Case Study on the Ecosystem of Startup Incubators and Accelerators for Innovation and Sustainability: To Viksit Bharat

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ABSTRACT

Purpose: *The purpose of this article is to examine the role of startup incubators and accelerators in strengthening India's entrepreneurial ecosystem and promoting innovation and sustainability. It analyses how government policies, academic institutions, and support systems contribute to startup growth, economic development, and the achievement of Sustainable Development Goals (SDGs). The study also explores how these ecosystems support the vision of Viksit Bharat through innovation, inclusivity, and entrepreneurship.*

Design/methodology: *The current research paper utilizes a case study and secondary data to analyze the role of incubators and accelerators in the entrepreneurial startup ecosystem, focusing on fostering inclusivity and sustainability.*

Originality /Value: *This research paper analyses the impact of the incubators and accelerators in promoting the Sustainable Development Goals (SDGs).*

Social Implications: *The research paper explores how incubators and accelerators promote innovation, entrepreneurship, job creation, Visit Bharat, and economic prosperity in the country.*

Type of Research: *Case Study.*

Keywords: NEP 2020, Atal Innovation Mission (AIM); Incubators and accelerators; Start-up Sectors; Startup India; Startup ecosystem; Sustainability Development Goals; Angel investors and PE investment; 5 S Approach; ABCD framework.

1. INTRODUCTION :

1.1 India's Startup Incubation and Accelerators Evolution for Visit Bharat:

India is one of 3rd third-largest ecosystems in terms of start-up incubation and accelerators after the US and China, and Indian start-up incubators and accelerators play a crucial role in fostering entrepreneurship and nurturing technology start-ups by providing comprehensive support from the initial stages to scaling. They help transform ideas and research from laboratories into market-ready products, driving innovation and generating economic benefits. Start-ups contribute to economic resilience, promote environmental awareness, and advance technology, all of which align with the vision of 'Visit Bharat.'

The Startup India initiative, together with the Atal Innovation Mission (AIM)National Initiative for Developing and Harnessing Innovations (NIDHI) and the Digital India scheme, has created a more inclusive and innovative environment to support startups through both privately funded and government-supported incubators and accelerators. These programs target various educational institutions to establish the necessary infrastructure for incubators and accelerators, thereby fostering a robust startup ecosystem in fields such as Cleantech, Edutech, SpaceTech, Fintech, SaaS, AI, Fashion Tech, Deep Tech and E-Commerce. This initiative not only helps generate more jobs but also empowers entrepreneurship, promotes women's empowerment, drives innovation, and contributes to economic

development. Accelerators play an important role in stimulating entrepreneurship by providing startups with mentorship, funding access, networking opportunities, and structured support for rapid growth (Pauwels et al. (2016). [1]). The National Business Incubation Association (NBIA; nbia.org) describes a business incubator as a structured support process that helps start-up and early-stage firms grow successfully by providing entrepreneurs with targeted resources and services. The terms incubator and accelerator are often used interchangeably. Moreover, the two models share several common features and operate in overlapping areas of technology entrepreneurship (Isabelle (2013). [2]). India's entrepreneurial culture is expanding rapidly, with more universities and private institutions establishing incubators and accelerators (Gaurav et al. (2019). [3].

Table 1. Evolution of Indian Start-up Incubators and Accelerators for the Visit Bharat

Year	Evolution
1955	The establishment of the National Small Industries Corporation (NSIC) has led to the institutionalization of incubation policies.
1982	**The National Science and Technology Development Board(NSTEDB)** is supported by the Department of Science and Technology(DST) to boost technology entrepreneurship.
2004	**The Society for Innovation and Entrepreneurship (SINE)**, one of India's earliest academic-backed incubators, was born at IIT Bombay, the oldest academia-backed incubator in India.
2008	**Incubation Policy of Ministry of Micro, Small and Medium Enterprises (MOMSE)**-Under this scheme, the Government of India provides opportunities for innovators to develop and nurture their innovative ideas for the production of new products that can be commercialized in the market.
2008	**Technology Incubation and Development of Entrepreneurs (TIDE)** implemented by Department of Electronics and Information Technology (DeitY)
	TIDE 2.0 aims to promote technology entrepreneurship by providing financial and technical support to incubators that assist ICT startups. These startups will primarily focus on emerging technologies such as IoT, AI, Blockchain, and Robotics. The initiative will be facilitated through the MeitY Startup Hub (MSH), which will be established under TIDE 2.0. It classifies incubation into 3 levels G1, G2, & G3 G1 - Providing capacity building and post-investment support for startup mentoring in G2 and G3. G2 - The Incubation Centre conducts entrepreneurship training and an accelerator program. G3 - Engaging in entrepreneurship activities and monitoring incubators at academic institutions.
2016	**Atal Innovation Mission (AIM) by NITI Aayog** is the Indian government's flagship initiative to foster a culture of innovation and entrepreneurship in the country.
	Atal Tinkering Labs at the School Level.
	Atal Incubation Centres (AICs) aim to develop a vibrant startup and entrepreneur ecosystem in India.
	Atal Community Innovation Centres to serve unserved and underserved regions of India
	In 2022, the Atal New India Challenges Program aims to identify, select, support, and nurture technology-based innovations that address sectoral challenges of national importance and societal relevance.
	Mentor of Change aims to provide mentorship and partnership with the public and private sectors, NGOs, and academic institutions.
2016	**The National Initiative for Developing and Harnessing Innovations (NIDHI) program** was launched by DST. The NIDHI programme aims to foster innovation through support for incubators, seed funds, accelerators, and Proof of Concept grants. Within NIDHI, the Promoting and Accelerating Young and Aspiring Innovators and Startups (PRAYAS) programme aids established Technology Business Incubators (TBIs) by providing grants for Proof of Concept and prototype development.
2023	**The Next Generation Incubation Scheme (NGIS**) is a comprehensive initiative implemented by the Ministry of Electronics and Information Technology (MeitY) and entrusted to the Software Technology Parks of India (STPI). NGIS aims to boost the startup ecosystem in Tier 2 and Tier 3 cities across the country by providing incubation facilities for 300 tech startups. This will be achieved through 12 specialized incubators located in smaller cities within 12 Tier-

