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Article

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MANAGEMENT | RESEARCH ARTICLE

Towards a sustainable university transition model for emerging markets

Quang Hung Bui¹, Tu Anh Trinh^{1*}, Hanh An Le Thi¹, Nhu Quynh Phan² and Hoang Uyen Nguyen Dinh¹

Abstract: The growing importance of a sustainable university transition model is evident in developing countries, where the challenge lies in balancing economic growth, social well-being, and environmental protection. This is further complicated by the need to address global issues locally, known as glocal perspectives, and reconcile short-term versus long-term thinking. Sustainable universities (SU) go beyond traditional roles by incorporating sustainability into daily operations. However, universities in emerging markets differ significantly from mature institutions in developed countries, facing limited autonomy and unique social and prioritization factors. Therefore, it is essential to consider the differences between universities in various stages when developing a sustainable university strategy. A narrative literature review methodology was utilized, involving literature search and screening, data extraction, and analysis to provide insights into several relevant models for approaching and implementing SU in emerging markets. The proposed model accentuates the “Sustainability on Campus” concept, a nexus between Education, Research, and Connecting communities with a shared interest in sustainability. It extends the university campus’s role beyond a test bed and strives to inculcate sustainable practices within every facet of the institution, encompassing global, national, regional, organizational, and individual levels. Moreover, this approach seeks to contribute significantly to the national economy as part of the institution’s third mission.

Subjects: Business, Management and Accounting; Higher Education; Education & Training; Education - Social Sciences;

Keywords: sustainable university; developing country; emerging market; sustainability; transition model

1. Introduction

Although the Millennium Development Goals have been broadly adopted worldwide and hold enormous potential, many implementation issues remain in developing countries (Khalid et al., 2021). Due to diversity in context, each nation will confront problems in achieving the SDGs (Sarvajayakesavalu, 2015). The Sustainable Development Goals pose significant concerns in emerging nations, such as poverty, inequality, and pollution, driving research, education, and training in various sectors to encourage sustainable development (Filho, 2020). Thus, sustainable development is more necessary in developing nations than developed regions. Because the university is



responsible for teaching the next generation of leaders (Pereira Ribeiro et al., 2021), educating learners about sustainable development is vital. “Environmental sustainability education should be integrated into schools at all levels within underdeveloped nations”, wrote (Debrah et al., 2021, p. 1). Universities in the developing world have an even more crucial role in changing the young generation’s understanding of the long-term sustainability of all aspects of life. Thus, a university must be an excellent example of sustainable development by turning the learning and training environment into sustainable practice. As a result, fostering sustainable universities in emerging areas is essential.

Sustainable universities (SU) incorporate issues into and beyond their primary teaching, research, outreach and partnership, and stewardship (Shriberg, 2002; Velazquez et al., 2006). Establishing and promoting SU in emerging nations has already been learned and shared from successful lessons in developed countries (Sheth, 2011; UN, 2008). However, universities in emerging nations such as China or developing countries such as Vietnam and other Asian countries are not identical to mature institutions in developed countries such as Central and Eastern Europe. A long development history means more professional, trustworthy, and experienced staff, more excellent infrastructure, and guaranteed high-quality teaching and research; on the other hand, it also implies stiffness and resistance to multiple changes required to compete on a worldwide scale (Trencher et al., 2014). As a result, mimicking without considering the differences between universities in various stages of development may not deliver the intended results.

It is impossible to apply a uniform strategy to develop any sustainable university (UNECE, 2020). Sustainability university literature and lessons learned in the West are rich. However, adopting sustainable universities may differ in Asia-Pacific countries because universities have less autonomy due to government management and local characteristics such as socialization and prioritization. Integrating sustainable content into curricula is also complex due to academic bias and traditional teaching (Ryan et al., 2010). Thus, a critical research question that consistently engages university administrators revolves around identifying the optimal sustainable university approach, transformation, and deployment model suitable for the context of emerging markets and developing countries. This significant inquiry seeks to uncover the most suitable and practical strategies that educational institutions can implement to ensure long-term environmental, social, and economic sustainability. By addressing this question, stakeholders aim to make informed decisions and foster positive impacts in higher education within such contexts.

