*ISSN:3048-6505 (Online)*
*Shodh Samarth- Research Journal of Commerce, Management & Economics*
*Vol.3(2), August 2026,pp. 74-87*

# SECTORAL DISTRIBUTION AND INDUSTRIAL SUPPORT IN THE UTTARAKHAND STARTUP ECOSYSTEM

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## Abstract

In any economy startups plays important role. It also motivates for innovation and job creation. They also help in the economic development of any country. In past few years, many Indian states have introduced their policies to support startups. At the same time, they are encouraging entrepreneurs also. This study looks at the sector-wise distribution of startups in Uttarakhand. Support provided by institutions in the startup ecosystem is also measured in this study.

This research is purely based on secondary data which is taken from the Startup Uttarakhand startup portal. This web portal is managed by the Directorate of Industries, Government of Uttarakhand. The study describes the data to understand how recognised startups are distributed across different sectors and districts. It also examines the entire institutional support available in the state. Another focus of the paper is to understand the role of incubators, mentors, and nodal agencies also.

The findings of this study show that many startups in Uttarakhand are focused on food processing, agriculture, and information technology. This shows the presence of both resource-based businesses and new technology-driven ideas in the state. Another findings also show that startups are mostly concentrated in urban districts. Dehradun is a hub of startup in Uttarakhand. At other side many hill districts have a lower number of startups. The study shows that there is a urgent need for region-specific policies. These policies can help in promoting balanced entrepreneurial development in the state. It also suggests strengthening the startup ecosystem in regions where startup activity is very low. The findings also help in better understanding regional startup ecosystems in emerging economies.

**Keywords:** Startup Ecosystem; Entrepreneurial Ecosystem; Sectoral Distribution; Institutional Support; Incubators and Mentorship; Regional Entrepreneurship; Uttarakhand

## Introduction

Entrepreneurship is seen as an important factor for economic growth, innovation, and job creation in modern economies. Startup ecosystems include different connected actors such as entrepreneurs, investors, mentors, incubators, and government institutions. These actors play an important role in supporting entrepreneurship and encouraging innovation (Isenberg, 2010). These ecosystems create a supportive environment for startups. They help startups get important resources and they also provide knowledge and networks. These support the growth and long-term survival of startups (Stam, 2016). In recent years, governments at global level have introduced policies to strengthen startup ecosystems. These policies are used as a strategy to support economic development and promote technological progress.

If we talk about Indian, initiatives like Startup India have greatly encouraged entrepreneurship and innovation. All the intermediating support for startups have been improved (NASSCOM, 2023). This is not limited to the country only. Many state governments have introduced geographic specific policies to support local startup ecosystems. Uttarakhand is a Himalayan state and full of beauty. It is known for its natural resources, biodiversity, tourism and rich cultural heritage. In past years, the state has started developing its entrepreneurial ecosystem. Startup Uttarakhand policy implemented by the Directorate of Industries has impacted positively. These initiatives aim to promote innovation-based businesses. They also encourage entrepreneurship based on local resources. In addition, they provide institutional support through incubators, mentors, and different funding options.

The development of startup ecosystems in geographically unique regions like Himalayan states brings both opportunities and the challenges. Natural resources and tourism create good opportunities for entrepreneurship. However, problems related to infrastructure and limited access to markets can slow down the growth of startups (Spigel, 2017). It is important to understand how startups are distributed across different sectors in such regions. At the same it is also important to study the institutional support available to them.

This approach helps in evaluation of the policy effectiveness and in identifying future growth opportunities. So far, the present study looks at how startups in Uttarakhand are distributed across different sectors. The institutional support system of the state's startup ecosystem is also examined.

## Literature Review

Entrepreneurial ecosystems is a smart way to understand how entrepreneurship develops in a region. According to Isenberg (2010), an entrepreneurial ecosystem includes different connected actor's institutions and resources. They also help in the creation of new businesses venture. These actors include entrepreneurs, investors, universities, government agencies, incubators, and startup mentors. Stam (2015) explained in his research that entrepreneurial ecosystems work through the interaction of many stakeholders.

