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Sustain cubator “Eco Innovate Hub”: Nurturing green entrepreneurship in higher education

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Abstract---Purpose: This study presents a groundbreaking proposal for an academic business incubator model that aligns with sustainable development principles, using the "EcoInnovate Hub" Business Incubator as an exemplar. The model aims to bridge the gap between academic knowledge and practical entrepreneurship while promoting sustainable business practices. The research explores the incubator's role in fostering innovation, job creation, and economic diversification, particularly in the context of Saudi Arabia's transition to a knowledge-based economy. The study's objectives encompass analyzing the structure and methodology of the proposed model, examining its potential impact on sustainable development goals, and evaluating collaboration among academic institutions, government entities, and non-governmental organizations in supporting entrepreneurship. Through a comprehensive review of existing incubator models and sustainable development guidelines, the research outlines the incubator's working mechanism, emphasizing the integration of academic resources and practical business support from idea analysis to market development. Results. Ultimately, the study concludes that implementing similar models in academic institutions can significantly contribute to developing sustainable

entrepreneurs and achieving comprehensive sustainable development goals, recommending their adoption to foster innovation, enhance economic resilience, and promote sustainable business practices.

Keywords---incubator, sustainable development, Entrepreneurship, Innovation.

Introduction

In the rapidly evolving landscape of global entrepreneurship, academic business incubators have emerged as crucial catalysts for innovation and economic growth. This study proposes a novel academic business incubator model, the "EcoInnovate Hub" Business Incubator, designed to align with sustainable development guidelines. The research addresses the pressing need for integrating sustainability principles into entrepreneurship support systems, particularly within academic environments.

In the early 1970s, the idea of sustainable development for natural resources emerged. It was introduced at the international level by global institutions and organizations concerned with environmental protection. The content of this idea or new approach was disseminated and explained through global summits and conferences held in various countries around the world.

This concept was further developed and given its true meaning. It was also placed within a legal framework and formulated into an international legal system, which made countries commit to and abide by the legal provisions and regulations that came through the establishment of this idea on the international stage. (Laksaci Sid Ahmed, 2022)

Aim of the Study

The primary aim of this study is to develop and present a comprehensive model for an academic business incubator that not only fosters entrepreneurship and innovation but also adheres to sustainable development principles. Specifically, the research seeks to:

- Conceptualize an academic business incubator model that bridges the gap between academic knowledge and practical entrepreneurship.
- Integrate sustainable development guidelines into the incubator's operational framework.
- Explore the potential impact of such a model on entrepreneurial success and sustainable economic growth.

Research Problem

The topic of sustainable development has received significant attention from researchers and academics, with numerous studies and research related to it. Several definitions have been provided to explain the meaning and content of sustainable development. Among these is the definition from the Brundtland Report, which defined it as:

"Meeting the needs of the present without compromising the ability of future generations to meet their own needs. The principle of sustainability is based on economic growth and achieving social justice while maintaining natural balance."
(Imene Ramdane, 2023)

Despite the proliferation of business incubators globally, there remains a significant gap in models that effectively combine academic resources, practical business support, and sustainability principles. This study addresses the following key problem:

How can academic business incubators be structured to promote both entrepreneurial success and sustainable development?

The "EcoInnovate Hub" Business Incubator model proposed in this study aims to address these challenges by offering a multifaceted approach to entrepreneurial support. This model encompasses practical and strategic assistance, a sophisticated methodology for idea development, and enhanced collaboration among various stakeholders.

Through a detailed examination of the incubator's working mechanisms and support stages, from idea analysis to market implementation, this research aims to contribute to the body of knowledge on sustainable academic entrepreneurship. The findings of this study have the potential to inform policy-makers, academic institutions, and entrepreneurship support organizations in developing more effective and sustainable incubation models.

Business Incubators:

The emergence of business incubators represents a significant economic innovation in fostering entrepreneurship and supporting small and medium-sized enterprises (SMEs). These institutions serve as catalysts for economic growth by providing crucial resources to aspiring entrepreneurs who possess innovative ideas but lack the financial and managerial capabilities to bring them to market.

The concept of business incubators originated in 1959 in the United States with the establishment of the Batavia Industrial Center. This pioneering model demonstrated how underutilized industrial space could be repurposed to stimulate local economic development. By offering affordable workspace, shared equipment, and mentorship to nascent businesses, the Batavia Center created a nurturing environment for startup growth and job creation.

The economic potential of this model gained recognition, leading to the formation of the American Association of Business Incubators in 1985. This institutionalization of the incubator concept accelerated its adoption across the United States, as both public and private sector entities recognized its efficacy in fostering innovation, creating jobs, and revitalizing local economies.