Nevertheless, existing researches on sustainable universities in emerging markets and developing countries have primarily focused on specific aspects like *capacity building* (Weiler & Ham, 2002), *sustainable construction* (Du Plessis, 2007), *sustainable energy* (Kolk et al., 2012), *carbon footprint* (Li et al., 2015), *green university system* (Liyanage & Netswera, 2021), and leaving a notable gap in comprehensive SU models. Through the narrative literature review, this article aims to inspect several original sustainable university models from both aspects, including the approach and implementation models, to comment on their strengths and weaknesses. Then, a tailored model combined with an application methodology will be proposed for the developing countries. Finally, the reliability of the novel model will be shown by a practical application at a Vietnam university in the following research.

2. Literature review

The Managerial Model, the Transformation Model, The Sustainably Excellent University Model, The UNEP Sustainable University Framework, The Community Model, The Research Centric Model, and The Green University System are seven well-known models frequently employed. The initial model adopted a top-down approach and frequently suffered from a lack of field connectedness. Nevertheless, they provided many recommendations for selecting, applying, and evaluating sustainability universities. In other words, they consisted of two crucial components: an approach model and implementation instructions. The three latter models, which defined a university and its function in advancing society, are the focal points of the other three models. The three latter

models exhibited a similar approach in structuring the relationship among various layers of elements within the SU, progressing from outside to inside. This was accomplished through either a top-down or bottom-up approach. However, implementation principles were not well-developed, so this was a limitation for Higher Educational Institutes (HEIs) to apply the three models in practice. Nevertheless, due to the inadequacy of the assessment of previous approaches, the SU models have been still reviewed and evaluated until now.

The *Managerial Model* by Velazquez et al. (2006) was one of the pioneer models addressing sustainability initiatives at the university as a commercial entity. It offered logical guidance from strategy to practice. The model then guided policy formulation, goals, initiatives, and funding, starting with defining the vision and mission. This complex model included four focal factors: Education, Research, Outreach and Partnership, and Sustainability on Campus. Education was not only learning in class but also through seminars or workshops. Learning was not limited to campus boundaries but extended to learning from the community, family, and grassroots movements. The main research topics were practical environmental, economic, and societal issues. Relations with communities should range from national to global. Finally, the “sustainability on campus” component must be carried out inside the university, in contrast to the first three criteria, which could be done on or off Campus. The highlight of this model was that the university itself must become an example of sustainable practice through sustainability on Campus. Due to its simplicity of use, this product has been competitive. Its weakness, however, was that it did not focus enough on how the four tactics interacted (Hoffman et al., 2015).

The second one, the *Transformation model* by Grecu and Ipiña (2015), provided a holistic approach. It was based on the argument that some schools integrated into the curriculum, others focused on sustainability research, while others focused on environmental and landscape bias inside campuses. Such sporadic ways did not help the entire university transform into a sustainable form. This model academically emphasized a university’s three aspects: knowledge, skills, and competencies as an academic approach. Its internal aspect included the Campus and Campus family, while the external aspect related to the community and the broader world. This model was holistically evaluated in all three academic, internal, and external perspectives. However, the model has not explained the connectivity of the arrays above in the transition to sustainable development.

