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Determinants for Agripreneurship Development under Agriclinics and Agribusiness Centers (ACABC) Scheme

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ABSTRACT

The determinants of entrepreneurial prospect have been extensively investigated but the case of agribusiness is still unexplored. This present investigation was done to specify the determinants of agripreneurship under the ACABC scheme in two states, viz. Telangana (south zone) and Uttar Pradesh (north zone) during October 2018. Both the states had the highest number of established agribusiness in the respective zone. A mixture of multistage and purposive sampling technique was employed for data collection from 120 agripreneurs by utilizing structured questionnaires. Findings revealed that farm input supply agribusiness (44.2%) and farm production agribusiness (40.8%) were dominant. The following determinants of agripreneurship i.e. lack of inputs for production, unemployment, low income of farmers, serving to farming community, low awareness among farmers, interest in business, proximity to markets, free specialized training, and profit motive were revealed during the study in both zones. It was also discovered that the age of agripreneur, educational background, agribusiness age and family size were agripreneurs' socioeconomic characteristics that had a significant effect on the annual turnover of the agribusiness. Based on these findings, formulation and implementation of policies should be targeted on the identified determinants of agripreneurship. Such policies will improve the agribusiness environment within the country through the schemes of the Government like RKVY RAFTTAR Agribusiness.

Keywords: ACABC scheme, Agripreneurship, Determinants, Principal Component Analysis

Traditionally, agriculture is considered as a low-tech industry with insufficient dynamics dominated by copious small family firms (Shetty *et al.* 2014). Over the years, circumstances have improved dramatically for small firms due to economic liberalization and commercialization in agriculture (Das 2015). All such alterations have cleared the path for participation, innovation, and portfolio entrepreneurship in agriculture and allied sectors, which is termed as agripreneurship. Agripreneur is an educated professional person who apprehends diverse ideas in various dimensions of agripreneurship (Nain *et al.* 2015, Sharma *et al.* 2019). It can be envisioned as a process that involves the efforts of an individual in identifying viable opportunities of agriculture and allied sectors in a business environment.

In India, formally agribusiness came to fruition after the commencement of Agriclinics and Agribusiness Centers (ACABC) scheme in 2002, and hence the concept of agripreneur was introduced in the country. ACABC scheme was launched by the Ministry of Agriculture and Farmers' Welfare (MoA & FW), Government of India to supplement the public extension system, increase the availability of inputs and services to the farmers and provide gainful self-employment to the unemployed agricultural graduates through agribusiness (Afroz *et al.* 2020). Currently, ICAR had established 456 Agri-business Incubation (ABI) Centers to nurture early-stage innovative startups and entrepreneurs (Bhooshan and Sharma 2020). Government of India is also promoting and transforming entrepreneurial activity into startups through Agripreneurship Incubation and Orientation programme through the RKVY RAFTAAR ABI scheme (Singh *et al.* 2020).

Under ACABC scheme agriculture graduates are trained to blend technology with entrepreneurship to improve the methods of farming as well as agribusiness. Hence, the objective of the study was to investigate the determinants of agripreneurship of agribusiness under ACABC scheme. Besides, the socio-economic characteristics of agripreneurs and their effect on the annual turnover of the agribusiness were also examined.

MATERIALS AND METHODS

The purposive and multistage sampling techniques were exercised in the selection of 120 agripreneurs from two states, viz. Telangana (south zone) and Uttar Pradesh

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(north zone) during October 2018. As per the classification of Global AgriSystem 2009 for midterm evaluation, the south and north zone were purposively selected due to their highest success rate. The training enrollment and successful establishment of agribusiness in both states were progressively growing compared to other states. The agripreneurs from each state (60 agripreneurs each) were selected randomly, and hence the total sample for the study was 120 agripreneurs. Besides, a surveillance survey was carried out to discover the existence and locations of agribusiness ventures in the study area. Thereafter, primary data was collected through a structured interview schedule which was devised specifically for this objective. To assure reliability and validity of this instrument, the interview schedule was pre-tested on thirty (30) respondents that were distinct from the 120 sample size, and the Cronbach's alpha coefficient was 0.861, which is considered reliable.

