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Startup Ecosystem Of Northeast India: A Sectoral Analysis

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ABSTRACT
Background: The startup ecosystem in Northeast India is growing rapidly. However, due to the lack of proper infrastructure and existence of internal conflicts within the region, the full potential is not visible. This study attempts to explore the startup ecosystem in Northeast India, how the startups are distributed and their funding across the states and sectors.
Methodology: The study is descriptive and exploratory in design by using secondary data. The collected data is processed using Microsoft Excel and Python. Mean scores were used to analyse and compare the funding patterns and allocation of funds across states and sector. Graphs and heatmap visualization were used to present the data for better clarity of the complex distributions.
Results: The results highlighted that startup registration rose from 2020 to 2021 and fell in 2022. The funding data as of 2024 showed that there were uneven distribution of startup funding across sectors and states. Assam had the highest number of registrations but fewer investments while Manipur have more investments across each startup, although it had fewer registrations. The other states show good startup activities, but there is a funding gap. The study highlighted that there is a need for increasing the infrastructure and connectivity of Northeast India..
Keywords: Startups, Ecosystem, Sectoral distribution, Northeast India, Funding, Entrepreneurship
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1. INTRODUCTION:

A startup ecosystem is a set of people, institutions, and resources that work together in a dynamic environment to help create businesses and expand them. The idea has grown over the years from the basic theories that say how entrepreneurship can help economic growth (Schumpeter, 1934) and geographic clusters encourage creating competitive advantage (Porter, 1990). Recent research has also highlighted the importance of having access to capital, skilled labor, market opportunities, and supportive policies to enable productive entrepreneurship (Isenberg, 2010). Furthermore, a study by (Autio et al., 2018; Stam & Spigel, 2016) shows that social networks, cultural dynamics, and governance structures are very important for making these ecosystems perform better and last longer. Startup ecosystems operate both physically and virtually to support the development, expansion, and scaling of innovative business ventures in today's digitally connected world. This study aims to explore the growth of the startup ecosystem and analyse the sectoral distribution of startups, their investment patterns, who the key investors of startups in Northeast India and which sector attracts the most funding, which is the novelty of this research.

1.1 Startup India

The Startup India program was launched on January 16, 2016, to build a robust ecosystem that fosters innovation and entrepreneurship while generating employment opportunities. Since its inception, the number of Department for Promotion of Industry and Internal Trade (DPIIT)-registered startups has surged from 504 to 164,820 as of 2024 (*Startup India*, n.d.). Out of which a total of 2054 belong to Northeast India. India currently ranks 19th in the Global Startup Ecosystem Index 2024 by StartupBlink, experiencing the second-highest growth among the top 20 startup ecosystems globally (Global

Startup Ecosystem Index, 2024). India has 112 unicorn startups, which are valued at 30 lakh crore rupees (States' Startup Ranking on Support to Startup Ecosystems, 2022).

1.2 Northeast India Startup ecosystem

Like every other startup ecosystem in the emerging economy, the startup ecosystem of NE India also consists of entrepreneurs, academic institutions, government agencies, investors, and established industries. All of them play important roles in the growth of the startup environment, but the participation of investors and established industries is very limited, which is the crucial factor when it comes to scaling the business. This is primarily due to the lack of proper infrastructure, connectivity, and the existing internal disturbances, which make the investors resistant. While these challenges exist, there is no denial that NE India is surrounded by abundant natural resources and cultivates rich heritage, and recently there has also been a rise in the development of digital infrastructure, which provides opportunities for growth in agritech, tourism, handloom, and even IT. According to the SRF 2022 (States' Startup Ranking on Support to Startup Ecosystems, 2022), Assam and Arunachal were leading states in fostering entrepreneurship, Manipur, Meghalaya, and Tripura were aspiring leaders, and Mizoram and Sikkim were emerging leaders. The governments of these regions are also continuously trying to boost innovation by initiatives such as *Accelerating Startup Calibre and Entrepreneurial Drive* (ASCEND), *the North East Entrepreneurship Development Program* (NEEDP), *and the Northeast Entrepreneurship Fellowship.* There are also funds that are specific for the startups in NE India, such as the *Northeast Venture Fund* (NEVF) by NedFi, PM-DevIne, and the NRL Startup Initiative Fund, and startups from Assam, Sikkim, Tripura, Arunachal Pradesh, Manipur, and Meghalaya have benefitted from NEVF.

