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RESEARCH ARTICLE

Constraints faced by Agri-Startups Entrepreneurs in Andhra Pradesh State

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ABSTRACT

Agri-startups are disrupting the agriculture value chain by offering a desirable blend of credibility, efficiency, and transparency. The present study was undertaken to assess the perceived constraints faced by Agri-Startup entrepreneurs during normality and due to Covid-19 lockdown in Andhra Pradesh. With a total of 44 Agri-Startups, the study was carried out using a multistage stratified random sampling procedure. There were 24 Startups in agri-tech, 9 in organic farming, 8 in food processing, and 3 in dairy farming sectors. The results of this study clearly demonstrated that inadequate incentives offered by government, inadequate scalable technologies for commercialization, difficulty in attracting investor funds and non-availability of labour notably during the covid-19 epidemic were the obstacles addressed by the majority of Agri-Startups. Agripreneurs demanded crucial support services from the Agri-Startup ecosystem players such as guidance and mentorship help, goods and service tax exemptions and incubation support. If the epidemic persists, over one-third of Startups would fail to operate their businesses with the available funding, with the majority only being able to do so for a short period of time. At this point, it is crucial to abandon the status quo and make use of real-time data to protect Startups from severe crisis and encourage entrepreneurship in the agricultural sector.

Key words: Agri-Startups; Constraints; Covid-19; Andhra Pradesh

Despite being a tragic human catastrophe, COVID-19 has sparked a wave of social transformation. The situation in India has been similar, however aggravated by poverty and inadequate public health institutions. The unanticipated consequence of India's lockdown, which commenced in 2020, aided the advancement of the country's emerging agribusiness ecosystem. During COVID-19, there was a growing trend of using various e-commerce platforms for last-mile delivery of critical agri-inputs to farmers. As a result of farmer's ability to trade online, Agritech Startups have proliferated tremendously (*InC 42, 2020*). Agritech companies also provided financial assistance, crop, and marketing advice to farmers for the sale of their goods. Due to the increased smart phone and internet penetration in rural India, the Agritech ecosystem has been growing rapidly. This ecosystem is further fueled by fresh Startups with steady financial inflows and location-specific technologies (*Accel and*

Omnivore, 2020). The pandemic offers an opportunity for the agricultural sector (*Apostolopoulos et al., 2021*) to diverge from the status quo while encouraging entrepreneurs. Additionally sustainable agri-food systems are needed to hasten green technologies (*Galanakis et al, 2020*). Due to a dearth of funding, poor market demand and lack of venture capital, many entrepreneurs have learned to reiterate their goods, upgrade their technologies, and invest in their long-term growth potential amid the pandemic (*Bhooshan and Kumar, 2020*).

Andhra Pradesh State launched its State Startup policy in 2014, fostering entrepreneurship and a culture of innovation which contributes to increased knowledge, wealth and employment in the society. Andhra Pradesh Innovation Society is a well-organized and fully working entity constituted in 2014. Also, it serves as the focal point for overseeing the State's Startup activities. The State has also been ranked as the

best state in 'ease of doing business' (*Reserve Bank of India, 2020*). According to the State Startup Ranking Report, Andhra Pradesh made significant progress from a "leader" in 2018 to an "emerging startup ecosystem" in 2021 based on the state's overall performance (*GOI, 2018*) and (*GOI, 2021*). According to the sector-wise distribution of Agri-Startups in Andhra (*GOI, 2022*), 15.23 percent belonged to 'Agri-tech' followed by food processing (12.94%) and application development (15.99%) sectors. The present investigation was designed to analyze the constraints faced by Agricultural entrepreneurs. The primary constraints were studied under five major sub-headings: financial, technical, marketing, personal, and Covid-19 pandemic constraints faced by the entrepreneurs. Since mitigation measures would help startups survive the pandemic, the study also looked into the Covid emergency plans implemented by the budding firms. Also, crucial support services needed by the entrepreneurs from the startup ecosystem players were also analyzed.

METHODOLOGY

The study was purposively conducted in Andhra Pradesh State as it is the emerging Startup ecosystem according to the State Startup ranking report, 2019 (*GOI, 2020*). The respondents were Agri-Startup entrepreneurs operationally defined to have founded their respective Startups and were registered on the Startup India portal. Andhra Pradesh State has only 189 Agri-Startups scattered across all districts, comprising 79 Agri-Tech Startups, 7 Dairy Startups, 28 Organic Farming Startups, and 75 Food Processing Startups (*GOI, 2020*). The current study used a multistage stratified random sampling procedure, where 25% of a random sample was drawn from each sector and stage of development of Agri-Startups. Hence, a total of forty-four respondents were selected.

The study followed a survey research design using semi-structured interview schedule which was developed for the purpose. Constraints faced by the Agri-Startups measured the impediments faced by Startups while growing into an enterprise, scored by the respondents as 3, 2, and 1 for most serious, serious and less serious for all the statements respectively. Mitigation plans measured the strategies to be prepared for the occurrence of any unexpected event. Support needed measured the assistance that is required to increase the Startup's ability to function efficiently and successfully. Government and policy support measured

the need for government help to foster and encourage Startups. For constraints, mitigation plans, support needed from the ecosystem stakeholders, government and policy support needed, statements were scored by respondents and analysed using suitable descriptive statistical tools such as frequency and percentage.