The following models illustrated the various principles universities were pursuing as a foundation for establishing strategic frameworks for sustainable development. *The Community Model*, the third model (Hoffman et al., 2015), stressed the HEIs’ focus on social and community issues and used a bottom-up, community-based approach. The five primary factors—Education, Research, Sustainability on Campus, Outreach, and University Strategy—were all structured overlappingly, even though they were all referenced in the same vein. In this perspective, the university strategy reflected the direction of the other four factors. The research focused on a broad scope that contributes to sustainable education, a factor for sustainable education could be campus operation, and community connections always appear when implementing any aspect. However, this strategy made it challenging for education to promote sustainable development without the presence of research. *The research-centric model* (Hoffman et al., 2015) was mainly for HEIs with a research orientation. This approach was centred on research, which was able to take the lead in designing any sustainable curriculum (education), altering attitudes and behaviours for sustainable campus operations (campus operation), making strategic decisions (strategy), and engaging the community (outreach). This method placed research at the centre of the sustainability plan and interacted with the other four components, setting the university apart by gaining and transferring high-quality knowledge to society.

Hussain’s research (2019) went beyond a mere approach model and introduced *The Sustainably Excellent University Model*. This framework highlighted the transformation of a university into a powerful institution, leveraging society’s resources to generate knowledge, foster economic

and social progress, and protect the environment, thereby contributing to a promising future. By integrating perspectives from all the previously mentioned models, this excellent model encompassed seven key aspects, visualized as a compass: Teaching Quality, Research Culture, Technological Capability Building, Accessibility, Community Engagement, Internationalization, and Environment. Furthermore, the model underscored the importance of self-assessment and continuous improvement. However, one limitation was that the model emphasized independent implementation of these aspects without explicitly addressing their interconnectedness. To achieve true sustainability, future explorations could explore how these facets influence and reinforce each other harmoniously and synergistically.

The consequent model is *The UNEP Sustainable University Framework*. This model was generalized from the intersection between the above core dimensions, with particular attention to the general and specific parts of the elements (UNEP, 2021). Like the Transformation model, teaching and research helped students become more environmentally conscious. In contrast to other models, People and Society highlighted the particular function of universities in conceiving and carrying out initiatives to build sustainable communities. The university was a civic bridge to government, business, and related organizations, creating a positive impetus for change. This framework offered a simple implementation manual, implying that building a sustainable university is a one-way moving forward process. A university would reach a sustainable state after going through 4 stages, including (i) Initiating commitments, calling for participation, (ii) Progressing work related to plans, policies, and training, (iii) Establishing measurement and evaluation solutions, and (iv) Leading through improved reporting and applying best practices. Unlike the Managerial model, UNEP's strategy was consistent with ongoing system improvement. The end of the process was to review the vision and set goals for the new phase.

In addition, certain studies have emphasized *The Green University* as a crucial milestone for achieving sustainability in HEIs (Dave et al., 2014; Gandasari et al., 2020). The relevant models were finally examined, *The Green University System*, proposed by Hikkaduwa Liyanage (2020). This study aligned itself with The Community Model by a top-down, outside-in connectivity approach, ensuring a comprehensive and interconnected framework for sustainability implementation. Yet, it set itself apart by adopting a distinctive perspective centred on eight essential clusters within SU, addressing Green Governance, Culture, Success Pillars (global, regional, and local issues), Education, Research, Community Outreach, Internal Operations, and Reporting. Derived from the Quintuple Helix Model (Carayannis & Campbell, 2012), it promoted autonomous development with interconnectedness for innovation. The study proposed a tailored model for the fast-growing market in Africa (Botswana), addressing local challenges like bureaucratism, rationalism, myths, ceremonies, isomorphism, and legitimacy (Liyanage & Netswera, 2021). While this study stands out as one of the scarce endeavours offering a relevant model for the research context, its drawback lies in its exclusive focus on merely one of the integral strategies essential for a sustainable university.

All in all, the seven typical approach models mentioned above might form the fundament for subsequent research and experiments. In most cases, primary dimensions have been referred to, even though considered under different labels, including Education, Research, Sustainability on Campus, Community, and Governance (Table 1).