Both descriptive and inferential statistics were utilized in the analysis of the collected data. Descriptive statistics, such as tables, percentages, and means were used, while the

Table 1 Socio-economic characteristics and Agribusiness of Agripreneurs (N = 120)

Parameter	*f*	%	Mean	Nature of Agribusiness	*f*	%	% $\bar{x}$
Age of Agripreneur				*Farm Input Supply (50)*			
20–40 years	84	70.0	36	Input Dealers	24	20.0	44.2
40–55 years	33	27.5		Agriclinic cum Input dealership	27	22.5	
>55 years	3	2.5		Vermicomposting	2	1.7	
Marital status				*Farm Production (49) [8-Arable; 41-Livestock]*			
Single	46	38.3		Nursery	6	5.0	40.8
Married	74	61.7		Spirulina production	1	0.8	
Family Size				Vegetable/ Flower production	1	0.8	
<4 members	39	32.5	6	Fish farming	1	0.8	
4–6 members	53	44.2		Bee Keeping	2	1.7	
6–8 members	22	18.3		Poultry	9	7.5	
8–10 members	6	5.0		Diary	21	17.5	
Educational background				Goat farming	6	5.0	
Senior Secondary	4	3.3		Sheep farming	1	0.8	
BSc (Agri. Sci.)	91	75.8		Piggery	1	0.8	
BSc (Others)	6	5.0					
MSc/PhD	19	15.9		*Processing (04)*			
Social group				Animal Feed	1	0.8	3.3
Schedule Caste	7	5.8		Seed processing company	2	1.7	
Schedule Tribe	2	1.7		Food processing unit	1	0.8	
OBC	61	50.8		*Distribution/ Marketing (08)*			
Others (General)	50	41.7		Urban Horticulture	2	1.7	6.7
Entrepreneurial History				Custom Hiring Centre	4	3.3	
No History	98	81.7		Micro propagation through plant tissues culture	1	0.8	
Father	20	16.7		Cold Storage Unit	1	0.8	
Brother	2	1.7					
Agribusiness Age				Advisory Services (06)			
<3 years	59	49.2	4	Farm Consultancy	4	3.3	5.0
3–6 years	18	15.0		Vetri-clinics	2	1.7	
6–9 years	16	13.3					
9–12 years	8	6.7					
12–15 years	19	15.8					
Source of Capital							
Formal	85	70.8					
Informal	35	29.2					

other part of the objective was realized by using principal component analysis and multiple regression analysis.

Principal Component Analysis: It was used in naming the factors based on the application of Kaiser's rule of thumb (Kaiser developed a rule of thumb of 0.4 as a minimum loading weight which a factor can have before it can be isolated as being positive to the attribute in question). The factor model was expressed mathematically as:

$$Y_i = \beta_{i0} + \beta_{i1}F_1 + \beta_{i2}F_2 + \beta_{i3}F_3 \ldots\ldots + \beta_{in}F_n + e_i$$

where, β_i is parameters or loadings; $\beta_1 - \beta_i$ are the loading of variable Y_i on factors, F_n.

Multiple Regression model: It was applied to realize the effect of socio-economic characteristics of the agripreneurs on the annual turnover of agribusiness. The multiple regression model expressed explicitly as:

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 \ldots\ldots + b_nx_n + U_i$$

where, Y is annual turnover of agribusiness, x_1 is agribusiness age (years), x_2 is educational background, x_3 is age of the agripreneurs (years), x_4 is social group of agripreneurs, x_5 is marital status, x_6 is family size, x_7 is entrepreneurial history, x_8 is source of capital, α_0 is base constant, U_i is stochastic error term.

RESULTS AND DISCUSSION

Socio-economic characteristics of Agripreneurs: The result of the socio-economic characteristics of agripreneurs (Table 1), illustrates that agribusiness under ACABC scheme was dominated by the young (mean age-36 years) and married (61.7%) agripreneurs. It is reported that young agro-entrepreneurs are more innovative, motivated and adaptable who can cope with farming challenges (Kumar et al. 2009). It has been described that specific family lifecycle events like marriage or marital status (Chahal and Ponnusamy 2014) and divorce may also affect agricultural entrepreneurship, as spouses and partners can energize the business with new competencies, networks and ideas (Veena and Nagaraja 2013).

