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# **An Analysis of Marketing Cost, Producer's Share in Consumer's Rupee and Market Efficiency of Marketing Channel of Prawn Fish in District Rohtak, Haryana**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Sent study was conducted in district Rohtak of Haryana state. In the investigation, 60 fish farmers, 5 traders, 5 wholesalers, 5 retailers and 10 consumers were taken. The most of produce of prawn was marketed to Andhra Pradesh, Tamil Nadu and Gujarat other states. The market chain from fishermen to consumers passes through a number of intermediaries: local traders, retailers and consumers. The presence of intermediaries or market functionaries leads to reduce the producer's share in consumer's rupee. There were three different marketing channel existed in the study area.

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For the marketing aspects analyzed by tabular and percentile analysis and the constraints faced by the sample farmers in prawn marketing were ranked using Garrett's ranking technique were used in the study. The present study revealed that the average of market cost, market margin and price spread of channel's was Rs.38, Rs.37 and Rs.75 per kg. The average producer's share in consumer's rupee is 85.68%. The average of market efficiency of existing channels was 8.67.

**Keywords:** Marketing cost; margin; efficiency; constraints.

## 1. INTRODUCTION

Prawn or shrimp are crustacean species farmed on commercial scale. Shrimps have a commercial significance in the fishing industry. In the share of fish export of India more than 70% place accounted for shrimp fish products. The overall export of shrimp production during 2021-22 was to be counted as 728123 MT [1-3]. India transport most of the shrimp products to the USA, China, EU and other countries. Prawn fish are important source of essential fatty acids, vitamins and proteins 18-20% [4-7]. In the year 2020-2021 inland fish production was 121.21 lac tonnes; Haryana accounted 2.08 lac tonnes (Handbook on Fisheries & Statistic). Shrimp accounted for more than 70% of fishery products. There is an increased knowledge, attitude and better perception of health, quality and safety issues related to fish consumption, customers are swiftly switching to online fish markets [8-10].

## 2. METHODOLOGY

The present study was conducted in district Rohtak of Haryana state. The purpose of the study was to examine the market aspects; market cost, market margin, price spread, and consumer's share in the producer's rupee. Multi - Stage sampling procedure was adopted in the selection of districts, blocks, villages, respondents and market functionaries selected purposively. In first stage – the selection of district, second stage – the selection of the block, third stage – the selection of the villages, fourth stage – selection of respondents and last stage was a selection of the market functionaries. A list of shrimp farms located in each of the selected villages in district Rohtak was prepared with the help of the staff of the department of District Fishery Office and Heads of selected villages. In this study total of 60 farmers from villages viz. Anwal, Bahuakbarpur, Kalanur and Lahli were selected purposively. For the purpose of finding the mean of the marketing aspects of the prawn fish market; 5 traders, 5 wholesalers, 5 retailers and 10 consumers were selected purposively.

Collected data in aspects of the market are summarized, analyzed, and tabulated which helped to find a result of the study. In the study, marketing efficiency was analyzed through the Shepherd Method (1965). An average of market cost, market margin and price spread of Rs.38, Rs.37 and Rs.75 per kg were in channel I, channel II and channel III respectively. An average producer's share in consumer's rupee was 85.68 and market efficiency was 8.67 in channel I, channel II and channel III respectively. The period of study was agriculture year; 2021-2022.

### 2.1 Statistical Analysis:-

#### Constraints in Fish marketing:

$$\text{Percent Position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where,

**R<sub>ij</sub>** = Rank given to i<sup>th</sup> constraint by j<sup>th</sup> individual,

**N<sub>j</sub>**= Number of constraints ranked by j<sup>th</sup> individuals.

#### Analytical tools:-

- i. **Marketing Cost** :- consisted of loading and unloading charges, sorting, weighing, icing and packing in channels. It may be cost incurred by farmers, traders, wholesalers and retailers.

Total Marketing Cost is calculated by the below given formula;

$$C = Cf + Cm1 + Cm2 \dots \dots \dots Cmi$$

Where,

**C** = Total marketing cost.

**Cf**= Cost paid by the fishermen for sell of prawn.

**C<sub>mi</sub>** = Cost incurred by i<sup>th</sup> middleman in the process of buying and selling of prawn.

- ii. **Market margin**:-is the price of all utility, as a profit earned by market intermediaries.

The marketing Margin of Middlemen is given below given formula;

Percentage margin of  $i^{th}$  middlemen

$$PRi = \frac{Ppi + Cmi}{PRi} \times 100$$

Where,

$PRi$  = Total value of receipts per unit (sale price)

$Ppi$  = Purchase value of goods per unit (purchase price)

$Cmi$  = Cost incurred on marketing per unit

**iii. The price Spread:-** it is difference between price paid by the consumer and price received by the fishermen.

The price spread is calculated below given formula.

$$Ps = Cp - Pf$$

Where,

$Ps$  = Price spread

$Cp$  = Consumer's price

$Pf$  = Price received by farmer

**iv. Producer's share in Consumer's Rupee**

$$Ps = \frac{Pf}{Pc} \times 100$$

Where,

$Ps$  = Producer's share in consumer's rupee

$Pf$  = Price of the produce received by the fishermen

$Pc$  = Price of the prawn paid by consumer.

