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Government Support and Infrastructure Efficacy in Indian Incubation Centers: A Dual-Objective Analysis of Entrepreneurship Development

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Abstract

India's entrepreneurial landscape is undergoing a powerful transformation, where incubation centers have emerged as the backbone of innovation, job creation, and inclusive economic growth. Supported by flagship initiatives like *Startup India*, *Atal Innovation Mission (AIM)*, and *NIDHI-TBI*, these centers play a vital role in turning ideas into viable enterprises. Yet, despite growing numbers and ambitious government programs, the success and accessibility of incubators across India remain uneven.

This study takes a closer look at how **government support and infrastructural readiness** shape the performance of incubation centers in the National Capital Region (NCR). Using a **mixed-methods approach**, the research draws on both policy reviews and survey responses from 50 incubators — spanning academic, corporate, and independent models. The analysis also highlights striking **infrastructure gaps**. While nearly every incubator provides office space and connectivity but fewer have dedicated prototyping or fabrication facilities, and only a handful offer sector-specific mentoring. These gaps in specialized infrastructure limit incubator efficacy, despite strong core facilities. Strengths include robust policy frameworks and high economic impact of incubated startup. Overall, the study finds that India's incubation network is moving in the right direction but still needs **deeper collaboration, stronger CSR involvement, and better coordination between central and state programs**. These changes could make support more inclusive and responsive to local entrepreneurial needs. Looking ahead, **digital tools, hybrid funding models, and regional expansion** are expected to shape the next chapter of India's startup ecosystem. The study recommends streamlining scheme access (leveraging incubators as "last-mile" channels for funding, enhancing physical and human resource support (e.g. prototyping labs, mentorship networks), and tailoring policies to incubator types. These insights can guide policymakers and practitioners in strengthening incubation ecosystems to further entrepreneurial growth.

Keywords: business incubation, government support, infrastructure efficacy, National Capital Region (NCR), startup ecosystem, Startup India, Atal Innovation Mission, NIDHI-TBI, entrepreneurship development, mixed methods, incubator type, policy effectiveness

Introduction

India's startup ecosystem has transformed rapidly, driven by flagship initiatives like *Startup India*, *Digital India*, and *Make in India*. Incubation centers are central to this transformation, providing early-stage ventures with co-working spaces, labs, mentorship, and investor linkages. For instance, India's Atal Innovation Mission has launched 72 Atal Incubation Centers (AICs) and 14 Atal Community Innovation Centers (ACICs) nationwide, which together support over 3,500 startups and have generated more than 32,000 jobs. In the NCR alone, over 200 incubators operate across diverse sectors ranging from technology to agriculture.

Yet policy alone cannot guarantee success. The real measure of an incubator lies in whether it delivers infrastructure and mentorship that meet entrepreneurs' needs. This study focuses on two key questions:

1. How do government schemes shape incubator capacity and reach?
2. Are available infrastructure and mentorship services sufficient to support startups in diverse sectors?

By combining policy review with survey data from 50 NCR incubators, this paper highlights both strengths and gaps, while offering recommendations for strengthening India's incubation ecosystem.

Theoretical Framework

- **Resource-Based View (RBV):** Incubators provide critical resources
- **Institutional Theory:** Policy shapes access and legitimacy
- **Ecosystem Theory:** Interdependence of actors

