
SOCIOLOGICAL AND ECONOMIC PROBLEMS: AN EMPIRICAL INVESTIGATION WITH FISHERMEN FAMILIES WITH SPECIAL REFERENCE TO TAMILNADU COASTAL AREAS

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Abstract

The research is helps to find demographic and biographic characteristics of fishermen families with special reference to Tamilnadu coastal areas, to identify the sociological and economic problems for fishermen families with special reference to Tamilnadu coastal areas. The nature of the research is exploratory method, and the sample size is 522 fishermen families from various locations in India, Tamilnadu coastal areas and data collection method used in the research is "Questionnaire Method". Data will be analyzed by using SPSS 20.0. Findings, suggestions and conclusions were made by keeping an eye on the research objectives.

Keywords: Sociological, Economic Problems, Fishermen Families, Demographic and Biographic Characteristics

Introduction

Tamilnadu is one of the leading States in India in Fisheries Development having coastal length of 1076 km. Tamilnadu is bordered on the north by Andhrapradesh State, on the north west by Karnataka state, on the west by Kerala state and on the east and south by the Bay of Bengal and the Indian Ocean. Tamilnadu has an area of 1,30,058 sq.km. (50,216 sq.miles). The geographical position of Tamilnadu state lies between north latitude to 8o 5'and 13o 35' east longitude between 76o 15' and 80o 20'. It is separated from Srilanka by narrow Palk Strait. The climate is tropical. The temperature during summer reaches 40oC and in winter it rarely falls below 20oC. Rain fall occurs during the North east monsoon period from the months of October to

December. The normal annual rain fall is 915 m.m. The total population of Tamilnadu is 6,24,05,679. The per capita income at current price is Rs.23,476 and at constant price Rs.13,423.

Past Studies Related to the Research

Ganesh Kumar et al., (2008) this study has been conducted in all the major coastal states and some selected inland states to understand the domestic marketing of fish in India. The total marketing costs of auctioneer, wholesaler, retailer, vendor, marine fishermen cooperative society and contractor/freshwater fishermen cooperative society have been found to be `0.98, `8.89, `6.61, `4.50, `6.00 and `3.51, respectively. The marketing efficiencies for Indian major carps (IMC), sardine and seer fish have been found to vary from 34 per cent to 74 per cent depending on the length of market channel. The marketing efficiency has been found more in the case of marine species than freshwater species, since the latter travel longer distances from the point of production to consumption centre, passing many intermediaries as compared to the former. The fisherman's share in consumer's rupee has shown variations across species, marketing channels and markets. The infrastructure facilities at most of the surveyed landing centers, fishing harbors and wholesale and retail markets have been found grossly inadequate and poorly maintained. The study has highlighted the need for formulating a uniform market policy for fishes for easy operation and regulation, so that the country's fish production is efficiently managed and delivered to the consuming population, ensuring at the same time remunerative prices to the fishers.

RagupathyVenkatachalam (2005) in his article the objective of the paper was examined the threat to the substantially of the fisheries in India and in particular in the Gulf of Manner region. It is widely quoted that the depletion is due to the introduction of trawler fishing techniques, which scrape the bottom of the sea and end up catching juvenile fish. In viewing this problem of over fishing (by the trawlers) as a negative externality to the traditional fishing community, the best way to internalize the social cost inflicted by the people who over fish is the question that this study attempts to seek the answer for. One of the most commonly practiced techniques to sustain the fisheries resource is the blanket ban on fishing during specific months of the year like the one practiced in the coastal regions in India. The researcher has attempted to critically evaluate the effectiveness of this method of resource conservation. The researcher has also proposed an alternative model for sustaining the resources, which would be an effective solution for the problem.

Nirmal Chandra et al., (2009) in their articles remarked that the fisherwomen of Gopalpur have a vibrant organization called 'Kalinga Fish Workers Union' that fights for their rights. The women also assert their rights through self-help groups (SHGs) and through participation in the Panchayat. The girl children are now sent to school. Women in the area with the help of the local NGOs began to protest against child

marriages and child labor. They have also fought against illegal taxes. The economic contribution of fisherwomen to their families is quite significant. The income of the fisherwomen is mainly determined by the amount of time allocated to collection, processing and marketing of fish. The age, body weight, marital, maternity status and education do not significantly influence their income. They spend bulk of their time on fishery and household activities. There is no scope for leisure and pleasure. They are being exploited by the middlemen and traders belonging to their own community and others. The fisherwomen are aware of the conditions of sustainability such as diversity, alternative sources of income, community harmony and familial equilibrium.