Indeed, knowledge resources have been regarded as the heart of global sustainability, and it is thus no coincidence that universities and educational institutions have played the most indispensable actors in this progress (Schopp et al., 2020). To transfer knowledge into sustainable practice, it is necessary to combine all five factors appropriately, not merely related to education and research or ecology focuses as commonly misunderstood (Block & Paredis, 2019). Again, the sustainable development of HEIs promotes a university for sustainability while demonstrating its unique characteristics that make each organization different. Therefore, there will not be a one-size-fits-all model. It will depend on how to mix and match those angles to implement

Table 1. Primary dimensions under different labels in sustainable university models

Model *	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Education</i> Teaching/The knowledge, skills, competencies, and values (as academic approach)/Teaching quality & Internationalization & Accessibility	x	x	x	x	x	x	x
<i>Research</i> The knowledge, skills, competencies, and values (as academic approach)/Research culture & Internationalization & Accessibility	x	x	x	x	x	x	x
<i>Community</i> Outreach and Partnership/Societal Network/People & Society/The community and the wider world (as the external approach)/Community engagement & Internationalization & Accessibility	x	x	x	x	x	x	x
<i>Operation</i> Sustainability on Campus/Environment and Climate/The campus and campus family/Campus operation/Technological capability building & Environment/Internal Operations	x	x	x	x	x	x	x
<i>Governance</i> Strategy/Administration/Leadership Approach/Management/Resources/Mechanism/Organization Cultures/Performance/Reporting	x		x	x	x	x	x

*(1) Managerial Model (Velazquez et al., 2006); (2) Transformation model (Grecu & Ipiña, 2015); (3) Community Model (Hoffman et al. 2015); (4) Research Centric Model (Hoffman et al. 2015); (5) The Sustainably Excellent University Model (Hussain et al. 2019); (6) The UNEP Sustainable University Framework (UNEP, 2021); (7) The Green University System (Liyana and Netswera, 2021)

a sustainable strategy according to each university’s development life cycle’s strengths, limitations, opportunities, and challenges.

3. The proposed model

3.1. Research methodology

The literature article utilized the narrative review, a common qualitative research method, to achieve the research objectives. The review followed a three-step analytical framework developed by Levy and Ellis (2006), involving literature search and screening, data extraction and analysis, and writing the literature review. This approach effectively synthesized a selective volume of literature on the subject area (Paré & Kitsiou, 2017), providing insights into relevant topics and issues (Green et al., 2006). Followingly, the authors researched and extracted information from selectively previous studies, focusing on proposed models of approach and sustainable university implementation, the context and status of sustainable development in emerging economies and developing countries, and higher education background in emerging markets. For efficient execution, in addition to skimming the researches manually, the authors employed Elicit, a free online artificial intelligence research assistant, to automate certain aspects of researchers’ workflows for evidence synthesis and text extraction, developed by a non-profit machine learning research lab in the United States (Kung, 2023). By pulling publications from Semantic Scholar, Elicit accelerated the literature review process, shortening the search process and aggregating results based on relevant keywords given out by researchers. This significantly expedited the synthesis, analysis, and identification of a suitable proposed model for the research context.

3.2. The emerging markets context

As shown in the previous part, a set of fundamental pillars necessary for developing and implementing a sustainable university model has been identified from the perspective of higher education institutions (HEIs) managers. Then, the ensuing focus revolves around elucidating how these constituent elements should be effectively integrated to suit the distinctive contexts of universities in emerging markets and developing countries.

In the current context, two primary categories of universities are discernible. Firstly, predominantly senior public universities are intrinsically linked to regional progress. Additionally, there are young entrepreneurial universities that adopt a privatized operational structure (Nguyen & Le, 2023; Robert Buchanan, 2013). Irrespective of the university affiliation, the integral roles of “Education” and “Research” have evolved into emblematic representations acknowledged by academic institutions and the wider community. As crucial stakeholders, these functions assume a pivotal position in nurturing a proficient workforce within emerging economies and developing nations in contemporary society (Tan et al., 2016). Hence, the challenge lies in how these universities can effectively shift towards a sustainable university model while still emphasizing “Education” and “Research.” This becomes particularly complex given the incomplete understanding of “Sustainability” within the context of “Ecological concerns” (Block & Paredis, 2019). Allocating resources towards core functions, prioritizing accelerated development, or directing investments towards sustainability practices has posed a dilemma for all organizations and institutions, including higher education establishments in these countries (Jayanti & Rajeev Gowda, 2014).