These exchanges help promote productive entrepreneurship. Early studies highlighted the importance of domestic network. They also emphasized institutional support in the development of entrepreneurship. Cohen (2008) noted that strong and sustainable entrepreneurial ecosystem are formed when local institutions, entrepreneurs, and government policies work together effectively.

Similarly, Feld (2020) emphasized collaboration and community participation. He also highlighted the need for long-term institutional support to build strong entrepreneurial ecosystems. The entrepreneurial ecosystem has evolved over time. From traders to entrepreneurs, it has a long journey. Spigel (2017) identified cultural, social and material factors as the main elements of entrepreneurial ecosystems. Cultural and social factors are related to the entrepreneurial mind-set. They show how people react for starting a business.

In this case social factors include once networks and relationships among different stakeholders. Another factor named Material includes infrastructure, availability of capital and policy support. Roundy et al. (2018) explained that entrepreneurial ecosystems are highly complex system. Both grow and change through interactions among entrepreneurs, institutions and markets. In the same flow Cantner et al. (2021) suggested in research that any entrepreneurial ecosystem develop in different stages. These stages include emergence, growth, maturity and renewal same like the product life cycle.

In Any country Government policies and institutional frameworks also influence entrepreneurial progress. For example, as Mazzucato (2013) explained that governments can act as entrepreneurial states. They support innovation through financial, infrastructure support and policy measures. The Institutional system like incubators and accelerators are also very important for any entrepreneur setup. Hackett & Dilts (2004) explained that an incubator provides infrastructure to all entrepreneurs. They support networking and help startups get access to finance. Phan et al. (2005) also noted that incubators help improve the survival and growth of startups. Educational body like universities and research institutions are important parts of entrepreneurial ecosystems.

The Triple Helix Model coined by Etzkowitz & Leydeorff (2000) explains the collaboration between universities, Industries and the government. This collaboration helps ecosystem, promote innovation and entrepreneurship. Regional characteristics also influence the development of entrepreneurial ecosystem. Saxenian (1996) noted that strong regional network contributed to the success of Silicon Valley. Audretsch & Belitski (2017) also identified regional culture, access to resources and institutional quality as important factors for ecosystem performance. Recent studies have focused on the changing nature of startup ecosystem. Wurth et al. (2022) stated that this concept is still not fully developed in theory. Social networks are also highly important for any entrepreneur. Knowledge sharing is a also boost for business growth. Through knowledge sharing entrepreneurs can avail benefit from professional networks. Such networks provides mentoring, idea sharing within the communities. Higher education (now schools and colleges also) institutions help in entrepreneurial development. Phan **et al.** (2005) highlighted that educational bodies can help through entrepreneurship education, technology transfer, and incubation support. Guerrero et al. (2016) explained the same that entrepreneurial universities contribute to regional innovation system.

Among the academicians the trends of research on entrepreneurial ecosystems is increasing. There are numerous research from idea to validation of any startup execution. Very few studies have focused on smaller and geographically unique regions like Himalayan states. Most of them are about major innovation hubs such as Silicon Valley, Bangalore or Shenzhen. As a result, there is a research gap in understanding how startup ecosystems develop in smaller and resource-based economies. In India, initiative like Startup India and different state startup policies have helped in reinforcing entrepreneurial ecosystems very well. However, very few empirical studies have examined the sector-based distribution of startups and institutional support at any state level. Therefore, studying the startup ecosystem of Uttarakhand state can provide useful insights into entrepreneurial development in emerging regions.

## Research Gap

While several studies have examined startup ecosystems in major metropolitan regions and technology hubs, relatively limited research has focused on emerging entrepreneurial ecosystems in smaller states and geographically unique regions such as Himalayan states. In particular, there is a lack of empirical analysis examining the sectoral distribution of startups and the institutional support mechanisms available within the Uttarakhand startup ecosystem.

