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Evaluating the efficiency of marketing channels of farm enterprises: A study in Kolar district

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Abstract

This study investigates the marketing channels and efficiency of farm enterprises in Kolar and Malur taluks of Kolar district, India. Data from 30 sample farmers were analyzed, focusing on four major farming systems: Crop + Sheep (C + Sh), Crop + Dairy (C + D), Crop + Dairy + Horticulture (C + D + H), and Crop + Dairy + Sericulture (C + D + S). Marketing efficiency was assessed using Shepherd's and Acharya's methods. The results show significant variations in marketing efficiency across different farming systems and marketing channels. For instance, the marketing efficiency of finger millet was higher when sold directly to the government through APMC (70%) compared to village-level sales. In sheep marketing, channel-I (Farmer to Farmer/Consumer) was more efficient, accounting for 74.73% of the sales. In milk marketing, the efficiency was highest in channel-I (Farmer to Consumer) with a 100% producer's share in the consumer's rupee, compared to channel-III (Farmer to Dairy Cooperative Society to Consumer) with a 78.6 percent share. The study highlights the challenges faced by farmers in marketing their produce, such as price fluctuations, inadequate market information, and high transportation costs. These inefficiencies reduce farmers' profit margins and limit their ability to compete in broader markets. The findings suggest that improving market access, reducing intermediaries, and enhancing infrastructure could significantly increase the marketing efficiency of farm enterprises, leading to better income stability for farmers.

Keywords: Marketing efficiency, agricultural marketing channels, farm enterprises, farmer-producer organizations (FPOs) and livestock

Introduction

Agriculture remains a cornerstone of the Indian economy, contributing approximately 18.8% to the Gross Value Added (GVA) in 2022 (Anonymous, 2023) [5]. The sector supports a significant portion of the population, with millions of people relying directly or indirectly on agriculture for their livelihoods. India boasts the world's largest net cropped area and ranks second in global farm output. The country is also a leading producer of a diverse range of agricultural commodities, including dry fruits, textile raw materials, pulses, vegetables, and a vast array of animal products. Despite these impressive statistics, the sector faces several challenges, particularly in the areas of production and marketing, which are critical for the sustainability and profitability of farm enterprises.

Traditional and Evolving Farming Systems

Indian agriculture has traditionally been characterized by mixed farming systems, where crops are grown alongside enterprises such as dairy, poultry, sericulture, and horticulture. These systems, developed over centuries, are designed to ensure stability in production, provide subsistence for farming families, and mitigate risks associated with environmental stresses, such as weather aberrations and pest outbreaks. However, the traditional cereal-based cropping systems often yield relatively low returns, prompting a gradual shift towards more diversified and high-value farming systems.

In recent years, the farming system approach has gained prominence, adding a scientific touch to these traditional practices. This approach emphasizes the integration of multiple farm enterprises to create a more resilient and sustainable agricultural system. Crop diversification, particularly the inclusion of income-elastic goods like horticultural products, has been identified as a key strategy for increasing farm income, ensuring food and nutritional security, and alleviating poverty. The shift from traditional cereal-based systems to more flexible cropping systems that include high-value and export-oriented crops reflects this evolving approach.

Along with agriculture, animal husbandry, and dairying activities have been an integral part of human life since the dawn of civilization. These two sectors have played significant socio-economic role in India due to favourable climate and topography. Livestock considered to be a valuable and critical asset of the rural poor in supporting their livelihoods particularly during unfavorable times. Mixed (crop-livestock) farming system provide flexible

asset regime and reduce risk and vulnerability of the poor farmers. The growth of horticulture crops has become one of the driving forces for overall development of agricultural sector in India. With the emergence of urbanization and modernization, changes in cropping pattern from traditional to high value cash crops, especially the horticultural crops have been initiated in Indian agriculture. Sericulture being a profitable venture, is practiced in many countries of the world under varied agro-climatic conditions with global raw silk production of 1,09,111.10 million tonnes (mt). China is the largest producer of silk with a production of 68,620 mt of raw silk followed by India with a production of 35,820 mt of raw silk. Out of the total raw silk production in India, mulberry silk contributes 25,239 mt, of which 7,009 mt is bivoltine silk and 18,230 mt is multivoltine silk while, the rest is non-mulberry silk (Tasar, Eri and Muga) (Anonymous, 2019) [6].

