

FACTORS INFLUENCING THE LIVELIHOOD INDEX AND LEVEL OF ASPIRATION OF FISHERWOMEN

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Abstract

A study was conducted among fifty women fish vendors in Kancheepuram and Chennai districts to determine the factors influencing the livelihood index and level of aspiration. The independent variables such as annual income, scientific orientation, expenditure per year and savings per year were found to have highest factor loadings on livelihood index and level of aspiration of fisherwomen. Besides most of the fisherwomen had a high level (score of < 50) of livelihood index and a high level (score greater than 13) of aspiration.

Key words: Fisherwomen, livelihood index, level of aspiration, factors.

INTRODUCTION

In India fisherwomen play a substantial role in contributing to the fisheries economy of the country. In the fisheries sector, women have an active role and extensive involvement especially in the post-harvest operations, where they constitute almost half of the work force. They also play major role of shouldering almost all the household responsibilities thereby indirectly encouraging active fishing by men. (Sathiadhas *et al.*, 2003).

In this context, a clear understanding of the multitude of components that influence the livelihood status as well as their level of aspiration is of immense value. Fisherwomen are receptive to new ideas and enterprises but this depends upon situational factors and the resultant behaviour of the individuals and this aspect merits special consideration in developing employment programmes for them. Besides, these factors serve as measurable indicators in the

monitoring and evaluation of fisheries extension programmes which are specially tailored to uplift the socio-economic status of fisherwomen. The present study was specially undertaken to determine the factors responsible for influencing the livelihood index and level of aspiration and to provide an empirical classification of clustering of variables into groups which helps in identifying the factors which are important for strengthening the delivery mechanisms of extension and developmental programmes.

METHODOLOGY

The study was conducted in two predominant coastal districts of Tamil Nadu, namely Kancheepuram and Chennai districts. Five fisherwomen who were fish vendors were drawn randomly from each of the five villages of Kancheepuram and Chennai districts to form a total sample of fifty fisherwomen.

A total of 16 independent variables namely age (X1), education (X2), occupation

(X3), stakeholder category, family type (X4), annual income (X5), material possession (X6), source of livelihood, social participation (X7), credit orientation (X8), economic motivation (X9), risk orientation (X10), scientific orientation (X11), expenditure per year (X12), debt per year (X13) and savings per year (X14) were selected for the study. The dependant variables were livelihood index and level of aspiration. The independent variables X1 to X14 were used for the statistical analysis. The independent variables for the study were measured through standardized scoring procedures developed for the study. The independent variables such as annual income, annual expenditure, annual debt, and annual savings were developed for the study. For this, a group of 30 fisherwomen were asked to indicate their annual income, annual expenditure, annual debt, and annual savings and the average of the values for each variable was arrived at. For each average value of annual income, annual expenditure, annual debt and annual savings a score of one was given. The operationalisation of these variables and their scoring procedures are given below.

Annual Income: It referred to the total income earned by the respondent from fisheries. For every 10,000 Rupees a score of 1 was given.

Category	Score
For every 10,000 Rupees	1

Annual expenditure: It referred to the total amount of money incurred by the respondent for his occupation as well as for the maintenance of his family.

Category	Score
For every 10,000 Rupees	1

Annual debt: It referred to the total amount of money availed as loan in a year for his occupation as well as for the maintenance of his family, by the respondent.

Category	Score
For every 5000 Rupees	1

Annual savings: It referred to the total amount of money saved by the respondent in an year.

Category	Score
For every 2000 Rupees	1

Development of Livelihood Index

The independent variables such as actual expenditure/year, actual debt/year and actual savings/year were measured using standardized scoring procedures developed for the study. The livelihood index for the present study was operationalised as the income, expenditure, debt and savings pattern of the individual respondent which denotes the standard of living of the individual respondent. A livelihood index (L.I.) was developed for the present study which was as follows:

$$\text{Livelihood Index} = \frac{\text{Actual income} + \text{Actual expenditure} + \text{Actual debt} + \text{Actual savings}}{\text{Potential income} + \text{Potential expenditure} + \text{Potential debt} + \text{Potential savings}} \times 100$$

The potential income, potential expenditure, potential debt and potential savings were defined as the maximum possible income, expenditure, debt, savings that could be incurred by the fish vendors.