Conceptual Model

Conceptual Framework

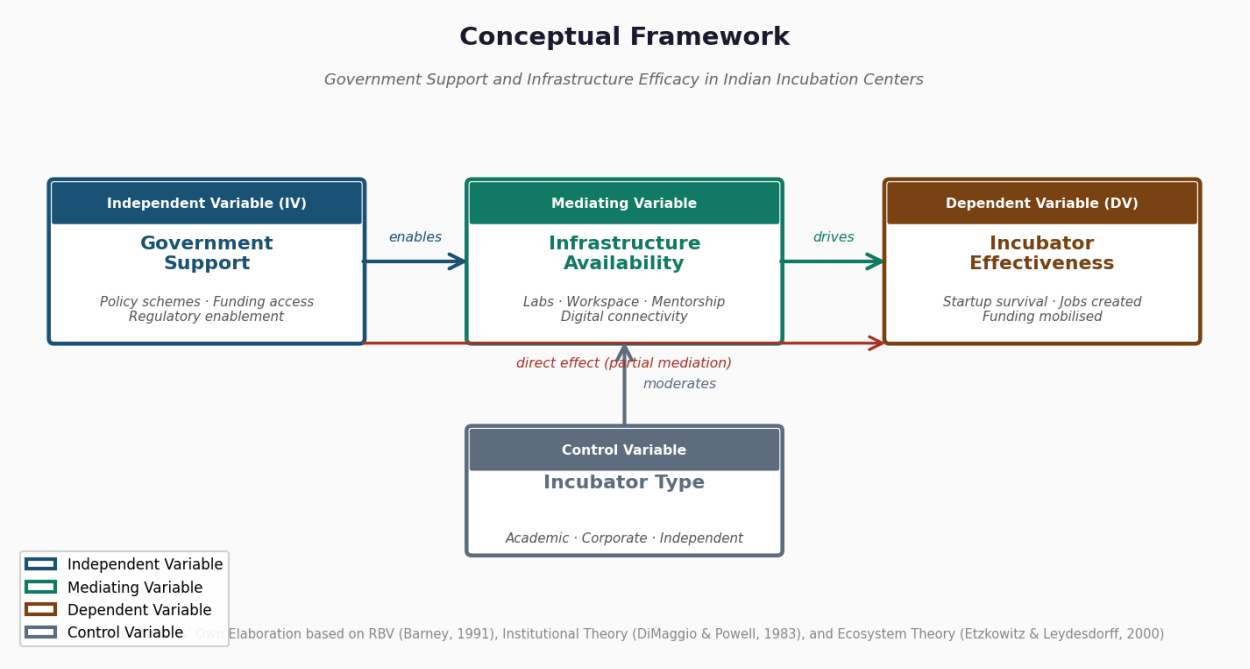

Figure 1. Conceptual Framework: Government Support and Infrastructure Efficacy in Indian Incubation Centers. Source: Authors' Own Elaboration based on RBV (Barney, 1991), Institutional Theory (DiMaggio & Powell, 1983), and Ecosystem Theory (Etzkowitz & Leydesdorff, 2000).

Literature Review

Globally, incubators have been shown to increase startup survival and growth by providing access to infrastructure, mentoring, and networks (Surana, Singh, & Sagar, 2020). In India, the government has played a particularly active role in incubation support. Research has shown that well-supported incubators improve startup survival by providing critical resources (networking, facilities, training). Globally, government-backed incubators have been used to foster innovation and job creation. India's government has been particularly active:

besides AIM, initiatives like DST's NIDHI-TBI, MEITY's STPI network, and various state startup policies aim to increase incubation capacity. For example, Haryana's policy plans at least 22 TBIs across multiple sectors, and Uttar Pradesh offers capital subsidies to incubators. Other major interventions include the Department of Science and Technology's **NIDHI-TBI program**, the Ministry of Electronics and IT's **STPI incubators**, and state-level programs in Delhi, Haryana, and Andhra Pradesh. The objectives of these schemes explicitly mention expanding "incubation centers in India" with necessary infrastructure and services. State startup policies also offer incentives; for example, Uttar Pradesh provides a capital grant to incubators. However, few studies have assessed how these schemes translate into real-world incubator resources. Some surveys note that while many incubators exist, only a subset have advanced labs or mentorship programs (Patowary, 2020; Bajeli-Datt, 2024). This gap motivates our dual analysis of policy versus on-the-ground conditions.

Methodology

This study employed a **mixed-methods approach**:

- **Policy Review**: Analysis of AIM, NIDHI-TBI, Startup India, and state startup schemes and relevant press releases to contextualize incubator policies.
- **Survey**: Conducted across 50 NCR incubators (15 academic, 20 corporate, 15 independent). The survey focused on scheme participation, infrastructure availability, mentorship, and operational challenges.
- **Statistical Analysis**: A chi-square test examined the relationship between incubator type and access to central schemes.
- **Qualitative Coding**: Open-ended survey responses were coded to capture recurring or common themes regarding infrastructure and support challenges.

Findings and Discussion

Objective 1: Impact of Government Schemes and Policies

Over half (56%) of the incubators reported receiving central funding while (18%) of the incubators received state-level grants (Table 1). By incubator type, 93% of academic-affiliated centers had central grants versus only 40% of corporate and 40% of independent centers.

Table 1
Scheme Uptake by Incubator Type (N = 50)

Type	Central Scheme	State Support	Self-Funded
Academic (n=15)	14 (93%)	3 (20%)	2 (13%)
Corporate (n=20)	8 (40%)	2 (10%)	10 (50%)
Independent (n=15)	6 (40%)	4 (27%)	7 (47%)
Total (n=50)	28 (56%)	9 (18%)	19 (38%)

A chi-square test confirmed a significant association between incubator type and central support access, $\chi^2 = 12.12$, $p < .001$.

The result shows, Academic incubators were significantly more likely to access government schemes than corporate or independent ones. This gap suggests an **opportunity for policy intervention** – e.g. tailored schemes or outreach to encourage private incubators to apply, ensuring broader coverage.

