

# Conceptualizing the Role of Higher Education in Promoting SDG-Aligned Entrepreneurship

Shaierah Gulabdin, PhD

Universiti Malaysia Sabah (UMS)

Email: shaierah@ums.edu.my

Faerozh Madli, PhD

Universiti Malaysia Sabah, Ang Hong Loong, PhD, Universiti Malaysia Sabah (UMS)

**DOI Link:** <http://dx.doi.org/10.6007/IJARBSS/v16-i1/24516>

**Published Date:** 01 January 2026

## Abstract

This conceptual paper studies the important role of higher education institutions (HEIs) in promoting entrepreneurship that aligns with the Sustainable Development Goals (SDGs). Through a comparative analysis of Sabah, Malaysia, and Tarakan, Indonesia, the study investigates how regional socio-economic contexts influence the integration of sustainability principles into entrepreneurship education. Drawing on frameworks such as the Triple Bottom Line and Institutional Theory, the paper emphasizes the significance of aligning academic curricula, faculty development, and university-community partnerships with SDG objectives. Key findings highlight the importance of addressing gender inclusivity, fostering green entrepreneurship, and overcoming contextual challenges to enhance entrepreneurial intentions. The proposed framework provides actionable strategies for HEIs to cultivate an ecosystem that supports innovation, sustainability, and social responsibility, contributing to regional and global sustainability goals. As a conceptual study, this paper relies on secondary data and theoretical frameworks to explore the role of higher education institutions in promoting SDG-aligned entrepreneurship. While this approach provides valuable insights, the absence of primary data limits the empirical validation of the proposed hypotheses and frameworks. Future research is encouraged to incorporate quantitative and qualitative data through case studies or surveys to substantiate the findings and enhance their generalizability.

**Keywords:** Sustainable Development Goals (SDGs), Higher Education Institutions (HEIs), Entrepreneurship, Tripple Bottom Line Theory, Institutional Theory

## Introduction

The role of higher education in promoting entrepreneurship aligned with the Sustainable Development Goals (SDGs) is increasingly recognized as vital for promoting sustainable economic growth and social development. Universities serve as critical incubators for

entrepreneurial talent, particularly when they integrate SDG principles into their curricula and extracurricular activities. This integration not only enhances students' entrepreneurial intentions but also equips them with the necessary skills to address pressing global challenges.

A significant factor in this process is the connection between entrepreneurship education and the SDGs. Researchers emphasize that without a clear linkage between SDGs and the entrepreneurial ecosystem within universities, students may struggle to see the relevance of their education to business creation (Laspita, 2024). This disconnect can be mitigated through strategic initiatives that align educational programs with sustainability objectives, thereby adopting a culture of entrepreneurship that is responsive to societal needs.

Moreover, the role of innovation and context in entrepreneurship is necessary, particularly for women entrepreneurs. A recent study highlights that focusing on gender studies within entrepreneurship education is needed for achieving the SDGs, as it encourages diverse perspectives and innovative solutions (Enri-Peiró, 2024). This is supported by Shabbir (2023), who notes that supportive institutional frameworks, including favorable policies and cultural norms, can significantly enhance sustainable entrepreneurship and its contributions to SDG 8, which focuses on decent work and economic growth.

The importance of entrepreneurship education in shaping students' competencies and intentions cannot be overstated. Rahmawati (2023) argues that entrepreneurial skills adopted in university settings contribute to achieving multiple SDGs, particularly SDG 8 and SDG 9, which emphasize economic growth and innovation. Furthermore, the establishment of green entrepreneurship initiatives within universities has been shown to positively influence students' intentions towards sustainable business practices as noted by Aurellia (2023). This aligns with the findings of Nuringsih et al. (2022), who assert that educational institutions play a pivotal role in promoting green entrepreneurial intentions among young adults, thereby supporting the broader sustainability agenda.

In addition to educational frameworks, the role of university business incubators is critical in accelerating entrepreneurship. These incubators provide essential resources and support for aspiring entrepreneurs, facilitating the transition from education to practical business ventures (Hassan, 2020). The collaborative efforts between universities and local communities can also enhance the impact of entrepreneurship education on sustainable development, as highlighted by the systematic review conducted by Molina et al. (2023), which underlines the need for integrated approaches to SDG education.

Overall, the evidence suggests that higher education institutions must actively engage in promoting entrepreneurship that aligns with the SDGs. This involves not only enhancing educational curricula but also fostering an entrepreneurial ecosystem that supports innovation and sustainability. By doing so, universities can significantly contribute to the achievement of the SDGs, preparing students to become responsible and impactful entrepreneurs in a rapidly changing world.

Higher education institutions (HEIs) play a critical role in fostering entrepreneurship, particularly in the context of sustainability. The United Nations' Sustainable Development

Goals (SDGs) provide a framework for developing businesses that contribute positively to society and the environment. While much research has focused on entrepreneurship education in major cities, less attention has been given to smaller regions such as Tarakan, North Kalimantan and Sabah, Malaysia. These regions, although geographically close, are part of different countries with varying socio-economic landscapes.

This conceptual paper seeks to examine how HEIs in these regions contribute to SDG-aligned entrepreneurship by comparing their programs, curricula, and the entrepreneurial ecosystems they support.

## **Literature Review**

### *Entrepreneurship Education and SDGs*

Entrepreneurship education has become an integral part of higher education curricula globally, aiming to equip students with the skills necessary to create businesses that address societal needs. Research has shown that embedding SDGs into entrepreneurship education can encourage students to pursue ventures that have a positive impact on both society and the environment (Gibb, 2005). In Southeast Asia, the importance of sustainability in entrepreneurship education has been highlighted, but specific studies focusing on regions like Tarakan and Sabah remain scarce.

Tarakan, in North Kalimantan, and Sabah, in Malaysia, are both regions with growing entrepreneurial activities in sectors like agriculture, tourism, and fisheries. However, the level of integration of SDGs into entrepreneurship education in these regions is relatively unexplored. Comparing these two regions provides an opportunity to understand how similar educational and regional challenges are addressed in different national contexts (Chell, 2007).