Their traditional ecological knowledge (tek) needs documentation, recognition and appreciation. The natural fishery capital stock in the sea and land resources in the coast needs protection. The fisher people's council should be recognized as a socio-political institution.

JeseVerebalavu (2009) in her paper even though artisanal fisherwomen have never been educated about basic business management, they have learned a lot about it first hand over the years by selling at the markets. They have also gained knowledge about the importance of keeping their resources as clean and hygienic as possible for the market. Hygiene is illustrated in the type of preservation and packaging of their resources. Income generated from artisanal fisherwomen, small business owners, and female employees of the two fishing companies has a multiplier effect on their families and communities. The contribution of women in industrial fisheries has a huge impact on the individual fishing companies and nation as a whole. In both fishing companies, more than 50 per cent of all employees are women. A significant contribution of the income generated by women in both artisanal and industrial fisheries goes towards their children's education (e.g. primary school, high school and tertiary level). This research has noted that women's involvement in fisheries in Fiji, although underreported, is having a significant socioeconomic contribution towards their households, community and nation as a whole.

Statement of the Problem

This particular research is majorly concentrating on research problem and areas of social issues and upliftment strategies, economical problems and issues in Tamilnadu coastal areas. The findings and recommendations of this entire research study will help to the future endowers of the fishermen families in Tamilnadu coastal areas.

Research Gap

Gap - Identified	Authors	References
"Socio-economic status of marine fisheries along Madras coast", they analysed the main issues and inter relationship existing in the management of coastal fisher folk. They	Sathiadhas and K.K.P Panikkar (1989)	R.Sathiadhas and K.K.P Panikkar, "Economics of catamaram fishing along Madras coast", journal of

had also brought out role played by the fisheries sector in generating employment and income for the weaker sector in backward areas. They had found that fisheries industry had helped in uplifting the standard of living of weaker sections.		marine Biological Accessories in India, Vol.33, No.1 and 2. 1991, PP.241- 245
Quick changes taken place in the fishery due to the introduction of mechanization of traditional fishing crafts. The highlights are (i) the fishermen are benefited by increased catch per unite as well as increased price for the catch by arriving earlier.	Sam Bennet and Arumugam, (1988)	P. Sam Bennet and Arumugam, "New Trends in the Traditional marine fisheries at Tuticorin", CMFRI Bulletin, Cochin, Vol.44, No.1, 1988 PP.155-158

Research methodology

The aim of the research study to find, analyze and strategies to overcome the socio, and economic problems for fishermen families with special reference to Tamilnadu coastal areas. The sample will be collected from more than 522 fishermen families in Tamilnadu coastal areas. The data will be collected through questionnaire by using personal interview. Appropriate statistical tools and techniques were used based on the research objective and hypotheses. The findings, suggestions and conclusions were made based on the research objectives and hypothesis.

Pilot Study

Reliability is the ratio of true variance to the total variance yielded by the measuring instrument. It indicates stability and also the internal consistency of a test. The reliability of a measure indicates the stability and consistency with which the instrument measures the concept and helps to assess the 'goodness' of a measure. A measure is reliable to the degree that it factors consistent results.

Table 1 Cronbach's Alpha test for Reliability

S. No	Variables	Pilot Study	First 30 respondents
1	Demographic factors	0.818	0.821
2	Social problems	0.857	0.859
3	Economic problems	0.875	0.878

Source: Primary data – Questionnaire

Software Used: SPSS 20.0

From the above table 1, it's clear that the alpha value has improved after pilot study. The alpha values for collected from the first 30 respondents after making changes are more than 0.6 which means the statements used to measure the variables are reliable. This implies that there is no further change warranted and there is no early response bias.

Measurement Model for Socio and Economic Problems for Fishermen Families with Special Reference to Tamilnadu Coastal Areas

The measurement model displays the value of normed Chi square 2.180, GFI as 0.86, AGFI as 0.82, CFI as 0.89 and RMSEA as 0.076. These results reveal that all the pre-

requisites for the acceptance of the measurement model are well met. After establishing the individual item reliability of the model, the validity of the model is next tested. The results are presented in the below table.

