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Analysis of barriers in accelerating viable agribusiness startups in supply chain management and measures for improvement in the same under Agri Startups of Chhattisgarh

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Abstract

Startups have the potential to create a large number of jobs-often more than large businesses. This is especially important in emerging countries with high unemployment rates like India. To free up time for their core skills, established businesses often hand over some of their work to startups. This creates opportunities for foreign investment in the country. Boost the economy: Startups boost economic activity in addition to generating jobs of the 236 agribusiness businesses in the research sample, 36 were specifically focused on supply chain management. To obtain information, letters and personal contacts were made to all those startups. The study used the survey method through questionnaires, and the data collection process relied on both primary and secondary sources. Primary data was obtained through personal interviews with sample respondents from startups, with the help of a pre-tested schedule. Established startups face many challenges, which are reflected in Garrett's ranking table. The businesses selected had nine main issues before formation. The most serious issue was identified as lack of finance or seed money, with an average score of 62.5 and a Garrett value of 80. The challenges faced by businesses after the establishment stage are reflected in Garrett's ranking table. The selected startups had to deal with eighteen critical issues before their establishment. Regulatory barriers were identified as the most serious issue in the Garrett ranking, with an average score of 55.8 and a Garrett value of 77. This was followed by government regulations, lack of right staff (lack of teamwork), irrational expectations, connections in rural areas and barriers to entry for new businesses, all of which were present with an average score of 54.2, 54.2, 54.2, 52.5 and 52.5 with a Garrett value of 54, 40, 60, 57 and 48 respectively.

Keywords: Start-ups, Agri-business, establishment, Garrette value, pre-tested schedule, foreign investment.

1. Introduction

Startups have garnered more attention in India and other parts of the world in recent years due to their recognition as a key driver of economic progress. Along with the rise in start-ups comes an increase in employment. Startups use cutting-edge inventions and new technologies to deliver significant answers. Since startups are a means of bringing about socioeconomic change & growth. 33,973 start-ups from India are listed with DIPP. A total of 125 plans and policies are developed especially for start-ups by various Indian ministries.

Startups have the capacity to create a significant number of jobs—often more than larger businesses. This is particularly important in emerging countries with high unemployment rates, like India. In order to free up time for their core skills, established businesses frequently assign some of their work to startups. This creates chances for foreign investment in the nation. Boost to the Economy: Startups encourage economic activity in addition to producing jobs. Money comes into the economy as they hire locals and make purchases of goods and services, resulting in more government income and general economic growth. Encouraging Innovation and Entrepreneurship: The startup ecosystem promotes innovation and entrepreneurship, advancing social capital and technology breakthroughs that are advantageous to the entire economy.

Especially in developing nations, the convergence of agriculture and technology through startups is becoming a key driver for increasing agricultural sustainability and production. Despite a 13% decline from 2011, agri-tech businesses continue to draw significant financial backing, with global investments totaling $10.6 billion in 2022. Over the past ten years, venture capital investments in this sector have increased by an astounding 20 times, indicating the growing significance of this sector in tackling food security in the face of growing global population and climate-related challenges.

The Indian startup ecosystem has evolved dynamically over the last two decades. Startups in India are emerging in the fields of IT, agriculture, aviation, education, energy, health and space sectors. Since the launch of Startup India initiative in 2016, DPIIT has recognized 92,683 entities as startups as on 28th February 2023.

One of the key sectors where the need for agricultural inputs has grown is the input industry. Agricultural biotechnology has potential applications in the development of seeds,

biocontrol agents, and industrial microbe exploitation for various goods. Another area where agripreneurs are finding success and opportunity is processing. There is enormous profit potential in adding value to livestock goods including milk, eggs, meat, and fish. Processing increases the value of the items several times more, offering excellent returns. Because of increased agricultural production, there are more jobs available in marketing, transportation, cold storage and warehousing facilities, credit, insurance, and logistic support services.

2. Review of literature
Preethika *et al.* (2020) [2], studied that entrepreneurship development in agriculture became the major agenda for the government of India. It is very important to recognise the potential by putting innovations into practice by development of new products and services. For this purpose, Agri Business Incubation centres concept came into the practice in agri and allied sectors. Agri Business Incubation centres provided the services to encourage the start-up ventures, accelerate the business ideas towards sustainable ventures, to support the start-ups by funding etc. During the process of incubation, stakeholders were facing different challenges/issues which hindering the performance of the incubation centres. The present paper outlines the different challenges faced by the stakeholders in Agri Business Incubation centres.