Crop diversification is one of the best options to increase farm income leading to food, nutrition and ecological security as well as poverty alleviation. India is having traditional cereal crops based cropping systems which yields relatively low returns. However, significant changes in India are taking place over the last few decades resulting in change in cropping systems from cereal based to alternate systems. Flexible cropping systems that feature production of more income elastic goods like horticultural products are a means of diversifying their income sources. Further the importance of diversification to value-added export-oriented crops was also emphasized.

The farming system is the result of interaction among several interdependent components. The farmer allocates certain quantities and qualities of four factors of production, to which he has access, to three processes i.e., crop, livestock, and off-farming enterprises in a manner which given the knowledge they possess, helps in attaining the set goals.

The decision of component combination in a farming system will be conditioned by overall welfare of the households, resources availability, market access, endogenous factors like temperature, soil, rainfall etc. Hence, to understand the farming system and enhance farm income, there is a need for studying socio-economic characters and livelihood security of the farm households, agrarian characteristics and assets structure of the farm households.

The Importance of Marketing Channels in Agriculture

The success of any farming system is not only dependent on production but also on effective marketing. Marketing channels play a crucial role in the agricultural sector, determining how farm produce reaches the consumer and at what price. In India, marketing channels for farm produce vary widely depending on the type of crop or livestock product, the region, and the existing infrastructure.

Traditional marketing channels in India often involve multiple intermediaries, including local traders, wholesalers, and retailers. These intermediaries play a significant role in the distribution of farm produce but also contribute to inefficiencies in the system. Farmers, particularly small and marginal ones, often receive a lower share of the final consumer price due to these intermediaries. Additionally, the lack of direct access to markets and inadequate infrastructure, such as roads and storage facilities, further exacerbates the challenges faced by farmers. (https://infah.org/animalhealth/animal-husbandry)

The emergence of modern marketing channels, including farmer-producer organizations (FPOs), cooperatives, and e-commerce platforms, has begun to address some of these issues. These channels aim to reduce the number of intermediaries, thereby increasing the share of profits that farmers receive. For instance, FPOs enable small farmers to aggregate their produce, thereby gaining better bargaining power and access to larger markets. E-commerce platforms, on the other hand, provide a direct link between farmers and consumers, bypassing traditional intermediaries altogether.

Methodology

The primary data for the study was collected from 30 sample farmers from Kolar and Malur taluks of Kolar district (15 farmers from each taluk) through personal interview methods with the help of a pre-tested structured schedule. The four majorly practiced farm enterprises in the study area were Crop + Sheep (C + Sh), Crop + Dairy (C + D), Crop + Dairy + Horticulture (C + D + H), Crop + Dairy + Sericulture (C + D + S). The collected data pertains to the agricultural year 2022-23. The collected data were classified, processed and presented in order to bring out generalisation of facts from which meaningful inference can be drawn. The shepherd's approach and Acharya's method of marketing efficiency was used to determine the marketing efficiency of framing systems in the study area

Acharya's method of marketing efficiency

According to Acharya (2003), an ideal measure of marketing efficiency, particularly for comparing the efficiency of alternate market channels should consider all of the following.

1. Total marketing costs (MC).
2. Net marketing margin (MM).
3. Prices received by the farmers (FP).
4. Prices paid by the consumer (RP).

Further, the measure should reflect the following relationship between each of these variables and the marketing efficiency.

1. Higher the (a), lower the efficiency.
2. Higher the (b), lower the efficiency.
3. Higher the (c), higher the efficiency.
4. Higher the (d), lower the efficiency.

As there is an exact relationship among four variables, i.e., a + b + c = d, any three of these could be used to arrive at a measure for comparing the marketing efficiency.