	II locations in India, including Agartala, Bhilai, Bhopal, Bhubaneswar, Dehradun, Guwahati, Jaipur, Lucknow, Prayagraj, Mohali, Patna, and Vijayawada.
2022	**The MSME Innovative Scheme** comprises three components: incubation, design, and intellectual property rights. The scheme's goal is to support innovation throughout the entire value chain, from idea generation to the development of new applications. The Incubation component involves recognizing eligible institutions as Host Institutes (HIs), which act as business incubators. This includes approving the ideas submitted by incubates through the HIs, providing assistance to nurture these ideas, and offering financial support to the HIs for purchasing equipment and machinery.

Source: Author & Google.com

1.2. Government of India and State-specific Schemes and Policies to Promote Startup-Ecosystem for Viksit Bharat:

The Indian start-up ecosystem began in 2013 and was supported by the government of India and various state-specific policies to nurture entrepreneurial ventures. The central government allocates funds to support new entrepreneurial efforts and startups in the annual budget every year. This initiative has created pathways for innovation, inclusive growth, and collaboration across multiple sectors, including health tech, agri-tech, ed-tech, space tech, electric vehicles, fintech, e-commerce, semiconductors, quantum computing, biotech, and cleantech. As part of the Viksit Bharat initiative, the objective is to develop India into a fully developed economy by 2047, which marks the 100th year of India's independence. The aim is to achieve a $5 trillion economy through a transformative start-up movement. According to the Department for Promotion of Industry and Internal Trade (DPIIT), 1.59 lakh recognized startups in India as of January 2025. The initiatives under Startup India are projected to generate employment for 16.67 lakh individuals in 2024. The Startup India program remains a crucial driver of economic growth, fostering an inclusive and vibrant entrepreneurial ecosystem. The Government of India launched the Atal Innovation Mission (AIM) under the aegis of NITI Aayog **A**IM helps build an ecosystem where startups can grow by giving them incubation support, infrastructure, mentoring, and resources to startups in various sectors such as manufacturing, energy, health, education, agriculture, water, sanitation and transportation (Kadirvel et al. (2025). [4]). Viksit Bharat 2047 can be understood as an integrated and interdisciplinary national agenda designed to guide India toward the status of a developed and self-sustaining nation by the hundredth year of its independence. Within this framework, the idea of "Viksit" extends beyond narrow economic indicators and should instead be interpreted as a multidimensional and resilient form of development grounded in three closely connected elements: progress, innovation, and equity. Here, progress denotes inclusive, sustainable, and high-quality economic development; innovation highlights the generation of indigenous knowledge, the adaptation of technology, and its widespread application across sectors; and equity emphasizes the eradication of multidimensional poverty while ensuring dignity, fairness, opportunity, and justice for all people, regardless of their social identity or regional location (Jirnal & Basargi (2026). [5]). Incubation centers have to promote innovative solutions through partnerships with universities, private sectors, communities, and the government for economic progress, and this serves as a pathway toward the Viksit Bharat goal by 2047.