Potential income

The potential income was operationalised as the maximum possible

income a respondent could earn in a year from his/her occupation.

Potential expenditure

The potential expenditure was operationalised as the maximum possible expenditure a respondent incurred in a year for carrying out his/her occupation as well as for maintenance of his/her family.

Potential debt

The potential debt referred to the maximum possible debt a respondent incurred in a year, for his occupation as well as for his occupation as well as maintenance of his family.

Potential savings

The potential savings referred to the maximum amount of money a respondent could save in a year.

The potential income, the potential expenditure, the potential debt and potential savings for each category was calculated by taking a sample of 30 respondents from fish vendors and asking them to indicate the level of potential income, potential expenditure, potential debt and potential savings. The average of the values were found out for each category which are detailed as follows:

Fisherwomen who are fish vendors
 Potential Income/year = 75,000
 Potential expenditure/year = 50,000
 Potential debt/year = 10,000
 Potential savings/year = 20,000

the scoring procedure developed by Jancy (1991). The level of aspiration was defined as the level of future performance of a familiar task, which an individual after knowing the level of past performance in his/her task is able to reach.

Each fisherwoman was asked to express her hope, desires, worries and fear in her own terms and assumptions. A figure of a ladder she feels, and where she stands personally is shown to her, and she is asked to indicate her position in the ladder with respect to the time period indicated. Corresponding to the position in the ladder, scores for the present, past and future were recorded and summed up. The totaled value gave the aspiration score for the individual fisherwoman.

a) Where in that ladder do you feel you stand personally at present? Step No
 ----- 10

b) Where on that ladder, would you say you stood 5 years ago?

----- 9
 ----- 8
 ----- 7

c) And where do you think you will be on the ladder 5 years from now

----- 6
 ----- 5
 ----- 4
 ----- 3
 ----- 2
 ----- 1
 ----- 0

The data were collected using structured interview schedules during the period from October to November 2004.

The level of aspiration was measured by using

Statistical tools such as factor

analysis, and percentage analysis were made used for analyzing the data. The independent variables were analysed based on standardized scoring procedures. The collected data was analysed by using factor analysis, used in order to determine the relationships existing among the groups of independent variables. The procedure followed for factoring the correlation matrix in the present study was the Principal Axis method. (Nagabhushanam and Nanjaiyan, 2002).

Findings and Discussion

It could be observed from Table 1 that most of the respondents (38.00 percent) had high level (score of <50) of livelihood index. It could be observed during the study (Table 3) that most of the fisherwomen (58 percent) had a medium level of annual income (Rs.50,000-75,000), 82.00 percent had a medium level of annual expenditure (Rs 40,000- 65,000) and 84 percent had a medium level of annual debt (Rs 3000-5000) and 44 percent had medium level of annual savings (Rs 3000- 8000). The livelihood index was computed using the independent variables such as annual expenditure, annual debt, annual savings and annual income. It could be observed from Table 2 that most of the fisherwomen (60.00 percent) had a high level of aspiration (score <13). This could be because, most of these fisherwomen were members of self-help groups which were actively involved in mobilization of micro credit for fisherwomen for fish vending and dry fish selling. These self-help groups helped to increase the level of aspiration, as well as annual income of these fisherwomen.

In the study, the factor analysis was conducted to explain the number and nature of relationship existing among the profile characteristics with the livelihood index and level of aspiration of the fisherwomen, and the results are presented in Table 4.

A close perusal of Table 4 revealed the factor loadings, communalities, eigen values and the percentage of variance explained by the factors. Out of the 14 profile characteristics, 4 factors were extracted and these 4 factors together explained the total variance of these characteristics to the extent of 69.48 percent. It is necessary to rotate the factors so that the rotated factors may be meaningfully interpreted. The varimax rotation was used to obtain meaningful interpretation and the results are given in Table 5.