Consequently, when developing a sustainable university approach and implementation model in emerging economies and developing countries, careful consideration should be given to the following essential characteristics:

- The approach should be grounded in theory and aligned with practical considerations.
- Emphasize the transition from a Traditional University to a Sustainable University.
- Integrate harmonious sustainability principles into the fundamental and extended functions of the university without altering its inherent operational structure.
- Implement the framework with a long-term vision, enabling continuous improvement and tailoring the most suitable strategies for each stage of the university's evolution.

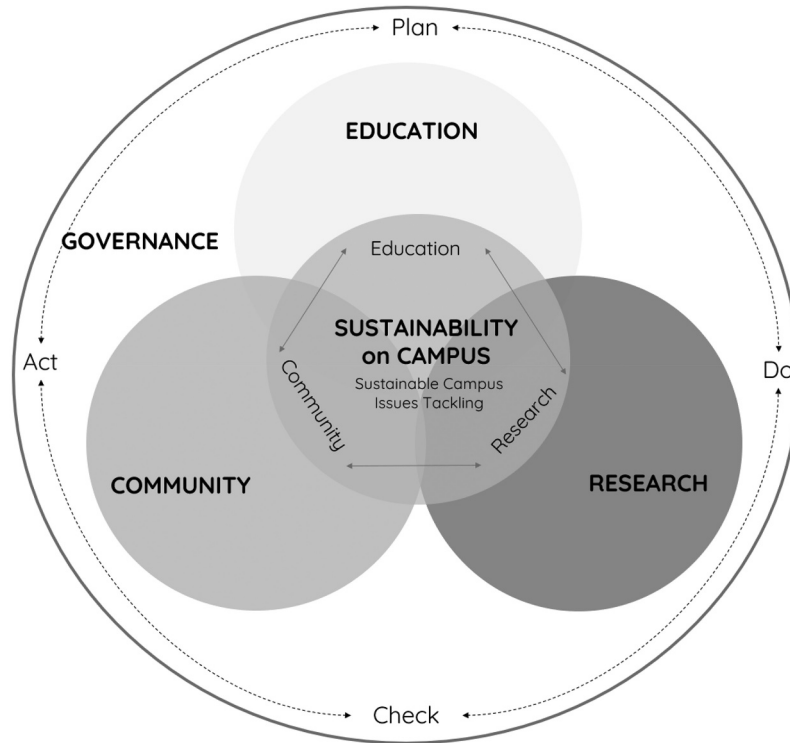
3.3. Theoretical model

Difference from the models presented in the previous section, the proposed model combines approaches and implementation techniques. The proposed model as the system transformation includes the five typical pillars: Education, Research, Sustainability on Campus, Community, and Governance, which integrate sustainable practices into everyday tasks. Governance and leadership assume the driving forces, while Sustainability on Campus forms the central aspect of the overarching model, acting as a critical pillar that interconnects various primary functions, including Education, Research, and Community. Besides, the proposed model also tries to overcome the limitations of the Research-Centric Model and The Community Model by using the Plan—Do—Check—Act (PDCA) method as the implementation principle. This management philosophy seeks improvements as a never-ending process for minor improvements (Lukman & Glavič, 2007) that helps continuously coordinate improvement efforts (see Figure 1).

Governance encompasses the entire model. This pillar consists of a plan to gradually transform an HEI toward sustainability, resources to govern and implement sustainability, also a sufficient budget for sustainable development (Kieu Thi & Nguyen Thu, 2020). A robust governance framework is necessary to provide committed, well-directed leadership, clarity, and strategic influences from the top management if a university is to be considered only as an institution. Sustainability governance simplifies the organization's implementation of its sustainability strategy, monitors goal-setting and reporting processes, promotes collaboration with stakeholders and assigns responsibility (Eapen, 2017).

