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RESEARCH ARTICLE

Sustainable Entrepreneurship of Farm Women through Duck Farming in Purba Bardhaman District of West Bengal, India

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ABSTRACT

Duck farming plays a vital role in satisfying daily protein needs and increasing the household income of farm families in the state of West Bengal, India. In this backdrop of fact, the study has been conceptualized to find the sustainable livelihood empowerment potentiality of rural women through duck farming in the Purba Bardhaman district of West Bengal, India. A total of 120 number of sample population were collected randomly from 2 blocks, i.e., Katwa-1 and Katwa-2 of Purba Bardhaman district in the state of West Bengal. Data were collected with the help of a pre-tested designed interview schedule, complied, tabulated, and analyzed through statistical tools such as Mann–Whitney U test, Kruskal–Wallis Test, Mean ± SE, and correlation analysis with the help of Statistical Package for the Social Sciences-20.0 statistical software for better interpretive study. The analytical facts indicated that the Entrepreneurial Potentiality of the Katwa-I block is quite better due to their better attitude and adoption of improved duck farming practices, which is indicative for specific interventions to explore entrepreneurial potentiality among the stakeholders. The analytical study also implied that personnel cosmopolite sources, social participation, and knowledge in duck farming are the key variables for sustainable entrepreneurship and livelihood empowerment among the farm women stakeholders in the functional area of study.

Key words: Duck farming, entrepreneurship, farm women, rural, etc., sustainable

INTRODUCTION

Duck farming plays a pivotal role in satisfying daily protein needs and increasing household income of farm families in the state of West Bengal, India. The total duck's population in India is 33.51 million, which is only 3.93% of the total poultry population and ranks 2nd in the World. The top most state in duck population and production is West Bengal (37.87%) with a population of 6.54 million (BAHS, 2016). Among the alternate poultry species, the contribution of ducks for egg and meat production is next to the chicken. The requirement for egg and poultry meat in India is 180 and 10.8 kg per person per annum and per capita availability of egg and poultry meat is only 86 and 2.2 kg. There are many advantages of duck production over chicken such as long production year, large size eggs, early morning egg laying, hardiness to diseases, suitability for integrated farming and different types of rearing systems, survivability in moist land, easily tamed, and maintenance under minimum input system. Duck farming is predominantly extensive, small scale and women led rural farming practices in the state of West Bengal. Therefore, ducks farming should be explored for both egg and meat production, to become self-sufficient and for sustainable nutritional security and empowerment of women in the state of West Bengal. Considering these backgrounds, a study has been conceptualized

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to find sustainable entrepreneurship and livelihood empowerment of farm women through duck farming in Purba Bardhaman district of West Bengal, India.

RESEARCH METHODOLOGY

The investigative study was carried out in purposively selected Purba Bardhaman district in the state of West Bengal, India. From the selected district, two blocks, i.e., Katwa-1 and Katwa-2 were selected purposively, considering the density of the sample population selected for the present study. From each block, 60 no's of the sample population were selected randomly, which formed a total of 120 numbers of the sample population for the research study. Interviews of respondents and field examinations were used to accumulate data with the help of a pre-tested designed interview schedule from October to November, 2023. The Entrepreneurship Development Index scale, in relation to Animal Husbandry practice, was used as a dependent variable (Y_1) along with 19 number of independent variables, in which 07 sociopersonal, 05 socioeconomic, 04 communication, and 03 socio-psychology variables as independent variables for the present study. All the accumulated data were collected, complied, and tabulated to analyze through statistical tools, such as Mann–Whitney U test, Kruskal–Wallis Test, Mean ± SE, and correlation analysis with the help of Statistical Package for the Social Sciences-20.0 statistical software for better interpretive study.

RESULTS AND DISCUSSION

Table 1 the study revealed that the respondents of the Katwa-I block are highly significantly better ($P < 0.01$) in terms of attitude in duck farming and adoption in duck farming, whereas significantly higher ($P < 0.05$) in mass media source use than Katwa-2 respondents in the functional area. Simultaneously, the findings revealed that respondents of the Katwa-2 block are highly significantly better ($P < 0.01$) in terms of Personnel Localities Sources than Katwa-I respondents in the adopted area. The analytical facts indicated that the Entrepreneurial Potentiality of the Katwa-I block is quite better due to their better attitude and adoption of animal husbandry practices, which is indicative for specific interventions to explore entrepreneurial potentiality among the stakeholders. Thilakar *et al.* (2021) reported that the majority of duck farmers of advanced age (more than 45 years) have better knowledge and attitude than non-adopted stakeholders and supported the present study.

