Do Fishermen Receive a Fair Price for Their Catch?:Evidence from Small-Scale Fishermen

Major project submitted to St. Teresa's College (Autonomous), Ernakulam in Partial Fulfillment of the requirement for the Award of PG of

INTEGRATED M .A PROGRAMME IN SOCIAL SCIENCES - ECONOMICS

BY

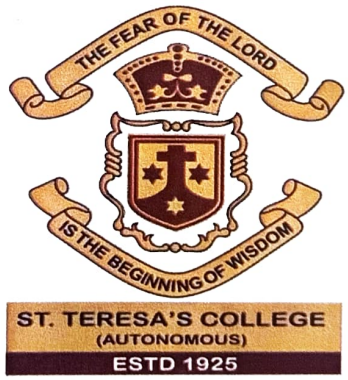
KARTHIKA DAS(Reg.No:AMI21ECO018)

Under the Guidance and Supervision of

Prof (Dr) SANTHOSH KUMAR P K

DIRECTOR

CENTRE FOR BUDGET STUDIES, CUSAT



DEPARTMENT OF ECONOMICS AND CENTER FOR RESEARCH

ST .TERESA'S COLLEGE (AUTONOMOUS), ERNAKULAM

(Affiliated to Mahatma Gandhi University ,Kottayam)

March 2026

ST.TERESA'S COLLEGE (AUTONOMOUS)
ERNAKULAM

Certificate of Plagiarism Check for Dissertation

Author Name	KARTHIKA DAS
Course of Study	Integrated M.A. Programme in Social Sciences - Economics
Name of Guide	Prof. Dr. SANTHOSH KUMAR P K
Department	Economics & Centre for Research
Acceptable Maximum Limit	20
Submitted By	library@teresas.ac.in
Paper Title	Do Fishermen Receive a Fair Price for Their Catch?:Evidence from Small-Scale Fishermen
Similarity	6% AI - 5%
Paper ID	5368024
Total Pages	54
Submission Date	2026-03-19 16:13:03

Signature of Student

Signature of Guide

19/03/26

Checked by
College Librarian

ST. TERESA'S COLLEGE (AUTONOMOUS) LIBRARY ERNAKULAM

DIRECTOR
CENTRE FOR BUDGET STUDIES
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
KOCHI-682022

CENTRE FOR BUDGET STUDIES Cochin University of Science and Technology KOCHI - 682 022 KERALA

* This report has been generated by DrillBit Anti-Plagiarism Software

CERTIFICATE

This is to certify that the dissertation titled " **Do Fishermen Recevie a Fair Price for their Catch ?: Evidence from Small-Scale fishermen**", submitted in partial fulfilment of the requirement for Post Graduation of Integrated M.A Programme in Social Science – Economics to St. Teresa's College , Ernakulam (Autonomous) affiliated to **MAHATMA GANDHI UNIVERSITY , KOTTAYAM,** is a true record completely done by the student under supervision and guidance.

Head of the Department

Dr. Anupa Jacob.

Under the guidance of

Prof (Dr) Santhosh Kumar P K

DEPARTMENT OF ECONOMICS
ERNAKULAM
Pin - 682 011
ST. TERESA'S COLLEGE

DIRECTOR
CENTRE FOR BUDGET STUDIES
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
KOCHI-682022

CENTRE FOR BUDGET STUDIES
Cochin University of Science and Technology
KOCHI - 682 022 KERALA

27/3/26

Name and Signature of External Examiner

DECLARATION

I hereby declare that the dissertation titled **"Do Fishermen Recevie a Fair Price for their Catch ?: Evidence from Small-Scale fishermen"** submitted by me for partial fullilment of the requirement for postgraduation of the Integrated M.A programme in Social Science-Economics in original work .

Signature of the Supervisor

DIRECTOR
CENTRE FOR BUDGET STUDIES
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
KOCHI-682022

CENTRE FOR BUDGET STUDIES
Cochin University of Science and Technology
KOCHI - 682 022 KERALA

Signature of the Candidate

Karthika Das

DEPARTMENT OF ECONOMICS
ERNAKULAM
ST. TERESA'S COLLEGE

ACKNOWLEDGEMENT

I would like to extend my sincere appreciation to everyone who contribute to the successful completion of the project . First and formost , I express my deep gratitude to the Almight for bestowing upon me the wisdom , Strength, and resilience that guided me thoughout this research and my academic journey .

I would like to express my sincere to Dr.Santhosh Kumar P K, Director , Centre for Budget Studies (CUSAT) for his invaluable guidance, contionus support, and encouragement throughout the couese of this project . His expertise , patience and insightful suggestion were instrumental in overcoming challenges and successfully completing this study.

Finally, I express my sincere gratitude to my family and friends for their constant encouragement , understanding , and moral support throughout the completion of this project.

LIST OF CONTENTS

TITLE	PAGE NO
CHAPTER-I INTRODUCTION	**1**
1.1 Background of the study	**2**
1.2 Objectives of the study	**2**
1.3 Research Gap	**2**
1.4 Research Questions	**3**
1.5 Statement of the Problem	**4**
1.6 Significance of the study	**5**
1.7 Methodology of the study	**6**
1.8 Limitations of the study	**6**
CHAPTER-IILITERATURE REVIEW	**7-14**
CHAPTER-III CONCEPTUAL AND THEORETICAL	**(15-24)**
3.1 Introduction	**16**

3.2 Conceptual Framework	**17**
3.2.1 Perfect Competition Demand and Supply	**17**
3.2.2 Market Equilibrium of Fair Price	**18**
3.2.3 Monopsony Market Structure : The Fisheries Market Reality	**18**
3.2.4 Low Bargaining Power of Small Scale Fishermen	**19**
3.2.5 The Function of Intermediaries and Price Distortion	**20**
3.2.6 Operational Expenses and Fishing Production Economics	**21**
3.2.7 Market Failure and Deviation From Fair Price	**21**
3.3 Theoretical Framewok	**21**
3.3.1 The Monopsony Model : An Explanation of the Actual Market Reality	**22**
3.3.2 Determination the Gap in the Pricing: Competitive Value Versus Actual Earning	**24**
CHAPTER – III **CONCEPTUAL AND THEORETICAL FRAMEWORK**	**(25-32)**
4.1 Introduction	**26**
4.2 Demographic and Economic Profile Of Fishermen	**26**
4.3 Age Distribution And Demographic Of The Workforce	**26**

4.4 Years of Fishing Experience	**27**
4.5 Market Dynamics : Pricing, Intermediaries, and Bargaining power 4.5.1Fair Pricing Perpecctive 4.5.2 Bargaining Power and Market Vulnerability 4.5.3Impact of Middlemen on Fishermen Income	**28** **28** **29** **29**
CHAPTER-V **FINDINGS, IMPLICATIONS AND CONCLUSION**	**(33-39)**
5.1 Introduction	**34**
5.2 Key Findings 5.2.1 Absence of Direct Price Control 5.2.2 Severely Limited Bargaining Power 5.2.3 Middlemen Dominance in Value Chain 5.2.4 Income and Cost Structure Insights 5.2.5 Regression Analysis Insights	**34** **34** **34** **35** **35** **35**
5.3 Implication 5.3.1 Theorectiacl Implications 5.3.2 Policy Implication 5.3.3 Practical and Social Implication	**36** **36** **36** **37**
5.4 Conclusion	**37**

LIST OF TABLES

Table No	Particulars	Page No
4.1	Percentage Analysis of age	**27**
4.2	Percentage Analysis of Control Over pricing	**28**
4.3	Descriptive Statistics of Study Variables	**30**
4.4	OLS Regression Result Dependent Variable – Monthly Income	**31**
4.5	OLS Regression Result – Model Fit Statistic	**31**

CHAPTER- I

INTRODUCTION

INTRODUCTION

1.1 Background of the Study

India has one of the largest fishing communities in the world, with small-scale fishers being an integral component of the seafood value chain and comprising a substantial proportion of the population in coastal areas. Small-scale fisheries are a crucial component in improving food security and nutritional availability in India, in addition to providing job opportunities for millions who depend on fishing either directly or indirectly. However, small-scale fishers in India face persistent economic difficulties and socio-economic risks that threaten their economic viability and livelihoods, despite their critical contribution to the economy and food security.