Education, the first pillar, related to teaching (UNEP, 2021) or curriculum (Cotgrave & Kokkarinen, 2010) in different SU models, referred to “all initiatives from formal (undergraduate, graduate, and certificate programs), non-formal (conferences, seminars, and workshops), and informal training (family, grassroots, movements, community)” (Velazquez et al., 2006). Education for Sustainable Development (ESD) frequently appeared in the UN strategies over the last two decades (UNESCO,

Figure 1. Proposed model for sustainable university strategy in emerging countries.



2016). It was explicitly explained in The Fourth UN Sustainable Development Goal for 2030 (SDG 04 – Quality education) to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” It also has a crossing impact on other SDGs such as SDG3 (health and well-being), SDG5 (gender equality), SDG8 (decent work and economic growth), SDG12 (responsible consumption & production), SDG13 (climate change mitigation). Accordingly, the entire system of education and research of the university was expected to synchronize the principles and sustainable development goals into a mandatory part of the knowledge, skills, and competencies necessary for personal survival and development. On the whole, three critical principles for SU altogether to achieve ESD goals include (1) Global citizenship as the centre of ESD (UNESCO, 2015); (2) Glocal Curriculums (Global and Local) as the training program (John et al., 2017); (3) Approach to ESD from a Multi-disciplinary, Interdisciplinary, and Transdisciplinary perspective (Grecu & Ipiña, 2015; Lukman & Glavič, 2007).

Unlike a traditional university, the targeted objectives of ESD were learners, who were identified not only as university students but also as any related stakeholders that SU could influence (Rieckmann & Bormann, 2020) and equipped with the competencies to become the future generation of global citizens. Through multimodal learning techniques, such as traditional classroom instruction, online learning, blended learning, project-based learning, research-based learning, co-creation, and mindful learning in open-access libraries or resources, sustainable knowledge could be relatively transmitted to learners (Rieckmann & Bormann, 2020). A learner as a global citizen, an international curriculum, a multi-disciplinary, interdisciplinary, and transdisciplinary approach, a system-centric approach, a holistic approach, a whole-person approach, a dynamic balance between subject and real-life context, multimodal forms of learning, and open access can all be used to summarize the characteristics that represent ESD at SU in the new century.

The second pillar is *Research*. Through their extensive research skills and activities, universities provide the necessary data, proof, solutions, and innovations to support and aid sustainability development (SDSN Australia/Pacific, 2017). However, research in HEIs is frequently conducted and published exclusively for scholarly purposes, particularly in developing nations. Instead of addressing pressing issues, they focus on pursuing economic or reputational interests. Therefore, individual research must be connected with the university's research topic and associated with society (Hussain et al., 2019). Studies on sustainability can be conducted in a single discipline, across disciplines, interdisciplinarity, or transdisciplinarity. Transdisciplinary research is the best strategy for producing fruitful outcomes for long-term societal development (UNESCO, 2017). To find solutions to global problems, transdisciplinary research is an approach that promotes collaboration between scientists and stakeholders, including people and groups beyond the profession. This kind of work has a record for a trustworthy, successful, and transformative strategy (Wuelser et al., 2020).

The third pillar is the *Community*. Communities and nearby campuses are involved in universities' local, regional, and international placement. Community participation and partnership include cooperation with government agencies, the private sector, and non-governmental organizations in sustainable development within the Campus. It is also the collaboration with the residential community in various fields, such as investment in research and development, commercialization of sustainable projects, products, and technologies, and campaign to raise awareness for the community about sustainable development. According to Grecu and Ipiña (2015), these collaborations can be established locally, nationally, regionally, or internationally. Recognizing the community's involvement in advancing the sustainable development program is crucial. Three leading indicators for sustainability in terms of the Community pillar are suggested by Too and Bajracharya (2015). Engagement of the community, society, stakeholders, Loyalty, and Leadership. While the involvement with the community, culture, and stakeholders includes central government, communities, non-profit organizations, industry, government, Involvement of NGOs, and academia, loyalty means the university's commitment to achieving sustainable development goals. Leadership is essential in engaging the university community in projects about sustainable development.

