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Agri-Startups in Telangana State: Profile characteristics of Agri-startup entrepreneurs

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Abstract
Agri-Startups have the potential to significantly contribute to the expansion of the agriculture sector by transforming it from 'subsistence farming' into 'Agri-business' and ultimately increasing the farmer's income. The total numbers of agriculture Startups in India are around 10,018, of which 50 per cent of Startups belonged to Agri Tech sector. Telangana State is graded as one of the 'Top performing' Startup State in India and it is a centre for manufacturing and placed fourth in the major States category of the 'India Innovation Index' report. The present study was conducted in Telangana State covering 53 Agri-Startups out of 526 Agri-Startups, selected randomly by using multistage stratified random sampling method to study the profile characteristics of agri-startup entrepreneurs. The sector wise classification of selected 53 Agri-Startups include; 'Agri-Tech' (23), 'Animal Husbandry' (3), 'Dairy' (3), 'Fisheries' (2), 'Food Processing' (6), 'Horticulture' (3), 'Organic' (7), and 'Other' (6). The major findings of the study revealed that about 33.96 per cent of the Agri Startups were present in the 'ideation stage', followed by, 'validation' (28.30%), 'early traction stage' (24.53%) and 'scaling stage' (13.21%). Majority (45.28%) of the Agri Startups were established during the year 2019 to 2021. Majority (94.34%) of the Agri Startups acquainted with incubator programs and 58.49 percent of the Startups entrepreneurs had not received any training related to their Startups. Majority of the Startup entrepreneurs belonged to the young age group (69.81%), male (84.91%), primary occupation (88.68%), post graduates (79.25%) and belonged to general category (54.72%). The study suggested that the majority of Agri-Startup entrepreneurs had oftenly interacted with the stakeholders of Agri-Startup ecosystem network.

Keywords: Agri-Startups, Agri-Startup entrepreneurs, Startup ecosystem network and profile characteristics

1. Introduction
Indian agriculture has evolved from producing basic food grains to being self-sufficient by utilising a wide range of novel concepts and technologies. The Startups serve as an example of how many minor things combined can produce tremendous results. Startups have a positive impact on the socio-economic structure of the community in which they operate. India's Agri Startup ecosystem is undergoing incredible change (Anand and Raj, 2019) [1]. The government's primary focus is on enhancing the agricultural industry while encouraging the expansion of Startups. The sector has become more profitable for ambitious entrepreneurs as a result of infrastructural development, financial allocations, regulatory reforms, ease of doing business, and specialized plans and initiatives (Deshmukh and Raj, 2021) [7]. One of the biggest Startup ecosystems in the world is in India, which supports about 226644 Startups in industries like IT, banking, and services (Startup India, 2022). Since 2015, India's Startup ecosystem has progressively developed as businesses have broadened their focus to encompass a variety of economic sectors and embraced technological innovation to address the country's particular difficulties. India ranks 63rd in terms of 'ease of doing business' (World Bank, 2022) [24]. The total number of Indian Startups are 2,26,644. The cumulative growth rate (10-year CAGR) of Indian Startups is 39.00 per cent with 40.00 per cent of them using the B2B (Business to Business) model, 276 unicorns present, there are 750+ active institutional investors, and Indian Startups raised more than $24.1 billion in total equity investments in 2021 (Startup India, 2021).

