

Multidimensional Assessment of Ageing Among Marine Fishermen: Evidence from Kanniyakumari District

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Abstract

Ageing is a gradual and multidimensional process that affects physical strength, emotional stability, social relationships, and economic security. In labour intensive occupations like marine fishing, the impact of ageing becomes more challenging because the work requires continuous physical effort and involves high occupational risk. As fishermen grow older, declining health, reduced work capacity, and irregular income begin to influence their overall quality of life. Unlike organised sectors, marine fishing lacks structured retirement systems and adequate social protection, making old age more vulnerable for fishermen. This study examines the multidimensional aspects of ageing among marine fishermen in Kanniyakumari District by

analysing four major dimensions: physical, psychological, social, and economic. The physical dimension focuses on health conditions, occupational strain, and ability to continue fishing activities. The psychological dimension considers stress, insecurity, and life satisfaction in later years. The social dimension explores family support, community involvement, and access to welfare schemes. The economic dimension evaluates income stability, savings, debt burden, and financial dependency. The study highlights that economic insecurity and health-related limitations are the most serious challenges faced by ageing fishermen. Limited pension coverage, rising medical expenses, and unstable earnings increase their vulnerability. The paper emphasises the importance of targeted policy measures, improved social security coverage, and sustainable livelihood support to ensure a secure and dignified life for elderly marine fishermen.

Keywords: Ageing, Physical Health, Psychological Well-Being, Social Support, Economic Vulnerability

I. Introduction

Ageing is a continuous and unavoidable phase of life that brings gradual changes in physical strength, emotional balance, social interaction, and economic independence. Although ageing is a universal experience, its impact differs significantly across occupations and social groups. In recent decades, population ageing has emerged as an important demographic and developmental concern, particularly in developing regions where social security systems remain limited. The challenges of ageing become more complex for individuals working in unorganised and labour-intensive sectors, where income security is uncertain and institutional protection is minimal. In such contexts, workers often experience early physical decline while still being compelled to remain economically active.

Marine fishing represents one of the most physically demanding traditional occupations in coastal regions. The occupation involves prolonged exposure to the sea, unpredictable

climatic conditions, heavy manual labour, and high occupational risk. As fishermen advance in age, their physical endurance gradually weakens, increasing vulnerability to chronic health problems and work-related injuries. Simultaneously, the absence of structured retirement schemes, regular pensions, and comprehensive insurance coverage intensifies financial insecurity. Reduced earning capacity combined with rising medical expenses often results in economic dependency and psychological stress.

In Kanniyakumari District, marine fishing continues to be a vital source of livelihood for many coastal households. Elderly fishermen frequently remain engaged in fishing activities due to financial necessity rather than personal choice. Despite this reality, ageing within fishing communities has not been sufficiently examined through a multidimensional framework. Against this background, the present study aims to analyse the physical, psychological, social, and economic dimensions of ageing among marine fishermen in Kanniyakumari District. By examining how these factors collectively influence their quality of life, the study seeks to identify key vulnerabilities and propose suitable policy measures to improve the overall well-being of elderly marine fishermen.

II. Review of Literature

The study by Shimada (2020), *“Being a Fisherman Despite Aging: Based on Research on Elderly Fishermen in Aomori, Northern Japan”*, examined how elderly fishermen continue working despite advancing age. The study found that older fishermen remain active due to strong occupational identity and economic necessity, although aging affects their physical strength and work capacity.

The study by Pollnac and Poggie (2008), *“Happiness, Well-Being and Psychosocial Adaptation among Small-Scale Fishermen”*, published in *Human Ecology Review*, examined psychological well-being among small-scale fishermen. The study found that income stability

and occupational risks significantly influence life satisfaction, while livelihood uncertainty contributes to stress and reduced psychological security.

The study by Coulthard (2012), *“What Does the Notion of ‘Wellbeing’ Mean for Fisheries?”*, explored the concept of well-being within fishing communities. It emphasized that social relationships, livelihood security, and community participation are central to fishermen’s overall well-being.

