

Functional Analysis of Marketing of Blackgram in Lalitpur District of Uttar Pradesh

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Received: 10-12-2022

Revised: 29-02-2023

Accepted: 06-03-2023

ABSTRACT

An investigation entitled "Functional Analysis of Marketing of Blackgram in Lalitpur District of Uttar Pradesh" was conducted in Blackgram grown four different development blocks of Lalitpur district during the agricultural year 2014-15. Five villages from each block, 15 farmers from each village were selected randomly, so as to constitute an ultimate sample size of 300 farm households. Primary data were collected by the survey method by interviewing the blackgram growers as well as different market functionaries involved through an especially structured and pre-tested schedule. In the study, the three types of marketing channels were identified to be followed by the blackgram growers, the first one channel was the Producer - Village trader - Processor - Wholesaler -Retailer - Consumer, second channels was the Producer - Commission agent - Processor - Retailer - Consumer and third was the Producer - Processor - Consumer. Functional analysis of marketing of blackgram reveals the highest traders' profit in channel-III in terms of percentage. But traders' profit per quintal declined from channel-I to channel-III. This ranged from ₹ 2241.65/ qtl. to ₹ 2523.46/ qtl. In spite of the highest number of intermediaries in channels-I, the highest marketing cost recorded in channel-II can be explained in terms of nonexistence of some functions in the former channel. The marketing efficiency was higher in marketing channel- III as compared to marketing channel-II and marketing channel-I because of relatively low marketing cost and marketing margin in channel-III. These were estimated at 1.35, 1.46 and 1.78 in channel-I, channel-II and channel-III respectively.

Keywords: Marketing Channels, Marketing Cost, Marketing Margin and Marketing Efficiency

Pulses are highly important as a component of daily diet, its contribution to human nutrition (protein) and also in terms of its contribution to farmers' income and employment. Most importantly all pulse crops improve soil fertility by fixing atmospheric nitrogen into soil and help in increasing sustainability of the soil fertility. Pulses in India have been poor men diet since long. Pulses are grown on an area of 22-23 million hectares with an annual production 13-18

million tonnes (MT). There is a steep increase in the price of pulses due to short supply following the growing demand due to burgeoning population. The net availability of pulses has come down from 70.1gm/ day/ person in the year 1951 to 45 gm/ day/

How to cite this article: Kumar, N., Dey, G., Rajawat, B.S., Dwivedi, S., Singh, S.P., Bhat, A., Singh, A.D. and Saroj. (2023). Functional Analysis of Marketing of Blackgram in Lalitpur District of Uttar Pradesh. *Agro Economist - An International Journal*, 10(01): 17-23.

Source of Support: None; **Conflict of Interest:** None



person in the year 2021 (Indian Council of Medical Research recommended 65 gm/day/capita in 2008). Recently, under the National Food Security Mission (NSFM), high priority has been given for increasing the production of pulses across the country to curtail growing imports, arrest protein deficiency in nutrition and make pulses available at affordable price to the common people. In India, the important reasons for stagnation of production of pulses can be attributed to replacement of pulse area by high yielding varieties of cereals and other crops following expansion of irrigation facilities in dry areas. To meet the domestic requirement, there is need to increase the pulse production which can be increased either by bringing more area under cultivation or by enhancing their productivity. India is the largest producer as well as consumer of blackgram. It produced 1.95 MT of urad from 2.52 M ha. of area in the year of 2014-15 (Ministry of Agriculture and Farmer Welfare). In India black gram is mostly grown in Uttar Pradesh, Andhra Pradesh, Maharashtra, Madhya Pradesh, Tamil Nadu, Chhattisgarh, Rajasthan, Jharkhand and Odisha states which together account for about 86.78 per cent area and 86.53 per cent production (Lahre et al., 2017). As per the available estimates, UP and Andhra Pradesh occupy the first two positions, contributing over 40 % of the total production. Maharashtra contributes about 14% while Tamil Nadu and Madhya Pradesh account for about 10 % and 8.5 % respectively of total production in the country. In Uttar Pradesh the largest area to the extent of 160879 ha. (28.13 %) is covered by Lalitpur district and this also makes the highest contribution in the production of the state. This contributed about 124355 tonnes (32.72 %) of the total production in the year of 2012-13 (Ministry of Agriculture, GOI, 2013-14).

