

Expanded corporate social responsibility framework: companies' role in improving higher education institutions infrastructure to Sustainable Development Goal 4

Expanded
corporate
social
responsibility

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Abstract

Purpose – Public higher education institutions (HEIs) infrastructure funding is challenging in many developing countries. Encouraging private investment in HEIs infrastructure via a developed expanded corporate social responsibility (ECSR) may improve physical facilities. ECSR is a form of infrastructure tax relief providing physical facilities for HEIs. Academic literature is scarce concerning how ECSR can improve Nigeria's public HEIs infrastructure and achieve education infrastructure related to Sustainable Development Goal 4 (SDG 4). Therefore, this study aims to proffer measures to improve public HEIs infrastructure and achieve sustainable development connected to Goal 4 focussing on infrastructure via a developed framework.

Design/methodology/approach – This is an expansion of an ongoing study, and data were collated via virtual interviews across the six geo-political zones in Nigeria. The analysed data were presented in a thematic pattern.

Findings – A total of 18 measures (sub-variables) emerged and were re-grouped into six variables. This includes institutionalising ECSR, HEIs infrastructure via ECSR awareness, HEIs infrastructure incentives, national and state action plans on HEIs infrastructure, a legal framework for HEIs infrastructure and key stakeholders' participation. Also, the study used the generated six main variables to develop the improved public HEIs infrastructure via ECSR in developing countries, using Nigeria as a case study. This can enhance achieving infrastructure associated with SDG 4 (quality education) and targets.

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Originality/value – This study intends to develop the philosophy (ECSR) with an implementable framework to encourage the private sector further to expand their CSR in the infrastructure development to the educational sector, especially in developing countries higher institutions, using Nigeria as a case study.

Keywords Expanded corporate social responsibility (ECSR), Higher education institutions (HEIs), Infrastructure, Nigeria, Organisations

Paper type Research paper

1. Introduction

Physical infrastructure is a critical component influencing productivity and requires capital investment. [Omobhude and Chen \(2020\)](#) and [Ebekozién et al. \(2022a\)](#) affirmed that the demand and supply of infrastructural services might be determined by economic growth. The education sector is not exempted from infrastructural services. Funding infrastructural services in the education sector have been problematic, especially in developing countries. [Ebekozién et al. \(2022b\)](#) identified insufficient funding as the root cause. To provide feasible measures, the government embraced an alternative model. [Elebiju and Ilesanmi \(2020\)](#) asserted that the concept of “concession” is an understanding involving the public sector investors and the governments. Governments embraced the model in many developing countries because the investors offered the financing model against the government in the traditional method. The government intention is to ensure optimal public service delivery, including a return in revenue for the services offered. [Elebiju and Ilesanmi \(2020\)](#) found that the embraced model faces scratchy legal and regulatory issues despite the regulations and policies to ensure successful public–private partnerships. [Ololube \(2016\)](#) opined that the education sector had been hit by insufficient physical infrastructure. Insufficient funding has complicated this challenge ([Jacob and Musa, 2020](#)).

[Ololube \(2016\)](#) reported that the United Nations Education, Scientific and Cultural Organisation (UNESCO) benchmarked a 26% minimum to be acceptable for education national budgets for developing countries. Nigeria is ranked among the top countries that have failed to meet this minimum standard set by UNESCO in the recent years ([Ebekozién et al., 2022b](#)). Between 2012 and 2016, the highest in Nigeria was 10.63% in 2014 and the least was 8.44% in 2016 ([Ololube, 2016](#)). In 2018 and 2019, the education sector was allotted 7.04% and 7.02%, respectively ([Amoo, 2018](#)). [Olufemi \(2020\)](#) reported that in 2021, the sector was allotted 5.6% of the total budget. Sourcing an alternative to sustaining the education sector’s physical infrastructure has become pertinent. Studies confirmed that private organisations involved in Nigeria’s higher institutions’ infrastructure delivery are insignificant ([Ateloye et al., 2016](#); [Ebekozién et al., 2022b](#)). This is a call for concern because physical infrastructure can influence the quality of educational output.

Several studies, such as [Ateloye et al. \(2016\)](#), [Enefolá \(2016\)](#), [Ololube \(2016\)](#), [Raimi \(2018\)](#), [Rendtorff \(2019\)](#), [Anaelobi and Agim \(2019\)](#), [Aversano et al. \(2022\)](#) and [Ebekozién et al. \(2022b\)](#) found inadequate infrastructure in Nigerian HEIs and attempted to proffer solutions. Besides these studies not addressing the issues with the aim of realising SDG 4 and their targets on or before 2030, their studies did not address the issue from the perspective of expanded corporate social responsibility (ECSR) with the exemption of [Ebekozién et al. \(2022b\)](#). [Ebekozién et al. \(2022b\)](#) explored the role of private firms through a proposed ECSR in the provision of physical infrastructure for HEIs but not targeted at realising SDG 4 and their targets. This study explored [Ebekozién et al.’s \(2022b\)](#) “ECSR framework” to theorise the advanced CSR business behavioural philosophy to a developed ECSR framework. The study, via the developed framework, was motivated by the massive deficit in infrastructure in the Nigerian education sector ([Raimi, 2018](#); [Rendtorff, 2019](#)). The study