1.3 Impact of Incubators and Accelerators on Sustainable Development Goals:

Sustainable Development Goals (SDGs), which consist of 17 global objectives established by the United Nations in 2015, are all aimed at achieving a better and more sustainable future for everyone. The analysis of the impacts of incubators and accelerators on six specific Sustainable Development Goals (SDGs) out of the total 17: SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 17 (Partnerships for the Goals). Each specific startup, such as those in the HealthTech and FoodTech sectors, has the potential to contribute to all 17 Sustainable Development Goals. In the context of implementing the SDGs, the link between science, technology, and innovation-based incubators and specific SDGs is most evident in the emergence of startups aligned with these goals and the incubators that support them (Kavita Surana et al. (2020). [6]).

Table 2: SDG - Impact of incubators and accelerators

Goals	Sustainable Development Goals	Impact of Incubators and Accelerators
4	Quality Education	It provides opportunities for young entrepreneurs through academic incubators, connecting them with a supportive network and quality education to generate new ideas and concepts that drive societal change.
5	Gender Equality	The Incubator and Accelerator programme aims to mentor women entrepreneurs and provide young girls with skills development through practical policy engagement and networking opportunities for a better future. WeHub, an India State-led Incubator for women entrepreneurs based in Hyderabad, Telangana has raised funding for women-led entrepreneurs.
8	Decent Work and Economic Growth	Incubators and accelerators enhance startup survival and successful development of sector-specific startups, fostering prosperity in society through economic growth, new job opportunities, education, and fundraising.
9	Industry, Innovation and Infrastructure	Incubators and accelerators play a multifaceted role in supporting startups by providing essential infrastructure (like a Lab) and resources for developing innovative products or services, such as climate-resilient, low-emission technologies in deep tech and health while creating an inclusive environment.
17	Partnership for the Goals	Incubators and accelerators offer funding opportunities by collaborating with private equity, and angel investors for startups. Public-private partnership model (PPP) to drive competitive potential in the areas of Spacetech, Healthtech, and Greentech.

1.4 AIM, NITI Aayog accelerator- Rapid Innovation and Startup Expansion (RISE) :

Atal Innovation Mission (AIM), NITI Aayog, is the Government of India's flagship initiative to promote a culture of innovation and entrepreneurship in the country. RISE Accelerator aims to enable start-ups with mature tech-based innovations to fast-track their cross-border social, economic, and environmental impact through an international innovation ecosystem. On 21st November, 2023, Atal Innovation Mission (AIM), NITI Aayog launched a new accelerator called Rapid Innovation and Startup Expansion (RISE) to support Australian startups The **RISE Accelerator Program,** a joint initiative by NITI Aayog's Atal Innovation Mission (AIM) and the Commonwealth Scientific and Industrial Research Organization (CSIRO), aims to foster innovation and growth in Climate Smart Agritech. Indian circular economy startups. It focuses on Environment and Climate Technology. The RISE Accelerator programme will help start-ups navigate the early stages of entering a new region, expedite connections with the right partners, customers, and talent, and build credibility to succeed in international markets. Areas include Climate Smart Agriculture, Clean Energy, Circular Economy and Waste Management, and Climate Smart Mobility. Rapid Innovation and Startup Expansion (RISE) support Australian and Indian circular economy startups and small- to medium-sized enterprises (SMEs) with mature, cutting-edge technology to fast-track their cross-border impact. To apply for this startup or SME headquartered or domiciled in Australia or India (the home country), you must be registered for GST in your country of incorporation.

The **RISE Accelerator Program,** a joint initiative by NITI Aayog's Atal Innovation Mission (AIM) and the Commonwealth Scientific and Industrial Research Organization (CSIRO), aims to foster innovation and growth in Climate Smart Agritech.

Atal Innovation Mission (AIM), NITI Aayog, is the Government of India's flagship initiative focused on cultivating a culture of innovation and entrepreneurship across the nation. A significant development occurred on November 21, 2023, when AIM launched the Rapid Innovation and Startup Expansion (RISE) Accelerator. This initiative aims to empower startups with mature tech-based innovations, particularly to enhance their social, economic, and environmental impact on a global scale. Rapid

Innovation and Startup Expansion (RISE) to support Australian startups which an impact on the environment.

The RISE Accelerator Program, a collaboration between AIM and the Commonwealth Scientific and Industrial Research Organization (CSIRO), is designed to stimulate growth and innovation within the Climate Smart Agritech sector as well as support Indian circular economy startups. It emphasizes advancements in Environment and Climate Technology. The program is structured to assist startups in overcoming the initial barriers to entering new markets, facilitating essential connections with appropriate partners, customers, and talent, and establishing a dependable presence in international markets. Key focus areas for the RISE Accelerator include Climate Smart Agriculture, Clean Energy, Circular Economy and Waste Management, and Climate Smart Mobility. This initiative aims to expedite the cross-border impact of Australian and Indian startups, as well as small- to medium-sized enterprises (SMEs) that showcase cutting-edge technology and innovative solutions. To participate in the program, startups or SMEs must be registered for GST in their home country, which can be either Australia or India.