The economic benefits of business incubators soon attracted international attention, particularly in the European Union. Recognizing the potential to boost competitiveness and drive regional development, European countries began

implementing their own incubator programs, with the first European business incubator established in 1986.

This proliferation of business incubators globally underscores their role as a key economic development tool. By providing a supportive ecosystem for startups, incubators help mitigate the high failure rates typically associated with new businesses. They facilitate the commercialization of innovative ideas, accelerate the growth of SMEs, and contribute to the diversification and dynamism of local and national economies. Moreover, by nurturing entrepreneurship, incubators play a crucial role in fostering innovation-driven economic growth and enhancing overall economic resilience.

Definitions:

The incubator model is built on the premise that by offering a blend of resources, guidance, and infrastructure, it can significantly enhance the chances of success for these nascent businesses. This support typically encompasses areas such as research development, technological innovation, and marketing strategies – critical components that many startups struggle to navigate independently. By bridging the gap between innovative concepts and market-ready businesses, incubators play a vital role in fostering economic growth, promoting technological advancement, and cultivating a culture of entrepreneurship within the region." (Croche Iman, 2022)

"A business incubator is a specialized entity that provides a nurturing environment for nascent enterprises, offering a comprehensive suite of services, resources, and support mechanisms. These incubators aim to bolster the success rate of startups and small businesses by mitigating the challenges associated with the critical launch phase. They typically offer their services for a limited period, usually up to three years, and can be operated by public, private, or mixed ownership structures. (Mohamed Nafissa Bamhammed, 2021)

The incubator's support often encompasses physical facilities, mentorship, networking opportunities, access to funding, and various business development services. By leveraging their expertise, relationships, and resources, incubators create an ecosystem that fosters innovation, enhances the viability of new ventures, and contributes to economic growth and entrepreneurship development." (Attia, 2022)

Business incubators are dynamic, multifaceted organizations designed to foster the growth and success of early-stage companies and entrepreneurial ventures across various sectors of the global economy. These specialized entities provide a structured and nurturing environment that offers a diverse range of resources, services, and support mechanisms to startups and emerging businesses during their most vulnerable initial phases. Key features of business incubators on a global scale include: (Lahmar, 2016)

- Comprehensive Support: Incubators offer a holistic suite of services, including mentorship, business planning, financial guidance, legal advice, market research, and networking opportunities.

- Physical and Virtual Spaces: They often provide flexible workspaces, shared facilities, and increasingly, virtual support platforms to accommodate diverse business needs and global reach.
- Access to Funding: Many incubators facilitate connections to investors, venture capitalists, and other funding sources, crucial for the growth of new ventures.
- Knowledge Transfer: Incubators serve as hubs for sharing expertise, best practices, and industry insights, often leveraging partnerships with universities, research institutions, and established corporations.
- Cultural Adaptation: Global incubators adapt their models to fit local entrepreneurial ecosystems, economic conditions, and cultural contexts while maintaining international best practices.
- Sector Specialization: Some incubators focus on specific industries such as technology, biotech, clean energy, or social enterprises, providing specialized knowledge and resources.
- Time-Bound Support: Typically, incubators offer their services for a defined period, usually ranging from six months to three years, aiming to launch businesses into self-sufficiency.
- Economic Catalysts: On a broader scale, incubators act as engines for economic development, job creation, innovation, and technological advancement in their respective regions and globally.
- Diverse Ownership Models: Incubators can be operated by governments, private entities, universities, non-profit organizations, or through public-private partnerships, reflecting the diverse stakeholders in the entrepreneurial ecosystem.
- Performance Metrics: Global incubators often employ standardized metrics to measure their impact, such as the number of jobs created, funding secured by incubated companies, and successful exits.

By providing this multifaceted support, business incubators play a crucial role in nurturing innovation, fostering economic resilience, and cultivating a global culture of entrepreneurship. They serve as critical bridges, helping transform promising ideas into viable, scalable businesses capable of competing in the global marketplace."

Objectives of Business Incubators

Business incubators aim to achieve a set of objectives that can be summarized in the following points (Hakim Zaidi, Mufid Abdellaoui, 2021):

- Develop new ideas that contribute to creating a new innovative project or developing an existing project;
- Translate ideas into marketable products or processes;
- Provide support, funding, guidance services, and facilities;
- Offer research, knowledge, and training;
- Connect new projects with the market by forming a common link between these projects and those that already exist;
- Develop human resources and solve the problem of unemployment;
- Continuously evaluate incubated projects to identify weaknesses and attempt to avoid them in other projects.

This translation outlines the key objectives of business incubators, emphasizing their role in fostering innovation, providing comprehensive support, and contributing to economic development.