Marketing efficiency is the ratio of the net selling price of the grower to the total marketing cost and total marketing margin.

$$\text{Marketing efficiency} = \frac{\text{Net selling price of the grower}}{\text{Total marketing cost} + \text{Total marketing margin}}$$

Shepherd's approach

In this study, Shepherd's approach was used to determine the marketing efficiency of framing systems in the study area. Shepherd suggested that the ratio of the total value of goods marketed to the marketing cost may be used as a measure of marketing efficiency. The higher the ratio, the

higher efficiency and vice versa.

$$\text{Marketing efficiency} = \frac{\text{Value of goods sold (V)}}{\text{Total marketing cost (I)}}$$

Results and Discussion

Marketing efficiency of major crops in different farming system: The marketing efficiency of the major crops grown in the study area including finger millet, cowpea, maize, tomato, green chilli, beans, marigold, rose, mango and guava are assessed.

Marketing channels of finger millet in study area

In this section, marketing channels identified for finger millet are presented. Two marketing channels that existed for finger millet in the study area are presented below:

Table 1: Labour employment in the existing farming system, (in labour days/annum)

Sl. No.	Farm enterprises	Family labour			Hired labour			Total
		Man days	Woman days	Bullock Pair	Man days	Woman days	Bullock Pair	
1.	C + Sh	280	292	90	52	68	0	782
2.	C + D	370	392	110	130	246	0	1,248
3.	C + D + S	418	430	102	154	282	22	1,408
4.	C + D + H	484	466	130	166	318	16	1,580

Channel-I: Farmer - APMC (Govt, PDS system).

Channel-II: Farmer - Consumers (Village level).

Farmers in the study region traded finger millet in two channels. In channel-I, the famers sold finger millet directly to Government through Regulated Markets for PDS system. About 70 percent of the farmers sold finger millet through channel-I. In channel-II, farmers sold their produce directly to households in the villages who do not grow finger millet.

Farmers sold their produce to government through APMC for PDS system as they can sell large quantities of produce at remunerative prices. In addition, the marketing costs incurred for marketing of finger millet is very low in the absence of middlemen, and it saves time and money for marketing of finger millet.

Farmers sold small quantities of their produce directly to consumers in the event of the requirement of cash to meet their immediate expenditure and to avoid transportation, loading and unloading charges to take the produce to APMC or any other markets (channel-2). The selection of the marketing channels becomes imperative for the farmers since the realization of remunerative price is mainly dependent upon the choice of the agency or the channel for disposal of their produce. Majority of the farmers sold their produce directly to the government to get a fair price for their produce and to save money and time.

Marketing of sheep

In the study area, two channels were prevalent for marketing of sheep. They are as follows.

- **Channel-I:** Farmer ‑ Farmer / Consumer.
- **Channel-II:** Farmer ‑ Butcher ‑ Consumer.

All the sample sheep farmers sold their sheep through channel-I, while 45 percent of the sheep farmers sold their sheep solely through channel-I. Around 55 percent of the sheep farmers sold their sheep through both the channels. channel-I accounted for 74.73 percent of the sheep sold while channel-II accounted for 25.27 percent.

In channel-I, the sample sheep farmers either sold their sheep to fellow sheep farmers in their own village as well as in the neighbouring villages who then used the sheep for breeding purposes; or sold their sheep to consumers of other villages who purchased sheep for several reasons, including slaughter or for social events such as festivals, weddings, etc. As sheep rearers sold their animals at farm gate, no marketing costs were involved in channel-I.

In channel-II, the farmers sold their sheep to butchers in their own village. In the study area, the butchers also performed the functions of traders. The butchers bought a large number of sheep from the local sheep rearers for both slaughter at their own shops and sale to other butchers in the neighbouring villages. None of the farmers sold their sheep in livestock markets / shandies as they could sell them in their own village without incurring marketing costs. The price paid by the ultimate buyer (farmer / consumer) in channel-I was ₹ 470/- per kg of live sheep while in channel-II, the price paid by the ultimate buyer (consumer) was ₹ 640/- per kg of sheep meat. The producer's share in consumer's rupee was 70 percent in channel-II as the price received by the farmer was ₹ 450/- per kg of live sheep. The sample sheep rearers sold only live sheep, and manure. Majority of the sample farmers used sheep manure for their own farms while a few of them sold to fellow farmers at about ₹ 3,140/- per ton. These results are in conformity with the findings of Astiti (2021) [2] and Selvakumar and Kathiravan (2019) [4].

