Startups in God's Own Country: A Study of Entrepreneurial Ecosystem in Kerala

Sajeev Kumar A P[1*], Dr. N Shanmugam[2], Dr. Madhusoodanan Kartha N V[3]

[1*]Assistant Professor Post Graduate & Research Department Of Commerce Government Arts & Science College, Calicut, Meenchanda - 673018, Kerala &
[1]Research Scholor – Part Time (Reg. No : BDU2220122780066) Post Graduate & Research Department Of Commerce Government Arts College (Autonomous) Karur – 639005, Tamilnadu (Affiliated To Bharathidasan University, Thiruchirappalli) abhimanskumarapc2014@gmail.com
[2]Associate Professor, Head & Research Supervisor (BDU01225001119) Post Graduate & Research Department Of Commerce Government Arts College (Autonomous) Karur – 639005, Tamilnadu (Affiliated To Bharathidasan University, Thiruchirappalli), nsunface@gmail.com
[3]Associate Professor, Post Graduate & Research Department Of Commerce Panampilly Memorial Government College, Chalakudy, Potta (Post), Thrissur Dist. Pin– 680722, Kerala (Affiliated To University Of Calicut) madhunjaloor@gmail.com

Abstract
This study examines the entrepreneurial ecosystem of Kerala, India, exploring its structural strengths, sectoral composition, funding patterns, enablers, and challenges. While Kerala has been widely recognized for its social development model, its emerging role as a startup hub has received limited scholarly attention. A mixed-methods research design was adopted, combining quantitative analysis of startup data with qualitative insights from surveys, interviews, and focus group discussions involving founders, ecosystem enablers, and policymakers. Secondary data was sourced from official reports, startup registries, and published literature. Analytical tools included descriptive statistics, SWOT analysis, comparative benchmarking, and thematic coding of qualitative responses. The results indicate a predominantly IT/ITES-driven ecosystem, supplemented by growing clusters in tourism-tech, healthcare, agritech, and fintech. Government-led initiatives, particularly through the Kerala Startup Mission, have played a pivotal role in incubation, grant funding, and infrastructure development. However, major challenges persist, including limited private investment, talent migration, constrained market access, and infrastructural gaps in semi-urban regions. The study suggests that attracting private capital, fostering industry–academia linkages, improving post-incubation support, and expanding market access initiatives are essential for sustaining growth. These recommendations hold significance for policymakers, investors, and entrepreneurs aiming to strengthen Kerala's position within the national and global startup landscape. By integrating quantitative data with qualitative stakeholder perspectives, this research offers a comprehensive and context-specific evaluation of Kerala's startup ecosystem. It contributes to the limited body of literature on state-level innovation ecosystems in India, highlighting how a socially developed state can harness its human capital and cultural strengths to build a competitive entrepreneurial environment.

Keywords: Kerala, startup ecosystem, entrepreneurship, innovation, funding, incubation, government policy

Introduction

The world start-up system has turned out to be a fundamental source of innovation, technology development, and economic competitiveness in the 21st century. Startups are no longer considered to be small businesses; they are viewed as nimble, innovation-driven organizations that can disrupt existing industries to create whole new markets. Governments all over the world have come to appreciate their potential and have developed policy frameworks to support entrepreneurship, enable risk capital, and cross-border collaboration.

India has experienced the rise of a young but successful startup culture, which has become one of the iconic elements of its modern economic development. Initiatives like Startup India have been instrumental in marshalling resources and policy focus to the demands of entrepreneurs, and state governments have customised their approach to attract and support startup activity (Startup India, 2022). The startup ecosystem in the country is marked by fast-paced growth in the metropolitan centers, such as Bengaluru, Hyderabad, and Mumbai, but the growth of tier-2 and tier-3 cities is also on the rise as potential startup hubs.

Kerala, commonly called the God's Own Country because of its unique natural beauty and the social and cultural wealth it holds, is one of the few examples in this national context. The state is known to have a high literacy rate, progressive social indicators, and a service-oriented economy; however, in the recent past, the government has invested in entrepreneurship as one of the means of sustainable economic diversification (Kerala Startup Mission, 2023). Its focus has been to develop a fertile ecosystem of knowledge-intensive start-ups based on its educated workforce and to develop innovation

in areas like information technology, tourism, agribusiness, and health.

