ISSN Print: 2664-844X
ISSN Online: 2664-8458
NAAS Rating: 4.97
IJAFS 2025; 7(7): 128-132
www.agriculturaljournals.com
Received: 12-05-2025
Accepted: 14-06-2025

Vishwas Deep
Assistant Professor, Bhai Gurdas Degree College, Sangrur, Punjab, India

Amita Girdhar
Associate Professor, Department of Business Management, CCSHAU, Hisar, Haryana, India

Corresponding Author:
Vishwas Deep
Assistant Professor, Bhai Gurdas Degree College, Sangrur, Punjab, India

Price spread and marketing efficiency of potato marketing in Yamuna Nagar district of Haryana

Vishwas Deep and Amita Girdhar

DOI: https://www.doi.org/10.33545/2664844X.2025.v7.i7b.506

Abstract
An efficient marketing system is the prime factor for raising the producer's share in consumer's rupee of the farmers and promoting the economic development of a country. The main objective of the study was to examine the existing marketing channels, price spread and marketing efficiency of potato marketing in Yamuna Nagar district of Haryana, India. The district was selected on the basis of highest average triennium production of potato in the state. Survey method was used for the collection of data using well designed survey schedule. The study was focused on 100 potato farmers, 5 commission agents, 5 wholesalers and 7 retailers and super markets. *Acharya's modified method* was applied to determine the marketing efficiency of potato. Four major marketing channels were identified in the study were (I) Farmer – Commission agent – Wholesaler – Retailer – Consumer, (II) Farmer – Wholesaler – Retailer – Consumer, (III) Farmer – Retailer – Consumer and (IV) Farmer – Super market – Consumer. The involvement of large number of middlemen was the major reason for the highest price spread in marketing channel I in the supply chain of the potato and producer's share in consumer's rupee was highest in marketing channel IV. Marketing efficiency was highest in marketing channel IV. This paper provides the information regarding the adoption of market options for increased benefits to various chain actors and selection of right marketing channel for potato marketing.

Keywords: Marketing cost, marketing efficiency, price spread, potato, supply chain

Introduction
The potato (*Solanum tuberosum*) ranks as the world's third most important food crop, after wheat and rice. As this product is perishable in nature there is a need of proper storage and transportation facilities to supply these in fresh form to the consumer (Halder and Pati). A greater proportion of potato is edible as compared to these staple crops and production is also higher per hectare, which along with its nutritional value, emphasizes its importance and describes ongoing expansion in potato production. Potato occupies the largest portion of the vegetable production in the country followed by tomato, onion and brinjal. In Haryana, it is grown mainly in the districts like Ambala, Kurukshetra, Yamuna Nagar, Karnal, Sonepat, Panchkula, Panipat, Rohtak, Jind and Sirsa. The varieties of potato which are mainly grown in Haryana are *pukhraj, chipsona, jawahar, chandramukhi, LR etc*.
The commitment of various stakeholders like growers, traders and supermarkets is required in the development of a sustainable agro-supply chain (Buurma *et al.* 2000) [3]. The agricultural supply chain system of the country is determined by different sartorial issues like dominance of small/marginal farmers, fragmented supply chains, low level of processing, and inadequacy of marketing infrastructure *etc*. Long supply chains consist of village traders, commission agents, wholesaler, retailers, cold storage owners in potato markets are the main source of exploitation of farmers which results in the increase in the cost for the consumers (Reddy *et al.* 2012) [6]. An efficient agricultural marketing system is helpful in disposing the final produce of the growers at reasonable returns, which in turn raises the conditions and living standard of the farmers and agriculture, which directly depends upon efficient agricultural marketing system. The main objectives of the study were to estimate the marketing cost and marketing margins of different middlemen for fresh potato under various marketing channels and to analyze the price spread, marketing efficiency and producer's share in consumer's rupee in various marketing channels.

Materials and Methods

Multi stage purposive sampling technique was used for the selection of districts, blocks, villages and respondents of the study. At first stage of sampling, Kurukshetra was selected purposively based on the highest production of potato in the state. At second stage of sampling two blocks were selected randomly and from each selected block, five villages were selected at random. From each village, ten farmers were randomly selected, thus in total, 50 farmers were selected from each block, making a sample of 100 farmers. For collection of the data, on marketing aspect one main market was selected purposively and the marketing channels of vegetables were scrutinized by selecting a random sample of intermediaries such as wholesalers, commission agents, retailers, supermarkets. Simple and weighted averages and percentage methods were used for tabular analysis. Further analysis for specified objective was done by using various standard statistical tools.

