

ROLE OF AI IN STRENGTHENING OF ENTREPRENEURSHIP IN AGRICULTURAL COOPERATIVES

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ABSTRACT

India is an agriculture-oriented country where two third of the population is dependent on agriculture. Nowadays, entrepreneurship is considered as the engine of economic and cultural development of the society. The purpose of this study is to identify the role of AI instrengthening entrepreneurship in agricultural production cooperatives. Specifically, this study is intended to examine the operations of agricultural co-operatives and role of AI in the development of entrepreneurship in agricultural and marketing co-operatives. For this, research samples were selected using randomly stratified method. The validity of instrument was determined by investigating the attitudes of specialists in agricultural cooperativesto quantify the effectiveness of the AI in agriculture entrepreneurship.

Keywords : *Entrepreneurship, Agricultural Production Cooperatives, Entrepreneurship promotion, Development of entrepreneurship, AI.*

Introduction

In India, most of the population is considered to be dependent on agriculture for their livelihood. Around 52% of the land areas in India are cultivable. Hence, agriculture plays a vital role in India's growth and development. It significantly contributes to the development of economy of our country. Similarly, development of entrepreneurship also plays a vital role in enriching the economy of a country.

Agricultural activity indirectly impacts environment than other sector of business (Koe et al., 2015). Thus, increasing agricultural activity contributes numerous entrepreneurship opportunities to the youth of the country, specifically in India. For the entry of agricultural oriented business, entrepreneurs are supported by CAP to start their own business (Sutherland et al., 2015).

Agribusiness entrepreneurship is the newest area in the field of entrepreneurship (Mugonola & Baliddawa, 2014). However, this integration will provide substantial support for rural economic development of a country. Klerkx & Leeuwis (2008) states entrepreneurship as a personalized drive and individual's capacity to commercialize their product, business idea etc.,. Hence, agribusiness entrepreneurship can be defined as an individual one who has managerial capacity to introduce their investment in farming activities (Escalante & Turvey, 2006).

Even though, it creates way for the economy growth of a country and is supported by government policies, the level of entrepreneurship is low. This is because the entrepreneurs belonging to agricultural activity may have different factors affecting their growth. In same developing countries, rural entrepreneurs are not recognized properly. The lack of proper resources, lack of knowledge about marketing and sales can also lead to their failure. Likewise, agricultural entrepreneurs in rural and natural environments face some challenges like capital finance and weak communications etc., (Korsgaard et al., 2015).

In most of the developing countries, the entrepreneurial activities are mainly affected by financial criteria (Bond et al., 2015). Similarly, the factors affecting entrepreneurship in agricultural co-operative can be subdivided into eight groups, namely psychological/cognitive,

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education, economical, organizational, financial, personal characteristics, regulatory, and social, ordered by the magnitude of their impact [8-13]

Methods

In this study, an analytical method is employed to analyze the effectiveness of AI that affect the entrepreneurship in agricultural field. Hence, a survey was conducted among the agricultural cooperative managers of Tamil Nadu. A questionnaire was framed to collect data. Content and face validity of instrument were developed based on the attitudes of the Cooperative officers.

A pilot study was carried out with 25 respondents. The reliability of the Questionnaire was calculated using Cronbach's Alpha method.

Thus, the questionnaire prepared comprises three areas namely

- 1) Demographic characteristics like age, sex,
- 2) Entrepreneurship score of Cooperatives (Five scale method)
- 3) Factors affecting the entrepreneurship (five-point scale).

Results

Personal attributes of respondents

The age of the Cooperative managers varies from 25 to 50 years. Among those, 81% of them were male and 19% were female.

Based on their education level, 30 % of the respondents had a diploma, 30% had UG degree and the remaining 40% had Master's degree.

Measurement of entrepreneurship score from the viewpoint of agricultural cooperative managers while implementing AI

Thus to access the entrepreneurship score from the viewpoints of agricultural cooperatives a survey was

conducted with 17 using five level score and the results obtained are reported in table 1.



Table 1
Entrepreneurship score of agricultural cooperatives

Groups	Mean	SD	C.V.
Policymakers support modern agriculture	3.91	1.25	0.43
Customer satisfaction rate is high while implementing AI	3.86	1.27	0.45
Able to apply modern techniques to produce products is high	3.62	1.21	0.45
The rate of change in quality of products offered to the market	3.64	1.3	0.49
Cooperative satisfaction	3.59	1.16	0.45
AI change the methods of marketing	3.61	1.28	0.5
Makes work easier for all the workers	3.55	1.28	0.51
Improves the share growth in market products	3.49	1.25	0.5
Enables to complete work tasks faster	3.49	1.26	0.51
New technologies in production	3.46	1.2	0.49
Increases the productivity	3.44	1.21	0.5
cooperative achievement level to the objectives	3.42	1.21	0.5
Leads to innovation of new products in comparison with other competitors	3.38	1.06	0.45
Improved sales growth in comparison with other competitors	3.37	1.33	0.56
Service offered by to the customers is high	3.34	1.09	0.46
Results in higher Profit growth	3.26	1.11	0.49

From the table, it is noted that the mean score found is above 3. This implies that from the agricultural cooperatives manager's point of view, the level of implementation of AI in cooperatives is comparatively high.

Four statements about workload, appropriateness, productivity and the reflectively evaluated construct perceived usefulness were used to quantify the effectiveness of the AI in agriculture entrepreneurship.