It has been facilitated by various ecosystem-building efforts. The creation of Technopark in Thiruvananthapuram, Infopark in Kochi, and Cyberpark in Kozhikode has given the necessary infrastructure to technology-based entrepreneurs (The Times of India, 2025, July 28). Similar efforts have been made by parallel initiatives, like incubation programs and innovation grants by Kerala Startup Mission, to reduce the barriers to entry for possible entrepreneurs. Significantly, the introduction of innovation cells in universities and collaborations with international accelerators have also contributed to the promotion of student entrepreneurship and the accessibility of the knowledge base to the business world (Kerala Startup Mission, 2019).

Regardless of these developments, Kerala has a weak startup ecosystem that has seen little academic research and policy attention. Most of the academic literature on Indian startups has concentrated on the existing hubs, and there has been comparatively less research on states with emerging ecosystems. This underestimates risks, overlooking the unexplored possibilities of the strengths and weaknesses that characterise the Kerala entrepreneurial environment (The New Indian Express, 2024).

Industry and government reports have shown the number of registered startups to have grown rapidly in the past years, with some analysis showing an increase of over 250 percent in recent years (PinkKerala News Desk, 2025). Nonetheless, there is a lack of comprehensive, field-based research that combines quantitative measures with qualitative input from stakeholders. This gap is especially important given the necessity to not only evaluate the achievements of the state in the sphere of innovation promotion, but also to consider the systemic clogs, like access to funding, retaining talent, and reaching the market, that hinder the scale. These dimensions are critical to know to make informed policy and enable Kerala to compete in the larger Indian and global startup ecosystems.

Research objectives

1. To analyze the current structure and dynamics of Kerala's startup ecosystem, focusing on sectoral distribution, geographic spread, funding patterns, and growth trends.
2. To evaluate the role of ecosystem enablers and constraints, including incubation facilities, policy support, academic linkages, and challenges such as funding gaps, talent retention, and market reach.
3. To provide a strategic assessment of Kerala's entrepreneurial environment through SWOT analysis and develop actionable recommendations for sustainable growth and competitiveness.

The research has multiple implications. To policymakers, it offers evidence-based analysis of ecosystem interventions, as well as the zones of intervention and the zones that need strategic focus. In Kerala, the policy environment of startups has been characterized by programs like state-sponsored incubation, co-working spaces, and innovation funding, yet the long-term impacts of such programs must be systematically evaluated, so they can meet the growth goals (Wikipedia contributors, 2025c).

To entrepreneurs and investors, the study determines the competitive advantages that exist in the economic and cultural environment of Kerala. The brand value of the state in areas such as tourism and agribusiness gives a natural base to the sector-specific startups, whereas the skilled labor force and diaspora networks offer a way of integrating the state into the international markets. Nonetheless, having an awareness of structural constraints, including the comparatively low venture capital penetration, allows for more strategic investment planning.

The study fills a gap in the literature of the state-level innovation ecosystems. The startup development path to Kerala falls in line with a more general trend in the world where non-metropolitan areas attempt to use their local socio-economic resources to spur entrepreneurship. Such territories are capable of providing information on alternative models of development that are not related to dense urban centers with startups (Wikipedia contributors, 2025a; Wikipedia contributors, 2025d).

The outcomes will also be applicable in comparative studies that look into the effects of social development indicators on the nature and sustainability of entrepreneurial activity. The historical priority given to public health, education, and gender equality in Kerala provides a unique context to research the development and emergence of startups, which may otherwise disrupt the dominant paradigm regarding the correlation between industrialization processes and the intensity of innovations.

The investigation is guided by the following questions:

- What factors are driving startup growth in Kerala?
- How do support structures such as incubators, accelerators, and funding schemes affect entrepreneurial success?
- What are the key sectoral strengths, and how can they be leveraged for sustainable growth?

Review of Literature

Global and National Startup Ecosystem Perspectives

The startup community has become a major force in reshaping the economy and technical advancement, and investment and government assistance are key elements. Research has indicated that enabling

environments should be promoted using infrastructure, funding, and regulatory ease in order to continue supporting entrepreneurial growth (Ali, Ullah, & Khan, 2009). A significant contribution to this impetus in building an institutional framework that fosters early-stage ventures, provides tax breaks, and relieves their compliance burden has been the Startup India initiative in India (Startup India, 2022). The comparative study of the state-level ecosystems shows that the policy flexibility, selective incentives, and industry specialization are the main differences between the well-performing and emerging hubs (Surana, Singh, & Sagar, 2020).