The study by Graham et al. (2019), *“Are Fishermen Happier? Evidence from a Large-Scale Subjective Well-Being Survey in a Lower-Middle-Income Country”*, investigated the link between income stability and life satisfaction. The study found that economic insecurity and occupational risk significantly influence fishermen’s subjective well-being and financial security.

III. Statement of The Problem

Ageing among marine fishermen in Kanniyakumari District creates multidimensional challenges that extend beyond physical decline. Reduced work capacity, psychological stress, limited social protection, and economic insecurity increase their vulnerability in later life. However, few studies have comprehensively examined these physical, psychological, social, and economic dimensions together. Therefore, a multidimensional assessment is necessary to understand the impact of ageing on their quality of life.

IV. Objectives of The Study

- To examine the physical health conditions of ageing marine fishermen,
- To analyse the psychological well-being of elderly fishermen in the study area.
- To assess the social support systems and living conditions of aging fishermen.
- To evaluate the economic security and financial vulnerability of elderly marine fishermen.

- To analyse the overall impact of ageing on the quality of life of marine fishermen and suggest suitable policy measures for improving their well-being.

V. Research Methodology

The present study is descriptive and analytical in nature. The study covers coastal villages of Kanniyakumari District. A total of 120 marine fishermen aged 50 years and above were selected as respondents. A stratified sampling approach was adopted, considering coastal villages as strata, and elderly fishermen were identified and selected based on age criteria. Primary data were collected through a structured interview schedule, while secondary data was gathered from books, journals, articles, and online sources. The collected data were analysed using Percentage Analysis, Mean Score Analysis to assess the level of ageing across different dimensions, and the Chi-Square test to examine the association between selected socio-economic variables and ageing dimensions.

VI. Limitation of The Study

- The study was conducted within a limited time period.
- Although 120 elderly marine fishermen were selected from the coastal villages of Kanniyakumari District, the findings may not fully represent the entire ageing fishing population of the district.
- The study focuses only on four dimensions physical, psychological, social, and economic and does not include other possible factors such as environmental or policy related influences that may also affect the ageing process.

VII. Analysis and Interpretation

Simple Percentage Analysis:

Socio-Economic Profile of the Respondents

Socio-Economic Profile		No.of Respondents	Percentage
Age	50-55 years	53	44
	56-60 years	41	34
	61-65 years	20	17
	66-70 years	6	5
	Total	120	100
Marital status	Married	91	76
	Unmarried	4	3
	Widowed	20	17
	Other specific	5	4
	Total	120	100
Household size	1-4 members	52	43
	5-8 members	56	47
	8 or more members	12	10
	Total	120	100
Fishing experience	20-30 years	42	35
	31-40 years	56	47
	40 years and above	22	18
	Total	120	100

Source: Primary Data

The age-wise distribution shows that most respondents 44 per cent are in the 50–55 age group, followed by 34 per cent in 56–60, 17 per cent in 61–65, and 5 per cent in 66–70. This indicates that most marine fishermen in Kanniyakumari District are in their active middle to early senior years, still engaged in fishing despite age-related challenges. Regarding marital status, 76 per cent are married, 17 per cent widowed, 3 per cent unmarried, and 4 per cent fall

into other categories. This shows that most elderly fishermen have family responsibilities, influencing their social support and financial security.

In terms of household size, 47 per cent live in households of 5–8 members, 43 per cent in households of 1–4 members, and 10 per cent in households of 8 or more members. This suggests that most fishermen maintain moderate-sized households, which may affect economic dependency and family support. Regarding fishing experience, 47 per cent have 31–40 years of experience, 35 per cent have 20–30 years, and 18 per cent have 40 years or more. This highlights the long-term occupational dependence on fishing and the physical demands and risks faced over an extended period.

