Economics of Price Spreads in Marketing of Potatoes in Telangana

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ABSTRACT: *Major five marketing channels were identified in the supply chain of Potato crop in Telangana. The producer share in consumer rupee was highest in channel-V (62.65%) due to the presence of only one intermediary and less marketing costs incurred, lowest in case of channel- III (3.05%) due to more marketing costs and margins of processor. In channels - I, II and IV the producer's share in consumer rupee was 44.75%, 31.52% and 51.04% respectively. The price spread also lower in case of channel – V which includes only one intermediary and higher in channel –III as the consumer purchasing price is high. There is need to establish more processing units for value addition of potatoes, need to encourage contract farming, facilities of packing, grading and transportation of potatoes to distant markets should be subsidized which provides farmers to get remunerative price of their produce and reduce the entry barriers for the organized retail were the major policies required to improve the efficiency of potato supply chain.*

Keywords: Marketing costs, Market margins, Potato, Price spread

INTRODUCTION

Potato is one of the important vegetable crops in India. About 85% of potatoes are cultivated in Uttar Pradesh, West Bengal, Bihar, Gujarat and Punjab states only. But in southern states like Karnataka and Telangana also the crop has been cultivated in *rabi* season only. Farmers in the Telangana state purchase the seed potato from Agra and harvested produce mainly sold in the regulated markets. In Telangana, Hyderabad is the major regulated market which attracts the largest share of arrivals of Potatoes, from where the produce will move to the other parts of the state. The major arrivals of Potato in these markets are from December to March months corresponding to *rabi* crop harvest. During off-season Potato from other states like Punjab and Uttar Pradesh will arrive in these markets. The crop is important in human diet and also provides quicker income to the farmers. But the more marketing costs, existence of large number of intermediaries, unorganized marketing issues etc decreases the efficiency of Potato marketing. To analyze these facts, the study was undertaken to estimate the marketing costs, margins and price spread of Potato under different marketing channels.

METHODOLOGY

Four stage sampling technique was used for the selection of district, mandals, villages and respondents. Medak district was purposively selected for the study as it is the highest potato producing district in Telangana with an area of 4,297 ha and production 38,853 tonnes. In Medak district, all the mandals growing the potato crop were arranged in descending order of the area under potato crop and the first two mandals *viz.*, Zaheerabad and Jharasangam which have largest area under potato were selected purposively for the present study. Two villages from each selected mandals were chosen purposively using the above said procedure making the total number of villages to four. The selected villages were Algole, Ranjole, Kuppanagar and Bidekanna. From each selected village a sample of 30 farmers was selected randomly thus the total constitutes 120 farmers. Further as the supply chain proceeds a matching sample of each of ten commission agents, wholesalers, retailers and processors were selected at random to examine the marketing costs, margins and price spread of Potato.

Total Marketing Cost

Total cost of marketing incurred either in cash or kind by the producer seller or by various intermediaries

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involved in the sale and purchase of the commodity till it reaches the ultimate consumers, is computed as

$$C = C_F + C_{m1} + C_{m2} + \ldots + C_{mi} + \ldots + C_{mn}$$

Where,

C - Total cost of marketing of the commodity

C_F - Cost paid by the producer from the time the produce leaves the farm till he sells it.

C_{mi} - Cost incurred by the ith middleman in the process of buying and selling of the product.

Price Spread

The difference between price paid by the consumer and price received by the producer for equivalent amount of the same product

For e.g. P_1-P_2

Where,

P_1 - price at consumer level

P_2 - price at producer level

Marketing Margin of a Middleman

(i) Absolute margin of ith middleman (A_{mi}) = P_{Ri} – $(P_{Pi} + C_{mi})$

(ii) Percentage margin of ith middleman (P_{mi})

$$P_{mi} = \frac{P_{Ri} - (P_{Pi} + C_{mi})}{P_{Ri}} \times 100$$

Where,

P_{Ri} - Total value of receipts per unit (sale price),

P_{Pi} - Purchase value of goods per unit (purchase price),

C_{mi} - Cost incurred on marketing per unit

Producers Share in Consumers' Rupee

It is the price received by the farmer expressed as per cent of the price paid by the consumer (retail price)

$$P_S = (P_F / P_r) . 100$$

Where,

P_S - Producers share in consumers' rupee,

P_F - Price received by producer

P_r - Consumer purchasing price

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 Are

1. Producer – APMC- Wholesaler- Retailer- Consumer (P-APMC-W-R-C)

2. Producer – APMC- Super market- Consumer (P-APMC-SM-C)

3. Producer – APMC- Processor- Consumer (P-APMC-PR-C)

4. Producer - Wholesaler- Retailer- Consumer (P-W-R-C)

5. Producer - Retailer- Consumer (P-R-C)

Marketing Costs of Potatoes in Different Channels

The costs incurred by different intermediaries in performing marketing tasks in different channels are presented in Table 1.