Kerala's Entrepreneurial Evolution

Kerala has also been known to have high human development indicators, but in recent years, it has shifted focus to entrepreneurship as a way of diversifying its economy. The government reports have indicated the steady rise in the number of registered startups, and the Kerala Startup Mission (KSUM) has been leading in providing incubation, mentoring, and funding (Kerala Startup Mission, 2019; Kerala Startup Mission, 2023). IT/ITES startups have been given a base through infrastructure projects like Technopark, Infopark, Cyberpark, and innovation cells within the education institutions have encouraged student entrepreneurship (The Times of India, 2025, July 28).

Role of Policy and Institutional Support

Government support has been seen as a major factor that determines the performance of startups in Kerala. According to Ranjini and Balasubramanian (2020), state-sponsored programs provide important seed funding and provide the right environment to experiment. On the same note, Freedom Squares is a government-sponsored program that will encourage students to become entrepreneurs by engaging them in interactive areas and workshops (The Times of India, 2025, July). The state entrepreneurship initiative is further inclusive, with institutional partnerships, as seen in the case of IIM Kozhikode and Kudumbashree promoting women-led enterprises (The Times of India, 2025, June).

Sectoral Dynamics and Emerging Trends

The studies identify the IT/ITES industry as the most powerful segment in the Kerala startup ecosystem with the help of digital infrastructure and skilled workforce (Dean, 2024). Nonetheless, other industries like tourism-tech, agritech, healthcare, and EdTech are on the rise, which is due to the resource base and market opportunities of the state (Sajan, 2024; Thomas & Antony, 2024). According to reports of Startup Genome and KSUM (2024), Kerala is becoming more visible worldwide, and there is a higher engagement in international startup fairs and working on joint research projects.

Challenges in Scaling and Sustainability

Regardless of the strong early-stage support, research notes that there are a few issues with the scaling of startups in Kerala. Access to venture capital and angel investment networks is one of the challenges experienced by most ventures that restricts the expansion of the high-potential venture to local markets (The New Indian Express, 2024). Retention of talent is also a major concern because professionals tend to move to bigger hubs in search of greater opportunities (Kala, 2025). In addition, semi-urban regions have infrastructural deficiencies and time-consuming regulatory procedures that complicate quick expansion (Lokuge, 2020).

Digital Transformation and Innovation Opportunities

The focus of Kerala on digital governance and the use of technology has created new opportunities for innovation. Digital literacy and digital connectivity have been facilitated by programs such as the Akshaya Project, and this has led to the creation of an educated consumer base who are receptive to service provision based on technology (Wikipedia contributors, 2025, June-a). The World Economic Forum (2025) is one of the global observers that has identified Kerala as an inclusive innovator that incorporates social aims with business development. This has made the state a possible example in the struggle between the need to develop and compete effectively in the market.

Empirical Studies on Ecosystem Culture

The International Journal of Research in Commerce, Management and Social Science (2025) provides empirical evidence on the importance of Kerala's cultural context in the formation of entrepreneurial attitudes. The results show that the risk appetite of first-generation entrepreneurs is increasing, but society is still not ready to view entrepreneurship as a potential career option, as compared to more industrialized states. The increased awareness of the Kerala ecosystem is further depicted through media coverage, like the one made by PinkKerala News Desk (2025), with the support of independent international rankings.

Materials and Methods

Research Design

The research design was a mixed-methods research design that combines qualitative and quantitative methods. This design holistically explores the Kerala entrepreneurial ecosystem by combining quantitative traces with storytelling. The quantitative part includes the statistical analysis of the startup distribution, the growth trends, and the funding trends, whereas the qualitative part focuses

on the stakeholder experiences, which were collected by means of interviews and group discussions. This integration makes it possible to view the ecosystem in a multidimensional manner.

Study Area

Kerala is a southern Indian state that is socially developed, digitally penetrated, and values education, and the geographical focus of the study was Kerala. Kerala has a high literacy rate, increasing digital infrastructure, and a proactive governance, which makes it a unique context in which startups can develop. The IT parks, the innovation centres, and the incubation platforms are available in major cities like Thiruvananthapuram, Kochi, and Kozhikode, and hence are startup hubs. New entrepreneurial activity is also evident in semi-urban and rural clusters in the state.