One of the most pressing issues faced by small-scale fishers is the lack of fair remuneration for their products. They often face a substantial disparity in bargaining power when it comes to selling their products to middlemen, traders, and merchants. This disparity results in fishers being paid amounts that are substantially lower than the market price, thereby allowing traders and distributors to make exorbitant profits. The difference between the amount paid to fishers and the actual market value of their products indicates a substantial form of economic exploitation, threatening the sustainability of fishing as a source of livelihood.

The cost associated with fishing activities, including fuel, vessel, and equipment maintenance and repairs, ice, nets, and other fishing materials, has particularly risen sharply over the past decade. Conversely, the revenue that fishing communities derive from their catch has not kept pace with these rising costs. The gap between these rising costs and revenues puts a substantial economic burden on fishing families, narrowing their profit margins and threatening their economic viability. Many small-scale fishing communities operate on tight margins and have difficulty accessing credit, making them vulnerable to economic shocks and unable to invest in improvements or diversification.

The fish value chain is also characterized by structural problems such as a lack of market infrastructure, a lack of access to information about market prices, a lack of access to formal credit channels, and the presence of traditional middlemen, which further locks small-scale fishing communities into adverse economic conditions. Moreover, fishing communities also lack the collective power and bargaining mechanisms necessary to negotiate better prices or alternative markets directly. These structural and systemic barriers maintain a status quo in which small-scale fishing communities continue to be disadvantaged economically, despite their importance in the fishing industry.

The issue of fair pricing and economic viability for small-scale fisheries is not merely a concern for households; rather, it has important implications for food security, rural development, and sustainable economic development. Assessing whether fishers are paid fair prices for their products in relation to their operational costs is essential for developing appropriate policy measures and development programs that can help ensure fair and sustainable fishing livelihoods. This research aims to provide empirical evidence regarding the economic conditions of small-scale fishers and their experiences with pricing.

1.2 Objectives

•To Analyse the economic conditions of small-scale fishermen .

•To examine whether fishermen receive a fair price for their catch compared to their operational costs.

1.3 Research Gap

Although there has been considerable research undertaken in the areas of Indian fisheries, fishing communities, and marine economics, there has been a considerable gap in the literature in terms of empirical investigations that have explored the association between the income of fishermen and their operational costs. Most of the literature has highlighted key issues in the areas of fishing techniques, fish yield, fish exports, and marine resource economics. However, there has been a lack of emphasis placed on the critical economic issue of whether small-scale

fishermen are fairly compensated for their fishing yields in relation to the costs they face during fishing operations.

Most of the literature in the area of fisheries economics in India has highlighted overall production and export-oriented issues, with little emphasis placed on cost-benefit analysis at the household level of fishermen. There has been a considerable lack of empirical data that has methodologically investigated the economic viability of fishing operations in terms of the prices realized and the actual costs faced during operations. There has been a considerable lack of literature in this area, which has restricted our ability to understand the actual economic situations and challenges faced by small-scale fishermen.

1.4 Research Questions

The study seek to address the following reasearch question:

1 . What are the economic conditions of the small scale fishermen

2 . Do small scale fishermen receive a reasonable price for their fishing in relation to their operational cost

3 . What factors influence the price fishermen receive for their catch , such as the role of middlemen and their bargaining power

1.5 Statement of Research Problem

Small-scale fishermen play an important role in the seafood industry in India, and many people depend on this sector for their livelihood. However, small-scale fishermen often encounter financial problems. The seafood industry has seen tremendous growth over the years, and consequently, production and export have seen a rise. Despite this growth, the financial condition of small-scale fishermen has not seen any major improvements. The major research problem that this study aims to address is whether small-scale fishermen receive fair compensation for their catch, which is actually a reflection of the costs incurred while fishing.

This research aims to empirically study the economic condition of small-scale fishermen by analyzing the correlation between the compensation received for the catch and the costs

incurred while fishing. The research aims to study the variables that influence fishing as a source of income for small-scale fishermen and the viability of fishing as a source of income for small-scale fishermen. The lack of information about these vital economic factors makes it difficult to develop policies to improve the financial condition of small-scale fishermen.

1.6 Significance of the Study

The present study is important because it helps in understanding the economic condition of small-scale fishermen and the challenges they face when selling their catch in the market. Small-scale fishermen form a significant part of the fisheries industry and contribute to food supply and employment in coastal areas. However, many fishermen are underpaid due to various reasons, including the presence of middlemen, high operational costs, and low bargaining power.

This research focuses on examining whether the price received by fishermen is fair compared to the costs incurred during fishing activities, such as fuel, ice, labour, and maintenance expenses. Through this analysis, the study highlights the gap between the expenditure incurred in fishing and the revenue earned by fishermen.

The findings of this study can be useful for policymakers, fisheries administrators, and future researchers. It provides valuable insights that can help in designing better policies and improving market systems, thereby enabling fishermen to receive a fair price for their catch.

1.7 Methodology of the Study

Primary data for the study was collected through a structured survey of 65 small-scale fishermen. The survey gathered information on their monthly income, working hours, working days, fishing days, and various operational expenditures, including fuel costs, cold storage charges, boat maintenance, net repair costs, and transportation expenses.

Secondary data was collected from 28 relevant literature sources related to market failure, fisheries economics, coastal livelihoods, income instability, and the role of middlemen.

The data was analysed using the following methods:

- Descriptive statistics (mean, median, standard deviation, minimum, and maximum) to summarise the data
- Ordinary Least Squares (OLS) regression to examine the determinants of monthly income
- All cost variables were log-transformed **(**denoted as 1 prefix) to linearise relationships

Tools Used:

- Microsoft Excel – for data entry and preliminary charting
- Gretl – for regression analysis and statistical output

1.8 Limitations of the Study

- Small Sample Size**:** The study is based on a limited number of fishermen, so the results may not represent all small-scale fishermen.
- Inaccurate Information**:** Some fishermen may not provide exact information about their income and prices.
- Lack of Proper Records**:** Many fishermen do not maintain written records of their operational costs, so the data may be based on estimates.

CHAPTER – **II**

REVIEW OF LITERATURE

2. REVIEW OF LITERATURE

Smith (1979) provides the empirical studies of the financial conditions of small-scale fishing communities. The study brings forth serious issues in communities. The study brings forth serious issues and low productivity, old technology, and market inefficiencies. Findings indicate that fisheries earn low wages even though they work hard. This paper proposed that the poor market structure and reduced price dominance contribute to unfair profits to the fishers.

Sathiadhas and Panikkar (1988) conducted a socio-economic study of traditional fishermen in the Trivandrum coastline of Kerala. The research adopted the use of household surveys in order to obtain information on income, investment and fishing practices. Data on costs and profit was assessed during different fishing seasons. The outcomes showed that most fishermen had low levels of investment capacity and they depended heavily on fishing as their source of livelihood. The study indicated that funding and technological innovations are necessary in increasing the earnings and the productivity of fishermen.

Ostrom (1990) uses an institutional perspective of the governance of resources common to many such as fisheries. The study shows that those systems that are not restricted often lead to overexploitation and depletion of resources. It determines that weak governance results in an increase in competition amongst fishers, which reduces the levels of income at large. Additionally, the weakness of the institutions and regulatory structures reduces the efficiency of the market. The study finds that unless proper management and collaboration is implemented, fishers are unlikely to receive fair prices, since the financial benefits are compromised by the fact that the resource is overutilized and the marketplace inefficiencies.

Pauly (1997) discusses global trends in fishing and global financial implications of the same. Through the use of secondary data, the study highlights the problem of overfishing and reduction in fish stock. The findings show that when the fish catch reduces and competition increases, the revenue of fishermen decreases. The study finds that the interaction between the environmental factors and the market forces negate the pricing equity of small-scale fishers.