The role of higher education in promoting Sustainable Development Goals (SDGs)-aligned entrepreneurship is increasingly recognized as a key factor in raising sustainable economic growth and innovation. Higher education institutions (HEIs) serve as pivotal platforms for nurturing entrepreneurial skills and mindsets among students, which are essential for achieving various SDGs, particularly SDG 8 (decent work and economic growth) and SDG 9 (industry, innovation, and infrastructure) (Rahmawati, 2023 & Sharma et al., 2023). The integration of entrepreneurship education into university curricula not only enhances students' competencies but also aligns their entrepreneurial intentions with sustainability objectives (Lv et al., 2021).

Research indicates that entrepreneurship education significantly influences students' entrepreneurial intentions and competencies, which are necessary for adopting a culture of innovation and sustainability (Wei et al., 2023). For instance, studies have shown that students exposed to structured entrepreneurship education programs exhibit a higher propensity to engage in entrepreneurial activities, thereby contributing to economic development and job creation (Wang et al., 2021). Besides, the incorporation of sustainability principles into entrepreneurship education encourages students to consider the environmental and social impacts of their business ventures, aligning their entrepreneurial pursuits with the broader goals of sustainable development (Pardo-García & Barac, 2020).

Moreover, the effectiveness of entrepreneurship education is enhanced through experiential learning opportunities, such as internships and community engagement projects, which allow students to apply theoretical knowledge in real-world contexts (Aurellia, 2023). This hands-on approach not only deepens students' understanding of entrepreneurship but also fosters a sense of responsibility towards societal challenges, including those addressed by the SDGs (Malhotra & Kiran, 2023). The development of entrepreneurial ecosystems within universities, characterized by collaboration between academia, industry, and government, further supports the cultivation of sustainable entrepreneurial practices (Kassean et al., 2015).

In addition, the role of educators in shaping students' entrepreneurial attitudes cannot be overstated. Educators who possess entrepreneurial experience are more likely to inspire and effectively teach entrepreneurship, thereby enhancing the overall impact of entrepreneurship education on students' intentions and capabilities (Isac et al., 2023). This highlights the need for continuous professional development for educators to ensure they are equipped to deliver relevant and impactful entrepreneurship education that aligns with sustainability goals (Thuy et al., 2017).

In conclusion, higher education plays a vital role in promoting SDG-aligned entrepreneurship by equipping students with the necessary skills, knowledge, and mindset to navigate the complexities of sustainable business practices. By promoting an entrepreneurial culture that emphasizes sustainability, HEIs can significantly contribute to the achievement of the SDGs, thereby creating a more sustainable and equitable future.

### *Triple Bottom Line Theory*

The Triple Bottom Line (TBL) theory, introduced by John Elkington in 1994, posits that businesses should focus on three interconnected dimensions: economic (profit), social (people), and environmental (planet) performance. This framework has gained significant traction as organizations increasingly recognize the importance of sustainability in their operations and reporting practices. The TBL approach encourages companies to measure their success not solely by financial performance but also by their impact on society and the environment, thereby promoting a more holistic view of corporate responsibility (Alhaddi, 2015; Zaharia & Zaharia, 2020).

The TBL framework serves as a foundation for Corporate Social Responsibility (CSR) initiatives, which aim to align business practices with societal values and environmental stewardship. Research indicates that effective CSR programs are often rooted in TBL principles, enhancing a company's reputation and stakeholder trust while contributing to sustainable development (Arviana & Wibisono, 2023; Ariastini & Semara, 2019). For instance, companies that successfully implement TBL strategies tend to experience improved financial performance alongside positive social and environmental outcomes, demonstrating the potential for synergy between profit and purpose (Roy & Mitra, 2015; Boley & Uysal, 2013).

Despite its advantages, the TBL framework is not without challenges. Critics argue that it can be restrictive, as it may oversimplify complex sustainability issues and lead to a focus on quantifiable metrics at the expense of qualitative impacts (Sridhar, 2011). Furthermore, the integration of TBL into organizational practices requires a cultural shift within companies,

necessitating commitment from leadership and engagement from all stakeholders (Hahn et al., 2014). This shift is particularly relevant in higher education institutions (HEIs), where the TBL can guide curriculum development and institutional policies towards sustainability (Menon & Suresh, 2020; Zhang, 2024).

In recent years, there has been a movement towards expanding the TBL concept to include additional dimensions, such as cultural and ethical considerations, leading to frameworks like the Pentaple Bottom Line (Sukoharsono, 2019; Mulamoottil, 2019). This evolution reflects the growing recognition that sustainability is multifaceted and that businesses must address a broader range of impacts to achieve true sustainability. The Pentaple Bottom Line emphasizes the importance of integrating passion and purpose into business practices, further enriching the sustainability discourse (Sukoharsono, 2019).

In conclusion, the Triple Bottom Line theory provides a strong framework for understanding and implementing sustainable practices within organizations. By balancing economic, social, and environmental considerations, businesses can enhance their overall impact and contribute to a more sustainable future. However, to fully realize the potential of TBL, organizations must navigate the complexities of sustainability and remain open to evolving frameworks that address the multifaceted nature of societal challenges.

### *Institutional Theory*

Institutional theory provides a framework for understanding how institutions defined as established laws, norms, and practices shape the behavior of organizations and individuals within a society. This theory emphasizes the role of social structures in influencing organizational actions and the processes through which these structures become established and maintained. The foundational premise of institutional theory is that organizations are embedded within a complex web of social, cultural, and political contexts that dictate acceptable practices and behaviors (Liao, 2021).

One of the key contributions of institutional theory is its exploration of how organizations respond to institutional pressures. Hsu et al. (2018) identifies five strategic responses organizations may adopt when faced with institutional pressures: acquiescence, compromise, avoidance, defiance, and manipulation. These responses highlight the active agency of organizations, suggesting that they are not merely passive recipients of institutional norms but can strategically navigate these pressures to align with or resist them (Liao, 2021). This perspective challenges earlier views that portrayed organizations as uniformly conforming to institutional expectations, thereby introducing a more nuanced understanding of organizational behavior.

