



## Startup ecosystem in Rajasthan: A comparative analysis with high-performer states of India

Dr. Neha Paliwal

Assistant Professor Department of Economics, Mohanlal Sukhadia University Udaipur, Rajasthan, India

### Abstract

The continuous development process urged for the optimum use of resources which can be made possible through technological innovations and efficient entrepreneurship. Rajasthan is a land of minerals and is rich in natural resources. It is a landlocked state and enjoys access to 40 per cent markets of India. It has a huge potential for entrepreneurship development. It is promoting entrepreneurship and strengthening the business ecosystem for industries and startups. Pro-business policy interventions are initiated to increase investments. Rajasthan stood at eighth rank as per the latest Ease of Doing Business (EoDB) indexing done by the Department for Promotion of Industry and Internal Trade (DPIIT) in 2019 at the national level (RBI, 2020). It was the first state in India to exempt new MSMEs from taking clearances and approvals initially for three years.

The total number of startups recognised by DPIIT in Rajasthan during the last five years (2019-23) is 3800 (PIB, 2 Feb. 2024). It is categorised as a top-performing state (second category out of five) in the Startup Ranking 2022 whereas it was under the category of aspiring leaders (fourth category out of five) under the same ranking in the year 2021. The present research paper aims to explain the current status of the startup ecosystem in Rajasthan and compare it with the selected high-performing states of India. For this comparison, the other six states- Gujarat, Karnataka, Kerala, Tamil Nadu, Maharashtra and Telangana are selected based on two criteria- these states are categorised as the best or top performers among major states having a population of more than 1 crore in Startup Ranking 2022 and they are among the top ten states having the high numbers of recognised startups by DPIIT (2024). The paper also tries to bring out the best practices adopted by the high performers which Rajasthan state can adopt to improve further the startup ecosystem in the state.

**Keywords:** Startup, business ecosystem, ease of doing business, entrepreneurship, Rajasthan

### Introduction

Schumpeter in his theory (1961) highlights the entrepreneur and innovation as the main drivers of economic development and it has become more relevant in this time of high competition. The continuous development process urged for the optimum use of resources which can be made possible through technological innovations and efficient entrepreneurship. Entrepreneurship has been broadly defined as the process of identifying opportunities and creating new ventures to exploit them (Shane & Venkataraman, 2000). An innovative entrepreneur builds startup. Startups are a specific form of entrepreneurship characterized by high growth potential and innovation (Ries, 2011). The literature provides strong evidence that startups are closely linked to economic development through job creation, economic diversification, Investment and Capital Flow, skill development, local economic impact, social improvements, and fostering an entrepreneurial culture (Haltiwanger *et.al.*, 2013; Feldman & Frenken 2007; Gompers & Lerner 2001; Saxenian, 1994 and Mair & Marti, 2006) [9, 10, 11, 12]. For a resilient economy strong startup ecosystem is a necessary condition. There is high potential of fostering entrepreneurial and startup culture in many states of India having ample of natural resources and well-developed network, communication system and infrastructural facilities. Rajasthan is also one of them.

Rajasthan state is rich in natural resources. It is known as a museum of minerals having a variety of about 57 different minerals. It has significant resources of metallic and non-metallic minerals including building stones, radioactive minerals, petroleum and natural gas (DGM). It has a strong base in agriculture and livestock too. It is the largest

producer of blended fabric and wool, coriander, mustard, hina, isabgol and the second largest producer of crude oil, oilseeds, milk and coarse cereals.

Its strategic location, strong industrial infrastructure and a strong base of MSMEs, rich resource base, and abundant skilled manpower are favourably suited for investments in sectors such as cement, tourism, agriculture and allied industries, and mineral and mineral processing industries. Thus it has a great potential for entrepreneurship development and startups. The state has already taken initiatives in this regard. Rajasthan stood at eighth rank as per the latest Ease of Doing Business (EoDB) indexing done by the Department for Promotion of Industry and Internal Trade (DPIIT) in 2019 at the national level (RBI, 2020). It was the first state in India to exempt new MSMEs from taking clearances and approvals initially for three years. It has already launched its Startup Policy in 2015 (DPIIT, 2024).