Zaridis (2020) [5] examined the impact of collaboration in agri-food supply chains on firm performance and the moderating role of scale constraints and firm strategy. Collaboration was measured by three constructs: Horizontal collaboration, vertical collaboration, customer engagement and SME performance with three variables: Growth, value for money, and innovativeness. Two strategies were evaluated: Price Strategy and Quality Strategy. Three types of scale constraints were assessed: Financial, efficiency, and innovation. Four demographic variables were used as control variables: Firm size, firm age, sector, and legal status.

3. Materials and Methods
Research method
The state of Chhattisgarh is divided into 33 districts, with most of the startups located in the plain area, mainly in Raipur, Durg, Bastar, etc. Since IGKV R-ABI, Raipur is the only centre that develops agribusinesses, it funds most of the agribusiness startups in the state. Out of all these, only supply chain-based agribusiness businesses have been selected, and their business analytics have been analyzed.

Selection of respondent
Of the 236 agribusiness businesses in the research sample, 36 were exclusively focused on supply chain management. To get the information, letters and in-person contacts were made to each of those startups. To be more specific, a Google Forms questionnaire was created and distributed to those startups in order to gather information. Only twelve startups were able to provide precise responses, hence the study used data from only twelve startups.

Data collection
Data was gathered from a variety of websites, research papers, and portals in order to examine the government policies and programs that assist agribusiness incubation and start-up operations in Chhattisgarh and India. To evaluate the beginning, the research employed primary and secondary data sources. The study employed a survey methodology via a questionnaire, and the data collection process relied on both primary and secondary sources. Through in-person interviews with sample responders from start-ups, primary data was acquired with the aid of a pre-tested schedule.

Method of analysis
Before being submitted to tubular analysis, the data gathered from the respondents was cross-checked and revised for accuracy and sufficiency. In accordance with the study's stated objectives, the primary data were categorized, tabulated, and analyzed using the appropriate impact tools and statistics.

Analytical tool
Constraints in acceleration of viable agribusiness startups in supply chain management
The Garrett Ranking technique was used to investigate and examine the supply chain management constraints preventing potential agribusiness firms from growing faster in the sampled start-ups. The respondents listed and ranked the different factors and limitations. The order of factors can be converted into ranks using the formula below.

Position percentage = 100 * (Rij-0.5)/Nj

Where,
Rij = Rank provided by the jth respondent for the Ith reason
Nj = The number of elements that the jth respondent ranked.