With a business-focused approach, Agri-Startups are taking advantage of opportunities in areas like boosting crop production, enhancing the nutritional value of crops, lowering input costs for farmers, enhancing the supply chain's overall process-driven nature, and decreasing distribution system waste, among others. Nearly 50.00 per cent of Startups are found in the Agri-Tech sector. These Startups in Agri-Tech are developing at an average rate of 25.00 per cent yearly, giving farmers the opportunity to benefit from enormous opportunities that increase their income by 1.7 times (NASSCOM, 2019) [14]. Telangana is graded as one of the Top performing Startup State in India with 526 Agri-Startups. Telangana is a centre for manufacturing and placed fourth in the major States category of the India Innovation Index report (Startup India, 2021). Telangana State launched an 'Innovation Policy' in 2016 that aimed to boost innovation and entrepreneurship, leveraging upon its natural demographic assets with the help of skilled technology and research professionals. The State has a unique model in the country for developing a robust Startup ecosystem and runs with the objective to foster an innovation-driven economy. Agri-Startups are suitable partners in the Indian agricultural sector and prospective human capital (FICCI and PwC, 2018) [8]. Agri-Startups make up 4.42 per cent of all Indian Startups (Startup India, 2022). The success of inventions improves stakeholders' standard of living. The majority of agricultural innovation in India comes from publically supported research institutions (Pal *et al.,* 2012). A total of 346 Startups in the agricultural and related industries are receiving funding for a total of Rs.3671.75 lakhs, creating jobs for young people as well as chances that directly and indirectly help farmers increase their income (DAC and FW, 2020) [6]. Agri-Startups encountered difficulties such as small landholdings, a protracted gestation period, non-localized technological advances, inadequate investment returns, unsustainable technologies for marginal and small-scale agricultural producers, low-skill adaption and technological retention, and complicated legal and policy issues.

2. Materials and Methods
The present study was conducted in Telangana State which has 526 Agri-Startups, the sectoral breakup of agriculture Startups has 264 Agri-Tech Startups, 21 Dairy farming Startups, 91 Organic agriculture Startups, 7 Animal Husbandry Startups, 8 Fisheries Startups, 15 Horticulture Startups, 63 Food processing Startups and 57 other allied Startups (Startup India, 2022). For the present study, a multistage stratified random sampling method was used, in which sampling was conducted at several stages from various strata. In this instance, 10 per cent of a random sample was chosen at each stage and each sector. A total of 53 Agri Startups were chosen at random by multistage stratified sampling from a total of 526 Agri-Startups by categorizing the Agri-Startups according to their current stage of operation (53) and sector (53) of the product or service they were providing. A well-planned semi structured interview schedule was used to gather the primary data for the current study from the Agri-Startup entrepreneurs. The information was gathered concerning the profile of the chosen Agri-Startups as well as other variables of Agri-Startup entrepreneurs. The collected data were coded and tabulated for statistical analysis by using statistical tools such as frequency and percentage.

3. Results and Discussion
3.1 Profile characteristics of Agri-Startups

3.1.1 Sector of Agri-Startup: Table 3.1 showed that the significant number of the chosen Agri-Startups (43.40%) belonged to the 'Agri-Tech sector' with an increasing number of Agri Startup entrepreneurs choosing this sector as a source of revenue due to new opportunities for engineering and technological advancements in agriculture. Although a sizable percentage (13.21%) of Agri-Startups were in the 'Organic sector' this may be due to increasing consumer consciousness of and demand for nutritious, organic foods. While, an equal proportion (11.32%) of Agri-Startups belonged to 'Food processing and Other allied Startups'. Whereas, the same percentage (5.66%) of Agri-Startups belonged to 'Horticulture', 'Dairy' and 'Animal Husbandry sector' and a low proportion (3.77%) of Startups belonged to 'Fisheries sector'. Hence, more attention needs to be paid in promoting other sectors of Agri-Startup, such as 'Fisheries and Dairy Sector'. The findings are in line with those of Aneesha (2021) [2], who found that majority of the Agri-Startups (54.55%) belonged to Agri-Tech sector.

3.1.2 Stages of development: According to the findings shown in Table 3.1 a sizeable percentage (33.96%) of the Agri-Startups were operating in the 'ideation stage' had a single head of management or an ambiguous team, and lacked the ideal combination of resources and talents. Whereas, 28.30 per cent of Startups were in the 'validation stage' which involved developing a minimal viable product with growing user growth and revenue. While, a notable percentage (24.53%) of Startups were in the 'early-traction stage' operating in emerging areas like the provision of inputs, digital agriculture services, and market linkage models and a sizable percentage (13.21%) of Agri-Startups were in the 'scaling stage' expanding in terms of customer base and revenue while increasing market share. According to aforementioned results a large majority of Agri-Startups were still in their early phases of business development. The findings are in line with those of Aneesha (2021) [2], who reported that majority of the Agri-Startups belonged to early stages of Startup development.