Despite the high potential and policy initiatives, the recognised startups by DPIIT during the last five years (2019-23) are 3800 in Rajasthan (PIB, Dec 7, 2022) and it was just 3.6 per cent of the total number of recognised startups in India. Though its efforts to strengthen the startup ecosystem made it categorised as a top performer in the Startup Ranking 2022 (top second category among five categories) whereas it was the aspiring leader (fourth category among five categories) in 2021 (DPIIT, 2024). The present research paper attempts to analyze the startup ecosystem of Rajasthan and compare it with high-performer states of India to bring out some strong policy suggestions to promote startups in the state.

## Objectives

- To analyse the startup ecosystem in Rajasthan.
- To compare the startup ecosystem in Rajasthan with high-performing states of India.
- To measure the efficiency of the startup ecosystems of selected high-performing states.
- To bring out some strong policy suggestions for entrepreneurship development and startup ecosystem in Rajasthan

## Methodology

The present research is more descriptive in nature. The secondary data for startup ecosystem and innovation are collected from authentic government reports (i.e., States' Startup Ranking-2022 National Report of DPIIT, States' Startup Ranking-2022 State Reports etc.) and press releases of Public Information Bureau (PIB), Delhi. A sample of seven states was selected purposively to compare the startup ecosystem of Rajasthan with the other high-performing states of India. These states are - Gujarat, Karnataka, Kerala, Tamil Nadu, Maharashtra, Rajasthan and Telangana. They are selected based on two criteria- firstly, these states are categorised as the best performers or top performers among major states having a population of more than 1 crore in Startup Ranking 2022 and secondly, they are among the top ten states as per the numbers of recognised startups by DPIIT till December 2023 (PIB, Dec 7, 2022 and February 2, 2024). To compute the efficiency of startup ecosystems of states efficiency ratio method was used which is the ratio of the output indicator against the input indicator. The percentile of the state on Fostering Innovation and Entrepreneurship is considered an output indicator and the average percentile score of the other six reform areas is considered an input indicator to measure the efficiency of startup ecosystems.

## Startup Ecosystem in Rajasthan and Policy Incentives

Generally, the startup ecosystem can be understood as a network of interconnected individuals, organizations, and resources that support the development and growth of startups. This includes entrepreneurs, investors, mentors, incubators, accelerators, service providers, and often government bodies or academic institutions. In other words, a startup ecosystem is a dynamic and collaborative environment where various components work together to nurture and advance new business ventures. Government support plays a major role in setting and strengthening the startup ecosystem in a state. Rajasthan government has played a vital role in establishing and encouraging startups in the state. The Rajasthan government launched its first startup policy in 2015. It has set up a structure for supporting the startup ecosystem in the state. iStart Rajasthan and the Department of Information Technology and Communication, Government of Rajasthan are the two major components of this system. iStart Rajasthan is the Rajasthan state government initiative that started in late 2017 to foster innovation and support startups in the state. Department of Information Technology and Communication, Government of Rajasthan is the nodal department for startup initiatives in the state and 8 other departments are also providing support to startups in the state. The startup program in Rajasthan is further strengthened by the Government of Rajasthan's Startup

Council, an evaluation committee and State Level Implementation Committee (SLIC). The other stakeholders of the Rajasthan startup ecosystem are mentors, incubators, techno funds etc. The state modified its startup policy in 2022 aiming to establish Rajasthan as the top entrepreneurship and innovation centre in India.

Rajasthan government is providing various incentives to startups registered with the iStartProgram for building a supportive ecosystem for startups in the state. These incentives can be further classified as financial and non-financial incentives which are as follows:

### Financial Support:

The Government of Rajasthan provides the following financial support to startups under the Rajasthan Startup Policy 2022:

#### 1. Funding Incentives:

- **Pre-Seed Stage:** Startups can receive an ideation grant of INR 2,40,000 if the idea meets the criteria set by the Evaluation Committee.
- **Seed Stage:** Startups can receive a Viability Grant based on their QRate score, with grants ranging from INR 10 lakh for Bronze (QRate score 1-20), INR 20 lakh for Bronze (QRate score 20-40), INR 30 lakh for Bronze (QRate score 40-50) and INR 60 lakh for Silver & above.