Total cost of marketing

This involves various type of expenditures incurred during movement of the final products from the point of production to the ultimate consumers. These costs vary with the channels through which a particular commodity passes through. Total cost of marketing was computed using the formula:

$$C = C_f + C_{m1} + C_{m2} + C_{m3} + \ldots\ldots\ldots C_{mn}$$

Where,
C = Total cost of marketing
C_f = Cost paid by the producer
C_{m1}, C_{m2}……..C_{mn}= Cost incurred by different middlemen in the process of buying and selling.

Marketing margin

Margin refers to the difference between the price paid and received by a specific marketing agency, such as wholesaler, retailer or by any combination of marketing agencies. This is the difference between the total payments (cost + purchase price) and receipt (sale price) of the middlemen.

$$\text{Marketing margin } (A_{mi}) = P_{ri} - (P_{pi} + C_{mi})$$

Where,
P_{ri} = Sale price
P_{pi} = Purchase price, and
C_{mi}= Cost incurred in marketing

Price spread

Price spread refers to the differences between the price paid by the ultimate consumer and the price received by the producer for an equivalent quantity of the farm produce *i.e.*

$$P_{sd} = P_c - P_f$$

Where,
P_{sd} = Price spread
P_c = Price paid by the consumer,
P_f = Net price received by the farmer

Producer's share in consumer's rupee

It refers to the share of vegetable producers in consumer's rupee is dynamic and subject to change. It specifies the price received by the vegetable producer and indicated in percentage of rupee paid by the consumers. It is estimated using the formula:

$$P_s = \frac{P_f}{P_c} \times 100$$

Where,
P_s = Producer's share
P_f = Farmer's price
P_c = Price paid by the consumer

Marketing efficiency

It is a measure of market performance. The movement of goods from producers to the ultimate consumers at the lowest possible cost consistent with the provision of service desired by the consumers id termed as efficient marketing. The marketing efficiency of different marketing channels was worked out by Acharya's method (Acharya and Agarwal, 2011) [1].

$$MME = FP \div (MC + MM)$$

Where,
MME = Modified measure of marketing efficiency
FP = Net price received by the farmer
MC = Total marketing cost
MM = Total net marketing margin

Results and Discussion

The marketing channels are linked with the chains of intermediaries involved at various levels of marketing for smooth distribution of the products.
The major marketing channels identified in the study were:
Marketing channel I: Farmer – Commission agent – Wholesaler – Retailer – Consumer
Marketing channel II: Farmer – Wholesaler – Retailer – Consumer
Marketing channel III: Farmer – Retailer – Consumer
Marketing channel IV: Farmer – Super market – Consumer

Marketing costs of potato under different marketing channels

Marketing channel I (P-APMC-W-R-C)

In this channel the producer on an average incurred a cost of ₹ 128.89 per quintal of potatoes which accounted for 37.72 percent of the total marketing costs. Producer incurred an amount of ₹ 69.46 towards post harvest losses which is the major item of marketing cost and accounted for 20.32 percent of the total marketing costs. The other important items were towards packaging (7.43%), transportation (6.03%) and, loading and unloading charges (3.92%). The commission agent incurred a cost of ₹ 20.80 per quintal of potato which accounted for 6.38 percent of the total marketing costs. The share of loading and unloading, wastage, and sorting was 3.63 percent, 1.52 percent, and 1.22 percent respectively. The wholesaler incurred a cost of ₹ 150.24 per quintal of potatoes which accounted for 43.97 percent of the total marketing costs. The share of commission paid was 18.91 percent of the total marketing costs followed by wastage (7.23%), market fee (6.96%), loading and unloading (3.60%), transportation (3.44%), packaging (2.31%) and sorting (1.56%). The retailer incurred a cost of ₹ 40.74 per quintal of potatoes which

accounted for 11.92 percent of the total marketing costs. The share of storage, loading and unloading, packaging, and transportation in the total marketing cost was 3.66 percent, 3.45 percent, 3.21 percent and 1.60 percent respectively. Similar findings were reported by Singh *et al.* (2018) [7].

