

# The mediating role of entrepreneurial education on sustainable entrepreneurship: Evidence from micro, small and medium enterprise (MSMEs)

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## ABSTRACT

In recent time, Small, Micro, medium Scale Enterprises in Nigeria has leveraged breakthroughs in the research and development to improve performance and sustainable development. Nigeria as a nation has since the year 2020 been facing economic meltdown and financial crisis. Prices of both locally made and imported goods have risen above a 200%. Businesses in many areas are folding and some MSMEs are winding-up. Education is widely acknowledged as a key driver of sustainable entrepreneurship and development, and its successful implementation in schools necessitates effective resource and capability management. Micro, small, and medium enterprises (MSMEs) are critical business entities, disproportionately challenged, and fail at a high rate. Business owners are concerned with sustainability strategies because they support the operations of their enterprises and mitigate failure. The Resource-Based Theory is used to examine the role of entrepreneurship education in attaining sustainable entrepreneurship. The theory emphasizes the importance of effective resource and capability management in achieving long-term competitive advantage. This means that, in the context of entrepreneurship education, schools must provide adequate resources and support to teachers and students for them to develop the skills and knowledge required for long-term entrepreneurship, such as access to mentorship, networks, and financial resources. This paper pointed out that sustainable entrepreneurship focuses on creating a balance between business goals and environmental concerns. Entrepreneurs keep our economy and society vibrant by implementing new ideas, which is why our society needs people with entrepreneurship competencies. The development of our entrepreneurship competencies does not begin with the start of our professional lives but is initiated in earlier phases of our socialization. Entrepreneurship education can trigger and support this process. A common goal of entrepreneurship education is to strengthen entrepreneurs with value orientation for a sustainable society. All entrepreneurs of the future are in school today, the nature of their value-oriented education and their willingness to participate is shaped by today's learning. The paper concludes by emphasizing the potential benefits of entrepreneurship education for attaining the desired sustainability. The study found out that Entrepreneurship makes a central contribution to sustainable development by creating jobs in MSMEs, with poor access to resources, while driving inclusive economic growth and innovation, improving social conditions, and dealing with economic environmental shocks such as the uncertainties of the current food, energy, and financial crises.

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## 1. INTRODUCTION

The Strategic Development Goals (SDG) agenda provides an ambitious framework to address education sector challenges. Innovation can help bring about the transformation needed to meet this ambitious agenda, and MSMEs could contribute to the creation and innovation for expanding the scope of inclusive education. This includes online/remote learning and educational opportunities, and digital education for development of skills of education professionals. The global market for educational products and services is growing rapidly (by nearly 50 percent from 2012 to 2017), primarily driven by an expanding middle class in emerging economies (UNDESA, 2023; UNDP, 2016). This trend indicates greater opportunities for business. Existing education-based enterprises and start-ups need to be supported through expanded access to finance and innovations to fully tap these opportunities and help achieve this goal. Entrepreneurship development refers to a process of enhancing the skills and knowledge of entrepreneurs regarding the development, management and organization of a business venture while keeping in mind the risks associated with it. Over the years, scholars have argued on the role of education on transition to sustainable entrepreneurship which will avail renewable hope in emerging economies but has not gotten the required attention to drive such transition in most countries like Nigeria. In our contemporary digital world, virtually everyone is seeking entrepreneurship in one form without even knowing it such as starting a social media account (Facebook, Instagram, Tik Tok, X), developing a small business or even making money from a side hustle.

However, many are unaware of sustainable entrepreneurship which could allow for independent workers the same benefits as traditional entrepreneurship while also helping to promote sustainability. Sustainable entrepreneurship is developing or promoting sustainable products that will financially benefit the sellers while also seeking to benefit the society in the long run. Entrepreneurs has a responsibility to consider the future ramifications of social innovation and business strategy and to practice business ethics that prioritize the long-term health of society at large. Sustainable entrepreneurship is governed by environmental concern and social commitments. It tries to reduce the negative impact of business on the environment and society.