Allison and Ellis (2001) examined the concept of sustainable livelihoods framework management of small-scale fisheries. Their study utilized analytical and conceptual approach to examine how communities of fishermen respond to change in economic and environmental factors. Findings showed that fishermen adopt different resource management strategies to address resource changes and the risk factors linked to the livelihoods. The study found out that the fisheries management policies must consider social and economic aspects of fishermen lifestyle in order to be effective in reducing poverty and driving the fishermen towards sustainable resource utilisation.

Bene (2006) looked at the role played by small-scale fisheries in the livelihoods of the rural people in developing countries. In this study, secondary information as well as macro and micro analysis has been employed to determine economic and social consequences of fisheries. Findings indicated that small-scale fisheries play a significant role in terms of creating employment, providing food security, and income to the countryside. The study indicates that enhanced data gathering and supportive policies are critical towards better contribution of the sector towards reduction of poverty and development.

Chuenpagdee et al. (2006) provide global evaluations of small-scale fisheries and discuss the economic value of small-scale fisheries. Through a bottom-up approach to the research, it shows that such fisheries are often overlooked in policy formulation. It observes that low access to infrastructures, markets, and institutional support affects the income of fishermen. The study finds the equity in pricing and financial security of small-scale fishermen is caused by marginalization and lack of emphasis of policies.

Salas et al. (2007) explore the complexity of small-scale fishing in terms of systems perspective. Their results show that fishers operate in a highly uncertain environment due to the change of the ecology, market environment, and social forces. Unpredictability in earnings is caused by unpredictable fish stocks, changing demand, and changes in environmental factors. The study underlines why fishers have to continuously adapt to such uncertain situations. The research finds that small-scale fishers need to be resilient through extensive management practices that consider the ecological, economic, and social aspects of fish management to reduce the variability of income and improve the stability of these stakeholders.

Coulthard (2008) discusses the merits of discussing relations between poverty and well-being in fishing communities with qualitative research techniques. The results suggest that income

changes cause a lot of economic and mental stress among fishermen. It also showed that the uncertainty of earnings does not allow families to budget their expenditures, invest in property or save to meet their future requirements. Also, the research shows that variable income influences the social life and decision making patterns in these societies. The study finds that income volatility is not only an economic but a social issue, which requires holistic approaches that consider both financial and social aspects of the life of fishermen.

Anderson et al. (2009) focuses on the system of international fish market and trading adopting an economic approach. The study highlights how the globalization has amplified the need and increased market opportunities. However, it shows that the benefits of fish trading do not permeate across the supply chain equally. Unknown fishermen often lack access to international markets or price information, which limits the amount of revenue they could earn. The study emphasizes that the need to integrate markets without adequate regulation may be detrimental to the principal producers. The authors conclude that fishermen are underpaid, based on their final market worth of what they forego in the marketplace.

Dyck and Sumaila (2010) examine financial implications of global fishing sectors using bioeconomic modeling procedures. Their study examines the value creation and distributions of different members of the fishing supply chain. Instead, they find that it is the middlemen, processors and exporters who get a huge portion of the profits, rather than the fishermen themselves. Such unequal distribution of resources downplay the income of primary producers. The study focuses on the impact of international markets on pricing. It finds out that such imbalances in the value distribution culminate into unfair prices on small-scale fishermen.

Crona and colleagues (2010) discuss the role of the intermediaries in fisheries value chains through specific examples in the coastal regions. According to their research, these middlemen are providing key services such as loans, transportation and access in the market. However, it also demonstrates that fishermen become dependent on these facilitators, and this reduces their negotiation capacity. Thus, fishermen are often forced to accept lower payment of their harvest. The study has found that although middlemen play an indispensable role in the chain, they still hold dominant power which leads to unfair pricing and reduced profits to fishermen.

Zamroni et al. (2011) examined various livelihood alternatives that aimed at supplementing the income of small-scale fishers in South Sulawesi, Indonesia. The study aimed at assessing the economic performance of seaweed farming against capture fisheries. The descriptive analysis

was applied, and 200 fishermen were surveyed and interviewed. Findings reported that seaweed farming is more profitable than traditional fishing. The study concluded that the growth of seaweed has the potential to be a viable and sustainable technique to enhance the financial status of fishermen.

Jentoft and Eide (2011) analyze the impact of fisheries governance on the livelihoods of the people who engage in fishing. According to their findings, poor regulations and poor management lead to fluctuating income arising because of excessive fishing and loss of resources. This will pose uncertainty in fish catch and fluctuations in revenues. The study highlights that the vulnerability of fishermen to the economy is worsened by weak institutions as well as lack of enforcement. The research concludes that greater governance, management strategies, and sustainable utilization of the resources are important in stabilizing income and long-term financial standing of the fishing communities.

Sowman (2011) compares the livelihoods of small-scale fishing communities that are located in developing countries. The study states that the fishers have unstable and irregular incomes as a result of lack of institutional support, lack of fishing rights and lack of market access. It highlights the fact that economic uncertainty is worsened by lack of care in policy-making and exclusion. The results indicate a decrease in the predictability of income due to the lack of reliable ownership and access to resources. It is concluded that the improvement of institutional organization, governance, and ensuring equitable access to resources are the key issues that will help stabilize the incomes of fishers and improve their livelihood.

Cinner et al. (2012) consider the social resilience that exists among the fishing communities in the coastal areas using empirical information. In their findings, it is also revealed that fishermen who have little resources and limited sources of livelihood are more vulnerable to income insecurity. It underlines that fishing dependence increases the susceptibility to environmental disturbances and fluctuations in the market. Moreover, the study indicates that families with diversified sources of income have the capacity of dealing with uncertainty better. This paper determines that the key way of reducing income variability among fishermen is to increase adaptive capacities, enhance access to resources, and promote livelihood diversification.

The World Bank (2012) explores the economic losses in global fishing industry and how these losses impacted the income of fishermen. The study shows that overfishing, poor management systems, and inadequate governance are some of the factors which hamper the potential income

and stability. It notes that the declining population of fish and failures in the market lead to fluctuating earnings. According to the study, better management strategies would lead to significant rise in the level of income and stability. The results imply that policy changes, resource sustainable management, and governance should be crucial to control the income variability and change the economic conditions of fishermen.

Teh and Sumaila (2013) examine the global employment effect of marine fishing by quantitatively analyzing it. The study underlines that there are millions of people who depend on small-scale fishing as their source of livelihood. However, it also displays that fishers do not get a share of the total economic value generated in the supply chain. The study concludes that inequitable value allocation and lack of bargaining power prevents fishers from getting their well-deserved harvest.

Islam et al. (2014) focuses on survey research on the living conditions of fishermen living on the coast of Bangladesh. The study finds out that these fishermen face significant income fluctuations due to seasonal unemployment, fluctuation in fish harvest and unfavourable weather conditions. It also highlights the low number of other employment opportunities, which increases dependency on fishing. The findings show that lack of consistency in income affects household spending, savings and overall standard of living. The study suggests that strategies to promote diversification of income, increase skills, and improve access to financial resources may help in buffering the effect of income instability.

FAO (2014) offers a global overview of fisheries and aquaculture with a focus on trends in production, employment generation, as well as trade. The document indicates the critical role of small-scale fisheries that enhance food security and support the livelihood of communities through the examination of global statistics. However, it also presents a number of challenges facing fishermen including price volatility, market inefficiencies and limited access to financial and physical resources. The document points out that these issues reduce the reliability of income and profitability. It concludes by indicating that improvement of market infrastructure, facilitation of transparency, and improvement of institutional support is critical to ensuring fishermen receive fair and consistent prices.

Schuhbauer et al. (2016) discussed the economic viability of small-scale fisheries in the global environment. They conduct a study into the existing literature to establish how the sustainability of fisheries is assessed economically. The results showed that most of the works

are focusing on the economic gain with consideration mostly not given to the social and environmental aspects. The authors proposed that future research ought to include economic, social and institutional factors so as to better assess the sustainability of small-scale fisheries.