4. Results and Discussion
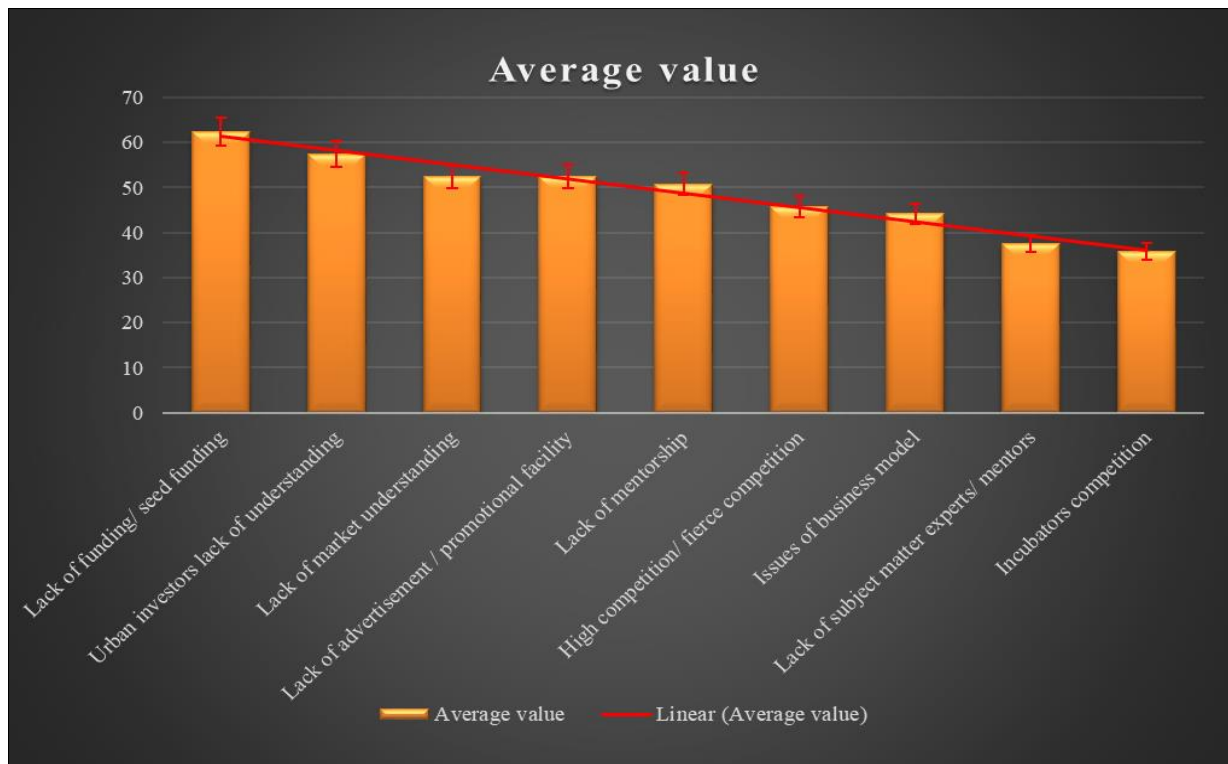### Major constraints in Agri startups faced by before establishment
The present section accurately evaluates/examines the obstacles faced by sample agriculture startup owners in various situations and during their activities and the remedial measures to overcome these obstacles.

4.1 Major constraints faced by startups before Established
Before established startups have several challenges, which are reflected in Garrett's ranking table. Table 1 showed that the chosen businesses had nine main issues prior to formation. The most serious issue was identified as a lack of finance or seed money, with an average score of 62.5 and a Garrett value of 80. was placed as. Lack of knowledge of urban investors, ignorance of the market, and absence of facilities for advertising and promotion. whose Garrett values are 38, 61, and 19 respectively, and whose average marks are 57.5, 52.5, and 52.5, respectively. This was followed by lack of mentorship, high competition/fierce competition, business model issues, lack of subject matter experts/mentors and Incubators competition with the mean average score of being 50.8, 45.8, 44.2, 37.5 and 35.5 and Garrett's value was also 55, 69, 31, 44, and 50 respectively.

Table 1: Pre-funding problem faced by Agri startup owner's

S. No	Pre- funding Start-Ups	Percent Position	Garrett value	Average of value	Ranks
1.	Lack of funding/ seed funding	5.6	80	62.5	I
2.	Lack of knowledge of urban investors	72.2	38	57.5	II
3.	Ignorance of the market	27.8	61	52.5	III
4.	Absence of facilities for advertising and promotion	94.4	19	52.5	IV
5.	Lack of mentorship	38.9	55	50.8	V
6.	High competition/ fierce competition	16.7	69	45.8	VI
7.	Issues of business model	83.3	31	44.2	VII
8.	Lack of subject matter experts/ mentors	61.1	44	37.5	VIII
9.	Incubators competition	50.0	50	35.8	IX

Fig 1: Pre-funding problem faced by Agri startup owner's

Twelve respondents (business owners of startups) and nine restrictions in the research field serve as examples of this process. Each respondent ranks these nine constraints in order of categorization based on the concept of an incubator. Assume the first responder ranked each of the nine restrictions in the following order: 1, 2, 3, 5, 6, 7, 8, 9, and 16. 7. The raw ranking, as determined by the formula above, was 5.6, 16. 7, 27.8, 38.9, 50.0, 61.1, 72.2, 83.3, and 94.4. Furthermore, using the 100-point garret table, which has the values 80, 69, 61, 55, 50, 44, 38, and 31, 19 accordingly, this percent position is transformed to a garret score. A comparable process is used for each respondent to determine their garret score, and at the end, the average score for every limitation was determined by adding up each respondent's garret score and dividing it by the total number of respondents Twelve. Presenting the higher score as severe limitations, the final scores for all constraints are now placed in decreasing order.