Micro, small, and medium enterprises (MSMEs) are critical business enterprises. They are indispensable to national economies, but they fail at a high rate (Jayasekara et al., 2020). MSME failure rates within 3 years can be as high as 80% (Mhlongo & Daya, 2023, Adebisi & Bakare, 2019). The general business problem is some owner-managers of MSMEs do not know how to sustain their operations beyond 3 years, resulting in business closure. MSMEs form the backbone of the economy in countries worldwide and are an important contributor to economic activity (Franco et al., 2021; Jayasekara et al., 2020; Kocherbaeva et al., 2019). Also, MSMEs represent an essential pillar undergirding the national economy, generating most employment and providing income to wide cross-sections of the population (Simba & Thai, 2019). Countries rely on the activities and output of MSMEs to support gross domestic product (GDP) performance. The economic wellbeing of most nationals and residents hinges on the existence and

continuing operations of MSMEs. Sustainability is a strategic concern for MSME owner-managers. Sustainable entrepreneurship is a type of entrepreneurship that contributes to sustainable development. It involves creating economic and societal value through innovative solutions that are environmentally and socially beneficial. Education plays a key role in sustainable entrepreneurship by equipping people with the knowledge and skills to create innovative solutions to sustainability challenges. Establishing sustainable communities requires bridging the gap between academic knowledge and societal requirements; this is where entrepreneurial education comes in (Suguna; Sreenivasan; Ravi, 2024). The importance of transforming to a sustainable economy to protect against global crises such as climate change is widely recognized. Sustainable entrepreneurs are seen as playing a key role in this transformation process by creating innovative market solutions with environmental, social, and economic value. To date, there is no consensus on the skills education should deliver to create sustainable entrepreneurs to solve sustainability challenges (Raimundo & Rosario, 2023).

Entrepreneurs find or make opportunities, on which they then undertake action. While entrepreneurship often culminates in starting up a new venture, it can also take place within existing enterprises and organisations. Entrepreneurship is just as much about opportunity recognition and exploitation as it is about the process of starting up a venture, maybe even more so. To be an entrepreneur is first and foremost to have a certain mentality or way of looking at the world and second about knowing how to start and to run a new business. Sustainability and entrepreneurship, long thought to have come from the opposing worlds of not-for-profit charity and profit-seeking business, are two sides of the same coin. Persons engaged in sustainable development are persons who aim to foster systemic changes. Like entrepreneurs they are disruptors. They envision a world where social welfare is not equated with monetary revenues, which historically spurs the exploitation of people and places. They define social welfare in terms of well-being (O'Mahony, 2022; Taylor, 2011). Making the well-being of people and of our planet as the most important societal goal (rather than maximising profits and economic growth) is nothing short of a fundamental transformation of contemporary mainstream paradigms. A crucial driver of change is education and the teaching programmes that aim to create a better world and put sustainability and entrepreneurship at the centre.

### 1.1 Research Problem

Nigeria as a nation has since the year 2020 been facing economic meltdown and financial crisis. Prices of both locally made and imported goods have risen above 200%. Businesses in many areas are folding and some MSMEs are winding-up. The federal government has strived to strategically improve on the country's economic state, many measures has been employed but little or nothing has been done to harness the impacting role of entrepreneurship education on sustainable MSMEs in Nigeria. The inability of the governments to meet the expectations of their people has reinforced the need for more emphasis on entrepreneurship in developing countries, Nigeria inclusive. The discovery of oil in many countries in Africa, especially Nigeria seems to have crippled the resourcefulness that Africans were known for, (Okoli, and Allahna, 2014). However, after independence, the federal government of Nigeria began the privatization and indigenization scheme to promote the businesses of Nigerians so as to allow for a more stable and independent economy. Other economic policy programs have also been put in place to assist entrepreneurship in Nigeria. Such programs include Open Apprenticeship Scheme, Graduate Employment Programs, etc. This gears the economy towards a self-reliant stand. There are other policies that also make it easy for entrepreneurs to obtain needed funds. Such policies include Peoples Bank of Nigeria, Funds for Small-Scale Industries (FUSSI), co-operative societies etc. Also in her efforts to ensure job opportunity and self-reliance, the federal government of Nigeria through the ministry of education has made it compulsory for every student in the university to take a course in entrepreneurship before graduation. This is to free them from dependency on white collar job, to be self-employed and self-reliant after graduation.

