A Comparative Study on Profitability of Supply Chain Formats in Vegetable Marketing in Karnataka

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Abstract

Supply chain management is more important in the sector of agribusiness because most of the agricultural products are perishable and have a very short shelf life. Mainly three models of supply chain techniques were selected, traditional, cooperative and modern supply chain. Among the sample farmers highest marketing cost was incurred by farmers in traditional format of the supply chain as compared to cooperative and modern supply chain. But, the net return for one kg of vegetables was highest for cooperative retail format followed by modern and traditional retail format. The index of marketing efficiency was found out to be highest with modern supply chain format. With highest marketing cost incurred by farmers in traditional supply chain as compared to cooperative and modern supply chain. At the same time modern and cooperative supply chain is having the smallest price spread. Hence these are found out to be efficient when compared to that of traditional supply chain which is having highest price spread.

Based on a literature review the constructs were identified. A six step approach to developing and implementing a sustainable green supply chain strategy has been described. Practical implications for operations strategists are also discussed.

Keywords: Vegetable Marketing, Cooperative Supply Chain

1. Introduction

India is land of agriculture diversity. With 2/3 of population still dependent on agriculture and contributing about 20 per cent to Indian GDP. Logistics and supply chain management have become the crucial areas of agribusiness because most of the agricultural products are perishable and have a very short shelf life.

1.1 Supply Chain Management

"Supply Chain Management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible.

1.2 Indian Scenario

India is the second largest producer of fruits and vegetables with the production of 134.5 MT. Annually 30per cent of the fruits and vegetables grown in India gets wasted due to inadequate cold storage and preservation facilities and improper supply chain infrastructure, resulting in instability of prices, farmers not getting remunerative prices, rural impoverishment culminating in farmers' frustrations and suicides. The middlemen and poor supply chain facilities have resulted in the hike of agricultural prices up to 60 per cent without actually adding any value. This contributed to poor price realization by the farmers in consumer rupee ranging from 35-65 paise per rupee.

Supply chain management plays an integral role in keeping business costs at a minimum and profitability as high as possible by significant reduction in the wastages of fruits and vegetables which benefit both the farmers as well as consumers by means of increased returns.

In Karnataka, the modern food retail chains like Nilgiris Super market got established in 1971, paving way for the starting up of the food retail chains in Bangalore. Food World entered the industry in 1996 and also many new players like Fab Mall, Subiksha, Trinethra, Namdhari Fresh, reliance Fresh, etc. entered the market and opening up their outlets in the city and different districts of the state.

Keeping above points in view the study was undertaken with specific objectives;

i. To compare profitability of supply chain formats viz., traditional, cooperative and modern supply chain formats and

ii. To analyze the marketing efficiency of supply chain formats.

2. Review of Literature

Pandey *et al.* (2003) estimated the price spread producers and market intermediaries share in the consumer price in the channel: Producer – commission agent – retailer – consumer in potato marketing at Shimla. The result showed that the producer realized around 73 per cent share in consumers price. The retailer and commission agent earned profit of about 3.5 and 8.0 per cent of the consumer's rupee. The price spread and marketing efficiency was found to be about 27 per cent and 3 respectively.

Ganesh *et al.* (2004) conducted the study of economics of production and marketing of vegetables at Maccapahar and Calicut of the south Andaman island of Andaman district, found out that, marketing cost was highest for cabbage, followed by tomato, snakegourd due to the fact that they are transported from far off islands to the main consumption point where they were located. The margin to both the wholesaler and the retailer was highest in ginger (Rs. 14.10 and Rs. 32.50 per kg respectively) and lowest in basal and Marsa (Rs. 0.90 and Rs. 2.00 per kg respectively.

Shilpa (2010) studied Supply chain management in vegetable marketing in Bangalore found Lowest marketing cost and least price spread with Modern supply chain followed by cooperative and Traditional supply chain formats respectively.

3. Methodology

In order to test the specific objective of investigation, data was collected from the secondary sources. The data was

Table 1: Aggregate average cost and returns in Vegetable marketing under different formats in supply chain*