Marketing channel II (P-W-R-C):
In this channel the producer incurred a cost of ₹ 126.80 per quintal of potatoes which accounted for 50.24 percent of the total marketing costs. Producer incurred an amount of ₹ 25.18 towards packaging. The major item of marketing cost was towards post harvest losses was ₹ 67.65 and accounted for 26.80 percent of the total marketing costs. The other important items were transportation (8.44%), loading and unloading charges (5.02%) *etc*. The wholesaler incurred a cost of ₹ 73.52 per quintal of potatoes which accounted for 29.13 percent of the total marketing costs. The share of wastage was 9.43 percent followed by loading and unloading charges (4.56%), and sorting (2.14%).The retailer incurred a cost of ₹ 52.04 per quintal of potatoes which accounted for 20.62 percent of the total marketing costs. The share of transportation, storage, packaging, and loading and unloading in the total marketing cost was 5.33 percent, 5.07 percent, 5.13 percent and 5.09 percent respectively. Similar findings were reported by Sodhi and Patel (2019) [8].

Marketing channel III (P-R-C): In this channel the producer incurred an average cost of ₹ 116.80 per quintal of potatoes (Table 1) which accounted for 67.81 percent of the total marketing costs. The share of post harvest losses was (37.29%), packaging (12.95%), transportation (12.71%), and loading and unloading (4.85%).The retailer incurred a cost of ₹ 55.43 per quintal of potatoes which accounted for 32.18 percent of the total marketing costs. The major share of marketing cost for retailer in channel III was storage and packaging cost which was observed ₹ 16.80 and ₹ 11.20 that accounted for 9.75 percent and 6.50 percent of the total marketing costs. Similar findings were reported by Kumar *et al.* (2020) [2].

Marketing channel IV (P-SM-C)
In this channel the producer incurred a total cost of ₹ 84.94 per quintal of potatoes that accounted for 50.44 percent of the total marketing costs occurred in this channel. The major share was of post-harvest losses that accounted for 41.08 percent followed by packaging cost (9.36%). The super markets incurred an average cost of ₹ 83.45 per quintal of potatoes which accounted for 49.55 percent of the total marketing costs in this channel. Transportation accounts for maximum share of 13.53 percent followed by packaging (8.20%), loading and unloading (7.04%), and storage cost (6.05%) in this channel. Hence it can be concluded that in this channel also the producer have to bear the maximum share of the total average marketing costs *i.e.* 50.44 percent. Similar findings were reported by Sodhi and Patel (2019) [8]; Kumar *et al.* (2020) [2].

Table 1: Marketing cost of potato under different marketing channels in Kurukshetra district of Haryana

Sr. No.	Particulars	Channel I	%	Channel II	%	Channel III	%	Channel IV	%
1.	**Farmer's level**								
	Packaging	25.41	7.43	25.18	9.97	22.3	12.95	15.76	9.36
	Transportation	20.63	6.03	21.30	8.44	21.9	12.71	0.00	0.00
	Market fees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Loading and unloading	13.40	3.92	12.68	5.02	8.36	4.85	0.00	0.00
	Commission paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Post harvest losses	69.46	20.32	67.65	26.80	64.23	37.29	69.18	41.08
	Sub total	128.89	37.72	126.80	50.24	116.8	67.81	84.94	50.44
2.	**Commission agent's level**								
	Sorting	4.20	1.22	0.00	0.00	0.00	0.00	0.00	0.00
	Storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Packaging	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Transportation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Market fees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Loading and unloading	12.40	3.63	0.00	0.00	0.00	0.00	0.00	0.00
	Commission paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wastage	5.20	1.52	0.00	0.00	0.00	0.00	0.00	0.00
	Sub total	21.80	6.38	0.00	0.00	0.00	0.00	0.00	0.00
3.	**Wholesaler's level**								
	Sorting	5.32	1.56	5.40	2.14	0.00	0.00	0.00	0.00
	Storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Packaging	7.88	2.31	8.92	3.53	0.00	0.00	0.00	0.00
	Transportation	11.74	3.44	0.00	0.00	0.00	0.00	0.00	0.00
	Market fees	23.80	6.96	23.50	9.31	0.00	0.00	0.00	0.00
	Loading and unloading	12.30	3.60	11.90	4.56	0.00	0.00	0.00	0.00
	Commission paid	64.60	18.91	0.00	0.00	0.00	0.00	0.00	0.00
	Wastage	24.80	7.23	23.80	9.43	0.00	0.00	0.00	0.00
	Sub total	150.24	43.97	73.52	29.13	0.00	0.00	0.00	0.00
4.	**Retailer's level**								
	Packaging	10.98	3.21	12.94	5.13	11.20	6.50	0.00	0.00
	Commission paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Loading and unloading	11.80	3.45	12.84	5.09	0.00	0.00	0.00	0.00
	Market fees	0.00	0.00	0.00	0.00	27.43	15.93	0.00	0.00
	Transportation	5.46	1.60	13.46	5.33	0.00	0.00	0.00	0.00
	Storage	12.50	3.66	12.80	5.07	16.80	9.75	0.00	0.00