Startups and university incubator:

Since 2020, Algeria has adopted a new economic model that prioritizes startups and business incubators. To embody this approach, the higher education sector sought to adopt university incubators to enhance the entrepreneurial orientation of students and guide them towards establishing startup projects. The aim of this research is to shed light on startups and the procedures for supporting them, and to highlight the new orientation of the higher education sector towards establishing university business incubators, demonstrating their importance in attracting Algerian university students to create startup projects.

Startups

A startup is a newly established company founded by an entrepreneur or a group, with the aim of developing a unique product or service to launch in the market. It is based on a business model capable of rapid and effective growth compared to other traditional institutions. (Dinawi Anfal Aisha, Zarwat Fatima Zahra, 2020). Eric Ries defines startups as: "A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty." (Eric Ries, 2011). The Algerian legislator views startups as any institution subject to Algerian law that respects the following criteria: (Official Gazette of the Algerian Republic, 2020)

- The company must not be more than eight (8) years old;
- The company's business model must be based on innovative products, services, business models, or ideas;
- The annual turnover must not exceed the amount to be determined by the National Committee;
- At least 50% of the company's capital must be owned by natural persons, approved investment funds, or by other institutions that have obtained startup status;
- The company's growth potential must be sufficiently large;
- The number of employees must not exceed 250.

Expanded Commentary:

Startups represent a dynamic and innovative sector of the modern economy, characterized by their potential for rapid growth, disruptive ideas, and adaptability. Let's delve deeper into the concept and its implications:

- **Innovation-Driven:** Startups are fundamentally built around novel ideas or approaches. This could be a new technology, a unique business model, or an innovative solution to an existing problem. The emphasis on innovation distinguishes startups from small businesses that may be new but follow traditional models.
- **Scalability:** A key characteristic of startups is their potential for rapid scaling. Unlike traditional businesses that might grow steadily over time,

startups are designed to expand quickly, often targeting large or global markets.

- Uncertainty and Risk: As highlighted in Eric Ries's definition, startups operate under conditions of extreme uncertainty. This uncertainty stems from factors such as unproven business models, new markets, or cutting-edge technologies.
- Funding Models: Startups often rely on different funding sources compared to traditional businesses. These may include venture capital, angel investors, crowdfunding, or startup incubators and accelerators.
- Agile Methodology: Many startups adopt agile and lean startup methodologies, focusing on iterative development, minimum viable products (MVPs), and rapid customer feedback cycles.
- Culture and Work Environment: Startup culture is often characterized by flexibility, flat hierarchies, and a strong emphasis on innovation and teamwork.
- Exit Strategies: Many startups are built with potential exit strategies in mind, such as being acquired by larger companies or going public through an IPO.
- Economic Impact: Startups play a crucial role in economic development, job creation, and technological advancement. They often drive innovation in established industries and create entirely new market categories.
- Global Phenomenon: While the Algerian definition provides specific criteria, the concept of startups is global, with startup ecosystems developing in major cities worldwide.
- Challenges: Startups face numerous challenges, including securing funding, attracting talent, navigating regulatory environments, and achieving product-market fit.

The criteria set by the Algerian legislator provide an interesting framework for defining startups within a specific national context. These criteria, such as age limits, ownership structure, and employee count, help to create a clear legal and regulatory environment for startups, which can be crucial for governmental support and ecosystem development.

3.2.2. University Incubators

University incubators, have emerged as significant entities in the entrepreneurial ecosystem, bridging the gap between academic research and commercial application. These institutions play a crucial role in fostering innovation, supporting nascent businesses, and contributing to economic development. As the concept of university-based incubation has evolved, various scholars have attempted to define and characterize these entities. This article explores the multifaceted nature of academic incubators through a comprehensive review of definitions provided by prominent researchers in the field. (Towards a Knowledge Society: "Science Parks and Technology Zones", 2004)

Since 2020, Algeria has adopted a new economic model that prioritizes startups and business incubators. To embody this approach, the higher education sector sought to adopt university incubators to enhance the entrepreneurial orientation of students and guide them towards establishing startup projects. The aim of this

research is to shed light on startups and the procedures for supporting them, and to highlight the new orientation of the higher education sector towards establishing university business incubators, demonstrating their importance in attracting Algerian university students to create startup projects. To address the role of university incubators in attracting Algerian university students to establish start-up projects, let's explore this topic in detail:

The Role of University Incubators in Attracting Algerian University Students to Establish Start-up Projects:

- Bridging the Gap Between Academia and Industry:
 - o University incubators serve as a crucial link between academic knowledge and practical business applications.
 - o They help students translate theoretical concepts learned in classrooms into viable business ideas.
- Providing Resources and Infrastructure:
 - o Incubators offer physical workspace, often at subsidized rates, which is crucial for cash-strapped student entrepreneurs.
 - o They provide access to technology, laboratories, and other necessary equipment that might be otherwise unaffordable for students.
- Mentorship and Guidance:
 - o Experienced entrepreneurs, industry experts, and academics offer mentorship to student start-ups.
 - o This guidance helps students navigate the complexities of starting and running a business.
- Networking Opportunities:
 - o Incubators facilitate connections between students and potential investors, partners, and customers.
 - o They often organize networking events, pitch competitions, and industry meetups.
- Financial Support and Funding Access:
 - o Many university incubators offer seed funding or help students access grants and investor networks.
 - o They assist in preparing financial projections and pitch decks for funding applications.
- Entrepreneurship Education:
 - o Incubators often conduct workshops, seminars, and training sessions on various aspects of entrepreneurship.
 - o This supplements formal education with practical, hands-on learning experiences.
- Fostering Innovation Culture:
 - o The presence of incubators on campus promotes a culture of innovation and entrepreneurship among students.
 - o It encourages students to think creatively and consider entrepreneurship as a viable career path.
- Reducing Risk and Failure Rate:
 - o By providing support and resources, incubators help reduce the risk of failure for student start-ups.

- This increased likelihood of success can attract more students to entrepreneurship.
- Alignment with National Economic Goals:
 - University incubators in Algeria often align their focus with national economic priorities, encouraging students to innovate in key sectors.
 - This alignment can help in job creation and economic diversification, which are crucial for Algeria's economy.
- Promoting Technology Transfer:
 - Incubators facilitate the commercialization of university research, encouraging students to turn innovative ideas into marketable products or services.
- Addressing Local Challenges:
 - They encourage students to develop solutions for local problems, promoting socially responsible entrepreneurship.
- Building a Supportive Ecosystem:
 - University incubators contribute to building a broader entrepreneurial ecosystem in Algeria, which can have long-term benefits for the country's economic development

Field Framework and Necessary Data on the Reference Incubator

More than twenty years ago, the rulers of the Kingdom of Saudi Arabia decided to adopt a strategic step to diversify its economy from an oil or petroleum-based economy to a knowledge-based economy. The King Abdulaziz City for Science and Technology, in cooperation with the Ministry of Planning, developed a long-term national policy in the field of science and technology, which was approved in 2002. From this policy emerged all the necessary tools for a knowledge-based economy to achieve sustainable development in the country.

Technology and business incubators in the Kingdom of Saudi Arabia are among the most important components and elements that play a vital and effective role in achieving the larger goal, which is adopting an approach to transform the economy that depends on depleting natural resources to a knowledge economy that depends on inexhaustible human minds, and thus achieving sustainable development, which is ensuring the future of coming generations. In this regard, an economic and social development authority focuses on modern technologies that in turn aim to select the entity, establish, accelerate growth, and organize commercial projects through a comprehensive program to provide assistance to commercial projects.

Information about the Incubator of Salman bin Abdulaziz University

More than ten years ago, the rulers of the Kingdom of Saudi Arabia decided to adopt a strategic step to diversify its economy from an oil or petroleum-based economy to a knowledge-based economy. The King Abdulaziz City for Science and Technology, in cooperation with the Ministry of Planning, developed a long-term national policy in the field of science and technology, which was approved in 2002. From this policy emerged all the necessary tools for a knowledge-based economy to achieve sustainable development in the country.

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The Badir Incubator - Salman bin Abdulaziz University in the Kingdom of Saudi Arabia is one of the most important components and elements that play a vital and effective role in achieving the larger goal, which is adopting an approach to transform the economy that depends on depleting natural resources to a knowledge economy that depends on inexhaustible human minds, and thus achieving sustainable development, which is ensuring the future of coming generations. In this regard, an economic and social development authority focuses on modern technologies that in turn aim to select the entity, establish, accelerate growth, and organize commercial projects through a comprehensive program to provide assistance to commercial projects.)Program-(Badir(2013 ‘

The Kingdom of Saudi Arabia, through the National Science and Technology Plan and the strategic objectives of the national industry, seeks to diversify the sources of the national economy by developing non-oil technology industries and stimulating creativity and innovation to transform the Saudi economy into a knowledge-based economy.

King Abdulaziz City for Science and Technology, as the national research institution concerned with science, technology, and scientific research in the Kingdom, has established a national environment for innovation in the field of technology, called the "Badir" Technology Incubators Program, with the aim of supporting technology-based business project opportunities and developing technological entrepreneurship.