Marketing channels of milk

Marketing channels through which farmers in the study area were marketed to the ultimate consumers. The three Channels were identified in the marketing of milk *viz.*

1. **Channel-I:** Farmer – Consumer
2. **Channel-II:** Farmer – Private milk vendor – Consumer
3. **Channel-III:** Farmer – Dairy Co-operative Society – Consumer

Table 2 shows the cost incurred by the dairy farmers in different marketing channels. It was found that farmers have been following three marketing channels in the study area as presented above. The marketing cost incurred by the farmer was only in the case of channel-I and channel-III, and they do not incur any cost in case of channel-II. It can be seen from the table that major portion of the cost incurred by the farmer involved transportation charges, labour charges and spoilage. In case of channel-I, farmer incurred ₹1.45 as marketing cost, out of which ₹1 per litre (68.96%) was spent on transportation charges, followed by labour charges ₹ 0.30 per litre (20.68%) and milk spoilage ₹ 0.15 (10.34%). In

channel-III, farmer incurred ₹1.35 per litre which includes 74.07 percent (₹ 1.00) transportation charge, followed by 14.81 percent (₹ 0.20) labour charges and 11.11 percent (₹ 0.15) milk spoilage. In channel-II, farmer does not incur any cost as private milk vendors come directly to their homes and collect the milk.

Table 2: Cost incurred by dairy farmers in different marketing channels, (₹/litre milk)

Sl. No.	Item	Channel-I	Channel-II	Channel-III
1.	Transportation charges	1.00 (68.96)	-	1.00 (74.07)
2.	Labour charges	0.30 (20.68)	-	0.20 (14.81)
3.	Spoilage	0.15 (10.34)	-	0.15 (11.11)
	Total cost	1.45 (100)	-	1.35 (100)

Note: Figures in the parentheses are percentage to respective total

The study reveals that farmer do not incur any marketing cost in channel-II, because in these channels' farmers do not transport the milk, as the private milk vendors directly collect the milk from farmers. Channel-I is considered to be beneficial to farmers as compared to other channels. In this channel, farmer sell milk directly to the consumer and hence farmer gets maximum share in consumer's price. However, farmers face problems of uncertainty in channel-I. Hence, most of the farmers prefer channel-III rather than channel-I. In this case, dairy co-operative society purchase milk in bulk quantities.

The marketing cost incurred by the private milk vendors is shown in Table 3. The study reveals that private milk vendors is involved in case of channel-II where they collect the milk from farmers and sell the same to consumers. The cost incurred by private milk vendor is ₹ 1.85 per litre out of which transportation charges contribute maximum of ₹1.50 (81.08%) per litre, followed by labour charges of ₹ 0.20 (10.81%) per litre and spoilage of milk ₹ 0.15 (8.10%) per litre. The private milk vendor travel both the ways *i.e.,* for milk collection as well as distribution of milk, hence the cost incurred by the private milk vendors is more as compared to farmers and dairy co-operative society. These results are in conformity with the findings of Mamo *et al.* (2021) [3].

Table 3: Cost incurred by private vendors in marketing of milk, (₹/ litre milk)

Sl. No.	Item	Channel-II
1.	Transportation charges	1.50 (81.08)
2.	Labour charges	0.20 (10.81)
3.	Spoilage	0.15 (8.10)
	Total cost	1.85 (100)

Note: Figures in the parentheses are percentage to respective total

It was found that the dairy cooperative society are involved only in milk marketing and operate in channel-III, where they collect milk from farmers and sell the same to consumers. The total cost incurred by the dairy co-operative society was ₹1.10 per litre. The cost incurred on electricity charges, milk spoilage, shop rent, and labour charges was found to be around 27 percent each and the same is presented in Table 4. The study also revealed that the chilling plant does not incur any marketing cost in channel-I and channel-II. After getting milk from farmer, the dairy co-operative society sell milk as much as possible at village level. For purchase of milk, the consumers come directly to the dairy co- operative society. After selling the milk at village level, the society send the remaining milk to processing units situated at taluk or district level. These results were in conformity with the findings of Mamo *et al.* (2021) [3].