It was further revealed that agripreneurs were belonging to medium size family (4-6 members) and mostly nuclear type. Khan (2011) informed that small and the nuclear families were successful agripreneur. It also shows that the majority of agripreneurs were B.Sc. (Agri.) graduates in the study area which plays a crucial role in being a successful agripreneur. The key factors, viz. education, experience in trade and finance experience recreated a vital role in the success of an entrepreneur (Kamitewoko 2013). Social background is also one of the critical factors which contributes towards entrepreneurship development in society (Gbadeyan 2017). The majority of the agripreneurs (50.8%) were belonging to the Other Backward Class (OBC) in the study area.

The familial occupational backgrounds also influenced the attitudes of an individual for entrepreneurial development (Muhanna 2007). The study unveiled that majority of agripreneurs did not have any entrepreneurial history. This finding is in coherence to the study of Nwibo and Okorie (2013) who reported that household entrepreneurial history had a positive effect on the determinants of entrepreneurship. The source of investment capital for commencing the business had an influential relationship with entrepreneurship and a very critical determinant (Nwibo and Okorie 2013). In the study, it was found that the major source of investment capital of agripreneurs was from formal sources, mainly commercial banks.

Further, the heterogeneous agribusiness under the scheme was found in the study area (Table 1) which was classified in terms of farm input supply, farm production, processing, distributing/marketing and advisory services (Nto and Mbanasor 2011). It shows that the study area was highly dominated by the farm input supply agribusiness (44.2%). The other agribusinesses were farm production agribusiness (40.8%), processing agribusiness (3.3%), distribution/marketing agribusiness (6.7%), and advisory service agribusiness (5.0%).

Determinants of Agripreneurship: The eigen-values of principal component analysis revealed that four determinants of the agripreneurs encouraged agripreneurs to join the

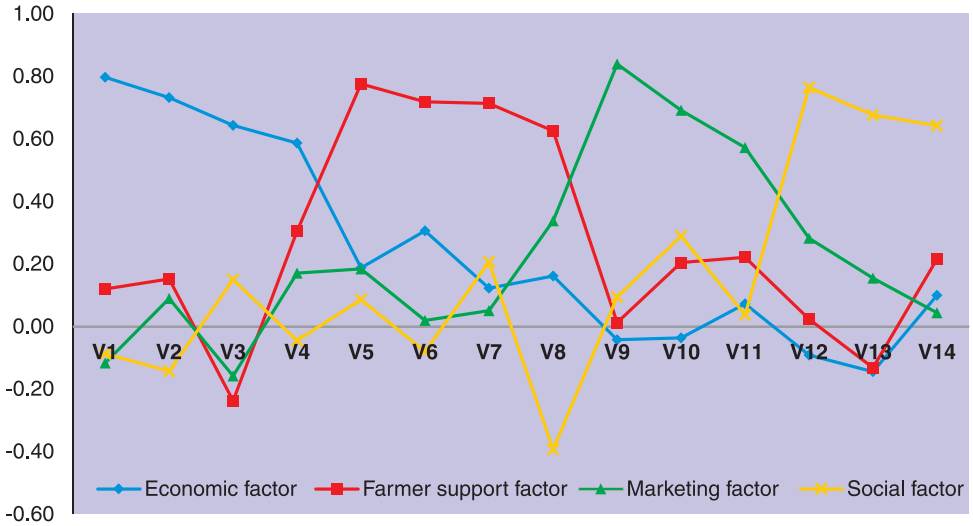

Fig 1 Varimax Rotated Component matrix for Determinants to join ACABC
V1, Lack of inputs for Production; V2, Unemployment problem; V3, Financially independent; V4, Non, remunerative yield/income; V5, Low income of farmers; V6, Serve farming community; V7, Low awareness of farmers; V8, Poor situation of agriculture; V9, Interest in business; V10, Subsidized credit facility; V11, Proximity of markets; V12, Free specialized training; V13, Free facilities/food; V14, Profit motive.

ACABC scheme, viz. economic factors, farmer support factors, marketing factors, and social factors (Fig 1). It was found that lack of inputs for production in agriculture and allied sectors (Kannan 2015) was the major motivating force. It was also illustrated that some agripreneurs opted to be agripreneurs to avoid the unemployment problem after completion of education and desired to be financially independent (Farzana 2018). This substantiates the study of Mandama (2010) who extrapolated that lack of jobs and poverty forces entrepreneurial activities.