## Research Questions

1. What is the sectoral distribution of recognized startups in Uttarakhand?
2. What institutional support mechanisms exist within the Uttarakhand startup ecosystem?
3. How do incubators startup mentors and nodal agencies support startup development in state?
4. What new trends can be seen in the startup ecosystem of Uttarakhand state?

## Research Objectives

- To analyse how recognized startups in Uttarakhand are distributed across different sectors.
- To examine the institutional support available in the startup ecosystem, such as incubators, mentors, and nodal agencies.
- To identify the emerging trends in the startup ecosystem of Uttar Pradesh.

- To provide policy suggestions for strengthening entrepreneurial development in the region.

## Research Methodology

### Research Design

This study uses a descriptive research design to examine the sectoral distribution of startups and the institutional support structure in Uttarakhand. This design helps in describing patterns and trends in the startup ecosystem.

### Data Source

The study is based on secondary data taken from the official Startup Uttarakhand portal. The portal is managed by the Directorate of Industries, Government of Uttarakhand. It provides information about recognized startups and different stakeholders in the startup ecosystem of the state.

### Dataset

Following data set is used in this research to understand the sectoral distribution of startups in Uttarakhand:

- 211 Recognised Startups
- 46 Funded Startups
- 15 Recognised Incubators
- 7 Recognised Nodal Agencies
- 233 Registered Mentors

These indicators help in understanding the sector-wise distribution of startup. They also give insights into the institutional support available within the startup ecosystem.

### Data Analysis

The collected data were examined using descriptive statistical. These included frequency distribution and sector-wise classification. This helped in identifying dominant startup sectors.

It also helped in examining the role of institution support such as incubators, mentors and nodal agencies. Table and charts were used to present the findings in a clear way.

**Scope of the Study**

The study focuses on the startup ecosystem of Uttarakhand. It examines how sectoral distribution and institutional support influence entrepreneurial activities in the state

Limitations of the Study

The study is based only on secondary data sources. The study is based on secondary sources. This may limit detailed analysis pf the actual performance of startup.

## Sectoral Distribution of Startups in Uttarakhand

In Uttarakhand approx. 21 sectors have been explored by the entrepreneurs. The sector wise analysis of recognized startups shows that entrepreneurial activities are spread across many sectors. This distributions reflects the states's natural resources, agricultural potential, and the gradual growth of technology-driven entrepreneurship entrepreneurship. However, some sectors have a higher concentration of startups than others.

| S. No. | Sector | Number of Startups | Percentage (%) |
|---|---|---|---|
| 1 | Food Processing & Agriculture | 40 | 18.96 |
| 2 | IT & Artificial Intelligence | 24 | 11.37 |
| 3 | Bio Technology | 16 | 7.58 |
| 4 | Other / Miscellaneous | 15 | 7.11 |
| 5 | Travel & Tourism | 12 | 5.69 |
| 6 | Education | 11 | 5.21 |
| 7 | Healthcare | 10 | 4.74 |
| 8 | Energy | 10 | 4.74 |

| | | | |
|---|---|---|---|
| 9 | Agri Tech | 9 | 4.27 |
| 10 | Waste Management | 8 | 3.79 |
| 11 | Transportation | 7 | 3.32 |
| 12 | Health & Wellness / Beauty | 5 | 2.37 |
| 13 | Fintech | 4 | 1.90 |
| 14 | Robotics | 3 | 1.42 |
| 15 | Textile | 3 | 1.42 |
| 16 | Space Tech | 3 | 1.42 |
| 17 | E-Commerce | 3 | 1.42 |
| 18 | Pharmaceutical | 2 | 0.95 |
| 19 | Gaming | 2 | 0.95 |
| 20 | Skill Development | 2 | 0.95 |
| 21 | Consultancy | 2 | 0.95 |
| Total Startups = 211 | | | |