The central theme of this model is *Sustainability on Campus*, represented as the fourth pillar that intersects with the other pillars. This aspect focuses on integrating Sustainable Education, Research, and Community to address sustainable development issues within the university setting operation. This pillar is firmly rooted in the theoretical foundation of the sustainable university model, considering campuses as potential microcosms of cities, where sustainable actions can be initiated and replicated at broader scales. Sustainability on Campus encompasses the university's commitments to managing resource consumption, environmental protection, and various activities, incorporated into policies and action strategies spanning short, medium, and long terms (Grecu & Ipiña, 2015; Lukman & Glavič, 2007). The indispensability of Sustainability on Campus lies in its role as the starting point for all sustainability efforts, from achieving zero waste, reducing carbon emissions, and promoting biodiversity balance to becoming a tobacco-free university (Hoffman et al., 2015; Too & Bajracharya, 2015; Verhoef & Bossert, 2019). To execute strategic projects and programs effectively, universities must adopt a transformative approach beyond short-term media campaigns and inspirational events (Verhoef & Bossert, 2019). Instead, the focus should begin at the core of knowledge acquisition (Education), fostering in-depth research (Research) and propagating targeted policies and regulations (Operation/Governance). Empowering learners and staff to proactively implement action plans (Operation/Governance) and collaborate with like-minded communities (Community Outreach) is vital to achieving impactful and sustainable outcomes. This comprehensive strategy ensures a strong foundation for university-led initiatives, leading to meaningful engagement and positive change within and beyond the academic realm.

3.4. Implementation

3.4.1. Continuous strategic improvement with PDCA

PDCA (Plan—Do - Check—Act) is a continuous improvement cycle introduced by Deming in 1950 (Velazquez et al., 2006). The PDCA principle demonstrates that continual improvement is the essence of the management process. There is no universal formula for sustainable university development, particularly for institutions in emerging markets attempting to shift from a conventional to a futuristic, new-generation university. Thus, to ensure sustainable development without sacrificing the distinctive qualities of each institution, this procedure necessitates ongoing evaluation and enhancement. According to PDCA, implementing the sustainable university model begins with planning (containing vision, mission, sustainability policy, operational objectives, budget, assessment plan, measurement plan, and improvement/implementation activities/events). Then, sustainability strategies and plans are embedded and implemented in daily activities, and data is collected, analyzed, and measured. University administrators use this information to evaluate the efficacy of what has been accomplished and to take prompt remedial action against deviations or inappropriate expressions.

3.4.2. Living lab—a tool to ensure the connection of 05 elements in a sustainable university model

Living Labs (LLs) are viewed as an open innovation ecosystem that is applied to real-world situations to tackle particular challenges sustainably. LLs utilize continuous iterative feedback loops to enhance creative products and initiatives. LLs also unite all stakeholders through the co-creation principle, utilizing community resources (schools, research institutes, businesses, and government agencies) to generate, test, improve, scale, and continue developing ideas. LLs integrate PDCA to produce a tenet that implements the sustainable university model (Verhoef & Bossert, 2019).

3.4.3. Culture of “unity”

Higher education institutions and universities of different sizes, including individuals, units, and member schools. Creating a unified culture with mutual understanding and realizing a common goal in sustainable universities has been recognized in many successful sustainable university models, such as Harvard University (Harvard, 2023) and Massachusetts Institute of Technology (MIT, 2023).