#### 2. Growth Stage Support

- **(Scale-up Fund):** Financial support for Growth Stage startups up to a maximum of 50 per cent of the total amount raised, with ceilings defined as up to INR 1 Crore for Bronze category startups, up to INR 1.5 Crore for Silver category startups and up to INR 2 Crore for Gold and above category startups.
- **Startup Equity Fund:** The government has set up an Alternative Investment Fund (AIF) to provide funding support to startups in the form of equity, matching the amount raised by eligible startups up to INR 5 Crore per startup.

#### 3. Additional Financial Incentives:

- **Investment subsidy:** 75 per cent of state taxes due & deposited for 7 years.
- **Intellectual Property Incentives:** Reimbursement of up to 75 per cent of the costs of acquiring patents, up to INR 5 lakhs per startup.
- **Quality certification incentive:** One-time reimbursement of 50 per cent of the cost incurred in obtaining quality certification, up to INR 25 lakhs per startup.
- **Hosting Infrastructure:** Free access to the Rajasthan Stack for Pre-Seed & Seed stage startups and at 50 per cent of the cost for Growth stage startups for a period of 3 years.
- **Incentive for Startup Investment Fund:** A grant of up to INR 35 lakhs will be provided to startup investment funds for organising acceleration programmes and workshops for at least 30 per cent of participants from the state.
- **Incentives for Incubators and Academic Institutes:** Companies and academic institutions will be given benefits for setting up incubation centres.

- **Networking Support:** Reimbursement for attending national conferences up to INR 50,000 per startup member and up to INR 5 lakhs for attending international conferences.
- **Booster Programs:** Additional financial support through various boosters based on performance, employment generation, and being a product-based startup, which can provide further financial incentives. Such boosters are performance boosters, woman founder boosters, transgender founder boosters, employment boosters, specially-abled founders, rural area boosters etc.

**Non-Financial Support:**

The Government of Rajasthan provides the following non-financial support to startups under the Rajasthan Startup Policy 2022:

1. **Digital and Physical Infrastructure Support:** Startups are provided free or subsidized access to facilities such as cloud storage, APIs, payment platforms, SMS, and email services through the Rajasthan Stack. They also receive space in government-owned incubation centres, co-working spaces, laboratories, and testing labs.
2. **Networking Opportunities:** The government organizes various events and workshops throughout the year, including exposure visits, academic/university events, industry events, festivals, startup meets, sector-specific events, and job fairs to facilitate networking among startups and industry stakeholders.
3. **Training and Upskilling:** The government operates and plans to expand training and upskilling centres dedicated to startups, providing access to courses and knowledge banks at nominal fees or free of cost for special cases.
4. **Mentorship and Counseling:** In mentorship programs, the government invite counsellors and senior guest mentors to guide startups. Mentors are also hired for incubation centres to assist startups on a day-to-day basis.
5. **Capacity Building Activities:** Through the iStart Spotlight program, capacity-building activities are undertaken across districts, focusing on training in areas such as operations, human resources, marketing, and promotion.
6. **Centralized Incubator Model:** A centralized incubator model has been operationalized to provide incubation cells at each district with divisional headquarters and a

central Techno Hub, ensuring support for startups across the state.

7. **Public Procurement Support:** Startups are encouraged to participate in government procurement processes, with special provisions allowing them to procure orders up to INR 15 lakh without prior turnover or experience requirements.
8. **Job fairs and Employment Opportunities:** The government organizes job fairs and partners with private companies to facilitate employment opportunities for startups in the exit stage or dormancy.
9. **Awareness and Outreach Programs:** These programs are conducted to promote Rajasthan-based startups and support their marketing efforts.

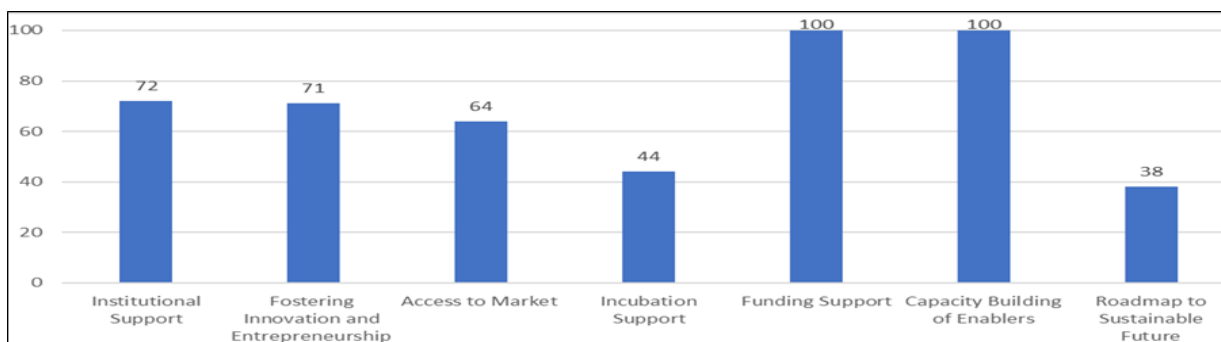
These financial and non-financial supports are designed to create a conducive environment for startups, fostering innovation, collaboration, and growth within the startup ecosystem in Rajasthan.