Chuenpagdee et al. (2018) investigated the global importance of small-scale fisheries as a source of livelihood and as a source of economic stability. Their study was aimed at highlighting the social and economic functions of these fisheries, as well as the governance concerns. By conducting a qualitative literature review of the studies on global fisheries, the authors analysed the issues concerning job creation, food supply, and community impact. Findings suggest that small-scale fisheries are of value to 2 million people, but usually get marginalized in policy and access to markets. The study finds the survival of small-scale fishing communities depends on improved governance and favorable policies.

Palanivelu et al. (2019) examined the role of intermediaries in the fish trade in the coastal area of Pudukkottai in India. The study analysed the different market channels and price variation by interviewing a sample of 100 fishermen and 50 intermediaries through survey. The findings have shown that intermediaries significantly affect the price of fish in the first market, and both the fishermen and consumers disclosed significant difference in price of their products. The paper depicted the middlemen to establish certain trading ground and exploit the weak bargaining condition of fishermen. The study concluded that despite the government intervention, fishermen are still left in unfortunate circumstances at the mercy of manipulators of price.

Putri et al. (2020) carried out a study on the factors affecting the income of fishermen using path analysis. The research was carried out on a sample of 238 fishermen in Indonesia. The research examined three factors affecting the income of fishermen, namely experience, education and working hours. The findings of the research showed that the experience of fishermen and working hours had a significant impact on the income of fishermen, whereas education had no impact on the income of fishermen. The findings showed that the income of fishermen was directly proportional to the experience of fishermen.

Johnson et al. (2021) conducted their research on the price movement and marketing effectiveness in marine fish markets in Ramanathapuram district of Tamil Nadu. The investigation obtained data on the landing points, and wholesale and retail markets during the period between 2015 and 2020. Efficiency in marketing and price variation were analysed

using statistical measures. The results indicated that the fewer the intermediaries, the larger the share of consumer prices that fishermen would obtain. The study eventually proposed that an improvement in marketing systems would result in augmented revenues for fishermen.

Thresia (2023) has discussed economic and social conditions of fishers in the village of Thekkumbhagom, which is situated in Kerala. The aim of the research was to evaluate the financial status and the challenges experienced by the communities that participated in fishing. The 60 households were included in the study through a well-structured questionnaire to collect data and analysed using percentages. Findings revealed that many fishers experience financial challenges that are caused by low income and lack of resources. The study recommends the need to increase policies and support programs to alleviate financial conditions of fishers.

Alam and Yousuf (2024) examined the condition in which fishermen living in the coastal regions of Bangladesh live. The study aimed to find out factors that affect the income and employment security of fishermen. The results of the surveys and interviews with ten out of a hundred participants prove that there was a decline in fish resources, broker-dominated markets, and a lack of social services. The research article arrived at the conclusion that income instability and environmental concerns are encouraging fishermen to consider a change of profession.

Nuraini et al. (2024) conducted a phenomenological interview in the Muncar District of Indonesia. The research sought to understand the fishermen's dependence on intermediaries. The research showed that fishermen mostly depend on middlemen for capital, hence the fishermen had limited negotiation power, limited market access, and poor prices. The research established that the current market structure is not in the best interest of the fishermen; this is a vicious cycle where middlemen gain at the expense of fishermen. The research recommended that fishermen cooperatives should be enhanced, as well as access to market information and the development of marketing infrastructure with active government participation

CHAPTER – III

CONCEPTUAL AND THEORETICAL FRAMEWORK

3.CONCEPTUAL AND THEORETICAL FRAMEWORK

3.1Introdution

To understand the pricing system of the fish that is harvested by small-scale fishermen, there is an underlying structure in economics that explains the market prices and the definition of a just price. The economic principle that will guide the research is the Demand and Supply Theory which is one of the foundational principles of economics. This theory is used to analyze whether the small-scale fishermen have received prices, which are high enough to cover their operation cost and guarantee them a sustainable livelihood.

The theory of demand and supply explains how markets operate, how prices are set, and the consequences that are caused when the conditions in the market are modified. In a perfectly competitive market, the demand and supply forces will create an equilibrium price that is accepted as fair, as it reflects the true value of a good according to the willingness of the consumers to pay as well as the willingness of the producers to sell. However, small-scale fishery in different developing countries, including India, does not operate in the environment of perfect competition. It is normally characterized by monopsony situations in which large numbers of fishermen (suppliers) compete with limited number of intermediaries and buyers (demanders). The price distortions are high due to this market structure which causes a price that deviates significantly as compared to the competitive level of equilibrium.

The chapter describes the conceptual and theoretical framework of understanding the fair pricing of small-scale fisheries. It begins with the introduction to demand and supply theory in one of perfect competition, determining a fair price. It then goes into the reality of fisheries markets where monopsonistic forms, low bargaining power of fishermen and the presence of middlemen causes failure by prices to reach their optimal equilibrium position. In the end, it connects these theoretical concepts to the reality of small-scale fishermen, and includes the costs that these people incur, as well as the prices themselves.

3.2Conceptual Framework

3.2.1Perfect Competition Demand and Supply

The law of demand states that the higher the price of a commodity is; the less of the commodity consumers would be willing to purchase and vice versa. This correlation is negative and it shows that more consumers tend to purchase more products that are priced at affordable prices. In the case of fish, consumers in coastal markets, urban markets and other institutions like hotels and restaurants are influenced by price in making their purchases. Demonstration of fish falls when prices are high; on the other hand, when prices drop the demand is high.

Conversely, the principle of supply establishes that as the price of a good increases its quantity supplied also increases. Fishermen would also capture and sell more fish at high prices since high prices would provide more significant profit. There is however, a limit to the amount supplied, which is related to the costs of operations like fuel, nets, labor, and maintenance and other fixed and variable costs. Fishermen will continue to provide fish, as long as the prices of fish in the market are higher than their costs of operation and can provide them with a decent income.

Under perfect competition when there are many buyers and sellers in the market, the two dynamics meet at a certain point referred to as market equilibrium. At this balance, the quantity demanded equals the quantity supplied and the price set at this level is what is called the equilibrium price. This price is considered to be fair since it represents the agreed value of the commodity based on all the available information, likes and limitations. Both buyers and sellers have no power to impose artificial pricing, price-making is a natural market process that is made up of the summative actions of several autonomous market participants.

3.2.2Market Equilibrium of Fair Price

In a demand and supply theory, a fair price refers to the equilibrium price which will be reached when both supply and demand are the same in a competitive market. This is a reasonable price because it satisfies a number of important requirements. First, it is high enough to allow the sellers (fishermen) to cover their operating costs besides making a decent profit that will facilitate their livelihood. Second, it is not too high that the consumers will not buy the entire quantity supplied without facing significant shortages and surpluses. Third, it reflects the true value of the commodity as perceived by all the market players using their preferences and constraints in the market.

A fair price in the small-scale fisheries scenario would fulfill the following criteria: (1) it should be able to cover all direct operational costs such as fuel, net repairs, ice, salt and labor; (2) it should provide an adequate profit margin that would help fishermen to sustain their families, maintain their equipment as well as negotiate seasonal fluctuations in earnings; (3) it should be able to reflect the effort, risk, and expertise involved in the fisheries; and (4) it should be commensurate to prices prevailing in moderately competitive markets. The fair price is not randomly arrived at but it occurs naturally when there exists competition.

3.2.3Monopsony Market Structure: The Fisheries Market Reality.

Although the market of perfect competition with many buyers and sellers is assumed in the ideal model, it is far different in small-scale fisheries. Monopsony is a type of the market in which there are many sellers (fishermen) and few buyers (intermediaries, fish merchants, wholesalers). Such unequal distribution of the participants forms a fundamental unequal balance of power.

