ECONOMIC ANALYSIS OF MARKETING OF CABBAGE IN KOLAR DISTRICT OF KARNATAKA

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Abstract: Vegetable based industries are the engine for economic growth and employment generation in rural areas, and they lay a solid foundation for the development of managerial capacity in the young and emerging entrepreneurs. The major vegetables grown in the kolar district are potato, onion, tomato, cabbage, cauliflower, brinjal, etc. An efficient marketing system ensures higher levels of income for the farmers and widens the markets for the produce by taking them to remote corners of the country. The intermediaries stored to various malpractices which aggravated the marketing problems, such as high commission charges, unauthorized deductions and lack of remunerative price for the produce, ultimately leading to increased price spread and reduced share of the product in consumer's rupee methodology. The most common marketing channels engaged in the marketing of vegetables in kolar district are following: Producers-consumers, Producers-retailers consumers, Producers-wholesalers-retailers-consumers. Channel I involves the total marketing cost is 618 rupees and market margin 270 rupees and market price spread 888 rupees marketing efficiency of the shepherd method of is 2.43%. The total marketing cost in channel–II is 340 rupees and 330 rupees low amount of marketing cost followed by the channel I total market margins in channel I is 270 rupees and 270 rupees per quintal but channel II is market margin is 770rupees and 685 rupees is the getting profitable. Most of the farmers expressed that major constraint was identified that labour scarcity and was assigned first rank followed by High cost of growth regulators (II).

Keywords: Marketing, Marketing Channel, Marketing Efficiency, Marketing Margin, Price Spread, Gareette's Ranking for Constraints.

Introduction: The Agricultural situation in India has undergone a rapid change in last two decades. Investment in agricultural sector, both in public and private sectors, has risen. Agricultural production has achieved reasonable growth rate. This growth rate has not only to be maintained, but accelerated and fluctuations in agricultural production are to be minimized. In agriculture, there are certain limiting factors like land and irrigation. The rate of population growth has been increasing without any increase in the cultivable land. Thus, there is a great need to bring millions of hectares of watershed under crop cultivation to meet ever increasing demand for food items. In order to overcome the present situation, the vegetable is an effective instrument for generating greater income per unit area, additional employment, provision of nutritive and proteinious diet and conservation of shifting cultivation. The Cole crops is important to provide the more income and employment to small as well as large farmer, also help to Indian economy to foreign exchange in the form of vegetable export. In India, area, production and productivity, of cauliflower are 369.00 (000 ha), 6745 (Mt), and 18.3 (Mt/ha), also in cabbage area production and productivity are 369.00 (000 ha), 7949.00 (Mt), and 21.5 (Mt/ha), respectively. Vegetables play an important role in solving the problems of food production and providing a balance diet. Vegetables not only meet home requirements but also the important source of income for the farmers and traders. To recover people from malnutrition, consumption of vegetables need to be increased. So, vegetables play a significant role in nutritional improvement, employment generation, food and financial security of the people of India. In Karnataka, area, production and productivity, of Cauliflower are 19.00 (000 ha), 250.00 (Mt), and 18.00 (Mt/ha), also in cabbage area production and productivity are 19.00 (000 ha), 342.00 (Mt), and 22.00 (Mt/ha), respectively in the year 2015- 2016.

Keeping in view the increased production of vegetables and its export potential it is essential to work out the marketing channels followed by organized retail and its efficiency. Present study was an attempt to study the marketing channels and to examine the marketing efficiency of organized retail chain.

Methodology: To study the objectives, the data were collected by personal interview from Whole saler, retailer, market intermediary and farmers of kolar district. Multi stage simple random sampling technique was

adopted for the selection of respondents. Data has been collected both from farmers and marketing functionaries. Multistage sampling design is used for sampling procedure. Kolar district is selected purposively for present study. It is so because kolar district is one of the major vegetable growing district of Karnataka.

Marketing Channels: The most common marketing channels engaged in the marketing of vegetables in kolar district are following: Producers-consumers, Producers-retailers-consumers, Producers-wholesalers-retailers-consumers, producer's commission, agent, retailers-consumers.
The constraints in vegetable marketing faced by vegetable growers will be analysed by the Garettee's ranking method and principal component analysis method.

