

Socio-Economic Status of Marine Fishermen in Two Fishing Villages of Orissa

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The socio-economic status of fishermen in two marine fishing villages of Orissa State viz., Pentakota and Belinoliasahi were measured using a Socio-economic Status Index (SESI) developed in the study. It was seen that the mean SESI scores of respondents in these two villages (57.53%) had differed significantly at 1% level. Of the nine regression co-efficients calculated between the SES scores and independent variables, the regression co-efficient of two variables viz., knowledge about technological practices and sources of information used were found to be positive and significant in Pentakota village and the R^2 (73.38%) was highly significant. But in Belinoliasahi, the R^2 (28.30%) was not significant. The results also revealed that the fishermen had favourable attitude towards the motorisation of fishing crafts (71.60% and 81.56%) in both the villages.

Key words: Socio-economic status, fishermen, Orissa

In spite of large scale awareness about fishery technological practices, fishermen could not adopt costlier innovations due to socio-economic constraints (Balasubramaniam *et al.*, 1991). In a fishing village, even though, the fishermen have more or less a common life style and social background, the ownership pattern of fishing craft and gear, and individual status vary. Considering the non availability of a precise method to measure the socio-economic status of fishermen, the present work was undertaken with the following specific objectives: i) to delineate the various components and measure the socio-economic status of marine fishermen in the selected fishing villages ii) to determine the role of the selected variables in influencing the socio-economic status of fishermen and iii) to assess the relationship between the selected variables and attitude of fishermen towards motorisation of traditional crafts.

Materials and Methods

In order to measure the socio-economic status, twenty components were delineated by examining the literature and through

pre-testing. Then, 35 experts were requested to assign weightages/percentages scores to these 20 components in such a way that the total of these 20 weightages comes to 100. While assigning weightages, the importance of each component as an indicator of socio-economic status was considered by the experts. Based on the responses, the arithmetic means of components were calculated to obtain the final weightages of 20 components. These components were categorized into three major categories viz., personal factors, social factors and economic factors. These categories and the weightages of 20 components are given in Table 1.

The weightages assigned to 20 components were further divided among the different rating scale categories in each component, based on the experience and expertise of five experts. The reliability coefficient of the socio-economic status index was calculated by the test-retest method (Guilford, 1984) and was found to be high (0.933). The validity of the index was ensured by content validity.

Table 1. Weighted components of socio-economic status index of fishermen of two of fishing villages in Orissa

Components	Weightages (%)
Personal factors	
Experience	15
Education	6
Subsidiary occupation	4
Marital status	2
Information sources used	3
Type of personality	3
Peer group communication	3
Sub total	36
Social factors	
Type of family	3
Caste	3
Social participation	4
Social group affiliation	4
Adherence of social values & laws	3
Sub total	17
Economic factors	
Crew engaged	4
Land owned	5
House owned	5
Material possession	5
Investment on craft	8
Investment on nets	7
Investment on engine	6
Annual income	7
Sub total	47
Grand total	100

For measuring the attitude of fishermen towards motorization of traditional crafts, an attitude scale was developed based on the equal appearing interval method (Thurstone & Chave, 1929) with slight modifications (Edwards, 1969). The reliability of the scale was determined by test-retest method and the validity of the scale was ensured by content validity.

Independent variables such as risk preference, information need, credit orientation, cosmopolitan/local nature, technological adoption and sources of information were measured through different rating scales and then, corresponding index scores were

calculated. High score on the cosmopolitan nature referred to the tendency of an individual to be in contact with those outside his own community while lower score on the index referred to the local nature which meant the confinement of an individual within his own community. Knowledge about technological practices was measured through a teacher test developed for the purpose. Interview schedules were used for collecting the data from the random samples of 50 fishermen in each of the two fishing villages selected viz., Pentakota and Balinoliasahi in Orissa State during the year 1995-96.

Results and Discussion

The socio-economic status index (SESI) mean scores of fishermen respondents in the two fishing villages are given in Table 2. The results revealed that the mean SESI score of fishermen in Pentakota village was higher (57.52%) than the mean index score of fishermen in Balinoliasahi village (47.55%) and the socio-economic status difference between the fishermen in these two villages were found to be highly significant at 1 per cent level.

It could be seen that the fishermen of Pentakota village had significantly higher mean scores on all the three major components viz., personal factors, social factors and economic factors than the fishermen of Balinoliasahi village.