An observation of Table 5 shows the interpretation of the rotated factors in the varimax matrix. A total of four factors have been identified as having maximum percentage variance. Each factor column was scanned for identifying a few profile characteristics with significantly high loadings. Thus from each factor column, the profile characteristics having a factor loading of more than 0.5 were selected. Thus, the selected factor loadings from each column were selected and presented in Table 6.

Factor 1

The profile characteristics which explained for 27.77 percent of the total variance, consisted of annual income (0.941), scientific orientation (0.907), expenditure per year (0.870) and savings per year (0.600). It could be seen from the table that annual

income has the highest factor loading among the other characteristics. Hence this factor is termed as "Income" factor.

Factor II

The second factor accounted for 19.85 per cent of the total variance. It consists of age (-0.825), followed by education (0.725), risk orientation (0.640) and family type (0.611) since the characteristic age has the highest factor loading, followed by other socio-personal characteristics this factor is called "Socio-personal" factor.

Factor III

Characteristics having the highest factor loadings were credit orientation (0.797) followed by social participation (0.752) and family type (0.596). Since the characteristic credit orientation has the highest factor loading this factor is called "Credit factor".

Factor IV

The fourth factor accounted for 9.403 percent of the total variance. The characteristics having the highest factor loadings were economic motivation (0.765) followed by debt/year (-0.716). Since these two characteristics pertained to economic aspects, this factor was called "Economic factor".

It appears natural that as the economic motivation of the fisherwomen increases, the tendency to avail loans also increases. Loans could be utilized by the fisherwomen for investing in post-harvest

related activities such as auctioning of fish, selling of fresh and dry fish leading to earning of higher income. Besides these women, self help groups have demonstrated their capabilities in mobilizing the micro-credit and involving in income generating activities such as buying of fish carts, vessels for marketing of fish and in other ancillary activities such as Palmyra crafts, shell string making and small time handicrafts and cottage industries. Figure 1 shows an empirical model for enhancing the livelihood index and level of aspiration of the fisherwomen. From the study it is evident that the factor which influences the livelihood index and level of aspiration of the fisherwomen most is Factor I i.e. the "Income factor". Fisherwomen can be empowered by exposing them to various skill oriented training programmes which can sharpen and hone their skills especially in areas of fishery based value addition, and also by training them in culture of mussels, edible oysters and clams which can supplement their income from sale of fishes.

With respect to the socio-personal factors variables such as age, education, risk orientation and family type have to be emphasized while designing and tailoring extension programmes for women. During the course of the study it was observed that majority of the women fish vendors were middle-aged, since the social customs and traditions did not permit unmarried young women as well as young married women to venture outside their homes for marketing and sale of fish. Training and extension programmes can lay greater emphasis to women of this age group. Group activities such as group discussions and role playing exercises can be organized for the young women to motivate them to participate in income

Table 1. Distribution of respondents based on their livelihood index (n = 50)

Category	Livelihood index	
	No	%
Low(score > 40)	13	26.00
Medium (score of 40-50)	18	36.00
High(score <50)	19	38.00

Table 2. Distribution of respondents based on their level of aspiration

Category	Level of Aspiration	
	No	%
Low (score >10)	5	10.00
Medium(score 10-13)	15	30.00
High(score <13)	30	60.00

Table 3. Distribution of the respondents based on their annual income, annual Expenditure, annual debt and annual savings.

A) Annual income of fish vendor (n=50)

Sl.No	Category	Number	Percentage
1.	Low (> Rs. 50,000)	21	42.00
2.	Medium (Rs. 50,000- 75,000)	29	58.00
3.	High (> Rs. 75,000)	0	0.00

B) Annual Expenditure of fish vendors (n=50)

Sl.No	Category	Number	Percentage
1.	Low (> Rs. 40,000)	9	18.00
2.	Medium (Rs. 40,000 – 65,000)	41	82.00
3.	High (< above Rs. 65, 000)	0	0.00

C) Annual debt of fish vendors (n=50)

D) Annual Savings of fish vendors (n=50)

Sl.No	Category	Number	Percentage
1.	Low (> Rs. 3000)	0	0.00
2.	Medium (Rs. 3000-5000)	42	84.00
3.	High (< Rs. 5000)	8	16.00

