

Incubator Interventions and Funding Outcomes in Gujarat's Startup Ecosystem

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Abstract

Purpose – This study examines how incubated founders in Gujarat evaluate startup-support infrastructure, access to funding, and support from incubation centres. **Design/methodology/approach** – A descriptive, cross-sectional survey was conducted with 200 founders/co-founders and startup representatives associated with 20 incubation centres in Gujarat. Eligible ventures were registered or associated after April 2015 and had progressed at least to proof-of-concept. The instrument used demographic and venture-profile questions, multiple-response items, and five-point scales. Descriptive statistics, analysis of variance, and independent-samples tests reported in the source dataset were critically re-examined; internally inconsistent rank calculations and significance interpretations were corrected where the available frequency tables permitted recomputation. **Findings** – Respondents reported strong agreement that incubators provided co-working, government funding, mentoring and infrastructure support, yet 47.5% identified external funding as an unmet need. Only 11.5% of ventures reported having obtained external funding. Support perceptions differed by gender in the available data. **Originality/value** – The paper provides founder-level evidence from the Gujarat ecosystem and highlights a policy-relevant “support-to-scale” gap: incubator and grant support appears comparatively visible, while private/external capital and growth-stage connections remain weaker.

Keywords: entrepreneurial ecosystem; startup incubation; startup funding; Gujarat; Startup India; entrepreneurial support organisations; innovators; startups

1. Introduction

A **startup ecosystem** encompasses the network of people, organisations, institutions, and environmental factors that collectively support and drive entrepreneurship in a region. It includes entrepreneurs, startups at various stages, investors (venture capitalists, angels, banks), mentors, universities, support organisations (incubators, accelerators), and governmental bodies, as well as the cultural and business processes that tie them together. These are interdependent regional systems in which institutions, networks, finance, talent, knowledge and support organisations jointly shape entrepreneurial activity. Contemporary ecosystem research emphasises that the value of an ecosystem lies in the relationships among its elements and in the mechanisms through which entrepreneurs can mobilise resources, legitimacy and knowledge (Spigel, 2017; Stam & van de Ven, 2021). This relational perspective is particularly relevant in emerging economies, where policy institutions and incubators often compensate for thin private-capital markets and uneven access to specialised networks.

India offers an unusually large setting in which to study these mechanisms. By 31 March 2026, more than 223,000 entities had been recognised under the Startup India initiative, and these firms were credited with more than 2.33 million direct jobs. Gujarat was among the leading states, with more than 19,270 recognised startups and approximately 214,800 direct jobs reported by the Government of India. The scale of this growth makes the effectiveness of state-level support systems an empirical question rather than merely a policy aspiration (Government of India, 2026).

Gujarat's state support combines general entrepreneurship policy with a strong education-linked innovation architecture. Incubation centres, university-based entrepreneurship organisations and the Student Startup and Innovation Policy (SSIP) create multiple entry points for early-stage ventures. However, ecosystem maturity cannot be inferred from the number of incubators or schemes alone. Founders must be able to move from proof-of-concept and minimum viable product to market validation, repeatable revenue and growth capital. A state ecosystem can therefore be simultaneously strong in early-stage support and weak in the “handoff” to private capital, industry customers and scaling networks.

This paper examines that possible gap using survey evidence from 200 incubated ventures in Gujarat. Rather than attempting to reproduce an entire thesis synopsis, the article focuses on four publishable questions: (1) who participates in the sampled ecosystem; (2) which incubation and funding supports are actually visible to founders; (3) where founders report unmet needs; and (4) which success and failure factors they consider most important. It also re-examines the reported inferential statistics to avoid reproducing internal inconsistencies in the source tables.

2. Literature Review and Research Gap

2.1 Entrepreneurial ecosystems as relational systems

Spigel (2017) conceptualises entrepreneurial ecosystems as configurations of cultural, social and material attributes whose relationships enable entrepreneurial activity. Stam and van de Ven (2021) similarly distinguish institutional arrangements from resource endowments and argue that ecosystem outcomes depend on the interdependence of these elements. Ziakis, Vlachopoulou and Petridis (2022) operationalise this view through a startup-ecosystem framework in which government, funding, connectivity, entrepreneurship education, incubator support and mentoring emerge as important contextual drivers. These approaches shift analysis away from simple counts of startups and towards entrepreneurs' actual access to ecosystem resources.