Hence there is paucity on literature on the mediating role of entrepreneurship education on sustainable businesses. Hence, this study is poised to bridge this gap.

### 1.2 Objective of the study

The overall objective of the study is to examine the mediating role of entrepreneurship education on sustainable businesses; empirical evidence from Micro, Small and Medium Scale Enterprises in South East, Nigeria.

## 2. THEORETICAL BACKGROUND

### 2.1 Sustainability and sustainable development

The concept of sustainability usually describes the balance between the three dimensions of economic, social and environmental [United Nations Department of Economic and Social Affairs (UNDESA), 2021]. In this study,

sustainability is defined as the state in which this balance is achieved. Sustainable development is understood as processes that pursue this balance while meeting "the needs of the present without limiting the ability of future generations to meet their own needs" [United Nations General Assembly (UN), 1987, p. 43]. Although the concepts of sustainability and sustainable development are not new, they have steadily gained importance in politics, society and science over recent decades, especially in the light of increasingly drastic climate predictions and the already apparent consequences of climate change (Leal Filho et al., 2018). In 2015, the United Nations operationalised sustainable development into 17 goals to be achieved by 2030. These SDGs are also known as the 2030 Agenda. The SDGs are a shared expression of the needs of stakeholders at the global level and can serve as both an indication and a measure for progress towards the overarching objective of sustainability (Fonseca and Carvalho, 2019; Fonseca et al., 2020; Giangrande et al., 2019). While knowledge and research about sustainable development is increasingly available, this has not stopped humanity from pushing the limits of exploiting natural resources. This brings on urgency to the debate in sustainable development research, with a particular focus on the SDGs (Leal Filho et al., 2018).

Sustainability is "a capacity to maintain some entity, outcome, or process over time" (Jenkins, 2009) and using resources sustainably. This definition of sustainability covers all human and commercial activities. According to the broad definition, each action can be repeated infinitely without destroying it. According to Shiva (2010), the common definition of sustainability ignores environmental limits and the need to adjust human activities to sustain natural systems. Sustainability requires an ecological perspective because natural systems support human life and activity (Shiva, 2010). Thus, ecological sustainability is a framework for socio-cultural and economic sustainability and a topic of debate in sustainable development. It discusses sustainability. Sustainability is maintaining an entity, outcome, or process without depleting its resources. This means activities can be repeated without self-destruction. This broad definition of sustainability ignores environmental limits and the need to adapt human activities to natural systems, Shiva warns without them, ecological limits and sustainability cannot be addressed.

Ecological sustainability now underpins socio-cultural and economic sustainability. Ecological sustainability is essential to sustainability and development. The preceding briefly introduces sustainability, recognizes ecological sustainability, and emphasizes the need to integrate environmental considerations into human activities for long-term viability. United Nation Development Programme (UNDP) releases 17 sustainable development goals in 2015. Transforming Our World targets seek global change by 2030. They include ending extreme poverty and hunger, promoting economic growth and decent employment within planetary limits, advancing gender equality, social inclusion, and human rights, guaranteeing health and well-being for all ages, strengthening agricultural systems and rural prosperity, building inclusive, productive, and resilient cities, combating human-induced climate change, and establishing sustainable energy practice. Sustainable development meets human needs without harming future generations or the environment. Ukairo (2017) reiterates that sustainable development must consider environmental, social, and economic factors to preserve and improve future generations' quality of life

#### *How education helps*

**Develops skills:** Education can help people develop the skills to create jobs and become self-reliant.

**Inspires action:** Education can inspire people to make informed decisions and take responsible actions.

**Promotes sustainability:** Education can help people understand how to use current resources to achieve sustainability growth.