Data Sources

The study used both primary and secondary data. Structured surveys, in-depth interviews, and focus group discussions with a cross-section of the entrepreneurial ecosystem, founders of startups, heads of incubators, industry mentors, investors, and policy stakeholders were used to collect primary data. These instruments helped in gathering in-depth contextual data on the immediate-time problems and opportunities of Kerala entrepreneurs. The official reports, economic surveys, startup databases, policy briefs, academic publications, and respectable media sources were used to create secondary data. These sources gave empirical and institutional background to the field findings and cross-validated them.

Sampling Technique

The purposive sampling approach was used so that the research samples could include a wide variety of startups and ecosystem stakeholders. The sample was envisaged in a way that it could cover startups in various industries (including IT, agritech, tourism, healthcare, and fintech), at various stages of development (early-stage, growth-phase, and scaling enterprises), and located in various geographical zones across Kerala. Also, the sample consisted of participants in other supporting institutions like state-supported incubators, co-working hubs, and innovation accelerators. This sampling strategy was to obtain diverse opinions that indicate the heterogeneity of the ecosystem.

Data Collection Tools

There were a number of tools employed in order to aid the systematic data collection. Measurable data were obtained by using structured questionnaires that addressed the profile of the startups, history of funding, operational restrictions, and policy interactions. The startup founders and support staff were arranged in focus group discussions to share common knowledge, experience, and trends in the field. Key informants, such as policymakers, academic leaders, or incubator managers, were interviewed in a semi-structured way, which provided the freedom to cover their approach to the issue. Moreover, checklists were also applied when visiting the offices of startups and innovation hubs in the field to record environmental and operational details that are pertinent to the research.

Analytical Methods

A number of methods of analysis were applied to the collected data. The descriptive statistics were used to compare the densities of startups, funding flows, and growth indicators by sector and region. To provide a methodical review of the entrepreneurial environment in Kerala, a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis was carried out. Benchmarking was done through comparative analysis of the performance of Kerala with other Indian states with well-established startup ecosystems. Thematic coding of the qualitative data of interviews and discussions was carried out to determine the recurring themes, institutional stories, and perceptions of policy to shed light on the process of startup success or stagnation.

Ethical Considerations

Ethical integrity was maintained throughout the research process. Before participation, all the participants were informed of the nature and aim of the study. Informed consent was given either in writing or orally, as the case may be. The participants were guaranteed anonymity and confidentiality, and their identities were not revealed anywhere in the analysis or report. The obtained data was stored safely and was used only as an academic and analytical tool. The study followed the principles of voluntary nature, openness, and respect for all participants.

Results

Startup Landscape in Kerala

The startup landscape in Kerala has evolved significantly, with a diverse range of ventures emerging across technology, agriculture, healthcare, and tourism. An analysis of sectoral distribution (Table 1) shows that the highest concentration of startups is in the IT/ITES domain, followed by tourism-tech and healthcare. Agritech, EdTech, and FinTech also exhibit growing momentum, supported by sector-specific innovation hubs.

Table 1. Startup Sector Distribution in Kerala

Sector	Number of Startups
IT/ITES	350
Tourism-Tech	120
Healthcare	95
Agritech	85
EdTech	70
FinTech	60
Others	50

This pattern is visually represented in Figure 1, which highlights the concentration of startups across sectors. The dominance of IT/ITES is reflective of Kerala's strong digital infrastructure and technical talent base, while the presence of tourism and agritech startups underscores alignment with the state's natural and economic context.