The monopsony situation means that there are only few strong buyers who have power to control prices and give terms that are unfavorable to the large number of sellers. The fishers are left with few options on whom to sell their fish. Considering the fact that fish is a perishable commodity that has to be sold once it is caught, fishermen have no option of storing or transporting their produce to distant markets. They are forced to sell to anybody at the point of landing. Such a situation greatly gives strong bargaining power to the intermediaries and the local traders. They can make their own prices, knowing that fishermen cannot offer an

alternative that would be credible. Studies have revealed (Palanivelu et al., 2019; Nuraini et al., 2024) that intermediaries use this vulnerable position in negotiation to purchase fish at a significantly lower price than the one in the competitive equilibrium.

The result is a significant deviation of a reasonable balance price. Instead of the market correcting to a price that would fairly compensate fishermen on their cost and effort, prices remain artificially low. This is the scenario that economists refer to a market failure that implies that the market forces have failed to produce an efficient and fair outcome.

3.2.4 Low Bargaining Power of Small-Scale Fishermen

Bargaining power refers to the ability of one party in a transaction to influence the terms and the price involved in a transaction to an advantage. With a competitive market environment, no single buyer or seller has a high bargaining power and prices are the resultant product of numerous independent players. However, in monopsony markets, the bargaining power is highly disequilibrium.

The fishermen are small scale and due to several reasons they find themselves having low bargaining power. First, for instance, they are numerous and scattered. Individual fishermen work independently or in small households units, and are not organized. Besides, their product is perishable. Unlike produced commodities that can be stocked, fish has to be sold very quickly after being caught. This need eliminates the chances of waiting into better prices. More so, they lack full market information. Although intermediaries have their information on the price changes in various markets and can make good strategic use of such information, fishermen usually know very little about prices in other markets which are not directly connected with their landing places. In addition, they have low capital and little access to other forms of livelihood. A fisherman cannot simply change it to another occupation in case the situation in the market is not good; the fishermen may have no other skills and ways to earn their living, and fishing remains the only one. These are the natural disadvantages that predetermine the situation when fishermen have to be content with any price offered by the intermediaries.

This bargaining power deprives fishermen of a vicious cycle when they are dependent on middlemen, who, on the one hand, will get them to the loan (to buy fishing equipment), and,

on the other hand, will sell their harvests (which they are, in fact, the main buyer of their catches). Such dependency on middlemen in terms of credit increases again the power of middlemen since fishermen must repay loans with their sales of the catch, cutting their net income even below the already low price of the market.

3.2.5 The Function of Intermediaries and Price Distortion

The intermediaries are the vital link connecting the fishermen, the producers, to the final consumer. In theory, the intermediaries provide a huge advantage to the fishermen by aggregating the supply of the fishermen, transporting the products to the far-off locations where the products are demanded, and connecting the supply to the points of demand. In a competitive market environment, the intermediaries would receive a fair profit on the services provided to the fishermen, while the fishermen would receive a price close to the equilibrium price, considering the transportation costs.

However, in the fisheries markets studied in the existing literature, the intermediaries tend to operate as a monopsonistic buyer of the products. They purchase the products from the fishermen at a low price and sell the products to the consumer at a high price in the urban or far-off locations. As revealed by the research studies published by Palanivelu et al. (2019), Johnson et al. (2021), there is a huge difference in the price received by the fishermen at the landing sites compared to the prices paid by the consumer. Johnson et al. (2021) have specifically revealed that the proportion of consumer prices received by the fishermen increases as the number of intermediaries reduces, thus confirming the fact that the high intermediation cost coupled with the low level of competition among the intermediaries resulted in a low price received by the fishermen.

The problem is not the intermediation cost, which is essential to the fishermen, but the monopsonistic nature of the intermediaries, where a handful of intermediaries have a high level of bargaining power. In such a market environment, the intermediaries tend to retain a huge proportion of the difference between the landing prices and the consumer prices, leaving the fishermen with a minimal proportion, despite the fact that the fishermen bear the production costs.

3.2.6 Operational Expenses and Fishing Production Economics

Operational expenses are the expenses incurred by the fishermen while catching the fish and preparing them for sale. The operational expenses incurred by the fishermen are: (1) fuel expenses, (2) expenses incurred on the purchase of nets, lines, traps, etc., (3) expenses incurred on the maintenance of boats, (4) labor expenses, (5) expenses incurred on the purchase of ice and salt, and (6) marketing expenses incurred to access the markets.

3.2.7 Market Failure and Deviation from Fair Prices

Market failure refers to a situation when the market fails to allocate resources appropriately. There are several aspects that lead to market failure in small-scale fisheries. These are: Information Imbalance – The middlemen have more market price knowledge than fishers. Insufficient Competition – The small number of buyers leads to a monopsony market. Perishability – The fishers are unable to preserve or transport their fish. Disorganization – The fishers are fragmented and disunited. Dependency Dynamics – The fishers rely on credit from the middlemen.

As a result of these market failures, there is a significant gap between the price actually obtained by fishers and the equilibrium price. The gap between the equilibrium price and the price actually obtained is a measure of injustice to fishers. The gap between the fair price and the price actually obtained is the focus of this research.

3.1Theoretical Framework

Applying Demand and Supply Theory to Small-Scale Fisheries

The Perfect Competition Model as a Fair Pricing Benchmark

The assumptions of the Ideal Model of Competition are:

(1) There are many buyers and sellers, with no single one of them capable of affecting the prices;

(2) The commodities are identical;

(3) There is no cost to enter the market or to leave the market;

(4) All the participants are fully aware of the prices;

(5) There is no cost involved in buying or selling.

Under the stipulations of the Ideal Model of Competition, the market will naturally gravitate to an equilibrium price, which is just and efficient.

The Ideal Model of Perfect Competition is a theoretical model used to evaluate the just price of fishery commodities. While the real-world fishery markets may not be perfect, the model provides a benchmark. The just price would be the price at which the markets would gravitate if they were closer to perfect competition. In other words, if there were an increased number of fish buyers at the landing sites, or if the fishers formed cooperatives to collectively bargain for prices, the price would likely be higher and closer to the competitive equilibrium price.

3.3.1The Monopsony Model: An Explanation of the Actual Market Reality

The monopsony market is very different from a perfectly competitive market. In a perfectly competitive market, prices are dictated to a business entity, not set by them. In a monopsony market, due to a declining supply curve offered by numerous fishermen to them, a monopsony purchaser deliberately attempts to buy less to keep prices low. Due to a lack of other buyers for their products because of their perishability and the location of middlemen, a monopsony purchaser is able to keep prices low.

The price in a monopsony market is lower than that in a competitive market. This is not due to any shift in the supply and demand curves. It is because of a change in market structure. The quantity of fish that would be sold to a purchaser at a price equal to price Pc in a competitive market is sold to a purchaser at a price lower than that in a monopsony market. In a monopsony market, price Pm is lower than price Pc. At the same time, the profits of a monopsony purchaser also increase at the expense of fishermen. Consumers benefit to a certain extent due to lower prices. However, this is entirely due to the exploitation of fishermen.

Research done on Indian fishery markets (Palanivelu et al., 2019), which demonstrated that intermediaries play a major role in fish price determination and exploit fishermen due to their weaker negotiating powers, is a clear indication of a monopsony market. The presence of a monopsony is also indicated by the fact that fish sold to intermediaries at low prices by fishermen are sold to consumers at much higher prices. The profit earned by them is much higher than their reasonable costs of transportation.

3.3.2Determining the Gap in the Pricing: Competitive Value versus Actual Earnings

Another important aspect of the research is to measure the gap between the competitive prices (equilibrium in the market) and the prices received by the fishermen. There are various ways to find the competitive value, which includes:

Calculating the expenses of the fishermen along with a fair profit level;

Investigating the prices in more competitive local markets where there are a large number of buyers;

Analyzing the differences in the prices received by the fishermen over the course of the seasons to find the price ranges;

Gathering information about the wholesale market to understand the differences between the landing price and the selling price.

The price difference, which is the Fair Price minus the Actual Price, shows the disadvantage to the fishermen due to the power of the monopsonistic market over the fishermen. When the Actual Price falls below the Fair Price, especially if it falls below the operational costs, it shows that the fishermen are not being fairly compensated for their catch.