Table 4: Cost incurred by Dairy Co-operative Society, (Rs. / litre milk)

Sl. No.	Item	Channel-III
1.	Shop-rent	0.25 (22.72)
2.	Labour charges	0.25 (22.72)
3.	Electricity charges	0.30 (27.27)
4.	Spoilage	0.30 (27.27)
	Total cost	1.10 (100)

Note: Figures in parentheses are percentage to respective total

Marketing efficiency of milk

The marketing efficiency, marketing cost and marketing margins in the identified marketing channels for fresh milk is presented in Table 5. Farmer received high price for selling buffalo milk to Dairy Co-operative Society as it is fixed based on the fat percentage. The marketing efficiency is more in channel-II (4.27%) followed by channel-III (3.7%). Among these, channel-III is most efficient because of absence of involvement of intermediaries in milk marketing. The producers' share in consumer's rupee is more with respect to channel-I (100%) followed by channel-II (81%). These findings are on par with study conducted by Mamo *et al.* (2021) [3].

Table 5: Marketing efficiency of milk in Kolar district

Sl. No.	Particulars	Channel-I	Channel-II	Channel-III
1.	Price received by producer	31	30.8	27.5
2.	Marketing cost	0	1.55	8
3.	Marketing Margin	0	5.65	-0.5
4.	Consumer Price	31	38	35
5.	Total Marketing cost and margin	-	7.2	7.5
6.	Marketing Efficiency (%)	-	4.27	3.7
7.	Producer's share in consumer's rupee (%)	100	81	78.6

Marketing of silk cocoon

The results of the analysis of marketing channels for silk cocoon are presented here. In general, the silk cocoon producers disposed their produce through different marketing channels. Two important marketing channels were identified in the study area. They are:

1. **Channel-I:** Producer-Wholesaler-Consumer (Reeler).
2. **Channel-II:** Producer – Wholesaler – Retailer - Consumer (Reeler)

In the first channel, the producer sold his produce to the consumer through wholesaler. Out of 116 kg of cocoon, 108 kg (93.10%) was sold through channel-I which is presented in the Table 6.

In channel-II, the producer sold his produce to the wholesaler, further wholesaler sold the produce to retailer. Finally, the produce reaches consumer through retailer for further processing. Out of 116 kg of cocoon, 7.67 kg (6.61%) was sold through channel-II. The results on quantity of cocoon marketed by sample farmers in local cocoon markets under different channels are presented in Table 6.

These findings are in conformity with Arya (2022) [1]. Marketing cost and marketing margin vary considerably from channel to channel and are related directly to the length of the channel-I *i.e.,* longer the channel, higher the marketing cost and marketing margin. Channel-II (Producer -Wholesaler - Retailer - Consumer) being the longest channel and in this channel the highest marketing cost and marketing margin per kg, *i.e.,* Rs. 77.62 and Rs. 250.03, respectively were observed. Channel-I (Producer - Wholesaler - Consumer) is the shortest channel accounting for lowest marketing cost, *i.e.,* Rs. 41.65 per kg and low marketing margin *i.e.,* Rs. 150.10 per kg. Thus, it can be concluded that as the length of channel-I increases the marketing cost and marketing margin also increases and vice-versa.

In other words, the more the numbers of intermediaries involved between the producer and the ultimate consumers, the more is the marketing cost and marketing margin of the intermediaries. It can also be seen from the table that as the consumer paid the lowest price (Rs. 601.68 per kg) when they purchased from channel-I and paid the highest price (Rs. 624.98 per kg) when they purchased from channel-II with two intermediaries between the producer and consumer. The price paid by the consumer increased with the increase in the length of the marketing channel or with the increased in the number of intermediaries involved between the producer and the ultimate consumers.