	Sub total	40.74	11.92	52.04	20.62	55.43	32.18	0.00	0.00
5.	**Super market**								
	Packaging	0.00	0.00	0.00	0.00	0.00	0.00	13.80	8.20
	Transportation	0.00	0.00	0.00	0.00	0.00	0.00	22.80	13.53
	Loading and unloading	0.00	0.00	0.00	0.00	0.00	0.00	11.87	7.04
	Commission paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Market fees	0.00	0.00	0.00	0.00	0.00	0.00	26.48	15.72
	Storage	0.00	0.00	0.00	0.00	0.00	0.00	10.20	6.05
	Post harvest losses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub total	0.00	0.00	0.00	0.00	0.00	0.00	83.45	49.55
6.	Total marketing cost	341.67	100.00	252.36	100.00	172.23	100.00	168.39	100.00

Price spread and marketing efficiency

The price spread for the marketing channels I, II, III and IV was worked out separately and presented in Table 2. The producer's share in consumer rupee was highest in marketing channel IV and lowest in marketing channel I due to the presence of more number of intermediaries in the supply chain and marketing costs and margins by them. In marketing channel I commission agent incurred ₹ 21.80 which was 1.18 percent of consumer's price in respective channel. In marketing channel I and II wholesaler incurred a marketing cost of ₹ 150.24 and ₹ 73.52 which accounted for 8.16 percent and 4.26 percent of consumer's price respectively. In channel I, II and III retailers incurred ₹ 40.74, ₹ 52.04 and ₹ 55.43 which was 2.21 percent, 3.01 percent and 3.21 percent of the consumer's price. In channel IV super market incurred ₹ 83.45 that accounted for 4.90 percent of the consumer's price in the respective channel. In marketing channel I commission agent obtained a profit margin of ₹ 136.13 per quintal of potatoes and realized 7.39 percent of the final consumer price. In channel I and II wholesaler received a profit margin of ₹ 112.52 and ₹ 167.54 respectively and 6.11 and 9.70 percent of consumer's price. In marketing channel I, II and III retailers received a marketing margin of ₹ 135.17, ₹ 196.21 and ₹ 351.31 per quintal of potatoes with a percent margin of 7.34, 11.36 and 20.32 of consumer's price respectively. In marketing channel IV super market received a margin of ₹ 319.39 per quintal of potatoes with 18.86 share of percent margin of consumer's price. Price spread in marketing channel I, II, III and IV is observed ₹ 719.77, ₹ 616.11, ₹ 523.54 and ₹ 487.78 which is 39.07, 35.68, 30.28 and 28.63 percent respectively of the final price received by the consumer. The index of marketing efficiency was observed 1.55, 1.80, 2.30 and 2.49 in marketing channel I, II, III and IV respectively. The producer's share in consumer rupee in channel I, II, III and IV was 60.92 percent, 64.31 percent, 69.71 percent and 71.42 percent respectively. Despite the fact that the producers share in consumer's rupee was low in channel I and II when compared to channel III and IV, most of the farmers preferred these channels because of less risk and uncertainty in these channels. The farmer incurred ₹ 128.89, ₹ 126.80, ₹ 116.80 and ₹ 84.94 per quintal of potatoes respectively in channel I, II, III and IV. The net price received by the farmers was ₹ 1122.23, ₹ 1110.34, ₹ 1205.20 and ₹ 1219.22 per quintal of potatoes in respective marketing channels.

Table 2: Price spread and marketing efficiency of potato in Yamuna Nagar district of Haryana