2.2 Incubators, signalling and resource acquisition

Incubators and accelerators can reduce resource constraints by providing infrastructure, mentoring, legitimacy, networks and investor connections. Recent Indian evidence supports this mechanism. Aggarwal and Acharya (2024) compared 146 incubated startups with 84 non-incubated startups and reported that incubated firms acquired resources more rapidly and performed better on multiple outcomes. Kaur et al. (2024), studying Indian FinTech ventures, found that incubator/accelerator engagement had a significant signalling relationship with startup funding. University-incubator research from Karnataka likewise links institutional support and resource acquisition to startup performance (Kulkarni et al., 2026). Collectively, these studies suggest that incubation matters, but they also raise a second question: which resources continue to remain scarce even after incubation?

2.3 Policy support and the transition from entry to scale

Indian entrepreneurship policy has increasingly used grants, seed funds, incubators, simplification measures and academic linkages. Deep and Sisodia (2025) stress the role of higher-education incubation

and industry-academia coordination in sustaining the national startup ecosystem. At the same time, Nagaraj et al. (2025) argue that Startup India policy instruments remain disproportionately focused on financial incentives and early-stage support, with comparatively fewer mechanisms dedicated to growth-stage “boosting” and network bridging. This critique is relevant to Gujarat because strong scheme awareness or early grants may coexist with weak follow-on investment, market access and scale-up support.

2.4 Research gap

The literature establishes the importance of entrepreneurial ecosystems, incubation and public policy, but founder-level state evidence remains comparatively limited. Much Indian research is either national, sector-specific, policy-oriented or focused on comparisons between incubated and non-incubated firms. There is less evidence combining, within one state sample, founders’ evaluations of incubation support, policy awareness and benefit uptake, government and external funding, unmet support requirements, and perceived success/failure factors. Gujarat offers a meaningful subnational context because it combines a strong university-linked incubation architecture with a large and growing startup base. The present study addresses this gap through evidence from 200 incubated ventures.

3. Research Questions and Analytical Framework

- RQ1. What demographic and venture characteristics describe the sampled incubated startup population in Gujarat?
- RQ2. How do founders evaluate incubation support, and which forms of support remain unmet?
- RQ3. Do perceptions of startups for incubation support differ across selected demographic and venture groups?

Analytically, the study treats incubation facilities and funding mechanisms as ecosystem resources; founder and venture characteristics as contextual variables; and founder perceptions of incubation support rather than observed causal outcomes. This distinction is important: the cross-sectional design can identify patterns and group differences, but it cannot demonstrate that a particular support mechanism caused venture success or failure.

4. Methodology

4.1 Research design and sample

This study used a descriptive, cross-sectional survey design. The target population comprised startups in Gujarat associated with incubation centres, with inclusion restricted to ventures entering the ecosystem after April 2015 and having progressed at least to proof-of-concept. The source synopsis identifies 45 incubation centres under the Gujarat “Scheme for Assistance for Start-up/Innovation – 2020.” Twenty centres were selected to provide geographic spread and adequate startup representation, after which 200 startup respondents were recruited from a population described as exceeding 5,000 incubated ventures. The source document uses both “multistage random sampling” and “convenient random sampling” to describe recruitment, while also stating that centres were chosen using geographic variation and the number of associated startups. Accordingly, this article describes the design conservatively as a multistage, centre-based sample with purposive geographic selection of incubation centres and mixed respondent recruitment. This wording avoids overstating probability sampling and recognises the resulting limits on statistical generalisation.

4.2 Instrument and measures

Primary data were collected through a structured questionnaire administered through online forms/email, telephone interaction and direct contact. The instrument contained demographic and venture-profile items, multiple-response questions on policy awareness and support utilisation, and five-point scales. Incubator-support and factor statements were coded from 1 = strongly agree to 5 = strongly disagree; therefore, lower mean scores indicate stronger agreement. Success-factor items were rated from 1 = least important to 5 = highly important.

The source synopsis states that the questionnaire was reviewed with academic and industry experts, including incubation-centre heads and government officers. However, it does not report Cronbach's alpha, exploratory/confirmatory factor analysis or other formal scale-reliability/construct-validity statistics. These diagnostics should be added in a future revision if the raw item-level dataset is available.

4.3 Statistical analysis and integrity corrections

The original analysis was conducted in IBM SPSS Statistics 23 and Microsoft Excel using frequencies, percentages, mean scores, weighted rankings, one-way ANOVA and independent-samples t-tests. For this manuscript, results were retained only where the tables were internally interpretable. Three corrections were necessary. First, age counts were aligned with the stated percentages and narrative (46% aged 26–35 and 28.5% under 25). Second, the success-factor ranking was recomputed directly from the published response frequencies because the original weighted-score formula reversed the questionnaire's stated 1-to-5 importance direction. For the gender comparison of incubation support, Levene's test indicated unequal variances; therefore, the Welch result ($t \approx 3.09$, $df \approx 118$, $p = .002$) is the more appropriate inferential statistic than the equal-variance row.

