
"EARLY-STAGE FINANCING PATHWAYS IN INDIA'S IT START-UP SECTOR: A LITERATURE REVIEW OF SEED CAPITAL, INSTITUTIONAL FINANCE, AND POLICY-DRIVEN FUNDING SUPPORT SYSTEMS"

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ABSTRACT:

While India's IT start-up ecosystem has grown at a tremendous pace, access to financing is still uneven and is heavily influenced by the organisation and velocity of funding mechanisms. The purpose of this literature review is to understand the early-stage financing avenues in the Indian IT start-up ecosystem, namely seed capital, institutional finance, venture capital, bank lending and policy-driven financing support systems. To gain insight into the effect of accessibility funding on the survival and readiness for growth of startups in high-speed digital markets, the study combines current academic and policy research. The review highlights the importance of the ease of obtaining seed funding, readiness of investors, procedural efficiency, and ecosystem connectivity on the financing outcomes for early-stage IT ventures. The availability of venture capital depends heavily on scalability metrics, the regional concentration of the venture capital ecosystem and the market validation, while traditional bank financing is limited by the collateral-based valuation system and lack of financial documentation of start-ups. Early-stage risk is mitigated, and innovation is encouraged through government grants and public funding mechanisms, but delays in appraisal, disbursement and institutional variance have a negative effect on the effectiveness. The study concludes that financing accessibility is multidimensional, and needs policy support, transparency in funding procedures and technology-based financial models to boost entrepreneurial growth and sustainability of innovation in India's start-up ecosystem.

INTRODUCTION:

Most start-up IT companies have intangible assets, fluctuating cash flows and quick cycles of product iterations. These attributes raise information asymmetry for funders and lead to a high reliance on external funding, which is not only available but also timely and processually accessible. Both the design of public schemes and the ease of operating application procedures, such as decision timelines and documentation requirements, have been shown in the literature to affect the ease with which seed funding is acquired. Concurrently, venture capital focuses on scale indicators and ecosystems, which can sometimes extend regional capital benefits in big cities.

The structural limitation of bank lending is especially acute for IT start-ups, whose credit appraisal focuses on collateral and financial history conditions, which IT start-ups do not satisfy. In this context, it is important to mention hybrid financing models and technology-driven lending that are getting more and more relevant in enhancing credit availability. Most government grants and seed schemes are designed to mitigate the risk of early-stage businesses and to facilitate pilot projects to test concepts; however, there are several requirements to be met for these schemes to be effective, including transparency, consistency of evaluation, and capacity at the institutional level. In general, the literature indicates that financing accessibility is multi-dimensional – it involves the availability of funds, the process support to use, and the timeliness of funding disbursement, all of which are important elements in the battle for survival of IT start-ups in high velocity markets.

While policy has been given attention, founders continue to report on inconsistent support across regions and incubators, appraisal and disbursement delays, and investor readiness documentation challenges. Hence, it is necessary that there is a focused research study on Indian IT start-ups to understand the impact of the combined effect of seed funding, VC funding, bank loans, and government funding on the financing outcome and the potential of start-up growth.

RESEARCH OBJECTIVES:

1. To examine how the ease of obtaining seed funding influences early-stage financing access for IT start-ups in India.
2. To evaluate the determinants and constraints of IT start-ups' access to venture capital and bank loans in India.
3. To assess how government grants and public funding mechanisms affect financing accessibility and early growth readiness among Indian IT start-ups.

SEED FUNDING ACCESSIBILITY FOR INDIAN IT START-UPS

This goal looks at what factors other than seed capital availability influence the ability of IT start-ups to obtain seed capital, including the procedural aspects that determine whether they are able to obtain seed capital. The literature shows that ease of application, clarity of eligibility, the time needed for evaluation, and speed of disbursement are important factors that impact the ease of getting seed finance. For Indian IT start-ups, the lean teams with burdensome documentation requirements and slow pace of participation can adversely impact their chances of survival at the

proof-of-concept stage. Decentralising the evaluation of seeds and making connections between support services (mentoring, incubation readiness) and funding improves access through seed schemes that go through incubators like SISFS. But this may result in differential performance of incubators and a lack of awareness among founders, leading to differential experiences across regions. The objective thus focuses on the indicators of the process (number of steps, decision lag, complexity of milestones) and of the outcome (time-to-funding, conversion rates, follow-on funding). In an IT business where it is essential to get a product to market in a timely fashion, this goal can be one of the reasons that identical investments can yield varying results depending on the ease with which the scheme can be traversed.