2. REVIEW OF LITERATURE :

Table 3: Review of literature

Sl.No	Focus	Author
1	The study analyses the rural startup ecosystem in India by highlighting both its vast potential and persistent challenges. It explains that rural areas, with abundant resources, skilled labor, and increasing digital access, are emerging as important hubs for entrepreneurial activities. Rural startups contribute significantly to employment generation, poverty reduction, and achievement of Sustainable Development Goals (SDGs). The paper also emphasizes the role of government initiatives like MUDRA Yojana and Startup India in promoting rural entrepreneurship through financial and institutional support. However, major challenges such as lack of infrastructure, limited access to finance, and regulatory barriers continue to hinder growth. The study points out that rural startups have opportunities in sectors like agriculture, healthcare, education, and renewable energy. It further highlights the importance of technology adoption, skill development, and market linkages for sustainable growth. Collaboration among government, industry, and academia is identified as a key factor for strengthening the ecosystem. The analysis concludes that with proper policies and support, rural startups can drive inclusive economic development and social transformation in India.	Gupta R. (2024) [7]
2	The article analyses the significant role of Technology Business Incubators (TBIs) in fostering startup growth and strengthening the entrepreneurial ecosystem in India. It highlights how economic liberalization and government initiatives like Startup India and Atal Innovation Mission have accelerated entrepreneurial activities. The study emphasizes that TBIs provide crucial support such as mentorship, networking, infrastructure, and access to finance, which enhance startup survival and growth rates. It also explains the importance of university-based ecosystems, where entrepreneurship education and incubation centres bridge the gap between theory and practical application. The paper identifies collaboration among universities, government, and industry as a key driver of innovation and commercialization. Furthermore, it discusses the structured incubation process, including pre-incubation, incubation, and post-incubation stages. The analysis shows that TBIs contribute to job creation, regional development, and technological advancement. It also outlines performance metrics like graduation rates and firm	Rai, R. S., Prasad, A., & Murthy, B. K. (2023) [8].

	survival to evaluate incubator effectiveness. However, the study suggests the need for deeper research into micro-level incubation processes and diverse variables affecting entrepreneurship. The article concludes that TBIs are vital instruments for nurturing sustainable startups and boosting economic growth.	
3	The study analyses the evolving competitiveness of India by emphasizing the growing role of start-ups and the entrepreneurial ecosystem in economic development. It highlights that India has steadily improved its global competitiveness, but needs to shift from a factor-driven to an innovation-driven economy. The paper explains that start-ups contribute significantly through innovation, job creation, and technological advancement, especially in areas like AI and digital platforms. It also stresses the importance of collaboration between firms, institutions, and government to build strong competitive capabilities. The study identifies key challenges such as limited scale-up of startups, dependence on foreign capital, and gaps in the ecosystem. It further points out the importance of focal firms and institutions like IITs in nurturing innovation and entrepreneurship. The role of emerging technologies and strategic flexibility is emphasized for long-term competitiveness. Additionally, leadership quality and skill development are seen as critical factors for sustaining growth. The analysis concludes that strengthening the startup ecosystem is essential for enhancing India's global competitiveness and achieving sustainable economic progress.	Momaya, K. S. (2022) [9].
4	The study analyses the role of startup accelerators and incubators in strengthening the Indian startup ecosystem while addressing key challenges and opportunities. It highlights that these support systems provide mentorship, funding, infrastructure, and networking, which are essential for startup growth and scalability. The paper also discusses the impact of COVID-19, which disrupted funding and employment but created new opportunities for innovation and self-reliance. Major challenges identified include lack of funding, regulatory complexities, inadequate infrastructure, and limited mentorship support. The study emphasizes the importance of government initiatives like Startup India and MUDRA Yojana in promoting entrepreneurship. It also points out the growing role of technology, digitalization, and foreign investments in accelerating startup development. Opportunities are seen in sectors such as fintech, edtech, and agritech, driven by increasing internet penetration. The collaboration between corporates, investors, and startups is highlighted as a key growth driver. The analysis concludes that despite challenges, accelerators and incubators play a crucial role in fostering innovation, job creation, and economic growth in India.	Rajan, R., & Motwani, A. (2021) [10]
5	The study analyses the importance of linking sustainable development with the startup ecosystem in India through a conceptual framework. It highlights that entrepreneurship alone cannot ensure long-term economic growth without a strong and sustainable ecosystem. The paper emphasizes the triple bottom line approach, focusing on economic, social, and environmental dimensions for balanced development. It explains that startups play a key role in job creation, innovation, and addressing societal challenges. However, many Indian startups struggle due to lack of support systems, funding, and policy limitations. The study also points out that collaboration among government, industry, academia, and investors is essential for ecosystem growth. It discusses how	Chillakuri, B., Vanka, S., & Mogili, R. (2020) [11]

	initiatives like Startup India and improved ease of doing business are strengthening the ecosystem. Furthermore, the framework identifies key actors such as incubators, mentors, infrastructure, and financial institutions. The analysis concludes that a sustainable and integrated ecosystem is crucial for the long-term success and global competitiveness of Indian startups.	

