exchanges to accelerate internal innovation and expand external markets (Kerry, 2021). This model promotes knowledge flow across organisational boundaries and utilises both monetary and non-monetary mechanisms (Kerry, 2021) and can be categorised into three core archetypes:

- The outside-in process enriches an organisation's knowledge base by integrating suppliers and customers and sourcing external knowledge, increasing innovativeness.
- The inside-out process involves earning profits by bringing ideas to market, selling intellectual property (IP), and transferring innovations to the external environment.
- The coupled process combines the outside-in and inside-out processes through alliances with complementary partners, where mutual exchange is vital for success (Kerry & Danson, 2016, p. 72).

In open innovation, collaborating with external actors and sharing knowledge is viewed as a "superior way of generating value" (Torkkeli et al., 2009 in Kerry, 2021, p. 33).

Organisations must seek and harness knowledge beyond their boundaries for innovation to thrive (Dyer & Singh, 1998). That requires forming inter-organisational alliances and developing absorptive capacity, which refers to effectively assimilating and utilising external knowledge for commercial purposes (Kerry, 2021). Establishing strong connections among institutions—such as research organisations, HEIs, and industries—is essential for fostering innovation. Kerry (2021) and Wang, Vanhaverbeke, & Roijakkers (2012) emphasise that successful innovation hinges on interconnected factors: quality education, effective technical organisations, industrial relations, government policies, support for basic research, strong inter-organisational relationships, skilled labour supply, financial resources, and cultural attitudes. Public support for open innovation initiatives is crucial as it promotes knowledge exchange among stakeholders (Kerry & Danson, 2016). Key conditions for success include fostering a culture of openness, managing trust dynamics, and effectively leveraging information technology within organisations (Kerry & Danson, 2016).

The process of acquiring and creating knowledge for innovation involves several key mechanisms:

- Continuous Education, Training, and Skill Development: These elements are essential for enhancing overall knowledge (Nonaka & Takeuchi, 1995).
- Investment in Research and Development (R&D): Such investments empower organisations to generate new knowledge and effectively apply it to solve problems (Chesbrough, 2003).
- Collaboration and Knowledge Sharing: Forming partnerships with external entities - such as academic institutions, industry peers, and customers- facilitates the exchange of diverse perspectives and expertise. This collaborative approach enriches the organisation's knowledge base and promotes innovation (Costa & Monteiro, 2016).
- Real-World Applications: Engaging in practical applications provides valuable insights that refine and enhance innovative ideas.

A dynamic feedback loop that emphasises continuous learning and adaptation drives the relationship between knowledge and innovation. This loop involves utilizing knowledge gained from one activity in different contexts, fostering ongoing learning (Chirumalla, 2017, p. 5). Such feedback mechanisms enhance creativity and innovation (de Sousa, 2006). Organisations that establish effective feedback processes can quickly adapt to changing circumstances (Chirumalla, 2017, p. 2). A learning organisation effectively creates and transfers knowledge while modifying its behaviours (Garvin, 1993). Chirumalla (2017) identifies single-loop learning, which corrects errors without questioning fundamental

assumptions, and double-loop learning, which challenges those assumptions. The feedback loop consists of four key steps: (a) Knowledge Acquisition: Gathering information from various sources. (b) Innovation Development: Applying knowledge to create new products or services (Kline & Rosenberg, 1986). (c) Implementation and Assessment: Executing and evaluating innovations; and (d) Knowledge Generation: Gaining insights that refine knowledge and guide future innovations (Nonaka & Takeuchi, 1995). This cycle illustrates the continual enhancement of knowledge through innovation

MEANING OF KNOWLEDGE AND KNOWLEDGE-SHARING

The term knowledge has been variously defined. For this paper, knowledge is defined as:

> an attitude for practical application, an awareness of individuals and situations, or a comprehension of facts. This understanding of facts, propositional knowledge, is typically described as a genuine belief differentiated from mere opinion or conjecture through justification (Deepti, Shimray, Kaba & Ramaiah, 2024, p. 65).