argument is that a component of the infrastructure tax relief (ITR) scheme that approves tax relief to corporate companies for public infrastructure delivery could be explored for HEIs (Vanguard, 2017). Implementing the developed framework via the elements emerging from the measures to achieve sustainable development connected to Goal 4 in public HEIs infrastructure will be grouped into elements to develop Nigeria's public HEIs physical infrastructure. The outcome will improve public HEIs infrastructure performance in developing countries using Nigeria as a case study and, by extension, achieving Sustainable Development Goal 4 (SDG 4). Physical infrastructure development in HEIs is key to realising SDG 4 (Ferguson and Roofe, 2020). Sustainable education, especially HEIs, would only be successful with adequate infrastructure. For government to achieve this in many developing countries has become a mirage (Ebekoziem *et al.*, 2022b). Thus, the need for ECSR initiative and, by extension, realising SDG 4, the former "CSR Model" encourages organisations to "do well" economically and "do good" as good corporate citizens to their host communities (Zur and Evans, 2008). The study's developed framework is to improve public physical HEIs infrastructure and ensure that SDG 4 associated with infrastructure is achieved.

Public HEIs infrastructure funding is challenging in many developing countries such as Nigeria. Encouraging private investment in public HEIs infrastructure via a developed ECSR may improve physical facilities. ECSR is a form of ITR providing physical facilities for HEIs. Academic literature is scarce concerning how ECSR can improve Nigeria's public HEIs infrastructure and achieve education infrastructure related to SDG 4. Thus, the study proffers measures to improve public HEIs infrastructure and achieve sustainable development connected to Goal 4, focussing on infrastructure via a developed framework. The objectives are as follows:

- to proffer measures to improve public HEIs infrastructure and achieve sustainable development connected to Goal 4 with a focus on infrastructure; and
- to develop a framework to improve public HEIs infrastructure via ECSR.

In providing solutions to the research questions, the researchers reviewed relevant academic literature, and a qualitative approach was used for the primary data collated. The study is split into seven main sections. Section 1 focusses on the background, including part of the study's justification and research objectives. Section 2 reviewed related literature. This includes an overview of infrastructure development in HEIs and CSR in infrastructure development. Section 3 presents the research method that engaged 26 participants through virtual interviews across Nigeria. Section 4 provides the findings through a thematic pattern and discussion with relevant reviewed literature, the study's implications section and the limitation and area for further research section. Lastly, is the conclusion section.

2. Literature review

2.1 Overview of infrastructure development in higher education institutions

The provision of basic infrastructure is the responsibility of the government. The reality of the economy for the past few decades, especially in developing countries, has enhanced infrastructure backlogs (Wentworth and Makokera, 2015). The infrastructure backlogs do not exempt the HEIs sector. Enefola (2016) and Ebekoziem *et al.* (2022b) avowed that the education sector is one of the vital sectors that influences countries' economic success and growth. Ebekoziem *et al.* (2022b) discovered a correlation between Nigeria's weak economic growth and the education system, worsened by leadership issues, academic strikes and inadequate infrastructure in public HEIs. Thus, the physical infrastructure's role in HEIs cannot be politicalised. Infrastructure transforms higher institutions for sustainability and national development. One of such outcomes is attracting international research funding

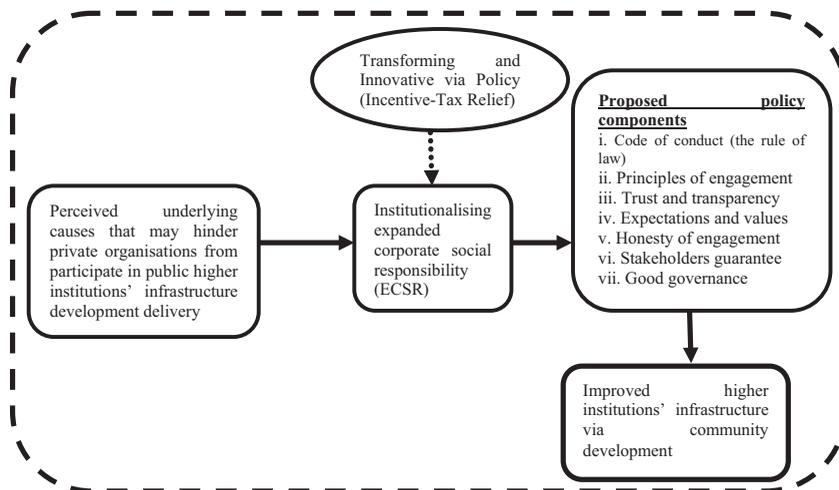
and productivity outputs. Several policies and programmes have been enacted in Nigeria to get the educational infrastructure right, but the lacuna remains. One such policy is the Education Tax Fund (ETF), established in 1993 under Act No. 7 of 1993. The Tertiary Education Trust Fund (TeTfund) (2011) affirmed that the TETFund Act of 2011 repealed ETF. [Anaelobi and Agim \(2019\)](#) avowed that the funds are disbursed for institutional equipment, infrastructure, human capacity development, etc., yet the issues remain. TETFund's revenue dropped from NGN 257bn (US\$1/426NGN) in 2020 to NGN189 billion in 2021 for the year 2022 operation may have contributed to the over-stretched ([Ikpefan, 2022](#)).