**Key Observations of sectorial Distribution**

The analysis shows that Food Processing and Agriculture sectors are highly liked by Uttarakhand's Entrepreneurs. They have the highest numbers in registration in the state. This trend reflects Uttarakhand's strong agricultural base and the availability of natural resources. These factors support the growth of agro-based entrepreneurship. The IT and Artificial Intelligence sector is the second-largest category. This shows the growing importance of digital innovation and technology driven business. In Uttarakhand the sector like biotechnology, healthcare, education, tourism and energy have been explored by the entrepreneurs. Such findings indicates the entrepreneurial upliftment in the state Uttarakhand

Although the sector like fintech, robotics, space technology and e-commerce have been fewer count but it is a symbol of Technology and innovation driven business model's adoption in state. We can see a slight change in the state for technology adoption which is a good sign for the state Uttarakhand. It is moving from resource-based entrepreneurship to a more diversified and technology-oriented ecosystem.

**Regional Concentration of Startups in Uttarakhand**

Considering the district-wise registration of startups in Uttarakhand shows a shocking result. It clearly seen that the entrepreneurial activities are highly concentrated in a few districts of Uttarakhand. This distribution highlights regional differences in startup development across Uttarakhand.

| District | Startups | Share (%) |
|---|---|---|
| Dehradun | 103 | 48.82 |
| Haridwar | 19 | 9.00 |
| Nainital | 12 | 5.69 |
| Udham Singh Nagar | 11 | 5.21 |
| Pauri Garhwal | 9 | 4.27 |
| Almora | 4 | 1.90 |
| Chamoli | 2 | 0.95 |
| Pithoragarh | 1 | 0.47 |
| Tehri Garhwal | 1 | 0.47 |
| Bageshwar | 0 | 0 |
| Champawat | 0 | 0 |
| Rudraprayag | 0 | 0 |
| Uttarkashi | 0 | 0 |

| | | |
|---|---|---|
| Udham Singh Nagar | 11 | 5.21 |

**Note:** District-wise startup date were referred using the district filter on the startup Uttarakhand portal. The dataset includes 162 startups at the portal. After shorting it was found that only 211 recognised startups are listed district wise. It indicates that some records may lack district classification or were recently added but not furnished.

**Key Observations of Regional Concentration**

The results of the district wise analysis clearly indicate that Dehradun alone **holds the half of the recognised startup. It makes Dehradun city a** primary hub of entrepreneurial activity in Uttarakhand. Researcher's opinions are this is due to the tag of capital city. The concentration of startups in Dehradun can be attributed to the presence of higher educational institutions, research centres, incubators, government agencies, and better infrastructure.

There are fewer support system in other districts such as **Haridwar, Nainital and Udham Singh Nagar. Due to this startup registration is low here**. At other hand several hill districts such as **Bageshwar, Champawat, Rudraprayag and Uttarkashi currently have zero recognised startup. This record in the available dataset,** indicating limited entrepreneurial penetration in these regions.

## Interpretation

Finding of this study concludes a significant regional **imbalance in the startup ecosystem of Uttarakhand**. It means the entrepreneurial activities are concentrated primarily in urban and industrial districts. Hill districts face challenges such as limited infrastructure, smaller markets, and restricted access to financial and institutional support. As these results suggests the need for **region-specific policy interventions,** including the establishment of the more incubation centres, improved connectivity and targeted incentives to promote entrepreneurship in underrepresented districts.

Another findings focus the patterns in both the sectoral distribution and regional concentration of startups. The results suggest that the startup ecosystem of the state is shaped by a combination of resource-based entrepreneurship, technological innovation and institutional support structures.

The sector-wise analysis shows that Food Processing and Agriculture accounts for the largest share of startups in the state. This trend reflects the natural resources advantage of Uttarakhand. These days' agriculture, horticulture and organic farming provide opportunities for value-added enterprises. Similar findings have been noted in regional entrepreneurship studies. It suggest that startups in emerging economies often develop around locally available resources and regional economic strengths (Stam, 2016).

