













Sustainable Impact Entrepreneurship Model: ECOCOLOR, a Success Story





Modelo de emprendimiento con impacto sostenible: ECOCOLOR, una historia de éxito

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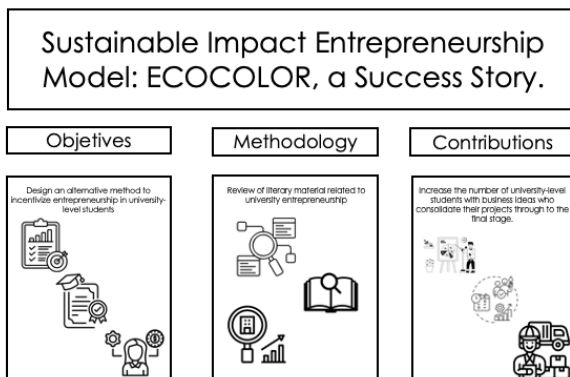


Abstract

The research addresses aspects related to entrepreneurship and the role of teachers as advisors and coaches for students with business ideas, to generate an alternative for fostering student entrepreneurship at the Technological University of Cancun, a specific case for students of the Bachelor's Degree in Business Innovation, Marketing Area.

Resumen

La investigación aborda aspectos relacionados al emprendimiento y el papel de los docentes como asesores y guías de alumnos con ideas de negocio, a fin de generar una alternativa para el fomento del emprendimiento estudiantil en la Universidad Tecnológica de Cancún; caso específico en los estudiantes de la Licenciatura en Innovación de Negocios Área Mercadotecnia.



Models, entrepreneurship, social impact



Modelos, emprendimiento, impacto social

Area: Strengthening the scientific community

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Peer review under the responsibility of the Scientific Committee MARVID®- in the contribution to the scientific, technological and innovation Peer Review Process through the training of Human Resources for the continuity in the Critical Analysis of International Research.



Introduction

The concept of sustainability has been incorporated into academic and business discourse since the last decade of the 20th century, following recognition of the need to conserve resources and address various social problems. In 1992, the Earth Summit was held in Rio de Janeiro, Brazil, where a programme was approved to develop an even more sustainable model of growth [Fernández-Vallejo, 2022].

Subsequently, scientific evidence was presented demonstrating how human activity had influenced climate change, as well as the dangers of inaction in this regard. As countries took a stand on this serious problem, the foundations were laid for action plans and projects in line with sustainability [Cabanzo Carreño, 2022].

Based on these studies, nations established public policies to address international red flags, such as Sustainable State Development Plans, Ecological Land Use Plans, National Protected Natural Areas System Policies, among other documents. At the business level, standards have been adopted to ensure more sustainable processes and companies that could be certified, some examples being international standards. However, this variability in how the phenomenon of sustainability should be understood and addressed in environmental, economic, and social terms has allowed companies to enter the standards game not only to generate added value but also to use labels and seals that become valid instruments for increasing sales and competitiveness in all areas of business [Calderón Moscoso, 2024].

Fundamentals of Sustainable Entrepreneurship

Sustainable entrepreneurship is a commitment to taking advantage of business opportunities while seeking to support a sustainable economy, contributing to the creation of sustainable technologies and services that offer solutions to the social problems present in these areas. It involves transforming a product or service by reducing its environmental or social impact compared to less sustainable alternatives [Martinez et al. 2023].

A sustainable enterprise does not break away from the community, from the flat market to the neighbourhood or neighbouring locality; it is found in the people around it and in a person who finds their goal or a social fund. In particular, emerging ventures make it possible to address and close the gap with other types of organisations in terms of the social appropriation of available resources, or to introduce technological improvements that are not necessarily adjustable.

Sustainable entrepreneurship is relevant both in economic and socio-environmental terms, in terms of responsibility for energy consumption and the use of available resources [Arista-Cancino & Colina-Ysea, 2024].

Through sustainable entrepreneurship, tools can be found to improve the local situation, coordinating strategic aspirations, enhancing the local image or social plaques, and carrying out financial monitoring in the form of arbitrage, income in the form of potential income on actual users, and on resources that will not be socially extracted for a period in which they remain available to be used again [Valdiviezo & Pazmiño 2024].

Concept of Sustainable Entrepreneurship

This concept has been gaining increasing prominence in academia and business practice, largely due to the global economic crisis caused in particular by irresponsible management of certain business practices. This situation has resulted in countless highly criticisable ethical behaviours, the loss of a large number of jobs and a profound restructuring of many industries, culminating in the current global economic crisis [Guerrero, 2023].

It is in this context that the need to seek alternatives to existing traditional business models has arisen, and thus most entrepreneurs and researchers have begun to use terms such as solidarity, cooperation, sustainable development, eco-entrepreneurship, fair trade, social and responsible business to express in some way their intention to improve society and/or the environment [Esquinas Rychen, 2023].

Some researchers have concluded that there is a specific relationship between entrepreneurship and sustainability.