1.3 Research questions:

1. What is the growth trajectory of the startup ecosystem in Northeast India?
2. What are the factors that influence funding distribution in Northeast India?
3. Which sector receives the highest funding in startups across Northeast India?
4. Which states in Northeast India receive the highest startup funding?
5. What trends can be identified in the funding amounts received by startups in Northeast India over time?

1.4 Research objectives:

1. To examine the growth trajectory of the startup ecosystem in Northeast India.
2. To analyze the distribution of NE Indian startups across the sectors.
3. To analyze the funding landscape across the states.
4. To identify the sectors that attract the highest investment and how much is received on average by each startup.
5. To analyze the disparities in funding across sectors of startups in Northeast India.
6.

2. Literature Review

This section presents the related literatures on the study of startup ecosystem in India and develops a conceptual framework based on the identified gaps.

India is a developing country and one of the main contributor of it's economic expansion is the country's entrepreneurial ecosystem. A study by (Korreck, 2019) viewed startup ecosystem in India as matured due to the increasing number of available resources and the support it gets from various dimensions. (Garg & Gupta, 2021) highlighted that this is the result of the increasing number of government initiatives that supports the growth of startups, the kind of investor confidence that the startup ventures have received and more importantly the technological advancements that incubation centres have that are made available for the startups. However, recently the pattern have changed in the way startups get funds, venture capitalists are targetting more on the established businesses alone which are challenging for the early startup companies that are trying to build sustainable innovation and need funds the most for developing the MVP.

The startup ecosystem in the eastern part of India started growing only in recent years. A study by (Hijam & Meetei, 2025) gave a broad understanding of the startup trends in NE India and highlighted that startups in these regions fail to scale mainly due to the lack of implementation of region-specific strategies. Another study by (Maran & Palathatka, n.d.) also highlighted that the decrease in the entrepreneurial activies in these regions is caused by the withdrawal of foreign investors due to ease of doing business and inability to retain skilled workers.

The success of startups can be measured by the financial stability of the company. Research has shown that a considerable number of startups fail due to insufficient funding to grow one's business (Halder, 2022). Another study by (Narayan et al., 2019) on funding trends in Indian startups reveals that most startups are funded during the expansion stage. But the level of development of the startup is mismatched with the stages of funding, indicating the uneven distribution of funds. It has been observed in another study by (David et al., 2016) that startups in tier I cities with good IT infrastructure secure more funding as compared to the startups in Northeastern region with limited industrialization.

The Indian startup ecosystem has received over $151 billion investments as of 2024 (The State of Indian Startup Ecosystem, 2024). Out of this, the Northeastern region

received Rs 128.56 crore (Increasing MSME&Start-up Financing Coverage & Expansion of NEDFi Role in NER, 2022) allocated to 1300 startups, which is a sign of underfinancing in a region with significant potential. This is further supported by (Economic Survey 2024-25, Department of Economic Affairs, 2025) stating that big states like Gujarat, Maharashtra, Tamil Nadu and Karnataka together contribute to 43% of India's economic output. But six states of Northeast (excluding Assam and Sikkim) only contribute 0.7% which clearly shows the lack of infrastructure, industrialization and connectivity which are the basic necessities for a startup ecosystem to grow.

3. Research Gap and Theoretical Framework

The literatures showed the need for studying the startup activity in Northeast India to achieve the goal of Viksit Bharat 2047 with economic growth across all regions. Northeast India is the gateway of international trade and collaboration as it is near to Southeast Asia. But before that it need good infrastructure, connectivity and more investments in local promising startups. Most of the studies are concentrated on startups in metropolitan cities and developed regions and there are little knowledge about startups working in NEI, how they get funding and what kind of infrastructure support is needed by them. This gap all highlights the requirement to analyse the Northeast Indian startup ecosystem, what are the patterns of funding and policy interventions.