Table 2 the study revealed that the mean value of nuclear family respondents was significantly higher ($P < 0.05$) than joint family respondents with respect to enterprise diversification and degree of satisfaction as a component of the entrepreneurship development index of sample respondents in Purba Bardhaman District of West Bengal. However, considering the mean value of other components, i.e., reinvestment of profit, plan to start new enterprise, and opinion leadership, etc., was no significant differences between nuclear family and joint family respondents in the adopted area. Hossain *et al*. (2021) found in their study that nuclear family respondents are keener in entrepreneurship development and support the findings of the study. The analytical findings suggest that the nuclear family is more conducive to enterprise diversification and satisfaction in developing any kind of entrepreneurship than joint family respondents, which was indicative of specific interventions to develop entrepreneurship among stakeholders in functional areas.

Table 3 the study revealed that the mean value of OBC-B category respondents was significantly higher ($P < 0.05$) than other categories, i.e., General, OBC-A and scheduled caste respondents with respect to reinvestment of profit and plan to start new enterprise as a component of entrepreneurship development index of sample respondents in Purba Bardhaman District of West Bengal. However, considering the mean value of other components, i.e., enterprise diversification, satisfaction, and opinion leadership was no significant differences among various categories of respondents in the adopted area. Mallick *et al*. (2014) revealed in their study that general category respondents are more diversified for entrepreneurship and support the present study. The analytical findings suggest that the OBC-B category of respondents had more potential in diversified entrepreneurship than other categories of respondents, which is indicative of specific interventions to develop entrepreneurship among the stakeholders in the functional area.

Table 4 shows the relationship among selected independent variables and the entrepreneurship

Table 1: Mann–Whitney U test of selected independent variables between Katwa-I and Katwa-II blocks of Purba Bardhaman District of West Bengal is as follows

	Mean									
Block	**Age**	**Education**	**Livestock holding**	**Gross income**	**Mass Media**	**Personnel cosmopolite**	**Personnel localite**	**Attitude in duck farming**	**Know in a duck farm**	**Adoption index**
Katwa-I	2.07	1.55	12.95	2.83	2.93	3.72	8.23	19.68	30.479	2.2485
Katwa-II	2.07	1.32	11.98	2.65	2.20	3.75	9.83	18.38	30.050	1.9608
Test statistics[a]										
MW U	1796.000	1743.000	1721.500	1586.500	1342.000	1526.000	808.000	1062.000	1722.000	1208.000
Wilcoxon W	3626.0	3573.0	3551.5	3416.5	3172.0	3356.0	2638.0	2892.0	3552.0	3038.0
Z	−0.032	−0.324	−0.447	−1.21	−2.478	−1.484	−5.45	−3.966	−0.411	−3.154
Asymp. Sig. (2-tail)	0.974	0.746	0.655	0.227	**0.013****	0.138	**0.000***	**0.000***	0.681	**0.002***

a. Grouping variable: Block. Mann–Whitney U test suggests significant differences in various selected independent variables between the Katwa-I and Katwa-2 blocks of Purba Bardhaman District of West Bengal

Table 2: Kruskal–Wallis test of independent variable (family type) and various component of entrepreneurship development (dependent variable) in Purba Bardhaman district, West Bengal

	Mean				
Family type	**Enterprise diversification**	**Reinvestment profit**	**Satisfaction**	**Plan start new enterprise**	**Opinion leadership**
Nuclear family	0.12	1.41	**3.89**	0.63	0.26
Joint family	0.02	0.96	3.66	0.51	0.15
Test statistics[a]					
Mann-Whitney U	1540.500	1456.000	1355.500	1510.500	1620.000
Wilcoxon W	2668.500	2584.000	2483.500	2638.500	2748.000
Z	−1.965	−1.488	−2.417	−1.291	−0.809
Asymp. Sig. (2-tailed)	**0.0498***	0.137	**0.016***	0.197	0.418

a. Grouping variable: Family-type: **P*(<0.05) denotes significant at 5% level of significance. The Kruskal–Wallis test for significant differences between the independent variable (family type) and entrepreneurship development (dependent variable) of sample respondents in Purba Bardhaman District of West Bengal