To better understand this, it is necessary to comprehend the real evidence that, historically, some societies have based their progress and economic development on the unsustainability of their resources, increasingly aggravating the situation of the population and initiating a cycle of dependency and underdevelopment [Guerrero, 2023].

Relevance of Sustainable Entrepreneurship

Sustainable entrepreneurship is the business approach that is most aligned with the social and environmental demands pursued by the 2030 Agenda. Sustainable entrepreneurship integrates the economic, social and environmental dimensions of business activities [Álvarez et al., 2024].

In this sense, the importance of sustainable entrepreneurship lies in the fact that its success is measured not only in economic, financial or market terms, but also in the social and environmental characteristics of companies. As progress is made towards the Sustainable Development Goals [SDGs], efforts to develop entrepreneurial skills present challenges and opportunities for the region [Solarte et al. 2023].

In 2020, there were 145 million people in the region living in poverty, around 29.5% of the total population. This dense landscape, where multidimensional inequality and extreme vulnerability predominate, indicates that the countries of the region have been investing efforts for some years in promoting entrepreneurship as a source for achieving the goals of the Sustainable Development Agenda, identifying an alignment between the interest in developing entrepreneurship and the need to generate new sources of income for the most vulnerable population.

Sustainable entrepreneurship, at multiple levels, plays an important role in the development of metropolises. Through new products and services, by promoting local economies and creating productive and decent jobs, it can contribute to the country's economic growth. Growing global, social, cultural and economic interdependencies have meant that, at present, all countries are confronted with the same economic, social and environmental reality, in which the principles of sustainability and social and cultural values have been altered, generating crises at the international level [Maguiña Leyva, 2024].

Education and Training

Entrepreneurial education has been the subject of a large number of studies. All have reached the same conclusion: entrepreneurs are, in general, people with little business training and who do not have the training that, depending on the size of the company, might be expected. However, they have also reached different conclusions regarding business training and have drawn up a profile or portrait of the business-trained person.

Although the topic has attracted interest, less research has been done on the origin and type of business education, both formal and informal. As a result, most of the references that form part of business education training programmes remain as hypotheses to be confirmed [Ospina, 2018].

The main objective of this study is to gain a deeper understanding of business education in relation to the creation of companies, and more specifically, micro-enterprises. Based on this diagnosis, it is hoped that business teaching will improve, both in terms of content and form. All of this is being carried out with a view to future definitions of the content of the different compulsory subjects that make up university curricula. The research takes into account the perception of those responsible for entrepreneurship in the productive fabric. Hence, the study aspires to be a reference tool for educators.

Training Programmes

The development of initiatives to promote sustainable entrepreneurship, which seek to strengthen the leadership of enterprises, empowering their leaders and enhancing their capabilities through access to quality education, has been an ongoing objective of many specialised organisations, as well as several governments.

Likewise, minimising differences in access to education and valuing knowledge serves to promote equality by training beneficiaries to better cope with adversity and risk, as well as promoting different strategies associated with the use and protection of natural resources, generating new spaces for different sectors of society to meet and exchange knowledge and experiences, and facilitating new opportunities for future entrepreneurship.

It is important to highlight the use of workshops, conferences, exhibitions and entrepreneurship platforms aimed at promoting learning and reducing the gap between trainers and beneficiaries, allowing for greater interaction and facilitating the exchange of knowledge and experiences [Arias and Echeverry 2023].

Mentoring and Advice

In the 21st century, most countries in Latin America and the Caribbean are promoting initiatives in favour of entrepreneurship as a way of creating employment. In most cases, these public policies establish a framework that includes incentives and programmes to promote private initiatives to generate employment by new entrepreneurs.

One of the barriers limiting the empowerment of society through job creation is the lack of mentoring and counselling to strengthen these initiatives and their continuous monitoring during the first months of the new entrepreneurs' lives [Mesa et al. 2023].

It is essential for public institutions dedicated to promoting entrepreneurship and business creation to integrate plans to promote mentoring and advice for all these initiatives six months after their launch [Aguilar, 2023].

In several developed countries, some of these services are provided by institutions and universities in their role of linking with their environment, but in most countries in Europe and Latin America, these actions tend to come to a standstill after promoting the public initiative to allow the creation of new businesses and generate employment [Ramírez, 2025].

Sharafizad, [2017], as cited in Portuguese [2020], mention that in recent studies related to the application of mentoring in entrepreneurship education, the mentor's intention to share their experiences, as well as the apprentice's ability and intention to learn from them, are considered important for the success of its implementation, where there is interaction between those involved and a relationship is established through effective communication.

Support Networks

Newly created companies need informal, fundamentally human support at the beginning of their journey, which allows them to advance in an often hostile environment. This means that, to a large extent, it is trust and a willingness to support that will result in the company becoming a meeting point for business, contacts, information, training and opportunities to be seized. Throughout this chapter, we have analysed the role played by different types of support networks in the early stages of any economic activity aimed at the production of goods or services.

Firstly, incubators and accelerators are proposed as a model of business support that provides a wide range of benefits to the company and is usually promoted by public institutions, universities or large companies.