Major constraints faced by startups after established
The challenges that after established stage businesses confront are reflected in Garrett's ranking table. Table 5.2

showed that the chosen startups had to deal with eighteen significant issues prior to their establishment. Regulatory barriers were ranked as the most serious issue in the Garrett ranking, with an average score of 55.8 and a Garrett value of 77. These were followed by Government regulations, the correct personnel (a lack of teamwork), irrational expectations, connection in rural areas, and obstacles to entrance for new businesses were all present. Whose average score is 54.2, 54.2, 54.2, 52.5 and 52.5 and also Garrett value is 54, 40, 60, 57 and 48 respectively. Followed by poor infrastructure, lack of feedback, application of technology, loss of manual employment, limited, knowledge of available technologies, management and leadership issues, economic and political instability, lack of knowledge about the customers, lack of right price, lack of skilled talent, lack of right customers / buyers, lack of market availability have the mean average score of 47.5, 47.5, 45.8, 45.8, 42.5, 42.5, 42.5, 42.5, 41.7, 40.8, 40.8, 34.2 also Garrett value is 71, 13, 46, 43, 67, 63, 36, 33, 59, 86, 28 and 23 respectively.

There are 12 respondents (startup owners) and 18 constraints in the study area, which serve as examples of

this approach. Each respondent ranks these 18 limitations in order of categorization based on the concept of incubate. Using the aforementioned formula, let's say the first responder ranked all 18 limitations in the following order: 1, 2, 3, to 18. The percent position of this raw ranking was 2.8, 8.3, 13.9, 19.4, 25.0, 30.6, 36.1, 41.7, 47.2, 52.8, 58.3, 63.9, 69.4, 75.0, 80.6, 86.1, 91.7, and 97.2. Additionally, using the 100-point garret table, which has the values 86, 77, 71, 67, 63, 60, 59, 54, 51, 48, 46, 43, 40, 36, 33, 28, 23, 13,

correspondingly, this percent position is translated to a garret score. A similar process is used for each respondent to determine their garret score, and at the end, the average score for each constraint was determined by adding up each respondent's garret score and dividing it by the total number of respondents, which is twelve. Presenting the higher score as severe limitations, the final scores for all constraints are now placed in decreasing order.