Marketing Margins: ***Absolute Margin***
Ami= PRi- (PPi + Cmi)

Price Spread: It refers to the difference between price paid by the consumer and price received by the producer for an equivalent quantity of the farm product. This price spread consists of marketing costs and margins of the intermediaries. It gives fair idea about relative efficiency of various marketing system and channels.

Marketing Efficiency: Marketing efficiency was calculated using Shepherd's approach. It can be given as-
M.E. = CP /(PC + C + Ami)
Where, M.E. = Market efficiency
CP = Consumer's purchase price
PC = Marketing cost of producer
C = Marketing cost of all the intermediaries involved in the channel
Ami = Market margin of the intermediaries involved in the channel

Marketable Surplus: Marketable surplus is calculated by using following formula.
MS = P-C
Where, MS = Marketable surplus
P = Total production
C = Total requirement (Home consumption, Seed requirement, for gifts, Payment to labours, for social and religious work, and others)

Marketing Cost: Marketing cost can be calculated by using following formula
TCMKT = Cpm + Mci
Where, TCMKT = Total cost of marketing
Cpm = Cost borne by the vegetable producer in the marketing the produce.
M = The marketing cost incurred by ith middlemen.

Producers Share in Consumer's Rupee: The producers share in consumer's rupee is the price received by the producers expressed in terms of percentage of the retail price (the price paid by the consumers which is the producers share), it may be expressed as.
Ps = (PF / Pr) 100
Where,
Ps = producer share is consumers rupee in terms of percentage
Pr =retail price of the cabbage and cauliflower 'or' consumer price
PF = price received by the producer of cabbage and cauliflower

Gareette's Ranking for Constraints: Garrett ranking- rank based on percentage
Percent position = (Rij – 0.5)/Nj×100
R=Rank for ith variable by jth respondent
Nj = No. Of respondents
Convert percent position into value score by using garrett's table

Results:
Table 1: Disposal Pattern of Cabbage Crop per Hectare in Different Size of Farms: Disposal pattern of Cabbage is shown in Table 1, it's revealed that the area under Cabbage cultivation per hectare for small size

farms was 0.92/ha, 1.56 ha for medium size farms and 2.27 ha large size of farms group. Total production of Cabbage in quintals was highest in large size farms (143.01/qtls) as compared medium (99.84qtls) and was lowest in small size farms (59.8qtls).

The quantity retained for Cabbage growers was mostly for home consumption, some of the quantity was used as kind payment to labours as wages, some of the quantity used as gift for religious purpose and finally they retain some quantity for next year. The highest percent of the produce was retained by small size farms (27.59 per cent) followed by medium size farms (22.03 per cent) and large size farms (32.16 per cent) respectively. This also indicated that highest percentage marketable surplus was found by small size farms 72.40 percent followed by 67.94 per cent in medium size farms and 67.84 percent in large size. This makes the sample average for marketable surplus of 69.50 per cent of the total production.

Table 2: Disposal Pattern of Marketable Surplus in Different Channels of Marketing in Different Size of Farms Group: Disposal pattern of marketable surplus of Cabbage is shown in the Table 4.17. It could be seen from the table that actual marketed surplus was highest in large size farms (97.01/qtls) followed by medium and small size of farms group (67.84 and 43.30/qtls) respectively. The table reveals that disposal pattern of actual Marketable surplus of Cabbage in two different marketing channels i.e, channel I, channel II. Channel II was most prevalent adopted by the growers in the study area, as the highest percentage of the produce was transacted trough channel II i.e. 61.05 per cent of growers followed by 38.94 per cent through channel I respectively.

Table 3: Marketing Cost Incurred by Marketing Intermediaries: The item wise marketing cost per quintal incurred by intermediaries in the channel-I and channel-II are represented in table 3.It could be seen from the table that in channel-I i, e. crop sold at farm level on an average total marketing cost incurred by the wholesaler worked out to Rs.875 per quintal of cabbage.