5. Results

5.1 Founder and venture profile

The sample was predominantly male (78%), although the gender imbalance should be interpreted as a feature of this sample rather than a population estimate. The largest age group was 26–35 years (46%), followed by respondents below 25 years (28.5%) and those aged 36–45 (23.5%). Engineering was the dominant academic background (52%). Students represented 42.5% of founder backgrounds, business owners 28.5%, professionals 25% and family-business backgrounds 4%. Most respondents were founders/CEOs (74%).

Table 1. Selected founder characteristics (n = 200)

Dimension	Category	%
Gender	Male	78.0
Gender	Female	22.0
Age	<25 years	28.5
Age	26–35 years	46.0
Age	36–45 years	23.5
Age	>46 years	2.0

Academic background	Engineering	52.0
Academic background	Science	17.0
Academic background	Management	9.5
Academic background	IT	7.0
Academic background	Medical	6.5
Founder background	Student	42.5
Founder background	Business owner	28.5
Founder background	Professional	25.0
Founder background	Family business	4.0

Note. Percentages are taken from the respondent's responses. Age frequencies in one source table were transposed; percentages and the narrative were internally consistent and are used here.

Venture characteristics suggest that the survey captured firms beyond pure ideation. Private limited companies accounted for 63.5% and LLPs for 21%. Fifty-nine per cent described their venture as an improvement of an existing idea and 35.5% as a completely new idea. Product innovation dominated (60.5%), followed by service innovation (22.5%). Early traction (36.5%) and scaling up (26%) were the largest development stages, followed by MVP (18%) and proof of concept/conception (11.5%). Healthcare and medical devices were the largest sector (25.5%), followed by education/lifestyle (15.5%), manufacturing (14%) and IT/IoT (11%).

5.2 Incubator support and unmet needs

Table 2. Perceived incubation support and unmet support

Support dimension	Mean agreement score	% reporting support not received
Co-working / dedicated office	1.54	8.5
Government funding support	1.55	21.0
Mentoring support	1.60	24.5
Infrastructure support	1.62	14.0
External funding support	1.89	47.5
Laboratory support	2.03	18.5
Library	2.40	6.5

Note. Agreement scale: 1 = strongly agree and 5 = strongly disagree, so lower means indicate stronger perceived provision. The unmet-support item was a multiple-response item.

Respondents evaluated several tangible and institutional supports favourably: co-working space, government-funding support, mentoring and general infrastructure all had means close to the “agree/strongly agree” end of the scale. The most prominent unmet requirement, however, was external funding support: 47.5% said they expected this support but had not received it. Mentoring (24.5%) and government-funding support (21%) were the next most common gaps. This pattern points to a distinction between incubator presence and successful investor linkage.

5.3 Selected group differences

Table 3. Selected inferential results retained after consistency review

Comparison	Test	p-value	Interpretation
Incubator support vs age	ANOVA	$p = .596$	No evidence of difference
Incubator support vs academic background	ANOVA	$p = .752$	No evidence of difference
Incubator support vs family income	ANOVA	$p = .664$	No evidence of difference
Incubator support vs founder background	ANOVA	$p = .867$	No evidence of difference
Incubator support vs startup type	ANOVA	$p = .886$	No evidence of difference
Incubator support vs innovation category	ANOVA	$p = .904$	No evidence of difference
Incubator support vs product stage	ANOVA	$p = .464$	No evidence of difference
Incubator support vs sector	ANOVA	$p = .594$	No evidence of difference
Incubator support vs government-funding experience	ANOVA	$p = .010$	Difference detected
Incubator support vs gender	Welch t-test	$p = .002$	Difference detected
Failure perceptions vs product stage	ANOVA	$p = .058$	Not significant at .05
Failure perceptions vs gender	t-test	$p = .087$	No evidence of difference

Note. Legal form vs support produced $p = .050$ and is treated as borderline rather than a robust effect. Internally inconsistent inferential rows were excluded from substantive interpretation.

Support evaluations were similar across most age, education, income, founder-background, startup-type, innovation-category, product-stage and sector groups. The clearest group pattern was gender. Female respondents reported a lower (more favourable) mean support score ($M = 1.61$, $SD = 0.40$) than male respondents ($M = 1.86$, $SD = 0.68$). Because Levene's test was significant, the unequal-variance result is preferred: Welch $t \approx 3.09$, $df \approx 118$, $p = .002$. The result should be interpreted cautiously because the sample was 78% male and the study was not designed to explain the mechanism behind the difference. Perceived failure reasons, in contrast, did not significantly differ by gender ($p = .087$), and the source ANOVA for product stage yields $p = .058$, which is above the conventional .05 threshold.