Physical Health Dimension of the Respondents

Physical Health Dimension		No.of Respondents	Percentage
Overall health	Good	24	20
	Fair	44	37
	Poor	52	43
	Total	120	100
Chronic illnesses or Work-related health problems	Yes	62	52
	No	58	48
	Total	120	100

Source: Primary Data

The table shows that 43 per cent of respondents rated their health as poor, 37 per cent as fair, and only 20 per cent as good, indicating that most elderly fishermen face health-related challenges. Additionally, 52 per cent reported suffering from chronic or work-related illnesses, while 48 per cent reported none. This highlights the prevalence of occupational health risks and the impact of ageing on their physical well-being.

Psychological Well-Being of the Respondents

Psychological Well-Being		No.of Respondents	Percentage
Feel stressed due to health	Always	25	21
	Often	29	24
	Sometimes	28	23
	Rarely	24	20
	Never	14	12
	Total	120	100
Current quality of life	Very Satisfied	17	14
	Satisfied	23	19
	Neutral	26	22
	Dissatisfied	30	25
	Very Dissatisfied	24	20
	Total	120	100
Concerned about your future well-being and security	Extremely Concerned	16	13
	Concerned	24	20
	Neutral	30	25
	Less Concerned	36	30
	Not Concerned	14	12
	Total	120	100

Source: Primary Data

The table shows that 24 per cent of respondents often feel stressed due to health issues, 23 per cent sometimes, 21 per cent always, 20 per cent rarely, and 12 per cent never, indicating that many elderly fishermen experience health-related psychological strain. Regarding current quality of life, 25 per cent are dissatisfied and 20 per cent very dissatisfied, while 22 per cent are neutral, 19 per cent satisfied, and only 14 per cent very satisfied. This reflects moderate life satisfaction with notable levels of dissatisfaction. Concerning future well-being and security,

30 per cent are less concerned and 25 per cent neutral, while 20 per cent are concerned and 13 per cent extremely concerned, with 12 per cent not concerned at all. This indicates varied perceptions of psychological security among elderly fishermen.

Social Support Dimension of the Respondents

Social Support Dimension		No.of Respondents	Percentage
Support receives from family for daily and financial needs	Very High	18	15
	High	24	20
	Moderate	36	30
	Low	31	26
	None	11	9
	Total	120	100
Actively involved in community activities	Yes	74	62
	No	46	38
	Total	120	100

Source: Primary Data

The table shows that 30 per cent of the respondents receive moderate support from their family for daily and financial needs, followed by 26 per cent who receive low support, 20 per cent who receive high support, and 15 per cent who receive very high support, while 9 per cent receive no support at all. This indicates that a considerable proportion of elderly fishermen experience only moderate to low levels of family assistance. Further, 62 per cent of the respondents reported that they are actively involved in community activities, whereas 38 per cent are not involved, suggesting that although community participation is relatively high, gaps remain in ensuring comprehensive social support for all elderly fishermen.

Economic Dimension of the Respondents

Economic Dimension		No.of Respondents	Percentage
Current income from fishing	Very Stable	22	18
	Stable	32	27
	Unstable	40	33
	Very Unstable	26	22
	Total	120	100
Savings, insurance, Pension, or Financial backup	Yes	54	45
	No	66	55
	Total	120	100

Source: Primary Data

The table indicates that 33 per cent of the respondents reported their income from fishing as unstable, followed by 27 per cent who considered it stable, 22 per cent who described it as very unstable, and only 18 per cent who reported it as very stable. This demonstrates the irregular and uncertain nature of fishing income among elderly fishermen. Further, 55 per cent of the respondents stated that they do not have any savings, insurance, pension, or financial backup, while only 45 per cent possess some form of financial security. This highlights the economic vulnerability and financial insecurity prevailing among a majority of the elderly marine fishermen.