HEIs' role in economic development processes, worker market upskilling and reskilling cannot be overstated ([Benneworth and Fitjar, 2019](#)). It is a platform for training economic drivers and innovations for new industries' emergence ([Marques, 2017](#)). [Atuahene \(2014\)](#) identified funding as critical to Ghana's higher education development. In Nigeria, [Enefola \(2016\)](#) discovered insufficient infrastructure in higher education because of inadequate funding. Between 1999 and 2014, the budgetary allocations were far below UNESCO's recommended 26% benchmark ([Enefola, 2016](#)). Similarly, in 2019, it was 7.02% ([Amoo, 2018](#)) and 5.6% in 2021 ([Olufemi, 2020](#)). [Wentworth and Makokera \(2015\)](#) projected not less than US\$ 66bn annually for African nations' infrastructure development. Funding from international partners may be a challenge, especially for Nigeria, because of records of default in some concession construction projects in the past ([Elebiju and Ilesanmi, 2020](#)). Attempting to explore other options led this research to consider developing the framework proposed by [Ebekoziem et al. \(2022b\)](#) and adapted, as presented in [Figure 1](#).

2.2 Sustainable Development Goal 4

The "Rio + 20 Summit" climax birthed the 2030 Agenda, which includes 17 SDGs and 169 targets. They aim to offer a roadmap for organisations to address the global most urgent sustainability challenges and develop a better future for all ([UN, 2015](#); [Fonseca and Carvalho, 2019](#)). SDG 4, one of the 17 SDGs, expresses a vision to "[...] ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." ([United](#)

Figure 1. Modified proposed framework to improve higher institutions infrastructure development via expanded corporate social responsibility (ECSR) by Private Companies



Source: [Ebekoziem et al. \(2022b\)](#)

Nations, 2015). This is an improvement from the universal primary education in the Millennium Development Goals (MDGs) framework. The targets for SDG 4 highlight expanding prospects across all phases of education (pre-primary to higher education) and broadening education scope to include outcomes in literacy, numeracy, wider learning, sustainability and gender equality. Although education is mentioned in several other SDG targets (SDG 3, 5 and 8), the study's focusses on SDG 4 (quality education). The SDG 4 comprises seven targets that deal with quality and equality for different education stages (Unterhalter, 2019). The first three targets are planned to ensure access to quality education from the primary and university levels. The fourth target aims to improve skills for youth and adults connected to job. The fifth target concerns the distribution of educational access across all categories, including people with disabilities, indigenous peoples and vulnerable groups. The sixth target ensures literacy and numeracy for all categories. The seventh target deals with the content of education. This includes developing knowledge and skills for sustainable development, human rights and gender equality (UN Statistical Commission, 2018).

Unterhalter (2019) avowed that SDG education targets were more inclusive regarding representations, quality and equality in all phases of education. The role of physical infrastructure in enhancing quality education, by extension, realising SGD 4, especially in developing countries HEIs cannot be over-emphasised. Ferguson and Roofe (2020) argued that HEIs must assist in shaping and leading the SDG 4 agenda by being integrally involved. They formulated a framework to enhance HEIs in achieving outcomes connected with SDG 4. Achieving this comes with some hindrances. The United Nations (2020) found that SDG 4 (quality education) was among the top SDGs affected by COVID-19 pandemic. Many schools were closed, and remote learning was less effective and inaccessible because of inadequate infrastructure, especially in many developing countries. Aversano *et al.* (2022) affirmed that the role of HEIs in advancing CSR and sustainability agendas has been reflected in several political initiatives, such as the UN Conference on Sustainable Development "Rio + 20."

2.3 Overview of corporate social responsibility in infrastructure to enhance Sustainable Development Goal 4

CSR has a different perspective in the business community. Summarily, it is used to describe business and society relations. CSR is defined as "the continuing commitment by business to contribute to economic development while improving the quality of life of the workforce and their families and the community and society at large" (World Business Council for Sustainable Development, 2000, p. 10). The government promulgated the Consumer Protection Council Act in Nigeria, Chapter C25. It aligns with CSR principles as they interact with customers and public members (Raimi, 2018). Ebekoziem *et al.* (2022b) opined that CSR is vital in meeting the 17 SDGs. The study focusses on achieving infrastructure related to Goal 4 (quality education). Thus, policies and programmes to attract organisations to embrace infrastructure development in HEIs via CSR cannot be over-emphasised because it is pertinent (Hopkins, 2016). In Saudi Arabia, Khan *et al.* (2022) underscored the roles of institutional investors in funding HEIs. This intends to increase the Saudi education system's institutional ranking and aligns with Saudi Arabia's Vision 2030. Ma *et al.* (2021) found that positive CSR performance enhances project firms and improves their shared value with partners. Rodríguez-Gómez *et al.* (2022) affirmed that CSR strategies that organisations will incorporate depend on the future generation's commitments. Thus, the need for HEIs to foster skills that will influence their ethical behaviours, so that they can respond to the new needs of business in the future.