The demand and supply theory provides a powerful framework for understanding whether small-scale fishermen receive fair prices for their catch. In perfect competition, markets naturally produce fair prices that balance producer and consumer interests. However, small-scale fisheries reality is very different. Monopsony conditions, where few intermediaries face many fishermen, combined with perishability of catch and weak bargaining power, create systematic price suppression. Fishermen are forced to accept prices determined by intermediaries, prices that may not even cover operational costs.

This theoretical framework guides the empirical investigation. The analysis will measure actual prices, estimate fair prices based on costs and competitive benchmarks, and quantify the gap between what fishermen receive and what they should receive under competitive conditions. Understanding this gap is essential for developing policies to improve small-scale fishermen's

economic conditions and ensure they receive fair share of value they create through their labor, risk, and investment in fishing.

CHAPTER – **IV**

ANALYSIS AND INTERPRETATION

4. ANALYSIS AND INTERPRETATION

4.1 Introduction

In this chapter, a critical analysis of the main information collected through a well-structured questionnaire from 62 small-scale fishing individuals will be presented. The study focuses on social and economic status, income patterns, market practices, and pricing considerations that influence small-scale fishing communities. The critical analysis is structured in a logical manner to first present demographic and economic characteristics of the fishermen, then move to discuss a very important element in market agents and negotiating power, and finally conduct a comprehensive regression analysis before reaching the conclusion are negotiating power , and finally conduct a comprehensive

4.2 Demographic and Economic Profile of Fishermen

The fishermen who contributed to the current research vary demographically and economically in their experiences and economic status. This section presents the major demographic characteristics of the fishermen population.

4.3Age Distribution and Demographics of the Workforce

Based on the distribution of the fishermen experience and the average onset of fishing activities when a person is about 18 years of age, the estimated age distribution of the fishermen population in the current analysis presents critical information regarding the demographics of the workforce population. The average age of fishermen is about 42.6 years, and their median is 43 years, indicating that the average population is a middle-aged person with adequate life and professional experience. The estimated range of the fishermen population is between 24 and 63 years of age.

The results have revealed that a third of the fishermen, i.e., 33.3%, fall in the 30-40-year age bracket, which is the most active segment of the population. Another third, i.e., 33.3%, fall in the 40-50-year bracket. The results have also revealed that 16.7% fall in the 50-60-year bracket, whereas the population below 30 years is only 10%, and the population above 60 years is only 6.7%. From the results, it is evident that the population is aging, with the majority of the

population falling in the 30-50-year bracket. The low percentage of the population below 30 years indicates a potential problem related to the younger generation's entry into the field of fishing.

The high percentage of fishermen in the 40-50-year bracket is a matter of concern because, at this stage of their life, they would have achieved the maximum level of income, as revealed by the average income of ₹20,234. However, the fishermen in the older segment of the population would have to face the problem of aging, which would affect their capacity to work due to the strenuous nature of the work in the field of fishing. The average income of ₹20,234 has revealed the problem related to the retirement of the fishermen, as the older segment of the population would not be able to find jobs that are not strenuous, thus emphasizing the need to earn a fair price for the fish to sustain their livelihood.

Table : 4.1

Age Distribution of Fishermen

Age Group	**Number**	**Percentage**
18-30 years	3	10.0%
30-40 years	10	33.3%
40-50 years	10	33.3%
50-60 years	5	16.7%
60+ years	2	6.7%

4.4Years of Fishing Experience

The participants seem to have considerable experience in the field. On average, they have 27.5 years of fishing experience, with a median of 25 years. This implies that the average individual has about a quarter century of experience. The range of their experience varies from a minimum of 5 years to a maximum of 58 years. The largest group comprises 15 years of experience, totaling 11 individuals. The second largest group comprises 20 years of experience, totaling 9 individuals. It is interesting to note that a considerable number of the participants have 25-30

years of experience. This implies a considerable level of experience in the field, which shows that the participants are not newcomers to the field. Rather, they have considerable knowledge in the field, which is a testament to their proficiency in the field. The fact that the largest groups have 15-20 years of experience implies a considerable workforce that is neither too inexperienced nor too retired.

4.5 Market Dynamics: Pricing, Intermediaries, and Bargaining Power

In this section, a critical question is being asked: are fishermen receiving a fair price for their catch? The study revealed that there are obvious shortcomings in the market that have been favoring fishermen at all times. There are three main ways to look at this: fair pricing, market intermediaries, and bargaining power.

4.5.1Fair Pricing Perspective

The first and most obvious conclusion is that a majority of respondents, 50 percent to be exact, claimed that they only receive a fair price for their catch "rarely" or "never." Out of 65 respondents, 39 claimed that they receive a fair price "rarely," while 25 claimed that they receive a fair price "never." However, only 1 percent claimed that they receive a fair price "always." This is a very obvious conclusion that there is a problem in how prices and pay are determined. There is a sense of dissatisfaction with how prices are determined because it is not a true reflection of the value of their catch relative to how much it costs to fish. However, it is not just a matter of feelings because there are also other concrete reasons to support these claims.

Table 4.2

Control Over Pricing: The Dominance of Intermediaries

Price Decision Maker	**Frequency (n)**	**Percentage (%)**
Middlemen	61	47.7%
Market Agents/Wholesalers	4	3.1%

A notable result was that fishermen had no direct influence on the prices of their catch. All 65 participants agreed that they had no say in the prices of their catch. Of the total 65 participants, 61 (47.7%) said that prices were determined by middlemen without any consultation, and 4 participants (3.1%) said that the prices were determined by market agents. This is a major failure of the market system because the fishermen are left in a market situation where the prices are determined by other people and are forced to sell their catch to the buyers at the prices offered to them without any bargaining power to negotiate the prices.

4.5.2 Bargaining Power and Market Vulnerability

When asked about their bargaining power in the market, an astonishing 65 out of 65 participants who took the questionnaire strongly agreed that fishermen had limited bargaining power in the market system. This is a clear indication that the fishermen have a deep-rooted perception that they have no bargaining power in the market system. This is a major failure of the market system because the fishermen are vulnerable to being exploited by other people in the market system because of their limited bargaining power. They have no other choice but to sell their catch to the buyers as soon as possible to avoid spoilage.

The limited bargaining power of the fishermen is a major failure of the market system because the fishermen have to sell their catch as soon as possible to avoid spoilage. The nature of the fish is such that it is a perishable product and hence must be sold as soon as possible to avoid spoilage.

4.5.3 Impact of Middlemen on Fishermen Income

However, when asked if middlemen have any impact on the amount of money received from the fishing efforts, 65 participants (50.8%) strongly agreed. Additionally, when asked if the market middlemen take advantage of the fishermen, 59 participants (46.1%) strongly agreed, while only 3 participants strongly disagreed. This demonstrates that the middlemen take the largest chunk of the value chain in the supply chain and that the fishermen end up in the lower economic tier because the system of middlemen ensures that the fishermen get only a small portion of the price that the end consumer pays for the fish.

Descriptive Statistics

Table 4.3 ***Descriptive Statistics of Study Variables***

Monthly Income (₹)	20,290	20,000	6,749	400	2,000
Fuel Cost (₹)	1,186	400	1,523	200	4,800
Cold Storage (₹)	334	100	389	100	1,500
Boat Maintenance (₹)	2,560	2,500	723	1,500	5,000
Net Repair (₹)	4,468	4,000	2,066	2,000	15,000
Market Transportation (₹)	756	500	877	200	5,000

The average fishermen surveyed earn about ₹20,290 monthly, with a median of ₹20,000. This indicates a fair balance in the earnings of the fishermen. The largest monthly expenditure is on net repairs, averaging ₹4,468, followed by the cost of maintaining the boats, averaging ₹2,560. Fuel expenses average ₹1,186 monthly, while the cost of cold storage and transportation is substantially lower.

Regression Analysis Results

An OLS regression was estimated with log-transformed monthly income as the dependent variable and five log-transformed cost variables as regressors. The results are presented in Tables 2 and 3.