3.1.3 Year of establishment: Table 3.1 illustrates that the significant percentage of Agri-Startups (45.28%) were founded between 2019 and 2021, possibly as a result of the beneficial Startup ecosystem that supported the development of Agri-Startups during that period. Following emerged significant percentages (33.97%) and small percentages (20.75%) of Startups founded between 2021 and 2022 and 2016 to 2019, respectively. The due reason for the above trend might be due to implementation of numerous initiatives and policy changes pertaining to Startups after 2019. Government of Telangana launched T-HUB and WE-HUB in October, 2019 which was a unique initiative by the State. Further, Government of India has launched 'Startup India' in 2016, which provided a major boost to Startups in our country. The findings are in line with those of Bhooshan *et al*. (2021) [5], who found that most of the Agri-Startups were founded in 2019 and after.

3.1.4 Location of Startups: Table 3.1 precisely indicates that a majority of Agri-Startups (64.15%) were located in 'urban' areas, followed by a notable percentage (18.87%) in 'semi urban' areas and a sizable percentage (16.98%) in 'rural' areas; this could be due to the fact that majority of Agri-Startup entrepreneurs had established their infrastructure in 'urban'areas in comparison due to simple access to various

infrastructure facilities and other operational benefits. Moreover, urban areas have several networking opportunities that foster and encourage the establishment of Startups. The findings are in line with those of Ram *et al.* (2013) [16], who reported that majority of the Startups are located in the urban areas.

3.1.5 Ownership status: Results from the sample of 53 Agri-Startups shown in Table 3.1 showed that private entities accounted for the bulk of the Startups (52.83%), followed by sole proprietorship businesses (33.96%) and general partnership firms (11.32%). However, only a very small portion of firms (1.89%) were owned by corporations. This may be because 'private firms' have benefits over 'sole proprietorship' and 'general partnership firms' in terms of having a separate legal entity, making decisions quickly, spending less money to Startup, making it simple to transfer shares, and having limited liability. The outcome is consistent with the observations made by Vasumathi (2003) [22], who noted that the significant percentage (47.73%) of agripreneurs established their Startup as private entity.

3.1.6 Annual turnover: According to the findings shown in Table 3.1 significant proportion of Agri-Startups (45.28%) had annual revenues up to 17 lakh rupees/annum. While, 32.08 per cent had annual revenue between 17 and 36.5 lakh rupees/annum, 22.64 per cent of Startups had annual revenue more than 36.5 lakh rupees/annum. This could be due to the fact that the majority of Agri-Startups were still in the 'ideation stage' and Startups often need more time to develop a minimum viable product, to reach break-even point, and generate profitable revenue. The outcomes are consistent with the findings reported by Ravi (2007) [17], and Aneesha (2021) [2], who reported that majority of Startups belonged to the low income category.

3.1.7 Customer segmentation: According to the findings shown in Table 3.1 it can be concluded that the majority of Agri-Startups (52.83%) had 'local consumers' as end customers. While, a significant percentage (35.83%) of Agri-Startups had 'farmers' as their primary customer segment due to the fact that most of the cutting-edge products and services offered by Agri-Tech Startups were tailored exclusively for farmers to increase their farm productivity and to address their specific broad needs. A small per cent (5.66%) of firms marketed and sold their goods and services to retailers and other wholesalers while placing wholesalers as their primary target market. The findings were in line with those of Vijayan and Shivkumar (2020) [23], and Aneesha (2021) [2], who noted that majority of the Agri-Startups were engaged in direct consumer sales.

