ANALYSING VENTURE CAPITAL FUNDING PATTERNS IN INDIAN AI START-UPS

Mrs. Prema Bardhan
Assistant Professor, Department of Commerce, JVM'S Mehta Degree College
prema.bardhan@jnanvikasmandal.com

ABSTRACT

The fast growth of Artificial Intelligence (AI) has significantly changed start-up environment in India, making it a big center for AI innovation. Venture capital (VC) funding is very important for creating, growing, and expanding AI start-ups by providing financial support and strategic guidance. This research focused at the trends in venture capital investment in Indian AI start-ups. It studies the venture capital distribution by sector, investment stages, geographical areas, and recent funding trends. The analysis used data from government publications, industry reports, and start-up databases. The results show that the Fin-Tech and Health-Tech sectors attract the most VC funding, early-stage investments are most common, and major cities serve as key hubs for AI start-ups. This study offers important insights for entrepreneurs, investors, and policymakers seeking to improve India's AI innovation ecosystem.

Keywords: Economic growth, Artificial Intelligence, Venture Capital, Start-ups, Funding Patterns, Innovation

INTRODUCTION

Over the last 10 years, India's start-up ecosystem has experienced tremendous growth, becoming the third-largest in the world. Artificial intelligence has become a powerful tool that drives global innovation and economic growth. India's improved digital infrastructure, a larger tech workforce, and government programs like Start-up India and the India AI Mission have all played a role in the country's rising adoption of AI. Many industries, including healthcare, finance, education, agriculture, and e-commerce, are seeing AI start-ups develop new solutions.

Venture capital funding is crucial for AI start-ups because they need large investments in infrastructure, skilled workers, and research and development. In recent years, venture capital investments in AI start-ups in India have risen significantly, reflecting growing confidence among investors. Looking at trends in venture capital funding offers valuable insights into the benefits, challenges, and opportunities in the Indian AI start-up market.

REVIEW OF LITERATURE

According to AIM Research's analysis of the 'Funding for AI Start-ups Landscape,' India's AI start-up ecosystem saw a significant rise in funding for AI start-ups in 2024. Currently, India has over 300 AI start-ups. This trend shows an increase in investor confidence in AI solutions, driven by rapid digital advancements in key industries like BFSI, healthcare, telecommunications, and automotive.

Raju Majumdar and Ankur Mittal's research on Start-up Financing: Some Evidence from the Indian Venture Capital Industry, sage journal, January, 2023 – the study shows Some Evidence from the Indian Venture Capital Industry argues that venture capital plays a major role in financing and developing technologies related to artificial intelligence and machine learning. By providing essential funding and strategic advice, venture capitalists assist AI and machine learning start-ups in navigating the complex challenges of technological innovation, market changes, and regulations. This relationship benefits both venture capital and AI technologies. Consequently, it leads to technological progress along with broader economic and societal gains. As artificial intelligence and machine learning continue to evolve, the role of venture capital in their future will be crucial, creating new chances for innovation and growth.

OBJECTIVES OF THE STUDY

1. To analyze venture capital funding trends in Indian AI start-ups

2. To examine sector-wise distribution of Venture Capital funding

3. To study stage-wise venture capital investments

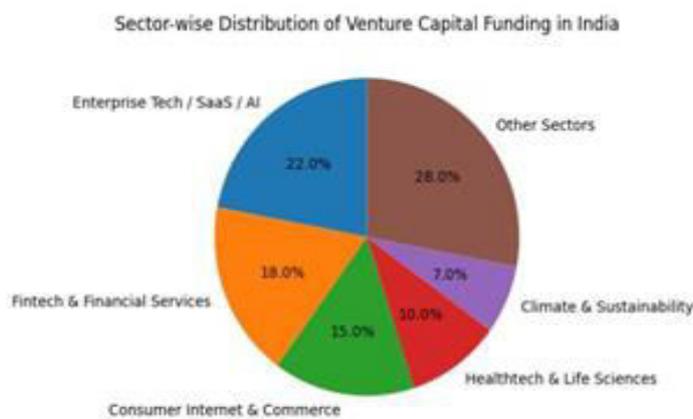4. To identify geographical concentration of AI start-ups

