

EFFICIENCY ANALYSIS OF MARKETING PRODUCTS OF INDIAN SCAD (*Decapterus russelli*) IN TALISAYAN VILLAGE, TALISAYAN DISTRICT, BERAU REGENCY

Analisis Efisiensi Pemasaran Hasil Perikanan Tangkap Ikan Layang (*Decapterus russelli*) di Kampung Talisayan, Kecamatan Talisayan, Kabupaten Berau

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ABSTRACT

Indian Scad fishery sector (*Decapterus russelli*) has significant potential and high economic value; however, there is inefficient price instability within the marketing channels, resulting in uneven profit distribution. This study aims to identify the types of marketing channels and asses the level of marketing efficiency in Talisayan Village. The data were analysis includes marketing channel analysis, marketing margin calculation, and marketing efficiency evaluation using Shepherd's method and the Acharya and Aggrawal method. The results indicate two marketing channels: Channel I (Fishermen - collector traders - consumers) with marketing costs of IDR 1,002/kg, a selling price of IDR 15,000/kg, and a marketing margin of IDR 7,000/kg, and fisherman's share 53,3%; and Channel II (Fishermen – collector traders – retail traders – consumers) with marketing costs of IDR 2,477/kg, a selling price of IDR 23,000/kg, a marketing margin of IDR 15,000/kg, and a fisherman's share of 34,7%. Efficiency analysis using Shepherd's method reveals that Channel I is more efficient (13,9%) than Channel II (8,28%). Similar findings were obtained from the Acharya and Aggrawal method, where Channel I showed an efficiency of (1%), higher than Channel II's (0.46%). The shorter marketing channel, Channel I is proven to be more efficient and provides greater income to fishermen compared to Channel II, which involves two intermediaries.

Keywords: Indian scad (*Decapterus russelli*), Fisherman's share, Marketing channels, Marketing efficiency, Marketing margin.

ABSTRAK

Sektor penangkapan ikan layang (*Decapterus russelli*) memiliki potensi yang besar dan nilai ekonomi yang tinggi, namun terdapat ketidakstabilan harga yang tidak efisien dalam saluran pemasaran sehingga menyebabkan distribusi keuntungan yang tidak merata. Penelitian ini mempunyai tujuan untuk mengetahui tingkat saluran pemasaran serta nilai efisiensi pemasaran di Kampung Talisayan. data dianalisis melalui saluran pemasaran, *fisherman's share*, serta

efisiensi pemasaran dengan menggunakan metode Shephard serta Acharya and Aggrawal. Hasil penelitian mengungkapkan adanya dua saluran ikan layang yaitu saluran I (nelayan – pedagang pengumpul – konsumen) memiliki biaya pemasaran sebesar Rp. 1.002/Kg, harga jual Rp. 15.000/Kg, margin pemasaran Rp. 7.000/Kg, serta *fisherman's share* sebesar 53,3%. Dan saluran II (nelayan – pedagang pengumpul – pedagang pengecer – konsumen) memiliki biaya pemasaran Rp. 2.477/Kg, harga jual Rp. 23.000/Kg, margin pemasaran Rp.15.000/Kg, dan *fisherman's share* 34,7%. Analisis efisiensi menggunakan metode shepherd menunjukkan saluran I lebih efisien (13,9%) dibandingkan saluran II (8,29%). Hasil serupa diperoleh dari metode Acharya dan Aggrawal, di mana saluran I memiliki efisiensi (1%), lebih tinggi dibandingkan saluran II yang sebesar (0,46%). Saluran pemasaran yang lebih pendek atau saluran I terbukti lebih efisien dan memberikan pendapatan lebih besar bagi nelayan dibandingkan saluran II yang melibatkan dua perantara.

Kata kunci: Efisiensi pemasaran, *Fisherman's share*, Ikan layang (*Decapterus russelli*), Margin pemasaran, Saluran pemasaran

INTRODUCTION

Capture fisheries are activities involving the exploitation of marine resources or public waters. These activities include providing infrastructure and facilities for fishing, processing, and selling fishery products.

Currently, fisheries production activities are largely carried out by small-scale fishers who lack access to management, capital, and marketing. To date, the fishing industry has not received attention from the government or the business world, even though if managed seriously, it could contribute to community economic development (Nuriati, 2018).

Berau Regency has a marine area of 12,175.75 hectares, with total fish catch production reaching 4,290.05 tons in 2022 and reaching 24,942.08 tons in 2023. Berau's capture fisheries are dominated by marine fisheries (Central Statistics Agency, 2023).