Table 1: Distribution of Agri-Startups according to there profile characteristics. (n=53)

S. No.	Characteristics	Frequency	Percentage (%)
1.	**Sector**		
	Agri-Tech	23	43.40
	Dairy	3	5.66
	Organic	7	13.21
	Food processing	6	11.32
	Animal husbandry	3	5.66
	Fisheries	2	3.77
	Horticulture	3	5.66
	Other Allied Startups	6	11.32
2.	**Stage of development**		
	Ideation	18	33.96
	Validation	15	28.30
	Early-traction	13	24.53
	Scaling	7	13.21
3.	**Year of establishment**		
	2016-2019	11	20.75
	2019-2021	24	45.28
	2021-2022	18	33.97
4.	**Location**		
	Rural	9	16.98
	Semi-urban	10	18.88
	Urban	34	64.14
5	**Ownership status**		
	Sole proprietorship	18	33.96
	General partnership	6	11.32
	Corporations	1	1.89
	Private entity	28	52.83
6	**Annual turnover**		
	Up to 17 lakh rupees	24	45.28
	17 to 36.5 lakh rupees	17	32.08
	Above 36.5 lakh rupees	12	22.64
7	**Customer segmentation**		
	Farmers	19	35.85
	Consumers	28	52.83
	Wholesalers	3	5.66
	Others	3	5.66
8	**Product portfolio**		
	Precision agriculture	13	24.53

	Agri machinery & equipment	7	13.21
	Agricultural inputs	10	18.87
	Manufacturing of processed food products	6	11.32
	Organic agriculture and value-added packaged powders and products	8	15.09
	Urban farming	2	3.77
	Mobile applications & services	3	5.66
	Organic milk	1	1.89
	Pharmaceutical	3	5.66
9	**Service portfolio**		
	Training and capacity building services	9	16.98
	Advisory services	17	32.08
	Digitalized services	1	1.89
	Real time Information systems	11	20.75
	E-commerce platform	12	22.64
	Export services	3	5.66
10	**Stage of Startup acquaintance with incubator**		
	Ideation	2	7.54
	Validation	7	30.19
	Early-traction	18	32.08
	Scaling	14	24.53

3.1.8 Product portfolio: Results from the sample of 53 Agri-Startups shown in Table 3.1 indicated that a sizeable portion of the Agri-Startups were providing services in 'precision agriculture' (24.53%), as they were engaged and focused on employing digital advancements in agriculture such as drone services, automatic irrigation motors, sensors. While, 18.87 per cent of them produced 'agricultural inputs' like micronutrients, organic fungicides, bactericides, and viricides. A notable per cent 15.09 per cent of Startups were producing 'organic and value-added products' in response to the growing demand for agricultural products free of residue, such as nannari root syrups, organic coffee powders, herbal drink powders and organic cereals. Whereas, 13.21 per cent offer services related to 'agriculture machinery and equipment' in an effort to alleviate the labour shortage. The production of 'processed food products' such as millet flours, spice powders, and instant breakfast powders, was carried out by a sizeable percentage of Startups (11.32%). The same portion of Startups (5.66%) were involved in 'mobile applications and services' and 'pharmaceutical operations'. Whereas, 3.77 per cent were involved in 'urban farming' activities and 1.89 per cent of Startups were 'procuring and selling organic milk'. The findings were in line with those of Aneesha (2021) [2].

3.1.9 Service portfolio: According to the findings in Table 3.1, a significant portion of the Agri Startups provided 'advisory services' (32.08%) on a variety of crop cultivation techniques, the handling and production of irrigation sensors and drones, as well as technical aspects of the processing, packaging, branding, and marketing of agri commodities followed by 'e-commerce platform' (22.64%) and 'real time information systems' through personalised apps (20.75%). A significant percentage of the Startups (16.98%) offered 'training and capacity building services' which were then followed by 'export services' (5.66%). Likewise, 1.89 per cent of Startups were providing 'digitalized services'. The findings were in line with those of Sindhu (2015) [18], who noted that majority of the Agri-Startups were providing advisory services.

3.1.10 Incubator support: The findings suggested that nearly all Agri-Startups (94.34%) had received incubation assistance at different stages of their Startups. As shown in Table 3.1 about one-third of Agri-Startups obtained incubation support at the 'early-traction' (32.08%), with significant percentages

also receiving support at the 'validation' (30.19%) and 'Scaling' (24.53%) stages. Only 7.54 per cent of Agri-Startups have received incubation support at 'ideation stage'. The findings were in line with those of Jayaselan (2005) [9].