**v. Marketing efficiency**

Efficiency is measured with the help of the following formula given by Shepherd (1965)

$$ME = \frac{V}{I} - 1$$

Where,

$ME$  = Index of Marketing Efficiency,

$V$  = Value of goods sold or consumer price and

$I$  = Total marketing cost or marketing cost per unit

**Net price of Producer** = Gross sale price - cost incurred in market of produce by producer to sell.

### 3. RESULTS AND DISCUSSION

A large number of people are concerned with fish production, distribution and marketing systems in the nearby market of the study area. Marketing is an operation that involves cost, and margin at different levels of marketing and therefore, the price spread from producer to consumer increases. An understanding of these concepts is necessary to choose the channels for marketing agricultural products. The movement of products from the producers to the ultimate consumers involves costs, taxes, and cess which are called marketing costs.. The results were based on primary and secondary data collected related to the markets of the study area. There were three different marketing channels existed in prawn fish marketing. They are given below.

**Channel I:-** Fish farmers → Traders → Consumer.

**Channel II:-** Fish farmers → Traders → Wholesalers → Consumer.

**Channel III:-** Fish farmers → Traders → Wholesalers → Retailers → Consumer.

The lengths of marketing channels depend upon a number of intermediaries involved in the channels.

The various cost of marketing, market margin and price spread of channels are shown in Table 1. In channel I the costs incurred by fishermen were Rs.11 per kg and a sale price of fish was Rs.280 per kg. The costs incurred by traders were Rs.11; in channel I, the margin of trader's was Rs. 15 and the price spread in the channel I was Rs.37 per kg. In channel II, the market cost incurred by traders was Rs.13, the trader's margin was Rs.19 and the cost incurred by wholesalers was Rs.10; the wholesaler's margin was Rs.14 and price spread in this channel was Rs.69. In channel III, the cost incurred by fishermen, traders, wholesalers and retailers was Rs.14, Rs.15, Rs.13 and Rs.14 respectively. In channel III the margin of trader's, wholesaler's and retailer's was Rs.23, Rs.21 and Rs.19 per kg respectively. In channel III price spread was Rs.119.

In Table 2, shows that the average of market cost was Rs.38 in Channels. The market cost in channel I, channel II and channel III was Rs.22, Rs. 36 and Rs.56. The market margin of intermediaries was Rs.15, Rs.33 and Rs.63 in Channel I, Channel II and Channel III respectively while average of margin of market

channels was Rs.37. The average of price spread of channels was Rs.75; where channel I was Rs.37, Channel II was Rs.33 and Channel III was Rs.63. The average of producer's share in consumer's rupee of all channels was 85.68%, where channel I was 94.91%, channel II was 86.68% and channel III's was 75.47%. The overall market efficiency of channels was 8.67; channel's I, channel's and channel III's market efficiency was 12.41, 7.47 and 5.63 respectively.

Table 3, shows the preference and ranking of problems and constraints given by fishermen. The problems and constraints in the study area were non-availability of local market, lack of market information of price, high cost of transportation, Perishability nature of fish, distance of market, Inadequate storage of facilities, and lack of standardizations and grading facility. In which non-availability of the local market was ranked the top most problem accounted 57.33%.

**Table 1. Average composition of market cost, market margin and price spread in channels.**

Sr. No.	Market functionaries	Value in rupees per kilogram		
		Channel I	Channel II	Channel III
1	<b>Producers</b>			
i	Gross price received by producer	280	280	280
ii	Market charges	11(3.73)	13(4.02)	14(3.77)
iii	Net price received by producer	269 (91.19)	267(82.66)	266(71.70)
2	<b>Traders</b>			
i	Market charges	11(3.73)	13(4.02)	15(4.04)
ii	Market margin	15(5.08)	19(5.88)	23(6.20)
iii	Sale price of trader's to consumer/wholesalers/retailers	295	299(92.57)	304(81.94)
3	<b>Wholesalers</b>			
i	Market charges	----	10(3.10)	13(3.50)
ii	Market margin	----	14(4.33)	21(5.66)
iii	Sale price of wholesaler's to consumer/ retailers	----	323	338(91.11)
4	<b>Retailers</b>			
i	Market charges	----	----	14(3.77)
ii	Market margin	----	----	19(5.21)
5	<b>Consumer purchase price</b>	295	323	371

**Table 2. An average composition market cost, market margin, price spread, producer's share in consumer's rupee and market efficiency channel wise**

Sr. No.	Particulars	Channel I	Channel II	Channel III	Channel average
1.	Market cost	22	36	56	38
2.	Market margin	15	33	63	37
3.	Price spread	37	69	119	75
4.	Producer's share in consumer's rupee	94.91	86.68	75.47	85.68
5.	Market Efficiency	12.41	7.97	5.63	8.67

**Table 3. Ranking and percentage of problems and constraints in marketing by respondents**

Sr. No.	Particulars	Total score	%	Rank
1	Non availability of local market	4800	57.33	I
2	Lack of market information on price	4080	47.03	II
3	Higher cost of transport	3600	30.80	III
4	Perishability of produce	3180	21.65	IV
5	Distance of market	2820	19.92	V
6	Inadequate storage facilities	2460	9.45	VI
7	Small number of fish buyers	1888	3.60	VII
8	Lack of standardization and grading facility	1220	0.67	VIII

#### 4. CONCLUSION

The average of market cost of all channels was Rs.38; the highest market cost was incurred in channel III Rs.56 and the lowest was in channel I Rs.22. The overall market margin was Rs.37; the highest market margin was found in channel III Rs.63 and lowest in channel I was Rs.15. The price spread in channel I was lowest Rs.37 and highest in channel III Rs.119. The average of producer's share in the consumer's rupee was 85.68%, a channel I had the highest value of 94.91and best for fishermen.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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