King Abdulaziz City launched the first incubator in the program under the name "Badir Incubator for Information and Communication Technology" at the end of 2008, followed in 2010 by the launch of the second incubator named "Badir Incubator for Advanced Manufacturing," and then the "Badir Incubator for Biotechnology." There are two incubators under the construction and development phase: the Badir Incubator for Nanotechnology and the Badir Incubator for Energy. In 2011, the City also established an audit and evaluation system to ensure quality in Badir incubators.)Union of Arab Chambers of Commerce and Industry(2014 ‘

Incubator Services:

The Badir Incubator at Salman bin Abdulaziz University offers its services to all Saudi men and women of all categories, specifically those who have projects in various technology fields. This is done through programs designed to support current and potential entrepreneurs in overcoming challenges they may face when marketing their technological innovations within the Kingdom, and from there to the Middle East and then to the world.

Services include:

- Assistance in developing business plans tailored to each individual project and serving the project's objectives.
- Organizing workshops on various topics to develop the individual skills of the incubatee.
- Providing legal, administrative, and marketing consultations.
- Developing marketing research skills.
- Developing promotion skills.

- Building relationships with commercial entities in the Saudi and global markets.
- Assisting in developing company strategies.
- Helping in obtaining financing and facilitating access to sources of financial support.
- Continuous follow-up and support for project development and success.

The Badir Incubator - Salman bin Abdulaziz University provides its services on "three levels of service" to build a direct line for customer requests, including events and workshops aimed at increasing awareness of entrepreneurship in general and incubators in particular. (Al-Mubarak, 2017).

Strategic Plan for the Proposed Sustainable Business Incubator 'EcoInnovate Hub'

In terms of conceptual diversity, the term "sustainability" remains a broad and vague notion. It is not limited only to making a business or an entrepreneurial project. on the contrary, sustainability symbolizes the ultimate purpose and objective of projects in many fields, be they in health, politics, funding programs, partnership, power, actions, activities, governance, etc. (Nesrine DAHMANE, 2024)

EcoInnovate Hub:

Name: **EcoInnovate Hub**

Location: Integrated within a forward-thinking university campus

Mission: To catalyze sustainable innovation by supporting entrepreneurs in developing solutions that address global environmental and social challenges while promoting economic growth.

Key Features:

- ✓ Sustainability-Focused Programs:

Specialized tracks for clean energy, sustainable agriculture, circular economy, and social innovation

Emphasis on projects aligned with UN Sustainable Development Goals (SDGs)

- ✓ Interdisciplinary Approach:

Collaboration between departments of business, environmental science, engineering, and social sciences

Cross-disciplinary research projects and startup teams

- ✓ State-of-the-Art Facilities:

Green building with solar panels and rainwater harvesting

Shared workspaces and private offices for startups

Prototyping labs with eco-friendly materials

Virtual reality suite for sustainable design

- ✓ Mentorship and Expertise:

Network of sustainability experts from academia and industry

Regular workshops on sustainable business models and impact measurement

Guest lectures by successful eco-entrepreneurs and thought leaders

- ✓ Funding Opportunities:

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Seed funding for promising sustainable startups

Connections to impact investors and green venture capital firms Support in applying for sustainability-focused grants

✓ Partnerships:

Collaborations with local and international environmental NGOs Partnerships with sustainable businesses for real-world projects

Government liaisons for policy-related initiatives

✓ Curriculum and Training:

Courses on sustainable business practices and circular economy principles

Workshops on impact assessment and sustainability reporting

Training in green technologies and sustainable innovation

✓ Research Integration:

Access to university research facilities and databases

Opportunities for startups to participate in academic research projects

Publication of case studies and research papers on sustainable entrepreneurship

✓ Community Engagement:

Regular sustainability hackathons and innovation challenges

Public lectures and exhibitions on sustainable technologies

Outreach programs to local schools to promote eco-entrepreneurship

✓ Global Network:

Exchange programs with international sustainability-focused incubators

Virtual mentorship opportunities with global sustainability experts

Annual sustainable innovation conference and expo

✓ Impact Measurement:

Rigorous tracking of environmental and social impact of incubated startups

Regular sustainability audits of the incubator itself

Long-term studies on the economic impact of sustainable ventures

✓ Post-Incubation Support:

Alumni network of sustainable startups

Ongoing mentorship and resources for graduated companies

Showcase opportunities at sustainability-focused investor events

This academic business incubator would serve as a hub for sustainable innovation, combining academic rigor with practical entrepreneurship support. It would not only nurture sustainable startups but also contribute to the broader academic discourse on sustainable development and business practices. By integrating research, education, and real-world application, such an incubator could play a significant role in advancing sustainable solutions to global challenges.