The theoretical framework in *Fig.1,* showed how the factors, the growth in state and sectors, the related policies and the investments srategies interact to contribute to NEI startup ecosystem.

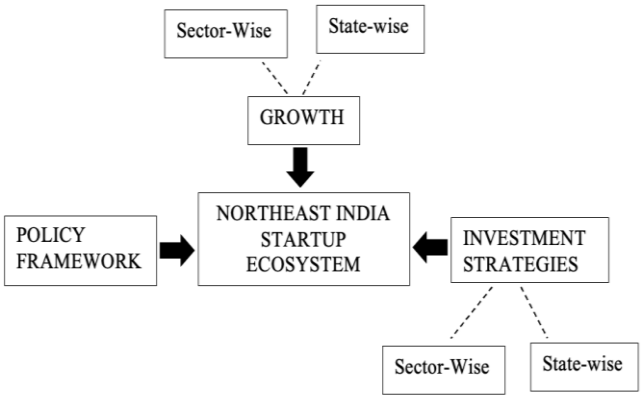

Fig. 1: Theoretical Framework of the Study

4. Methodology

The research followed a descriptive and exploratory design. Secondary data was used in the study included INC42 and StartupBlink for overview on startup industry, available researches, startup India database, and other government reports for identification of Indian startup environment and finally the NE India specific data were collected from reports of Ministry of development of Northeastern region (DoNER), the funding data from the Northeast venture fund (NEVF) and NRL.

Descriptive Mean analysis were used to identify the key industries and states that attracted the maximum funding from the funding data of (North East Venture Fund, 2023; *NRL Startup Funding*, n.d.). The mean calculated using Microsoft office as an analytical approach were used for comparison of growth patterns across sectors and states. Since the analysis showed uneven distribution result, a heatmap visualisation was used to map the sector-wise allocation as it is a technique designed to communicate complex patterns (Pleil et al., 2011). The study also highlighted the overview of policies that boost the number of growth.

5. Results and Discussion

The first part of this section presents the nos. of registered startups across NE India during the year 2016 to 2022 state and sector wise. The growth pattern of startup registration were represented by a graph and the sector-wise distribution were represented by a Heatmap. Secondly, the funding distribution across the startup registration were analysed using Mean Descriptive and the comparison was done across each state and sector. The funding data was calculated as of 2024.

5.1 Growth of startups in Northeast India State and Sector wise

The growth pattern of startups from 2016 to 2022 were presented in *Table 1* and the pattern of it's trajectory were graphically presented in *Fig. 2*. The data showed that Assam has the highest number of startups followed by Manipur, Tripura, Nagaland, Meghalaya, Arunachal, Mizoram and Sikkim. The highest growth was seen during the year 2020 to 2021 which fell in 2022 for Assam, Manipur and Nagaland. For Tripura, the number rose, but for rest of the states, Meghalaya, Sikkim and Arunachal Pradesh it either remained the same or the numbers added during this year was negligible.

Table 1: DPIIT-registered startups from 2016 to 2022

States of NE India	2016	2017	2018	2019	2020	2021	2022	Total
Assam	9	34	67	67	119	188	154	638
Manipur		4	7	6	12	37	18	84
Tripura			2	7	23	12	24	68
Nagaland	1	4	2	2	5	7	3	24
Meghalaya			2	5		9	8	24
Arunachal Pradesh			2	2		4	4	12
Mizoram			2	1	1	2	2	8
Sikkim		1		2	1	3	1	8
Total	10	43	84	92	161	262	214	866