Table 2 Measurement Model for Socio and Economic Problems for Fishermen Families with Special Reference to Tamil Nadu Coastal Areas

Items	Results of Measurement Model (Confirmatory factor Analysis)				Result of Reliability Test	
	Standard Solutions	T - value	Error Variance	R ²	Delta (Error)	AVE
Demographic factors	0.412	7.47	0.105	0.1697	0.83025	0.51
Social problems	0.509	7.413	0.026	0.2590	0.74091	
Economic problems	0.761	7.009	0.029	0.5791	0.420879	

Source: Primary data – Questionnaire

Software Used: AMOS 20.0

The individual reliability of the items is evaluated using factor loadings, factor loadings above 0.5 is acceptance. In the above table all the factor loadings are above the recommended value it shows the statements are related to the constructs. The internal consistency of all the items is ensured through construct reliability which evaluates the rigorousness with which the latent item is measured by the observable item. The AVE value should not be less than 0.5 to ensure convergent validity of the model.

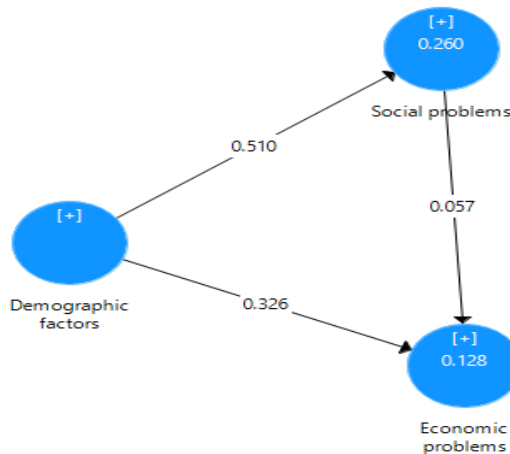


Figure 1 Measurement Model for Socio and Economic Problems for Fishermen Families with Special Reference to Tamilnadu Coastal Areas

Measurement Model for socio and economic problems for fishermen families with special reference to Tamilnadu coastal areafactors is shown in the above figure 1. The construct reliability should be above 0.6 and the measurement model table portrays that the construct reliability value in respect of all the items exceeds the minimum

requisite value. Hence, all the measurable items command the desirable construct reliability.

Analysis and Discussions

Age is an important factor in fisherman's decision in today's scenario. The young fisherman's category of respondents preferred to implement good quality business conditions and operations under one group. They are totally contra in implement good quality of business conditions with old age category, because the old age respondents were accustomed to maintain the good quality in their business operations. The distribution of sample respondents according to one of the demographic factors are shown in the table no 3.

Table 3 Demographic Factors

Demographic Factors	Statements	Frequency	Percentage
Age Group of the Respondents	Less than 35	296	56.7
	36-50	155	29.7
	51 and above	71	13.6
Marital Status	Single	245	46.9
	Married	277	53.1
Education Level	Illiterate	76	14.6
	Schooling	211	40.2
	Graduation	235	45.2
Types of Family	Joint Family	356	68.2
	Nuclear Family	166	31.8
Total		522	100.00

Source: Primary data – Questionnaire

Software Used: SPSS 20.0

Based on the fisherman's age as they are classified into 3 categories viz; young (below 35 yrs.), middle aged (36-50 yrs.), and old aged (above 50). The sample consists 296 (56.7%) fishermen belonged the group in young category 155 (29.7%) responds belonged to middle aged category and 71 (13.6%) responds belonged to old aged categories. This indicates the participation of younger fisherman's is higher than others.

To assess the basic distribution channel, the table shows the fisherman's in Tamilnadu coastal areas. 522 respondents were selected, out of which 245 (46.9%) were 'single' and the remaining 277(53.1%) are 'Married'. This shows the more participation from married respondents.

The sample consists of 76 (14.6%) respondents belonged illiterate level, 211 (40.2 %) respondents belonged schooling level, 235 (45.2%) respondents belonged graduation level. The distribution of sample respondents according to respondents each and fisherman's in Tamilnadu coastal areas are shown in the table 3.