Knowledge is an invaluable asset that fosters the development of individuals and organisations (Deepti et al., 2024, p. 65) and is essential for a country to achieve competitive strength. According to Guo and Chelliah (2024), citing the OECD (1996), knowledge can be classified into four types: "knowledge of what" (explicit knowledge), "knowledge of why" (explicit knowledge), "skill knowledge" (tacit knowledge), and "interpersonal knowledge of who" (tacit knowledge). Explicit knowledge can be easily articulated and conveyed through words and symbols, while tacit knowledge is more nuanced and is best understood through careful observation and experience. Tacit knowledge is particularly challenging to express, share, and comprehend (Guo & Chelliah, 2024). Despite these challenges, sharing tacit knowledge is crucial, as it constitutes a significant portion of overall knowledge and much of explicit knowledge derives from tacit insights. Knowledge resides not only in documents and repositories but also in processes, practices, and routines. It encompasses various elements and is often intuitive. Explicit knowledge can be codified, verbalised, transferred, and articulated (Paliszkiewicz, 2021, p. 32). In contrast, tacit knowledge resides in individuals' minds, perceptions, and behaviours, existing as hidden or unwritten knowledge (Paliszkiewicz, 2021, p. 32). This knowledge develops through experiences, human interactions, and practices, making it difficult to transfer (Guo & Chelliah, 2024). Knowledge creation arises from the interplay of explicit and tacit knowledge, leading to the emergence of new knowledge within specific contexts. This new knowledge can enhance efficiency and improve organisational performance (Zaim & Tarim, 2019).

Guo and Chelliah (2024) classified knowledge behaviour into four categories: knowledge creation (KC), knowledge transfer (KT), knowledge hiding (KH), and knowledge waste (KW). This framework highlights the dynamic nature of knowledge flows and underscores the interrelationships between knowledge sharing and absorption within emerging innovative organisations. The authors suggest that organisations can enhance their performance by cultivating a strong culture of knowledge exchange (Guo & Chelliah, 2024, p. 934). Knowledge creation transforms individual and collective skills into valuable explicit or tacit knowledge, a dynamic process supporting organisational innovation and competitive advantage (Nonaka & Takeuchi, 1995). Knowledge transfer can be defined as the process by which an individual, team, or department is influenced by the experiences of others (Argote & Ingram, 2000). This process requires organisational members to share their knowledge while acquiring knowledge from others to adapt and reuse it (Chen & Hung, 2010). Knowledge hiding is the intentional concealment of valuable information within organisations, negatively affecting knowledge sharing,

organisational learning, and performance. It can include withholding information, avoiding questions, or providing incomplete answers (Connelly, Zweig, Webster & Trougakos, 2012). According to Connelly et al., three factors influence this behaviour: avoidance, rationalisation, and pretending to be oblivious. Individuals may withhold knowledge out of fear of job insecurity or losing a competitive edge, resulting in wasted knowledge. Additionally, in cultures prioritising competition over collaboration, employees are more likely to see knowledge as a personal asset and avoid sharing it.

Guo and Chelliah (2024), citing Nonaka and Takeuchi (1997), define knowledge waste as failures in the knowledge-sharing process, which includes underutilisation of existing knowledge and unleveraged employee creativity. It manifests in many ways: knowledge loss, redundancy, underutilisation, and obsolesce. When valuable information is shared but not absorbed or applied, critical resources are lost, leading to organisational learning and decision-making inefficiencies. Factors contributing to knowledge waste include knowledge reshaping, lack of employee discipline, communication breakdowns, and information overload (Ferenhof, 2011 in Aisenberg, Ferenhof, Durst & Mauricio Selig, 2016; Ferenhof, Durst, & Selig, 2015). To combat knowledge waste, organisations should enhance communication, improve absorptive capacity, and foster a culture of continuous learning, thereby better utilising collective talent and expertise (Klein et al., 2023).

Knowledge-sharing has been defined in various ways. For example, Helmstadter (2003), as cited in Castaneda and Cuellar (2020, p. 159), describes it as "interactions between human actors where the raw material is knowledge." Wiewiora et al.. (2013) refer to it as the ability to transfer organised experiences, information, and expert insights into practices. Additionally, Cummings (2003) defines it as the process through which organisations access their knowledge and that of others. Gibbert and Krause (2002) highlight the desire of individuals to share the knowledge they have developed or acquired. Oyemomi, Liu, Neaga, & Alkhuraiji. (2016) defines it as transferring experiences and organisational knowledge to business processes through communication channels between individuals. In the context of the nursing profession, Deepti et al. (2024) assert that knowledge-sharing encompasses skill transfer across specialities, collaboration, innovation, decision-making, knowledge growth, accountability, and teamwork. Based on the foregoing, we can deduce that knowledge sharing is a process through which what has been learned is transferred to other individuals, groups, or organisations for use and reuse.