In the third quarter of 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development to enhance the world's transformation (United Nations DESA, 2016; Rajabifard *et al.*, 2021). From the Agenda, 17 SDGs and 169 targets emerged, an improvement from the MDG (United Nations, 2015). Regarding SDGs and HEIs infrastructure, Heleta and Bagus (2021) identified Goal 4, Target 4.3 focus on ensuring "[...] equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university [...]" Goal 4 is one of the few goals that underpins all other goals (Ferguson and Roofe, 2020). It is important and influential to other goals achievement. This calls for concern, especially in developing countries with dilapidated physical infrastructure in public HEIs, including Nigeria (Ebekozi *et al.*, 2022b). Despite the little financial assistance to these developing countries to provide reform, upgrade and rebuild these facilities, the infrastructural gap is expanding and a threat to achieving SDGs in less than a decade (Hannase *et al.*, 2020). In Indonesia, Islamic Development Bank has contributed to developing educational infrastructure and, by extension, enhancing sustainable development (Hannase *et al.*, 2020). Functional HEIs infrastructure is germane for socio-economic development and environmental sustainability of institutions of higher learning and quality education (Heleta and Bagus, 2021). Creating alternative sustainable funding for HEIs and investment opportunities for institutional investors with government intervention cannot be overstated (Khan *et al.*, 2022). The outcome will stir towards achieving SDG 4 – Quality education (Khan *et al.*, 2022). Ferguson and Roofe (2020) affirmed that Goal 4 focusses on equitable, inclusive, quality and lifelong education. Waage *et al.* (2015) found that most goals require infrastructure, but this study focusses on educational infrastructure (Goal 4).

In Nigeria, the CSR role is key and could be explored to improve public HEIs infrastructure with attractive incentives. Some noticeable CSR programmes in the past, as reported by Raimi (2018) and Ebekozi *et al.* (2022b), are as follows:

- Airtel Nigeria Limited supported programmes through the Adopt-a-School Initiative in Lagos.
- Nestle Nigeria Plc is engaged in rural development and environmental sustainability.
- Etisalat Nigeria engaged in education (Adopt-a-School Programme), health and the environment.
- Cadbury Nigeria Plc has engaged in CSR for over 50 years in elevating and associating with diverse partners in its operating environment.
- MTN Nigeria's CSR provided host communities with economic empowerment, health and education.
- Globacom Nigeria Limited and Starcom's Nigeria Limited have maintained long-time sustainability and relationship with their partners through CSR.

Ebekozi *et al.* (2022b) opined that a policy in the form of incentives (tax relief) would attract companies to invest in public HEIs infrastructure. There needs to be developed framework for possible implementation in developing countries such as Nigeria. This intends to address the lacuna and form part of the study's motivations. Exploring CSR via an expanded approach can enhance the private sector's participation in HEIs infrastructure development. This study intends to develop the philosophy (ECSR) with an implementable framework to encourage the private sector further to expand their CSR in the infrastructure development to the educational sector, especially in developing countries higher institutions, using Nigeria as a case study. To promote ECSR, the need to explore the existing ITR (Vanguard, 2017) cannot be

over-emphasised. The tax relief order offered that the ITR will be granted in addition to the usual deductions allowed in respect of the costs incurred under the relevant provisions of the Companies' Income Tax Act, "and shall form part of the deductible expenses of the company." The Act allows the Nigerian Federal Government to grant tax relief to individuals and corporate organisations investing in Nigeria's road infrastructure. The concept is to attract the private sector to road construction and maintenance (Agency Report, 2017). CSR via ECSR should be encouraged because Salehi *et al.* (2018) found that investment in CSR initiatives is significantly and positively linked with organisation financial performance.

3. Research method

The researchers adopted a qualitative research approach. It was the most suitable approach to address the study's Objective One and further develop a framework to address Objective Two. Data were collected from the perspective of the key stakeholders (selected agencies under the Education Ministry that provide funds for construction projects in HEIs, private organisations managers and infrastructure managers in HEIs). Bryman (2012), Jaafar *et al.* (2021) and Ibrahim *et al.* (2022) opined that seeing the scenario via the eyes of the partners cannot be overstated because it allows the inductive type of reasoning. Therefore, the study aligns with the interpretivism epistemological idea (Ebekoziem *et al.*, 2022b). Concerning ontological point of view, the study is in line with constructivism. Data were collected via semi-structured virtual interviews across the six geo-political zones. Saunders *et al.* (2012) avowed that a semi-structured interview allows for investigatory study. This allows the investigators to probe the participants in-depth, where necessary.

The study engaged 26 interviewees. Referring to Table 1, the participants were directors/senior officers in the physical planning department of selected polytechnics and universities, heads of CSR units or management staff of selected companies and policymakers from government agencies. The study adopted a purposive sampling technique. It is a non-probability sampling in which engaged participants are sampled to respond to the semi-structured questions (Bryman, 2012; Ibrahim *et al.*, 2022). Also, it assists in ensuring that the various groups are satisfactorily represented (Sekaran and Bougie, 2016). This is the second phase of the ongoing study and covers 12 HEIs (seven universities and five polytechnics). To ensure adequate representation, two HEIs were covered in each geo-political zone of Nigeria. The interviews took an average of 40 minutes and were carried out between October 2021 and early December 2021. The interviewees' identities were hidden for ethical reasons, as presented in Table 1.