Sl.No	Category	Number	Percentage
1.	Low (> Rs. 3000)	12	24.00
2.	Medium (Rs. 3000-8000)	22	44.00
3.	High (< Rs. 8000)	16	32.00

Table 4. Factor Loadings Extracted (n=50)

Variable	Factor				Communalities
	1	2	3	4	
X1	-0.101	-0.846	-0.014	-0.083	0.733
X2	-0.116	0.772	0.009	0.154	0.634
X4	-0.472	-0.405	0.606	-0.004	0.754
X5	0.887	-0.012	0.358	0.007	0.914
X7	-0.423	0.487	0.521	0.159	0.694
X8	-0.242	0.251	0.723	-0.039	0.646
X9	-0.079	-0.054	-0.118	0.757	0.597
X10	0.479	0.490	-0.284	0.109	0.561
X11	0.849	-0.231	0.240	0.122	0.848
X12	0.895	0.234	0.241	0.010	0.914
X13	0.206	0.250	-0.009	-0.663	0.544
X14	0.512	-0.432	0.141	0.176	0.500
Eigen Values	3.333	2.358	1.520	1.128	8.339
% Variation explained	27.773	19.847	12.665	9.403	69.489
Cumulative % variation explained	27.773	47.420	60.085	69.489	

(X1-Age, X2-Education, X3-Occupation, X4-Family type, X5-Annual income, X6- Material Possession, X7-Social Participation, X8- Credit Orientation, X9- Economic Motivation, X10-Risk Orientation, X11-Scientific Orientation, X12- Expenditure/Year, X13- Debt/Year, X14- Savings/ Year.)

Table 5. Factor Loadings Rotated (n=50)

Variable	Factor			
	1	2	3	4
X1	0.008	-0.825	-0.214	0.077
X2	-0.186	0.725	0.270	0.034
X4	-0.136	-0.611	0.596	0.089
X5	0.941	0.097	0.005	-0.140
X7	-0.223	0.264	0.752	0.099
X8	0.021	0.021	0.797	-0.095
X9	-0.008	0.092	-0.047	0.765
X10	0.269	0.640	-0.281	-0.025
X11	0.907	-0.069	-0.139	0.021
X12	0.870	0.356	-0.033	-0.173
X13	0.059	0.161	-0.051	-0.716
X14	0.600	-0.296	-0.161	0.163
Eigen Values	3.003	2.322	1.804	1.210
% Variation explained	26.026	19.349	15.034	10.080
Cumulative % variation explained	25.026	44.375	59.409	69.489

(X1-Age, X2-Education, X3-Occupation, X4-Family type, X5-Annual income, X6- Material Possession, X7-Social Participation, X8- Credit Orientation, X9- Economic Motivation, X10-Risk Orientation, X11-Scientific Orientation, X12- Expenditure/ Year, X13- Debt/Year, X14- Savings/ Year.)

•Table 6. Clustering of variables into factors

I	X5 (Annual income)	0.941
	X11 (Scientific orientation)	0.907
	X12 (Expenditure/year)	0.870
	X14 (Savings/year)	0.600
II	X1 (age)	-0.825
	X2 (Education)	0.725
	X4 (Family type)	-0.611
	X10 (Risk orientation)	0.640
III	X4 (Family type)	0.596
	X7 (Social participation)	0.752
	X8 (Credit orientation)	0.797
IV	X9 (Economic motivation)	0.765
	X13 (Debt/year)	-0.716