**Prepares future leaders:** Education can help prepare future leaders to address global sustainability challenges.

#### *What sustainable entrepreneurship education looks like*

**Multidisciplinary:** Sustainable entrepreneurship education combines sustainability principles with entrepreneurial practices.

**Holistic:** Sustainable entrepreneurship education considers environmental, social, and economic dimensions.

**Incorporates sustainability into lessons:** Sustainable entrepreneurship education integrates sustainability into educational curricula.

#### *Who sustainable entrepreneurship education is for*

**Higher education institutions:** Sustainable entrepreneurship education can be taught in higher education institutions.

**Secondary schools:** Sustainable entrepreneurship education can be taught in secondary schools.

## 2.2 Key Elements of Sustainable Entrepreneurship Education

This section presents the SE competences and teaching approaches that derived from the systematic literature review. The five most important SE competencies are system thinking competence, anticipatory thinking competence, normative competence, strategic competence and interpersonal competence. Of these five competencies system thinking and anticipatory thinking be the least contested in literature. A brief discussion of each of the five competences is follows. System thinking is 'the ability to identify and analyze all relevant (sub)systems across different domains (people, planet, profit) and disciplines, including their boundaries' (Ploum et al., 2018). It is one of the core competencies for sustainable entrepreneurs and is particularly important in the beginning of the sustainable entrepreneurial process (Foucrier & Wiek, 2019). Anticipatory thinking is 'the ability to collectively analyze, evaluate, and craft "pictures" of the future in which the impact of local and/or short-term decisions on environmental, social, and economic issues is viewed on a global/cosmopolitan scale and in the long term' (Ploum et al., 2018). Put differently, it concerns the ability to think long-term (intergenerational), about social/political developments and to be able to deal with risks and uncertainty (Biberhofer et al., 2019). Note that system thinking and anticipatory thinking in part overlap. System thinking is the thinking of different levels of space (local, regional, global), while anticipatory thinking deals with the thinking of different levels of time (past, present, future). They both deal with thinking beyond there and now and about venturing into more complex and uncertain considerations.

Normative competence concerns the ability to define sustainability values as the centre of entrepreneurial decisions (Ploum et al., 2019). 'Doing the right thing' is the main driver for the actions that sustainable entrepreneurs undertake. It is therefore closely related to values and worldviews that underlie SE competences (Biberhofer et al., 2019). As such the normative competence can be seen as the most fundamental or 'first' competence for SE. It also comprises negotiation and the reconciliation of norms, as one's own norms will inevitably at some point clash with others, especially with SE. It is therefore inherently related to the ability to think critically and be open to diversity to enter into discussion with others. Strategic competence 'is regarded as a set of skills that includes the ability to recognize and analyze problems, see new opportunities and possible solutions, and to bring sometimes highly idealistic visions, ideas and solutions of SDE "down to earth. Some see creativity and innovativeness as crucial parts of the strategic competency, while others describe strategic competency as comprising only default managerial skills that are devoid of any ingenuity. The strategic competency can therefore be viewed as a jacket that can be put on in two ways. Students might have to learn that running a successful business demands leadership skills such as innovativeness, having a vision, and thinking long-term by 'using and constantly reworking strategies to remain competitive on the social entrepreneurial market' (Halberstadt, Timm et al., 2019) as well as managerial skills such as organization, planning and controlling or 'how to identify a target customer segment, propose a relevant value, identify distribution methods, locate key resources, ensure adequate revenue streams' (Serhan & Yannou-Lebris, 2020).