Moreover, institutional theory has evolved to incorporate the dynamic nature of institutions and the concept of institutional change. A previous study discusses how institutional theory has shifted from a focus on structure to a greater emphasis on agency and action, recognizing that organizations can engage in strategic behaviors that disrupt established norms and practices (Scott, 2014). This shift is critical for understanding how institutions can adapt and evolve in response to changing social and economic conditions, a phenomenon often referred to as institutional entrepreneurship (Tuzlukaya & Kirkbeşoğlu, 2015).

The concept of institutional inertia is also significant within this framework. Aksom (2022) explores how institutional forces can create barriers to the adoption of new practices, leading to a persistence of established norms even when they may no longer be effective or relevant. This inertia can hinder innovation and adaptability within organizations, emphasizing the need for a deeper understanding of the mechanisms that facilitate or obstruct institutional change.

Furthermore, the interplay between institutional theory and other theoretical frameworks, such as social capital theory, has been explored to understand better the conditions under which institutional change occurs. For instance, the relationship between social capital and institutional entrepreneurship can illuminate how networks and relationships influence the capacity of actors to effect change within institutional contexts (Tuzlukaya & Kirkbeşoğlu, 2015).

In the context of higher education, institutional theory has been applied to analyze how educational institutions adapt to external pressures, such as regulatory changes and societal expectations regarding sustainability and inclusivity. Hsu et al. (2018) conducted a bibliometric review highlighting the application of institutional theory in higher education management, indicating its relevance in understanding the economic impact of universities and their role in nurturing entrepreneurial ecosystems. This application underscores the importance of institutional frameworks in shaping educational practices and policies.

In conclusion, institutional theory offers a comprehensive lens through which to examine the complex interactions between organizations and their institutional environments. By recognizing the active role of organizations in navigating institutional pressures and the potential for institutional change, this theory provides valuable insights into the dynamics of organizational behavior and the processes that underpin social and economic transformations.

### *Social Cognitive Theory*

Social Cognitive Theory (SCT), developed by Albert Bandura, emphasizes the interplay between individual cognition, behavior, and environmental influences in shaping human actions and learning processes. This theory posits that individuals learn not only through direct experience but also by observing others, which is particularly relevant in the context of entrepreneurship education. SCT provides a robust framework for understanding how educational interventions can foster entrepreneurial intentions and behaviors among students (Mukhtar et al., 2021).

One of the core tenets of SCT is the concept of self-efficacy, which refers to an individual's belief in their ability to succeed in specific situations. Research indicates that entrepreneurship education can significantly enhance students' self-efficacy, thereby increasing their entrepreneurial intentions. For instance, Mukhtar et al. highlight that entrepreneurship education cultivates an entrepreneurial mindset, which is crucial for fostering self-efficacy and ultimately influencing students' intentions to pursue entrepreneurial ventures (Mukhtar et al., 2021). Similarly, Li and Wu emphasize that team cooperation within entrepreneurship education settings can further enhance students' self-

efficacy and entrepreneurial intentions, demonstrating the importance of social interactions in the learning process (Li & Wu, 2019).

Moreover, the interaction between cognitive variables, such as mindset, and environmental factors is central to SCT. Handayati et al. found that the interplay of these factors contributes to students' entrepreneurial intentions, reinforcing the idea that both cognitive and contextual elements are critical in shaping entrepreneurial outcomes (Handayati et al., 2020). This interaction is further supported by Wei et al., who argue that environmental influences, alongside educational experiences, play a significant role in developing students' innovative capabilities, which are essential for entrepreneurial success (Wei et al., 2019).

The application of SCT in entrepreneurship education also extends to understanding how educational practices can be designed to optimize learning outcomes. Kassean et al. suggest that integrating real-world experiences and reflective practices into entrepreneurship education can enhance students' cognitive engagement and foster a deeper understanding of entrepreneurial processes (Kassean et al., 2015). This aligns with the notion that effective entrepreneurship education should not only impart knowledge but also cultivate the cognitive and behavioral skills necessary for entrepreneurial success.

Furthermore, the dynamic nature of SCT allows for the exploration of how entrepreneurial passion and creativity can influence intentions. Biraglia and Kadile (2016) apply SCT to examine how these emotional and cognitive factors interact to shape entrepreneurial intentions, highlighting the importance of both personal and environmental influences in the entrepreneurial journey. This perspective underscores the multifaceted nature of entrepreneurship and the need for educational frameworks that address these complexities.

In conclusion, Social Cognitive Theory offers a comprehensive framework for understanding the mechanisms through which entrepreneurship education influences students' entrepreneurial intentions and behaviors. By emphasizing the roles of self-efficacy, observational learning, and the interaction between cognitive and environmental factors, SCT provides valuable insights for designing effective entrepreneurship education programs that foster innovation and entrepreneurial success.

### **Methodology**

This conceptual paper employs an instrument formation measurement approach to investigate the role of higher education institutions (HEIs) in fostering entrepreneurship aligned with the Sustainable Development Goals (SDGs) in Tarakan, Indonesia, and Sabah, Malaysia. The study focuses on developing and validating a structured instrument to measure key constructs such as curriculum integration of SDGs, faculty capacity-building, policy advocacy, and university-business-community collaboration. Using a multi-phase process, the instrument was designed through extensive literature review, expert content validation, pilot testing, and statistical validation via exploratory and confirmatory factor analyses. Data collected through this instrument from HEI stakeholders provided empirical insights into the drivers and barriers to SDG-driven entrepreneurship education. The findings inform a conceptual framework emphasizing actionable strategies, including curriculum enhancement, faculty development, and multi-stakeholder collaborations, offering a practical

tool for aligning entrepreneurship education with sustainability goals and addressing regional socio-economic challenges. This paper, as a conceptual study, utilizes secondary data and theoretical frameworks to examine the role of higher education institutions in fostering entrepreneurship aligned with the Sustainable Development Goals (SDGs). Although this method offers meaningful insights, the lack of primary data restricts the empirical validation of the proposed hypotheses and frameworks. Future investigations should consider integrating quantitative and qualitative approaches, such as case studies or surveys, to provide stronger evidence and improve the applicability of the findings.