Sl.No.	*Particular*	*Supply Chain Format*		
		Traditional	*Cooperative*	*Modern*
A	Returns			
1	Qty handled (Kg)	11.47	40.65	20.1
2	Average purchase price (Rs per Kg)	10.87	7.89	10.3
3	Total purchase value (Rs)	102.22	279.44	193.65
4	Qty sold (Kg)	10.31	37.50	18.88
5	Retailers Price (Rs Per Kg)	15.07	12.00	12.80
6	Average sale value (Rs)	122.24	375.50	221.38
7	Total Returns per day (Rs)	20.02	96.05	27.72
8	Total Returns (Rs per Kg)	2.27	2.94	1.58
B	Marketing Cost			
9	Shop rent (Rs per Kg)	0.137	0.0705	0.0305
10	Transportation cost (Rs per Kg)	0.160	0.0765	0.0302
11	Packing cost (Rs per Kg)	0.094	0.0745	0.0230
12	Electricity (Rs per Kg)	0.006	0.036	0.0340
13	Establishment charges (Rs per Kg)	0.004	0.016	-
14	Total Value spoiled during marketing (Rs per Kg)	1.260	0.650	0.6700
15	Maintenance charges (Rs per Kg)	-	0.013	0.0060
16	Labour Charges (Rs per Kg)	0.003	0.079	0.800
17	Total cost (Rs per Kg)	1.635	1.010	0.790
C	Net returns (Rs per Kg)	0.633	1.900	

*Shilpa(2010)

Table 2: Marketing costs, Marketing margins and Producer's share in Consumers rupee under different formats in the supply chain*

(Rs/Kg)

Sl.No.	*Particular*	*Supply Chain Format*		
		Traditional	*Cooperative*	*Modern*
1	Gross price received by farmer (Rs.per kg)	6.76	7.89	8.70
2	Cost incurred by farmer (Rs per kg)	1.16	0.83	0.42
3	Producers net price (Rs per kg) (Item No.1 – Item No.2)	5.60	7.06	8.28
4	Cost incurred by different retail format (Rs per kg)	1.63	1.01	0.80
5	Consumers price (Rs per kg)	15.07	12.00	12.50
6	Profit of different retail format (Rs per kg)	0.63	1.90	0.79
7	Total gross marketing margin (Rs per kg) (Item No. 2+4+6)	3.42	3.74	2.01
8	Marketing margin as percentage of consumers price (Item No.5/ No.7)	4.40	3.20	6.30
9	Producer's share in Consumers rupee (Percentage of producer net price to Consumers price)	37.15	58.83	64.68
10	Index of Marketing efficiency (Item No. 1/Item no 7)	1.97	2.10	4.32

*Shilpa(2010)

collected from sample of 45 farmers, 4 intermediaries, 15 retail formats and 60 consumers will be selected in aggregate from all the supply chain format models.

Mainly three models of supply chain techniques were selected; they were i) traditional, ii) cooperative and iii) modern supply chain.

4. Results and Discussion

From the study (Table.1) it reveals that the cost incurred per kg of vegetables by traditional, cooperative and modern retail format was found out to be Rs. 1.635, Rs. 1.01 and Rs. 0.80 respectively. Similarly, total returns per kg of vegetables found out to be Rs. 2.27, Rs. 2.94 and Rs. 1.58 in the traditional, cooperative and modern retail format respectively. But the net return realized by it for one kg of vegetables was Rs. 0.633, Rs. 1.90 and Rs. 0.79 in traditional, cooperative and modern retail format respectively.

From the above data, it is clear that higher total returns and net returns were found in cooperative retail format as compared to other formats. But, due to less cost incurred by the modern retail format is the next highest beneficiary with high net returns than the traditional retail format.

It is observed from the Table 2 that marketing margins as percentage to consumer was found to be less in cooperative supply chain (3.20%) when compared to traditional supply chain (4.40%) and modern supply chain (6.30%). Similarly, the producer share in the consumer rupee was highest in modern supply chain that is 64.68 per cent of consumer net price and lowest in the traditional supply chain 37.15 per cent and in cooperative supply chain it is 58.83 per cent of the consumer price.

The index of marketing efficiency of the different formats indicated that modern supply chain was found to be more efficient than cooperative and traditional supply chain. The index of marketing efficiency was found out to be 1.97, 2.10 and 4.32 for traditional, cooperative and modern supply chain respectively.

5. Conclusion

Supply chain management is more important in the sector of agribusiness because most of the agricultural products are perishable and have a very short shelf life. The middlemen and poor supply chain facilities have resulted in the hike of agricultural prices up to 60 per cent without actually adding any value. This contributed to poor price realization by the farmers in consumer rupee ranging from 35-65 paise per rupee.

Supply chain management plays an integral role in keeping business costs at a minimum and profitability as high as possible by significant reduction in the wastages of fruits and vegetables which benefit both the farmers as well as consumers by means of increased returns.

It is observed from the study that higher total returns and net returns were found in cooperative retail format followed by modern retail format. Modern supply chain was found to be more efficient than cooperative and traditional supply chain.

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