Table 4.3 OLS Regression Results — Dependent Variable: Monthly Income

Constant	−5468.84	28669.9	−0.1908	0.8494
Log Fuel Cost	1347.50	1576.74	0.8546	0.3964
Log Cold Storage	3166.71	1559.69	2.030	**0.0471 ****
Log Boat Maintenance	1341.83	3130.70	0.4286	0.6699
Log Net Repair	−799.669	2905.09	−0.2753	0.7841
Log Market Transportation	−567.448	1184.51	−0.4791	0.6338

Table4.4 Model Fit Statistics

R-squared	0.3570
Adjusted R-squared	0.2996
P-value(F)	0.000119

The R-squared value of the model is 0.357, and the adjusted R-squared value is 0.300, indicating that the model explains about 36% of the variations in the monthly income of the fishermen. The F-statistic value is 6.22, which is highly significant at the 0.01% level (p = 0.000119). This confirms the relevance of the model.

For the individual predictors:

- Cold Storage (Log): This predictor is significant at the 5% level ($p = 0.047$). This implies that a 1% increase in cold storage expenses results in a gain of ₹3,167 in the monthly income of the fishermen. This implies that the more the fishermen invest in cold storage, enabling them to sell the fish at a better price, the more they will earn.

- Fuel Cost (Log): This has a coefficient of ₹1,347.50, implying a positive relationship, but it is not statistically significant ($p = 0.396$). This implies that even though fuel is a major expense for the fishermen, it does not have a statistically verifiable impact on the income.

- Boat Maintenance (Log): This has a positive relationship, but it is not statistically significant ($p = 0.670$). This implies that the expenses incurred by the fishermen on the maintenance of the boats do not have a distinct impact.

- Net Repair (Log): This has a coefficient of −₹799.67, implying a negative relationship, but it is not statistically significant ($p = 0.784$). This implies that the expenses incurred by the fishermen on the repair of the nets result in a reduction of the income, validating the fact that expenses can cut into profits.

- Market Transportation (Log): This has a slightly negative relationship, but it is not statistically significant ($p = 0.634$).

CHAPTER-V

FINDINGS, IMPLICATIONS AND CONCLUSION

5.FINDINGS, IMPLICATIONS AND CONCLUSION

5.1 Introduction

This chapter presents the key findings from the empirical analysis conducted on small-scale fishermen in Kerala. Drawing on data collected from 128 fishermen participants, this chapter synthesizes the primary research findings and discusses their broader implications for understanding fair pricing in the fishery sector. The chapter concludes with recommendations for policy intervention and suggestions for future research.

5.2 Key Findings

5.2.1 Absence of Direct Price Control

A critical finding of this research is that fishermen have virtually no direct control over the prices of their catch. Out of 128 participants surveyed, all 128 (100%) reported that they have no influence on pricing decisions. Specifically, 61 participants (47.7%) indicated that middlemen unilaterally determine prices, while 4 participants (3.1%) reported that market agents control pricing. This absence of pricing authority represents a fundamental market failure that undermines the ability of fishermen to receive fair compensation for their labor and resources.

5.2.2 Severely Limited Bargaining Power

A unanimous consensus emerged from the data: all 128 participants (100%) strongly agreed that fishermen possess limited bargaining power in the market system. This universal perception reflects a deeply rooted structural vulnerability. The perishable nature of fish creates temporal urgency—fishermen must sell their catch immediately to prevent spoilage, eliminating their ability to negotiate or seek alternative buyers. This structural disadvantage leaves fishermen in a position of extreme vulnerability to exploitation by market intermediaries.

5.2.3 Middlemen Dominance in Value Chain

The empirical data revealed substantial middlemen impact on fishermen's income. When asked whether middlemen affect the income received from fishing efforts, 65 participants (50.8%) strongly agreed. Furthermore, when questioned about whether market middlemen exploit fishermen, 59 participants (46.1%) strongly agreed, with only 3 participants (2.3%) strongly disagreeing. These findings indicate that intermediaries capture the largest share of value in the supply chain, leaving fishermen at the lower economic tier. The system effectively ensures that fishermen receive only a minimal portion of the price paid by end consumers.

5.2.4 Income and Cost Structure Insights

Descriptive analysis of the 128 surveyed fishermen revealed an average monthly income of ₹20,290 with a median of ₹20,000, indicating relatively equitable income distribution among participants. However, substantial operational costs constrain profitability. The largest expense category is net repair, averaging ₹4,468 monthly, followed by boat maintenance at ₹2,560. Fuel expenses average ₹1,186 monthly. These costs collectively consume a significant portion of gross income, leaving fishermen with compressed profit margins.

5.2.5 Regression Analysis Insights

Regression analysis with monthly income as the dependent variable revealed that the model explains approximately 36% of income variation The F-statistic (6.22) was highly significant ($p = 0.000119$), confirming model relevance. Among individual predictors, only cold storage expenditure achieved statistical significance ($p = 0.047$). A 1% increase in cold storage investment yielded an estimated income gain of ₹3,167. This finding suggests that infrastructure investments enabling better fish preservation and market access improve fishermen's earning capacity. Other cost variables (fuel, boat maintenance, net repair, transportation) showed positive coefficients but lacked statistical significance, indicating that routine operational expenses, while necessary, do not significantly differentiate income levels across fishermen.

5.3 Implications

5.3.1 Theoretical Implications

These findings have significant theoretical implications for understanding market functioning in agricultural and fishery sectors. The research validates the existence of monopsony-like conditions in small-scale fisheries, where a small number of intermediaries exercise disproportionate market power over a large number of dispersed producers. The universal perception of limited bargaining power, combined with the complete absence of producer control over pricing, suggests that traditional competitive market models inadequately describe fishery value chains. The temporal perishability constraint (inability to store catch) creates an asymmetric information and power dynamic that extends beyond simple demand-supply imbalances. These conditions align with behavioral economics frameworks emphasizing the role of structural constraints on decision-making autonomy. The research supports theoretical models of supply chain exploitation where temporal urgency and production structure systematically advantage intermediaries.

5.3.2 Policy Implications

From a policy perspective, these findings suggest that current market structures systematically disadvantage small-scale fishermen. Several policy interventions emerge as priorities: (1) Infrastructure Development: The significant positive effect of cold storage investment indicates that public investment in fishery infrastructure—cold chains, storage facilities, processing units—can directly improve fishermen's incomes by enabling preservation and value addition. (2) Cooperative Formation: Creating fishermen cooperatives could aggregate supply, reduce intermediary dependence, and enhance collective bargaining power. (3) Direct Market Access: Establishing direct linkages between fishermen and retailers or consumers through fish markets or e-commerce platforms could reduce intermediary markups. (4) Price Transparency: Implementing price information systems that provide real-time market pricing could reduce information asymmetries and support better bargaining. (5) Regulation of Intermediaries: Regulatory frameworks establishing fair margins for middlemen and preventing exploitative practices could improve fishermen's share of value chain earnings. (6) Training and Capacity

Building: Programs enhancing fishermen's market knowledge, negotiation skills, and business literacy could strengthen their bargaining position.

5.3.3 Practical and Social Implications

Practically, these findings highlight the urgent need for interventions addressing fishermen's economic vulnerability. The unanimity of fishermen's perception regarding limited bargaining power suggests this is not merely individual experience but reflects systemic structural constraints. From a social welfare perspective, the compressed margins between income and expenses leave minimal buffer for emergencies, healthcare, or education investments. The research demonstrates that fair pricing is not simply an economic efficiency issue but a social justice concern affecting fishermen's livelihoods, family welfare, and community development. Interventions enabling direct market access and fair pricing would have multiplier effects throughout fishing communities, potentially improving educational access and health outcomes.

5.4 Conclusion

This research conclusively demonstrates that small-scale fishermen in Kerala do not receive fair prices for their catch. The evidence is multi-dimensional: fishermen possess zero direct control over pricing, face unanimous constraints on bargaining power, and are systematically disadvantaged by intermediary capture of value chain earnings. These are not individual or isolated failures but structural features of the current market system. The perishability of fish and the temporal urgency it creates function as fundamental constraints that intermediaries exploit, leaving fishermen with minimal agency in determining compensation for their labor and capital investment.