3. RESEARCH GAP :

The study reveals several research gaps in understanding the role of start-ups in enhancing India's competitiveness. There is limited empirical research on micro-level factors influencing startup success and failure across different regions in India. Insufficient attention has been given to the long-term sustainability and scalability of startups beyond the initial growth phase. The role of emerging technologies like artificial intelligence in driving competitiveness is discussed conceptually but lacks detailed quantitative analysis. There is a gap in understanding the effectiveness of collaboration between startups, government, and academic institutions. Limited studies explore the impact of domestic funding sources compared to foreign investments on startup growth. The influence of leadership quality and entrepreneurial skills on competitiveness needs deeper investigation. There is inadequate research on sector-specific startup challenges, especially in deep-tech industries. The role of policy frameworks in supporting innovation-driven competitiveness is not sufficiently evaluated. Comparative studies between India and other emerging economies are lacking. Finally, future research should focus on developing comprehensive models to measure the direct impact of startup ecosystems on national competitiveness.

4. OBJECTIVES :

(1) To identify the key challenges and gaps in the startup ecosystem and suggest strategies for improving scalability, innovation, and global competitiveness.
(2) To examine the role of start-ups in enhancing India's national competitiveness and economic development.
(3) To analyse the impact of the entrepreneurial ecosystem, including government policies, institutions, and funding, on startup growth and sustainability.
(4) To evaluate the contribution of emerging technologies such as artificial intelligence and digital platforms in improving the competitiveness of startups.

5. METHODOLOGY :

This research paper utilizes a case study and secondary data to analyze the role of incubators and accelerators in the entrepreneurial startup ecosystem, focusing on fostering inclusivity and sustainability. Data/information is collected using keyword/prompt-based search using Google search, Google Scholar search, and AI-driven GPT search engines. The information is analysed using various frameworks as per the objectives of the paper [12-16].

6. ANALYSIS THROUGH VARIOUS CASE STUDIES :

In this study, incubators and accelerators are analysed through various case studies to examine their contribution to startup development, innovation ecosystems, and sustainable growth. Barbero et al. (2014) [17] and Sharma and Vohra (2020) [18] classified incubators into four categories based on their strategic focus, location, and ownership: (a) business innovation centers, which focus on regional economic development; (b) university incubators, which aim at commercializing technology; (c) research incubators, also located in educational institutions, which seek to valorise in-house research; and (d) stand-alone incubators, which focus on selecting and supporting nascent ventures with high potential." Accelerators represent a new form of entrepreneurial support organization that helps build networks, supports the development of individual start-ups, facilitates appropriate matches among ecosystem stakeholders, and identifies mentors and founders with the necessary motivation and expertise (Goswami et al. (2018). [19]. University incubation centers (UICs) contribute significantly to nurturing entrepreneurship and innovation in academic settings by equipping startups with essential resources, guidance, and networking support, while also strengthening connections between academia and industry (Kulkarni et al. (2026). [20]).

6.1 Case Study on University-based Incubators:

Higher Educational Institutions are increasingly establishing dynamic academic incubators as a strategic initiative to enhance their competitiveness and relevance in today's rapidly evolving landscape. The primary objective of these incubators is to attract and retain innovative students, dynamic faculty, and pioneering researchers by fostering an entrepreneurial spirit. Additionally, they serve as vital links for creating meaningful connections between industry and academia, thus promoting collaboration and facilitating the commercialization of groundbreaking ideas. Higher Education Institutions Startup incubators and accelerator centers (HEISIAC) have played a pivotal role in shaping the Indian startup ecosystem. They are essential in promoting entrepreneurship and supporting technology startups by providing comprehensive assistance from concept to scaling. The National Education Policy provides students and higher education institutions (HEIs) with greater flexibility to foster innovation and entrepreneurship by incorporating startup ecosystems into the curriculum. In India, there are 1,200 universities, colleges, and standalone institutions such as IIMs, IITs, National Institutes of Technology (NITs), National Institutes of Pharmaceutical Education and Research (NIPERs), central universities, deemed-to-be universities, state universities, and autonomous institutions that will support the transition of ideas and research from laboratories to the marketplace. This drives innovation and generates economic benefits.