Intermediaries rendered variety of services in the marketing of cocoon with a view to earn some profit. The price spread in the various channels involved in the marketing of cocoons is given in Table 6. The price spread in channel-I is found to be lowest (Rs. 389.31 per kg) and highest in channel-II (Rs. 665.3 per kg). Thus, it can be concluded that as the length of channel increases, the price spread also increases and vice-versa.

A comparative view of producer's share and the shares of the various intermediaries involved in the different marketing channels is presented in Table 6. It is evident from the table that the producer's share in consumer's rupee decreased with the increase in the length of the marketing channels. The producer's net share is highest (69.84 percent) in Channel-1 while lowest (50.9 percent) in channel-II. Thus, Channel-II is the less favourable to the producers as their share is the lowest in consumer's rupee. It is due to the presence of large number of intermediaries in between the producer and the consumer. The farmers are not receiving good remunerative price for their produce in channel-II.

Marketing efficiency is also calculated for the identified two channels by Shepherd's method and presented in Table 6. The higher the ratio, the higher efficiency and vice versa. The marketing efficiency is found to be high in channel-I (3.14) and low in channel-II (1.90). It is higher in channel-I as price received by farmers is higher and both marketing cost and marketing margin were lower than channel-I. Thus, it can be concluded that the channel-I is efficient compared to channel-II, as the efficiency ratio is higher in channel-I.

Table 6: Marketing of silk cocoon

Sl. No.	Particulars	Channel-I	Channel-II
1.	Quantity of cocoon sold (kg)	85 (93.10)	8 (6.61)
2.	Selling price of producer (Rs.)	442	342
3.	Purchase price of consumer (Rs.)	623.25	646.7
4.	Price received by farmer (Rs.)	431.58	323.25
5.	Marketing cost (Rs.)	41.67	73.37
6.	Marketing margin (Rs.)	150	250.08
7.	Price spread (Rs.)	383.34	646.9
8.	Marketing efficiency (Ratio)	3.25	1.99
9.	Producer's share (%)	70.92	52.88

Note: Figures in parentheses indicates the percentage of total quantity of cocoon sold from respective group of farmers

Marketing of horticultural commodities

It was observed that intermediaries involved in the marketing of vegetables in C + D + H farming system were wholesalers and retailers. In the study area, three marketing channels existed for vegetables. They are:

- **Channel-I:** Producer - Consumer.
- **Channel-II:** Producer - Retailer - Consumer.
- **Channel-III:** Producer - Wholesaler - Retailer - Consumer.

Marketing efficiency in tomato

The Shepherd's method is followed for measuring the marketing efficiency of each channel for different grades. The results of marketing efficiency are given in Table 7.

It is observed from the table 7, that the net price realized by the producer is Rs. 2500.00, Rs. 2360 and Rs. 2336 in channel-l, channel-II and channel-III, respectively. Price spread is Rs.100 in channel-l (Producer - Consumer). Price spread is maximum in channel-III (926.06), followed by channel-II (430.64). This is due to fact that as the market chain increases, price spread also increase. The price paid by consumer is highest in channel-III followed by channel-II.

Producer's share in consumer's rupee is highest in Channel-I (96.15%) followed by Channel-II (81.50%) and Channel-III (69.089%). It is revealed that the variation is seen in price received by farmers in different channels. This is because of variation in market margin and cost of marketing in different channels. As number of middlemen increased in marketing process, producer's share in consumer's rupee

decreased.

Table 7 reveals that in channel-I the marketing efficiency (26) is significantly better than in channel-II (4.93) and channel-III (2.87), respectively. Longer the channel-III, marketing margin resulted in low performance. Thus, the research showed that marketing of summer tomato directly by farmer without any intermediary is most successful and profitable but is performed rarely due to marketing constraints in the study field. Channel-I is the most effective channel in tomato marketing.