**Performance of the Rajasthan Startup Ecosystem**

The fourth edition of the States’ Startup Ranking 2022 (August 1, 2021 to December 31, 2022.) assessed the startup ecosystem of 26 states and 7 union territories on seven key reform areas (divided into 25 action points)-Institutional Support, Fostering Innovation and Entrepreneurship, Access to Market, Incubation and Mentoring Support, Funding Support, Capacity Building of Enablers and Roadmap to a Sustainable Future (DPIIT, 2024). The score of each State and UT is converted into percentiles which shows the relative performance of each State and UT compared to others and they are categorised into five groups according to their performance -Best Performers (Percentile: 90-100), Top Performers (Percentile: 70-89), Leaders (Percentile: 50-69), Aspiring Leaders (Percentile: 30-49) and Emerging Startup Ecosystem (Percentile up to 30) (Startup Ranking- India, 2022). The states/UTs with a population of more than 1 crore are ranked in Category A and others are assessed in Category B. Rajasthan was categorised in the Top Performer category which means it is performing better but still, the scope is there to achieve the best. The reform area-wise performance of the state is explained in section 5.1.

**Reform Area-Wise Performance of the State**

Rajasthan has participated in all 25 Action Points under the Startup Ranking 2021. The relative performance of the State in percentile for each of the Reform Areas is presented graphically (Fig 1).



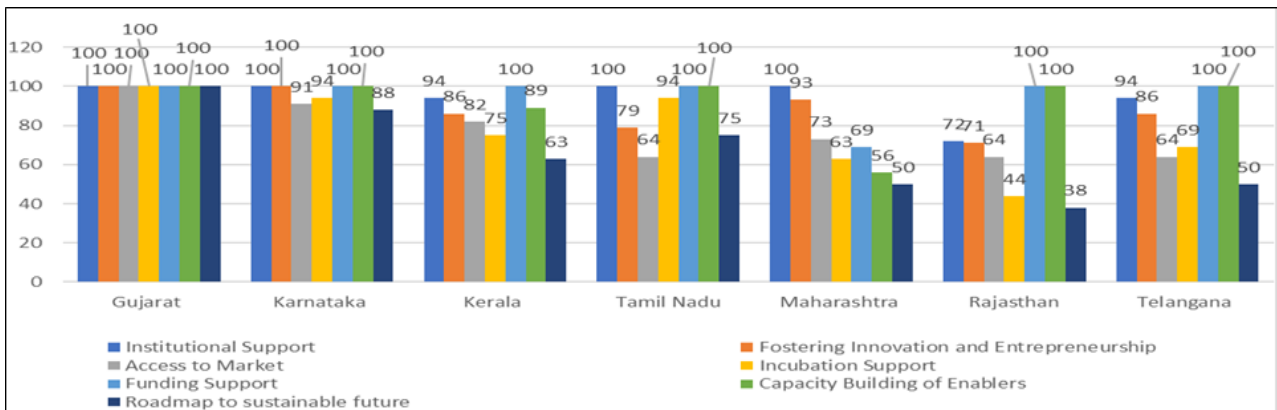
Source: States’ Startup Ranking 2022- Top Performer Rajasthan, DPIIT, 2024

Fig 1: Rajasthan’s Performance in Reform Areas under Startup Ranking 2022 (in Percentile)

The State has shown remarkable performance in two reform areas Funding support and Capacity Building for Enablers where it has got 100 percentile which means that the State has scored highest among all participating States/UTs in these reform areas but it did not score well in Roadmap to Sustainable Future and Incubation Support where it has 38 and 44 percentiles respectively. In Institutional Support and Fostering Innovation and Entrepreneurship, it scored more than 70 percentile which is somehow satisfactory but for Access to Market, it was at 64<sup>th</sup> percentile only. This shows Rajasthan has a good startup ecosystem in the state but there is scope for further improvement. The comparison of the state’s performance with high-performing states is done in section 5.2 of the paper.