The presence of a significant number of startups in the IT and Artificial Intelligence sector indicates the gradual emergence of technology-driven entrepreneurship in the state. This pattern aligns with broader trends in the Indian startup ecosystem, where digital technologies increasingly drive innovation and new venture creation (NASSCOM, 2023). The growth of technology startups in Uttarakhand can also be linked to the availability of skilled human resources from educational institutions and the expansion of digital infrastructure.

The study also reports that sectors such as biotechnology, healthcare, tourism and education contribute to the diversification of the startup ecosystem. According to Isenberg (2010), a diversified entrepreneurial ecosystem is an important indicator of ecosystem maturity. It reflects the ability of the regional economy to support innovation across multiple industries.

The district-wise analysis reveals a strong regional concentration of startups in Dehradun also. This alone accounts for nearly half of the recognised startups in the state. This concentration is consistent with the findings of Spigel (2017), who argued that entrepreneurial ecosystems tend to develop around urban centres where infrastructure, institutional support and market access are more readily available.

The existence of startups in disctrict such as Haridwar, Nainital, and Udham Singh Nagar can also be explained by their relatively stronger industrial base and connectivity with major markets. These districts is benefited by better transportation infrastructure, industrial clusters, and proximity to major economic centres. This also facilitate entrepreneurial activities. In contrast, several hill districts such as Bageshwar, Champawat, Rudraprayag and Uttarkashi currently show no recognised startups in the available. This resulted a clear geographical imbalance in entrepreneurial development within the state. Previous resrach suggests that factors such as limited infrastructure, lower market accessibility and reduced availability of financial and institutional support can restrict startup development in remote and mountainous regions (Roundy et al. (2018).

The findings indicate that the startup ecosystem of Uttarakhand is highly concentrated in urban districts while remaining underdeveloped in many hill regions. Addressing this imbalance will require targeted policy interventions that strengthen entrepreneurial infrastructure in underrepresented districts, including the establishment of incubation centres, improved connectivity, and better access to funding mechanisms. The combined analysis of sectoral and regional patterns therefore provides important insights into the structure and evolution of the startup ecosystem in Uttarakhand, highlighting both its strengths and the challenges that need to be addressed for balanced regional development.

## Conclusion

This sectorial analysis of startup culture in state Uttarakhand is a unique way to analysis the sgtartup ecosystems. In this study the distribution and regional count of recognised startups in Uttarakhand has been listed. The finding indicates that in Uttrakhand the ecosystem is increasing and getting matured gradually. Sectors operated in Uttarakhand for startups are also expending and not limited to the traditional field. In Uttarakhand startups have been registered from food tech to space tech. Tech based entrepreneurial setup is also found in the study.

As per sectorial calculations the Food Processing and Agriculture constitute the largest segment of startups. This segment highlights the importance of the state's agricultural resources and organic product potential. Simultaneously startups in IT and Artificial Intelligence, biotechnology, healthcare, tourism and education indicate a gradual diversification. It is a remarkable entrepreneurial landscape and the growing role of knowledge-based enterprises. The district-wise analysis results a strong geographical concentration of startups in Dehradun city, followed by districts such as Haridwar, Nainital, and Udham Singh Nagar.

At the other hand multiple hill districts currently have zero recognised startup. It indicates the regional disparities in entrepreneurial development in Uttarakhand. Although state has made progress in strengthening its startup ecosystem. It also promotes the balanced regional entrepreneurship and improved institutional support but a dedicated policy must be developed for hilly districts.

## Limitations and Future Research

1As this study is based on purely secondary data set referred by the Startup Uttarakhand Portal. Some startups which are in pipe lines are not included. The analysis focuses on sectorial and district wise distribution and does not include the startup operations and performance. Future study may use the primary data and comparative state-level analysis to better understand the ecosystem in Uttarakhand.

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