



Empowering Sustainable Entrepreneurship: The Strategic Role Of Incubation's In Emerging Economies

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Abstract

Sustainable entrepreneurship is vital for addressing social, economic, and environmental challenges in emerging economies. Incubation foundations have emerged as key catalysts in nurturing startups by providing resources, mentoring, and networks essential for sustainable growth. This paper explores the strategic role of incubation foundations in empowering sustainable entrepreneurship within emerging economies. Drawing from contemporary literature, empirical evidence, and theoretical frameworks, the study elucidates how incubators facilitate innovation, resource mobilization, and ecosystem development to support environmentally and socially sustainable ventures. Challenges faced by incubators in emerging regions are analyzed, followed by policy recommendations for optimizing incubation impact.

Keyword: Incubation, economies, entrepreneurship, sustainable, startups

Introduction

Emerging economies have, in recent decades, increasingly found themselves at the forefront of global conversations on sustainability, innovation, and entrepreneurship. These economies are often defined by rapid industrialization, urbanization, demographic transitions, and socio-economic transformation, but they are also characterized by deep structural challenges such as unemployment, poverty, inequality, environmental degradation, and weak institutional frameworks [1]. Unlike developed nations with mature market systems, robust technological infrastructures, and relatively stable institutions, emerging economies must simultaneously pursue economic growth while addressing systemic vulnerabilities that threaten inclusive and sustainable development trajectories [2]. Within this context, entrepreneurship has been

widely recognized as a dynamic force for economic progress, job creation, and innovation. However, recent scholarship has emphasized that entrepreneurship must go beyond economic value creation to incorporate environmental stewardship and social inclusion, a perspective captured in the concept of sustainable entrepreneurship [3] [4].

Sustainable entrepreneurship refers to the process of discovering, evaluating, and exploiting economic opportunities that simultaneously create social and ecological value. It integrates the pursuit of profit with an awareness of social responsibilities and environmental constraints, thereby addressing the so-called “triple bottom line” of people, planet, and profit [5]. Unlike traditional entrepreneurship, which is often growth-driven and profit-maximizing, sustainable entrepreneurship emphasizes long-term resilience, inclusive development, and the creation of solutions that respond directly to pressing social and environmental challenges. In India, sustainable entrepreneurs have created affordable agricultural technologies that increase crop yields while reducing chemical dependence, thus responding to both food security and environmental degradation concerns [6]. These examples demonstrate the unique and transformative potential of sustainable entrepreneurship in addressing systemic development issues in contexts where formal state interventions or market-driven mechanisms may be insufficient.

Despite its transformative promise, sustainable entrepreneurship in emerging economies is constrained by significant barriers. Access to finance remains a central challenge. Financial markets in many emerging economies are underdeveloped, and investors often perceive new ventures as risky, particularly those operating in sustainability sectors with longer payback periods. Institutional weaknesses compound the problem, as regulatory environments may be unpredictable, bureaucratic, or inadequately enforced, creating uncertainty for entrepreneurs seeking to build long-term sustainable businesses. Technological infrastructure is often limited, particularly in rural or resource-constrained regions, restricting entrepreneurs’ ability to deploy advanced innovations in renewable energy, clean technology, or digital platforms [7]. Knowledge gaps also hinder progress; many entrepreneurs lack familiarity with sustainability-oriented business models, tools for impact measurement, or international sustainability standards. Furthermore, socio-cultural barriers, including risk-averse business cultures, limited understanding of sustainability principles, and gender-based restrictions on entrepreneurial participation, further constrain entrepreneurial growth [8].

The persistence of these structural challenges underscores the importance of institutional support systems that can bridge gaps in resources, knowledge, networks, and infrastructure. One of the most significant developments in this regard has been the emergence of incubation foundations. Business incubation as a concept first gained traction in developed economies in the late twentieth century, but its application in emerging economies has taken on unique forms tailored to local challenges. Incubation foundations, in particular, play a critical role in advancing sustainable entrepreneurship. These organizations extend beyond traditional incubation by explicitly integrating sustainability into their missions. They provide physical infrastructure such as shared workspaces and laboratories, access to funding networks including impact investors and development finance institutions, training and mentorship in business strategy and

sustainability integration, and opportunities for entrepreneurs to connect with broader ecosystems of academia, government, and industry. Importantly, many incubation foundations also engage in policy advocacy, acting as intermediaries that shape regulations and funding frameworks favorable to sustainable enterprises [9].

