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Impact assessment of entrepreneurship development programme (EDP) on aquaculture and fishery sector conducted by ni-msme in southern states of India

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Abstract

This research paper investigates the impact of a training programme on aquaculture in southern states of India. *viz.*, Telangana, Andhra Pradesh, Kerala, Karnataka and Tamil Nadu. To evaluate the Entrepreneurship Development Programme (EDP), data would be collected from 120 trainees from five southern states of India who have undergone an EDP conducted by National Institute of Micro Small Medium Enterprise (ni-msme). The systematic random sampling method was used to select the sample of 120 trainees. Analysis of findings suggested that on a general account a positive trend has emerged from this study indicating the effectiveness of the training programs although with range of variations of benefits gained by the farmers. A majority of the respondents agreed that the program have been useful and had made them entrepreneurs.

Keywords: Aquaculture, EDP, trainees, impact assessment

Introduction

India is the world's third largest fish producer after China and Indonesia, accounting for around 7.58 per cent of total global production, and contributing 1.24 per cent of India's Gross Value Added (GVA), (NFDB, 2021) [4]. The Indian fisheries industry is a significant one that not only promotes nutritional and food security but also provides opportunity for entrepreneurship, income generation and self-employment. This sector employs around 25 million fishers and fish growers at the primary level and more than twice that number further up the value chain.

Recent agricultural and allied graduates have a high rate of unemployment. Entrepreneurship develops the individual capacity of rural youth to establish sustainable rural businesses. The Pradhan Mantri Matsya Sampada Yojana (PMMSY) aims to close major production and productivity gaps in the fishing industry. The National Fisheries Development Board (NFDB), in partnership with the Department of Fisheries (DoF), plays a crucial role in the execution of the PMMSY and serves as the implementing agency for entrepreneur models under the central sector scheme. The National Institute for Micro, Small, and Medium Enterprises (ni-msme) is an Indian national institute that encourages the development of micro, small, and medium enterprises. Under PMMSY, ni-msme and NFDB co-host webinars on Resource Capacity Building in Fisheries and Aquaculture.

These Entrepreneurship Development Programme (EDP) are provided free of charge in compliance with the criteria of the Pradhan Mantri Matsya Sampada Yojana (PMMSY). By offering information on retail fish marketing, the programme aims to benefit fishing communities, entrepreneurs, fish retailers, NGO professionals, and farmers. It is expected that participants will be able to grasp the fundamentals of establishing or expanding their aquaculture businesses.

Materials and Methods

The current study was carried out in five southern Indian states: Telangana, Andhra Pradesh, Karnataka, Tamil Nadu, and Kerala. To evaluate the EDP, data was collected from 120 trainees from five southern Indian states who had participated in an EDP offered by the National Institute of micro, small, and medium enterprise (ni-msme).

A questionnaire was made to collect data from trainees. The collected data was evaluated using logit regression analysis, and tabular analysis. Logit regression analysis was employed to determine the effect of EDP on trainees.

The logit regression model was determined using the equation

$$Li = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + UI$$

Where,

L = Trainees' adoption of fishery unit (1 for adoption and 0 for non-adoption) and X = i Independent variables

X1 = Age of the respondents (years), 2 if > 40 yr. 1 if (30-40 yr.), 0 if (18-30 yr.), X2 = Gender; 1 if Female, 0 if Male

X3=Marital status, 1 if married, 0 if UN married

X4=Family size (No) 2 if > 8 mem 1 if 4-8mem, 0 up to 4 mem X5= Education, 2 if graduate 1 if secondary, 0 if primary

X6=Occupation, 3 if UN employeeed 2 if Pvt. Employee, 1 if other business, 0 if Agriculture X7 = income, 2 if > 5lakhs, 1 if 2-5 lakhs, 0 if up to 2 lakhs.

X8=Farm size (ha), 4 if large, 3 if semi medium, 2 if medium, 1 if small, 0 if marginal.

Results and Discussion

Age distribution of respondents

The individual's age group is a key component in decision-making as well as risk-taking abilities (Thejeswini, 2015) [7]. According to table 1, the age group between 18 to 30 years old has the highest proportion of trainees, accounting for 44 per cent. 42 of the total trainees are between the ages of 31 and 40, accounting for 35 per cent of the total. Around 25 people are over the age of 40 have been trained, accounting for 21 per cent of the total.

A major finding from the data indicates that individuals between the ages of 18 to 30 showed greater interest in attending the EDP because these individuals are more risk taking with a focus on future career. According to the report, trainees over the age of 40 account for 21 per cent of all trainees because they are hopeful and willing to try any good practices or approaches to make money.

Table 1: Age distribution of respondents

S. No.	Category	Age group (in years)	Percentage (%)
1	Young Age	18-30	44
2	Middle Age	31-40	35
3	Above Middle Age	> 40	21

Gender wise distribution of respondents

Out of the 120 applicants trained, the majority of beneficiaries 62 per cent are men, while the remaining beneficiaries' 38 per cent are women. Women enroll in training programmes at lower rates than men, which could be linked to a variety of societal, cultural, economic, and personal factors. A lack of confidence in certain women may be caused by cultural expectations and standards.