Mean Score Analysis

Mean Score Analysis was employed to measure the level of ageing across selected dimensions using scaled responses. For the relevant questions, numerical scores were assigned to each response option on a five-point scale ranging from Strongly Agree (5) to Strongly Disagree (1). The mean score was calculated using the formula:

$$\text{Mean Score} = \frac{\sum(F \times X)}{N}$$

Where F represents the frequency of respondents, X denotes the assigned score, and N is the total number of respondents. The weighted scores were summed and divided by the total sample size (120) to determine the average level of response. The resulting mean value indicates the overall tendency of respondents and helps classify the level as high, moderate, or low based on the score range.

Table: Ability to Perform Fishing Activities Compared to Earlier Years

Respondent	Frequency	Score	Fx
Strongly Agree	5	5	25
Agree	10	4	40
Neutral	16	3	48
Disagree	31	2	62
Strongly Disagree	58	1	58
Total	120		233

$$\text{Mean Score} = \frac{\sum Fx}{N}$$

$$= \frac{233}{120}$$

$$= 1.94$$

Level Classification

1.1 – 2.0 → Low Level

Since the calculated mean score is 1.94, it falls under the low level category.

The mean score of 1.94 indicates that the majority of elderly marine fishermen disagree that they are able to perform fishing activities as effectively as in their earlier years. This clearly

reflects a decline in physical strength and occupational efficiency due to ageing. The finding highlights the significant impact of advancing age on work capacity in a physically demanding occupation like marine fishing.

Chi-Square Test

The Chi-square test is applied to examine whether there is a significant relationship between age and income stability among fishermen in Kanniyakumari District. This test helps to determine whether variations in income stability are associated with different age groups, thereby identifying age-related economic vulnerability.

The Chi-square value is calculated using the formula:

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Where:

O= Observed frequency

E= Expected frequency

Hypotheses

H₀: There is no significant relationship between age and income stability of fishermen.

H₁: There is a significant relationship between age and income stability of fishermen.

Table: Testing the Relationship between Age and Income Stability

O	E	O-E	(O-E) ²	Σ (O-E) ² / E
5	9.72	-4.72	22.28	2.29
10	14.13	-4.13	17.06	1.21
20	17.67	2.33	5.43	0.31
18	11.48	6.52	42.51	3.70
8	7.52	0.48	0.23	0.03
12	10.93	1.07	1.14	0.10
15	13.67	1.33	1.77	0.13
6	8.88	-2.88	8.29	0.93
6	3.67	2.33	5.43	1.48

8	5.33	2.67	7.13	1.34
4	6.67	-2.67	7.13	1.07
2	4.33	-2.33	5.43	1.25
3	1.10	1.90	3.61	3.28
2	1.60	0.40	0.16	0.10
1	2.00	-1.00	1.00	0.50
0	1.30	-1.30	1.69	1.30
				19.2

Degree of freedom= (r-1) (c-1)

- r = number of rows = 4
- c = number of columns = 4

$$df = (4 - 1)(4 - 1) = 3 \times 3 = 9$$

Level of Significance

- 5 per cent level of significance.

Table Value

- Chi-square table value at df = 9 and 5% level = **16.92**

Comparison

- Calculated Chi-square value = 19.2
- Table value = 16.9

Since $19.2 > 16.92$, the null hypothesis is rejected and the alternative hypothesis is accepted.

The Chi-square analysis reveals that there is a significant relationship between age and income stability of fishermen in Kanniyakumari District at the 5 per cent level of significance. Hence, the alternative hypothesis is accepted. The findings indicate that income stability varies

across different age groups, suggesting that advancing age has a significant influence on the economic condition of the respondents.