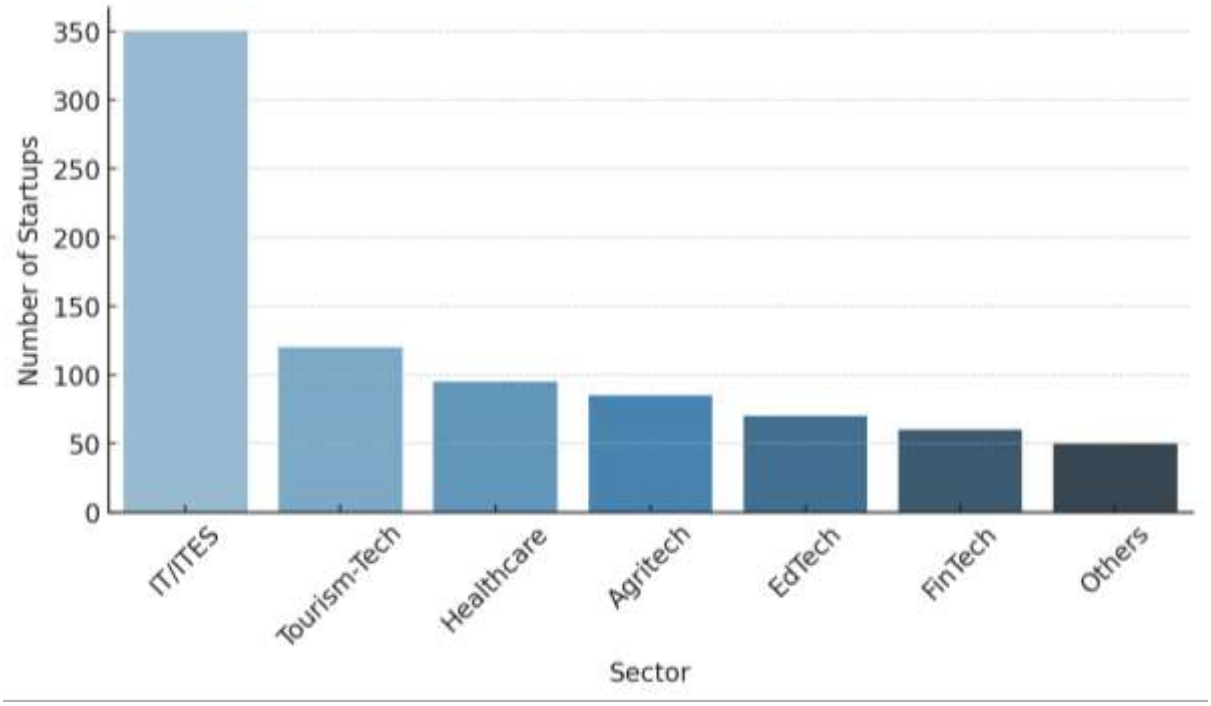

Figure 1. Startup Distribution by Sector in Kerala

Funding and Investment Patterns

Funding sources for startups in Kerala reveal a reliance on self-financing and public schemes. As shown in Table 2, nearly 40% of startups are bootstrapped. Government grants constitute a significant 25%, while angel and venture capital funding are less prevalent. This reflects both the state's developmental orientation and the ecosystem's nascent appeal to private investors.

Table 2. Funding Sources for Startups in Kerala

Funding Source	Percentage (%)
Bootstrapped	40
Government Grants	25
Angel Investors	15
VC Funding	10
Crowdfunding	10

To further illustrate these dynamics, Figure 2 presents a pie chart of funding distribution. The visual emphasizes the disproportionate dependence on internal and government-led funding, pointing to a funding gap for scaling startups that fall beyond early-stage interventions.