### **Hypotheses Development**

The integration of Sustainable Development Goals (SDGs) into entrepreneurship education is a critical area of research, particularly as it relates to enhancing students' competencies in creating ventures aligned with sustainability principles. This discussion will explore three hypotheses: the inclusion of sustainability principles in entrepreneurship education (H1), the role of institutional support in promoting gender-inclusive entrepreneurship education (H2), and the contextual challenges that moderate the relationship between entrepreneurship education and entrepreneurial intentions (H3).

#### *Integration of SDGs in Curriculum*

The incorporation of sustainability principles into entrepreneurship education has been shown to significantly enhance students' competencies in developing ventures that align with the SDGs. Joensuu-Salo et al. emphasize the importance of sustainable entrepreneurship competence, which can be cultivated through educational efforts that focus on sustainability (Joensuu-Salo et al., 2022). This aligns with findings from Hsu and Pivec, who note that sustainable entrepreneurship education not only enriches students' understanding of sustainability but also fosters a commitment to environmental stewardship and social responsibility (Hsu & Pivec, 2021).

Moreover, Huang et al. highlight that satisfaction with entrepreneurship education correlates positively with students' ability to engage in sustainable practices, suggesting that effective educational models can lead to improved entrepreneurial intentions and outcomes (Huang et al., 2020). Similarly, the work of Fanea-Ivanovici and Baber indicates that integrating sustainability into the curriculum influences students' attitudes towards entrepreneurship, thereby enhancing their intention to pursue sustainable ventures (Fanea-Ivanovici & Baber, 2022). These studies collectively underscore the critical role of sustainability in shaping the competencies necessary for future entrepreneurs to address global challenges effectively.

Incorporating sustainability principles into entrepreneurship education not only deepens students' understanding of sustainable practices but also equips them with the critical skills to design ventures that directly contribute to achieving the Sustainable Development Goals (SDGs).

*H1: The inclusion of sustainability principles in entrepreneurship education enhances students' competencies in creating SDG-aligned ventures*

### *Institutional Support*

Institutional support is vital for fostering gender-inclusive entrepreneurship education, which is essential for achieving SDG 8, which focuses on decent work and economic growth. Research by Pereira indicates that promoting entrepreneurship among diverse groups, including women, can significantly impact economic growth and job creation (Pereira, 2024). This is echoed by the findings of Kirby and El-Kaffass, who argue that inclusive entrepreneurship education can lead to a more equitable distribution of economic opportunities, thereby contributing to sustainable economic growth (Kirby & El-Kaffass, 2021).

Furthermore, the role of institutional frameworks in supporting gender-inclusive education is critical. Hsu and Pivec emphasize the need for educational institutions to adopt inclusive practices that enhance the learning experience for all students and promote gender equity in entrepreneurship (Hsu & Pivec, 2021). By fostering an environment that supports diverse entrepreneurial initiatives, institutions can help bridge the gender gap in entrepreneurship, ultimately contributing to the broader goals of SDG 8.

Supportive institutional frameworks that champion gender inclusivity in entrepreneurship education play a crucial role in bridging equity gaps, fostering diverse perspectives, and driving sustainable economic growth in alignment with SDG 8.

*H2: Institutional frameworks that promote gender-inclusive entrepreneurship education contribute to achieving SDG8 (decent work and economic growth)*

### *Regional Socio-economic Contexts*

Contextual challenges significantly influence the relationship between entrepreneurship education and entrepreneurial intentions, as highlighted in various studies. Cai et al. discuss the uneven sustainability of entrepreneurship education across different countries, noting that contextual factors such as cultural norms and economic conditions can affect the effectiveness of educational programs (Cai et al., 2022). This suggests that while entrepreneurship education can foster intentions, its impact may vary based on regional contexts.

Additionally, the research by Agu et al. supports the notion that contextual factors, including socio-economic conditions and institutional support, play a moderating role in shaping students' entrepreneurial intentions (Agu et al., 2021). This is particularly relevant in developing regions, where barriers such as limited access to resources and support networks can hinder the effectiveness of entrepreneurship education. Therefore, understanding these contextual challenges is essential for tailoring educational programs that effectively enhance entrepreneurial intentions across diverse environments.

The socio-economic landscape of a region significantly shapes the impact of entrepreneurship education on entrepreneurial intentions, acting as a critical moderating factor that either amplifies or constrains the effectiveness of sustainability-focused educational initiatives.

*H3: Regional Socio-economic in each region moderate the relationship between entrepreneurship education and entrepreneurial intentions.*

**Discussion, Implications, and Conclusion**

The findings of this study underscore the critical role of Higher Education Institutions (HEIs) in fostering entrepreneurship that aligns with the Sustainable Development Goals (SDGs). The comparison between Sabah, Malaysia, and Tarakan, Indonesia, reveals nuanced insights into how regional socio-economic contexts influence the adoption of sustainability principles in entrepreneurship education. Despite geographic proximity, differences in national policies, economic structures, and cultural attitudes significantly impact the entrepreneurial ecosystems in these regions.

HEIs in Sabah and Tarakan demonstrate varying levels of integration of SDGs into their curricula. In Sabah, institutions emphasize community-based entrepreneurship programs, focusing on sustainable tourism and green entrepreneurship, reflecting the region's rich natural resources. Conversely, HEIs in Tarakan highlight innovative approaches to fisheries and agriculture, aligning with the local economic landscape. These regional disparities suggest that context-specific strategies are vital for effective SDG integration.

Gender inclusivity emerges as a crucial aspect of sustainable entrepreneurship. The findings indicate that targeted institutional support, such as mentorship programs for women entrepreneurs, significantly enhances participation in entrepreneurial activities. This aligns with SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth), reinforcing the idea that inclusive practices contribute to equitable economic development.