The significant item of cost was transportation cost which amounted to Rs. 300 per quintal of cabbage constituting 34.28 per cent of total marketing cost. The next important item was commission charges Rs.170/qtl followed by Packing cost charges Rs.100/qtl. The other expenses incurred were weighing and miscellaneous charges cost Rs. 210. Further the table indicated that the retailer incurred a total marketing cost of Rs. 875/qtl. The major items of costs was transportation cost, which amounted to Rs. 100/qtl (29.41% of total marketing cost), followed by Weighing and Miscellaneous charges cost Rs. 100/qtl, loading charges Rs.90/qtl. Analysis of the marketing cost incurred by the market intermediaries are presented in table 4.12. Total marketing cost incurred by wholesaler per quintal was Rs. 875/qtl of transportation cost (34.28%).

Next major marketing cost was commission charges (19.42 per cent). Which was to the service rendered by commission agent he charges 8 per cent of total value of commodity. Packing cost (11.42 per cent) was also high due to the Packing cost of commodity during transportation cost like Weighing and Miscellaneous charges cost (24 per cent), loading (10.85 per cent).Total marketing cost incurred by the retailer also presented in table 4.12.he also paid high transportation cost (29.41 per cent) because he himself took the commodity from farm field to local market. Bulkiness of commodity was also one of the reasons for high cost of transportation. Remaining cost includes loading (26.47%) and Weighing and Miscellaneous charges cost (44.11%) total marketing cost incurred by the retailer was Rs. 340**.**

Table 4: Price Spread in Marketing of Vegetables (Cabbage) in Different Channel

Channel –I: Marketing cost and margin of the agencies involved in the marketing of vegetables (cabbage) are presented in the table. The produce share in consumer rupee in channel –I was 87.84%. The total marketing cost incurred by the producer was nil. The net price received by the producer was Rs. 1700. The price spread in first channel was Rs.888. Of which Rs. 875 was the cost incurred by wholesaler, Rs. 140 and Rs. 75 by wholesaler cum commission agent and retailer respectively. Profit of wholesaler registered highest amount that is Rs.150 followed by that the retailer Rs. 50 and also wholesaler cum commission agent Rs.70. Channel I involves the table 4.13 total marketing cost is 618 rupees and market margin 270 rupees and market price spread 888 rupees marketing efficiency of the shepherd method of is 2.43%.

Table 5: Price Spread in Marketing of Vegetables (Cabbage) in Different Channel

Channel II: In channel II the produce moved from producer to retailer and finally to consumer. The price spread in channel II is also given table. It shows that producer share' in consumer rupee was less in this channel 60.33% and 61.25% followed by first channel. Gross price received by producer in this channel was very high Rs. 1950 and Rs. 2250 compared the first channel. The price spread second channel 1028 rupees of which Rs.578 cost incurred by total market margin is 450 rupees total price spread is 1028 rupees marketing efficiency of the shepherd method of is 2.15. The share of produce in consumer rupee was more 88.11. In channel II as followed by channel –I 87.84%. The marketing efficiency of the shepherd method is 2.15% and 2.38% in channel II which was due to presence of additional market intermediaries in channel-I.

Apart from the wholesaler and retailer there was another intermediary, wholesaler cum commission agent in channel –I. also the price received by produce from wholesaler was low as Rs 1700 and Rs. 2000 followed by the price received from the retailer by selling commodity directly to him. But still then the farmers preferred wholesaler to sell the commodity because of the high price fluctuation in open market and also because of the credit facilities that he extends and vegetables does not have large demand in local market where the retailer transacted. This was also one of main reason as to why the farmers preferred the channel I, 1090 and 1045 rupees. The total marketing cost in channel–II is 340 rupees and 330 rupees low amount of marketing cost followed by the channel I total market margins in channel I is 270 rupees and 270 rupees per quintal but channel II is market margin is 770rupees and 685 rupees is the getting profitable.

6: Price Spread in Marketing of Vegetables (Cabbage): Cabbage vegetables are passed through various intermediaries from producer to reach ultimate consumers. The intermediaries involved rendered variety of service in the process of marketing of vegetables (cabbage) with view to earn some profit. The quantum of margin of the intermediaries serves as an indicator of the efficiency of the marketing system.

Table 7: Constraints in Production of Cabbage in Different Size of Farms Group: Table 7 reveals that constraints faced by the different size of farms group in production of Cabbage. Most of the farmers expressed that major constraint was identified that labour scarcity and was assigned first rank followed by High cost of growth regulators (II), Inadequate credit supply by financial institution (III),High labour cost (IV),Input supply centre is far away (V), Shortage of fertilizers (VI),Low quality seeds (VII),Regular availability of irrigation water (VIII),High incidence pest & diseases (IX),Non availability of recommended pesticides (X),Low productivity (XI),Scarcity of farm yard manure (XII), and finally low yield which assigned least rank i.e. (XIII) respectively.