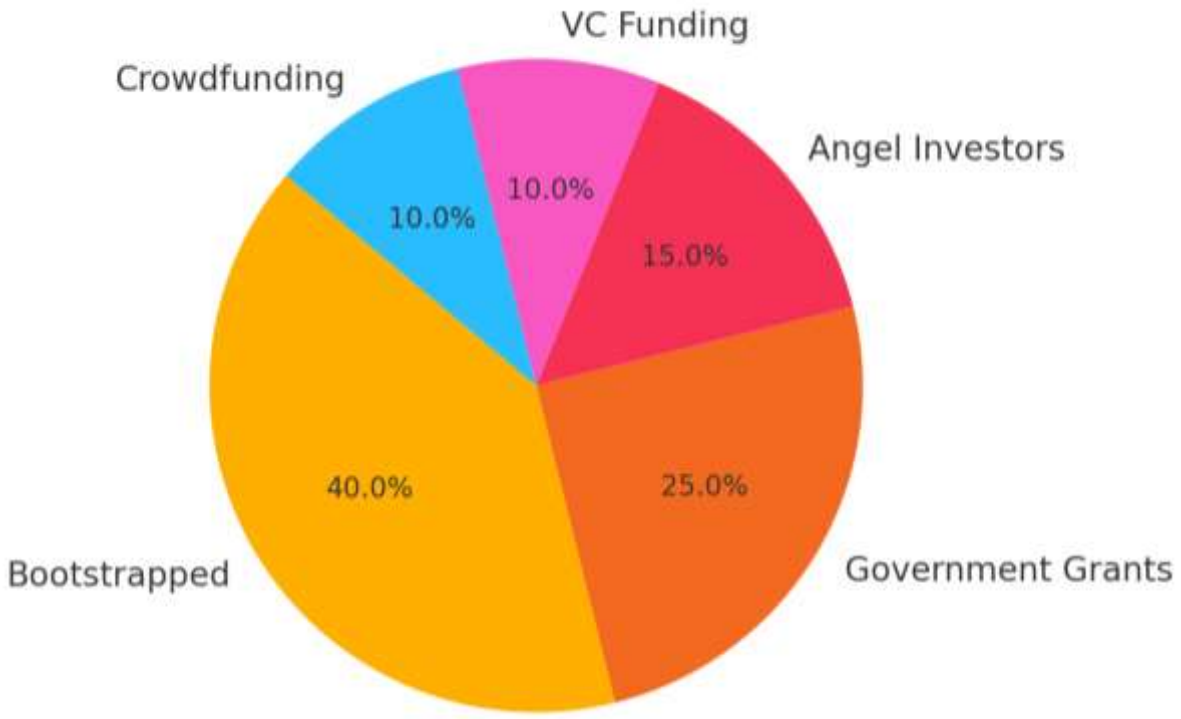

Figure 2. Funding Sources for Startups in Kerala

Ecosystem Enablers

Kerala's ecosystem enablers include a network of incubation centers, co-working spaces, and government-led initiatives. The state government has played an active role in promoting entrepreneurship through policy support, funding assistance, and events such as the Huddle Global summit. Academic institutions are also contributing through innovation cells and research support. These elements collectively create a nurturing environment for early-stage startups.

Challenges

Despite progress, startups face persistent challenges. As detailed in Table 3, the most frequently cited issue is limited access to funding (72%), followed by talent retention (64%) and restricted market reach (58%). Regulatory and infrastructural barriers also remain, especially for startups in rural or semi-urban locations.

Table 3. Challenges Faced by Startups in Kerala

Challenge	Reported by (%)
Access to Funding	72
Talent Retention	64
Market Reach	58
Regulatory Barriers	43
Infrastructure Gaps	35

These issues are also visualized in Figure 3, which depicts the proportion of startups reporting each challenge. The data suggest that while Kerala provides a strong initial platform for innovation, sustained scaling often encounters structural bottlenecks.