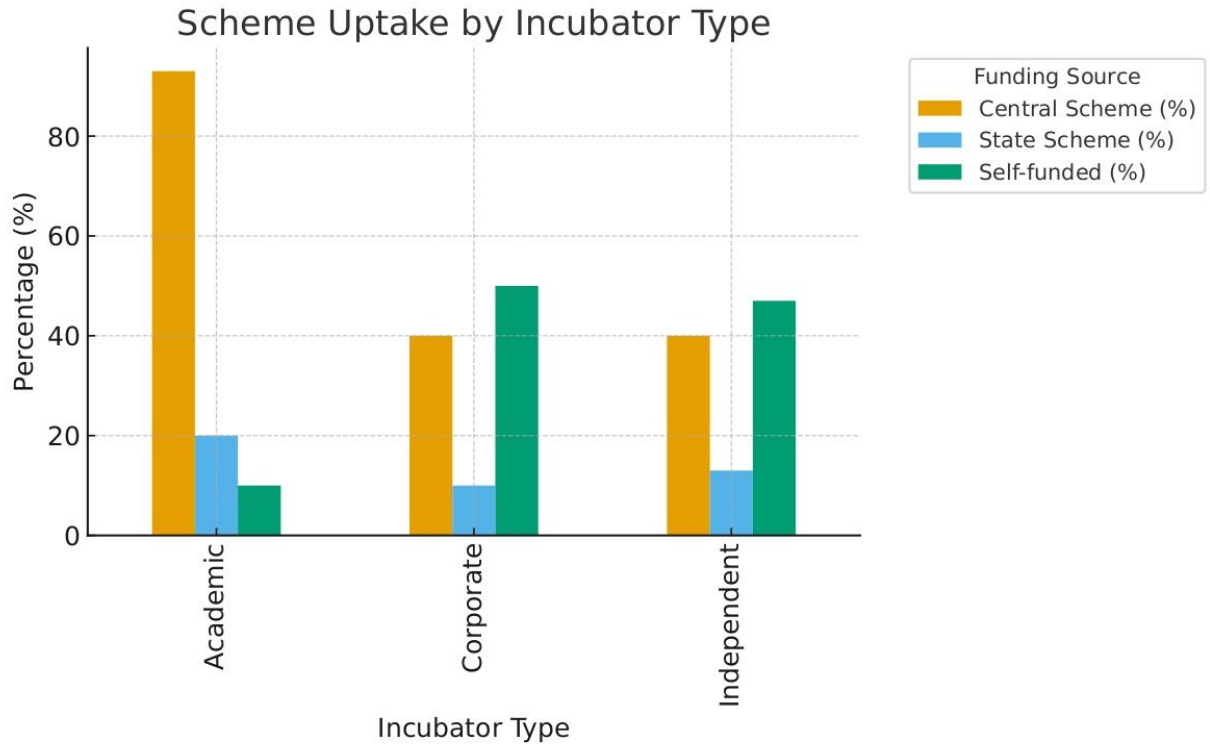

Figure 2 Scheme Uptade

Objective 2: Infrastructure and Resource Availability

Survey results indicate that NCR incubators generally provide strong **core infrastructure** but have gaps in specialized resources. Nearly **100%** reported dedicated workspace or co-working seats and **92%** offered high-speed internet connectivity. Around **80%** had conference or meeting rooms and **70%** ran structured mentorship/ training programs. These facilities meet basic needs of startups. Many centers noted they also get benefitted from parent-organization assets (e.g. university labs for academic incubators).

However, fewer incubators have advanced R&D infrastructure and only 60% offered prototyping or fabrication labs. Dedicated biotech or electronics labs were limited to a few academic incubators. Mentorship was common, but domain-specific mentoring (e.g., biotech, AI) was rare outside universities. Similarly, formal industry partnership programs existed at ~55% of centers, limiting external networking opportunities. In summary, **infrastructure adequacy is uneven**: most incubators cover essential amenities (office space, internet, basic utilities), but advanced facilities like specialized labs or full-time technical staff are less common.