The last competence of the CASE framework concerns interpersonal competencies and is especially important for SE because sustainable entrepreneurship calls for more dialogue than mainstream business and often involves a more diverse set of stakeholders to engage with. It underlies all other competences and is important throughout the entire entrepreneurial process (Foucrier & Wiek, 2019). Characteristics of this competency are the ability to communicate in a transdisciplinary way with multi-stakeholder networks and engage in participative teamwork and show integrative leadership (Biberhofer et al., 2019).

## 2.3 Sustainable Entrepreneurship Attitudes

Competences function as building blocks that make up the sustainable and entrepreneurial attitude and abilities a sustainable entrepreneur ought to have. In the SEE literature, attitudes, values, worldviews, orientations, intentions, and drivers (from here on referred to as attitudinal subjects or, shortened, attitudes) are also self-standing subjects of research. These attitudes are harder to grasp than the comparatively concrete competencies, but not less important. They are an inherent part of SE and are most obviously linked to normative competence. Concretely entrepreneurial intention, self-efficacy, sustainability orientation, and how these are related, are recurring themes for research.

## 2.4 Sustainable Entrepreneurship

Our review of the SEE literature indicates convergence on the competences necessary for a sustainable entrepreneur. Yet, the debate about the role of opportunity recognition, (previous) disciplinary knowledge, attitudinal subjects and, more generally but equally crucial, about the abilities of creativity and critical thinking/reflection in the sustainable

entrepreneurship process continues. Nonetheless, there is increasing agreement that all these elements, ranging from values and intentions to visionary and managerial aptitudes, are important for SE and therefore ideally should also be included in the content of a sustainable entrepreneurship teaching programme. The next question concerns the teaching methods, that is, how to teach the competencies, skills, and abilities. Since sustainable entrepreneurs rely more on a wide range of abilities than on specialized knowledge, sustainable entrepreneurship education aims to be as experiential as possible. Unlike conventional education known for top-down and instructional teaching methods, SEE involves students in 'learning by doing'. A key theme in SEE literature is the transition from traditional teacher-centered teaching to a more learner-centered teaching approach. Learner-centred learning in the view of Biberhofer and Rammels (2017: 73) is a form of experience-based learning, in the sense that 'the experience of the learner occupies a central place in all considerations of teaching and learning'. Experience-based learning also referred to as active or experiential learning, is a core characteristic of SEE, with the most often used forms being challenge-based or problem-based learning. The challenges or problems are often based on real-life sustainable entrepreneurial problems and situations and are usually designed as a project or a competition. Such solution-oriented teaching approaches have a collaborative character, while often also being competitive, with teams of students striving to have the best sustainable business model or prototype.

## 2.5 The role of marketing in sustainable development

The relevance of the marketing discipline to sustainability can be traced back to the 1970s – when the broader scope of marketing was recognised and the impact that marketing can have on social and environmental conditions was first highlighted (Kelley, 1971). Within research, there are usually two perspectives on the impact of marketing on sustainability. On the one hand, marketing is seen as contradictory to sustainable development. This reflects a view of marketing based on purely economic outcomes, e.g. ever-increasing consumption through exploiting natural resources (Kemper and Ballantine, 2019). On the other hand, by promoting the development of sustainable products and behaviours, marketing can bring about desirable changes in individual consumers, businesses and society towards sustainable development (Chandy et al., 2021; de Ruyter et al., 2022). Such a broader scope of marketing beyond economic outcomes is also reflected in the latest definition of marketing used by the American Marketing Association, which states that marketing should also create value for society as a whole [American Marketing Association (AMA), 2017]