RESULTS AND DISCUSSION

Constraints faced by Agri-Startup entrepreneurs:

Financial constraints: It is evident from Table 1 that majority (81.82%) of the entrepreneurs expressed inadequate incentives followed by high GST taxes, inadequate financial support, high rate of interest' and 'lack of collateral security'. It might be due to the reason that tax exemptions are not granted to Startups unless their annual income exceeded Rs. 25 crores in a fiscal year. More so than early-stage firms, well-established Startups are more appealing to investors due to their smaller size in terms of money, personal credit, and the ability to repay loans. Similar findings were reported earlier by *Sindhu (2015)* emphasizing that high rate of interest and non-availability of collateral security was the major financial constraints.

Technological constraints: It has been observed from Table 1 that less than two-thirds of the respondents (65.91%) expressed inadequate scalable technologies for commercialization followed by lack of skills in handling and maintaining the latest technologies, high cost of technologies, lack of technical know-how and inadequate consultancy and mentoring services. This was apparently due to the fact that more than half of the respondents in the current study lacked the formal training and work experience essential to scale up their ideas, and early-stage Startups lack the capital necessary to obtain scalable technology.

Marketing constraints: A detailed analysis of Table 1 reveals that a notable per cent expressed 'low level of knowledge about marketing strategies' (38.64%) followed by non remunerative price for the product/services offered and inadequate market information as major constraints. This could be attributed to a lack of commercial branding and advertising strategies to market their products or services owing to inexperience and scant knowledge. A considerable per cent of them reported 'lack of data base for market intelligence' (11.36%) which might be due to lack of proper market research and poor professional expertise in the team. Only 9.09 per cent of them reported 'inadequate

Table 1. Constraints faced by Agri-Startup entrepreneurs

Constraints	No.	%
<i>Financial constraints</i>		
Inadequate incentives provided by govt.	36	81.82
High GST taxes	30	68.18
Inadequate financial support by the investors	29	65.91
High rate of interest	23	52.27
Lack of collateral security	21	47.73
<i>Technological constraints</i>		
Inadequate scalable technologies for commercialization	29	65.91
Lack of skills in handling and maintaining latest technologies	18	40.91
High cost of technologies	15	34.09
Lack of technical know-how	13	29.55
Inadequate consultancy and mentoring services	10	22.73
<i>Marketing constraints</i>		
Low level of knowledge about marketing	17	38.64
Non remunerative price for the product/service offered	10	22.73
Inadequate market information	8	18.18
Lack of data bases for market intelligence	5	11.36
Inadequate transportation facilities	4	9.09
<i>Personal constraints</i>		
Difficulty in attracting investors/funds	27	61.36
Non-availability of trained manpower	22	50.00
Lack of entrepreneurial education & training	19	43.18
Unable to identify and satisfy customers needs	18	40.91
Low level of innovation capability	16	36.36
<i>Constraints faced by agri-startups amid Covid-19</i>		
Non-availability of labor	29	65.91
Problem of fund raising	27	61.36
Disrupted supply chain	27	61.36
Difficulty in selling the products	25	56.82
Additional expenses spent for non-working hours	24	54.55
Delayed product launch	23	52.27
Problems in procuring Agri-Commodities	19	43.18
Impacted credit rating	18	40.91
Travel restrictions	18	40.91
Problems in exporting products to other countries	6	13.64

*Multiple responses were obtained

transportation facilities' as seed stage Startups lack investor funds and supporting infrastructure for the sale of their products/services. The results are in line with the findings of *Shaik (2013)*.

Personal constraints: The findings in Table 1 clearly indicate that majority of the entrepreneurs expressed 'difficulty in attracting investors/funds' (61.36%), 'non-availability of trained manpower' (50.00%), and 'lack of entrepreneurial education and training' (43.18%). This might be due to the reason that investors look up to potential Startups with strong growth. It is evident

from the analysis that most of the Startups in the current study failed to give a unique competitive advantage or product portfolio. Further, they had to manage their firms with a limited number of unskilled employees. A considerable per cent of them failed 'to identify and satisfy customers needs' (40.91%) which might be due to the reason that entrepreneurs who claimed to adhere to the norms of lean Startups are in fact only accommodating and failed to understand the needs of their customers. A sizable per cent (36.36%) of them reported 'low level of innovation capability' due to lack of innovation and R&D expenditures. The results are contrary with findings of *Gaur (2005)*, *Reddy and Chandawat (2021)*.