MATERIALS AND METHODS

The present study was carried out on the basis of primary data collected from four different development blocks of Lalitpur district namely Maharauni, Bar, Birdha and Jakhaura where Blackgram is predominantly grown. Five villages from each block were selected randomly. Further, from each village, 15 farmers were selected randomly, so as to constitute a total sample size of 300. Required data from sample farmers as well as the market functionaries involved were collected through a

pre-tested schedule and questionnaires by personal interview method. Tabular analysis has been used to obtain the result of the study. The reference year of the study is agricultural year 2014-15.

Marketing channels are the path through which goods are moved from the hands of producers to the hand of ultimate consumers. It involves various middlemen who facilitate the flow of goods and services from the producers to the consumers. The length of channel varies from commodity to commodity and depends on the quantity to be moved and the nature and degree of specialization in production. In the present study the three marketing channels (viz.: Channel-I, Channel-II and Channel-III) of blackgram in Lalitpur district of Uttar Pradesh were identified.

Marketing Efficiency

For estimation of Marketing Efficiency, Acharya's approach was used as per the suitability of the data.

The modified marketing efficiency (MME) formula is given below.

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

Where,

FP is prices received by the farmer,

MC is the marketing cost,

MM is the marketing margin.

Marketing cost

The total marketing cost (MC) incurred by the producer / seller and by various intermediaries has been calculated as:

$$MC = CF + Cm_1 + Cm_2 + Cm_3 + \dots + Cm_i$$

Where,

MC = Marketing cost

CF = Cost incurred by Producer

Cm_i = Cost incurred by the *i*th middleman

Marketing margin

Marketing margin of middlemen has been calculated as the difference between the total payment

(marketing cost + purchase price) and receipts (sale price) of the middlemen and has been calculated as;

$$Am_i = PR_i - (PP_i + Cm_i)$$

Where,

Am_i = Absolute marketing margin of i^{th} middlemen

PR_i = Total value of receipts per unit

PP_i = Purchase value per unit

Cm_i = Cost incurred on marketing per unit

RESULTS AND DISCUSSION

The tables 1 display distribution of farm households to different size categories e.g., marginal, small, semi-medium, medium and large in different blocks of Lalitpur district. In the district as a whole, out of 300 farm households growing blackgram, 62 & 78 numbers of households belong to marginal and small size categories, respectively. There existed 86, 45 and 29 number of households in semi-medium, medium and large size categories, respectively.

Marketing channels

In the study, the main marketing channels involved in the marketing of blackgram can be summarized as follows:

- ♦ **Channel-I:** "Producer - Village trader - Processor - wholesaler -Retailer - Consumer"
- ♦ **Channel-II:** "Producer - Commission agent - Processor - Retailer - Consumer"
- ♦ **Channel-III:** "Producer - Processor - Consumer"

These three types of marketing channels were found in the study area, and are presented in Table 2.

Marketing cost and marketing margin of blackgram under different marketing channels

Marketing cost and marketing margin of blackgram under different marketing channel are presented in table 2. In this study, three marketing channels were identified in marketing of blackgram. There were four market intermediaries between producer and consumer in channel-I of blackgram marketing. These included village trader, processor, wholesaler and retailer. In other words, blackgram was sold by

the farmers/ producers to the village trader who in turn, sold the commodities to the processor; the processor sold the processed blackgram (*dal*) to the wholesaler and then wholesaler to the retailer. The consumers bought it from the retailer.

Table 1: Category wise sample farms growing blackgram under Lalitpur district

Size Categories	Maharauni Block	Bar Block	Birdha Block	Jakhaura Block	Total Size of Sample
Marginal	20	16	11	15	62
Small	19	22	17	20	78
Semi-medium	20	18	25	23	86
Medium	11	13	12	9	45
Large	5	6	10	8	29
All farms	75	75	75	75	300

Table 2: Marketing costs and marketing margins of blackgram under different Marketing channels (in ₹/qtl.)