It was also observed that due to the operation of marine plywood boats with outboard engines, synthetic fishing nets and, technological advancement was clearly visible in Pentakota than in Balinoliasahi village where the catamarans and other non motorized crafts were more predominant. Thus, it is evident that technological advancement of a fishing village such as Pentakota would also result in overall significant progress on the socio-economic status of fishermen (mean ESI = 57.52% in Pentakota and 47.55% in Balinoliasahi).

Table 2. Socio-economic status index (SESI) scores of fishermen in two fishing villages in Orissa

Components	Scores assigned	Scores obtained				
		Pentakota (n ₁ :50)		Balinoliasahi (n ₂ :50)		
		\bar{X}	SD	\bar{X}	SD	
Personal factors	36.00	19.82 (55.05%)	3.34	18.30 (50.83%)	3.54	2.36*
Social factors	17.00	10.52 (61.88%)	1.87	9.84 (57.88%)	0.68	2.54*
Economic factors	47.00	27.38 (58.25%)	5.05	19.41 (41.29%)	3.68	9.38**
Total	100.00	57.52	8.51	47.55	5.89	8.03**

* Significant at 5% level; **significant at 1% level
 Figures in parathesis indicate percentage of assigned scores

When the mean scores of these factors were expressed in terms of percentages of assigned weightage, it was seen that in Pentakota village, the scores obtained were 61.88% of the maximum possible on social factors, 58.25% of the maximum possible on economic factors and 55.05% of the maximum possible on personal factors. Similarly in Balinoliasahi village also, the scores obtained were 57.88% on social factors, 50.83% on personal factors and 41.29% on economic factors. Thus, in both villages there was further scope for improvement in their social, personal and economic conditions.

The mean scores and standard deviations of nine selected variables of fishermen in the two fishing villages are given in Table 3. The results revealed that there are significant differences between the fishermen of Pentakota and Balinoliasahi villages on all variables except cosmopolitan/local nature. Of the eight differentiating variables, the fishermen of Pentakota had higher mean scores on four variables viz., knowledge about technological practices, technological adoption, sources of information, and credit utilization. The fishermen of Pentakota had lower mean scores on four variables viz., risk preference, information need, attitude towards motorization of crafts and number of fishing days per day. On an average, Pentakota had higher technological adoption, higher knowledge about technological

practices and used more communication channels besides increased credit utilization.

Due to higher investments and comforts in existing fishing crafts, it was observed that they had preferred lesser risks than the fishermen of Balinoliasahi village. Further, average number of fishing days per year was higher for the fishermen of Balinoliasahi as they could operate their non-motorized

Table 3. Mean scores (%) and standard deviations of selected variables in two fishing villages in Orissa

Variables	Pentakota (n ₁ =50)		Balinoliasahi (n ₂ =50)		't'
	* %	SD	* %	SD	
Risk preference	57.95	12.05	81.35	4.77	14.38**
Information need	42.71	14.19	49.60	5.20	3.17**
Attitude towards motorization of crafts	71.60	3.68	81.56	6.87	9.15**
Credit utilization	85.76	6.36	9.33	25.52	4.32**
Cosmopolitan-local nature	73.27	29.91	81.86	21.63	1.97
Knowledge about technological practices	83.30	5.94	72.50	4.43	9.78**
Technological adoption	64.80	16.44	43.20	16.34	6.14**
No. of fishing days in a year	268.60	30.10	325.60	16.18	11.55**
Sources of information used	22.31	6.74	15.52	5.15	5.51**

**Significant at 1% level

crafts like catamarans without much operational expenses. The results further revealed that the fishermen had favourable attitude towards the motorisation of fishing crafts in both the villages ($X_1 = 71.60$; ($X_2 = 81.56$) and the fishermen in Balinoliasahi had shown more positive attitude than in Pentakota village.

The correlation and regression coefficient calculated between the socio-economic status and the selected independent variables are given in Table 4. It was seen that in Pentakota village, information need, cosmopolitan/local nature technological adoption and sources of information were found to have positive and significant

Table 4. Correlation and partial regression co-efficient of socio-economic status indices and selected variables.