Numerous successful startups in India have emerged from these higher education institutions, contributing to social and economic development by creating wealth and job opportunities. These enterprises play a crucial role in transforming laboratory research and ideas into market-ready products, thereby enhancing innovation and economic growth. Additionally, startups contribute to economic resilience, promote environmental awareness, and advance technological progress, all of which align with the vision of 'Visit Bharat' by 2047. The National Education Policy 2020 skill-based education provides students and higher education institutions (HEIs) with greater flexibility and a Holistic curriculum to foster innovation and entrepreneurship by incorporating startup ecosystems into the curriculum. In India, there are 1,200 universities, colleges, and standalone institutions such as IIMs, IITs, National Institutes of Technology (NITs), National Institutes of Pharmaceutical Education and Research (NIPERs), central universities, deemed-to-be universities, state universities, Private Universities, Government Colleges, private colleges, and autonomous institutions that will support the transition of ideas and research from laboratories to the marketplace. This drives innovation and generates economic benefits. As per the GUESSS India Report 2023, India is ranked highest in terms of the entrepreneurial spirit parameter (Students) compared to the US, England, China, Japan, and Germany.

Numerous successful startups in India have emerged from these higher education institutions, contributing to social and economic development by creating wealth and job opportunities. These enterprises play a crucial role in transforming laboratory research and ideas into market-ready products, thereby enhancing innovation and economic growth. Additionally, startups contribute to economic resilience, promote environmental awareness, and advance technological progress, all of which align with the vision of 'Visit Bharat' by 2047.

Table 3: Notable Startups emerged from higher education institutions

Education Institutions	Startups Incubated
IIT Delhi	Flipkart, Zomato
IIT Madras	Urban, Ladder, Agnikul, Cosmos
BITS Pilani	Swiggy,, MPL, Groww, BigBasket,, Zeta,Redbus
Society for Innovation and Entrepreneurship (SINE) IIT Bombay	Atomberg, GupShup, IdeaForge, Sedemac
Amity Innovation Incubator	Apna Circle.com
Centre for Innovation Incubation and Entrepreneurship, IIM Ahmedabad.	Innoz, Travelyaari
IIM Bangalore-NSRCEL	Amagi, Nextgen
ISB-Wadhwani Centre for Entrepreneurship Development	Orkash, Richcore, Lifesciences

Source: Author & Inc42

6.2 Case Study on University-based Incubators:

University-based incubators utilize academic resources, research facilities, and expertise to assist startups. They offer access to advanced research and a pool of skilled students. The Society for Innovation and Entrepreneurship (SINE) is one of India's earliest academic-backed incubators, launched at IIT Bombay. Established in 2004, it is among the oldest academic incubators in the country. SINE nurtures technology start-ups by providing comprehensive support from their initial stages to scaling up. The incubator focuses on bridging the gap between academia and the market by fostering an entrepreneurial mindset among students, researchers, faculty members, alumni, and others. Its primary goal is to support early-stage tech start-ups.

Table 4: Impact of the Society for Innovation and Entrepreneurship Incubator (SINE)

Impact	Focus Area
Resources offered by SINE	shared workspaces, prototype labs, access to IIT Bombay labs, technical expertise, mentoring, and access to funding
Number of startups supported	250 Startups are supported. SINE incubated companies span across over 25 different industries including around 5o in the healthcare, medtech and biotech space, 12 in agritech/food tech, 22 in cleantech and environmental sustainability, and 4 in education
Entrepreneurs and innovators are supported	1000
Employment Generated	"Employment is created by SINE Startups for 10000 individuals."
Funding	Plans to launch a Rs 100-crore venture capital (VC) fund to support deep tech start-ups and those in areas of national importance, and the Total Fund raised 7641 crores.
Collaboration	SINE engages in various initiatives with corporations, governments, institutions, and international organizations, establishing leadership in India's business incubation community for providing Startup Scale.

Case Study on IIT- M Incubation Cell (IITMIC)

6.3 Case Study on Government-Supported Incubators and Accelerators:

The National Initiative for Developing and Harnessing Innovations (NIDHI) was established in 2016 by the Department of Science and Technology to nurture technology startups. It offers various support mechanisms, including the NIDHI Seed Support Program, which provides early-stage funding to startups, and the NIDHI Accelerator program, which helps enhance the investment readiness of these startups. NIDHI encourages stakeholders—startups, entrepreneurs, innovators, scientists, technology experts, and academicians—to engage in translational research and innovation. The goal is to develop affordable products and technologies that benefit the public. The various NIDHI support schemes include NIDHI Entrepreneur in Residence (EIR), NIDHI Seed Support System (SSS), NIDHI Centers of Excellence (COE), NIDHI Accelerator, NIDHI PRAYAS, NIDHI Technology Business Incubator (TBI), and NIDHI Industrial Technology Business Incubator (ITBI).