The study adopted thematic analysis and manually analysed the generated codes. The investigators read 26 documents many times and played the role of the coders to describe the participants' opinions regarding the phenomenon. Omotayo *et al.* (2020) and Ebekoziem *et al.* (2022b) adopted the same approach to generate their studies' initial coding. The study adopted two coding phases. This aligned with Ebekoziem (2020a, 2020b). The first was open coding (Saldana, 2015). The last phase of this study involves using the sub-themes that emerged from the first phase to re-read the transcript and find the main variables. Triangulation, researcher reflexivity and member checking were adopted as the validity approach to the collected data (Creswell and Creswell, 2018; Ebekoziem, 2019). In vivo, narrative and themeing techniques in the This research used data coding (Saldana, 2015). A total of 59 codes were identified and re-assembled into six sub-themes (categories), as presented in the following section.

4. Findings and discussion

This section presents the participants' perspective of the feasible measures (Objective One) and re-grouped them into six variables to develop an improved public HEIs infrastructure

Table 1.
Summary of
interviewees'
description

ID	Organisation	Location	Years of experience	Rank/Firm
P1	Federal University	North Central	25 years	Deputy Director, Physical Planning Dept
P2	State Polytechnic		21 years	Senior staff in Maintenance Dept
P3	Quarry Company		28 years	Head, Community Service
P4	Food Processing Factory		25 years	Operational Head
P5	State University	North East	20 years	Senior Staff, Physical Planning Dept
P6	Federal Polytechnic		21 years	Senior Staff, Physical Planning Dept
P7	Quarry Factory		35 years	Director
P8	Cement Factory		22 years	Operational Head
P9	Federal University	North West	24 years	Deputy Director, Physical Planning Dept
P10	State University		28 years	Director, Physical Planning Dept
P11	Food Processing Factory		23 years	PRO/Administrator
P12	Quarry Factory		32 years	Community Service Representative
P13	State University	South East	20 years	Senior staff, Physical Planning Dept
P14	Federal Polytechnic		23 years	Senior staff, Physical Planning Dept
P15	Palm Oil factory		35 years	Director
P16	Beverage Factory		32 years	Director
P17	Federal University	South West	28 years	Deputy Director, Physical Planning Dept
P18	State Polytechnic		27 years	Director, Physical Planning Dept
P19	Textile Factory		32 years	Manager
P20	Cement Factory		20 years	Sale/ Customer Manager
P21	State University	South-South	29 years	Director, Physical Planning Dept
P22	Federal Polytechnic		21 years	Senior staff, Physical Planning Dept
P23	Oil and Gas Company		20 years	PRO/Community Service Head
P24	Oil and Gas Company		22 years	Community Representative
P25	Govt agency	Abuja	20 years	Senior staff, a government agency under the Federal Ministry of Education
P26	Govt agency		22 years	Senior staff, a government agency under the Federal Ministry of Education

framework (Objective Two), as presented in Figure 2. One of the study's pertinent novelties is categorising the measures into six variables. From the few related review, such as Ebekozi et al. (2022b), it has been established that ECSR may be one approach to bridging the infrastructure gap in developing countries HEIs, using Nigeria as a case study. Apart from Ebekozi et al. (2022b), findings reveal that HEIs physical infrastructure is key to the success of SDG 4 and its seven targets (Unterhalter, 2019; Ferguson and Roofe, 2020). Ferguson and Roofe (2020) asserted that HEIs should lead the SDG 4 agenda by being integrally involved. Findings reveal 18 measures (sub-variables) to improve public HEIs infrastructure and re-grouped into six variables. They are institutionalising ECSR, HEIs infrastructure via ECSR awareness, HEIs infrastructure incentives, national and state action plans on HEIs infrastructure, the legal framework for HEIs infrastructure, and key stakeholders' participation. Findings show that the generated six variables could enhance achieving infrastructure associated with SDG 4 (quality education) and targets.

4.1 Institutionalising expanded corporate social responsibility

Institutionalisation is key to the sustainability of policies and programmes. Monitoring and evaluation of policies and programmes can be enhanced with functional institutionalisation. Findings reveal that measures such as promoting suitable governance mechanisms to achieve Goal 4 (majority), institutional synergy among stakeholders to achieve Goal 4 (P1, P3, P16 and P22), and promoting innovative and transforming policy to achieve Goal 4 (P1, P2, P13 and P26) are grouped under institutionalising ECSR, as presented in Figure 2. Findings show that regulations and rules (legitimation) will improve public HEIs infrastructure via ECSR (P14, P25 and P26). By extension, realising SDG 4 and its targets will be feasible (Ferguson and Roofe, 2020). Participant P25 says:

[...] even higher institutions should be socially responsible in their practices within their immediate communities as part of their mission statement and could be expanded as suggested in this study. It should be all-inclusive [...] Findings agree with Dinica (2019) and Rahman et al. (2019).