EASE OF OBTAINING SEED FUNDING:

(Schulte, V, 2024) The availability of public funding is more related to the process of design rather than to the size of the funds. More streamlined applications, quicker decisions and mentored integration enhance applicant conversion, follow-on funding and survival rates. Lack of participation due to bureaucratic delays. Measures indicators with numbers, such as decision lag, documentation burden, etc.

(OECD, 2025) Coordinated ecosystems of angels, accelerators and co-investment structures facilitate ease of seed funding. Fragmented markets and regulatory costs are barriers. Tax incentives, syndication and first-loss guarantees help lower access restrictions. Metrics include time to investment and participation in a seed deal.

(Jain, M, 2022) India's SISFS facilitates access to seeds, but it is effective if digital processes and transparency are operational, links with incubation providers are established, and the regional seed ecosystem is robust. Tier-2/3 gaps persist. Accessibility is threefold: procedural, infrastructural and mentorship. Proposes to simplify milestones and decentralise.

(Startup India, 2022) Eligibility, milestones, application flow and various categories of grants have been defined in the official framework of Funding is influenced by the portal design, documentation load and disbursement stages. Provides a policy framework to evaluate the ease and transparency of the process for financing with seeds.

ACCESS TO VENTURE CAPITAL

(Somaya, D, 2024) Scalability signals digital network effects, modularity and growth readiness are drivers of VC access. High scalability ecosystems are where most funding goes, leading to asymmetry. VC also provides mentorship and market access. Accessibility is related to ecosystem maturity and signalling strength.

(Bhattacharyya, J, 2024) The access to VC funding for Indian startups in the digital space hinges on variables such as innovation intensity, traction indicators, founder experience, and ecosystem connections. The funding is concentrated in the regions, in favour of the big centres. SMEs are finding it easier to get funding from the government, though it is slower to come through. Asymmetry of information plays a significant role in funding decisions.

(Amore, M. D, 2023) Micro-VCs are emerging as a hybrid option to offer a middle-ground in terms of investor types: they're flexible on terms and can make quick decisions, making them accessible to smaller investors and an early-stage funding option. They improve the ability to prototype, enter the market, and receive follow-on VC investments, but as the fund size is limited, they can only provide support for a short period.

(David, D, 2021) Four factors – ecosystem maturity, policy changes, investor networks, and infrastructure – influence the VC scene in India. Funding remains metro-concentrated. Although governments mitigate early-stage risks, the high complexity of procedures and regional differences cause unequal access to these benefits.

VC and bank-loan access constraints for Indian IT start-ups

This objective is to assess the reasons behind the unequal access to VC funds and less appropriate bank credit among the IT startups in India. Scalability signals (fast growth, repeatable models, network effects) and ecosystem embeddedness are suggested to be key factors that drive VC funding. Therefore, IT start-ups in established IT cities receive increased investor networks and accelerators, while Tier-2/3 cities suffer due to a lack of such resources, even if they are innovative. VCs will rely on the figures (growth, engagement, unit economics, etc.), and if the founders don't have investor-ready documents, they could be filtered out during diligence.

In contrast, bank loans are structurally unsuitable for IT start-ups since traditional banks require collateral, a stable cash flow and a long credit history. Despite credit guarantees, loan sizes are still small and working-capital focused, and not geared towards high-growth scaling. Hence, blended models are becoming the choice for more and more IT start-ups: venture debt, co-lending, and FinTech-driven underwriting of alternative data. This objective specifies the factors that explain VC and bank-loan access together (traction metrics, founder capital, location, investor networks), and factors that create obstacles to VC and bank-loan access (information asymmetry, collateral norms, documentation burden).