**Reform Area-wise Comparison of Rajasthan with Other High-Performer States**

The performance of Rajasthan is compared with other high-performer states under the startup ranking 2022. Four best-performing states and two top-performing states (other than Rajasthan) of ‘Category A’ under Startup Ranking 2022 were selected for comparison. Among them, Gujarat, Tamil Nadu, Kerala and Karnataka are the best performers whereas Maharashtra and Telangana are top performers. The percentile scores of these states for each reform area under Startup Ranking 2022 are presented in Fig 2.



Source: States’ Startup Ranking 2022 of Gujrat, Karnataka, Kerala, Tamil Nadu, Maharashtra, Rajasthan and Telangana, DPIIT, 2024

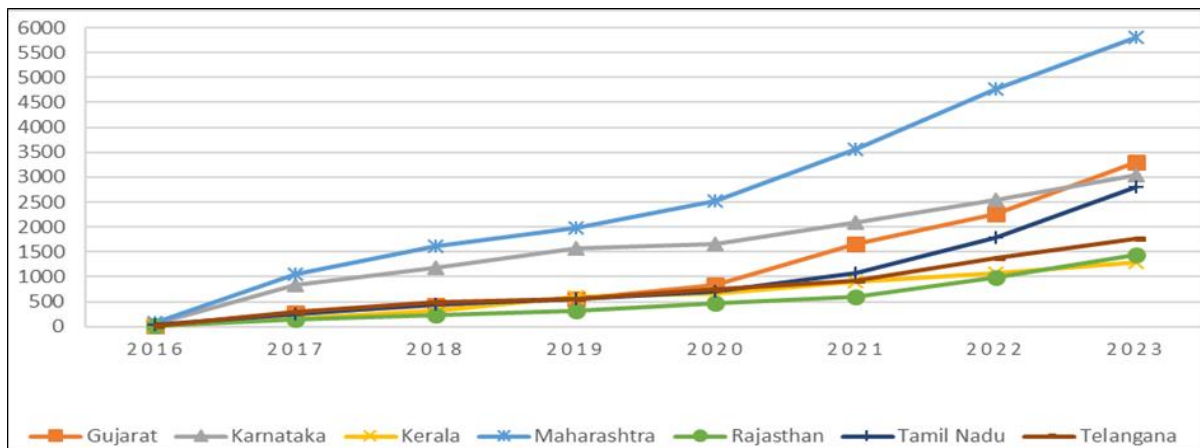
Fig 2: Reform Area-wise Performance of Selected States under Startup Ranking 2022 (in Percentile)

Gujrat is the best performer among seven high-performer states of India since it has scored 100th percentile for every reform area. Karnataka, Kerala and Tamil Nadu which are the other best performers in category A have not scored less than 60th percentile in any of the reform areas which means that they are better than at least 40 per cent of all states in all reform areas. Maharashtra and Telangana which are the top performers (other than Rajasthan) have scored more than 50th percentile for all reform areas, whereas Rajasthan has scored less than 50th percentile in two reform areas. So, Rajasthan is the last one among all these high-performing states and lots of scope is there to strengthen its startup ecosystem. One more noticeable fact is that all other six states have scored more than 90th percentile for Institutional

Support and more than 60th percentile for Incubation Support whereas Rajasthan is lagging. Rajasthan has performed worst among all in two reform areas- Incubation Support and Road Map to a Sustainable Future.

**Efficiency of Startup Ecosystem in Rajasthan: A Comparative Analysis**

Although states provide a lot of support to startups and run programmes for capacity building, this may not necessarily lead to an increase in the number of startups in their states. This is evident from Fig 3 which shows the state-wise number of startups recognised by the Department for Promotion of Industry and Internal Trade (DPIIT) in selected high-performing states of India from 2016 to 2023.