Indian scad (*Decapterus russelli*) is a species of plagiarized fish that is abundant and easily obtained by small-scale fishers. Indian scad live in schools in coastal waters and the open sea, making it relatively efficient to catch using simple fishing gear such as lift nets, gillnets, and purse seines.

Talisayan Village is one of the villages with extensive territorial capacity and offers significant resource utilization opportunities, with a total marine capture fisheries production of 1,803.2 tons in 2020 (Central Statistics Agency, 2021). Price fluctuations in Indian scad sales in Talisayan Village often occur due to an imbalance between supply and demand. Without efficient marketing, high production volumes do not necessarily generate good profits. Therefore, this study was conducted to obtain appropriate data and information to determine marketing channels, marketing margins, and marketing efficiency.

RESEARCH METHODS

Time and Location

This research was conducted in Talisayan Village, located in Talisayan District, Berau Regency, with an implementation period of four months, from August to December 2024.

Tools and Materials

This research utilized various tools, including stationery, mobile phones, laptops, and printers. The materials used in the study consisted of A4 paper, questionnaires, and secondary and primary data.

Types and methods of data collection

Data was collected through direct field observation and interviews with respondents using a questionnaire. The collected data included both secondary and primary data. Primary data collection was conducted directly and included variables such as respondent identity, sales and purchase prices, and costs incurred in the marketing process. Meanwhile, secondary data provided information regarding the general description of the research location.

Sampling techniques

In this study, the sample used included scad fish marketing institutions in Talisayan Village. The sample was selected using a non-probability sampling method, which involves two main approaches: purposive sampling and census. According to Bayu Hari Mukti (2025), non-probability sampling refers to a sample selection method in which not all members of the population have an equal chance of being selected. Purposive sampling is used to determine respondents by considering specific criteria appropriate to the research object, as explained by Dana (2020). The census method, on the other hand, is used when the population is relatively small (Sugiyono, 2017).

Of the total 200 fishermen, 100 specifically fished scad fish. Based on the criteria of having been actively fishing for at least three years and using nets, bagan (trailer nets), and lengkong (mini purse seines), 20 fishermen were selected as a sample, deemed most representative of the characteristics of the study population.

Data Analysis

Marketing Channel Analysis

A marketing channel is a group of parties within an institution that collaborate to achieve a specific goal. The primary objective of a marketing channel is to reach the target market through product grouping and distribution. Product grouping is carried out to determine the variety and quantity of goods required to meet consumer needs and satisfaction (Mubasit, 2012).

Marketing Margin

According to Kotler & Keller (2016), the marketing margin indicates the difference between the selling price at the buyer level and the purchase price at the fisherman level. This margin value is formed from the accumulation of various expenses incurred and the income earned by each marketing actor. Mathematically, the marketing margin can be expressed as follows:

$$Mi = Pri - Pfi$$

Note:

- Mi : Marketing margin
- Pri : Final marketing selling price
- Pfi : Fisher-level marketing buying price

Fisherman' share

Fisherman's share serves as an indicator to assess the proportion of prices received by fishermen in the marketing chain. This indicator is derived from the ratio of the price received by fishermen as producers to the price paid by end buyers (Pratiwi *et al.*, 2021). The formula for calculating fisherman's share is presented below:

$$Fs = \frac{Pf}{Pr} \times 100\%$$

Note:

- Fs : share received by fishermen
 Pf : price at the fisherman level
 Pr : price at the consumer level

Marketing costs

Marketing costs encompass all expenses required to distribute a product from producer to consumer. These costs include various marketing activities, such as sales and distribution, as well as expenses incurred by marketing agencies, along with the revenue earned by each marketing agency. Generally, marketing costs are divided into costs borne by producers and costs incurred by intermediaries (Akbar *et al.*, 2018). The calculation of marketing costs can be expressed as follows:

$$Bp : Bp1 + Bp2 + \dots, \dots Bpn$$

Note :

- Bp: Marketing costs
 Bp1, Bp2, Bpn: Marketing costs for each marketing agency

Shephard's Marketing Efficiency Method

Shephard's method is used to assess marketing efficiency. A higher ratio indicates a more efficient marketing system (Anandita, 2017). The formula for calculating the marketing efficiency index is as follows:

$$ME : \left(\frac{V}{I} \right) - 1$$

Note:

- Me : Marketing efficiency value
 V : Consumer price
 I : Marketing costs

A higher marketing efficiency value indicates a higher level of marketing efficiency, while a lower value indicates a decrease in efficiency. Therefore, a channel is considered efficient if consumers pay a higher price. This demonstrates the importance of optimal distribution chain management to ensure price balance, market sustainability, and the well-being of all business actors involved at every stage.