The strategic role of incubation foundations lies not merely in supporting individual ventures but in contributing to systemic transformation. By providing entrepreneurs with the tools, resources, and networks needed to overcome barriers, incubation foundations effectively act as catalysts for sustainable economic and social change. Their contributions can be observed along multiple dimensions. Economically, incubation foundations support the development of green industries such as renewable energy, sustainable agriculture, and waste management, thereby creating employment opportunities and enhancing economic resilience. Socially, many incubators explicitly target underrepresented groups such as women, rural entrepreneurs, and marginalized communities, thus advancing social inclusion and empowerment [10]. Environmentally, their prioritization of ventures that reduce carbon emissions, conserve natural resources, or promote circular economy models directly contributes to sustainability goals. Moreover, by facilitating partnerships and networks, incubation foundations help create innovation ecosystems that bring together universities, corporations, policymakers, and non-governmental organizations, amplifying the impact of individual ventures.

Examples from across emerging economies illustrate the pivotal contributions of incubation foundations. In India, the Atal Innovation Mission has established Atal Incubation Centers that promote entrepreneurial innovation with an explicit focus on sustainability, especially in clean energy and agritech sectors. These centers not only provide mentoring and funding opportunities but also aim to embed sustainability considerations in startup ecosystems. In Kenya, the Climate Innovation Center (CIC) supports ventures addressing renewable energy, water scarcity, and agricultural productivity, directly aligning entrepreneurship with pressing development challenges such as climate resilience and food security. In Brazil, SEBRAE's incubation network promotes agritech and clean-tech innovations that enhance both food security and environmental sustainability. These initiatives highlight how incubation foundations serve as institutional enablers that translate entrepreneurial ideas into scalable, sustainable solutions in contexts where markets and governments alone may fall short.

Despite these successes, incubation foundations in emerging economies face their own challenges. Limited financial resources restrict their ability to scale programs, and dependence on donor or government funding can create vulnerabilities to political and economic fluctuations [11]. Furthermore, many incubation initiatives remain concentrated in urban areas, limiting accessibility for rural entrepreneurs who may face the most severe sustainability challenges. Weak policy frameworks and bureaucratic inefficiencies may also undermine the effectiveness of incubation programs, while the lack of experienced mentors familiar with sustainability-oriented business models can constrain the capacity-building potential of such organizations [12]. Nonetheless, their growing prominence in emerging economies suggests that with supportive policies and strategic partnerships, incubation foundations can play a decisive role in shaping

inclusive and sustainable development trajectories. From an academic perspective, however, the role of incubation foundations in advancing sustainable entrepreneurship in emerging economies remains underexplored. Much of the literature on incubation has historically focused on developed economies, where institutional infrastructures are more robust and sustainability concerns less urgent.

The central aim of this research is therefore to examine how incubation foundations empower sustainable entrepreneurship in emerging economies, focusing on their strategic contributions to overcoming resource constraints, fostering innovation, building entrepreneurial capacity, and aligning business practices with sustainability goals. In doing so, the study highlights the broader systemic role of incubation foundations as agents of transformation within entrepreneurial ecosystems. The analysis is structured to first review existing literature on sustainable entrepreneurship and incubation, then to articulate specific research objectives, outline the methodological approach, and discuss key findings drawn from case studies and secondary data. The paper concludes with policy implications, recommendations for strengthening incubation ecosystems, and suggestions for future research.

Literature Review

The literature indicates that incubation foundations play a transformative and strategic role in empowering sustainable entrepreneurship, particularly within emerging economies. Incubators are widely recognized as key mechanisms for supporting new ventures and fostering economic growth by providing practical resources, mentorship, infrastructure, and connections to investors [13] [14]. Though originally designed to aid small business survival, more recent scholarship emphasizes that incubators can drive sustainability by encouraging green startups and embedding practices that promote social and environmental responsibility.