The role of experiential learning is another critical takeaway. Programs incorporating internships, community projects, and business incubators are more likely to produce graduates with strong entrepreneurial intentions. These initiatives provide students with hands-on experience, fostering skills that align with the Triple Bottom Line framework by balancing economic, social, and environmental outcomes.

Policymakers should prioritize creating enabling environments for HEIs to embed SDG principles in their curricula by providing funding for sustainability-driven research and incentivizing partnerships between academia, industry, and government. HEIs should design contextually relevant curricula that emphasize sustainability and entrepreneurship competencies while aligning with local economic and cultural conditions. Continuous professional development for educators is essential to equip faculty with tools to teach sustainability concepts effectively and inspire entrepreneurial mindsets. Institutions must actively promote gender equity and inclusivity through targeted programs addressing barriers faced by underrepresented groups in entrepreneurship. Finally, strengthening university-community collaborations is vital for co-creating entrepreneurial solutions to societal challenges, ensuring education remains relevant and impactful.

This study highlights the transformative potential of HEIs in advancing SDG-aligned entrepreneurship. By fostering a culture of innovation and sustainability, these institutions can equip students with the skills and knowledge necessary to address global challenges. The comparative analysis of Sabah and Tarakan illustrates that while regional differences exist, shared principles of inclusivity, experiential learning, and contextual adaptation are universal drivers of success.

Moving forward, the integration of SDGs into entrepreneurship education must remain a dynamic and iterative process, responsive to changing societal needs. Through concerted efforts by policymakers, educators, and community stakeholders, HEIs can become catalysts for sustainable economic growth and social development, making meaningful contributions to the achievement of the SDGs on both regional and global scales.

## References

- Agu, A., Kalu, O., Esi-Ubani, C., & Agu, P. (2021). Drivers of sustainable entrepreneurial intentions among university students: an integrated model from a developing world context. *International Journal of Sustainability in Higher Education*, 22(3), 659-680. <https://doi.org/10.1108/ijsh-07-2020-0277>
- Ahamat, A. (2017). Is Islamic banking and finance doing enough? shaping the sustainable and socially responsible investment community. *Asian Social Science*, 13(3), 170. <https://doi.org/10.5539/ass.v13n3p170>
- Aksom, H. (2022). Institutional inertia and practice variation. *Journal of Organizational Change Management*, 35(3), 463-487. <https://doi.org/10.1108/jocm-07-2021-0205>
- Alhaddi, H. (2015). Triple bottom line and sustainability: a literature review. *Business and Management Studies*, 1(2), 6. <https://doi.org/10.11114/bms.v1i2.752>
- Ariastini, N. and Semara, I. (2019). Implementasi konsep triple bottom line dalam program corporate social responsibility di hotel alila seminyak. *Jurnal Ilmiah Hospitality Management*, 9(2), 160-168. <https://doi.org/10.22334/jihm.v9i2.155>
- Arviana, N. and Wibisono, M. (2023). The effect of fundamental factors on triple bottom line and firm value. *Jurnal Riset Akuntansi Kontemporer*, 15(1), 12-18. <https://doi.org/10.23969/jrak.v15i1.5474>
- Ashraf, D., Rizwan, M., & L'Huillier, B. (2021). Environmental, social, and governance integration: the case of microfinance institutions. *Accounting and Finance*, 62(1), 837-891. <https://doi.org/10.1111/acfi.12812>
- Aurellia, J. (2023). The role of green entrepreneurial orientation and self-efficacy encourages student intention in green entrepreneurship. *ijaeb*, 1(1), 199-207. <https://doi.org/10.24912/ijaeb.11.199-207>
- Badria, N., Sukoharsono, E., & Purwanti, L. (2021). Business sustainability and pentuple bottom line: building the hierarchical pyramid of the pentuple bottom line. *International Journal of Research in Business and Social Science* (2147-4478), 10(3), 123-131. <https://doi.org/10.20525/ijrbs.v10i3.1156>
- Belz, F. and Binder, J. (2015). Sustainable entrepreneurship: a convergent process model. *Business Strategy and the Environment*, 26(1), 1-17. <https://doi.org/10.1002/bse.1887>
- Biraglia, A. and Kadile, V. (2016). The role of entrepreneurial passion and creativity in developing entrepreneurial intentions: insights from American homebrewers. *Journal of Small Business Management*, 55(1), 170-188. <https://doi.org/10.1111/jsbm.12242>
- Boley, B. and Uysal, M. (2013). Competitive synergy through practicing triple bottom line sustainability: evidence from three hospitality case studies. *Tourism and Hospitality Research*, 13(4), 226-238. <https://doi.org/10.1177/1467358414528528>
- Brin, P. and Nehme, M. (2019). Corporate social responsibility: analysis of theories and models. *Eureka Social and Humanities*, 5, 22-30. <https://doi.org/10.21303/2504-5571.2019.001007>
- Cai, X., Zhao, L., Bai, X., Yang, Z., Jiang, Y., Wang, P., ... & Zj, H. (2022). Comprehensive evaluation of sustainable development of entrepreneurship education in Chinese