Table 5: Government supported incubators

Impact	Focus Area
Products	1288
Incubation Network	180 center
No Entrepreneurs in Residence (EIR)	1074
No of Start-ups	571
Job created	3693
Patents	233
Prominent Start-ups	Atomberg Energy Efficient Fans& Ather Electric Bikes

Source: BS,06, Sep,2024

6.4 Case Study on T-Hub - an Innovation Hub:

India's Global Capability Centres have significantly expanded the landscape of the Innovation Hub. These centres provide large-scale facilities that host multiple incubation programs, fostering a collaborative environment for various startups and innovators. They offer support through the "6 M's ": Mentors, Market, Motivation, Manpower, Money, and Methodologies, along with the "2 Ps": Partnership and Policy. Established in 2015, the T-Hub aims to promote a culture of innovation across India and act as a catalyst for future startup entrepreneurship. It strengthens the startup innovation ecosystem by collaborating with government entities, corporations, academic institutions, and financial organizations. Through various incubation and acceleration programs, T-Hub connects startups with venture capabilities and angel investors, offering funding, workspace, technological assistance, and access to government schemes for early-stage, growth-stage, and scaling-stage startups.

T-Hub partners with the Atal Innovation Mission (AIM), NITI Aayog, the Department of Science and Technology (DST), and the Confederation of Indian Industry (CII). Its programs, such as Lab32, T-Angel, T-Bridge, and RubriX, empower entrepreneurial and innovation ecosystems by incubating technologies in areas such as artificial intelligence and machine learning, mobility, space technology, climate technology, health technology, sustainability, semiconductors, and agriculture.

Table 6: T- Hub impact on the Innovation ecosystem

Impact	Focus area
Engaging Startups	2000 plus
Funding Support to Startups	$1.94Billion
Programs	100
Corporate engagements	110
International Connects	400
Mentor	200 Plus

Source: T-Hub website-https://t-hub.co/about-us/

6.5 Case study on non-profit Incubator and Accelerator - NUDGE FOUNDATION- N/Core:

Non-profit incubators aid in creating social impact, fostering community development, and supporting entrepreneurs from underserved backgrounds.

N/Core, a Bengaluru-based non-profit incubator, supports early-stage non-profits focusing on poverty alleviation. Founded by Atul Satija, this initiative plans to invest over $7.3 million (INR 50 crore) to create a 'Collective' of 100 leaders. N/Core aims to mentor these non-profit ventures by providing seed grants, coworking spaces, and valuable connections to help them scale. The supported ventures may operate in various areas, including education, healthcare, employability, access to finance, agriculture, water, sanitation, energy, gender equality, human rights, and disaster management. N/Core offers grants of up to INR 15 lakh for early-stage non-profits and provides an accelerator program for those with proven models, offering scale-up support with grants of up to INR 2 crore.

Table 7: Incubator and acceleration process

N/Core Incubator Process	N/Core Acceleration Process
Seed grants of 10 lakhs to 15 lakhs will be provided for product development and training. Additionally, boot camps, mentoring, and networking will be organized.	The grant includes a Seed Grant and a Special Grant for the pilot project, amounting to Rs 25 lakhs to 50 lakhs, along with mentoring and roadshows.

6.6 Case Study: Government-supported incubation Scheme-NGIS :

The 2019-Next Generation Incubation Scheme (NGIS) is an innovative and comprehensive initiative led by the Ministry of Electronics and Information Technology (MeitY) and implemented by the Software Technology Parks of India (STPI). This scheme aims to enhance the startup ecosystem in Tier-II and Tier-III cities across India by providing critical support to tech startups.

Under NGIS, 12 specialized incubators have been established in strategically selected locations, including Agartala, Bhilai, Bhopal, Bhubaneswar, Dehradun, Guwahati, Jaipur, Lucknow, Prayagraj, Mohali, Patna, and Vijayawada. These incubators are designed to support and nurture 300 tech startups, fostering innovation and promoting entrepreneurship outside of metropolitan hubs.

The initiative emphasizes the importance of decentralizing the startup ecosystem and providing necessary resources, mentorship, and infrastructure to startups in smaller cities, ensuring a more inclusive approach to innovation and economic growth in India.

6.7 Case Study MSME Innovative Scheme of Incubation :

MSME Innovative Scheme has three components viz., incubation, design, and intellectual property rights The Scheme aims to support innovation throughout the entire value chain, from idea generation to the development of new applications. The Incubation component involves recognizing eligible institutions as Host Institutes (HIs) that act as business incubators. This includes approving the ideas submitted by incubates through the HIs, providing assistance to help nurture these ideas, and offering capital support to the HIs for equipment and machinery.

Accelerators and incubators both nurture startups and entrepreneurs by providing an array of resources. the MSME Innovative Scheme emphasizes the importance of supporting innovation at all levels, ultimately contributing to economic growth and sustainability within the MSME sector. This initiative reflects a commitment to fostering a robust entrepreneurial ecosystem that encourages creativity and the commercialization of innovative ideas.