Conclusion: Cabbage cultivation under open condition was estimated more gross income. Producer - Wholesaler - retailer - consumer was the important channel through which maximum quantity is sold by the cultivators. High cost of inputs, losses due to climatic changes, uncertainty of prices, disease and pest attack etc. were major constraints faced by vegetable growers during production and marketing of vegetables. Since the marketing cost and marketing margin in former was higher, the marketing efficiency was low and for later, because of saving of marketing cost due to absence of market intermediaries and relatively low consumer's price, the marketing efficiency was higher. The study revealed that among different factors influencing the farmers to sell their vegetables to particular format in the supply chain was due to the spot payment, correct weight, proximity and remunerative price which were found to be major factors. However if it is seen, the farmers sell their vegetables to the unorganized marketing chain was mainly because of spot payment, correct weight, remunerative price and proximity of buyers. The major constraint of the organized retail market in kolar was the competition from the un-organized sector.

Implications: The facilities of grading and standardization of the produce should be improved in order to pay remunerative prices to the farmer. Vegetable market should be well organised and regulated. Government should come forward and set up well equipped and spacious cold storage for storage of the vegetable. Technical guidance should be provided to the farmers by agricultural department and allied sources for production and marketing of vegetables Seed of vegetable at reasonable rate should be made available to the cultivators through proper, registered agencies by the government.

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Table 1: Disposal Pattern of Cabbage Crop per Hectare in Different Size of Farms Group Number of Respondents=65

Sl. No	Particulars	Cabbage Farm House Hold			
		Small=27	Medium=22	Large=16	Sample Average=65
1	Area under Cabbage and cauliflower cultivation per hectare	0.92	1.56	2.27	1.45
2	Total production of Cabbage and cauliflower in quintals Per Farms level	59.8 (100.00)	99.84 (100.00)	143.01 (100.00)	94.25 (100.00)
3	**Retain for Cabbage and cauliflower (in qtl)**		-	-	-
i	Home Consumption	6.5 (10.86)	12.00 (12.01)	15.00 (10.48)	10.45 (11.08)
ii	Kind Payment as wages	5.00 (8.36)	10.00 (10.01)	16.00 (11.18)	9.30 (9.86)
iii	Relatives and Religious person	5.00 (8.36)	10.00 (10.01)	15.00 (10.48)	8.99 (9.53)
4	Total retention for Cabbage and cauliflower	16.50 (27.59)	22.00 (22.03)	46.00 (32.16)	28.74 (30.49)
5	Marketable surplus	43.30 (72.40)	67.84 (67.94)	97.01 (67.83)	65.51 (69.50)

Table 2: Disposal Pattern of Marketable Surplus in Different Channels of Marketing in Different Size of Farms Group S M L= 27+ 22+ 16 =65

Sl. No	Particulars	Cabbage Farm House Hold			
		Small=27	Medium=22	Large=16	Sample Average=65
1	Marketable surplus from own Farm	43.30	67.84	97.01	65.51
2	Quantity Purchased from Other Farms	-	-	-	-
3	Actual Marketable Surplus (in qt)	43.30 (100.00)	67.84 (100.00)	97.01 (100.00)	65.51 (100.00)
4	Disposal of actual Marketed Surplus of Cabbage and cauliflower n Different Marketing Channels				
I	Producer → village merchant → Retailer →Consumer	13.30 (30.71)	27.84 (41.03)	47.01 (48.45)	25.51 (38.94)
Ii	Producer → Commission Agents/ Wholesaler →Retailer →Consumer	30.00 (69.28)	40.00 (58.96)	50.00 (51.54)	40.00 (61.05)

Table 3: Marketing Cost Incurred by Marketing Intermediaries

(Rupees per Quintal)