VIII. Findings of The Study

Findings Related to Profile of the Respondents

- 44 per cent of the respondents belong to the age group of 50–55 years, followed by 34 per cent in the 56–60 years category, 17 per cent in the 61–65 years group, and 5 per cent in the 66–70 years category, indicating that most fishermen are in their active middle-age stage.
- 76 per cent of the respondents are married, 17 per cent are widowed, 4 per cent belong to other categories, and 3 per cent are unmarried, reflecting a predominantly married population in the study area.
- 47 per cent of respondents have a household size of 5–8 members, 43 per cent have 1–4 members, and 10 per cent have 8 or more members, showing moderately sized families among the fishermen.
- 47 per cent of respondents have 31–40 years of fishing experience, 35 per cent have 20–30 years, and 18 per cent have 40 years or more, highlighting long-term dependence on fishing as the primary occupation.

Findings Related to Physical Dimension

- 43 per cent of the respondents rated their overall health as poor, 37 per cent as fair, and 20 per cent as good, indicating that a large proportion of elderly fishermen experience health challenges.
- 52 per cent of the respondents reported having chronic illnesses or work-related health problems, while 48 per cent reported no such issues, highlighting the prevalence of occupational health risks among marine fishermen.

- 48 per cent of the respondents strongly disagreed that they are able to perform fishing activities effectively compared to earlier years, followed by 26 per cent who disagreed and 13 per cent who were neutral. Only 8 per cent agreed and 4 per cent strongly agreed, reflecting a significant decline in physical strength and work capacity due to ageing.

Findings Related to Psychological Dimension

- 24 per cent of respondents reported often feeling stressed, followed by 23 per cent who sometimes felt stressed, 21 per cent who always felt stressed, 20 per cent who rarely felt stressed, and 12 per cent who never felt stressed. This shows a considerable level of psychological strain among elderly fishermen due to health and financial concerns.
- 25 per cent of respondents were dissatisfied with their current quality of life, followed by 22 per cent who were neutral, 20 per cent who were very dissatisfied, 19 per cent who were satisfied, and 14 per cent who were very satisfied. This reflects moderate life satisfaction and some level of dissatisfaction among the respondents.
- 30 per cent of the respondents reported being less concerned about their future well-being and security, followed by 25 per cent who were neutral, 20 per cent who were concerned, 13 per cent who were extremely concerned, and 12 per cent who were not concerned. This indicates varied levels of anxiety about future security among elderly fishermen.

Findings Related to Social Support Dimension

- 30 per cent of the respondents reported receiving moderate support from their family, followed by 26 per cent who receive low support, 20 per cent high support, 15 per cent very high support, and 9 per cent receive no support. This shows that most elderly fishermen receive only moderate to low levels of family support, highlighting potential gaps in social and financial assistance.

- 62 per cent of respondents reported that they are not actively involved in community activities or local decision-making, while only 38 per cent participate actively. This indicates low social engagement among elderly fishermen in community affairs.

Findings Related to Economic Dimension

- 33 per cent of the respondents reported their income as unstable, followed by 27 per cent who considered it stable, 22 per cent as very unstable, and 18 per cent as very stable. This demonstrates the irregular and precarious nature of income among elderly marine fishermen, highlighting financial vulnerability in their occupation.
- 55 per cent of the respondents reported that they do not have any savings, insurance, pension, or financial backup, while 45 per cent have some form of financial security. This indicates that a majority of elderly fishermen lack adequate financial preparedness for emergencies or old age.

Findings Based on Statistical Analysis

- The Mean Score Analysis shows that elderly fishermen experience a low level of physical effectiveness in performing fishing activities compared to their earlier years. This reflects a significant decline in physical strength and work capacity due to ageing.
- The Chi-square test revealed a significant relationship between age and income stability among elderly fishermen. This shows that advancing age affects financial stability, confirming that ageing has an impact on income security.

IX. Suggestion

- **Enhancing Physical Health:** Elderly fishermen should be provided with regular health check-ups, preventive care, and occupational safety guidance to mitigate the effects of ageing and maintain work capacity.