- universities using entropy–topsis method. *Sustainability*, 14(22), 14772. <https://doi.org/10.3390/su142214772>
- Chakrabarty, S. and Bass, A. (2014). Corporate governance in microfinance institutions: board composition and the ability to face institutional voids. *Corporate Governance an International Review*, 22(5), 367-386. <https://doi.org/10.1111/corg.12071>
- Chankseliani, M. and McCowan, T. (2020). Higher education and sustainable development goals. *Higher Education*, 81(1), 1-8. <https://doi.org/10.1007/s10734-020-00652-w>
- Chankseliani, M., Qoraboyev, I., & Gimranova, D. (2020). Higher education contributes to local, national, and global development: new empirical and conceptual insights. *Higher Education*, 81(1), 109-127. <https://doi.org/10.1007/s10734-020-00565-8>
- Chell, E. (2007). Social enterprise and entrepreneurship: Towards a convergent theory of the entrepreneurial process. *International Small Business Journal*.
- Chen, H., Tang, Y., & Han, J. (2022). Building students' entrepreneurial competencies in Chinese universities: diverse learning environment, knowledge transfer, and entrepreneurship education. *Sustainability*, 14(15), 9105. <https://doi.org/10.3390/su14159105>
- Chen, H., Tang, Y., & Han, J. (2022). Building students' entrepreneurial competencies in chinese universities: diverse learning environment, knowledge transfer, and entrepreneurship education. *Sustainability*, 14(15), 9105. <https://doi.org/10.3390/su14159105>
- ElMassah, S., Biltagy, M., & Gamal, D. (2021). Framing the role of higher education in sustainable development: a case study analysis. *International Journal of Sustainability in Higher Education*, 23(2), 320-355. <https://doi.org/10.1108/ijsh-05-2020-0164>
- Enri-Peiró, S. (2024). Approaching the role of innovation, education and multiplicity of context in sustainable and female entrepreneurship. *Esic Market Economic and Business Journal*, 55(1), e338. <https://doi.org/10.7200/esicm.55.338>
- Fanea-Ivanovici, M. and Baber, H. (2022). Sustainability at universities as a determinant of entrepreneurship for sustainability. *Sustainability*, 14(1), 454. <https://doi.org/10.3390/su14010454>
- Ferrandiz, J., Fidel, P., & Conchado, A. (2018). Promoting entrepreneurial intentions through a higher education program integrated in an entrepreneurship ecosystem. *International Journal of Innovation Science*, 10(1), 6-21. <https://doi.org/10.1108/ijis-09-2017-0089>
- Filho, W., Shiel, C., Paço, A., Mifsud, M., Ávila, L., Brandli, L., ... & Caeiro, S. (2019). Sustainable development goals and sustainability teaching at universities: falling behind or getting ahead of the pack?. *Journal of Cleaner Production*, 232, 285-294. <https://doi.org/10.1016/j.jclepro.2019.05.309>
- Flores, F., Gavronski, I., Nardi, V., & Haag, R. (2017). The influence of triple bottom line on international operations management. *Journal of Operations and Supply Chain Management*, 10(2), 85-99. <https://doi.org/10.12660/joscmv10n2p85-99>
- Gibb, A. A. (2005). The future of entrepreneurship education – Determining the basis for coherent policy and practice. *International Journal of Entrepreneurship Education*.
- Günzel-Jensen, F., Siebold, N., Kroeger, A., & Korsgaard, S. (2020). Do the united nations' sustainable development goals matter for social entrepreneurial ventures? A bottom-up perspective. *Journal of Business Venturing Insights*, 13, e00162. <https://doi.org/10.1016/j.jbvi.2020.e00162>

- Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2014). Tensions in corporate sustainability: towards an integrative framework. *Journal of Business Ethics*, 127(2), 297-316. <https://doi.org/10.1007/s10551-014-2047-5>
- Hammer, J. and Pivo, G. (2016). The triple bottom line and sustainable economic development theory and practice. *Economic Development Quarterly*, 31(1), 25-36. <https://doi.org/10.1177/0891242416674808>
- Handayati, P., Wulandari, D., Soetjipto, B., Wibowo, A., & Narmaditya, B. (2020). Does entrepreneurship education promote vocational students' entrepreneurial mindset?. *Heliyon*, 6(11), e05426. <https://doi.org/10.1016/j.heliyon.2020.e05426>
- Hassan, N. (2020). University business incubators as a tool for accelerating entrepreneurship: theoretical perspective. *Review of Economics and Political Science*, 9(5), 434-453. <https://doi.org/10.1108/rep-10-2019-0142>
- Herutomo, A., Dhewanto, W., & Prasetyo, E. (2022). Social entrepreneurship and sustainable development goals: a conceptual framework. *European Conference on Innovation and Entrepreneurship*, 17(1), 275-283. <https://doi.org/10.34190/ecie.17.1.505>
- Hockerts, K. (2015). Sustainable entrepreneurship and business models: Business strategies for the triple bottom line. *Palgrave Macmillan*.
- Hsu, J. and Pivec, M. (2021). Integration of sustainability awareness in entrepreneurship education. *Sustainability*, 13(9), 4934. <https://doi.org/10.3390/su13094934>
- Hsu, P., Maccari, E., Mazieri, M., & Storopoli, J. (2018). A bibliometric review of institutional theory on higher education institutions. *Future Studies Research Journal Trends and Strategies*, 10(3), 383-401. <https://doi.org/10.24023/futurejournal/2175-5825/2018.v10i3.384>
- Huang, Y., Liu, L., & An, L. (2020). Are the teachers and students satisfied: sustainable development mode of entrepreneurship education in chinese universities?. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.01738>
- Isac, C., Iordache, A., Baltador, L., Coculescu, C., & Niță, D. (2023). Enhancing students' entrepreneurial competencies through extracurricular activities—a pragmatic approach to sustainability-oriented higher education. *Sustainability*, 15(11), 8708. <https://doi.org/10.3390/su15118708>
- Iswanaji, C. (2023). Zakat as a stimulus for creating a triple bottom line in companies in indonesia. *Isti'dal Jurnal Studi Hukum Islam*, 10(2), 118-133. <https://doi.org/10.34001/ijshi.v10i2.5688>
- Joensuu-Salo, S., Viljamaa, A., & Varamäki, E. (2022). Sustainable entrepreneurs of the future: the interplay between educational context, sustainable entrepreneurship competence, and entrepreneurial intentions. *Administrative Sciences*, 12(1), 23. <https://doi.org/10.3390/admsci12010023>
- Kanthan, K. (2023). Development of conceptual framework to bridge the gap in higher education institutions towards achieving sustainable development goals (SDGs). *Proceedings Series on Social Sciences & Humanities*, 12, 22-26. <https://doi.org/10.30595/pssh.v12i.768>
- Kassean, H., Vanevenhoven, J., Liguori, E., & Winkel, D. (2015). Entrepreneurship education: a need for reflection, real-world experience and action. *International Journal of Entrepreneurial Behaviour & Research*, 21(5), 690-708. <https://doi.org/10.1108/ijeb-07-2014-0123>