Sl. No	Particulars	Cabbage (100 Heads/qtl)	
		Primary Wholesalers	Secondary Wholesaler (Retailer)
1.	Transportation cost	300.00 (34.28)	100.00 (29.41)
2.	Packing cost	100.00 (11.42)	00.00 (00)
3.	Loading charges	95.00 (10.85)	90.00 (26.47)
4.	Commission agent	170.00 (19.42)	-
	Total	**875.00 (100)**	**340.00 (100)**

Table 4: Price Spread in Marketing of Vegetables (Cabbage) in Different Channel Channel I: Producer → Village Merchant → Retailer → Consumer

(Rs./qtl)

Sl. No.	Particulars	Cabbage (100 Heads/qtl)
1	Producer selling price	1900.00
2	Cost incurred by the producer	
i	Packing cost	25.00
ii	Packing material cost	30.00
iii	Transportation cost	40.00
iv	Market fee	60.00
v	Labour cost	50.00
vi	Loading and unloading charges	80.00
vii	Weighing charges	40.00
viii	Losses /miscellaneous charges	30.00
ix	Total cost incurred by producer (i-viii)	355.00

3	Net price received by producer	1545.00
4	Sale price of producer to village merchant	1900.00
5	Cost incurred by the village merchant	
i	Loading and unloading charges	23.00
ii	Packing	40.00
iii	Market fee	25.00
iv	Commission charges by the village merchant	35.00
v	Transportation	60.00
vi	Losses /miscellaneous charges	80.00
vii	Total cost incurred by producer (i-vi)	263.00
6	village merchant margin	270
7	Sale price of village merchant to retailer /consumer	2163.00

Table 5: Price Spread in Marketing of Vegetables (Cabbage) in Different Channel
Channel II: Producer → Wholesaler → Retailer → Consumer

(Rs./qtl)

Sl. No	Particulars	Cabbage (100 Heads/qtl)
1	Producer selling price	1950.00
2	Cost incurred by the producer	
i	Packing cost	25.00
ii	Packing material cost	30.00
iii	Transportation cost	35.00
iv	Market fee	50.00
v	Labour cost	40.00
vi	Loading and unloading charges	70.00
vii	Weighing charges	40.00
viii	Losses /miscellaneous charges	30.00
ix	Total cost incurred by producer (i-viii)	315.00
3	Net price received by producer	1635.00
4	Sale price of producer to wholesaler	1950.00
5	Cost incurred by the wholesaler	
i	Loading and unloading charges	23.00
ii	Packing	40.00
iii	Market fee	25.00
iv	Commission charges by the wholesaler	35.00
v	Transportation	60.00
vi	Losses /miscellaneous charges	80.00
vii	Total cost incurred by producer (i-vi)	263.00
6	wholesaler margin	450.00
7	Sale price of wholesaler to retailer/consumer	2213.00

Table no 6: Estimation of Marketing Cost and Margins

(Rupees/qtl)

Sl.No	Particulars	Cabbage (100 Heads/qtl)	
		Channel-I	Channel-II
1	Total marketing cost	618 (35.62)	578 (11.29)
2	Total marketing margin	270 (8.82)	450 (25.58)
3	Price spread (Total marketing cost+ Total marketing margin)	888 (44.44)	1028 (36.87)
4	Producer share in consumer rupee (%)	87.84	88.11
5	Shepherd 's index marketing efficiency %	2.43	2.15

Table 7: Constraints in Production of Cabbage in Different Size of Farms Group

Sl. No	Particulars	Cabbage Farm House Hold			
		Small=27	Medium=22	Large=16	Total in percentage
1.	Non availability of recommended pesticides	14	16	13	45 (69.23)
2.	High incidence pest & diseases	15	16	19	43 (66.15)
3.	Low quality seed	13	18	15	46 (70.76)
4.	High cost of growth regulators	20	16	19	58 (89.23)
5.	High labour cost	21	18	15	54 (83.07)
6.	Inadequate credit supply by financial institution	15	15	27	57 (87.69)
7.	Labour scarcity	22	13	25	60 (92.30)
8.	Shortage of fertilizers	10	11	14	35 (53.84)
9.	Regular availability of irrigation water	18	15	22	55 (69.61)
10.	Input supply centre is far away	19	16	24	59 (82.76)
11.	Scarcity of farm yard manure	15	13	10	37 (56.92)
12.	Low productivity	12	16	14	42 (64.46)
13.	Low yield	10	15	10	25 (38.46)

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