3.2 Profile characteristics of Agri-Startups entrepreneurs
3.2.1 Age: It could be indicated from the fig 3.1 that a majority of Agri-Startup entrepreneurs (69.81%) belonged to the young age group (up to 35 years old), whereas, 20.75 per cent of entrepreneurs belonged to the middle age group (between 35 and 50 years old) and 9.43 per cent of entrepreneurs belonged to the old age group (over 50 years old). It could be due to the fact that young people were more able to create jobs than they were to find them because they had their own unique ideas and driving passions and young aged entrepreneurs take risk to enter into the new venture of agri business. Young age entrepreneurs can effectively take up self-employment and become job-providers than job-seekers. The outcome was consistent with the observations made by Kaur *et al.* (2000) [11].

3.2.2: **Gender:** Fig 3.1 makes it clear that men made up the vast majority of Agri Startup entrepreneurs (84.91%), while women made up only 15.09 per cent. This could be attributed to the fact that males having asset in their name had more freedom, independence and room to grow as business entrepreneurs than female groups also. Further, there are certain societal and cultural obstacles that prevent women from engaging in such activities. The findings support those of Sindhu (2015) [18] and Aneesha (2021) [2], who found that the majority of agripreneurs were men.

3.2.3 Startup occupation: According to data on Startup occupation presented in fig 3.1 majority of Agri-Startup entrepreneurs had Agri-Startup as their 'primary occupation' (88.68%), with only a sizeable percentage (11.32%) of them having it as their 'subsidiary occupation'. The aforementioned results may be explained by the fact that the primary objective of a business Startup is to concentrate on a profitable activity, which necessitates the entrepreneurs undivided attention. The findings are in conformity to the studies conducted by Bhaskar (2018) [4], who observed that majority (55.00%) of the Agripreneurs had business as 'main occupation'.

3.2.4 Education: According to the statistics shown in fig 3.1 majority of entrepreneurs (79.25%) had postgraduate degrees,

followed by graduates (20.75%). No entrepreneur had only high school diploma as their educational background. This could be due the fact that the majority of Agri-Startup founders had degrees in management or entrepreneurship, which might have inspired them to found their own Startups. Further, Startup is a new and innovative approach in the entrepreneurial ecosystem that calls for a stronger network of communication with many stakeholders and a higher cognitive domain to comprehend the complexities of the enterprise. The findings are consistent with those of Ohlan and Raj (2020) [15], who noted that the majority of respondents (80.00%) were postgraduates.

3.2.5 Family size: According to data on family size presented in fig 3.1 it was found that half (50.94) of the entrepreneurs had medium family size (5-6 members). Whereas, 45.28 per cent and 3.77 per cent had small and large family size respectively. This might be due to the changes in the economic and social structure, compelled migration from their village roots for employment. The results are consistent with the findings of Kavitha and Reddy (2007) [12], who found that the majority of respondents had medium-sized families, followed by small and big families.

3.2.6 Family type: According to data on family type presented in fig 3.1 it can be noted that majority of the Agri-Startup entrepreneurs (67.92%) belonged to 'nuclear families' followed by 'joint family type' (32.08%), and none were members of extended families. From the above results, it is

evident that nuclear families are on rise, which might be due to rise of individualism and the desire for greater financial security or more living space for children, as well as the more common occurrence of marriage dissolution and migration of respondents from rural areas. The aforementioned findings are consistent with those made by Bharatamma (2005) [3] and Aneesha (2021) [2], who discovered that the majority of agricultural entrepreneurs belonged to nuclear families, followed by joint families.

3.2.7 Caste: According to data on caste shown in fig 3.1, it can be inferred that more than half of the Agri-Startup entrepreneurs belonged to the 'general class' (54.72%), followed by a sizable percentage (20.75%) of them belonging to 'other backward class'. Whereas, 15.09 per cent and 9.44 per cent of entrepreneurs belonged to 'schedule caste' and 'schedule tribes' respectively. The findings published by Suresh (2008) [21], who came to the conclusion that the majority of agripreneurs belonged to the 'general class' were supported by the results.