To assess the basic demographic factors of fisherman's in Tamilnadu coastal areas, the table shows the demographic factors of fisherman's in Tamilnadu coastal areas. 522 respondents were selected, out of which 356 (68.2%) were living as a 'Joint family' and the remaining 166 (31.8%) were living as a 'Nuclear family'. This shows the more participation from Joint family.

Neural Network (NN) Model for Socio and Economic Problems for Fishermen Families with Special Reference to Tamilnadu Coastal Areas

The architecture which provides the best fit for the data is the network with eight input layers, twenty nine covariate variables and one hidden layers and one output layer, as shown in figure. The model used in this work is the Feed Forward Multilayer perception, using the Back Propagation Algorithm. Where (4-3-1)

8-Input layers: 29-Covariates layers: 1-Hidden layers: 1-Output layer All inputs are analysed in the experimental validation part, with appropriate output results by the illustration of graphs so that the influences of the parameters of tensile strength are taken into consideration. The network information presented in the table, the validation of the estimated NN and Experimental value illustrations is shown in figure 2.

Table 4 Model Summary for Socio and Economic Problems for Fishermen Families with Special Reference to Tamilnadu Coastal Areas- Neural Network Model

Input Layer	Factors	1	Nature of House
		2	Electricity Facility
		3	Mode of Fishing
		4	Wages of the Respondents
		5	Level of Income and Expenditure
		6	Mode of Savings
	Number of Units ^a		25
Hidden Layer(s)	Number of Hidden Layers		1
	Number of Units in Hidden Layer 1 ^a		9
	Activation Function		Hyperbolic tangent
Output Layer	Dependent Variables	1	Socio and Economic Problems for Fishermen Families with Special Reference to Tamilnadu Coastal Areas
	Number of Units		5
	Activation Function		Softmax
	Error Function		Cross-entropy

Source: Primary data – Questionnaire

Software Used: SPSS 20.0

The factors of Socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas model parameters are modelled by using the Neural Network Method. The parameters are optimized so as to determine the set of parameters, which will influence the increase in the overall factors for socio and

economic problems for fishermen families with special reference to Tamilnadu Coastal Areas Neural Networks Architecture and network information.

Table 5 Independent Variable importance for Neural Network Model for the factors on Socio and Economic Problems for Fishermen Families with Special Reference to Tamilnadu Coastal Areas

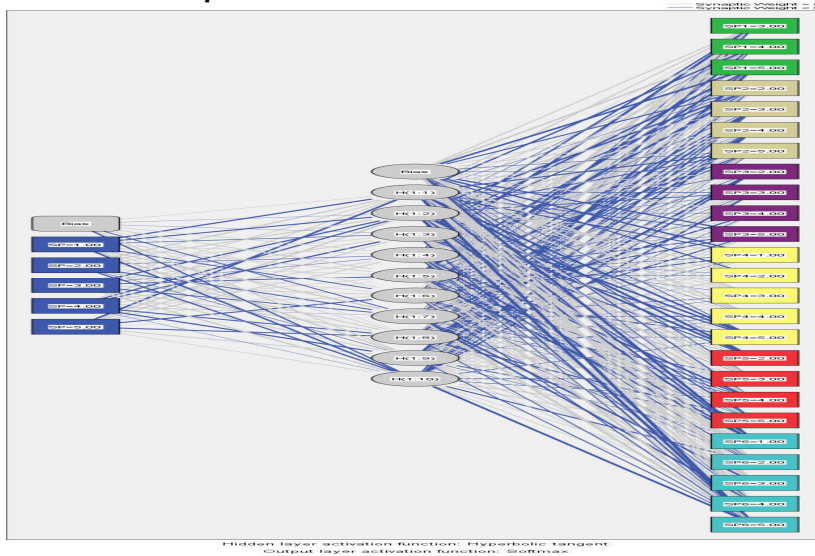
Independent Variable Importance	Normalized Importance
Nature of House	28.3%
Electricity Facility	48.2%
Mode of Fishing	50.7%
Wages of the Respondents	45.8%
Level of Income and Expenditure	53.4%
Mode of Savings	52.0%

Source: Primary data – Questionnaire

Software Used: SPSS 20.0

The table and diagram shows the “Wages of the Respondents” is contributing more towards the output of socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas. The analysis identifies the fact that among the 6 statements of socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas. Therefore the above said statement of socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas is preferred in priority by fishermen families with special reference to Tamilnadu Coastal Areas.