Sr. No.	Particulars	Channel I	%	Channel II	%	Channel III	%	Channel IV	%
1.	**Farmer's level**								
	Price received	1251.12	68.08	1237.14	71.66	1322.00	76.47	1304.16	76.40
	Expense occurred	128.89	6.99	126.80	7.34	116.80	6.75	84.94	4.98
	Net price received	1122.23	60.92	1110.34	64.31	1205.20	69.72	1219.22	71.42
2.	**Commission agent's level**								
	Purchase price	1251.12	67.92	0.00	0.00	0.00	0.00	0.00	0.00
	Expense occurred	21.80	1.18	0.00	0.00	0.00	0.00	0.00	0.00
	Sale price	1403.33	76.18	0.00	0.00	0.00	0.00	0.00	0.00
	Net margin	136.13	7.39	0.00	0.00	0.00	0.00	0.00	0.00
3.	**Wholesaler's level**								
	Purchase price	1403.33	76.18	1237.14	71.66	0.00	0.00	0.00	0.00
	Expense occurred	150.24	8.16	73.52	4.26	0.00	0.00	0.00	0.00
	Sale price	1666.09	90.45	1478.20	85.62	0.00	0.00	0.00	0.00
	Net margin	112.52	6.11	167.54	9.70	0.00	0.00	0.00	0.00
4.	**Retailer's level**								
	Purchase price	1666.09	90.45	1478.20	85.62	1322.00	76.47	0.00	0.00
	Expense occurred	40.74	2.21	52.04	3.01	55.43	3.21	0.00	0.00
	Sale price	1842.00	100.00	1726.45	100.00	1728.74	100.00	0.00	0.00
	Net margin	135.17	7.34	196.21	11.36	351.31	20.32	0.00	0.00
5.	**Supermarket's level**								
	Purchase price	0.00	0.00	0.00	0.00	0.00	0.00	1304.16	76.30
	Expense occurred	0.00	0.00	0.00	0.00	0.00	0.00	83.45	4.90
	Sale price	0.00	0.00	0.00	0.00	0.00	0.00	1707.00	100.00
	Net margin	0.00	0.00	0.00	0.00	0.00	0.00	319.39	18.78
6.	Price spread	719.77	39.07	616.11	35.68	523.54	30.28	487.78	28.63
7.	Producer's share in consumer rupee	-	60.92	-	64.31	-	69.71	-	71.42
8.	Index of marketing efficiency								
	(Acharya method)	1.55		1.80		2.30		2.49	

Conclusion

The major marketing channels revealed in the study area were *viz*; F-APMC-W-R-C, F-W-R-C, F-R-C and F-SM-C. The major marketing costs incurred by the farmers were post harvest losses and packaging while for other marketing intermediaries loading and unloading; market fees, storage cost and commission paid were the major marketing costs. The marketing cost was highest in marketing channel I due to the involvement of large number of market intermediaries and was lowest in marketing channel IV. The price spread was lowest in marketing channel IV as the product was directly sold to the super markets by the farmers and, packaging and unloading services were provided by the super markets to the farmers. The share of producer in consumer's rupee was highest in marketing channel IV and was lowest in marketing channel I. The marketing channel IV was having the highest marketing efficiency and was considered as the most efficient marketing channel among all the prevailing marketing channels in the supply chain of potato in Yamuna Nagar district of Haryana. It is suggested to provide well equipped storage facilities for the farmers at cheaper rates and promote the direct purchase of the produce by the government to minimize the costs in the supply chain of potato.

References

1. Acharya SS, Agarwal NL. Agricultural marketing in India. 5th ed. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.; c2011.
2. Kumar R, Kumar N, Bishnoi DK, Malik AK, Kumar P. A study of production and marketing of potato in Kurukshetra district of Haryana. Indian J Econ Dev. 2020;16(2):307-312.
3. Buurma ES, Boselie DM. Stakeholder perception analysis for Agri- Supply Chain development. Acta Hortic. 2000;536(75):625-633.
4. Halder P, Pati S. A need for paradigm shift to improve supply chain management of fruits and vegetables in India. Asian J Agric Rural Dev. 2011;1(1):11-20.
5. Kumar R, Kumar N, Bishnoi DK, Malik AK, Kumar P. A study of production and marketing of potato in Kurukshetra district of Haryana. Indian J Econ Dev. 2020;16(2):307-312.
6. Reddy GP, Murthy MRK, Prathari DK, Bhalchakra IV. Supply chains and futures market for potato growers in Uttar Pradesh. In: Supply Chain System in Agricultural Food Security NAARM (conf.spl). 2012. p. 30-53.
7. Singh DK, Pandey NK, Kharumnuid P. An economic analysis of marketing of potato from Shimla hills of Himachal Pradesh. Econ Aff. 2018;63(2):419-424.
8. Sodhi H, Patel A. Price spread and marketing efficiency of potato marketing channels in Gujarat. An International Refereed, Peer Reviewed and Indexed Quarterly Journal in Science, Agriculture and Engineering. 2019;9(29):41-44.