6. Points of Discussion

6.1 Strong early support, weaker capital handoff

The central finding is not that Gujarat lacks startup support. Respondents generally recognised and positively evaluated co-working, government funding, mentoring and infrastructure support. Instead, the weakness appears at the boundary between incubation and external capital. Nearly half the respondents reported external funding support as an unmet incubator expectation, and fewer than one in eight had obtained external funding. This is consistent with the broader literature showing that incubators can improve resource acquisition (Aggarwal & Acharya, 2024) and act as valuable social-capital signals to investors (Kaur et al., 2024), while also implying that incubator effectiveness should be assessed by the quality of downstream linkages, not only by facilities supplied.

6.2 Awareness does not guarantee utilisation

The large differences between scheme awareness and benefit receipt are also policy-relevant. Awareness of the Startup India Seed Fund was reported by 95%, yet only 8.5% reported receiving benefits from it. The exact causes cannot be identified from the current survey: eligibility, application quality, competition, timing, documentation or intermediary capacity may all matter. Nevertheless, the gap supports a process-

oriented interpretation of ecosystem quality. Mature systems need not only schemes and publicity, but also application assistance, transparent selection, feedback loops and pathways from grants to revenue and private finance.

6.3 Founder priorities combine innovation with execution

The corrected success-factor scores put innovation/USP first, but business planning and team quality are close behind. The failure-factor results reinforce this execution dimension: cash depletion, team problems and user-unfriendly innovation were more strongly endorsed than the other listed risks. The combined message is that founder perceptions do not reduce success to “having an innovative idea.” Innovation must be translated into a usable product through a capable team, credible planning and sufficient financial runway. This interpretation aligns with ecosystem perspectives that treat resources, knowledge and relational capabilities as complementary rather than substitutable.

6.4 Interpreting the gender difference cautiously

The gender difference in support perceptions is statistically clear in the available table, but it is not causally interpretable. Female respondents may have been concentrated in particular incubators, sectors or support programmes; they may also have different expectations or exposure to support channels. The sample imbalance further limits precision. Future work should use multivariable models and stratified sampling to test whether gender remains associated with support perceptions after controlling for incubator, sector, stage, venture age and funding status.

7. Policy and Managerial Implications

Build a funding handoff, not only a funding scheme. Incubators should maintain structured investor-readiness pipelines that move ventures from grants to angel/seed and growth capital. Metrics should track introductions, due diligence readiness, term sheets and follow-on rounds, not merely training sessions.

Create sector-specific investor and mentor networks. Healthcare/medical devices, manufacturing, IT/IoT and other sectors require different validation, regulation and capital profiles. Verified mentor pools and investor syndicates should therefore be organised by sector and stage.

Make market validation a core incubation outcome. Government and large enterprises can create pilot procurement, sandbox and challenge programmes that provide early customers and credible references. Market access may reduce the gap between a technically valid proof-of-concept and a scalable business.

Treat financial management as an incubation competency. Because cash depletion was the strongest failure concern, incubators should provide runway planning, unit-economics reviews, milestone-based budgeting and fundraising-timing support.

Measure ecosystem performance beyond participation. State dashboards should distinguish awareness, application, approval, disbursement, utilisation, private follow-on capital, revenue traction and survival. This would make it possible to diagnose where ventures fall out of the support pipeline.

Strengthen post-incubation support. The current Indian policy debate increasingly emphasises the need to support scaling and experimentation rather than concentrating only on entry and early-stage incentives (Nagaraj et al., 2025). Alumni founder networks, corporate partnerships and post-incubation investor access should therefore be formalised.

8. Limitations and Future Research

- The sample is restricted to incubated startups and therefore cannot establish whether incubated firms outperform non-incubated firms in Gujarat.

- The centre-selection and respondent-recruitment descriptions in the source synopsis combine purposive and random/convenience language, limiting claims of population representativeness.
- The design is cross-sectional and based largely on self-reported perceptions; causal claims about incubation, funding and venture success are not warranted.

Future research should combine a larger stratified Gujarat sample with a matched non-incubated comparison group and objective outcome variables such as follow-on funding, revenue growth, employment, survival and patent/commercialisation outcomes.

9. Conclusion

Gujarat's sampled startup ecosystem displays a meaningful base of incubation infrastructure, public-policy awareness and early-stage financial support. Founders generally recognise incubator facilities and government-funding support, yet external funding is the single most frequently reported unmet support need and only a small minority of respondents had secured external capital. The policy challenge is therefore not merely to create more programmes, but to improve the transitions between them: from incubation to market validation, from public grants to private capital, and from early traction to sustainable scale. A state ecosystem that can make those transitions routine will convert strong startup formation into stronger startup survival and growth.

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