4. Conclusion

In developing nations, higher education institutions and universities face pressing demands for sustainable development, encompassing various economic, societal, and environmental challenges. Unlike their counterparts in developed countries, universities in emerging markets encounter difficulties identifying suitable development approaches, especially when transitioning from local to global-oriented university models toward sustainability. In addressing this quandary, the study intricately weaves together theories to reveal two key accomplishments: (i) the identification of five pivotal components within the SU approach and (ii) the proposal of a framework to adjust and interlink these pillars with the study context.

Firstly, echoing prior SU research (Greco & Ipiña, 2015; Hoffman et al., 2015; Hussain et al., 2019; UNEP, 2021; Velazquez et al., 2006), the five proposed dimensions synthetically encompass Education, Research, Campus Sustainability, Community Engagement, and Governance. This departure from the conventional norm of focusing solely on Education and Research, prevalent in long-standing universities within emerging nations, introduces three additional functions (Tan et al., 2016).

This expansion into a holistic, sustainable university model across the five dimensions yields substantial benefits for universities in this region. It aids in surmounting inherent challenges, including enhancing students' grasp of practical realities (Rojstaczer et al., 2001) beyond traditional classroom teachings (Sinhaneti, 2011). Moreover, it facilitates diverse teaching methodologies, broadening access to knowledge across society's strata, especially pertinent given the heavy education financial due to limited public education budgets (Bougroum & Ibourk, 2011; WB, 2012). Simultaneously, this multidimensional growth model propels universities to transcend national

boundaries to regional significance and a global platform (Robert Buchanan, 2013). Above all, this five-fold developmental approach empowers educational institutions in developing nations and emerging markets to seamlessly integrate into the global problem-solving narrative in alignment with these national strategies that urgently necessitate internationalization (Ge, 2022; Robert Buchanan, 2013).

Moving forward, the proposed framework underscores the importance of Campus Sustainability as the convergence point for the remaining four functions: Education, Research, Community, and Governance. This holds particular significance during a university's transition phase when expansion radiates from its core functions. Abruptly pivoting towards environmental, social, or global issues could potentially alienate the university community (UNEP, 2021), particularly considering resource constraints (Robert Buchanan, 2013). Instead, tackling these challenges via the institution's core strengths—educational dissemination (Education), solution-oriented research (Research), effective governance (Governance), and community engagement (Community Outreach)—creates a logical and seamless transition towards on-campus implementation. Interlinking these facets can develop an on-campus resolution, fostering acceptance and practicality. Subsequently, this solution can serve as a prototype for addressing broader issues, employing the Living Lab model to propagate practical problem-solving approaches on a larger scale (Rivera & Savage, 2020; Verhoef & Bossert, 2019). Noteworthy examples encompass Zero-waste (Pazmino et al., 2019), Carbon-neutral (Botero et al., 2017), Circular (Bakos & Schiano-Phan, 2021), and Green Campus Living Labs (Benevides et al., 2021).

Furthermore, the study advocates for integrating sustainability-focused training and research on the 17 Sustainable Development Goals (SDGs) into a university's education and research functions. Furthermore, this research enriches the theoretical groundwork for implementing a sustainable university and stands among the pioneers in exploring emerging and developing countries' contexts during the transition phase.

5. Limitations

Employing the narrative review methodology, this study presents an approach model and implementation principles for universities transitioning from traditional to sustainable models. However, it is essential to acknowledge that this approach may exhibit some limitations due to its subjective selection of information from primary articles and lack of explicit inclusion criteria (Green et al., 2006). Nevertheless, this model remains a theoretical concept awaiting practical application, which is planned for the subsequent research phase focused on the University of Economics Ho Chi Minh City (UEH) as a case study. As a key national university in Vietnam, UEH is proactive in its development as an emerging country in the ASEAN region. In 2023, UEH achieved the highest ranking among universities in Vietnam, securing a spot in the Top 301–400 in THE Impact Rankings 2023. The university aims to become a new-generation institution with a multi-disciplinary and sustainability-oriented approach, and it has already initiated the first phase of this transformative journey between 2021 and 2030.

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Correction

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

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