3.2.8 Domicile: According to data in fig 3.1, the significant proportion of Agri Startup founders (43.40%) were from urban areas, followed by semi-urban (30.18%) and rural (26.42%) locations. This may be explained by the fact that entrepreneurs in 'urban areas' had access to infrastructure, funding, incubators, and marketing opportunities for their goods. The findings are consistent with those of Ohlan and Raj (2020) [15].
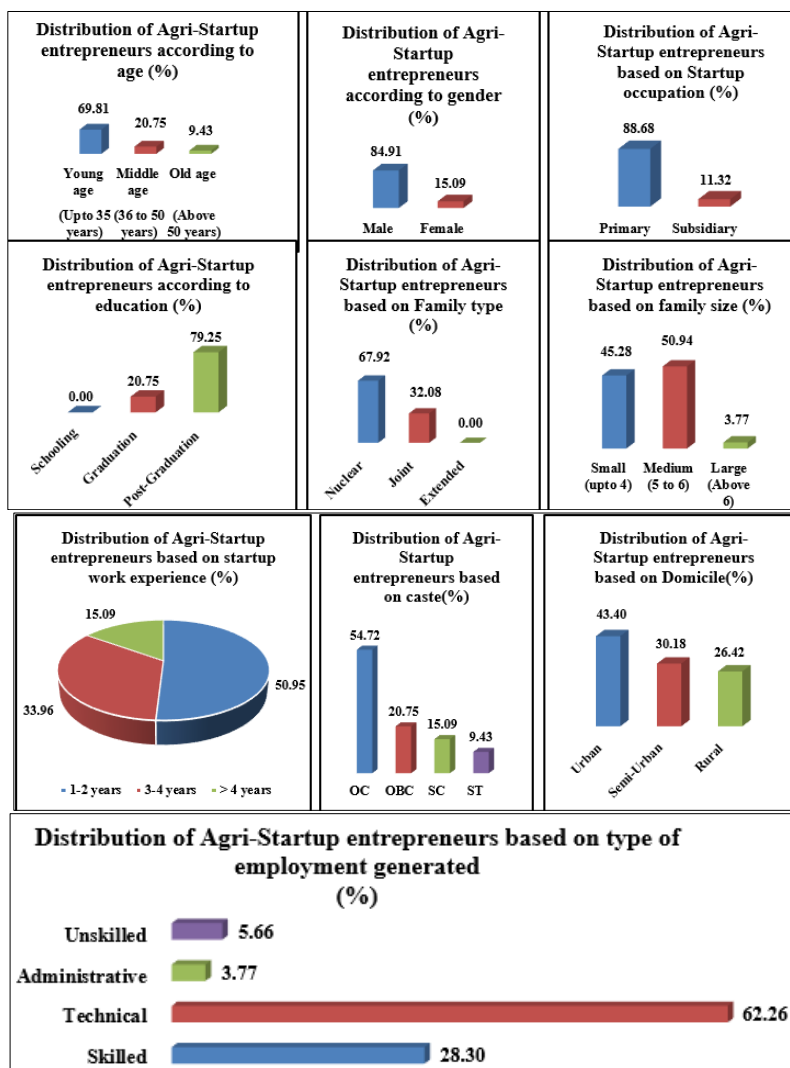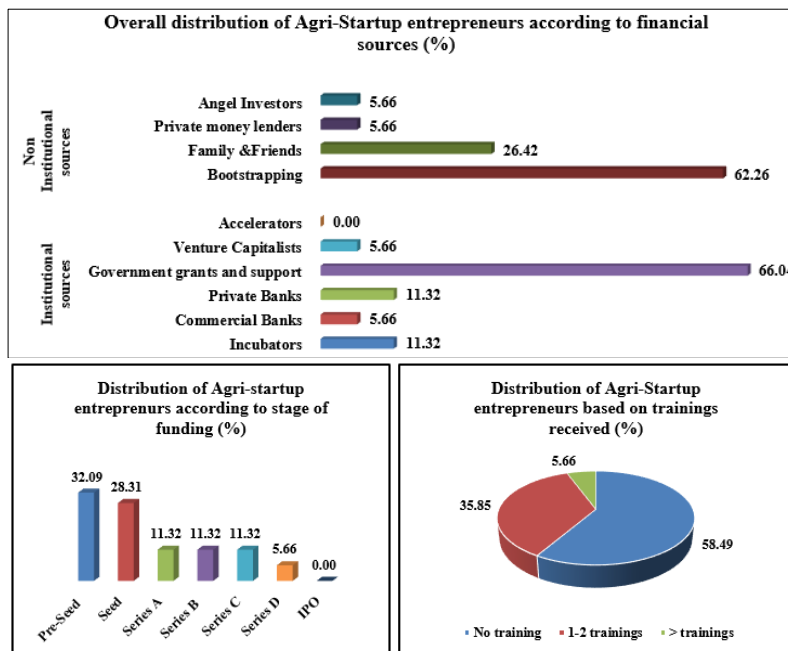
Fig 1: Distribution of Agri-Startup entrepreneurs based on their profile characteristics. (n=53)