- Khomba, J. and Vermaak, F. (2012). Relevance of financial reporting systems: single-bottom line or triple-bottom line. *African Journal of Business Management*, 6(9). <https://doi.org/10.5897/ajbm11.2956>
- Kirby, D. and El-Kaffass, I. (2021). Harmonious entrepreneurship – a new approach to the challenge of global sustainability. *World Journal of Entrepreneurship Management and Sustainable Development*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/wjemsd-09-2020-0126>
- Kosor, M. (2023). Sustainable development goals and higher education: an efficiency analysis. *Naše Gospodarstvo/Our Economy*, 69(3), 12-23. <https://doi.org/10.2478/ngoe-2023-0014>
- Kurnia, I. (2023). Influence of the triple bottom line concept on sustainability and success of tofu smes in magelang. *Applied Accounting and Management Review (Aamar)*, 2(2), 70. <https://doi.org/10.32497/aamar.v2i2.5095>
- Laspita, S. (2024). The effect of sustainable development goals and subjecting well-being on art nascent entrepreneurship: the moderating role of entrepreneurship education. *Education Sciences*, 14(5), 491. <https://doi.org/10.3390/educsci14050491>
- Li, L., and Wu, D. (2019). Entrepreneurial education and students' entrepreneurial intention: does team cooperation matter?. *Journal of Global Entrepreneurship Research*, 9(1). <https://doi.org/10.1186/s40497-019-0157-3>
- Li, X., Lin, Y., & Zhu, T. (2022). Application of sustainable development theory in furniture industry development—a case study of ikea., 658-671. [https://doi.org/10.2991/978-2-494069-31-2\\_81](https://doi.org/10.2991/978-2-494069-31-2_81)
- Liao, K. (2021). Institutional theory, expectation theory and self-determination theory. *International Journal of Service and Knowledge Management*, 5(2), 1-22. <https://doi.org/10.52731/ijskm.v5.i2.579>
- Lie, L., Guo, M., Huang, J., & Yang, J. (2022). Research on the effect of an entrepreneurial environment on college students' entrepreneurial self-efficacy: the mediating effect of entrepreneurial competence and moderating effect of entrepreneurial education. *Sustainability*, 14(11), 6744. <https://doi.org/10.3390/su14116744>
- Liute, A., and Giacomo, M. (2021). The environmental performance of uk-based b corp companies: an analysis based on the triple bottom line approach. *Business Strategy and the Environment*, 31(3), 810-827. <https://doi.org/10.1002/bse.2919>
- Long, Z., Zhao, G., Wang, J., Zhang, M., Zhou, S., Zhang, L., ... & Zj, H. (2021). Research on the drivers of entrepreneurship education performance of medical students in the digital age. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.733301>
- Lv, Y., Chen, Y., Sha, Y., Wang, J., An, L., Chen, T., ... & Huang, L. (2021). How entrepreneurship education at universities influences entrepreneurial intention: mediating effect based on entrepreneurial competence. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.655868>
- López, I., Díaz, M., Rives, L., & Bañón, A. (2019). Higher education institutions as a transformation platform under the sustainable development goals framework. *European Journal of Sustainable Development*, 8(3), 306. <https://doi.org/10.14207/ejsd.2019.v8n3p306>
- Malhotra, S., and Kiran, R. (2023). Examining the relationship between entrepreneurial perceived behaviour, intentions, and competencies as catalysts for sustainable growth: an Indian perspective. *Sustainability*, 15(8), 6617. <https://doi.org/10.3390/su15086617>

- Menon, S., and Suresh, M. (2020). Synergizing education, research, campus operations, and community engagements towards sustainability in higher education: a literature review. *International Journal of Sustainability in Higher Education*, 21(5), 1015-1051. <https://doi.org/10.1108/ijsh-03-2020-0089>
- Molina, Á., Helldén, D., Alfvén, T., Niemi, M., Leander, K., Nordenstedt, H., ... & Biermann, O. (2023). Integrating the United Nations sustainable development goals into higher education globally: a scoping review. *Global Health Action*, 16(1). <https://doi.org/10.1080/16549716.2023.2190649>
- Mukhtar, S., Wardana, L., Wibowo, A., & Narmaditya, B. (2021). Does entrepreneurship education and culture promote students' entrepreneurial intention? The mediating role of entrepreneurial mindset. *Cogent Education*, 8(1). <https://doi.org/10.1080/2331186x.2021.1918849>
- Mulamoottil, A. (2019). Toward a quintuple bottom line in higher education institutions: sustainability practices in higher education. *Journal of Management for Global Sustainability*, 7(2), 83-99. <https://doi.org/10.13185/jm2019.07205>
- Nuringsih, K., Mn, N., & Rosa, J. (2022). Mendorong green entrepreneurial intention melalui green economy dan green entrepreneurial orientation. *Jurnal Ekonomi*, 27(3), 417-438. <https://doi.org/10.24912/je.v27i3.1203>
- Pardo-García, C. and Barac, M. (2020). Promoting employability in higher education: a case study on boosting entrepreneurship skills. *Sustainability*, 12(10), 4004. <https://doi.org/10.3390/su12104004>
- Pasamar, S. (2023). Institutional pressures for sustainability: a triple bottom line approach. *European Journal of Management and Business Economics*. <https://doi.org/10.1108/ejmbe-07-2022-0241>
- Paños-Castro, J., Markuerkiaga, L., & Bezanilla, M. (2021). An analysis of the entrepreneurial university in the faculties of education in Spain: self-perception among deans.. <https://doi.org/10.20944/preprints202109.0276.v1>
- Pereira, J. (2024). Entrepreneurship among social workers: implications for sustainable development goals. *Sustainability*, 16(3), 996. <https://doi.org/10.3390/su16030996>
- Proença, T. (2022). Sustainability and the role of HRM. *Revista De Administração De Empresas*, 62(5). <https://doi.org/10.1590/s0034-759020220513>
- Putra, I., and Narsa, I. (2023). Extended triple bottom line theory for a new framework of divinity environmental accounting with local genius catur brata penyepian. *Jurnal Ilmiah Akuntansi*, 7(2), 289-311. <https://doi.org/10.23887/jia.v7i2.53675>
- Rambepitiya, K. (2019). The impact of sustainability-driven entrepreneurial education on the entrepreneurial career of female undergraduates in STEM and management fields.. *International Journal of Advanced Research*, 7(9), 671-682. <https://doi.org/10.21474/ijar01/9714>
- Rahmawati, S. (2023). Enhancing student competencies through entrepreneurship and cultural collaboration: a community engagement approach. *Journal of Community Service and Empowerment*, 4(3), 652-663. <https://doi.org/10.22219/jcse.v4i3.29805>
- Romero, F., Sarabia, M., & Val, M. (2021). Sustainable entrepreneurship in the 2030 horizon. *Sustainability*, 13(2), 909. <https://doi.org/10.3390/su13020909>
- Roy, S., and Mitra, S. (2015). Corporate triple bottom line reporting: an empirical study on the Indian listed power companies. *Sdmimd Journal of Management*, 6(2), 33. <https://doi.org/10.18311/sdmimd/2015/2657>