6.8 Case Study- IIT-M Madras Incubation Cell (IITMIC) :

IIT-Madras Incubation Cell (IITMIC) has made significant strides since its inception in 2012, successfully incubating over 500 startups. The incubator has become a breeding ground for some of India's most recognizable deep-tech successes, such as Ather Energy, which became the first IITMIC-backed company to go public, and Uniphore, a company now valued at $2.5 billion. Other notable incubated startups include Agnikul, which recently raised $15 million at a valuation of $500 million, alongside emerging players like GalaxEye, MediBuddy, and Stellapps.

IITMIC actively engages with more than 200 investors, comprising venture capitalists, angel investors, high-net-worth individuals, family offices, and corporate venture funds from major markets including Mumbai, Bengaluru, the US, UAE, and Japan. Fund flows to IITMIC-incubated startups have seen a dramatic increase in recent years, soaring to $121 million in 2024 and already reaching $291 million in 2025, a remarkable rise from the $13-22 million range seen annually between 2015 and 2018.

Furthermore, IITMIC's incubated companies have demonstrated innovation and creativity, filing over 700 patents in 2025 alone. The sectors represented by these startups include manufacturing technology, robotics, space tech, IoT, mobility, biotech, and more. Over 105 startups within the incubator have successfully raised pre-Series or Series A+ capital, showcasing the robust entrepreneurial spirit fostered within this dynamic ecosystem.

(Source: Outlook startups and The Hindu Business Line)

7. ABCD ANALYSIS :

Analysis of advantages, benefits, constraints, and disadvantages of the ecosystem of startup incubators and accelerators for innovation and sustainability from various stakeholders' points of view [21-24].

7.1 Advantages:

(1) Incubators and accelerators provide startups with a clear roadmap, mentoring, and resources, reducing the uncertainty faced in early stages through a structured support system.
(2) Startups benefit from experienced mentors, industry experts, and successful entrepreneurs who help refine ideas and strategies to get access to expert guidance.
(3) Networking opportunities create strong connections with investors, industry leaders, and other startups, which enhance collaboration and growth opportunities.
(4) Startups supported by incubators/accelerators have a higher chance of survival due to continuous guidance and monitoring.
(5) These platforms promote innovative ideas and often encourage sustainable and socially responsible business models.

7.2 Benefits:

(1) Funding support from many accelerators provides seed funding or helps startups connect with venture capitalists and angel investors.

(2) Infrastructure & resources for startups get access to office space, technology, labs, and other essential facilities at a lower cost.
(3) Entrepreneurs gain knowledge in areas like business planning, marketing, finance, and operations to enhance their skill development.
(4) Incubators help startups test their products in real markets and reach customers faster.
(5) Being associated with reputed incubators increases trust among investors and customers leads to brand credibility.

7.3 Constraints:

(1) Limited entry opportunities Not all startups get selected, as incubators have strict criteria and limited slots.
(2) Accelerator programs are time-bound, which may not be enough for some startups to fully develop.
(3) Startups may become overly dependent on mentor guidance, limiting independent decision-making.
(4) Some incubators focus only on specific industries, restricting opportunities for other types of startups.
(5) Most incubators are geographical concentration like urban areas, making access difficult for rural entrepreneurs.

7.4 Disadvantages:

(1) Equity dilution like many accelerators take equity in exchange for support, which reduces founders' ownership.
(2) Startups may face high pressure to achieve rapid growth, sometimes at the cost of long-term sustainability.
(3) Programs may follow a standardized approach that doesn't suit all types of startups or industries.
(4) Startups within the same incubator may compete for limited resources and attention.
(5) Sometimes the goals of startups and incubators/accelerators may not align, leading to conflicts.

8. CONCLUSION :

The study concludes that start-ups play a crucial role in enhancing India's competitiveness and driving economic growth in a rapidly evolving global environment. It highlights that India has made significant progress in improving its competitive position, but still faces challenges in transitioning to an innovation-driven economy. Start-ups contribute through innovation, employment generation, and technological advancements, especially in emerging sectors like AI and digital platforms. However, issues such as limited scalability, funding constraints, and ecosystem gaps hinder their full potential. The study emphasizes the importance of strong collaboration among government, industry, and academic institutions to build a supportive entrepreneurial ecosystem. It also underlines the need for improved leadership, skill development, and strategic flexibility among firms. The role of focal institutions like IITs and leading firms is critical in nurturing innovation and supporting startups. Furthermore, promoting domestic investment and reducing dependence on foreign capital is essential for sustainable growth. The study suggests that policy reforms and targeted support can strengthen startup ecosystems across regions. A robust and innovation-driven startup ecosystem is key to achieving long-term competitiveness and inclusive economic development in India.

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