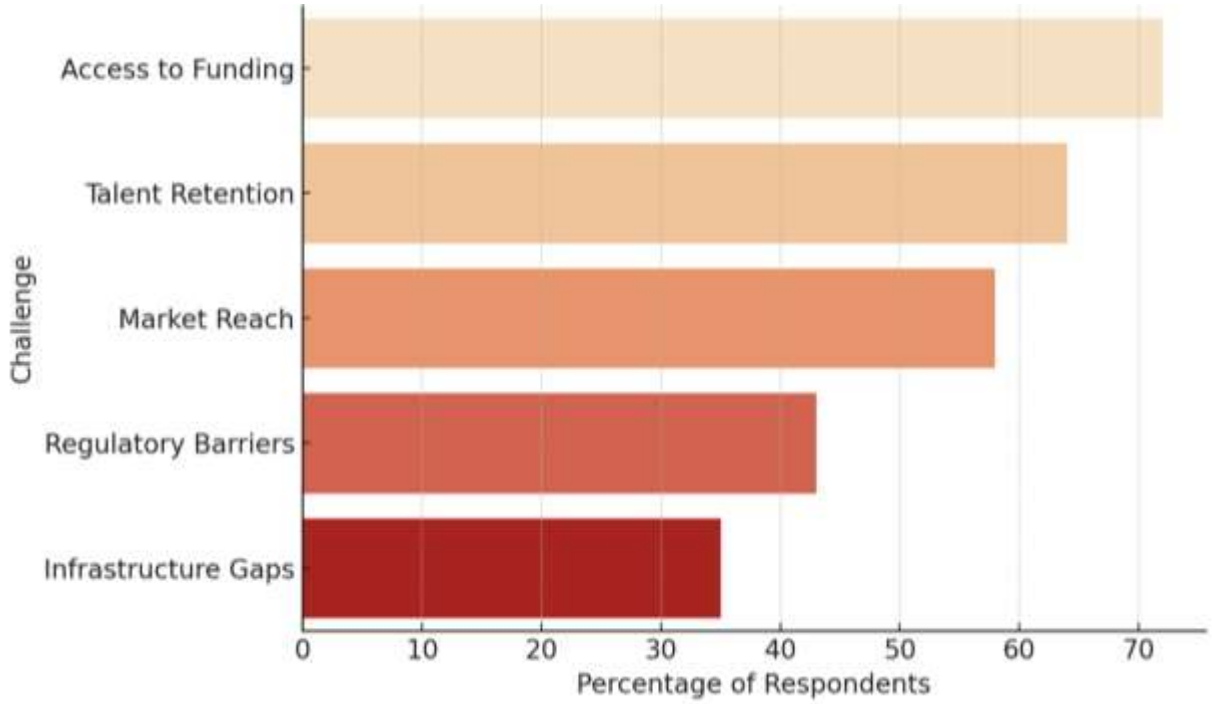

Figure 3. Key Challenges Faced by Kerala Startups

SWOT Analysis

This SWOT analysis (Table 4) captures the balance of internal and external factors shaping Kerala's startup ecosystem. The strengths highlight foundational advantages such as literacy, infrastructure, and government backing. The weaknesses indicate structural and operational gaps, especially in funding and talent retention. The opportunities point toward sectors where Kerala can leverage its unique strengths, while the threats reflect competitive and economic pressures that could undermine growth if not addressed.

Table 4. SWOT Analysis of Kerala Startup Ecosystem

Strengths	Weaknesses	Opportunities	Threats
High literacy rate and skilled workforce	Limited venture capital and private equity penetration	Expansion in tourism-tech leveraging Kerala's global brand	Competition from more established startup hubs in India
Strong IT infrastructure (Technopark, Infopark, Cyberpark)	Talent migration to larger metro ecosystems	Scaling of agritech and healthcare innovations	Economic slowdowns are impacting funding availability
Active government support through Kerala Startup Mission	Fragmented market linkage support	Export facilitation and global market access programs	Brain drain of high-skill talent
Growing diversity in sectors (IT/ITES, tourism-tech, agritech, healthcare)	Regulatory compliance delays for small enterprises	Industry–academia partnerships for research commercialization	Over-dependence on government grants in the early stages

Case Highlights

Several notable startup stories emerged during the study. Table 5 showcases a selection of high-impact startups from different sectors. These include a healthcare company that successfully scaled its AI diagnostics platform, a tourism-tech venture that attracted international funding, and an agritech startup that secured government procurement contracts.

Table 5. Notable Startup Case Highlights

Startup Name	Sector	Outcome
MediAI	Healthcare	Scaled nationally
EcoTours	Tourism-Tech	Received international funding
AgroConnect	Agritech	Integrated with government procurement
SmartLearn	EdTech	Acquired by a major edtech firm

Discussion

The results show that the Kerala startup ecosystem is expanding and also becoming more diversified, with the IT/ITES sector being the predominant cluster of entrepreneurial activity. This is in line with Kerala having a long history of investing in digital infrastructure and having technology parks like Technopark and Infopark (Kerala Startup Mission, 2023; The Times of India, 2025, July 28). The emergence of tourism-tech and agritech startups points to the impact of domestic resources and cultural assets in the formation of sectoral capabilities and is associated with an observation that local ecosystems are more likely to form around the homegrown economic strengths (Startup India, 2022).

The funding pattern indicates that it is over-reliant on bootstrapping and government grants. Although the state intervention has played a vital role in the development of early-stage businesses (Ranjini & Balasubramanian, 2020; Kerala Startup Mission, 2019), the lack of penetration in the area of scaling support, including the deployment of venture capital, indicates that there is a shortfall in the support mechanisms. This is in line with earlier research that cites access to capital past seed funding as a major challenge in developing ecosystems (Surana et al., 2020).

Kerala is found to have a distinctive equilibrium in social development indicators and entrepreneurial activities when compared with other regional ecosystems in India. The high literacy and digital adoption rates (Wikipedia contributors, 2025b) have helped the technology-based solutions to be integrated fast, and the diaspora networks in the state have also helped in creating knowledge and market linkages (World Economic Forum, 2025). Nevertheless, according to the literature on comparable state-level ecosystems, the long-term growth needs strong networks of angels and venture capital, which is true in the case of Karnataka and Maharashtra (Ali et al., 2009).

The results also align with those of Dean (2024), who also found the minimal representation of private equity and the clustering of startups in a small number of urban areas to be a major impediment to growth. The existence of rural innovation projects, including those that are mentioned by Lokuge (2020), indicates the potential of expanding into the semi-urban and rural markets.