SWOT analysis EcoInnovate Hub

The name "EcoInnovate Hub" reflects our commitment to fostering eco-friendly innovations and sustainable business practices. It underscores our belief that creative thinking and innovative solutions are essential for addressing modern environmental challenges and driving sustainable progress.

✓ **Slogan:** "Cultivating sustainable innovation for a greener tomorrow"

✓ **Logo:**



Figure (1): Logo of EcoInnovate Hub
Source: by authors

Through EcoInnovate Hub, we aim to inspire a new generation of eco-entrepreneurs who understand that business success and sustainability are intrinsically linked. Our mission is to nurture ventures that not only drive economic growth and create jobs but also address pressing environmental challenges and contribute to social well-being.

By fostering this holistic approach to entrepreneurship, we strive to contribute to comprehensive and sustainable development. We believe that by equipping our innovators with cutting-edge tools, interdisciplinary knowledge, and robust support systems, they can build businesses that are not just profitable, but also environmentally responsible and socially impactful.

✓ **Location of the Hub:**

EcoInnovate Hub is strategically located adjacent to the university campus, not within it. This location offers several advantages:

- Proximity to Academic Resources: Being near the university allows us to leverage research facilities, laboratories, workshops, and expertise from professors across various disciplines relevant to sustainable innovation.
- Support Services: Our location facilitates easy access to technical, administrative, and marketing support for our incubatees, enabling them to achieve high growth rates.
- Business Accessibility: Unlike an on-campus location, our position allows for unrestricted access for clients, suppliers, and partners of our incubatees. This ensures smooth operations for product development, testing, and business meetings without the constraints of campus security protocols.
- 24/7 Operations: Our off-campus location allows for round-the-clock operations, essential for many startups and aligning with the fast-paced nature of innovation and business development.
- Community Integration: Being adjacent to, but separate from the university, allows EcoInnovate Hub to serve as a bridge between academia and the broader business community, fostering collaboration and knowledge transfer.

This strategic positioning allows EcoInnovate Hub to maintain strong ties with academic resources while providing the flexibility and accessibility needed for successful business incubation in the sustainable innovation sector.

S	Strengths 1. Interdisciplinary approach combining business, environmental science, engineering, and social sciences 2. State-of-the-art sustainable facilities (green building, prototyping labs, VR suite) 3. Strong focus on UN Sustainable Development Goals (SDGs) 4. Comprehensive mentorship program with industry experts and academics 5. Access to university research facilities and resources 6. Diverse funding opportunities including seed funding and connections to impact investors 7. Emphasis on practical, hands-on learning through projects and partnerships 8. Global network and exchange programs	Weaknesses 1. Potential high initial setup and operational costs for advanced facilities 2. Dependence on university resources and policies may limit some flexibilities 3. Possible challenges in balancing academic rigor with practical entrepreneurship needs 4. May require specialized staff with both academic and industry expertise, which can be hard to find 5. Complexity in managing diverse sustainability tracks and ensuring equal focus on all areas	W
O	Opportunities 1. Growing global focus on sustainability and demand for eco-friendly solutions 2. Increasing government and private sector investment in green technologies 3. Rising student interest in sustainability and social entrepreneurship 4. Potential for partnerships with large corporations looking to support sustainability initiatives 5. Emerging markets for sustainable products and services 6. Possibility of becoming a regional or global leader in sustainable innovation education 7. Opportunities for research grants and funding in sustainability-related fields	Threats 1. Competition from other universities and incubators focusing on sustainability 2. Rapidly changing technology landscape may require frequent updates to curriculum and facilities 3. Economic downturns could affect funding availability for startups and the hub itself 4. Potential policy changes that might impact sustainability initiatives or funding 5. Risk of "greenwashing" accusations if impact measurement is not rigorous and transparent 6. Challenges in placing graduates if the job market for sustainability roles doesn't grow as expected 7. Possible resistance from traditional industries or stakeholders	T

Figure (2): SWOT analysis EcoInnovate Hub

Source: by authors

Regarding the incubator affiliates (project owners), the incubator targets Algerian students in general, whether during their academic journey or as graduates. It also targets university professors and researchers in university laboratories, whose graduation projects include ideas that can be transformed into promising projects, and who need funding and technical and administrative support to bring their innovations into existence as new products.

The door of the Sustainable Business Incubator "EcoInnovate Hub" is open to all Algerian entrepreneurs who have innovative works within the requirements of sustainable development in their early stages, or initial models, or anything that indicates a product idea.