Variables	Pentakota ($n_1:50$)				Balinoliasahi ($n_2:50$)			
	Cor. Coeffts	Partial reg. Coeffts	Std. Error	't'	Cor. Coeffts.	Partial reg. Coeffts.	Std. error	't'
Risk preference	-0.299*	-0.055	0.066	0.834	-0.041	-0.099	0.184	0.535
Information need	0.436*	0.054	0.061	0.880	0.287*	0.354	0.194	1.825
Attitude towards motorization of crafts	0.146	0.154	0.196	0.890	-0.275	-0.375	0.125	3.004**
Credit utilization	-0.059	-0.017	0.127	0.131	0.200	0.044	0.035	1.253
Cosmopolitan / local nature	0.511*	0.045	0.029	1.575	-0.035	0.019	0.042	0.459
Knowledge about technological practices	0.238	0.371	0.126	2.938**	-0.216	-0.270	0.205	1.314
Technological adoption	0.474*	0.037	0.056	0.657	-0.139	0.178	0.062	0.289
No of fishing days in a year	0.215	0.006	0.026	0.216	-0.032	0.013	0.055	0.229
Sources of information used	0.791**	0.764	0.143	5.388**	0.070	-0.032	0.164	0.192

* Significant at 5% level $R^2 = 0.734$; $F=12.256$ *

$R^2 = 0.283$; $F = 1.754$

** Significant at 1% level

Table 5. Attitude towards motorization of crafts and influence of selected variables in two fishing villages in Orissa

Variables	Pentakota ($n_1:50$)				Balinoliasahi ($n_2:50$)			
	Cor. Coeffts	Partial reg. Coeffts	Std. Error	't'	Cor. Coeffts.	Partial reg. Coeffts.	Std. error	't'
Risk preference	0.018	0.110	0.053	0.209	-0.299	-0.347	0.204	1.701
Information need	0.093	0.034	0.049	0.697	0.280*	0.376	0.223	1.687
Credit utilization	0.023	0.027	0.101	0.268	0.132	0.040	0.040	1.005
Cosmopolitan / local nature	0.581	0.006	0.024	0.269	0.040	0.037	0.048	0.774
Knowledge about technological practices	0.211	0.109	0.110	0.993	-0.157	-0.249	0.236	1.054
Technological adoption	0.032	0.010	0.045	0.216	-0.010	0.008	0.071	0.118
No. of fishing days in a year	-0.013	-0.010	0.0205	0.508	-0.064	0.007	0.063	0.115
Sources of information used	-0.003	-0.155	0.147	1.053	0.051	-0.072	0.187	0.383
Socio-economic status	0.146	0.111	0.125	0.900	-0.275	-0.490	0.163	3.004**

$R^2 = .095$; $F = 0.467$

$R^2 = .312$; $F = 2.012$

correlation with the socio-economic status of fishermen. 'Risk preference' was found to be negatively correlated with the socio-economic status. Earlier studies reported that in agriculture, the farmers with higher socio-economic status were found to prefer risks in innovative farming (Rogers & Shoemaker, 1971; Singh, 1982; Juliana *et al.*, 1991). However, among the fishermen, socio-economic status and risk preference were found to be negatively correlated, probably, due to the differences in the nature of occupation.

Only two variables viz., the knowledge about technological practices and sources of information, had shown significant regression coefficient among the fishermen in Pentakota village. When all variables were taken together, they had accounted for 73.38% of the variation on the socio-economic status scores of fishermen and the R^2 value was found to be highly significant. In Balinoliasahi village, it was seen that the independent variables had accounted only 28.30% of the variation on the dependent variable and the R^2 was found to be non significant. It could be interpreted that as the knowledge, technological adoption and number of information sources were more positively associated with the socio-economic status, the fishermen in the higher socio-economic category would have to be convinced initially and their participation would positively influence others. Rogers & Shoemaker (1971) also reported that the elites in the clientele system acted as the gatekeepers while the change agents introduced innovations.

The influence of selected variables on the attitude of fishermen towards the motorization of fishing crafts is given in Table 5. The results revealed that in Pentakota village, none of the variables had

yielded significant correlation and regression coefficients. The R^2 was found to be low (0.095) and non significant. In Balinoliasahi village, when there was an increase in the socio-economic status, there was corresponding decrease in the attitude score. Probably, this might be one of the reasons for the predominance of non motorized crafts in Balinoliasahi among all the categories of fishermen. R^2 was found to be low (0.3116) and non significant in this case.

Thus, the study revealed that precise measurement of socio-economic status of fishermen in fishing villages will indicate the less developed components in each village and they can be taken as the bench mark levels before initiating development programmes.

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