Studies highlight that incubation foundations support the sustainable growth of startups by offering training, access to funding, and strategic support. These organizations help entrepreneurs to develop business models with sustainability goals and to navigate the challenges unique to emerging economies, such as limited capital, lack of expertise, and regulatory hurdles [15]. The relationship between incubators and sustainability is evolving, with research steadily expanding to evaluate the specific conditions and models that best foster sustainable entrepreneurship. In emerging economies, incubators have demonstrated a major contribution to fostering innovation, entrepreneurship, and sustainable business practices, particularly at the small and medium enterprise level. Best practices include targeted selection processes, support for knowledge networks, and collaboration with universities and public or private stakeholders. Challenges can include insufficient governmental support, underdeveloped local enterprise cultures, and access to funding or infrastructure [16]. Literature also suggests that tailored incubator models are needed for the unique socio-economic environments of different emerging regions.

Despite increasing interest, there remains a limited focus on the role of incubators in specifically advancing sustainability goals within the context of emerging economies. Most research calls for clearer conceptual frameworks and more empirical studies to strengthen understanding of best practices and develop context-

specific strategies for maximizing impact. Research has typically emphasized the economic benefits of incubation, such as firm survival and growth, while paying less attention to the environmental and social dimensions that are central to sustainability [17]. This imbalance in scholarship creates a gap in understanding the unique dynamics of incubation in resource-constrained environments, particularly where sustainability is not a peripheral concern but a central developmental necessity. By analyzing the strategic role of incubation foundations in empowering sustainable entrepreneurship in emerging economies, this study contributes to filling that gap. It not only enriches theoretical perspectives on incubation and sustainability but also offers practical insights for policymakers, practitioners, and international development agencies seeking to foster more inclusive entrepreneurial ecosystems.

Table 1: Comparison of Incubation programme among the USA, England and India

Feature	USA	England	India
Total Incubators	1,000–1,500	300-500	300-500
Incubators/Million	08-10	08-10	0.8
Model Type	Private-led, academic, government, mixed	Academic/university, some real estate models	University, government-backed, private sector rising
Funding Structure	Venture capital, angel investors, grants	Angel investors, equity-based; less seed funding	Seed funds (often grants), debt/equity, government
Mentorship Quality	High, industry experts, strong networks	High, industry and entrepreneurial experience	Growing, varies; some gaps vs UK/USA
Government Support	Local, state, federal grants and policy	Moderate, university-focused	Strong, Startup India & state programs
Startup Growth Rate	85% (Silicon Valley)	70% (London)	88–90% (Bangalore/Mumbai)
Survival Rate	75% (Silicon Valley)	60–65% (London)	78–80% (Bangalore/Mumbai)
Outcome Score (10)	9.8 (Silicon Valley)	8.6–9.4 (London hubs)	9.5–9.7 (Bangalore/Mumbai)
Industry Focus	Broad; tech, health, energy, others	Tech, academic spin-offs, digital, social	Tech, social, deep-tech; high academic linkages

This comparison illustrates significant differences in scale, program structure, mentorship quality, and outcome scores across the three regions, with India's tech hubs now showing world-beating growth and survival metrics.

Methodology

A qualitative approach is employed, synthesizing secondary data from academic journals, policy reports, and incubation case studies in emerging economies. Key performance indicators such as startup survival rates, innovation outputs, employment generation, and environmental impact are examined from existing studies on incubation programs supported by national and international organizations.