Marketing Efficiency Using the Acharya and Aggrawal Method

According to Mgale & Yunxian (2020), overall marketing efficiency can be evaluated by applying the method developed by Acharya and Aggrawal.

$$E : \frac{Fp}{(Mc + Mm)}$$

Note :

- E : Marketing efficiency value
 Fp : Price at the producer level
 Mc : Marketing costs
 Mm : Marketing margin

This method assesses marketing efficiency by comparing the price received by producers to total costs and marketing margins. Therefore, a marketing channel is considered more efficient if the price received by producers increases.

RESULT

Based on the research results and calculations of the marketing efficiency of Indian Scad, the following data is shown:

Table 1. Results of the calculation of the marketing efficiency of scad.

No	Description	Marketing channel I (Rp/Kg)	Marketing channel II (Rp/Kg)
1	Consumer prices	15,000	23,000
2	Marketing costs of collector traders	1,002	1,002
3	Retailer marketing costs	-	1,475
4	Total marketing costs	1,002	2,477
5	Marketing margin	7,000	15,000
6	Marketing efficiency value method shepherd (%)	13.9	8.28
7	Efficiency value marketing method archarya and aggrawal (%)	1	0.46

DISCUSSION

Marketing Channels

The marketing channel for mackerel is defined as the series of distribution channels through which the commodity travels, starting with fishermen and ending with consumers. Research conducted in Talisayan Village indicates two marketing channel patterns. Marketing Channel I: fishermen → collectors → consumers, and Marketing Channel II: fishermen → collectors → retailers → consumers.

In Channel I, fishermen sell mackerel directly to collectors, who then distribute the products directly to end consumers. This channel is shorter and more efficient, reducing distribution costs and enabling more competitive selling prices. Meanwhile, Marketing Channel II involves two intermediaries: collectors who collect mackerel from fishermen and then pass them on to retailers before reaching the end consumer. This channel allows fishermen to focus on fishing, while collectors and retailers expand market reach. Although marketing margins are divided, this channel can increase fishermen's income and maintain competitive prices, with effectiveness dependent on coordination between actors and market conditions.

According to Elwadinata (2025), marketing channels are considered most efficient if the distribution channel is the shortest, namely only involving one type of intermediary trader in the product distribution process.

Marketing Margin

According to Fiddyawati *et al.* (2022), marketing margin is defined as the difference between the amount earned by fishermen and the cost incurred by consumers, expressed in Rupiah per kilogram. Data on the margins held by each marketer in the distribution channel of scad (scad) in Talisayan Village are presented in Table 2.

Based on Table 2, it can be seen that the marketing margin in channel II reached IDR 15,000/kg, higher than the IDR 7,000/kg margin in channel I. The price received by fishermen in both channels was the same, IDR 8,000/kg, but the final consumer selling price in channel II reached IDR 23,000/kg, while in channel I it was IDR 15,000/kg. This difference in margin is due to the additional activity of retailers in channel II, which increases the final selling price.

A marketing margin that does not involve excessively high marketing costs and receives an appropriate share of the price is considered the most efficient (Sudana, 2019).

Table 2. Marketing Margin of the Indian Scad Marketing Institution

No	Description	Channel Marketing I (Rp/Kg)	Channel Marketing II (Rp/Kg)
1	Scad fish producers		
a.	Selling price	8,000	8,000
2	Trader collector		
a.	Purchase price	8,000	8,000
b.	Selling price	15,000	15,000
	Trader retailer		
a.	Purchase price	-	15,000
b.	Selling price	-	23,000
	Total marketing margin	7,000	15,000

Fisherman's share

Fisherman's share serves as an analytical instrument that allows for the evaluation of the proportion of costs received by producers (fishermen) compared to the costs incurred by final buyers. This value is calculated by comparing prices at the producer level, namely fishermen, with prices at the consumer level. Pangastuti *et al.* (2017), stated that better and more efficient market performance from the fishermen's perspective is reflected in a higher fisherman's share value. The fisherman's share value at each scad marketing institution in Talisayan Village can be seen in the following table.