The need for knowledge sharing in enhancing innovation cannot be overemphasised. Upadhyay and Ansari's (2025) study confirms the need for knowledge-sharing. It was found to improve team creativity, problem-solving, and overall performance. It improved team creativity, problem-solving, and overall performance (Wu, 2021). It is a powerful tool in organisational improvement, creating and utilising organisational knowledge and enhancing innovation and Knowledge Management (Hendriks, 2004). Knowledge sharing facilitates "collective learning and generates beneficial collaboration that improves the core knowledge available" to the organisation (Skudiene, 2021, p. 109) and enables innovative solutions through the new knowledge created. For innovation to thrive, it is beneficial to interact with stakeholders with different knowledge, experience, and understanding. Working actively with universities has proven successful (European Commission, 2007). Knowledge-sharing encourages valuable interactions, such as discussions, guidance, coaching, and social engagement through organisations that can enhance their overall value and solidify their competitive edge (Martinez-Conesa, Soto-Acosta, & Carayannis, 2017 in Li Guo & Chelliah, 2024) and facilitate the distribution and acquisition of knowledge (Ipe, 2003).

KNOWLEDGE SHARING AND UTILISATION IN NIGERIA

At the base of all innovation is knowledge. However, there seems to be a weak framework for knowledge sharing between HEIs and other sectors of the economy in Nigeria. It is, therefore, unsurprising that the key challenge to the systematic development of the country is a lack of synergy between the education sector and other sectors of the economy, resulting in inadequate knowledge absorption and utilisation. That leads to knowledge waste with attendant economic consequences, and this lack of synergy has been a subject of discourse. As observed, the research-policy 'gap' is the subject of much commentary and research activity in the country (Oliver, Innvar, Lorenc, Woodman, & Thomas 2014, p. 1).

A study by Bello, Mela & Yakubu (2022) indicates that the Nigerian government does not recognise the importance of research outcomes, resulting in ineffective utilisation and application of research findings. The authors emphasise the need for research outcomes to be fully integrated into policy formulation and implementation to achieve the desired socioeconomic growth and development. Additionally, they suggest that research findings be made accessible to the public to help address societal issues. Their position was earlier observed by UKAID's needs assessment of the country's research ecosystem. The UKAID concluded that:

> "The national policy for research and innovation is set out in several documents and draws direct links between scientific research, innovation and industrial policy, but the consultation revealed that research is still not fully recognised by the Nigerian government for its contribution to social and economic development, a view supported by data showing relatively low government expenditure in research and development (UKAID, 2019, p. i)."

The study found that research organisations were largely disconnected from the public and the private sectors. "As a result, Nigeria seems to perform better in adopting innovation, especially in an industrial context, than in producing research and innovation domestically. A relatively dynamic private sector has proven to be more adept at adopting foreign technology than collaborating with in-country research organisations" (UKAID, 2019, p. 4), and the study viewed Nigerian universities as generally 'inward-looking' and "disconnected from society".

Another study on impediments to the utilisation of research findings among health professionals in Nigeria was carried out by Avwerhota, Daniel, Avwerhota, Popoola & Popoola (2024). Out of 400 respondents in the study, 87.6% indicated that they were engaged in research with the potential for significant impact, and only 13.6% reported that their findings were applied. Nigerian researchers in HEIs are engaged in publications in refereed journals to share knowledge created in the institutions. According to UKAID (2019), the country published 9,299 scientific papers in 2018, representing more than 12% of the total research output for Africa. In terms of citations, publications from Nigerian researchers are not widely cited, with the average paper from a Nigerian researcher yielding 0.49 citations (compared, e.g. to 0.75 for Kenya), and Nigeria is ranked 43 out of 54 African countries, and at the bottom of the seven countries considered in the UKAID (2019) study.