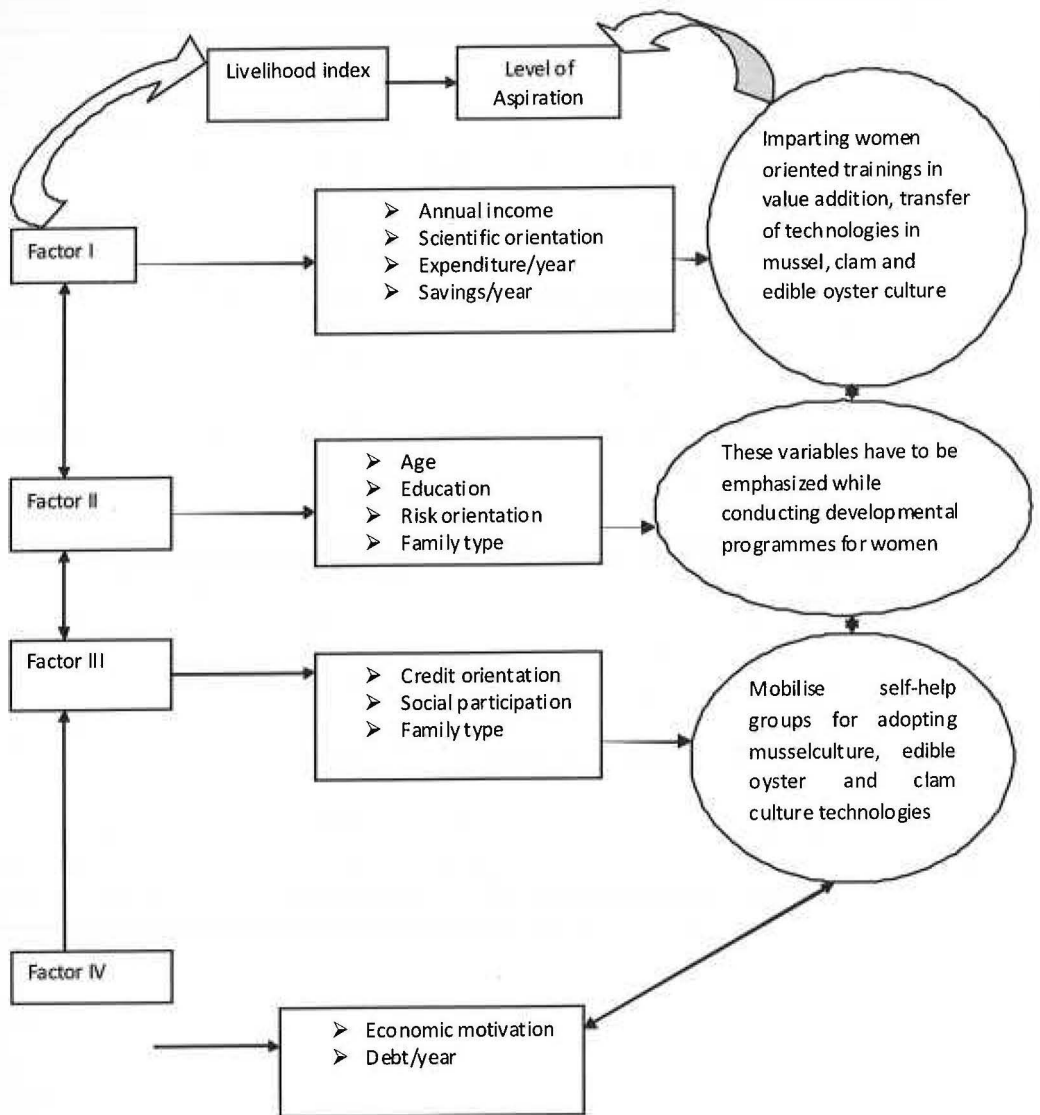


Fig 1: Empirical Model depicting the factors influencing the livelihood index and level of aspiration of fisherwomen and the necessary interventions.

generating activities such as value addition of fish and fish based products and enroll themselves in self-help groups to carry out economically viable activities.

CONCLUSION

The multitude variations in the socio-economic level of the fisherwomen were found to influence their livelihood index and level of aspiration. Among the socio-economic factors, the most important factor was annual income followed by socio-personal characteristics such as age, education, risk orientation and family type. Programmes for empowerment of fisherwomen should focus on economic activities which generate higher income such as value addition in fish and fishery based products, and involvement in ancillary activities and small scale industries. Programmes for fisherwomen should be tailored to meet the needs of the different age groups and different levels of education among the fisherwomen; which in turn would lead to higher livelihood index and higher level of aspiration of these women who function as the fulcrum of the fisher families.

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