3.2.9 Startup work experience: The results presented in fig 3.1 indicate that half (50.95) of Agri Startup entrepreneurs had 1-2 years of experience, followed by 33.96 per cent of Agri-Startup entrepreneurs had 3-4 years of experience. Only 15.09 per cent had more than 4 years of experience. This may be explained in light of the recent growth, attention, and advancement of the Startup concept that offers best opportunity for unemployed youths in the society. Additionally, a significant proportion of young aged respondents (26-35years) with entrepreneurial mindset became entrepreneurs or launched their own Startup compared to middle and old age respondents. Government also recognised this and various schemes/ programmes have been launched to promote entrepreneurship. The outcomes were in consistent with the findings of Vasumathi (2003) [22].

3.2.10 Trainings received: According to the statistics shown in fig 3.1 regarding the number of trainings received, it was evident that the majority of Agri-Startup entrepreneurs (58.49%) had not received any training, followed by 35.85 per cent of Agri-Startup entrepreneurs who had received 1-2 trainings and 5.66 per cent of them who had received more than two trainings. This could be explained by the fact that agripreneurs lack of knowledge about incubators, accelerators, and R&D organisations that could provide mentoring services to Startup entrepreneurs. However, because the majority of agribusiness Startups were young, sponsoring organizations were unable to conduct adequate entrepreneurship development programmes. The outcomes were consistent with Muthammal's (1997) [13] and Aneesha (2021) [2], observations that the majority of respondents had not participated in any relevant trainings.

3.2.11 Type of employment generated: Fig 3.1 shows that the Agri-Startups generated 'technical manpower' (62.26%), followed by 'skilled' (28.31%), 'unskilled' (5.66%) and 'administrative' (3.77%) manpower for them to engage in their Startups. This is essentially necessary for the efficient and effective functioning of Startups. The study makes it clear that Startups need support from technical and skilled manpower in order to succeed. The outcomes were consistent with the findings of Aneesha (2021) [2].

3.2.12 Financial sources: The results shown in fig 3.1 regarding distribution of Agri-Startup entrepreneurs based on Institutional financial sources reveal that a significant proportion of Agri-Startup entrepreneurs (66.04%) relied on government subsidies for the initial seed money to fund their ideas, followed by incubators and private banks (11.32%). While, just 5.66 per cent of Startups were financed by venture capitalists and commercial banks. From the above trends it can be clearly inferred that the governments support through financial grants for the Startups was a major Institutional source of finance for the Agri-Startups. The outcomes were consistent with the findings of Ravi (2007) [17].