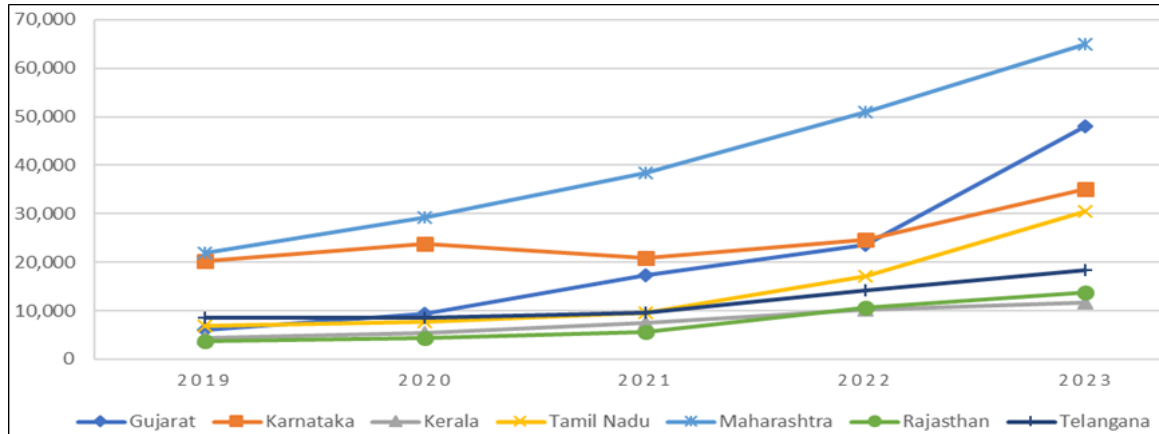


Source: Press Release, Public Information Bureau, New Delhi on Dec. 7, 2022 and February 2, 2024

Fig 3: Number of Recognised Startups by the DPIIT in Selected States (2016 - 2023)

It is depicted in Fig 3 that at the commencement of the Startup India initiative, all states had more or less the same number of registered startups with DPIIT but after that tremendous increase can be observed for all. The highest number of startups are recognised in Maharashtra (15,571) among all states and union territories (UTs) of India from 2016 to 2022 by DPIIT and the second highest is for

Karnataka (9,904). Gujarat stands at fifth, Telangana at eighth, Kerala at ninth and Rajasthan at eleventh in the list. Though the rank of Rajasthan does not differ much from Telangana and Kerala, but number of registered startups is approximately 150 per cent higher in these states as compared to Rajasthan.

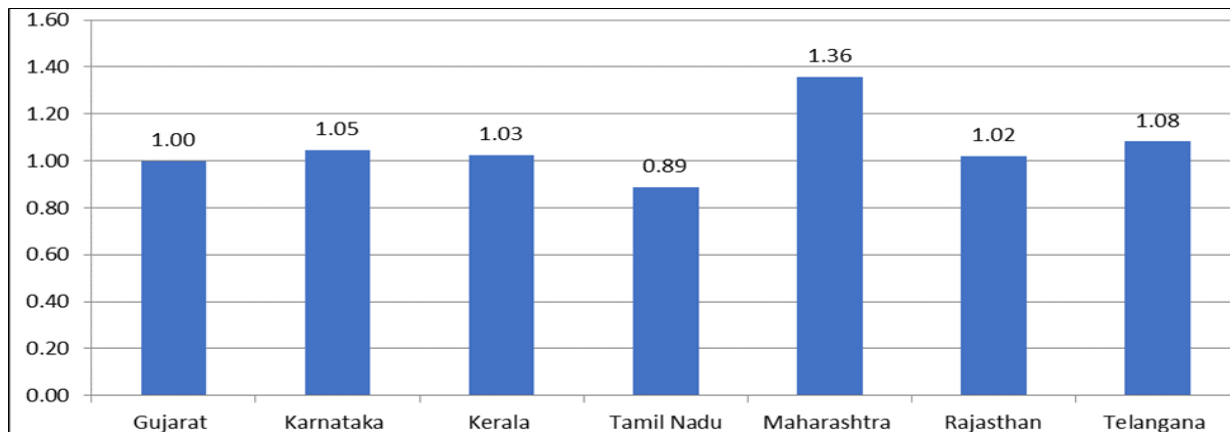


Source: Press Release, Public Information Bureau, New Delhi on February 2, 2024

Fig 4: State-wise Number of Direct Jobs (self-reported) Created by Recognised Startups during 2019-2023

If any state produces higher output with limited input, it can be considered efficient. To measure the efficiency of selected states' startup ecosystem the efficiency ratio has been computed by dividing the output indicator for the

Startup ecosystem (Fostering Innovation and Entrepreneurship) with the input indicator (average percentile score of state of 6 reform areas in startup ranking). The results are shown in Fig 4.