Table 2
Factors affecting the strengthening of entrepreneurship in agricultural cooperatives

Factors	Mean	SD	C.V.
Enables to complete work tasks quickly	3.82	1.1	0.29
Unsuitable for my agricultural business	3.82	1.18	0.31
Operation of self-learning machines is easy	3.77	1.18	0.31
Achieves higher production	3.68	1.1	0.3
AI impact helps in promoting	3.64	1.05	0.29
AI works at right decision	3.6	1.07	0.3
Promotes profit of the company	3.54	1.05	0.3
AI brings innovation in production	3.52	1.13	0.32
Requires more knowledge to	3.51	1.09	0.31
Able to forecast the farming nature	3.5	1.15	0.33
Dangerous to human beings	3.48	1.06	0.31
Helps in decision making	3.46	1.14	0.33
Prevents the loss in production	3.45	1.14	0.33
Helps in business promotion	3.36	1.29	0.39

From the table, it is indicated that the mean score obtained from the survey is about 3. Thus, it implies from the perspective of agricultural cooperatives managers that all the above factors are effective in strengthening entrepreneurship to very high levels.

Relationship between entrepreneurial scores and independent variables

In order to investigate the relationship between entrepreneurial scores and independent variables, considering the scale of variables and normal distribution of data, Pearson correlation coefficient was used. The results are presented in Table 3.

Table 3
Relationship between entrepreneurial scores and independent variables

Independent Variables	r	P
education level of board members	0.241*	0.015
educational level of cooperative managing director	0.157	0.117
Age	0.004	0.967
Number of cooperatives	-0.236	0.017
success level of cooperatives	0.320**	0.002

P < 0.01: ** p = 0.05: *

From table 3, it is inferred that there was a direct and significant relationship found between entrepreneurial score and education level and success level of AI implementation and significant negative correlation between entrepreneurial score and the total number of cooperatives. Relationship between entrepreneurial score and other variables were not significant.

According to the result of research on factors affecting entrepreneurship strengthening cooperatives, cooperation of entrepreneurship and employment laws by government agencies, should be important. In the similar manner, providing special training for managers and members of agricultural cooperatives is recommended to enhance the performance of the cooperative.

Conclusion

The study focused on the problems faced by Agriculture entrepreneur in Tamil Nadu. The study comes up with the Environmental, Managerial, and Diversification problems which affects the Agriculture based entrepreneur. From the analysis, it is concluded that introduction of AI based entrepreneurship training seems to be necessary for improving capacity building for younger generation to start units and skilled labours. The provision of social security for all categories of entrepreneurs in Agriculture should be made mandatory.

References

1. Koe, W.L., Omar, R., & Sa'ari, J. R. (2015). Factors influencing propensity to sustainable entrepreneurship of SMEs in Malaysia. *Procedia-Social and Behavioral Sciences*, 172, 570-577.
2. Sutherland, L.A., Darnhofer, I., Wilson, G. & Zagata, L. (2014). *Transition pathways towards sustainability in agriculture: Case studies from Europe*. CABI.
3. Korsgaard, S., Müller, S., & Tanvig, H. W. (2015). Rural entrepreneurship or entrepreneurship in the rural—between place and space. *International Journal of Entrepreneurial Behavior & Research*, 21(1), 5-26 .
4. Bond, E.W., Tybout, J., & Utar, H. (2015). Credit rationing, risk aversion and industrial evolution in developing countries. *International Economic Review*, 56(3), 695-722
5. Mugonola, B. and Baliddawa, C. 2015. Building capacity of smallholder farmers in agribusiness and entrepreneurship skills in Northern Uganda. *Agricultural Information Worldwide* 6:122-126.
6. Klerkx, Laurens, and Cees Leeuwis. "Matching demand and supply in the agricultural knowledge infrastructure: Experiences with innovation intermediaries." *Food policy* 33, no. 3 (2008): 260-276.
7. Escalante, Cesar L., and Calum G. Turvey. *Innovation and entrepreneurship in rural communities: early business survival challenges for the agribusiness entrepreneur*. No. 1366-2016-108207. 2006.
8. Tras, Cua, D.L.; Stefan, G.M.; Sahlian, D.N.; Hoinaru, R.; Serban-Oprea, G.-L. *Digitalization and business activity. The struggle to catch up in CEE countries*. *Sustainability* 2019, 11, 2204.
9. Talaviya, T., Shah, D., Patel, N., Yagnik, H., & Shah, M. (2020). Implementation of artificial intelligence in agriculture for optimisation of irrigation and application of pesticides and herbicides. *Artificial Intelligence in Agriculture*, 4, 58–73.
10. Sok, J., Borges, J. R., Schmidt, P., & Ajzen, I. (2020). Farmer behaviour as reasoned action: A critical review of research with the theory of planned behaviour. *Journal of Agricultural Economics*.
11. Jha, K., Doshi, A., Patel, P., & Shah, M. (2019). A comprehensive review on automation in agriculture using artificial intelligence. *Artificial Intelligence in Agriculture*, 2, 1–12..
12. Kakani, V., Nguyen, V. H., Kumar, B. P., Kim, H., & Pasupuleti, V. R. (2020). A critical review on computer vision and artificial intelligence in food industry. *Journal of Agriculture and Food Research*, 2, 100033.
13. Groher, T., Heitkämper, K., Walter, A., Liebisch, F., & Umstätter, C. (2020). Status quo of adoption of precision agriculture enabling technologies in Swiss plant production. *Precision Agriculture*, 21, 1327– 1350.

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