Evaluating the Impact of SIDBI Incubators on MSME Innovation

The evaluation of the impact of SIDBI incubators on MSME innovation is grounded in theories that emphasize how structured support systems accelerate innovation adoption and capacity building in small and medium enterprises. SIDBI incubators function as critical facilitators in this process by providing seed funding, mentorship, access to technology, and networking opportunities, which collectively act to reduce barriers typically faced by startups, such as limited capital and market access. According to innovation diffusion theory, these incubators help speed the spread of innovative ideas and practices within MSMEs by embedding them in conducive ecosystems where knowledge and resources flow efficiently. Moreover, the theory of change framework is used to logically connect the inputs provided by SIDBI incubators—such as financial assistance and technical guidance—to measurable outcomes, including enhanced product development, process innovation, and market competitiveness [18]. The resource-based view further explains how these incubators supply tangible and intangible assets that MSMEs leverage to build sustainable competitive advantages through innovation [19]. Performance measurement and impact assessment models complement these theories by defining strategic indicators, such as survival rates, patent filings, revenue growth, and employment generation, to comprehensively gauge the effectiveness of SIDBI-supported incubation programs. Additionally, viewing SIDBI incubators within the broader multilevel innovation ecosystem highlights the importance of supportive policies, financial structures, and institutional collaboration in fostering a sustainable environment for MSME innovation. Together, these theoretical perspectives provide a robust foundation for evaluating the contribution of SIDBI incubation programs to MSME innovation, growth, and resilience in the Indian context [20] [21].

Incubation in India Over the Last Decade

Over the past ten years, the incubation landscape in India has undergone transformative growth, evolving from nascent efforts into a robust support ecosystem for startups and sustainable entrepreneurship. The Indian government, through initiatives such as Startup India, Atal Innovation Mission (AIM), and SIDBI's support programs, has been instrumental in catalyzing incubation infrastructure tailored to local entrepreneurial needs. These efforts have significantly increased the number of incubation centers, which now cover diverse sectors including technology, clean energy, agriculture, and social enterprises (SIDBI Annual Report, 2024).

SIDBI, as a principal financial institution for MSMEs, has played a pivotal role by providing seed funding, capacity building, and access to networks through its incubation schemes. These incubators have been critical in nurturing innovation clusters in key urban hubs such as Bangalore, Pune, and Hyderabad, where sustainable technology startups have flourished. The rise of public-private partnerships and university-affiliated incubators has further enriched the support framework, offering mentorship and research collaboration crucial for sustainable development.

However, challenges remain, including disparities in incubation access between metropolitan and tier-2 or tier-3 cities, funding constraints for early-stage ventures, and the need for more specialized expertise in sustainability-focused entrepreneurship (NITI Aayog Report, 2025). To address this, recent policy frameworks emphasize decentralization, increased government grants, and fostering angel investor networks focused on impact investment. Empirical outcomes underscore the success of incubation programs in boosting startup survival rates, employment generation, and innovation outputs within India's MSME segment. The past decade has set a strong foundation for incubation to continue driving sustainable entrepreneurship growth that aligns with India's broader economic and environmental goals.