Sl. No.	Particulars	Channels		
		I	II	III
1.	Price received by Producer	4000	4300	4500
	(A) Cost of production	2971.05	2971.05	2971.05
	Marketing cost of Producer			
	(i) Transportation cost	—	22.16	16.80
	(ii) Packing	—	3.50	3.50
	(iii) Loading/unloading	—	4.00	4.00
	(iv) Helping hand	—	2.50	2.50
	(v) Octroi	40.00	43.00	45.00
	(vi) Others (Miscellaneous)	5.65	12.34	11.00
	Total marketing cost	45.65	87.50	82.80
	Marketing margin	983.30	1241.45	1446.15
2.	Price paid by village trader	4000	—	—
	Marketing cost of village trader			
	(i) Transportation cost	15.40	—	—
	(ii) Packing	3.00	—	—
	(iii) Loading/unloading	4.00	—	—
	(iv) Helping hand	5.00	—	—
	(v) Spoilage	10.00	—	—
	(vi) Octroi	45.00	—	—
	(vii) Others (Miscellaneous)	8.24	—	—
	Total marketing cost	90.64	—	—
	Marketing margin	409.36	—	—

3.	Price paid by commission agent	—	4300	—
	Marketing cost of commission agent			
	(i) Mandi tax (1 %)	—	48.00	—
	(ii) Helping hand	—	3.00	—
	(iii) Storage	—	6.00	—
	(iv) spoilage	—	20.00	—
	(v) Others (Miscellaneous)	—	6.56	—
	Total marketing cost	—	83.56	—
	Marketing margin	—	416.44	—
4.	Price paid by Processor	4500	4800	4500
	Marketing & processing cost of Processor			
	(i) Transportation cost	—	12.00	—
	(ii) Loading/unloading	—	4.00	—
	(iii) Helping hand	2.00	6.00	2.00
	(iv) Storage	8.00	8.00	8.00
	(v) Spoilage	15.00	20.00	15.00
	(vi) Local tax	5.00	5.00	5.00
	(vii) Others (Miscellaneous)	4.50	8.00	4.50
	Processing cost Milling	25.00	25.00	25.00
	Cleaning	135.00	135.00	135.00
	Packing	10.00	10.00	10.00
	Total marketing cost	204.50	233.00	204.50
	Marketing margin	495.50	437.00	795.50
5.	Price paid by wholesaler	5200.00	—	—
	Marketing cost of wholesaler			
	(i) Transportation cost	10.00	—	—
	(ii) Loading/unloading	4.00	—	—
	(iii) Helping hand	5.00	—	—
	(iv) Storage	10.00	—	—
	(v) Spoilage	12.00	—	—
	(vii) Others (Miscellaneous)	5.20	—	—
	Total marketing cost	46.20	—	—
	Marketing margin	353.80	—	—
6.	Price paid by retailer	5600.00	5500.00	—
	Marketing cost of retailer			
	(i) Transportation cost	8.00	10.50	—
	(ii) Loading/unloading	4.00	4.00	—
	(iii) Helping hand	8.00	10.00	—
	(iv) Storage	12.00	12.00	—
	(v) Spoilage	20.00	20.00	—
	(vii) Others (Miscellaneous)	6.50	8.20	—
	Total marketing cost	58.50	64.70	—
	Marketing margin	281.50	375.30	—
7.	Price paid by consumer	5940.00	5940.00	5500.00

The village trader went to producers and purchased blackgram from them at ₹ 4000/ qtl. But octroi charge

which was to be paid by the village trader while going to distant place for sale of the commodity to the processor was taken from the farmers. The octroi charge was noted to be ₹ 40 per quintal. Marketing cost paid by the producer was found to be ₹ 45.65/ qtl. in channel-I. Here marketing margin was observed to be ₹ 983.30/ qtl. But marketing cost borne by the village trader was found to be higher than that of producer owing to spending of various items of costs in the marketing of blackgram. These were transportation cost, cost of packing, loading and unloading cost, charges of helping hands, spoilage, octroi charges and other costs. Marketing cost incurred by the village trader was ₹ 90.64/ qtl., which was near about double the marketing cost borne by the producers. Blackgram was sold by the village trader to the processor at ₹ 4500/ qtl., i.e., ₹ 4500/ qtl. was paid by the processor to village trader. Here marketing margin was noted be ₹ 409.36/ qtl., which was less than that at producer level.