Despite the perception that Nigerian publications lack quality, often shown by low citation indices, the issue is that sharing research with Nigerian stakeholders is hindered by a focus on academic journals, effectively concealing knowledge. That is evident in Avwerhota et al. (2024), which revealed that 86.9% of respondents felt various pressures obstructing research application, while 74.1% noted inadequate research "packaging" for policy audiences. Additionally, 84.1% observed that restricting findings to academic circles limits access for decision-makers, and 80.9% stated that peer-reviewed publication demands shift focus away from policy improvement. Moreover, 83.1% recognised a communication gap

between researchers and users, with 84.6% identifying poor access as a barrier to health research utilisation. UKAID (2019) similarly found that other sectors conduct their research rather than depend on outputs from higher education. Consequently, higher education's focus on journal publications, while boosting authors' citation indices, results in knowledge hoarding. The requirement for publishing findings to secure faculty promotions worsens this issue, preventing effective knowledge absorption in vital sectors and contributing to Nigeria's low research utilisation and stalled innovation, hindering its progress toward a knowledge-based economy.

Theorists have identified factors affecting effective knowledge sharing within organisations. Previous research highlighted causes of knowledge hiding, including the personality and experience of the knowledge owner, competition reduction needs, fear of job loss, and self-preservation (Guo & Chelliah, 2024). Some individuals may prefer working alone and resisting collaboration, while others struggle to absorb knowledge due to limited absorptive capacity (Nguyen, Siri, & Malik, 2022, p.935). Additional knowledge-sharing barriers include poor social networks (Hansen, 1999), corporate culture, organisational mechanisms, leadership, and technological evolution (Guo & Chelliah, 2024). In competitive cultures, like the Nigerian university system, employees may view knowledge as a personal advantage. Negative experiences, such as unfair treatment, can promote knowledge hiding (Jahanzeb, De Clercq, & Fatima, 2020) and influence leadership styles (Zhao, Zhao, Chen, & Yu, 2023).

In Nigeria, significant obstacles to using evidence include limited access to quality research and delayed output (Oliver et al., 2014). Oliver et al. concluded that barriers include lack of research availability, relevance, time, skills in research methods, and costs. UKAID (2019) noted that Nigeria's research quality is low, as shown by fewer citations than other Sub-Saharan African countries and found no mechanisms for quality evaluation. Bello et al. (2022) highlighted challenges such as poor implementation of findings, lack of reliable data, secrecy, and insufficient funding. Additionally, there is a disconnect between researchers and policymakers, with research themes often misaligned with national priorities, leading to underutilisation in policymaking (Bello et al., 2022).

This paper argues that the primary issue affecting knowledge sharing in Nigeria is the inadequate dissemination of research findings to stakeholders, including government agencies, local communities, and the private sector. Our literature review shows that no academic research has influenced government decisions or reached other stakeholders, resulting in policymakers' unawareness of existing research that could guide policy and foster innovation. Despite establishing agricultural faculties in public universities, practices remain primitive and subsistence-based. The agricultural sector faces challenges like low irrigation, land degradation, climate change, high production costs, and limited financing, which stifle productivity and increase food imports. Effective knowledge-sharing could alleviate these issues, improving the sector's contribution to GDP. Additionally, the culture in government institutions hinders research integration into policymaking due to bureaucratic inertia and resistance to change. However, UKAID (2019) indicates that agencies conduct independent research for policy aid, suggesting that synergy between academia and other sectors could enhance practical knowledge use.

Additionally, the high levels of illiteracy among Nigerians (Bello et al., 2022) pose another challenge. As noted earlier, this limits the accessibility of created knowledge to a broader population, many of whom may struggle to understand information presented in academic formats. Therefore, their capacity to absorb and effectively utilise this knowledge is restricted.

RECOMMENDATIONS FOR KNOWLEDGE-SHARING BEHAVIOUR BY THE HEIs

In the preceding sections, we sought to establish that knowledge created must be shared to be absorbed, utilised, and contribute to innovative practices for human progress. We have also observed that knowledge absorption and utilisation by other sectors of the economy require substantial improvement for Nigeria to effectively transition into a knowledge-based economy and reduce its over-reliance on the importation of goods, services, and technology. Likewise, we argue that Nigeria's HEIs can generate knowledge crucial for the nation's economy to flourish while highlighting some of the key challenges hindering the education sector from fulfilling this role. Oliver et al. (2014) suggested that timely access to high-quality and relevant research evidence, collaboration with policymakers, and developing relationships and skills are key factors influencing the use of created knowledge. For this to occur, the essential roles of knowledge brokers and the promotion of a research-oriented culture relevant to decision-making are crucial. To enhance knowledge-sharing practices between knowledge creators (the academia) and other sectors of the Nigerian economy, we recommend the following:

- Policy formulation: government and HEIs need to develop policies that facilitate knowledge sharing and transfer to critical end users. Since the government is the funder of the public HEIs in the country, it is essential to review the knowledge management practice of such institutions to ensure that crucial knowledge created is shared for absorption and utilisation. That is considered appropriate, bearing in mind that one of the cardinal goals of the HEIs is to help improve the socioeconomic well-being of the country. It is also part of the accountability to the public for funds invested in the HEIs. The institutions must also review their promotion criteria to demand from and reward faculty for sharing knowledge with broader society, which aligns with their teaching, research, and community service mandates.
- There is a strong need to establish effective dissemination systems and mechanisms for relevant stakeholders. The government and stakeholders need different approaches to receive, absorb, and utilise new knowledge distinct from academic languages. For example, the HEIs may develop briefs from their research to communicate key issues, findings, and policy recommendations to the government. Likewise, briefs communicating breakthroughs with potential for commercialisation can be made and disseminated to industries with similar interests. Devising user-friendly, language-appropriate communication strategies will enhance knowledge sharing, arouse the interests of various stakeholders in knowledge created by academia, and potentially strengthen collaboration between the different sectors. As Bello et al. (2022, p. 50) posit, "Research should be known to the general public... should be made available for use in solving human problems."
- Alignment of research priorities with different stakeholders: HEIs need to align their research priorities to address the needs of various stakeholders, such as the government, financial institutions, security, the private sector, and the immediate communities. This alignment will stimulate interest by end users and lead to collaborations in the production and utilisation of the knowledge created. Earlier, we discussed a situation where government agencies conduct their studies, and the private sector employs expatriates for their R&D initiatives. That is mainly because of quality concerns and the misalignment of research priorities with other sectors.
- Establish a central repository or data bank where key knowledge generated from HEIs in Nigeria can be collected and disseminated for use and reuse. That currently does not exist, which makes storage and retrieval of knowledge in Nigeria complex and challenging, resulting in knowledge loss. Establishing this databank will significantly improve knowledge creation, enhance efficiency, reduce duplication of efforts, improve evidence-based decision-making, facilitate the application of

knowledge in various aspects of society, and transform Nigeria into a knowledge economy. The government should take the initiative to establish and maintain the proposed repository.

- Responsive leadership is necessary to enhance knowledge sharing, especially at the HEIs. For any initiative to succeed, leadership is essential. There is a need for HEI managers to be sensitised to change the current knowledge-sharing behaviour and be champions of change themselves. They must play a crucial role in changing the organisational culture that inhibits knowledge-sharing and put the necessary incentives in place to institutionalise good knowledge-sharing behaviour. Guo and Chelliah (2024) posit that leaders can provide incentives for sharing knowledge by devising means to address employees' concerns, developing reward systems, inculcating an atmosphere of trust, and promoting a culture of openness. For them to do this effectively, they also need adequate sensitisation.

CONCLUSION

This paper discussed the importance of knowledge sharing for the overall development of Nigeria through knowledge creation, absorption, and utilisation, which can lead to innovative practices across various sectors of the economy. An extensive literature review was conducted to examine Nigeria's low innovation index and its challenges related to development. The paper identifies poor and ineffective knowledge-sharing practices between HEIs and other critical sectors as one of the key factors contributing to Nigeria's limited level of innovation and its implementation in different areas. The argument is made that while Nigeria possesses a strong foundation for knowledge creation, it lacks adequate mechanisms for sharing this knowledge, resulting in wasted knowledge and negative repercussions for development efforts. Although knowledge generated within HEIs is primarily published in peer-reviewed journals, this is insufficient as many essential stakeholders who should benefit from this knowledge are often inadvertently excluded. Other sectors of the economy require access to the knowledge generated by HEIs to promote collaboration and maximise the use of the nation's intellectual resources.

The paper offers several recommendations to achieve the desired synergy between education and other sectors of Nigerian society. These include formulating effective policies, enhancing communication between HEIs and other sectors, establishing a national repository for knowledge creation, and realigning research priorities within HEIs to meet the needs of critical sectors in Nigeria, among other suggestions.

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