Figure 2 – Network Model for factors on Socio and Economic Problems for Fishermen Families with Special Reference to Tamilnadu Coastal Areas



Source: Primary data – Questionnaire

Software Used: SPSS 20.0

Results and implications

- Based on the respondents age as they are classified into 3 categories viz; young (below 35 yrs.), middle aged (36-50 yrs.), and old aged (above 50). The sample consists 296 (56.7%) respondents belonged the group in young category 155 (29.7%) responds belonged to middle aged category and 71 (13.6%) responds belonged to old aged categories. This indicates the participation of younger respondents is higher than others. 522 respondents were selected, out of which 245 (46.9%) were 'single' and the remaining 277(53.1%) are 'Married'. This shows the more participation from married respondents.
- The sample consists of 76 (14.6%) respondents belonged illiterate level, 211 (40.2 %) respondents belonged schooling level, 235 (45.2%) respondents belonged graduation level. The distribution of sample respondents according to respondents each and their distribution channels in the aluminium industries.
- "Wages of the Respondents" is contributing more towards the output of socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas. The analysis identifies the fact that among the 6 statements of socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas. Therefore the above said statement of socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas is preferred in priority by fishermen families with special reference to Tamilnadu Coastal Areas.

Conclusions

The major intend of this research to find demographic and biographic characteristics of fishermen families with special reference to Tamilnadu coastal areas, to identify the sociological and economic problems for fishermen families with special reference to Tamilnadu coastal areas. Based on the respondents age as they are classified into 3 categories viz; young (below 35 yrs.), middle aged (36-50 yrs.), and old aged (above 50).The sample consists of 76 (14.6%) respondents belonged illiterate level, 211 (40.2 %) respondents belonged schooling level, 235 (45.2%) respondents belonged graduation level. "Wages of the Respondents" is contributing more towards the output of socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas. The analysis identifies the fact that among the 6 statements of socio and economic problems for fishermen families with special reference to Tamilnadu Coastal Areas.

Limitations

- A number of suggestions with respect of the limitations identified in this study are cited here with the hope that future researchers would address these issues more concretely.

- The major limitation of the study is in generalizing the result obtained. Even though the survey was conducted in parts of Tamil Nadu, the same would not be a representative sample of the entire country.

References

1. FRI, Indian Fisheries 1947-1977, Issued on the Occasion of the Fifth Session of the Indian Ocean Fishery Commission, Cochin, 1977, pp.74-77.
2. Ganesh Kumar, B., Dattaa, K.K., Joshia, P.K., Katihab, P.K., Sureshc, R., Ravisankard, T., Ravindranathe, K., and MukthaMenona, Domestic Fish Marketing in India- Changing Structure, Conduct, Performance and Policies, Agricultural Economics Research Review, Vol. 21 (Conference Number) 2008, pp.345-354.
3. JeseVerebalavu, SPC Women in Fisheries Information Bulletin, Vol 20, November 2009, pp.18-22.
4. Nirmal Chandra Sahu, Aleyammalssac and Santosh Kumar Bali, Economy of the Fisherwomen in Ganjam District of Orissa: Conditions for Environmental Governance and Sustainable Development, Fifth Biennial Conference of the Indian Society for Ecological Economics (INSEE) on Environmental Governance, Ahmedabad, January 2009.
5. P. Sam Bennet and Arumugam, "New Trends in the Traditional marine fisheries at Tuticorin", CMFRI Bulletin, Cochin, Vol.44, No.1, 1988 PP.155-158
6. R.Sathiadhas and K.K.P Panikkar, "Economics of catamaram fishing along Madras coast", journal of marine Biological Accessories in India, Vol.33, No.1 and 2. 1991, PP.241- 245
7. RagupathyVenkatachalam., Sustainable Fisheries and Community Management Systems, Paper presented in "Environment and Growth" of the 2nd South Asian Economics Students Meet 2005 at Lahore, Pakistan, Jan28-30, 2005 being organized by the Lahore University of Management Sciences (LUMS).