The processed blackgram was sold to the wholesaler at ₹ 5200/ qtl., i.e., this was the price paid by the wholesaler to the processor. At the level of processor marketing cost was noted to be ₹ 204.50/ qtl. This amount was attributed to processing of the product. Here the marketing margin was found to be ₹ 495.50/ qtl., which was higher than that at the level of village trader. At the level of wholesaler, marketing cost was ₹ 46.20/ qtl. The wholesaler sold the commodity to the retailers who paid ₹ 5600/ qtl. to the former. Marketing margin was observed to be ₹ 353.80/ qtl. at the level of wholesaler. The marketing cost borne by the retailers were noted to be ₹ 58.50/ qtl. The retailers sold pulses (*dal*) to the consumers at ₹ 5940/ qtl. The marketing margin at the level of retailers was found to be ₹ 281.50/ qtl., which was the lowest among the market intermediaries.

Three intermediaries between producers and consumers were identified in channel-II for marketing of blackgram. These intermediaries were commission agent, processor and retailer. At producer's level, octroi charges were noted to be highest among different items of marketing cost. This charge was recorded at ₹ 43/ qtl. At this level, marketing cost was observed to be ₹ 87.50/ qtl. The producers sold their produce to the commission agent at ₹ 4300/ qtl. Marketing margin was noted to be ₹ 1241.45/

qtl. at producer level. At the level of commission agent, *mandi* tax was found to be highest cost among different items of market costs. This was ₹ 48/qtl. Marketing cost was observed to be ₹ 83.56/qtl., which was slightly lower than that at the level of producer. The commission agent sold the commodity to the processor. At the level of commission agent marketing margin was ₹ 426.44/qtl., which was considerably lower than that at producer level.

At the level of processor, cost of processing of blackgram was found to be highest among the different items of marketing cost. This was recorded at ₹ 160/qtl. At this level, marketing cost was ₹ 233/qtl., which was considerably higher than that at processor level. The processor sold the processed blackgram (*dal*) at ₹ 5500/qtl. to the retailer. The marketing margin at processor level was ₹ 437/qtl., which was slightly higher than that at commission agent level. Marketing cost at retailer level was noted to be ₹ 64.70/qtl. The retailers sold the pulses at ₹ 5940/qtl. to the consumers.

Only one intermediary was identified between producer and consumer in channel-III for marketing of blackgram. This intermediary was known to be the processor. At producer level, the octroi charge was noted to be highest among different item of marketing cost. Marketing cost was found to be ₹ 82.80/qtl. An amount of ₹ 4500/qtl. was received by the producer while selling blackgram to the processor. The marketing margin at producer level was estimated to the extent of ₹ 1446.15/qtl. At the

level of processor, cost of processing was found to be ₹ 160/qtl. Marketing cost was noted to be ₹ 204.50/qtl. Cost of processing of blackgram accounted for lion's share of the marketing cost. From the point of processing, blackgram pulse (*dal*) was bought by the consumers at ₹ 5500/qtl. So marketing margin at the processor level was estimated at ₹ 795/qtl. Similar findings were given by Srivastava *et al.* (2010).

Functional analysis of marketing of blackgram

The table 3 displays functional analysis of marketing cost of blackgram. Various types of functions for which producer and intermediaries in different marketing channels pay at various levels are included in this table. These are presented on per quintal basis. In channel-I traders' profit (market margin) was found to be highest and this accounted for 85 per cent of the total amount. Remaining 15 per cent of the total amount was distributed to different functions performed in the channel. In descending order, these were processing cost, octroi charges, spoilage value, transportation cost, other items of costs, charges for helping hands, packing cost, loading & unloading charges and *mandi* & local tax. In channel-II, traders' profit was 84.05 per cent. In this channel various items of cost/charges in descending order were processing cost, spoilage value, *mandi* & local tax, transportation cost, octroi charges, other items of costs, storage cost, charges for helping hands, packing cost and loading & unloading charges. In channel-III traders' profit accounted

Table 3: Functional analysis of marketing of blackgram (₹/qtl.)