Dinica (2019) discovered that expectations had been institutionalised that profitable companies assume responsibilities for infrastructure maintenance in publicly protected areas via corporate

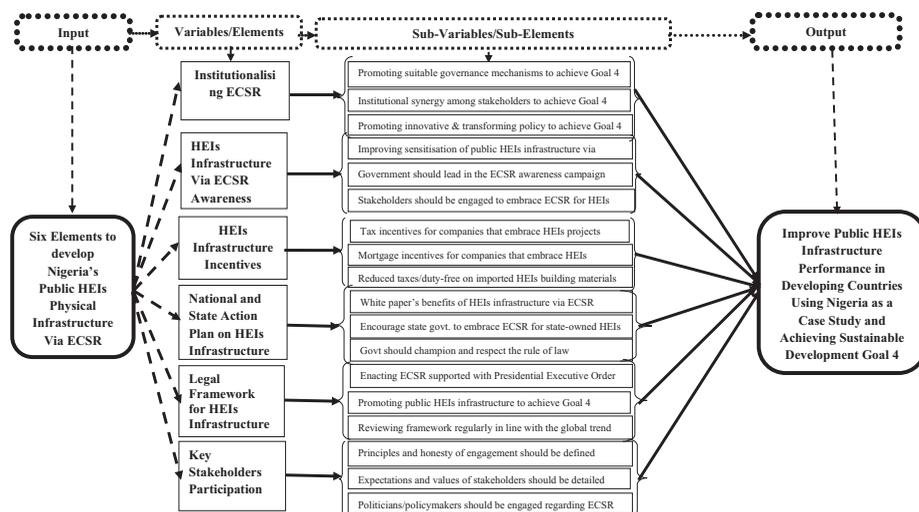


Figure 2. Developed framework to improve public HEIs infrastructure via ECSR in developing countries: a case study of Nigeria

sponsorships, donations and volunteering. [Rahman et al. \(2019\)](#) found that Malaysian HEIs have faced robust institutional pressures to embrace socially responsible practices in their day-to-day operations. Therefore, the need to encourage CSR institutionalisation in HEIs as part of their mission statement. A viable ECSR institutionalisation will provide a good platform for the regulatory authority to operate and promote ECSR, attracting more public HEIs infrastructure (P25). The regulatory agency will help fill the gap between regulation and execution via enforcement. The institutionalisation of ECSR will ensure inclusiveness and equitable education regarding infrastructure related to SDG 4 and its targets (P13, P17 and P25).

4.2 Higher education institutions infrastructure via expanded corporate social responsibility awareness

Awareness and sensitisation concerning ECSR concept and its benefits among the key stakeholders are pertinent to improving public HEIs infrastructure. Findings reveal that three measures (sub-variables) were grouped under HEIs infrastructure via ECSR awareness. They are improving sensitisation of public HEIs infrastructure via ECSR (majority), the government should lead in ECSR awareness campaign (majority), and stakeholders should be engaged to embrace ECSR for HEIs (majority), as illustrated in [Figure 2](#). Participants agree that key stakeholders, including HEIs managers, policymakers, politicians and lawmakers should be engaged in the sensitisation phase. Findings suggest that the government should improve public HEIs infrastructure via ECSR sensitisation and awareness (P10, P14, P17, P24 and P26). Participant P26 says:

[...] the sensitisation phase should go beyond media houses [...] stakeholders, especially government, should organise series of workshops and conferences, and partners/stakeholders engaged and enlightened how the concept will operate and the benefits to participatory companies/organisations and humanity at large. This is germane [...]. Findings agree with [Rahman et al. \(2019\)](#), [Rodriguez-Gomez et al. \(2022\)](#), and [Schimperna et al. \(2022\)](#).

They encouraged the idea that HEIs should introduce CSR and sustainability issues into their curricula. The concept is to offer support to mitigate future awareness issues. [Rahman et al. \(2019\)](#) and [Rodriguez-Gomez et al. \(2022\)](#) found that institutionalisation of CSR in HEIs would enhance CSR outcomes and by extension, increase the chances of organisations to embrace socially responsible practices.

Government leading in the sensitisation phase via different channels will boost confidence in the concept ([Ferguson and Rooft \(2020\)](#)). This may increase investors/organisations willing to invest in public HEIs infrastructure knowing the expected benefits (P3, P5, P11, P15 and P24). Participant P3 says:

[...] for over two decades, we have given attention to host communities regarding job placement, temporary healthcare services, basic utilities such as clean drinking water and electricity at a regulated interval, educational and craftsmanship scholarships to indigenes, etc. This approach makes these communities see our operations as theirs and protect our facilities. We may consider your proposed ECSR if well-defined by the government and evaluate the cost/benefit analysis before taking a decision [...].

Findings agree with [Uduji et al. \(2019\)](#), and it was found that CSR provides a platform to address prevalence issues through a business case for stakeholders in the host communities.

4.3 Higher education institutions infrastructure incentives

HEIs infrastructure incentives from the government emerged as the third categorised variable among three perceived measures. The measures are tax incentives for companies that embrace HEIs projects (majority), mortgage incentives for companies that embrace

HEIs (P14, P18, P20 and P25) and reduced taxes/duty-free on imported HEIs building materials (P3, P7, P9, P12, P20 and P26). Participant P26 says:

[...] the government may not have the financial capacity to give juicy incentives but can create an enabling environment to attract investors for intervention in HEIs infrastructure via the ECSR. . .