Covid-19 pandemic constraints: From the analysis of constraints faced by the Agri-Startups amid Covid-19 pandemic shown in Table 1, it is interpreted that almost two-third of the entrepreneurs (65.91%) reported 'non-availability of labor' followed by, 'problem of fund raising' and 'disruption in supply chain' which accounted for 61.36 percent in both the cases as a major constraint during Covid-19 pandemic. This could be due to the restrictions placed on people's freedom of movement during the lockdown period, which significantly affected the labor availability, disrupting the supply chain between farmers and Agri-Startups. A significant majority (56.82%) cited 'difficulty in selling the products' possibly due to lockdown guidelines, resulting in store closures. Slightly more than half (54.55%) reported 'additional expenses spent for non-working hours of the employees and laborers which could be attributed to social distance norms that resulted in labor shortages as the production operations of Startups are labor intensive. A notable percentage (52.27%) of the respondents expressed 'delayed product launch', this might be due to the perceived opportunities and time utilized by Startup entrepreneurs for redesigning their business models and reinventing their products/services amid the complete shutdown of operations during pandemic, thereby improving their business offerings. A sizable per cent (43.18%) reported 'problems in procuring Agri commodities' whereas an equal per cent (40.91%) reported 'impacted credit rating' and 'travel restrictions' which might be attributed to mobility restrictions followed by problems in exporting products to other countries (13.64%).

Mitigations plans laid amid Covid-19 Pandemic: From the results shown in Table 2, it is interpreted that a considerable majority (45.45%) of the Agri-Startups

Table 2. Mitigations plans laid amid Covid-19 Pandemic

Mitigation plans	No.	%
Mobile applications and online delivery of products /services	20	45.45
Digitalized marketing services	16	36.36
Organic and value-added processed products	9	20.45
Farm Automation	9	20.45
Employed skilled & additional workforce	6	13.64

*Multiple responses were obtained

switched over to mobile based applications for online delivery of their products and services during the lockdown period. This might be due to the reason that Agri-Startups designed mobile applications to market their products/services such as fruits, vegetables, farm inputs and value-added products in order to avoid direct contact with customers whereas, a notable (36.36%) per cent of the respondents offered digitalized marketing services for the sale of their products and services. Further a sizable per cent of Startups (20.45%) were engaged in production of organic and value-added processed products like millet-based break-fast flours, residue free fruits, vegetables, packed instant cooking powders, organic food grains, herbal syrups, beverages and naturally grown agricultural produce which had high demand during the pandemic followed by, farm automation services (20.45%) like providing drone services, tractors and smart irrigation systems reduced the labour shortage, whereas a sizable per cent (13.64%) of the Startups employed skilled & additional workforce to cope up with the increasing demand of the product/services extended by the Agri-Startups.

Support needed from the ecosystem stakeholders: Data presented in the Table 3 shows that more than one fourth of the entrepreneurs needed guidance and mentoring (31.82%) followed by professional skills and knowledge advancement programmes, networking assistance & partnerships, R&D support and funding support respectively. It is clear from the investigation that, it is imperative to provide the Startups with the necessary resources like funding, marketing strategies, and business support services and in particular the entrepreneurs need capacity building trainings to be active participants.

Government and policy support needed: The results indicated in the Table 4 shows that almost all the Agri-Startup entrepreneurs (90.91%) needed goods & service tax exemptions followed by implementation

Table 3. Distribution of Agri-Startup entrepreneurs based on support needed from the eco system stakeholders

Support Needed	No.	%
Guidance & Mentoring	14	31.82
Professional skills and knowledge advancement programmes	12	27.27
Networking Assistance & Partnerships	7	15.91
R&D support	6	13.64
Funding support	5	11.36

Table 4. Distribution of Agri-Startup entrepreneurs according to Govt. and policy support needed

Government & policy support	No.	%
Goods & service tax exemptions	40	90.91
Implementation of new startup policies and schemes	39	88.64
Public-Private-CSR support for agri-startups	38	86.36
Promotion of favorable startup ecosystem	31	70.45
Incubation support	29	65.91

of new policies and schemes, public-private-CSR support, promotion of favorable Startup ecosystem and incubation support. From the above results it can be concluded that Governments can create a regulatory environment that is conducive to agri-startups. This can include creating regulations that support innovation and entrepreneurship, while also protecting consumers and the environment. Overall, by providing support in these areas, governments and policy frameworks can help agri-startups to thrive and contribute to the growth of the agricultural sector.

CONCLUSION

The present study showed that among five different categories of perceived constraints expressed by the Startup entrepreneurs, inadequate incentives provided by the government, high GST taxes, inadequate scalable technologies for commercialization, non-availability of trained manpower, non-availability of labour, problem of fund raising, disrupted supply chain and difficulty in selling the products were the important constraints. Agri-Startups stepped to alleviate the toil caused by lockdown. Online trading and e-mandis, which reduced farmers' travel, were the alternatives to market agricultural products. Innovative business models emerged to full-fill the void on both the input and output sides. The strength of digital technology served as the foundation for many of these revenue models. It is possible to infer that Agri-Startup

entrepreneurs required goods & service tax exemptions, implementation of new Startup policies and schemes and public-private-CSR support to promote long-term growth of Agri-Startups. Agriculture was the only sector amid pandemic to generate employment where farm jobs have been created. Therefore, the present study concludes that Agri-Startups require a tireless support from Government, incubators, accelerators, investors, and other Startup stakeholders to streamline the current models of risk analytics and data to usher in greater transparency and trust.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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