Table 3: Kruskal–Wallis test of independent variable (caste) and various component of entrepreneurship development (dependent variable) in Purba Bardhaman district of West Bengal

	Mean				
Caste	**Enterprise diversification**	**Reinvestment profit**	**Satisfaction**	**Plan start new enterprise**	**Opinion leadership**
General	0.03	1.21	3.76	0.66	0.14
OBC_A	0.00	1.14	3.71	0.43	0.00
OBC-B	0.13	2.75	4.25	**1.00**	0.38
SC	0.11	1.09	3.78	0.53	0.25
Total	0.08	1.23	3.80	0.58	0.22
Test statistics[a,b]					
Chi-square	2.184	9.015	6.041	7.969	3.784
Asymp. Sig.	0.535	**0.029***	0.110	**0.047***	0.286

b. Grouping variable: Caste. Kruskal–Wallis test for significant differences between independent variable (caste) and entrepreneurship development (dependent variable) of sample respondents in Purba Bardhaman District of West Bengal. SC: Scheduled caste

development index as dependent variables in the present study.

The study revealed that among various components of the entrepreneurship development index, reinvestment of profit was positively and significantly correlated ($P < 0.05$) with personnel cosmopolite source (0.193*) and social participation (0.231*), whereas satisfaction with entrepreneurship development was positively and highly significantly correlated ($P < 0.01$) with personnel cosmopolite sources

Table 4: Correlation coefficient analysis between selected independent variables and entrepreneurship development as dependent variables in the study

	Correlation coefficient analysis				
Independent variables	**Enterprise diversification**	**Reinvestment profit**	**Satisfaction**	**Plan start new enterprise**	**Opinion leadership**
Livestock holding	−0.032	0.048	−0.005	0.108	0.025
Mass media source	−0.078	0.071	−0.025	0.003	0.057
Personnel cosmopolite	0.047	**0.193***	**0.262****	0.149	**0.206***
Personnel localite	0.031	0.004	0.131	0.102	0.096
Social participation	−0.018	**0.231***	−0.036	0.113	0.114
Decision-making pattern	0.009	−0.116	0.068	−0.142	-0.020
Attitude in duck farming	−0.099	0.034	−0.036	−0.029	-0.070
Know. in a duck farm	0.024	0.081	−0.035	**0.204***	-0.050
Adoption in duck farming	−0.075	−0.028	−0.096	−0.006	0.064

*Correlation is significant at 0.05 level and **Correlation is significant at 0.01 level

(0.262**) in the study. Roy *et al.* (2017) observed in their study that, social participation and communication sources are the key factors for knowledge gain and entrepreneurial motivation and support the facts of the study.

Similarly, plan to start new enterprise was significantly correlated ($P < 0.05$) with knowledge of duck farming (0.204*). On the other hand, opinion leadership was positively and significantly correlated ($P < 0.05$) with personnel cosmopolite (0.206*). Finally, enterprise diversification was not significantly correlated with any of the selected independent variables. The analytical study implied that personnel cosmopolite sources, social participation, and knowledge in duck farming are the key variables for entrepreneurship development. Personal cosmopolite sources, i.e., officials of the line department and local Panchayat members were the main sources of information regarding duck farming of the owners in the functional area.

CONCLUSION

Duck farming is predominantly extensive, small scale and women led rural farming practices in the state of West Bengal. The study revealed that, the respondents of the Katwa-I block are better in terms of attitude, adoption index, and mass media source use in improved duck farming than the Katwa-2 block, whereas respondents of the Katwa-2 block are better in terms of personnel localities sources, than Katwa-I respondents in the adopted area. The analytical facts indicated that the entrepreneurial potentiality of the Katwa-I block is quite better due to their better attitude and adoption of improved duck farming practices, which is indicative for specific interventions to explore entrepreneurial potentiality among the stakeholders. The analytical findings suggest that, the OBC-B category of respondents with nuclear families had more potential in diversified entrepreneurship than other categories for enterprise diversification and satisfaction in developing any kind of entrepreneurship. The analytical study implied that personnel cosmopolite sources, social participation, and knowledge in duck farming are the key variables for entrepreneurship development. Personal cosmopolite sources, i.e., officials of the line department and local Panchayat members were the main sources of information regarding duck farming of the owners in the functional area, which is essential for successful entrepreneurship development among the respondents in the functional area.

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