As for the affiliation (incubation) period, it ranges between 18 and 36 months, depending on the growth rate of the institution and its readiness to graduate from the incubator. This is done with a contract that is renewed every six months or annually in exchange for rent paid every three months (a symbolic amount)

EcoInnovate Hub simulation:

EcoInnovate Hub and the 1275 instruction:

Instruction No. 1275, issued by Algeria's Ministry of Higher Education and Scientific Research, outlines a comprehensive program to integrate entrepreneurship into the university curriculum. It enables students from various

disciplines to develop startup ideas as part of their graduation projects, aiming to obtain a "University-Emerging Institution Certificate." The initiative encourages students to form multidisciplinary teams, create business plans, and present their ideas to expert committees. Successful projects may receive support for incubation and potential funding. This instruction seeks to foster innovation, create job opportunities, and drive economic growth by bridging academia and entrepreneurship, ultimately aiming to transform promising student projects into viable startups with a focus on technological and innovative solutions. (Nadjiba, 2024)

"EcoInnovate Hub" could be positioned as a specialized academic incubator focused on eco-friendly and sustainable innovations, in line with the instruction's emphasis on creating emerging institutions and startups. It would cater to students from various disciplines who are interested in developing environmentally conscious business ideas.

Key features of "EcoInnovate Hub" could include:

- Multidisciplinary approach: Encouraging teams of 2-6 students from different specializations to work on eco-friendly projects.
- Specialized training: Offering programs on sustainable business models, green technologies, and eco-innovation.
- Mentorship: Providing guidance from experts in sustainability, technology, and business.
- Project development: Supporting students in creating comprehensive business plans for their eco-innovative ideas.
- Presentation platform: Organizing sessions for students to present their projects to scientific committees and potential investors.
- Incubation support: Offering resources and space for promising eco-projects to transform into actual startups.
- Funding opportunities: Connecting projects with potential funding sources, including government support and eco-conscious investors.
- Certification: Awarding the "University-Emerging Institution Certificate" to successful projects, with a focus on sustainable innovations.

This proposal aligns well with the instruction's goals while adding a specific focus on environmental sustainability, which is increasingly important in today's business landscape. "EcoInnovate Hub" could position itself as a pioneering initiative within the framework provided by Instruction No. 1275, fostering a new generation of eco-conscious entrepreneurs in Algeria.

EcoInnovate Hub serve SDG

To foster innovative startups that address the UN Sustainable Development Goals through cutting-edge research, entrepreneurship, and cross-sector collaboration:

- ✓ SDG-Focused Tracks:
 - Clean Energy Solutions (SDG 7)
 - AgriTech for Food Security (SDG 2)
 - HealthTech Innovations (SDG 3)
 - EdTech for Quality Education (SDG 4)
 - WaterTech Solutions (SDG 6)

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- ✓ Interdisciplinary Approach:
 - Collaboration between business, engineering, environmental science, and social science departments.
 - Regular interdisciplinary workshops and hackathons.
- ✓ Mentorship Program:
 - Industry experts
 - Academic researchers
 - Successful entrepreneurs
 - NGO leaders
- ✓ Funding Opportunities:
 - Seed funding for promising startups
 - Connections to impact investors and venture capitalists
 - Grant writing support for sustainability-focused projects
- ✓ Facilities and Resources:
 - Co-working spaces
 - Prototyping labs
 - Sustainability testing facilities
 - Virtual collaboration tools

Example Startup:

"AquaSmart" - An IoT-based water management system for agriculture that reduces water waste by 40%, addressing SDGs 2 (Zero Hunger), 6 (Clean Water and Sanitation), and 13 (Climate Action).

This simulation provides a comprehensive framework for an academic business incubator focused on sustainable development. It combines academic expertise, practical entrepreneurship support, and a strong focus on measurable impact aligned with the SDGs. Such an incubator would not only foster innovative startups but also contribute to research and education in sustainable business practices.

Conclusion

Business incubators represent a comprehensive ecosystem that treats each small project as a newborn, requiring exceptional care and holistic attention. This nurturing environment is crucial from the project's inception, protecting it from surrounding risks, providing it with the energy to continue, and gradually propelling it forward. The incubator equips the project with the strength to grow, readiness for the future, and the mechanisms for success.

The concept of business incubators is analogous to neonatal incubators, where newborns requiring immediate support are placed. These specialized systems help the newborns overcome environmental challenges through dedicated care. Similarly, business incubators provide tailored support until the project is deemed robust enough to thrive independently in the market.

This model, adopted by various countries, has been endorsed by economic experts who emphasize the importance of establishing such incubators. These structures are designed to protect projects in their infancy, offering specialized support and protection that enables them to transition successfully into external markets.

The proposed sustainable business incubator "EcoInnovate Hub" embodies these principles, offering its services and capabilities to students and graduates of Algerian universities. It provides necessary training to idea and project owners, assists them in preparing feasibility studies, and helps them benefit from existing market research and other services. The ultimate goal of this ecosystem is to support the sustainability of the Algerian economy.