Table 7: Marketing efficiency of tomato in different channels

Sl. No.	Particulars	Channel-I	Channel-II	Channel-III
1.	Net Price received by producer	2500	2360	2336
2.	Marketing cost	100	275	440
3.	Marketing Margin	0	290.64	765.11
4.	Consumer Price	2600	2790.64	3381.11
5.	Marketing Efficiency (%)	26	4.93	2.80
6.	Producer's share in consumer's rupee (%)	96.15	81.50	69.08

Marketing efficiency of beans

From Table 8, it is observed that the producer's net price in Channel-l, Channel-II and Channel-III are Rs. 891.64, Rs.850.08 and Rs. 678.5, respectively. In Channel-l (Producer-Consumer) the difference in price is Rs. 38.26. Price spread in Channel-III is high (325.97), followed by Channel-II (160.44). This is due to the fact that demand distribution is also rising, as the supply chain grows. The consumer's price charged is highest in Channel-III followed by Channel-II. The producer's share in market rupee is the highest in Channel-I (95.89%) followed by Channel-II (81.31%) and Channel-III (63.17%).

Table 8 reveals that the marketing performance in channel-I (20.15) is significantly higher than in channel-II (7.60) and channel-III (2.63). The larger channel-III marketing margin resulted in this channel's low performance. Channel-I is most efficient channel in marketing of beans.

Marketing efficiency of green chillies

The total marketing cost per quintal is Rs. 42.93, Rs. 63.36, and Rs. 189.27, respectively in channels I, II, and III. The marketing cost was found to be high in case of channel-I, (100%) followed by channel-II (75.50%) and channel-III (63.51%), respectively. The wholesaler incurred expenditure in channel-III to the extent of 19.44 percent. The company made investment for channel-II and channel-III at 24.49 and 17.04 percent, respectively.

Table 8: Marketing efficiency of beans in different channels

Sl. No.	Particulars	Channel-I	Channel-II	Channel-III
1.	Net Price received by producer	892.16	850.08	678.5
2.	Marketing cost	38.26	69.86	193.22
3.	Marketing Margin	-	112.77	218.87
4.	Consumer Price	930.10	1045.45	1074.15
5.	Marketing Efficiency	24.45	5.35	2.71
6.	Producer's share in consumer's rupee (%)	95.89	81.31	63.17

The producer's net price, in channel-l, channel-II and channel-III are Rs. 825.01, Rs. 747.96 and Rs. 650.0, respectively. Price spread in channel-l (Producer-Consumer) is Rs. 40.09. In channel-III, the demand range is high (303.2), followed by channel-II (91.13). It is due to the fact that demand distribution, as the supply chain grows. The consumer's price charged is highest in channel-III led by channel-II. The producer's share of consumer's rupee was found to be highest in channel-I (95.36%), followed by channel-II (87.52%) and channel-III (63.7%).

The Shepherd's method is followed for measuring the marketing efficiency of each channel for different grades. The results of marketing efficiency are given in Table 9.

Table 9 states that the marketing efficiency in channel-I (20.15) is significantly higher than in channel-II (7.60) and channel-III (2.63). Channel-III being longest marketing channel resulted in low marketing efficiency due to many intermediaries. Channel-I was found to be the efficient marketing channel for green chillies in the study area due to less number intermediaries.

Table 9: Marketing efficiency of green chillies

Sl. No.	Particulars	Channel-I	Channel-II	Channel-III
1.	Net Price received by producer	825.01	747.96	650.01
2.	Marketing cost	42.93	63.36	189.27
3.	Marketing Margin	-	49.04	198.05
4.	Consumer Price	865.10	854.59	1019.1
5.	Marketing Efficiency	20.15	7.60	2.63
6.	Producer's share in consumer's rupee (%)	95.36	87.52	63.7

Marketing efficiency of marigold

The marketing cost of marigold was found to be Rs. 38.23, Rs. 87.1, and Rs. 191.5 in channel-I, channel-II and channel-III, respectively. The farmer bore all the marketing cost in channel-I, while it was 48.51 percent in channel-II and 44.77 percent in channel-III. The wholesaler incurred a

minimum marketing cost of 24.75 percent for channel-III. The retailer incurred marketing cost of 51.48 and 30.65 percent for channel-II and channel-III respectively.