- **Improving Psychological Well-Being:** Counselling programs, stress management workshops, and awareness campaigns should be organized to help fishermen cope with anxiety, improve mental health, and enhance overall quality of life.
- **Strengthening Social Support:** Family engagement initiatives, social support networks, and community clubs should be promoted to ensure elderly fishermen receive adequate emotional, social, and financial assistance, thereby reducing social isolation.
- **Ensuring Economic Stability:** Financial literacy programs, pension schemes, insurance coverage, and cooperative savings plans should be implemented to help fishermen manage irregular income, secure financial backup, and prepare for old age.
- **Formulating Integrated Ageing Policies:** Local authorities, fisheries departments, and NGOs should develop comprehensive ageing support policies addressing physical health, psychological well-being, social support, and economic security in a coordinated manner to improve the overall quality of life of elderly marine fishermen.

X. Conclusion

The study on ageing among marine fishermen in Kanniyakumari District reveals significant challenges across physical, psychological, social, and economic dimensions. Elderly fishermen experience declining physical strength, chronic health issues, and reduced work capacity, accompanied by moderate to low levels of family and community support. Psychological concerns, including anxiety about future well-being and moderate life satisfaction, are also evident. Economically, many fishermen face unstable income and lack adequate financial security, making them vulnerable during emergencies or in old age. Statistical analysis confirms that advancing age significantly affects income stability, highlighting the multidimensional impact of ageing on the quality of life of marine fishermen. The findings emphasize the need for holistic and integrated interventions, including health care programs, mental health support, strengthened family and community networks, and financial

security measures. Implementing such comprehensive policies will enhance the well-being, dignity, and sustainability of the livelihoods of elderly marine fishermen in the region.

Conflict of Interest: The corresponding author, on behalf of second author, confirms that there are no conflicts of interest to disclose.

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References

Journal Articles

- Shimada, A. (2020), “Being a Fisherman Despite Aging: Based on Research on Elderly Fishermen in Aomori, Northern Japan”, *Japan Oral History Review*, Vol. 16, pp. 169–185, DOI: 10.24530/jjoha.16.0_169, ISSN: 2433-3026 (Online); 1882-3033 (Print).
- Pollnac, R. B. & Poggie, J. J. (2008), “Happiness, Well-Being and Psychocultural Adaptation to the Stresses Associated with Marine Fishing”, *Human Ecology Review*, Vol. 15, No. 2, pp. 194–200, ISSN: 1084-4699.
- Coulthard, S. (2012), “What Does the Debate Around Social Wellbeing Have to Offer Sustainable Fisheries?”, *Current Opinion in Environmental Sustainability*, Vol. 4, No. 3, pp. 358–363, DOI: 10.1016/j.cosust.2012.06.001, ISSN: 1877-3435.
- Graham, N. A. J., Wilson, S. K., Jennings, S., Polunin, N. V. C. & Robinson, J. (2019), “Are Fishermen Happier? Evidence from a Large-Scale Subjective Well-Being Survey in a Lower-Middle-Income Country”, *Marine Policy*, Vol. 106, Article 103559, DOI: 10.1016/j.marpol.2019.103559, ISSN: 0308-597X.

Books

- Faure, D. & He, X. (eds.) (2016), *The Fisher Folk of Late Imperial and Modern China: An Historical Anthropology of Boat-and-Shed Living*, Routledge, London, ISBN: 9781138924062.
- Ray, S. (2022), *Chilika: The Fishermen, the Catch, and the Challenges*, Routledge, London, ISBN: 9781032145754.
- Johnson, D. S., Acott, T. G., Stacey, N. & Urquhart, J. (eds.) (2018), *Social Wellbeing and the Values of Small-Scale Fisheries*, Springer Cham, ISBN: 978-3-319-60749-8.
- Joseph, S. (2003), *Fishermen: Their Social and Economic Development*, Saloni Publishing House, Delhi, ISBN: 8180960145.

websites

https://oceans-and-fisheries.ec.europa.eu/fishers-future/ageing-fisher_en

<https://www.sciencedirect.com/science/article/abs/pii/S0964569122003039>