In case of non-institutional sources of funding that support entrepreneurs in their early phases, 'bootstrapping/self-financing' (62.26%) took the lead, followed by 'family and friends' (26.42%), 'private money lenders' (5.66%) and 'angel investors' (5.66%). The above trend is likely due to entrepreneurs starting their businesses with their own money as their primary source of funding, but when Startups needed financial institutions' support for scaling up, they felt it was challenging to obtain credit from financial institutions due to the cumbersome process and bankers' preference for collateral security rather than looking at financial viability of the Startup. The findings of non-institutional sources of finance were consistent with those of Abdullah *et al.* (2014) and Ram *et al.* (2013) [16], who arrived at a finding that the majority of agripreneurs relied on their own financial resources.

3.2.13 Stages of funding: A further examination of fig 3.1 about the various phases of Startup finance indicated that about one-third of Agri-Startups (32.09%) raised their capital during the 'pre-seed stage' followed by the 'seed stage' (28.31%), 'Series A' (11.32%), 'Series B' (11.32%), 'Series C' (11.32%) and 'Series D' (5.66%). Whereas, none of the Startups had raised their capital from IPO. This could be due to the fact that pre-seed and seed stage Startups typically have a lower valuation than more established businesses. As a result, it is more appealing for investors to invest early and save money in order to potentially earn greater profits as the firm develops. Additionally, investors are aware of the benefits that might come from investing early in a profitable firm. They might be granted a sizeable equity investment and

be involved in determining the direction of the organisation. The findings are in agreement with the findings of Aneesha (2021) [2].

3.2.14: Startup Ecosystem Network: The results from Table 3.2 on the interactions between Agri-Startup entrepreneurs and stakeholders in the Startup ecosystem showed that entrepreneurs 'often contacted' Startup funders, universities/institutions, R&D organisations, incubators, accelerators, government agencies, and other entrepreneurs with a weighted mean score of 3.4 and above. The study suggested that the majority of Agri-Startup entrepreneurs had interacted with the ecosystem's networks 'often' which may have been because these entrepreneurs relied extensively on ecosystem stakeholders to provide them with access to capital resources and mentoring from incubators, accelerators, funders, government agencies, R&D organisations, and other entrepreneurs. The outcomes are consistent with the findings of Karuppanchetty *et al.* (2014) [10].

Table 2: Distribution of Agri-Startup entrepreneurs based on Startup ecosystem network (n=53)

S. No.	Agri-Startup Ecosystem Network	Weighted Mean Score	Descriptive Equivalent
1	R & D organizations	3.75	Often
2	Universities/ organization	3.47	Often
3	Incubators	3.66	Often
4	Accelerators	3.57	Often
5	Mentors	3.75	Often
6	Advisors	3.58	Often
7	Government agencies	3.43	Often
8	Startup funders	3.62	Often
9	Other entrepreneurs	3.42	Often

4. Conclusion
The profile analysis of the current study shows that the majority of the chosen Agri-Startups belonged to the 'ideation to validation stages' which amply demonstrates that the majority of the Agri-Startups were founded between 2019 and 2021 and were discovered to be at the early stages of Startups with no prior Startup experience among the entrepreneurs. Additionally, the majority of Agri Startup entrepreneurs lacked proper training in their respective Startup fields, illustrating the broader gap between Agri-Startups and other individuals in the Startup ecosystem. 'Bootstrapping/own savings' and 'family & friends' were discovered to be the main sources of finance for the Agri-Startups, which amply demonstrates the lack of institutional financial support for the Agri-Startups in its early phases of growth. Thus, the Agri-Startup ecosystem network should be strengthened with the help of research and development organisations, agribusiness incubators and accelerators, university and organisation networks, mentors or advisers, financial institutions and other stakeholders of Startup ecosystem. Further analysing the profiles of the Agri-Startups in the study area reveals that the majority of the aspiring entrepreneurs were leading the charge to disrupt traditional agricultural methods with cutting-edge technologies. In order to support Agri-Startup entrepreneurs in maintaining their business activities, concerted measures must be done. Thus, the present study concludes that strengthening of Agri-Startup ecosystem of Telangana State through Agri-sector specific schemes and capacity building programs would promote more number of Startups in Agri-sector.

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