AVAILABILITY OF BANK LOANS

(FinTech Association Reporting, 2025) With AI underwriting, alternative data, and instant KYC, digital lending has provided formal credit access, expanding the reach of digital lending services. It enhances geographic inclusion and loan speed, but introduces regulatory and risk issues. FinTech models work in tandem with bank loans.

(Shah, 2024) The role of banks in start-up financing is limited because of the norms of having collateral and risk aversion. Modest effect on access via credit guarantees. Alternative finance venture debt, FinTech supplement bank loans – hybrid credit ecosystems.

(David, D, 2021) A lack of collateral and cash-flow history is an obstacle to bank lending for start-ups. There are government schemes that increase access and limit the size of credits. Loans are primarily used for working capital, not for high-growth loans.

(Salamzadeh, A., & Kesim, H. K, 2020) In the world, banks are less inclined to finance startups because of information asymmetries and risk perceptions. Availability is lower due to collateral

demands, appraisal costs and screening barriers. Constraints can be overcome through credit guarantees and through tech-based scoring.

ROLE OF GOVERNMENT GRANTS AND PUBLIC FUNDING IN FINANCING ACCESSIBILITY

To evaluate the impact of public grants and government funding mechanisms on increasing the availability of capital and readiness of Indian start-ups in the technology domain. It is well documented that grants are not just funds, but are also a means to augment capabilities by allowing prototyping, market validation, and team development without pressing the need to generate immediate revenue. Transparent scoring, communicating eligibility requirements, release at milestones and post-grant mentoring/incubation programs are critical to the accessibility of grants. Seed-stage gaps are sought to be filled through schemes such as SISFS in India, with the help of incubators to assess applications and expand outreach and decision making locally. But differences in incubator capacity, criteria for evaluation, and awareness of the region can lower uniformity of benefits. Increased accountability, decreased response times and more successful targeting of high-potential ventures by data-driven approaches and automated dashboards is proposed. In the case of an IT start-up, with short product cycles and global competition, IT disbursement becomes critical as delays in granting can result in lost market opportunities. This objective thus relates to the implementation of the policy in terms of its accessibility, where transparency, quality of institutional support and timeliness are included as key mechanisms in which grants can affect early-stage performance and investor readiness.

(Joun, 2024) Awareness gaps and documentation complexity are challenges to granting access. Predictive analytics, clear scoring and automated monitoring enhances allocation efficiency and accessibility. Governance with technology improves the results of innovation funding.

(Schulte, V, 2024) The institutional design evaluation system, outreach, mentoring, and agency coordination are all necessary for grant accessibility. Private investment leverage and innovation financing are enhanced with hybrid funding models.

(Mueller, C. E, 2023) Exist grants fund prototyping and validation of academic start-ups, catalysed by the initiative of Exist. Integrating mentorship improves commercialisation preparedness. Administrative burden and low entrepreneurial awareness in academia are some of the barriers.

ACCESS TO GOVERNMENT GRANTS:

(Startup India (DPIIT), 2022) As per the Startup India (DPIIT) policy document, the design eligibility criteria for grants/seed funding, evaluation by incubators, disbursement based on milestones, online application, and transparency tools (scoring, dashboards) are explained. It enhances access and has access issues related to incubator capacity and competition, impacting the access of start-ups in the real world.

FUNDING APPLICATION SUPPORT

(Jain, M, 2022) Although SISFS is bringing in more seed funding, the founders still have to wait a long time to get their appraisals done, encounter bureaucratic hurdles, and receive varying evaluations from incubators. Many don't know the rules of eligibility, documentation, or timelines. Application navigation is successful with strong incubator guidance, transparent, very simple application criteria, digital workflow, and capacity-building.

(Inspira Journals, 2024) Funding applications appear daunting, lengthy and complicated due to the difficulty in proposal writing, forecasting and compliance documentation. Preparation is enhanced through mentoring, assistance with grant writing, workshops, and online advisory resources. Structured handholding is shown to improve the success rate of applying for funding and decrease information asymmetry, as evidenced by the higher rates of Tier-1/2 startups. Structured handholding also benefits Tier-2/3 startups, with higher application success rates, indicating that information asymmetry is reduced.