In the view of Participant P13, the government should redirect its mechanism to offering direct and indirect incentives to organisations/companies that indicate interest in investing in public HEIs infrastructure within their host environment/state. It can be waivers for taxes or other levies to motivate more companies to venture into HEIs infrastructure construction for their host community in conjunction with the institution's needs. Besides ECSR should be encouraged because [Salehi et al. \(2018\)](#) found that investment in CSR initiatives is significantly and positively linked with organisation financial performance.

Participant P25 says:

[...] there is an existing form of providing infrastructure by corporate organisations with incentives as a motivator just like the concept "public HEIs infrastructure via ECSR." It is called "Road Trust Fund Policy/Tax Credit Scheme" and "infrastructure tax relief (ITF)." The novelty of this new concept is that it will address one urgent need: providing public HEIs physical infrastructure [...].

[Ateloye et al. \(2016\)](#) and [Ebekoziem et al. \(2022b\)](#) found that previous related concepts that would have to improve Nigeria's infrastructure failed because of the absence of governance on policy and complicated by perceived corruption in the system. Public HEIs physical infrastructure via ECSR is a synonym for ITR scheme, focussing on HEIs (P11, P14, P17, P20, P22 and P25). Participant P2 says:

[...] there are no worries if the government can attract investors/corporate organisations via incentives to invest in public HEIs physical infrastructure. The sector is pertinent, and access to infrastructure in a learning environment is of the key determinants of graduates' quality. This cannot be negotiated [...].

Achieving this task, by extension, leads to achieving SDG 4 (quality education) and targets associated with infrastructure (P4, P12, P16 and P25). Government intervention is inevitable and should be all-inclusive (P2). Findings agree with [Khan et al. \(2022\)](#) and suggest government intervention and alternative sustainable funding for HEIs. This will stir towards achieving SDG4 (quality education).

4.4 National and state action plan on higher education institutions infrastructure

National and state action plan on HEIs infrastructure is necessary because of the relationship between HEIs infrastructure development and productivity/graduate employability ([Ferguson and Roofe, 2020](#); [Ebekoziem et al., 2022b](#)). The national and state action plans on HEIs infrastructure emerged as the fourth categorised variable from three perceived measures, as illustrated in [Figure 2](#). The measures are White paper's benefits of HEIs infrastructure via ECSR (P25 and P26), encourage the state government to embrace ECSR for state-owned HEIs (majority), and government should champion and respect the rule of law (majority). Participants agree that insufficient infrastructure in Nigeria's public HEIs contributed to the institutions' low rank in the global academic ranking systems. Findings agree with [Ukpong \(2018\)](#) and [Erezi \(2021\)](#). [Ukpong \(2018\)](#) discovered that only two of Nigeria's universities (Covenant University and University of Ibadan) were within the range of 601–800, and the University of Nsukka was ranked 1,001 out of more than 1,250 HEIs on the list of the 2019 Times Higher Education World University Rankings.

Apart from more institutions from South Africa, their positions were encouraging. This includes the University of Cape Town, ranked 156; University of the Witwatersrand, ranked 201–250; Stellenbosch University, ranked 301–350; the University of KwaZulu-Natal, ranked 401–500; the University of Johannesburg, ranked 601–800; University of Pretoria, ranked 601–800; and the University of the Western Cape, ranked 601–800. Thus, an all-inclusive approach should be encouraged to thrive for improved public HEIs physical infrastructure across all institutions via ECSR with government support (P4, P13, P17, P21 and P25). Participant P25 says, “[. . .] national and state action plan on HEIs infrastructure is key for sustainable and improved public HEIs infrastructure via ECSR [. . .].” Erezi (2021) reported that Nigerian universities were not within the top 400 universities from the 2022 World Best University ranking list. Nigeria’s public HEIs infrastructure needs institutional synergy between the federal and state and other agencies/ministries/departments to utilise all possible viable options to bridge the gap (P2, P9, P10, P20, P23 and P25). Regarding the white paper, findings show that key stakeholders should have strong and dynamic political will and engagement to embrace ECSR as a platform to contribute to the education sector and incentives to appreciate their contributions.

4.5 Legal framework for higher education institutions infrastructure

Legal framework for HEIs infrastructure emerged as the fifth categorised variable from three perceived measures. The measures are enacting ECSR supported by Presidential Executive Order (P25 and P26), promoting public HEIs infrastructure to achieve Goal 4 (P1, P13, P17 and P21) and reviewing the framework regularly in line with the global trend (P7, P13 and 18), as illustrated in Figure 2. Regulation and legal framework for public HEIs infrastructure provision via ECSR can stir more investors because of the expected benefits if the government abides by the rule. P25 says:

[. . .] we need to be sincere to thrive and bridge this infrastructural gap across the country and by extension to other countries with similar challenge [. . .] Policymakers and government officials’ respect for the rule of law is key here [. . .] the unpleasant experience associated with some of the construction concession construction projects can be avoided with the competent personnel to manage the scheme from the start [. . .].

Findings agree with Elebiju and Ilesanmi (2020), which found many cases of disregard for the rule of law attributed to construction concession contracts in Nigeria. A viable legal framework for HEIs infrastructure will improve Nigerian education quality performance. Also, findings show that infrastructural facilities associated with Goal 4 will positively influence and enhance achieving Goal 4. The legal framework will synergies between the public HEIs, and corporate organisations/companies, and the outcome will be enhanced productivity of graduates and higher global ranking of higher learning institutions (P25).