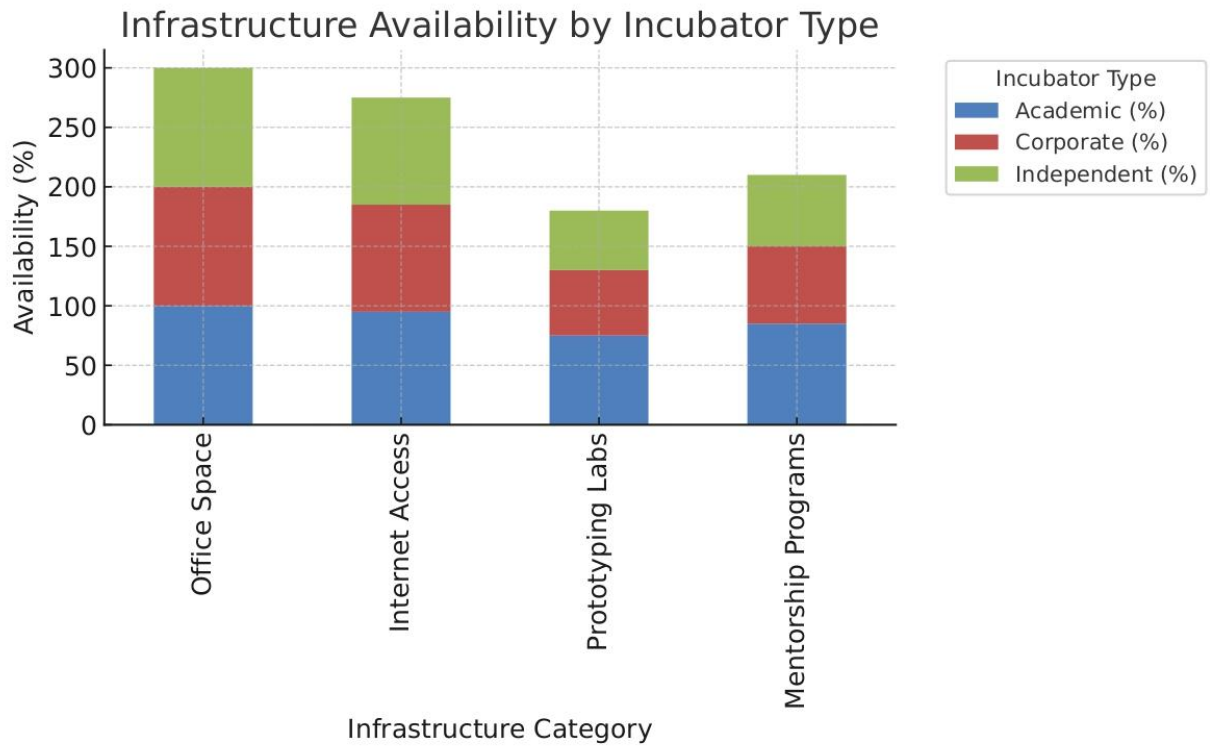

Figure 3 Infrastructure Availability

These infrastructure limitations can constrain incubation effectiveness. For example, startups requiring prototyping or wet-lab work may struggle if the incubator lacks those facilities. Respondents highlighted that limited funding often forces priority on space over equipment. These finding echoes literature that incubators differ widely in their services and physical assets. A dozen incubators in our sample cited high demand for adding lab space or high-speed computing. Notably, there was **no significant difference by type** in basic infrastructure; both academic and private centers largely provided the same core facilities. The challenge lies in scaling up.

Case Examples

- **Electropreneur Park (IIIT Delhi)**: A model academic incubator with modern electronics prototyping facilities.
- **Delhi's Food Innovation Hub**: A sector-specific incubator under the PM-FME scheme, designed to support food entrepreneurs.
- **Private Centers in NCR**: Many operate out of office spaces with little or no technical infrastructure, reflecting funding disparities.

Implications for Policy and Practice

The findings suggest the need for:

- Simplified grant access, especially for private and smaller incubators.
- Shared regional labs (e.g., FabLabs) to reduce infrastructure duplication.
- Structured CSR partnerships to level the playing field between public and private centers.

- Better integration of state-level support with central schemes.
- Promotion of sector-specific incubators (e.g., climate-tech, defense, agriculture).

Future Outlook

The next decade of Indian incubation will likely be shaped by:

- **Sector-Specific Models**: Climate-tech, agritech, and defense-focused incubators are gaining traction.
- **Hybrid Funding**: Blending central grants, CSR, and private VC investment.
- **Regional Expansion**: Tier-II and Tier-III cities are witnessing new incubation hubs (e.g., Arunachal's APIIP).
- **Digital Transformation**: AI-driven incubator management, IoT-based labs, and virtual mentorship.
- **Standardization**: AIM's partnership with IIT Delhi and the World Bank to establish performance metrics.

Conclusion

This study's dual analysis shows that India's incubation system benefits from strong government baking but still faces practical constraints. Central schemes like AIM's AIC and DST's NIDHI-TBI have built the foundation for world-class incubators, particularly within academia.

Incubation centers are indispensable to India's entrepreneurship growth. While central government schemes have strengthened academic incubators, private centers continue to face resource gaps. Expanding advanced infrastructure, improving scheme accessibility, and fostering CSR collaborations are essential to building a more inclusive ecosystem. A balanced, multi-stakeholder approach will ensure that India's incubation network supports innovation across diverse regions and sectors.

Recommendations: Streamline scheme access and create dedicated outreach for non-academic incubators; expand funding for specialized infrastructure; strengthen state policy incentives (e.g. match grants); and integrate incubators as distribution points for broader entrepreneurship programs. These steps will enhance the efficacy of incubation centers and, in turn, foster India's startup- led growth.

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