## 2.6 Marketing Education and Sustainable Entrepreneurship

Overcoming sustainability challenges is essential to protect our planet and safeguard livelihoods while meeting the needs of the world's current and future populations [United Nations Department of Economic and Social Affairs (UNDESA), (2021); United Nations General Assembly (UN), 1987]. Consequently, accrediting bodies for higher education require that business schools "respond to the business world's changing needs by providing relevant knowledge and skills" (AACSB Business Accreditation Standards, 2020) and "to be actively engaged in promoting business ideas and solutions to sustainability challenges" (EQUIS Standards and Criteria, 2021). In the context of business education, marketing has a critical role to play because it has a direct impact on social and environmental conditions – far more than some other business disciplines (Kemper and Ballantine, 2019). Based on its ability to influence behaviour, marketing is well positioned to help reduce unsustainable practices and promote sustainable development in both businesses and society more generally (Gordon et al., 2011). Not integrating sustainability into marketing degree programmes risks making the discipline increasingly irrelevant in today's world (Radford et al., 2015) and wasting its potential to contribute to the forging of a sustainable world (Chandy et al., 2021).

## 2.7 Entrepreneurship Education

Learning is not entrepreneurship. Entrepreneurship education emphasizes behavior over business knowledge. In its final report, the European Commission (2011) states that entrepreneurship education creates a culture of, for, and about entrepreneurship. Students learn by doing. They're hard to teach passively. They need active, learner-centered, real-world learning. Entrepreneurship education should be a theme rather than a subject for all students (ECOTEC, 2010). To help youth develop above-average entrepreneurial skills, this means that schools must provide adequate resources and support to teachers and students in order for them to develop the skills and knowledge required for long-term entrepreneurship, such as mentorship, networks, and financial resources. European Commission in (2004), highlights that teachers must become learning facilitators to teach entrepreneurship. While in (2013) the commission establishes that entrepreneurship education focuses on maximizing opportunities. Entrepreneurship education should emphasize opportunity

realization, while management education emphasizes hierarchical operations. Entrepreneurship education gives students the knowledge, skills, and motivation to succeed in various fields (Akinwale, 2023).

Paul (2005) states the following goals of entrepreneurship education; to educate youth so they can be self-employed and self-sufficient, train young graduates to find new business opportunities creatively and innovatively, To boost economic development, train tertiary graduates in risk management to ensure bearing, reduce poverty, create job opportunities, reduced rural-urban migration, train and support young graduates to establish careers in small and medium-sized businesses, and to teach kids and adults perseverance so they can succeed in business Help the economy transition from traditional to industrial. Entrepreneurship education helps youth develop character, outlook, and purpose. It fosters innovative environments (European Union, 2006).

The Quality Assurance Agency (QAA) (2012) recognizes its value in laying the groundwork for innovation, establishing shared values, and fostering an entrepreneurial culture that promotes job growth, economic growth, and new forms of innovation. The literature on entrepreneurship education discussed above encourages students to think creatively, identify opportunities, and take initiative rather than simply teaching business knowledge. Entrepreneurship education emphasizes active, learner-centered teaching. Inquiry-based learning and real-world activities are encouraged. All students should learn entrepreneurship as a cross-cutting skill. It suggests teaching entrepreneurship thematically across disciplines and curricula. It is a well-known fact that entrepreneurship education has been primarily a priority for management and business students in most countries around the world, particularly in Nigeria. The purpose of this paper is to emphasize the importance of entrepreneurship education principles in both the teaching and learning of actual entrepreneurial skills as well as the teaching and learning of how to manage the business part of entrepreneurial to equip learners with what it takes to succeed.

## 2.8 Theoretical Framework

The theoretical framework to be used in explaining this paper is Resource-Based Theory (RBT) which was first put forward by Penrose (2009), he proposed a model for the effective management of a firm's resources, diversification strategy, and productive opportunities. His publication was the first to propose conceptualizing a firm as a coordinated bundle of resources to address and tackle how it can achieve its goals and strategic behaviour (Penrose, 2009; Penrose, 2009). RBT began to take shape in the 1980s. The antecedent of RBT was the Theory of the growth of the firm. Later, during the 1990s, Jay Barney's work was critical to the emergence of RBT and became the dominant paradigm in strategic management and strategic planning. The Resource-based Theory suggests that resources that are valuable, rare, difficult to imitate, and non-substitutable best position a firm for long-term success.