4.6 Key stakeholders’ participation

Promoting the concept of “public HEIs infrastructure provision via ECSR” is not a one-person business. Government involvement is paramount for sustainability and implementation. Key stakeholders’ participation emerged as the sixth categorised variable from the three perceived measures. The measures are principles and honesty of engagement should be defined (P15, P18, P22 and P23), expectations and values of stakeholders should be detailed (P2, P5, P7 and P13), and politicians/policymakers should be engaged regarding ECSR (P19 and P21), as illustrated in Figure 2. Engaging stakeholders via fruitful communication are pertinent for investors’ decision-making concerning investing in public HEIs infrastructure via embracing ECSR in their host communities (P13, P16, P19 and P22). Findings reveal that the required

knowledge about the concept of “public HEIs infrastructure provision via ECSR” will boost the concept embraced by key stakeholders. Findings agree with [Venturelli et al. \(2021\)](#), [De Iorio et al. \(2022\)](#) and [Aversano et al. \(2022\)](#). [Venturelli et al. \(2021\)](#) and [De Iorio et al. \(2022\)](#) avowed that HEIs sector has been at the forefront of supporting and promoting the 2030 agenda, especially SDGs connected with the education sector. [Aversano et al. \(2022\)](#) affirmed that the role of HEIs in advancing CSR and sustainability agendas has been reflected in several political initiatives, such as the United Nations (UN) Conference on Sustainable Development “Rio + 20.”

5. Contribution to theory and practice

Findings from the preliminary academic review show that HEIs infrastructural facilities influence the educational output of graduates and, by extension, the global ranking of the schools. Few studies have been conducted concerning investigating ECSR as a possible mechanism. None regarding improving public HEIs infrastructure development in developing countries, including Nigeria, via a developed framework with six variables that emerged from the study.

Theoretically, the study would bring to the frontier of research and promote the participation of private corporate organisations via the developed ECSR framework in public HEIs infrastructure provision across Nigerian higher institutions. Also, findings and discussion from this study will contribute to the few academic literature regarding theorising the ECSR concept and possibly applying it to improve public HEIs infrastructure development in Nigeria. This is germane because, besides [Ebekozi et al. \(2022b\)](#), not about proffering measures to improve public HEIs infrastructure and achieve sustainable development connected to Goal 4 with a focus on infrastructure via a developed framework, there is a paucity of literature. As presented in [Figures 1 and 2](#), the adapted and developed frameworks will form part of the study’s theoretical contributions. The developed framework is key based on the input and output results. Regarding the output, the developed framework will improve public HEIs infrastructure performance in developing countries using Nigeria as a case study and achieving SDG 4, focussing on infrastructure associated with Goal 4 and its targets. In Nigeria, theorising the ECSR via a developed framework that emerged from the study’s measures to improve ECSR is a possible way to bridge HEIs infrastructure deficit. The developed framework will enhance the win-win scenario for the parties involved.

Concerning the study’s implications, Nigeria’s education policymakers can use the developed framework to stir stakeholders and promote public HEIs infrastructure provision via ECSR. Also, the developed framework will enhance the future upgrading of Nigeria’s HEIs global ranking. Apart from the framework addressing infrastructural components associated with Goal 4 and its targets, it intends to improve the quality of graduates and, by extension, Nigeria’s HEIs quality across the country, among others. Also, the study intends to improve public HEIs physical infrastructure provision to ensure inclusiveness and equity education across Nigeria. It implies that the infrastructural component of SDG 4 and its targets will be achieved and improve the quality of educational systems. Therefore, the study will improve public HEIs infrastructure provision via ECSR developed framework in developing countries, using Nigeria as a case study.

6. Limitations and areas for future research

The study’s limitations are as follows. First, the study utilised virtual interviews for the qualitative data collection and covered selected polytechnics and universities in Nigeria. Second, only 26 participants were used for the study. This does not influence the outcome of

the results. Also, the reviewed academic literature and analysed findings complemented the constrained sample size, and saturation was achieved. Thus, further research is required to validate the six variables that were used to develop the framework. Future studies may be required to examine the applicability of the developed framework across Nigeria and other developing countries with similar public HEIs infrastructure challenges. The study's developed framework may need further investigation for empirical validation.

7. Conclusion

The study's developed framework was formulated by integrating the six categorised variables that emerged from the 18 measures to improve public HEIs infrastructure via ECSR in developing countries using Nigeria as a case study and academic reviewed materials, as presented in Figure 2. The study may be among the few academic studies that attempt to develop a framework to improve public HEIs infrastructure development via ECSR in developing countries. Besides the theoretical implications, the study promotes the ECSR concept in improving public HEIs infrastructure development in developing countries and achieving SDG 4 and its targets, focussing on infrastructure associated with Goal 4. Physical infrastructure provision in HEIs would promote inclusiveness and equitable education across Nigerian educational systems. This implies that key components of SDG 4 and its targets are being addressed in improving public HEIs infrastructure via ECSR developed framework. One pertinent contribution is the developed framework and its six categorised variables from the 18 measures used to develop the study's framework. The study suggests that other developing countries with similar public HEIs infrastructure development issues may modify the framework and proffer solutions to their HEIs infrastructure encumbrances.

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