Sl. No.	Items	Channel-I		Channel-II		Channel-III	
		Amount	% of total	Amount	% of total	Amount	% of total
1	Packing cost	13.00	0.44	13.50	0.46	13.50	0.53
2	Transportation cost	33.40	1.13	44.66	1.52	16.80	0.66
3	Loading/unloading charges	12.00	0.40	12.00	0.41	4.00	0.16
4	Charges for helping hands	20.00	0.67	21.50	0.73	4.50	0.18
5	Storage cost	30.00	1.01	26.00	0.88	8.00	0.32
6	Spoilage value	57.00	1.92	60.00	2.04	15.00	0.59
7	Octroi charges	85.00	2.86	43.00	1.46	45.00	1.78
8	Mandi & local tax	5.00	0.17	53.00	1.80	5.00	0.20
9	Processing cost	160	5.39	160	5.44	160	6.33
10	Others	30.09	1.01	35.10	1.19	15.50	0.61
11	Traders' profits	2523.46	85.00	2470.19	84.05	2241.65	88.64
	Total	2968.95	100.00	2938.95	100.00	2528.95	100.00

for 88.64 per cent. In this channel, various items of costs/charges in descending order were processing cost, octroi charges, transportation cost, other items of costs, spoilage value, packing cost, storage cost, *mandi* & local tax, charges for helping hands and loading & unloading charges.

Inter-channel comparison reveals that traders' profit/ qtl. decline from channel-I to channel-III. This ranged from ₹ 2241.65/qtl. to ₹ 2523.46/qtl. Processing cost was found to remain same across the channels which was valued at ₹ 160/qtl. Octroi charge was noted to be highest in channel-I and lowest in channel-II. This ranged from ₹ 43/qtl. to ₹ 85/qtl. Spoilage value was found to be highest in channel-II and lowest in channel-III. This ranged from ₹ 15/qtl. to ₹ 60/qtl. Transportation cost was noted to be highest in channel-II and lowest transportation cost was estimated for channel-III. Transportation cost ranged from ₹ 16.80/qtl. to ₹ 44.66/qtl. Here marketing cost which is the difference between total receipts for performing different functions and traders' profit is implicit in the table. Marketing cost would be highest in channel-II and would be lowest in channel-III. In spite of the highest number of intermediaries in channel-I, the highest marketing cost in channel-II can be explained in terms of nonexistence of some functions (activities) in the former channel.

Total dal from blackgram after processing

Table 4: Total dal (pulse) from one quintal of blackgram after processing

Sl. No.	Particulars	Recovery (%)	Price (₹/q.)	Value (₹/q.)	Percentage
1	Fresh dal	70.00	7500.00	5250.00	88.38
2	Broken dal	14.00	3000.00	420.00	7.07
3	Bran	6.00	2000.00	120.00	2.02
4	Chuni (husk)	10.00	1500.00	150.00	2.52
	Total	100.00		5940.00	100.00

Table 5:: Marketing efficiency and price spread in marketing of blackgram through different channels (₹/qtl.)

Sl. No.	Particulars	Marketing channels		
		I	II	III
1	Price received by producer	4000.00	4300.00	4500.00
2	Marketing Cost (MC)	445.49	468.76	287.30
3	Marketing Margin (MM)	2523.46	2470.19	2241.65
4	Marketing Efficiency (ME)	1.35	1.46	1.78