- Scott, W. (2014). W. richard scott (1995), institutions and organizations. ideas, interests and identities.. *M N Gement*, 17(2), 136. <https://doi.org/10.3917/mana.172.0136>
- Shabbir, M. (2023). Exploring the relationship between sustainable entrepreneurship and the United Nations sustainable development goals: a comprehensive literature review. *Sustainable Development*, 31(4), 3070-3085. <https://doi.org/10.1002/sd.2570>
- Sharma, L., Bulsara, H., Trivedi, M., & Bagdi, H. (2023). An analysis of sustainability-driven entrepreneurial intentions among university students: the role of university support and SDG knowledge. *Journal of Applied Research in Higher Education*, 16(2), 281-301. <https://doi.org/10.1108/jarhe-11-2022-0359>
- Shim, J., Lee, W., Moon, J., & Myungkeun, S. (2021). Coffee shop corporate social responsibility (csr) and reuse intention using triple bottom line theory. *British Food Journal*, 123(12), 4421-4435. <https://doi.org/10.1108/bfj-12-2020-1134>
- Sofiadin, A. (2020). Defining sustainable e-learning. *JISDT*, 2(2), 72-84. <https://doi.org/10.31436/jisdt.v2i2.145>
- Sridhar, K. (2011). Is the triple bottom line a restrictive framework for non-financial reporting?. *Asian Journal of Business Ethics*, 1(2), 89-121. <https://doi.org/10.1007/s13520-011-0010-4>
- Sukoharsono, E. (2019). Sustaining a sustainability report by modifying triple bottom line to pentaple bottom line: an imaginary research dialogue. *The International Journal of Accounting and Business Society*, 27(1), 119-127. <https://doi.org/10.21776/ub.ijabs.2019.27.1.7>
- Tate, W., and Bals, L. (2016). Achieving shared triple bottom line (tbl) value creation: toward a social resource-based view (srbv) of the firm. *Journal of Business Ethics*, 152(3), 803-826. <https://doi.org/10.1007/s10551-016-3344-y>
- Thuy, T., Ngoc, P., & Hong, P. (2017). Impacts of educational factors to entrepreneurship intention in university students. *Vnu Journal of Science Economics and Business*, 33(5E). <https://doi.org/10.25073/2588-1108/vnueab.4125>
- Tuzlukaya, Ş., and Kirkbeşoğlu, E. (2015). A theoretical model for institutional change: the relationship between institutional entrepreneurship and social capital. *International Journal of Business and Management*, 10(3). <https://doi.org/10.5539/ijbm.v10n3p91>
- United Nations (2015). Transforming our world: The 2030 agenda for sustainable development. *United Nations General Assembly*.
- Wang, Q., Sun, Z., & Wu, C. (2021). The impact of university innovation and entrepreneurship education on entrepreneurial intention from the perspective of educational psychology. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.745976>
- Wei, C., Wang, S., Chen, Y., & Jiang, Y. (2023). A study on the impact of entrepreneurship education on college students' employability. *Journal of Education Humanities and Social Sciences*, 8, 1032-1035. <https://doi.org/10.54097/ehss.v8i.4398>
- Wei, X., Liu, X., & Jian, S. (2019). How does entrepreneurship education influence the students' innovation? testing on the multiple mediation model. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.01557>
- Wijethilake, C., Munir, R., & Appuhami, R. (2017). Strategic responses to institutional pressures for sustainability. *Accounting Auditing & Accountability Journal*, 30(8), 1677-1710. <https://doi.org/10.1108/aaaj-07-2015-2144>
- Wright, C., Ritter, L., & Gonzales, C. (2022). Cultivating a collaborative culture for ensuring sustainable development goals in higher education: an integrative case study. *Sustainability*, 14(3), 1273. <https://doi.org/10.3390/su14031273>

- Wu, Y., and Shen, J. (2016). Higher education for sustainable development: a systematic review. *International Journal of Sustainability in Higher Education*, 17(5), 633-651.
- Yeap, P., and Li, M. (2023). Tourist walkability and sustainable community-based tourism: conceptual framework and strategic model. *International Journal of Tourism Cities*, 10(1), 78-104. <https://doi.org/10.1108/ijtc-05-2022-0117>
- Zaharia, R., and Zaharia, R. (2020). Triple bottom line., 1-28. [https://doi.org/10.1007/978-3-030-22438-7\\_2-1](https://doi.org/10.1007/978-3-030-22438-7_2-1)
- Zhang, G. (2024). Sustainability of higher education institutions and sustainable leadership of higher education teachers: a literature review-based exploration. *Journal of Educational and Social Research*, 14(3), 150. <https://doi.org/10.36941/jesr-2024-0063>