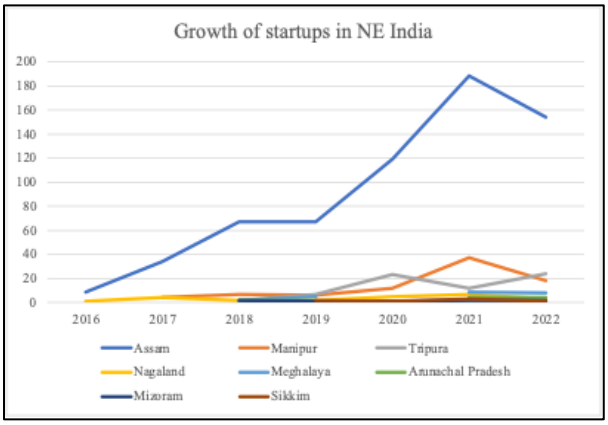

Fig. 2: Growth pattern of startups across NE India (2016-2022)

The number of startups were classified under 16 categories of sectors as shown in *Table 2* according to the type of business operations they are focused on. The data shows that there were uneven distribution of startups across all sectors. The complex distribution of startups across sectors were graphically represented by a heatmap in *Fig. 3,* mapping the sectors with the states. The figure showed that traditional sectors like agriculture, construction, and health & life sciences see more registrations across all states, with agriculture having registrations from all except Sikkim. The food and beverage, IT, and education sectors have registrations from almost all states

Table 2: Sector-wise distribution of startups across the 8 states of NE India.

Sectors	Assam	Manipur	Meghalaya	Tripura	Nagaland	Mizoram	Arunachal Pradesh	Sikkim
Construction	204	15	0	16	0	4	8	0
Professional and commercial services	67	0	0	9	0	0	2	0
Health and lifesciences	134	12	0	12	4	4	2	0
Agriculture	145	24	7	12	18	13	20	0
Education	105	14	4	19	5	0	3	1
IT services	103	14	7	13	7	4	0	0
Food and beverage	95	15	0	0	8	4	3	2
Transportation and storage	0	13	0	0	0	0	0	0
Enterprise Software	0	0	3	0	0	0	0	0
Travel and Tourism	0	0	5	0	0	0	3	1
Others	0	0	3	0	0	0	0	1
Retail	0	0	3	7	4	0	0	0
Human Resources	0	0	0	0	4	5	0	0
Textiles Apparels and Fashion	0	0	0	0	0	0	0	0
Social Network	0	0	0	0	0	0	0	1
Non renewable Energy	0	0	0	0	0	0	0	1

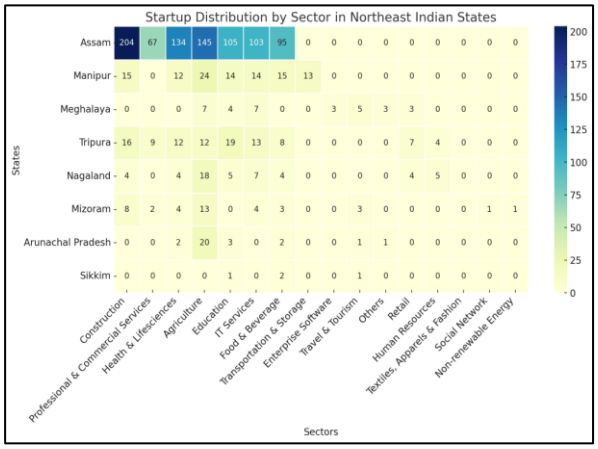

Fig. 3: Heatmap representing sector-wise startup distribution across the sectors of startups.

5.2 Startup registration and Incubator ratio

In *Table 3,* the number of startups registered as of 2024 shown with the number of incubators supporting the startups in the state. The data shows that Assam has the highest number of incubators with the maximum number of registered startups. Although Mizoram ranks second in the number of incubators, this state has the highest startups-incubator ratio. This shows that although states like Manipur and Tripura has high number of startups registered, the institutional support is less.

Table 3: Number of registered startups and incubators across 8 states of NE India.