(Evidence from the Indian venture ecosystem, 2022) The majority of start-ups that knock on the investor's door for funding do so because of insufficient documentation, bad financials, and a lack of investor alignment, and not because they are not good. Using templates, mock pitches, and feedback increases success rates for incubators/advisors. The amount of funding received depends on the application support, which is a mediator of procedural readiness and compliance proficiency.

(World Bank, 2021) Collateral gaps, low financial literacy and complex processes are some of the barriers that founders have to overcome across the globe. Application support (templates, digital portals, pre-screening, mentorship) enhances eligibility and equitable access. Facilitation centres, public-private mentoring and streamlined approvals are best practices. Support services are an intervention that is developed to allow compliant, fundable applications.

TIMELINESS OF FUNDING

(OECD, 2025) The ability to receive capital promptly is essential for innovation, commercialisation, and survival. The use of angels/accelerators in developed ecosystems accelerates market entry, talent acquisition and R&D, while emerging markets are burdened with bureaucratic delays and the lack of pre-investment support. Demands for more speed in due diligence and real-time decisions.

(Somaya, D, 2024) High-growth companies require quick, incremental rounds based on the company's milestones. High-growth companies are looking for rounds of funding that are quick and incremental and come in line with the company's milestones. Cost overruns, stalled R&D, inferior market position, and lack of scalability are caused by delayed VC approvals, particularly in emerging markets with slow due diligence. Suggests automated assessment and better investor-entrepreneur communication to speed up the funding process

(Economic Times, 2024) The impact of FinTech lending on MSME/start-up lending is expected to gain momentum in view of the automated scoring systems and instant knowledge verification process that minimise the time taken for the credit approval process compared to conventional banks. Rapid working capital fills the timing gaps, increases resilience to cash-flow shocks, and

enables growth. Underlines the importance of leveraging technology for credit ecosystems for timely financial support.

(David, D, 2021) There are three main contributors to funding delays in India: long evaluations, investor capacity, and fragmented infrastructure. Grants/seed/VCS come in handy for timely product prototypes, customer traction and survival. Start-up India and incubator-based mechanisms help, but there are still regional differences. Promotes inter-institutional coordination and streamlines bureaucracy to facilitate funding.

ADOPTION OF CLOUD TECHNOLOGIES:

(Reis, A, 2025) Cloud adoption is growing in order to be more cost-efficient, flexible, scalable, data-accessible, and for disaster recovery. Usefulness, reliability, and security are drivers, while cybersecurity, vendor lock-in, compliance, and skills shortage are barriers. The integration of multi-cloud and AI orchestration speeds adoption. The sooner the adoption, the more agile, faster product development, and more competitive.

(Asian Economic and Social Studies , 2024) Cloud increases efficiency, workflow automation, collaboration, and IT cost savings; supports remote working and resilience. Adoption is tied to readiness, executive support and perceived strategic importance. Challenges involve integration complexity, dependency on vendors, and cybersecurity risks. It accelerates the time to prototype and to market for start-ups.

(Marquez, L., & Singh, R, 2021) Cloud lowers the cost of IT hardware and software by operating on a pay-as-you-go basis, makes systems more scalable and flexible, and allows faster deployment/iteration. Distributed teams are supported by collaboration tools. Issues are data security, integration and dependency on vendors. Overall, cloud adoption improves response capabilities, innovation pace, and reliability of operations for early-stage startups.

USE OF AUTOMATION TOOLS

(Bisio, L., & Colleagues, 2025) Automation (RPA, algorithmic decision system) increases productivity by eliminating repetitive tasks and human errors, by freeing up labour for higher-value activities, and by scaling it quickly. Challenges are initial investment, process redesign resistance, and skills gaps. Optimised workflows and costs make automation a game-changer in terms of resilience and competitiveness.

(Ragkhitwetsagul, C., et al, 2024) Automated software engineering tools (testing, CI/CD, code analysis) accelerate releases, minimise defects and enhance maintainability. Challenges to adoption are the complexity of integration, learning curve, and reliability concerns; low training and managerial support limit use. Structured implementation and skills development are needed to realize full benefits.