Table 2: Gender wise distribution of respondents

S. No.	Gender	Frequency	Percentages (%)
1	Men	75	62
2	Women	45	38
3	Total	120	100

Perception of the beneficiary on usefulness of the EDP

Perception of the trainees for usefulness of the EDP has been analyzed and presented in Table 3 the majority of trainees found the EDP was useful, indicating a favorable outcome. However, a significant number of trainees that is about 29 per cent believe that the programme is good but not sufficient, indicating that there is potential for development. Further, 7 per cent of respondents did not find the training programme useful.

Table 3: Perception of the beneficiary on usefulness of the EDP

Classification	Frequency (F)	Percentage (%)
Useful	77	64
Not useful	8	7
Useful but not sufficient	35	29
Total	120	100

Logit regression model

In this study, a logit regression model was used to evaluate the relative influence of several factors on respondents' decision to select a fisheries unit. Five variables were hypothesized to influence the adoption choice (L) through key informants and a literature review: Respondent age, gender, land holding, literacy level, income and primary occupation. The adoption decision is regarded as a binary variable indicating whether or not a trainee adopts a fisheries unit and is stated as a logistic performs of the independent factors.

Age, gender, land holding, literacy level, and occupation were five factors in this study that were hypothesized to affect the influence the adoption choice (L). Table 4 revealed that gender, education, occupation and farm size were found to be positively significant in adoption of fishery unit.

Gender was found to have positive and significant on adoption of fishery unit. With one unit increase in male, there is 5.3 times increased chances of adoption of fishery unit. Indicating that Adoption rates were higher in male because balancing family and business duties can be more difficult for women, particularly in dual-income households.

Education was found to have positive and significant influence on adoption. With one unit increase in education there is 2.980 times increased chance in adoption. It means trainees with higher education are more likely to take a risk and use the technology.

Farm size was found to have positive and significant influence on adoption. With one unit increase in education there is 3.733 times higher odds of adopting a fisheries unit. Because larger farms can diversify their operations by pursuing businesses such as aquaculture and crop farming. Diversification can lessen the risks associated with relying on a single enterprise.

Thus analysis clearly shows that gender, education, occupation and farm size were major influencing factors in adopting fishery unit the results are conformity with findings of Roy *et al.* (2018) [6].

Table 4: Logistic regression coefficients of the factors affecting adoption of fishery unit

SI. No	Particulars	B	Std. Error	Sig.	Odds ratio
1	Age	0.347	0.407	0.394	1.415
2	Gender	1.677*	0.924	0.070	5.350
3	education	1.902**	0.520	0.036	2.980
4	Occupation	-0.972**	0.411	0.018	0.378
5	Farm size	1.317***	0.380	0.001	3.733

Note: ***, **and* significant at 1, 5 and 10 percent respectively

Post training adoption of various practices

According to the results, the majority of respondents have fully adopted seed production techniques (72%), harvesting techniques (50%) and storage/preservation techniques (55%). most of respondents (50%) adopted disease management as partially. 44 per cent of respondents said they had not used

value-addition techniques. But just 22 percent of people were able to adapt fully, compared to 33.3 per cent who were able to adopt partially. This may be because of insufficient infrastructure or facilities, which might limit the extent that which raw fish can be turned into higher-value products such as canned fish, fish meal or fillets.

Table 5: Post training adoption of various practices

SL. No	Practices	Fully Adopted		Partially Adopted		Not at all Adopted	
		Frequency	%	Frequency	%	Frequency	%
1	Seed production techniques	13	72.2	5	27.7	0	0.00
2	Disease management	8	44.4	9	50.0	1	5.5
3	Harvesting techniques	9	50.0	8	44.4	1	5.5
4	Storage/preservation techniques	10	55.5	6	33.3	2	11.1
5	Value addition techniques	4	22.2	6	33.3	8	44.4

Conclusion

By attending EDP, higher percentage of the trainees had increased their knowledge on fishery activity and gained moderate to higher level of confidence to start and manage business. The EDP encouraged the trainees to identify available business opportunities and to establish fishery units. Through the use of participatory methods and group activities, an immersive learning experience was produced, promoting a dynamic and collaborative environment. Gender, education, occupation and farm size of the trainees were found to have significant association towards adoption of fishery unit. Conduct regular training reviews to ensure that it remains updated with developments in the sector. This proactive strategy will allow ni-msme to quickly react to new trends and technical breakthroughs. By establishing an alumni interaction programme to stay in touch with prior participants. This network can be a significant resource for knowledge exchange, mentorship, and ongoing career development. By expanding on these positive outcomes and putting strategic recommendations into practice, ni-msme may further strengthen the influence of its aquaculture training programme, promoting both the participants' success and the sector's sustainable growth. Ni-msme standing as a pioneer in aquaculture education and training will surely be bonded by its dedication to quality and ongoing development.

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