States	DPIIT registered startups	Incubator	Startups per incubator
Assam	1487	17	87
Manipur	179	1	179
Tripura	141	2	71
Nagaland	85	3	28
Meghalaya	62	2	31
Arunachal Pradesh	47	1	47
Mizoram	41	6	7
Sikkim	12	3	4
Total	2054	35	

5.3 Funding distribution of startups across states and sectors of NE India

The nature of data available for funding across all 8 states of NE India is diverse. In order to bring uniformity to the study, only two funding pools were selected whose funds were open to all 8 states: *the North East Venture Fund* (NEVF) and the NRL Ideation Startup Funding Program. The mean descriptives and comparisons were done as per the registrations of startups as of 2024. The mean score were calculated by averaging the total amount invested

across the states by NEVF and NRL. *Table 4* showed the mean scores of investments where NEVF invested 5684.5 lakhs and NRL invested 215.1 lakhs, respectively, across 6 states (NEVF) and 4 states (NRL). Further, the data in *Tables 5* and *6* showed that NEVF distributed the funds across 18 sectors and NRL in 14 sectors.

Table 4: Mean Investment scores of number of startups funded by NEVF and NRL across states and sectors.

Mean Investment Across States			
	Total Investment (in Lakhs)	Number of States Funded	Mean Investment Across States (in Lakhs)
NEVF	5684.5	6	947.42
NRL	215.1	4	53.78
Mean Investment Across Sectors			
	Total Investment (in Lakhs)	Number of Sectors Funded	Mean Investment Across Sectors (in Lakhs)
NEVF	5684.5	18	315.81
NRL	215.1	14	15.36

In the comparison of funding amounts across the funded states, in *Table 5,* we can see that Assam receives the highest amount, 4888 lakhs (INR), distributed to 57 startups, which is 86 lakhs per funded startup. This was less than Manipur, which received 92 lakhs (INR) per funded startup. Arunachal Pradesh and Sikkim also receive moderate funds of 70 lakhs and 50 lakhs per funded startup. Although Meghalaya and Tripura received funds, the amount is less compared to the other states.

Table 5: Comparison of Funding as per the nos. of Startups across the State.

States	Nos. of registered startups	Funded Startups		Total nos. per state	Total Investment (in lakhs)		Total investments (in lakhs)	Investment per funded startups (in lakhs)
		NEVF	NRL		NEVF	NRL		
Assam	1487	24	33	57	4679.5	209.1	4888.6	85.76
Manipur	179	6	1	7	635	6	641	91.57
Tripura	141	1	1	2	25	0	25	12.50
Nagaland	85	0	0	0	0	0	0	0.00
Meghalaya	62	3	0	3	105	0	105	35.00
Arunachal Pradesh	47	2	0	2	140	0	140	70.00
Mizoram	41	0	0	0	0	0	0	0.00
Sikkim	12	1	1	2	100	0	100	50.00

The investment amounts of NEVF and NRL are distributed across 21 sectors. *Table 6* shows the total amount invested in a particular sector, and the average was calculated by considering the number of startups the funds are distributed to. The data showed that the funds were not distributed evenly across all sectors or even within the sectors. We can see that SaaS received the maximum amount of 903 lakhs (INR), but it was distributed across six startups. However, logistics received only 500 lakhs (INR) but was concentrated in only one startup. Mobility and biotech received investments of 745 lakhs (INR) and 700 lakhs (INR), which were distributed across two (mobility) and three (biotech) startups, giving each startup 373 lakhs (INR) and 234 lakhs (INR). The data also showed that the total amount invested in healthcare, agri-allied, tourism, food processing, and media was moderate, but since they are distributed across more startups, the average amount received by each startup was less. The graphical representation of the comparison of funding across sectors and the average within each sector was shown in *Fig. 4.*

Table 6: Distribution of funds across the sectors.