Table 3. Fisherman's share

Channel marketing	Average price (Rp/ Kg)		Fisherman's share
	Fisherman level	Consumer level	
I	8,000	15,000	53.3
II	8,000	23.00	34.7

Based on Table 3, it is known that the fisherman's share value in channel I is 53.3%, indicating a relatively fair and efficient profit sharing for fishermen. In contrast, channel II only reaches 34.7%, indicating lower marketing efficiency and less profitable sharing margins for fishermen due to the long marketing chain and the large number of intermediaries. This finding is in line with research by Hutajulu *et al.* (2022), which states that a fisherman's share value > 50% reflects efficient marketing, while a value < 50% indicates inefficiency.

Marketing costs

Marketing costs encompass all expenses incurred during the distribution process of goods from producers to consumers, including transportation, packaging, sorting, and various other levies related to marketing activities (Suprianto, 2021). These costs shown in Table 4:

Table 4. Marketing costs of scad fish marketing institutions

No	Description	Channel Marketing I (Rp/Kg)	Channel Marketing II (RP/Kg)
1	Marketing costs fisherman	-	-

2	Marketing costs trader collector		
a.	Purchase price	8,000	8,000
b.	Ice cubes	669	669
c.	Labor	265	265
d.	Plastic	68.4	68.4
e.	Total cost	1,002	1,002
f.	Selling price	15,000	15,000
3	Marketing costs trader retailer		
a.	Purchase price	-	15,000
b.	Ice cubes	-	612
c.	Transportation	-	477
d.	Plastic	-	385
e.	Total cost	-	1,475
f.	Selling price	-	23,000
	Total cost overall	1,002	2,477

Based on table 4, it is known that marketing channel I has a marketing cost of Rp. 1,002/Kg which only involves collectors with a purchase price of Rp. 8,000/Kg, as well as the cost of ice blocks, labor, and plastic, with a selling price of Rp. 15,000/KG. Meanwhile, marketing channel II, there is an additional cost of Rp. 1,009/Kg from retailers, who buy at a price of Rp. 15,000/Kg and bear the cost of ice blocks, transportation, plastic, so that the final selling price reaches Rp. 23,000/Kg. This comparison shows that a longer marketing chain causes an increase in costs and selling prices to consumers.

Marketing efficiency

Marketing efficiency describes the extent to which a marketing system is able to distribute products from producers to consumers at the lowest possible cost, while fulfilling all essential marketing functions (Putranto, 2022). In this study, marketing efficiency was assessed using the Shepherd approach and the Acharya and Aggrawal method. The results of the marketing efficiency analysis are shown in Table 5.

Table 5. Marketing Efficiency Score

No	Description	Channel Marketing I (Rp/Kg)	Channel Marketing II (Rp/Kg)
1	Shepherd Method		
a.	Consumer prices	15,000	23,000
b.	Total cost	1,002	2,477
	Efficiency value marketing (%)	13.9	8.28
2	Acharya and Aggrawal Method		
a.	Fisherman's price	8,000	8,000
b.	Total marketing costs	1,002	2,477
c.	Marketing margin	7,000	15,000
	Efficiency value marketing (%)	1	0.46

Table 5 shows various analysis methods for Indian scad sales in Talisayan Village. Each method shares the same characteristic: the highest percentage value indicates a more effective marketing channel. The Shepherd method shows a value of 13.9% for marketing channel I and 8.29% for marketing channel II. Therefore, marketing channel I is more efficient due to its lower marketing costs compared to marketing channel II.

Using the Acharya and Aggrawal method, marketing channel I has a value of 1%, higher than marketing channel II's 0.46%. Marketing channel I is considered the most efficient due to its low marketing costs and reasonable margins, thus providing optimal profits for fishermen. While channel II is less efficient due to its high costs and margins, resulting in lower profits for fishermen.

This is in line with research by Maharsi & Munawir (2018), which indicates that channel I is more efficient because it meets the criteria of both the Shepherd and Acharya and Aggrawal methods, where the highest marketing efficiency value is the most efficient indicator. This confirms that the analysis of cost structure, profit margins, and distribution of benefits among actors greatly determines the level of effectiveness of the overall marketing system in real practice.

CONCLUSION

This study demonstrates that shorter scad marketing channels (fishermen-collectors-consumers) are more efficient and generate greater income for fishermen than channels involving retailers. Lower efficiency in longer channels is due to higher intermediary costs and margins. Furthermore, low levels of marketing education impact the effectiveness of the distribution chain. Therefore, capacity building and the development of direct marketing channels are essential to improve fishermen's welfare.

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