In conclusion, the "EcoInnovate Hub" sustainable business incubator model presents a promising approach to fostering entrepreneurship within the framework of sustainable development. By providing a nurturing environment that combines academic knowledge with practical business support, it aims to develop resilient, innovative, and sustainable enterprises. This model not only supports individual entrepreneurs but also contributes to the broader goals of economic diversification and sustainable development in Algeria.

As we move forward, it is crucial to continue refining and adapting such incubator models to meet the evolving needs of entrepreneurs and the changing landscape of sustainable business practices. Further research and practical implementation of this model could provide valuable insights into its effectiveness and potential for replication in other contexts.

References

- [1] (2004). *Towards a Knowledge Society: "Science Parks and Technology Zones"*. REDMK, Saudi Arabia: series published by the Scientific Research Department of King Abdulaziz University.
- [2] Almasjadi, Y. A.-J. (2020). The Role of University Business Incubators in Guiding Graduates towards Entrepreneurship. *International Journal of Psychological and Educational Studies*.
- [3] Al-Mubarak, H. M. (2017). Challenges and opportunities of innovation and incubators as a tool for knowledge-based economy. *Journal of Innovation and Entrepreneurship*, 6(1), 1-17, <https://doi.org/10.1186/s13731-017-0075-y>.
- [4] Attia, K. (2022). The reality of business incubators in promoting emerging institutions in Algeria. *the Journal of Economic Analysis and Prospective*, 01-17.
- [5] Barbero, J. L. (2014). Do different types of incubators produce different types of innovations? . *The Journal of Technology Transfer*, 39(2), 851-865.
- [6] Croche Iman, S. R. (2022). Entrepreneurship Incubators: Leading Global Experiences with Reference to the Case of Algeria. *Revue Finance & Marchés*, 352-368.
- [7] Gao, Q. C. (2021). Business Incubators as International Knowledge Intermediaries: Exploring their role in the internationalization of start-ups from an emerging market., 27(4). *Journal of International Management*, 414-427.
- [8] Grimaldi, R. &. (2005). Business incubators and new venture creation: an assessment of incubating models. *Technovation*, 25(2), 111-121.
- [9] Hackett, S. M. (2004). A systematic review of business incubation research. *The Journal of Technology Transfer*, 29(1), 55-82.
- [10] Imene Ramdane, K. (2023). The role of human resource management applications in encouraging small and medium enterprises to achieve

- sustainable development dimensions -a field study on small and medium enterprises operating in Skikda state-. *Journal of Economic Growth and Entrepreneurship JEGE*, 47-59.
- [11] Lahmar, K. &. (2016). The Role of Entrepreneurship Incubators in Establishing the Knowledge Economy in Algeria. *L'Entreprise*, 72-95.
 - [12] Laksaci Sid Ahmed, B. A. (2022). The legal concept of sustainable development of the environment and its challenges in Algeria. *Journal of Economic Growth and Entrepreneurship JEGE*, 217-228.
 - [13] Mian, S. A. (1996). Assessing value-added contributions of university technology business incubators to tenant firms. *Research Policy*, 25(3), 325-335.
 - [14] Mohamed Nafissa Bamhammed, K. B. (2021). "Entrepreneurship Incubators as a Novel Mechanism to Support and Accompany Startups in Algeria: Reality and Challenges.". *Journal of Bashar University in Economic Sciences*.
 - [15] Nadjiba, S. (2024). University Business Incubators in Algeria: Promoting Startups through Ministerial Instruction No. 1275. *Journal of Law and Political Science, Khenchela University*, 437-452.
 - [16] Nesrine DAHMANE, A. B. (2024). Small and medium-sized enterprises sustainability: A multidimensional overview of approaches. *Journal of Economic Growth and Entrepreneurship JEGE*, 49-56.
 - [17] Program-(Badir). (2013, 09 12). *Program-(Badir)-for-Technology-Incubators*. Consulté le 04 26, 2023, sur Badir: <https://badir.com.sa>
 - [18] Ratinho, T. &. (2010). The role of science parks and business incubators in converging countries: Evidence from Portugal. *Technovation*, 30(4), 278-290.
 - [19] Somsuk, N. &. (2014). A fuzzy AHP to prioritize enabling factors for strategic management of university business incubators: Resource-based view. *Technological Forecasting and Social Change*, 85, 198-210.
 - [20] Union of Arab Chambers of Commerce and Industry. (2014, 02 07). *Union of Arab Chambers of Commerce and Industry*. Consulté le 04 25, 2023.
 - [21] United Nations Economic Commission for Europe UNECE. (2022). *Business Incubators for Sustainable Development in the SPECA Region*. Policy Handbook.