5. To assess challenges and opportunities in AI start-up funding

RESEARCH METHODOLOGY

The study uses a descriptive and analytical research design based on secondary data. Data was collected from the Start-ups India Portal, NITI Aayog reports, and published venture capital and industry reports.
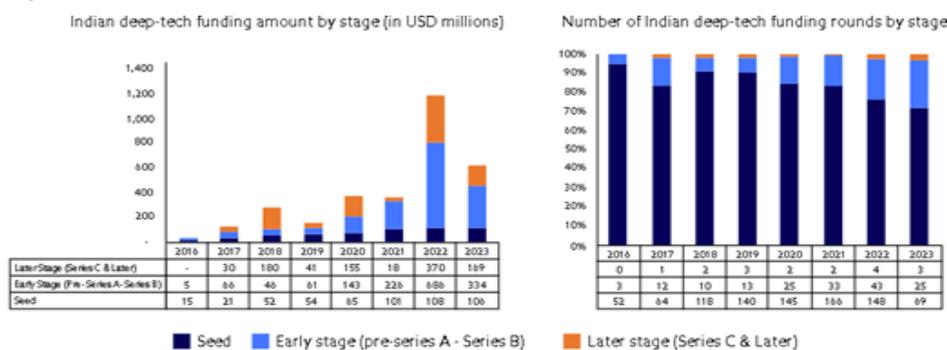
ANALYSIS AND INTERPRETATION

Sector-wise Distribution of Venture Capital Funding –

Sector-wise Distribution of Venture Capital Funding in India

Source: data snapshot India venture capital 2025

The analysis shows that Fin-Tech AI start-ups get the largest share of venture capital investments because of their scalability and revenue potential. Health-Tech AI start-ups come next, thanks to innovations in digital healthcare. Enterprise AI and SaaS models also receive a significant amount of venture capital funding.

Stage-wise Funding Patterns –

Source: Speciale Invest and Oister, 2025.

Early-stage funding, particularly Series A and B, makes up the largest portion of venture capital investments. This reflects investor confidence in scaling innovative AI solutions. Seed-stage funding is also important, indicating increased support for early innovation.

Geographical Distribution – AI start-ups that receive venture capital funding are mostly located in major cities like Bengaluru, Delhi-NCR, Mumbai, Hyderabad, Pune, and Chennai. These areas offer better access to talent, incubators, accelerators, and investor networks.

Different cities have sectoral strengths:

City	Specialization
Bengaluru	IT, SaaS, AI, Deep-tech
Mumbai	Fintech, BFSI, Media
Delhi NCR	E-commerce, Consumer Tech

Hyderabad	Pharma, Biotech, SaaS
Chennai	Manufacturing, Deep-tech

Year-wise Funding Trends

Year	VC Funding in AI Start-ups (USD)	Trend
2020	$1.7 Billion	Early growth phase; AI adoption in analytics, automation, and chatbots
2021	$2.0–2.2 Billion	Expansion stage; increased enterprise AI and SaaS adoption
2022	$3.24 Billion	Peak funding year; India ranked 5th globally in AI investment
2023	$168 Million	Sharp decline (~71%) due to global VC slowdown
2024	$780 Million	Strong rebound driven by Generative AI and enterprise use cases
2025	$640–700 Million	AI captures a large share of total VC funding

Venture capital investment in Indian AI start-ups shows a steady upward trend, with minor fluctuations due to global economic uncertainties. Overall, the long-term growth outlook remains positive.

Challenges Faced by AI Start-ups

- High research and development costs
- Limited availability of quality datasets
- Regulatory concerns
- Regional imbalance in funding distribution

Opportunities and Future Prospects

- Growth of AI-as-a-Service models and its adoption in the industries
- Expansion of Government support through innovation missions
- Increasing participation of global venture capital firms
- Significant contribution to achieve sustainable development
- Massive employment generation for skilled population

FINDINGS OF THE STUDY

- Venture capital funding in Indian AI start-ups is increasing steadily
- Fin-Tech dominates sector-wise investments
- Early-stage funding is attracting the highest Venture Capital
- AI start-ups are concentrated in metropolitan cities due to its well-structured infrastructure
- India has become a global AI innovation hub

CONCLUSION

The study finds that venture capital funding plays an important role in the growth of Indian AI start-ups. Although the funding landscape shows positive trends, challenges like talent shortages and regional concentration still exist. Policy changes, skill development programs, and inclusive funding methods are needed to improve India's AI start-up ecosystem. Understanding how venture capital funding works will help entrepreneurs, investors, and policymakers make better decisions.

REFERENCES

1. Bhoomika Kumari Ramchand Jeswani1 , Aarzoo2 , Aadhavan Ramesh3: Venture Capital and the Financing of Artificial Intelligence and Machine Learning ISSN: 2319-7471, Vol. 13 Issue 12, December, 2024

2. Raju Majumdar & aAnkur Mittal : Startup Financing: Some Evidence from the Indian Venture Capital Industry, sage journal, January, 2023

3. NASSCOM. (2022). India's AI Start-up Ecosystem Report. Startup India. (2023). Start-up Funding Trends in India.

4. NITI Aayog. (2021). National Strategy for Artificial Intelligence.

5. Ministry of Commerce and Industry Report

6. https://venturestudiocapital.com/venture-capital-for-artificial-intelligence-navigating-the- path-to-innovation