Quantity of pulse (*dal*) from blackgram after processing of one quintal of pulse grain is furnished in table 4. Pulse (*dal*) is obtained in different forms after processing of grain. These are fresh *dal*, broken *dal* and bran. It was found that processing of one quintal of blackgram resulted in 70 kg. of fresh *dal*, 14 kg. of broken *dal* and 6 kg. of bran (powder). Non-pulse material like husk (*chunni*) was also obtained to the extent of 10 kg. The table 4.24 also displays price and values of various processed forms of blackgram. Prices of fresh *dal*, broken *dal* and bran were ₹ 7500/qtl., ₹ 3000/qtl. and ₹ 2000/qtl., respectively. Price of husk was ₹ 1500/qtl. Taking into recovery percentage the value of fresh *dal* was noted to be ₹ 5250.00 which accounted for 88.38 per cent of the total value. Value of broken *dal* was found to be ₹ 420.00 which accounted for 7.07 per cent of the total value. Value of bran which was ₹ 120.00 account for 2.52 per cent. Husk value is observed to be ₹ 150.00 which accounted to 2.02 per cent of the total value of all processed forms of blackgram.

Marketing efficiency and price spread in marketing of blackgram through different channels

Marketing efficiency and price spread in marketing of blackgram through different channels are presented in table 5. It was found that prices received by the producer for one quintal of blackgram were

₹ 4000.00, ₹ 4300.00 and ₹ 4500.00 in channel-I, channel-II and channel-III respectively. Price received by the producer largely depends on the number of intermediaries in the marketing channel. Increase in price received by the producer was noted to gradually decline from channel-I to channel-III. This can be attributed to decreasing number of intermediaries in channel-II and channel-III. Marketing cost was found to be highest in channel-II. The lowest marketing cost was estimated in channel-III. Marketing cost depends not only on the number of intermediaries in marketing channels but also on types and nature of marketing and the number of marketing functions performed in marketing channel. In spite of the highest number of intermediaries in channel-I some marketing functions were not required to be performed at producer level (Table 2).

For this reason marketing cost in channel-II was found to exceed the marketing cost in channel-I. Marketing cost in channel-I, Channel-II and channel-III were observed to be ₹ 445.49/ qtl., ₹ 468/ qtl. and ₹ 287.30/ qtl. respectively. Marketing margin which is the difference between price received by an intermediary and price of the commodity along with marketing cost paid by him was noted to gradually decline from channel-I to channel-III. These were ₹ 2523.46/ qtl., ₹ 2470.19/ qtl. and ₹ 2241.65/ qtl. in channel-I, channel-II and channel-III respectively. This clearly indicates a negative relationship between marketing margin and number of intermediaries in marketing channel. Marketing efficiency which depends on price received by the producer, marketing cost and marketing margin was observed to gradually increase from channel-I to channel-III. This was attributed to declining marketing cost and marketing margin from channel-I to channel-III. These were estimated at 1.35, 1.46 and 1.78 in channel-I, channel-II and channel-III respectively.

CONCLUSION

The study shows that the functional analysis of marketing of Black gram in Lalitpur district. The main objective of the study was to identify the marketing channels, to analyze marketing efficiency and functional analysis of marketing of Black gram.

The three types of marketing channels were identified to be followed by the blackgram growers, the first one channel was the Producer – Village trader – Processor – Wholesaler –Retailer – Consumer, second channels was the Producer – Commission agent – Processor – Retailer – Consumer and third was the Producer – Processor – Consumer. The marketing efficiency was higher in marketing channel- III as compared to marketing channel-II and marketing channel-I because of relatively low marketing cost and marketing margin in channel-III. These were estimated at 1.35, 1.46 and 1.78 in channel-I, channel-II and channel-III respectively. Functional analysis reveals the highest traders' profit in channel-III in terms of percentage. But traders' profit per quintal declined from channel-I to channel-III. This ranged from ₹ 2241.65/ qtl. to ₹ 2523.46/ qtl. In spite of the highest number of intermediaries in channel-I, the highest marketing cost recorded in channel-II can be explained in terms of nonexistence of some functions (activities) in the former channel. The study indicated that there is scope to increase the farmer income by making the market more effective so that the number of intermediaries is to be restricted and marketing costs and marketing margins to be reduced. This will be the way for making blackgram marketing more advantageous for farmers.

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