(Nguyen, T., & Patel, S, 2022) To compensate for limited employees, reduce lead time and enable continuous delivery, start-ups take advantage of automation in their workflows, customers engagement and delivery pipelines. Advantages include quicker releases and higher quality;

disadvantages include complexity of tool selection, low expertise, and cost. There is a close correlation between early automation and scalable growth.

(Hernandez, M, 2020) To scale without hiring in accordance with the number of customers, small businesses are opting to utilize automation when it comes to customer support, data management, marketing, and operations. It cuts down delays, increases consistency and aids in real-time decision making based on analytics data. Factors that hinder the implementation of BCDWASH are cost, lack of skills, and reluctance to change. First movers enjoy agility and growth.

USE OF ANALYTICS PLATFORMS

(Kawsar, M, 2025) Real-time analytics ensures that continuous data is transformed into actionable insights, leading to better marketing outcomes, customer acquisition, and operational agility. Dashboards can shorten the time it takes for a decision to be made and can alert to problems before they become an issue. The challenges are in the complexity of integration, a shortage of expertise, and cost. Analytics turns into a strategic tool for growth and competitiveness, at scale.

(Rafiq et al., 2022) In software startups, analytics is often ad hoc and "founder-centric" and thus there is a disconnect between tools and usage. The lack of skill and product building focus is a constraint to analytics maturity. This doesn't stop analytics from enhancing user understanding and decreasing

(Zaidi, A., & Kumar, P, 2021) The factors responsible for the successful adoption of BI/analytics are readiness, perceived usefulness, compatibility, leadership support, and ease of integration. The benefits are customer insight, performance monitoring and forecasting, and efficiency. Barriers include lack of skills, lack of funding, and lack of willingness to move away from thinking and towards evidence. Adoption is a strategic capability commitment.

SUMMARY OF LITERATURE REVIEW AND FINDINGS:

Key Construct	Author (Year)	Key findings
FA1: Ease of obtaining seed funding	Schulte (2024)	Process design (simplicity, speed, low paperwork) and support services are both important factors that influence seed accessibility, and participation is hampered by bureaucracy. A context to measure "ease" is provided by operational indicators.
	OECD (2025)	Seed funding access is enhanced through coordinated ecosystems (angels, accelerators, co-investment), barriers are fragmentation and transaction costs. Time to first investment is one of the metrics.

Key Construct	Author (Year)	Key findings
	Jain (2022)	Transparency, integration of incubation and regional ecosystem capacity are essential components of SISFS' effectiveness in expanding seed access. Tier-2/3 gaps remain; suggests a streamlined set of milestones and decentralisation.
	Startup India (DPIIT) (2022)	Operational "ease" and transparency of seed access is determined by the policy design of eligibility, incubator evaluation, milestone disbursement, and portal process.
FA2: Access to venture capital	Somaya (2024)	Scalability signals and ecosystem maturity are important facets to VC access, with funding focused in high-signal ecosystems. Timing/velocity of rounds affects scaling and outcomes.
	Bhattacharyya (2024)	VC access is tied to innovation intensity, traction metrics, founder experience, and networks; VC hub concentration slightly persists, and public funds are playing an enabling role but with delays.
	Amore (2023)	Micro-VCs expand early VC access, offers flexible terms and quick decision making, facilitates prototyping and enhances follow-on VC opportunities, but can't support large fund sizes for longer-term support.
	David (2021)	Access to VC in India is dependent on maturation of the VC ecosystem, networks, and policy support; there is higher concentration in metros; procedures are complex, which results in inequitable access, despite efforts to make access more available.
FA3: Availability of bank loans	FinTech Association Reporting (2025)	Digital lending enhances Tier-2/3 extension of formal credit via AI underwriting, alternative data and instant KYC; boosts speed; heightens oversight and risk; and increases risk and oversight concerns.
	Journal of Innovation &	Collateral and risk norms remain a worry for the start-ups, and guarantees make a modest contribution, while alternative financing sources such as FinTech,