These strategic resources can provide the foundation to develop firm capabilities that can lead to superior performance over time. Two RBT assumptions explain how firm-based resources provide persistent competitive advantage and why some companies outperform others by becoming more competitive (Helfat & Peteraf, 2003). First, firm resource bundles differ. RBT bases its competitive advantage on a population of enterprises' heterogeneity of resources and capabilities. The heterogeneity of resources assumes that a firm with unique resources in a specific setting can perform some activities better and gain a competitive advantage. Second, the complexity of exchanging resources among enterprises may perpetuate resource inequalities (the assumption of resource curriculum, and support systems for entrepreneurial activities are examples of these resources).

Educational Administrators can improve students' entrepreneurial abilities by focusing on developing these resources, resulting in a higher potential for sustainable development. Administrators can also use RBT principles to prioritize resource allocation and investment decisions. They can identify the specific resources and capabilities that align with the goals of sustainable development and ensure that these resources are used effectively. Administrators can also create an environment that promotes resource sharing, collaboration, and knowledge exchange among students, faculty, and external stakeholders. Administrators can contribute to the overall goal of sustainable development within their educational institutions and beyond by cultivating a culture of entrepreneurship and resource utilization. School administrators can use Resource-Based Theory to promote positive outcomes in the context of entrepreneurship education for sustainable development. Administrators can identify and cultivate valuable and unique resources within their educational institutions by leveraging the theory's principles, which provides a framework for identifying and managing these resources effectively to achieve long-term success.

## 3. CONCLUSION

The importance of entrepreneurship in addressing social, environmental, and economic hurdles is central to achieving the Sustainable Development Goals (SDGs). Entrepreneurship makes a central contribution to sustainable development by creating jobs in SMEs, with poor access to resources, while driving inclusive economic growth and innovation, improving social conditions, and dealing with economic environmental shocks such as the uncertainties of the current food, energy, and financial crises. Also, entrepreneurship remains the last resort for self-employment in the face of the aforementioned crises. Therefore, it urges effective government support by inclusive and sustainable policies for innovation and business-friendly contexts. In the light of sustainability, entrepreneurship policies should thus be coherently carried out, bearing in mind both the sustainability of the results and the benefits to entrepreneurs. Sustainable entrepreneurship (SE) is thus considered central to solving challenges through innovative, proactive, and risk-taking solutions. Given the pressing global challenges underpinning the SDGs, marketing managers can no longer only focus on purely economic outcomes but must simultaneously respond to social and environmental concerns.

### 3.1 Educational implication for Sustainable Entrepreneurship and development

Regarding guidance for the practical implementation of integrating sustainability into marketing education, the MESD framework recommends that marketing degree programmes – using the SDGs as guiding principles and applying experiential learning as well as internet-based and online education – provide students with key competencies for sustainable development. The SD competencies should be adopted by marketing educators as learning objectives. Marketing educators can use this study's findings about pedagogical approaches to help design courses that deliver on these learning objectives. However, measures must be identified that can track student's performance regarding the acquisition of these SD competencies. Business schools can benefit from delivering marketing courses in a sustainability context. The SDGs point to several topics that can be addressed in addition to traditional curriculum content. At the same time, the SDGs – as representing an international agreement – can also provide a purpose to students. In conclusion, we encourage business schools, and marketing faculty in particular, to consider the above recommendations to help transform students into change agents who can contribute to marketing's huge potential for achieving a more sustainable future, thereby also meeting the demands of SDG4 and current accreditation standards. We call on marketing education researchers and marketing educators to build on our findings, to continuously develop the MESD framework and find ways to implement and test it in practice.

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