Low income of farmers from agriculture, eagerness to serve the farming community through agribusiness, low awareness among the farmers for the latest technologies, and poor condition of agriculture had been determined to have a strong affinity for agripreneurs, who get interested in this scheme in order to support the farmers in their region. This confirms the findings of Venkattakumar *et al.* (2016) who reported that satisfactory services to the customers/farmers, up-to-date knowledge on the latest innovations in the field, etc. are the critical success factors for agripreneurship. It also identified that interest in business, subsidized credit interests and proximity of markets as being crucial determinants of agripreneurship in marketing factors. This finding was in accordance with Nto and Mbanasor (2011) who postulated that firms close to market had the advantage of improved productivity, provided the low cost of inputs as a result of reduced transport cost. Free specialized training, free facilities/ food and a profit motive (Simons and Åstebro, 2010) were the social factors identified in the study to have positively impacted agripreneurs to join the scheme.

Effect of Socio-economic characteristics on annual turnover: The socioeconomic variables were utilized to describe and predict their effects on the annual turnover of the agribusiness (Table 2). It was discovered that the annual turnover of agribusiness and the explanatory variables were dispensing multiple regression coefficients of 0.684 which was found to be highly significant. The analysis of variance (Table 2) for the regression analysis yields an F-value of 10.762, which was also significant at 0.01. This confirms the regression equation as a model of fit for the impact of socio-economic factors on the annual turnover of the agribusiness.

It is interpreted from the results that four of the socio-economic characteristics were found to have significantly contributed to the annual turnover of agribusiness. The agribusiness age is positively related to the annual turnover of the agribusiness and is significant at 99% confidence level. As the agribusiness age will increase, the annual turnover of the firm will also start to increase (Matemilola *et al.* 2017). It is in line with the findings of Ilaboya and Ohiokha (2016) who reported that there is a significant positive relationship between firm age, firm size and profitability. It also reveals that the age of agripreneurs is positively related to the annual turnover of agribusiness and significant at 1 percent level. Rose *et al.* (2006) also reported that the age of the entrepreneur is positively related to knowledge and that knowledge makes the business successful.

It is equally revealed that the educational background, as well as the family size of the agripreneurs, is positively related to the annual turnover and significant at 95% confidence level. This finding is in line with the results of Chiliya (2012) who reported that age of the owner/

Table 2 Multiple regression analysis results

Variable	Parameter	B	Standard Error	Beta	t
Constant		0.707	0.514	-	7.375
Agribusiness' Age	X_1	0.176	0.053	0.329	3.291**
Educational background	X_2	0.174	0.075	0.168	2.332*
Age of Agripreneur	X_3	0.019	0.009	0.217	2.200**
Family Size	X_6	0.110	0.076	0.116	1.659*
Social group	X_4	0.084	0.050	0.125	1.679
Marital status	X_5	0.249	0.150	0.151	1.451
Entrepreneurial History	X_7	0.130	0.136	0.071	0.956
Source of Capital	X_8	0.064	0.130	0.036	0.492

Model Summary[b]				Analysis of Variance					
R	R Square	Adjusted R Square	Standard Error of the Estimate	Particulars	Sum of Squares	df	Mean Square	F	Sig.
0.684[a]	0.468	0.425	0.611	Regression	36.147	9	4.016	10.762	0.001[b]
				Residual	41.053	110	0.373		
				Total	77.200	119			

*Sig. at 0.05 level of significance, **Sig. at 0.01 level of significance

a. Dependent Variable: Annual Turnover; b. Predictors: (Constant), age, family size, capital source, education, social group, entrepreneurial history, marital status, agribusiness age

manager, level of education, and the age of the business had significantly affected the financial performance of small business operations.

Despite the performance of agribusiness in India, the sector is still unexplored by other potential young candidates, especially agriculture graduates. Hence, this investigation was an attempt to specify the determinants of agripreneurship development. The identified determinants of agripreneurship were lack of inputs for production, unemployment problems, low income of farmers, serving to the farming community, low awareness among farmers, interest in business, proximity to markets, free specialized training, and profit motive under the ACABC scheme. Therefore, policies should be devised to target the determinants of agripreneurship to attract young agriculture graduates. Such policies should explore ways of facilitating young agripreneurs to access the ACABC scheme or other agribusiness scheme of the Government, even if they do not possess an entrepreneurial attitude. It is suggested to conduct thorough market research to assure that there is adequate demand for the products or services being offered by materializing agribusinesses in a given region. Such strategies will be very helpful for the success of contemporary Government schemes like the RKVY RAFTTAR Agribusiness scheme.

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