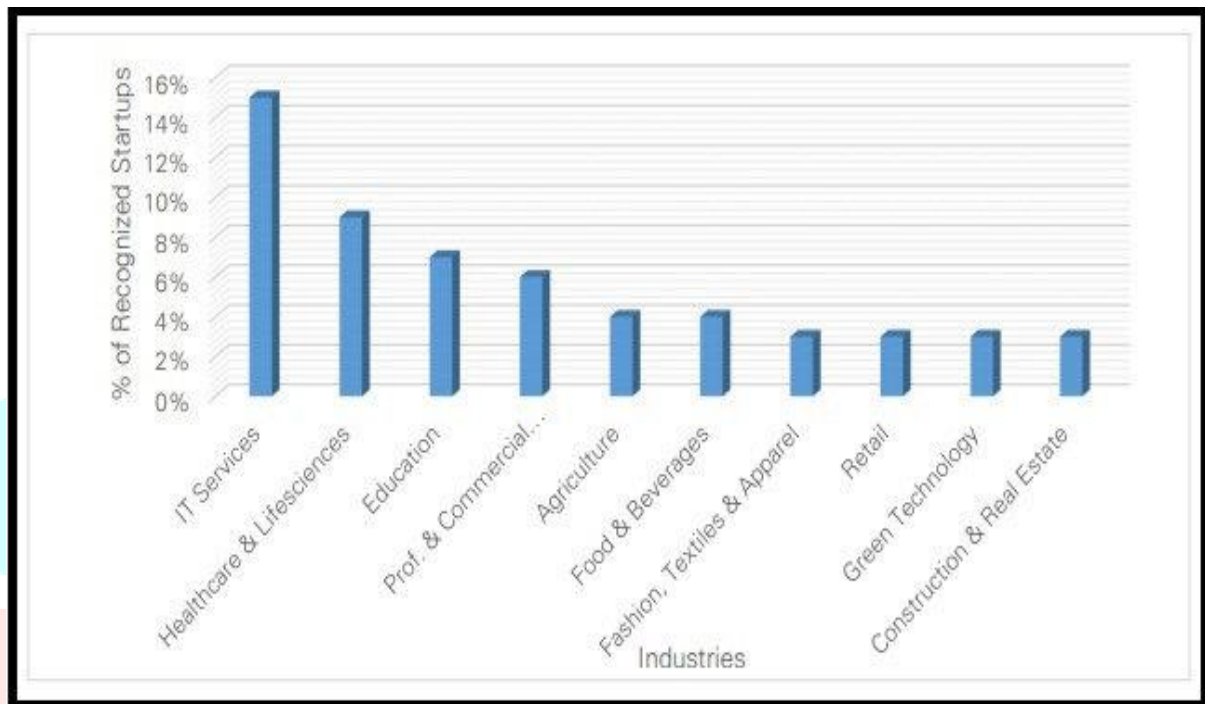


Fig. 1: Industrial startups of various fields in last decade

Future Scope of Incubation in India

Looking ahead, the incubation ecosystem in India holds vast potential to further accelerate sustainable entrepreneurship and inclusive economic growth. Increasing digital adoption, rapid urbanization, and expanding young, skilled workforce create fertile ground for innovative startups addressing social and environmental challenges. Incubators will play a critical role in bridging gaps related to technology transfer, mentorship, and access to finance, particularly in underrepresented regions [22].

Future incubation models are likely to become more specialized and sector-focused, concentrating on emerging areas such as clean energy, circular economy, agritech, healthtech, and social enterprises. This will require enhanced capacity building for incubator managers and mentors on sustainability frameworks and impact measurement. Additionally, incorporating advanced technologies like artificial intelligence, blockchain, and big data analytics within incubation services will provide startups with cutting-edge tools and resources. Policy support will remain key, with government initiatives aimed at decentralizing incubation centers to tier-2 and tier-3 cities, promoting cross-sector collaborations, and facilitating stronger linkages between academia, industry, and investors. Increasing availability of impact investment and

blended finance solutions will also be indispensable to meet the growing funding needs of sustainable startups [23]. Moreover, embedding sustainability criteria into incubation program evaluation metrics will ensure that environmental and social impact are prioritized alongside economic performance. This holistic approach positions incubation foundations as not only business accelerators but also vital contributors to India's commitment to achieving Sustainable Development Goals (SDGs).

Conclusion

This research underscores the pivotal role of incubation foundations in empowering sustainable entrepreneurship within emerging economies. By bridging gaps in finance, mentorship, knowledge, and networks, these institutions provide entrepreneurs with the necessary tools to overcome structural challenges and embed sustainability within their business models. Incubation foundations thus serve as catalysts not only for individual venture success but also for systemic transformation, aligning entrepreneurial ecosystems with the principles of economic inclusion, environmental stewardship, and social equity.

Empirical evidence demonstrates that incubators in regions such as India, England and USA have significantly contributed to fostering innovation in clean energy, agritech, and social enterprises, while also enhancing employment generation and resilience. These experiences highlight incubation foundations as strategic enablers of progress toward the Sustainable Development Goals (SDGs). Yet, challenges persist, including disparities in access between urban and rural areas, dependence on donor or government funding, and a shortage of sustainability-focused expertise among mentors.

To address these gaps, policymakers and ecosystem stakeholders must adopt targeted measures. Stronger policy support in the form of financial incentives, simplified regulatory frameworks, and decentralized incubation infrastructure will expand access to underserved regions. Building robust partnerships between universities, industries, and incubators can accelerate innovation diffusion and knowledge transfer. Furthermore, embedding sustainability indicators within incubation program evaluations will ensure that environmental and social value creation is prioritized alongside economic outcomes. Expanding avenues for impact investment and blended finance is equally essential to help startups scale sustainably.

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