Sectors	Funded Startups		Total nos. per sectors	Total Investment (in Lakhs)		Total Investment (in Lakhs)	Investment per startup (in Lakhs)
	NEVF	NRL		NEVF	NRL		
Software as a Service (SAAS)	2	4	6	850	52.6	902.6	150.43
Mobility	2		2	745		745	372.50
Biotech	2	1	3	700		700	233.33
Healthcare	4	6	10	555	6	561	56.10
Logistics	1		1	500		500	500.00
Media & Entertainment	2	1	3	450		450	150.00
Agri & Allied	3	10	13	350	58.5	408.5	31.42
Tourism	4		4	340		340	85.00
Food Processing	3		3	283		283	94.33
Construction and Manufacturing	1	2	3	260	13	273	91.00
Food & Beverage	2		2	162		162	81.00
Internet of Things	2		2	135	0	135	67.50
Handloom & Handicraft	3		3	110	0	110	36.67
Education	2	4	6	75	0	75	12.50
Waste Management & E-waste	1	1	2	75	0	75	37.50
Bamboo and Bamboo tech	1	1	2	45	10	55	27.50
E-commerce	1		1	25	0	25	25.00
Loyalty Marketing	1		1	25	0	25	25.00
Others	0		0		60	60	0.00
EV Hyperlocal	0	1	1		0	0	0.00
Automobile	0	2	2		0	0	0.00

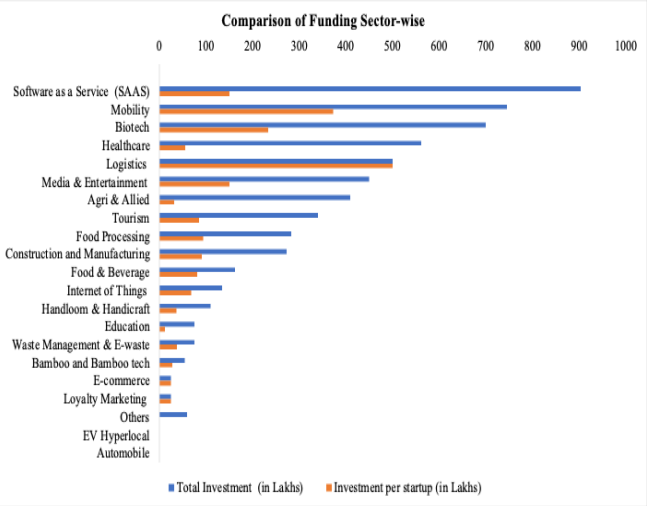

Fig. 4 Comparison of startup investment across sectors

6. Implications

The study indicated that startups are unevenly distributed across all states and sectors of Northeast India. More startup registrations are seen after 2019, and this can be due to the active participation of startup programs with funding opportunities (Startups in the North Eastern Region, 2025). Among all the 8 states of NE India, Assam showed the highest number of startup registrations, as the Assam startup NEST was actively involved. Assam also attracted the highest funding, as the NEST was actively raising funds. The study highlighted the importance of incubation centers and suggested that in order to encourage entrepreneurship, instead of relying in just one general incubation center for all sectors, there should be more incubation centers which are focused on Agri-allied industries, education, and handloom sectors, which has the highest numbers of startup registrations. The industries such as SaaS, mobility, and biotech are growing, but there is lack of a skilled workforce which can be solved by organizing skill development programs and industry-academia initiatives. The findings also highlighted that the e-commerce sector lack investor confidence due to limited digital accessibility and logistics issue. The digital infrastructure need to be improved and more connected roads should be developed to solve logistics issue. The awareness of market expansion should be given in frequent basis and industries should actively engage in investor networks to learn about the details of investment mechanisms.

7. Conclusion

The NE India startup ecosystem is growing, but this does not always mean there are investment opportunities (Menshikov et al., 2024). The Northeast is a diverse region; it needs a plan that takes into account all the important details that influence the ecosystem of the specific region. The priority should be given to building better infrastructure and connectivity, as this will contribute to boosting the investor confidence. Further studies can be done to evaluate and compare the influence of available policy frameworks related to startup environments across the states of NE India..

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