It is observed from the Table 10 that the net price realized by the producer is Rs. 2418.75, Rs.1998.68 and Rs.1828.91 in channel-l, channel-II and channel-III, respectively. Price spread is maximum in channel-III (Rs. 648.19), followed by channel-II (Rs.385.3). This is due to the fact that as the market chain increases price spread also increases. The price paid by consumer is highest in channel-III followed by channel-II. Producer's share in consumer's rupee is highest in channel-I (98.44%) followed by channel-II (83.33%) and channel-III (73.70%). It is observed from Table 10 that, In Channel-I (64.26), the marketing efficiency is significantly higher than in channel-II (6.21), and channel-III (3.82). The larger channel-III marketing margin resulted in this channel's low performance. Channel-I is marigold's most powerful marketing platform.

Table 10: Marketing efficiency of marigold

Sl. No.	Particulars	Channel-I	Channel-II	Channel-III
1.	Net Price received by producer	2418.75	1998.68	1828.91
2.	Marketing cost	38.23	87.1	191.5
3.	Marketing Margin		298.20	456.69
4.	Consumer Price	2456.98	2396.36	2481.23
5.	Marketing Efficiency	64.26	6.21	3.82
6.	Producer's share in consumer's rupee (%)	98.44	83.33	73.70

As per the above discussion, it is observed that majority of the farmers sold their produce to village traders. Hence, the null hypothesis "Majority of the farmers sell their farm produce to traders" and is accepted.

Conclusion

The study concludes that the marketing channels and efficiency of farm enterprises in Kolar district vary significantly across different crops and livestock products. The analysis reveals that direct sales to consumers or government agencies (e.g., through APMC) generally yield higher marketing efficiency, as these channels minimize the involvement of intermediaries and reduce marketing costs. For instance, in milk marketing, channel-I (Farmer to Consumer) provided the highest producer's share in the consumer's rupee (100%), while channel-III (Farmer to Dairy Cooperative Society) was less efficient due to additional costs and intermediaries. Similarly, in the marketing of sheep, direct sales to other farmers or consumers (channel-I) were more efficient compared to sales through butchers (channel-II). The marketing of crops like finger mill*et al*so demonstrated higher efficiency when sold directly to government agencies rather than through local markets. The study identifies several key challenges that reduce marketing efficiency, including inadequate infrastructure, high transportation costs, and limited access to market information. These challenges often force farmers to rely on intermediaries, who capture a significant portion of the profit margins. Additionally, price fluctuations and the lack of organized markets further exacerbate the situation, making it difficult for farmers to realize fair prices for their produce. To improve the marketing efficiency of farm enterprises, the study recommends enhancing rural infrastructure, expanding access to market information through digital platforms, and promoting farmer-producer organizations (FPOs) to aggregate produce and negotiate better prices. These measures could lead to more sustainable and profitable farm enterprises, thereby improving the livelihoods of small and marginal farmers.

Future Scope of Work

Future research should focus on the long-term sustainability of different marketing channels in the context of evolving agricultural practices and market dynamics. Given the rapid advancements in digital technologies, there is significant potential to explore the role of digital platforms in improving market access and efficiency for small and marginal farmers. These platforms could provide real-time market information, reduce the reliance on intermediaries, and facilitate direct sales to consumers, thereby increasing farmers' profit margins. Another area of interest is the impact of government policies and interventions on the efficiency of agricultural marketing channels. Studies could evaluate the effectiveness of recent policy reforms, such as those related to the Agricultural Produce Market Committee (APMC) Acts, in reducing marketing costs and enhancing farmers' incomes. Additionally, research could explore the role of Farmer-Producer Organizations (FPOs) in strengthening market linkages and improving the bargaining power of smallholders.

The integration of value-added processing within farm enterprises is another promising area for future research. By adding value to primary agricultural products, farmers could capture a larger share of the consumer price, thereby improving their income stability. Studies could investigate the feasibility of establishing small-scale processing units within farming communities and their impact on marketing efficiency. Lastly, there is a need to assess the environmental sustainability of different marketing channels, particularly in terms of carbon footprint and resource use. Future research could explore strategies to minimize the environmental impact of agricultural marketing, such as promoting local markets and reducing transportation distances. These efforts would contribute to the development of a more sustainable and resilient agricultural sector in India.

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