Incubators and Accelerators

Currently, business incubators and accelerators have a long history of generating new businesses and have had a significant impact on promoting entrepreneurship in different sectors and geographical areas. The main objective is to provide micro-enterprises in the process of formation with assistance in different areas so that they can develop and remain in the market [García et al., 2025].

The most significant difference between incubators and accelerators is the duration of the process. While incubators provide support for a period of two to three years, based on the philosophy that companies should develop their full potential, the philosophy of accelerators is to extract the maximum potential from companies in a shorter period of time [six to 18 months] in order to assess whether it is viable to bring the company to market.

While some consider accelerators to be focused on technology startups with low costs and high potential, others have shown that they can support startups in any sector.

Unlike incubators, accelerators tend to offer predefined, intensive programmes for learning and implementing a series of stages and objectives [Casali, n.d.].

The following lines present a compilation of the most common model currently used in large accelerators that have set trends in the sector. These are as follows: continuous mentoring, shared workspaces, training, courses and workshops, seed capital, facilitation in subsequent fundraising, alliances with other actors in the ecosystem, commitment to generating networks and contacts, and differentiated relationships with relevant actors in the system.

The growing importance of these methodologies in the entrepreneurial ecosystem justifies the need to delve deeper into how different incubators and accelerators periodically report on how significant they perceive their relationships with other actors to be in their final positioning and what practices they adopt from this perspective with regard to relationship management.

Entrepreneurial Cooperatives

Cooperatives are one of the associative forms of entrepreneurship since, traditionally, they bring together people who are in a vulnerable situation, who have common interests and the intention to accomplish a common task. On this basis, entrepreneurship emerges from the activity that solves their problems and/or needs. In the context of sustainable entrepreneurship, cooperatives can be formed both in the activity of people organised to improve their quality of life and in the generation of autonomous activities that make them more sustainable. If we add to this the training role of the cooperative, generating autonomous human resources and improving the quality of life of its members, the ultimate goal is for this action to have a significant impact on the social and environmental context [Sorroche, 2017].

ECOCOLOR, a sustainable project with teacher guidance

In the case of the Technological University of Cancún, since the start of operations in 2012 of the Higher Technical University Degree in Business Development in the area of Marketing, 13 years ago, entrepreneurship has been continuously promoted, including through the development of business plans. However, the results have been unfavourable, as no companies have been formally registered, even though the projects were viable and appeared to be financially profitable.

Therefore, this article highlights the results of a project by five students from the Higher Technical Degree in Business Innovation and Marketing [LINM] who, in 2024, through the Integrative I course, developed a product aimed at tourism in Quintana Roo: coloured pencils made from 55% sargassum and 45% recycled paper.

At the end of the semester, the students decided to continue with the idea and carry it out in real life, so they approached their teachers to receive advice and mentoring for the project. This allowed several teachers to get involved in the project, each contributing their academic knowledge and work experience as part of the Academic Body's activities.

As a result, from September 2024 to July 2025, significant progress has been made in the development of the project called ECOCOLOR, as mentioned below.

1. Formation of the students as equal collaborators for the development of the project, brand creation, and prototype design.
2. Integration of four professors from the Business Academy to provide support and advice to the students through the Academic Body.
3. Assistance in reviewing calls for proposals to obtain financial and administrative resources for
4. ECOCOLOR.
5. Mentoring to improve the colour manufacturing process.
6. Registration of the ECOCOLOR brand with the Mexican Institute of Intellectual Property [IMPI].
7. Involvement of the authorities of the Technological University of Cancún [which gave the project an even greater boost].
8. Guidance in the preparation of presentations to promote the project to the authorities.
9. Advice on alignment with the State Government's priorities and the Sustainable Development Goals.

10. Financial and material support for the students from the teachers, in order to develop a product to show to the authorities.
11. Accompaniment of students with the authorities of the Federal Maritime Land Zone [ZOFEMAT].
12. Presentation of the product to the Municipal Ecology Department to obtain support for supplies [recycled paper and sargassum].
13. Presentation of the product to the Secretary of Economic Development of the State of Quintana Roo.
14. Presentation of the product at the International Sustainability Congress in Chicago 2025.
15. Presentation of the product to the Municipal President of the Municipality of Benito Juárez in Quintana Roo.
16. Presentation of the product to the Governor of the State of Quintana Roo.
17. Presentation of the product to the Federal Secretary of SEMARNAT.
18. Interviews in the media and social networks.
19. Winners of the state award from the Ministry of Economy.
20. Participation in the Science Clubs promoted by the Quintana Roo Council for Humanities, Sciences and Technologies [COQHICYT].

With all of the above, ECOCOLOR aims to be the first LINM university project to be registered and operating as a company, even before the five students finish their degrees in 2027.

Consequently, there is an urgent need to design a guide in the future, with this alternative working model, so that students from subsequent generations with new business ideas can receive academic advice and support from different professors in the management and administration of their projects.

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