Policy-wise, the findings highlight the need to go beyond grant programs at the early stages to mechanisms that will attract larger investments. Efforts like the investor roadshows, tax concessions to the private investors, and streamlined equity processes may help to boost the role of the private players (Startup Genome & Kerala Startup Mission, 2024). Moreover, talent retention strategies are fundamental, as 64% of them state workforce attrition as a problem. These may include internship programs to link institutions of higher education to startups, as in other innovation-based states (Kala, 2025).

Market expansion remains another focal point. Improved facilitation of exports, participation in trade fairs, and state-sponsored market access missions could help solve the 58 percent who are limited in market reach. The need to bridge the gap between academia and industry, enhance infrastructure in non-metro areas, and simplify regulatory compliance will also play a crucial role in maintaining the growth momentum.

The data indicate that the Kerala startup ecosystem can be improved greatly with the help of a specific sectoral development. Enhancing tourism-tech has the potential to take advantage of the brand name that the state has already acquired in the global market as God's Own Country (Wikipedia contributors, 2025a). Agritech is another prospective direction, particularly when combined with the state program of agricultural modernization. Increasing the innovation in healthcare, especially telemedicine and AI diagnostics, can make Kerala a medical technology hub in South Asia (Sajan, 2024; Thomas & Antony, 2024).

The overlap of digital transformation initiatives in other sectors, such as the introduction of artificial intelligence into governance and the delivery of services to the population, would also contribute to the improvement of the innovation climate (The Times of India, 2025, June).

An analysis of the ecosystem's strengths, weaknesses, opportunities, and threats (SWOT) further clarifies Kerala's entrepreneurial position. The key strengths include a high literacy rate, a skilled workforce, strong IT infrastructure such as Technopark, Infopark, and Cyberpark, active government support through the Kerala Startup Mission, and a growing diversity of sectors including IT/ITES, tourism-tech, agritech, and healthcare. However, weaknesses persist, such as limited penetration of venture capital and private equity, talent migration to larger metro hubs, fragmented market linkage support, and regulatory compliance delays for small enterprises.

The opportunities ahead lie in expanding tourism-tech by leveraging Kerala's global brand, scaling agritech and healthcare innovations, facilitating exports to access global markets, and strengthening industry–academia partnerships to promote research commercialization. At the same time, the ecosystem faces threats from competition with more established hubs in India, potential economic slowdowns impacting funding availability, brain drain of highly skilled talent, and over-dependence on early-stage government grants.

Although the research has a wide scope of researching the startup ecosystem in Kerala, the purposive sampling technique may not capture all

the niche areas. Longitudinal performance data is not available; therefore, there is a limitation in determining long-term startup survival rates. Moreover, secondary data was used to cross-check the primary findings, but in the fast-changing startup environment, there is a possibility that some of the figures might vary drastically in a short period.

Conclusion

The paper finds that the Kerala startup ecosystem is slowly moving towards a more institutionalized phase and is improving in terms of sector diversification and institutional support. The IT/ITES industry is the most dominant in terms of volume, and it is facilitated by strong digital infrastructure and talent. Such sectors as tourism-tech, agritech, and healthcare are also shaping significant niches in line with the state's economic and cultural strengths. Early-stage support and an entrepreneurial ecosystem are also facilitated by the Kerala Startup Mission, university innovation cells, and government-supported incubators. However, systemic challenges persist. There is still a lack of private investment, particularly in expanding startups outside the state. There is also the issue of talent retention, where skilled workers look elsewhere. Many startups still lack access to markets, both domestically and internationally, particularly in the niche or resource-intensive sectors. Regulatory processes, although getting better, are very complicated for small businesses, and there are also infrastructural gaps in semi-urban and rural settings. To sustain the current momentum, Kerala needs to diversify its funding base by bringing in more angel and venture capital by organising special investor events, tax holidays, and risk-sharing provisions for private investors. To narrow the skills gap and increase research commercialization, it is possible to increase industry-academia collaboration through co-innovation programs. Also, formal export assistance and international trade fairs would increase market access. The support for the post-incubation is a significant aspect of long-term sustainability and competitiveness. In the future, it would be interesting to study the startup ecosystem in Kerala over time, to examine the survival and growth of the ventures. Comparative research with other Indian states and emerging ecosystems across the world may give an idea about the best practices of promoting sustainable entrepreneurship. Policy and investment actions can also be directed by sector-specific studies in agritech, healthcare, and tourism-tech.

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