Source: Computed

Fig 4: Efficiency Ratio of Startup Ecosystem of Selected States (2023)

Fig: 4 represents the efficiency scores of selected high-performing states' startup ecosystems. All the selected states except Tamil Nadu have an efficiency ratio greater than 1 which means these six states have an efficient startup ecosystem. Gujarat which is top in the startup ranking list has the value of both indicators as 100 so it has an efficiency ratio equal to 1. It is the limitation of this method that despite performing best in input and output indicators Gujarat cannot be considered best in efficiency score. The efficiency ratio of the startup ecosystem in Maharashtra is highest among all states. The value of its input indicator (average percentile score for six reform areas) was lowest among all selected states but its comparatively high value of output indicator due to the highest number of registered start-ups and 500 programs in HEIs to promote entrepreneurial spirit and support student entrepreneurs in the state made it the highest efficient state. Tamil Nadu has

an efficiency ratio of less than one which means it is not producing output as compared to its initiatives for the startup ecosystem in the state. The efficiency score of Rajasthan is slightly higher than one indicating that it is also efficient but this value is far less than Maharashtra and identifies the need to improve the output indicator which is lowest among all selected states.

**Major reasons for Low Efficiency of Startup Ecosystem in Rajasthan**

- Less number of startups: In Rajasthan, DPIIT recognised number of startups in 2022 was just 1443 whereas it was 5801 in Maharashtra, 3291 in Gujarat and 3032 in Karnataka.
- Less number of events for student entrepreneurs: In Rajasthan, more than 52 events at schools and more than 60 events at higher education institutes were held

in 2022 to promote student entrepreneurs whereas Maharashtra conducted more than 500 of these types of programmes alone at higher education institutions in 2022.

- Less number of Incubators and Startups getting incubation support: In Rajasthan more than 75 incubators were set up and more than 280 startups are getting incubation support which is quiet less than the numbers of Gujarat and Maharashtra. In Gujrat, nearly 250 incubators are set up and more than 1350 startups are getting incubation support. The number of incubators in Maharashtra is also more than 400.

### Conclusion and Suggestions

The startup ecosystem of Rajasthan has become stronger through policy interventions and is performing better. It is the top performing state as per the startup ranking 2022 which indicates that it is doing well in supporting its ecosystem such as providing institutional support, financial and non-financial incentives to startups, doing capacity building of enablers etc. As a result, the ecosystem of Rajasthan is found efficient which means it is not only strong in respect to providing support to startups and entrepreneurs but the output of these efforts in terms of registered number of startups and women-led startups is also good. But if the startup ecosystem of the state is compared with other high-performing states, it is found that it is better than none. It indicates that still it has to go far to be the best performer and many areas have to be worked upon. It has to work to increase the startups' access to the market through public procurements, the number of incubators, the incentives and programmes held for student entrepreneurs and women-led startups, and incentives for startups having an impact on rural development and renewable energy so that number of registered startups can increase not only in quantity but also in quality. The state should create outreach programs and programmes for knowledge support to promote the benefits of startup registration so that more entrepreneurs can be encouraged to set up new startups and register them with DPIIT or the state. Each of the State Departments and State PSUs should be given a mandate to procure a certain percentage of required goods or services from registered startups. Workshops should be conducted for higher education students and other entrepreneurs covering recent regulations, incentives for all and special categories and their impact on disruptive sectors with government departments for effective knowledge sharing. The state should work to convene the interactions of students and other entrepreneurs with successful entrepreneurs and industry experts to make students learn about real-world challenges and opportunities in the startup ecosystem. The startups and entrepreneurs of the state should be provided opportunities for national and international collaborations.

If implemented, these changes will foster a startup-friendly mindset and environment in the state so that all kinds of startups and entrepreneurs can thrive and grow across all sectors of the state.

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