Table 2: Post-funding problem faced by Agri Startup Owner's

S. No	Post-funding start-ups	Percent Position	Garrett value	Average of value	Rank
1.	Regulatory hurdles	8.3	77	55.8	I
2.	Government policies	41.7	54	54.2	II
3.	Right team (Lack of team work)	69.4	40	54.2	III
4.	Unrealistic expectations	30.6	60	52.5	IV
5.	Connectivity in rural areas	47.2	51	52.5	V
6.	Barriers to entry for new firms	52.8	48	52.5	VI
7.	Poor infrastructure	13.9	71	47.5	VII
8.	Lack of feedback	97.2	13	47.5	VIII
9.	Loss of manual employment	58.3	46	45.8	IX
10.	Limited knowledge of available technologies	63.9	43	45.8	X
11.	Management and leadership issues	19.4	67	42.5	XI
12.	Economic and political instability	25.0	63	42.5	XII
13.	Lack of knowledge about the customers	75.0	36	42.5	XIII
14.	Lack of right price	80.6	33	42.5	IVX
15.	Application of technology	36.1	59	41.7	XV
16.	Lack of skilled talent	2.8	86	40.8	XVI
17.	Lack of right customers / buyers	86.1	28	40.8	XVII
18.	Lack of market availability	91.7	23	34.2	XVIII
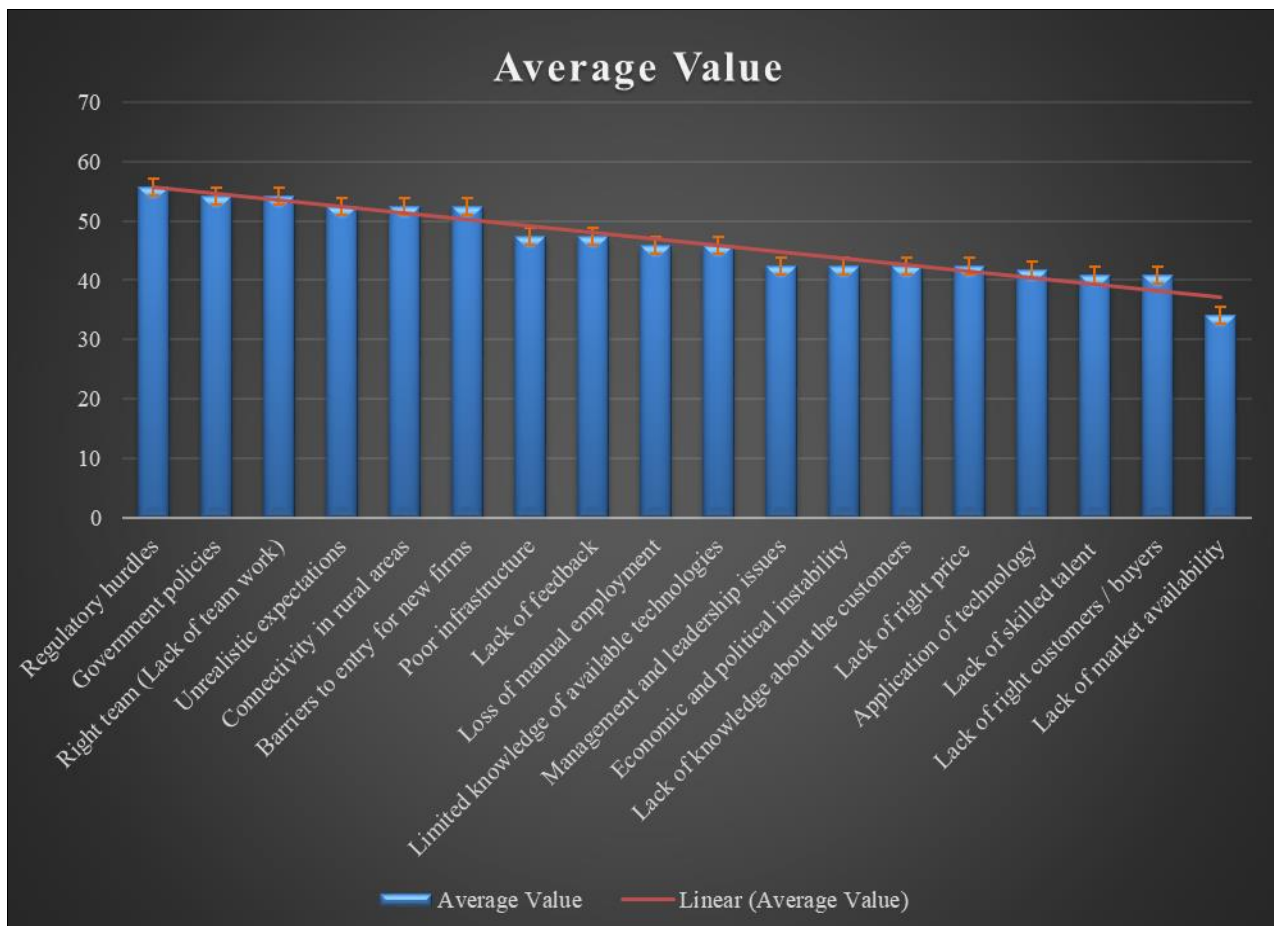
Fig 2: Major constraints faced by startups after established

5. Conclusion

1. The state of Chhattisgarh has set up a network of more than twenty incubators.
2. The IGKV R-ABI, Raipur initiative offers funding to new businesses in the agriculture and related industries.
3. The primary issue is defined by two parameters: The issues that startups encounter both before and after they receive funding.
4. Lack of funding/ seed funding is the most common pre-funding issue among businesses, ranking top with a Garrett value of 80 and an average value of 62.5.
5. With Garrett values of 38 and 61 and average values of 57.5 and 52.5, respectively, Lock of Urban Investor and Lock of Marketing Understanding are ranked second and third, respectively.
6. Similarly, with a Garrett value of 77 and an average value of 55.8, regulatory hurdles are indicated as the main issue facing firms after funding.

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