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Influence of Socio Economic Variables on Level of Adoption of Prawn/Fish Pickle Making Technology

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The study attempts to explore the level of adoption of prawn/fish pickle making technology by coastal fisherwomen and the influence of socio economic variables on the adoption. Level of education, social participation, extension agency contact, mass media exposure, risk orientation and economic motivation were found to be the factors influencing awareness, knowledge level and adoption of the technology.

Key words: Socio economic variables, pickle making technology, adoption

Aquatic resources immensely contribute to the livelihood of the poor people in the coastal areas, in addition to generating employment. A sizeable population is involved in fishing activities including seed collection, fish culture, marketing and preparation of diversified fish products. These people could be mobilized to undertake projects intended for better utilization of fish catch. Pickling is one such activity, which can create substantial income by effectively utilizing the low cost fish for value addition. The present investigation was undertaken as a part of world bank sponsored National Agricultural Technology Project to study the profile of coastal fisherwomen, their awareness on various value addition activities and variables contributing knowledge and adoption of pickle making technology.

Materials and Methods

Skill oriented field training on preparation of fish and prawn pickle was imparted to twenty two self help groups (SHGs) of fisherwomen at Kattur, a coastal village in Tamil Nadu, in March, 2002. Thirty five respondents were selected from the 22 SHGs at random for the study of various parameters including socio economic characteristics, awareness of the technology and motivation levels. With an interview schedule, data were collected and suitable statistical tools were used to analyze the information gathered. The selected independent variables were age, education, occupation, family type, marital status, social participation, extension agency contact and the dependent variables were awareness, knowledge and adoption of prawn/fish pickle making technology.

Simple correlation was employed to examine the relationship between the variables and multiple regression analysis to find out the extent of contribution of all independent variables on a single set to the dependent variables. Percentage analysis was done to make simple comparisons wherever necessary and corrections of percentage were made to 2 decimals.

Results and Discussion

The data in Table 1 reveal that majority of the respondents belonged to the category of young (51.4%) and middle (31.4%) age group

It was revealed that 34.3 percent of the farmwomen were functionally literate followed by primary, secondary and middle class education. The respondents were almost divided equally as small and large family size. Majority of them were married. With regard to occupational status, majority

Table 1. Socio economic characteristics of respondents

Category	No.	%
Age		
Young (upto 35 years)	18	51.4
Middle age (36-45)	11	31.4
Old (>45)	6	17.7
Educational status		
Illiterate	4	11.4
Functionally literate (read & write)	12	34.3
Primary education	8	22.9
Middle education	5	14.3
Secondary education	6	17.1
Collegiate	–	–
Family type and size		
Upto 5 members (small)	16	45.7
>5 members (large)	19	54.3
Marital status		
Unmarried	10	28.6
Married	25	71.4
Occupational status		
Aquaculture only	13	37.2
Aquaculture + agriculture	11	31.4
Aquaculture + business	6	17.1
Aquaculture + services	5	14.3

of them had aquaculture as their livelihood option followed by aquaculture together with agriculture.

A majority of the respondents had medium to high level of extension agency contact, mass media exposure, risk orientation or economic motivation as shown in Table 2. This is because of their close interaction with CIBA staff and the motivation they gained from them. It could be inferred from Table 2 that educational status, occupation, social participation, extension agency contact, mass media exposure, risk orientation, and economic motivation were found to be positive and highly significant at one percent level. Family type and size showed non-significant relationship with awareness.

The age and marital status were found to be negatively significant at one percent level, which indicate that young, and unmarried fisherwomen have higher awareness compared to old and married women. It might be due to less family worries and not much responsibility to maintain their family.

The relation between the educational status and awareness level was found to be highly significant. The probable reason might be that the respondents with higher education had more exposure to information sources, which could improve their standard of living. Being fisherwomen, they were familiar with fish resource, fishing skills of fish handling and other related activities. This helped them understand the value addition information and skill.

Occupational status was found to be highly significant with awareness level. The reason might be the dependence of the respondents on aquaculture for their livelihood rather than other options, which made them to know things related to the same.

It was clear from the Table, that with high social participation, extension agency contact and mass media exposure, the respondents' awareness level increased. This might be due to involvement in rural social

Table 2. Distribution of respondents by other socio economic variables

Variable	Low		Medium		High	
	No	%	No	%	No	%
Social participation	14	40	12	34.3	9	25.8
Extension agency contact	10	28.6	5	14.3	20	57.1
Mass media exposure	9	25.7	14	40.0	12	34.3
Risk orientation	8	22.9	5	14.3	22	62.9
Economic motivation	9	25.7	3	8.6	23	65.7

Table 3. Zero order correlation coefficient between characteristics of respondents and adoption of pickle making technology