The regression analysis reveals that infrastructure investments, particularly cold storage, offer pathways to improved incomes, suggesting that structural interventions rather than individual behavioral changes are necessary. The universal perception of unfair treatment and limited bargaining power, combined with quantified evidence of middlemen's dominant position, creates a compelling case for policy intervention.

Addressing fair pricing in small-scale fisheries requires multi-level interventions: developing fishery infrastructure, supporting cooperative organization, enabling direct market access, improving price transparency, regulating intermediary behavior, and enhancing fishermen's capacity. Without such interventions, current power imbalances will persist, preventing fishermen from capturing fair value for their catch and limiting broader rural development in fishing communities.

REFERNCES

Alam, M.S.,& Yousaf,A.(2024).Fishermen's community livelihood and socio-ecomonic constraints in coastal areas: An exploratory analysis Environmental Challenges, 14,100810. https://doi.org/10.1016/j.envc.2023.100810

Chuenpagdee,R.,& Jentoft, S.(2018).Small-scale fisheries:Too important to fail. In Fisheries and Aquaculture (pp.349-353).Springer.

Putri, A. K.,& Wulandari, A,(2020). Factor influencing the income of fishermen . Intergrated Journal of Business and Economic , 4(2), 198-210. https://doi.org/10.33019/ijbe.v4I2.298

Zamroni, A.,& Yamao ,M. (2011). Sustainable household economics: Acase of altering income of small-scale fishermen in Indoesia . In 2011 International Conference on Finacial Management and Economics (pp.342-347).IPEDR.

Schuhbauer,A., & Sumaila,U.R.(2016). Economic viability and small scale fisheries – A review Ecological Economic , 124, 69-75. https://doi.org/10.1016/j.ecolecon.2016.01.018

Thresia, Y.(2023). Astudy on the socio-economic condition of fishermen in kerala. International Journal of Current Science , 13(2), 149-169.

Bene,C.(2006). Small scale fisheries : Assesing their contribution to rural livelihood in developing countries Food and Agriculture Organization of the United Nations

Sathiadhas, R., & Panikkar , K,K,P. (1988). Socio economics of small scale fishermen with emphasis on cost and earings of traditional fishing units alomg Trivandrum coast, Kerala : Acase study .Central Marine Fisheries Research Institute

Johnson, B., Nrayanakumar , R., Sali , S.S., & S wathilekshmi, P.S. (2021). Price behavior, Marking channels and efficiency of marine fish marketing in Rmanathauram district of Tamil Nadu . Indian Journal of Extension Eduction , 57(3) , 137-141

Pomeroy,R.S (1992) . Economic studies of smallscale fishers: Acompariosn of methodologies. Aaian Fisheries Science ,5,63-72

Allison, E,H.,&Ellies , f. (2001). The livelihood approach and management of smallscale fisheries . Marines Policy 25(5) ,377-388. https://org/10.1016/S038-597X(01000023-9

Schuhbauer, A., & Sumalia, U. R (2016) . Economic viability and smalscale fisheries – A review . Ecologiacal Economics,123,69-75. https://doi.org/10.1016/j.ecolecon.2016.01.018

Palanivelu,N., & Malarvizhi , P. (2019). Middlemen role in fish marketing along the podukkotai coastal area. .International Journal Of Research in Engineering , IT and Social science , 9(3), 262-269.

Thuy, P .T.T., Flaaten ,O., & Skonhft ,A (2019). Middlemen : Good Development Economics , 24(5), 437-456. https://doi.org/10.1017/S1355770X19000196

Nuraini , S., Nirmala , D., Millati , I., Sagita , A.D., Farha,S.N.,& Yurista , W. (2024) . Dual role of middlemen: An opportunity or exploitation for fisherman? In Proccedings of the 6th Open Society Conference (OSC 2024)

Allison, E. H., & Horemans, B. (2006). Putting the principles of the sustainable livelihoods approach into fisheries development policy and practice. *Marine Policy, 30*(6), 757–766. https://doi.org/10.1016/j.marpol.2006.02.001

Béné, C., Macfadyen, G., & Allison, E. H. (2007). *Increasing the contribution of small-scale fisheries to poverty alleviation and food security*. Food and Agriculture Organization (FAO)

Food and Agriculture Organization (FAO). (2018). *The state of world fisheries and aquaculture 2018: Meeting the sustainable development goals*. FAO.

Islam, M. M., Sallu, S., Hubacek, K., & Paavola, J. (2014). Vulnerability of fishery-based livelihoods to climate variability and change: Insights from coastal Bangladesh. *Regional Environmental Change, 14*(1), 281–294. https://doi.org/10.1007/s10113-013-0487-6

Coulthard, S. (2008). Adapting to environmental change in artisanal fisheries—Insights from a South Indian Lagoon. *Global Environmental Change, 18*(3), 479–489. https://doi.org/10.1016/j.gloenvcha.2008.04.003

Jentoft, S., & Eide, A. (2011). *Poverty mosaics: Realities and prospects in small-scale fisheries*. Springer

Cinner, J. E., McClanahan, T. R., Daw, T. M., Graham, N. A. J., Maina, J., Stead, S. M., … Brown, K. (2012). Vulnerability of coastal communities to key impacts of climate change on coral reef fisheries. *Global Environmental Change, 22*(1), 12–20. https://doi.org/10.1016/j.gloenvcha.2011.09.018

Salas, S., Chuenpagdee, R., Seijo, J. C., & Charles, A. (2007). Challenges in the assessment and management of small-scale fisheries in Latin America and the Caribbean. *Fisheries Research, 87*(1), 5–16. https://doi.org/10.1016/j.fishres.2007.06.015

Appendix

QUESTIONNAIRE

SECTION A : Demographic Information

1. Name
2. Gender
3. Age Group:
4. Education level :
5. Years of fishing Experience

SECTION B : Working days and Effort

6. How many days do you go fishing in a week ?
7. Average hours spent per fishing trip:
8. Do weather conditions affects your working days ?
   - Yes
   - No

SECTION C : Income and Expenses

9. Average daily income from fishing ?
10. Average fuel cost per fishing trip ?

11. Cost incurred ice storage ?

12. Cost incurred for Net Repair?

13. Cost incurred for boat maintanace ?

14. Do you feel you receive a fair price for your catch?
    - Always
    - Sometimes
    - Rarely
    - Never

SECTION D : Market Failure Issues

15. Who mainly decides the selling price of fish ?
    - Fishermen
    - Middlemen
    - Traders
    - Market agents

16. Do middlemen affcet your income?
    - Yes
    - No

17. Do you face problems like:
    - Price fluctuations
    - Lack of storage facilities
    - Delay in payment
    - No direct market access

18. Do you think fishermen have weak bargaining power in the market ?
    - Yes
    - No

SECTION E : Environment & Marine Pollution

19. Do you think overfishing is a mojor reason for reduced fish availability ?
    - Yes
    - No

20. Do you think marine pollution affects fish availability?
    - Yes
    - No

21. What are the major causes of marine pollution ?
    - Plastic waste
    - Industrial waste
    - Oil spills
    - Sewage dischrge

22. Has overfishing increased ypur fishing effort
    - Yes
    - No

SECTION F : Fair outcome for Effort

23. Do you receive fair payment for the effort you invest in fishing ?
    - Yes
    - No
    - Sometimes

24. Do you feel expolited by market intermediaries ?
    - Yes
    - No

25. Is fishing income sufficient to meet your family expenses?
    - Yes
    - No

SECTION G : Government Support & Suggestion

26. Are you aware of government schemes for fishermen ?
    - Yes
    - No

27. Do government subsidies help reduce fishing cost ?
    - Yes
    - No

28. What support would improve fishermen's income most ?
    - Fair pricing policy
    - Direct market access
    - Fuel subsidy
    - Better cold storage