Key Construct	Author (Year)	Key findings
	Entrepreneurship Research (2024)	venture debt, P2P, co-lending also complement bank credit.
	David (2021)	Loans available from banks are limited by the need for collateral/cashflow, schemes have expanded their footprint, loan sizes are fairly small and work for working capital rather than growth, delays and compliance burden remain.
	Salamzadeh & Kesim (2020)	In the rest of the world, banks limit lending because of information asymmetry and deficiencies in collateral, or appraisal costs; guarantees and tech scoring may be useful when there is robust regulatory/data systems.
FA4: Access to government grants	Working Paper (2024)	Accessibility increases when targeting is data-driven, scoring is transparent, tasks are automated, and dashboards are developed; it decreases when there are awareness gaps and documentation complexity.
	Schulte (2024)	Institutional design—clearly defining criteria for accessibility, outreach, milestone disbursement, coordination and mentoring—as well as hybrids of public–private models—can increase accessibility and effectiveness and enhance follow-on investments.
	Mueller (2023)	Structured grants (EXIST) launch academic enterprises through prototyping support and mentoring, while unclear guidelines and admin burden limit access, and outreach and metrics boost participation.
	Startup India (DPIIT) (2022)	Eligibility, incubator evaluations, milestone-based releases, and transparency tools are integral parts of the SISFS framework that influence grant accessibility; capacity differences and competition influence outcomes.

RESEARCH GAP:

The literature on financing channels is numerous, and yet it is scattered between the design of seed funding, the access to VC, bank-lending restrictions and the effectiveness of grants. While there are scattered signs of integrated evidence on the impact of these mechanisms on the performance of IT start-ups, the impact is significantly distinct and unique when it comes to sectors that are dependent on speed, scalability, and intangible assets. Previous research tends to focus on VC ecosystems or government initiatives independently, without accounting for the experience of the founders on the financing journey, from seed to growth.

Moreover, there are some procedural signals (decision delay, documentation load, variation among different incubators) identified in the literature but few India IT-specific empirical models that relate these signals to actual measures like time-to-market, follow-on funding, or early survival. Another gap is regional equity, as it is well known that funding flows into major hubs, but there is a lack of sector-specific evidence to show if there are any specific obstacles on application support, investor readiness, and institutional mentoring for IT start-ups in Tier-2/3 cities. Last, but not least, timeliness is often cited as important, but rarely measured in the context of grants, seed funding, VC rounds and credit. These gaps need to be tackled with an integrated study of the IT sector and will need to draw on several angles - procedural, ecosystem embedding, and financing outcomes.

DISCUSSION AND CONCLUSION:

The body of literature suggests that availability of capital is not the only barrier to financing of Indian IT startups but accessibility, support and timeliness of financing people across funding channels. Seed funding becomes truly attainable when schemes cut down paperwork, make eligibility clearer and shorten decision cycles especially crucial for IT entrepreneurs engaged in quick prototyping and iterative product-market fit. Evaluating access with the help of the incubators can help reinforce access but inconsistent standards and capacity may result in inequitable access between regions. The access to VC is revealed to be very selective and ecosystem dependent. The fact that IT start-ups are able to show some degree of traction, show some degree of scalability readiness, have good documentation, have a good pitch deck, is going to get them VC; as long as they're not in major markets, even if they're as innovative as the other guys. At the same time, bank credit is mismatched with the nature of IT startups, with a focus on collateral and stability. This drives start-ups to hybrid credit models and FinTech-enabled underwriting, which can enhance speed, but can also introduce governance and risk issues.

Government grants and funding mechanisms are strategic in the reduction of the risk involved in early-stage projects and in enhancing the capability development, particularly when supported through mentoring and fair evaluation. But, the quality of execution, the timely disbursal, predictable milestones and the support of the institutional infrastructure is important for the impact of the grant. In all four areas, it is evident that the policy design and operational implementation is key to whether the funding mechanisms can be converted into actual entrepreneurial access.

To conclude, Indian IT Start-ups require a capital-intensive funding system, as well as time-efficient, region-inclusive and procedure-efficient. The proposed research adds value by bringing together these three sources of funding (seeds, VC, and bank loans) within a unified framework, and by operationalising key indicators of accessibility for IT start-ups relevant for their growth, survival, and competitiveness.

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