Independent variables	Correlation coefficient (r values) Awareness	Knowledge	Adoption
Age	-0.4680**	-0.2410	-0.2680
Educational status	0.7350**	0.5810**	0.5760**
Occupation	0.4730**	0.3270	0.2890
Family type & size	-0.1170	-0.1320	-0.0150
Marital status	-0.5740**	-0.3790*	-0.3720*
Social participation	0.6550**	0.5330**	0.5410**
Extension agency contact	0.8490**	0.7880**	0.9050**
Mass media exposure	0.4770**	0.3560**	0.3430*
Risk orientation	0.9020**	0.8810**	0.9120**
Economic motivation	0.7840**	0.6900**	0.8570**
Awareness	—	0.8310**	0.9100**
Knowledge	—	—	0.8560**

**Correlation is significant at 0.01 levels;
*Correlation is significant at 0.05 level

institutions, availability of required information from extension agency and mass media, which could improve their awareness about fish value addition. Higher economic motivation and risk orientation could motivate the farmwomen to search for high-income revenue sources and hence these two variables showed positive relationship with awareness level.

The characteristics of the respondents were found to have positive and highly significant relationship with the knowledge level. Other variables, except marital status, showed insignificant relationship with the knowledge level. With regard to marital status, it showed a negative and significant relationship with the knowledge level. This might be due to lesser exposure of the married women to the information sources compared to the unmarried. Awareness about the venues of the improvement could motivate/encourage the farmwomen to seek further information to take up the new technology.

Similar results were obtained in the case of adoption level. While taking the awareness and knowledge level as the independent variables, there was positive and significant relationship with the adoption level. It might be due to higher awareness and knowledge level, which helped them to know the benefits of the new technology for enhancing their socio economic status.

It could be observed from Table 4 that the coefficient of multiple regression (R^2) was 0.913 and 0.819, respectively for the dependent variables namely awareness and knowledge level of respondents, which were significant. It implies that all the ten variables contributed to the extent 91.30 and 81.90 percent variation in the dependent variables, viz., awareness and knowledge about the technology respectively.

Table 4. Multiple regression analysis of socio economic characteristics

Socio-economic characteristics	Partial Regression Coefficient Awareness	Knowledge	Adoption
Age	-0.3699	0.2096	0.0393
Educational status	0.1738	0.1168	0.0297
Occupation	-0.0381	0.0054	-0.0200
Family type & size	-0.1045	-0.1055	0.0480
Marital status	-0.4523	-0.0133	0.0072
Social participation	0.0599	-0.0615	-0.0117
Extension agency contact	0.1193	0.2050	0.0967**
Mass media exposure	0.1616NS	0.2448	0.0626**
Risk orientation	0.5496**	0.6356**	0.0929
Economic motivation	0.2824	-0.1403	0.0380
Awareness	—	0.1771	0.0845**
Knowledge	—	—	0.0021
R^2	0.9130	0.8190	0.9610

**Significant at 0.01 level; *Significant at 0.05 level

Of the ten independent variables considered for the study, only one variable viz., risk orientation contributed significantly towards the awareness and knowledge of the technology. This indicated that a unit change in above mentioned variable would increase the awareness and the knowledge to an extent of 0.5496 and 0.6356 unit keeping other variables constant. The above finding

revealed that risk orientation highly influenced the awareness and knowledge level of the respondents.

Thus it is clear that the ten selected independent variables along with awareness and knowledge taken together explained for 96.10% of the variation in their adoption level. A unit increase in extension agency contact, mass media exposure and awareness will increase 0.0967, 0.0626, 0.0845 unit in the respondents adoption level.

Lack of assured market was the foremost problem expressed by the farm women followed by low price for products (Table 5). The farmwomen are well aware of this problem because they sell their products locally. Lack of well-organized distribution network is another reason in this regard. In addition, regular supply of the products is difficult during off-season due to non-availability of raw materials, which also hinders the prospects of consistent market.

Table 5. Problems encountered by the adopters of pickle making technology

Problem	No.	%
Lack of assured market	35	100.0
Low price for the products	32	90.1
Lack of marketing information	30	85.7
Poor working capital	26	70.4
Non availability of raw material during off season	23	60.6
Attractive and cheap packaging material	14	40.0

Poor working capital is another major problem for adoption of the technology. This fear was expressed by nearly 70% of the respondents.

The non-availability of attractive, cheap and flexible packaging material, to replace the conventional glass bottles is yet another problem faced by the farmwomen.

Table 6 gives factors motivating the adoption of pickle making technology. Lack of alternate employment in off seasons and improper preservation and storage of fish during glut season are factors favouring propagation of the technology. Because of these reasons, income generation was the chief motivating factor and ranked first by the farmwomen. This was followed by availability of an opportunity for effective utilization of low cost fish. Cooperation among SHG members was ranked third, which was essential for group work and for effective utilization of the funds taken on loan. Training programmes were ranked last, as the requirement for proper adoption of technology.

To conclude, factors like integrity of group members, training in improved and hygienic methods of handling and processing and above all enthusiastic marketing technology will motivate the farmwomen to adopt the technology in a commercial way.

References

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