1. Marketing channel I (P-APMC-W-R-C): In this channel the producer on an average incurred a cost of Rs.177.71 per quintal of potatoes which accounted for 33.60 % of the total marketing costs. Producer incurred an amount of Rs. 54.98 towards packing and weighing, which is the major item of marketing cost and accounted for 10.39 % of the total marketing costs. The other important items were transportation (9.39%), commission (7.97%), spoilage losses and labor charges were around 3% each.

The wholesaler incurred a cost of Rs. 97.02 per quintal of potatoes which accounted for 18.34 % of the total marketing costs. The share of transportation cost was 5.67% followed by spoilage losses (3.98%).

The retailer incurred a cost of Rs. 254.14 per quintal of potatoes which accounted for 48.05 % of the total marketing costs. The share of labor charges, spoilage losses, electricity, packing, shop rent, transport and storage and in the total marketing cost was 12.93%, 10.76%, 8.62%, 5.97%, 5.04%, 2.91% and 1.79% respectively.

From this it is observed that in channel I, the retailer incurred the highest marketing cost to the extent of 48.05 % followed by producer (33.60%) and wholesaler (18.34%).

2. Marketing channel II (P-APMC-SU-C): In this channel the producer incurred an average cost of Rs. 173.58 per quintal of potatoes which accounted for 25.11% of the total marketing costs. Producer incurred an amount of Rs. 55.97 per quintal of produce towards packing and weighing which is the major item of marketing cost that accounted for 8.09 % of the total marketing costs. The other important items were transportation (7.02%), commission agent charges (5.09%), labor charges (2.01%) and spoilage losses (2.17%).

Table 1
Total Marketing costs under different marketing channels (Rs/ Qtl)

S.No	Particulars	Channel I	Channel II	Channel III	Channel IV	Channel V
1	**Producer**					
i.	Labour charges	15.07(2.85)	13.90(2.01)	14.23(0.12)	9.30(2.25)	9.47(2.61)
ii.	Storage	0	0	0	0	0
iii.	Packing & weighing	54.98(10.39)	55.97(8.09)	55.92(0.48)	16.73(4.05)	16.98(4.68)
iv.	Transport	49.67(9.39)	48.57(7.02)	49.93(0.42)	12.11(2.94)	13.63(3.76)
v.	Commission @ 4%	42.16(7.97)	40.09(5.80)	40.16(0.34)	0(0.00)	0(0.00)
vi.	Spoilage @ 1.5%	15.81(2.98)	15.03(2.17)	15.06(0.12)	14.91(3.61)	18.34(5.06)
vii.	Sub Total	177.71(33.60)	173.58(25.11)	176.33(1.51)	53.07(12.87)	58.43(16.12)
2	**Wholesaler**					
i.	Labour charges	15.82(2.99)	0	0	13.04(3.16)	0
ii.	Storage	0	0	0	0	0
iii.	Packing & weighing	8.00(1.51)	0	0	20.00(4.85)	0
iv.	Electricity and communication	3.67(0.69)	0	0	0.69(0.16)	0
v.	Shop rent	7.91(1.49)	0	0	1.43(0.34)	0
vi.	Transport	30.00(5.67)	0	0	17.81(4.32)	0
vii.	Spoilage @ 2%	21.08(3.98)	0	0	19.88(4.82)	0
viii.	Market fee @1%	10.54(1.99)	0	0	0(0.00)	0
ix.	Sub Total	97.02(18.34)	0	0	72.87(17.68)	0
3	**Processor**					
i.	Labour charges	0	0	3499.98(30.07)	0	0
ii.	Storage	0	0	122.22(1.05)	0	0
iii.	Packing & weighing	0	0	353.05(3.03)	0	0
iv.	Electricity and communication	0	0	138.88(1.19)	0	0
v.	Shop rent	0	0	1083.33(9.30)	0	0
vi.	Tax @ 4%	0	0	40.16(0.34)	0	0
vii.	Transport	0	0	133.33(1.14)	0	0
viii.	Spoilage @ 8%	0	0	80.32(0.69)	0	0
ix.	Market fee @1%	0	0	10.04(0.08)	0	0
x.	Operational cost	0	0	6000(51.55)	0	0
xi.	Sub Total	0	0	11461.35(98.48)	0	0
4	**Super market**					
i.	Labour charges	0	112.47(16.27)	0	0	0
ii.	Storage	0	10.00(1.44)	0	0	0
iii.	Packing & weighing	0	250.00(36.16)	0	0	0
iv.	Electricity and communication	0	29.70(4.29)	0	0	0
v.	Shop rent	0	29.40(4.25)	0	0	0
vi.	Transport	0	15.88(2.29)	0	0	0
vii.	Spoilage @ 2%	0	20.04(2.90)	0	0	0
viii.	Market fee @1%	0	10.02(1.45)	0	0	0
ix.	Tax @ 4%	0	40.09(5.80)	0	0	0
x.	Sub Total	0	517.63(74.88)	0	0	0
5	**Retailer**					
i.	Labour charges	68.42(12.93)	0	0	58.11(14.09)	83.33(23.00)
ii.	Storage	9.47(1.79)	0	0	7.55(1.83)	7.33(2.02)
iii.	Packing & weighing	31.57(5.97)	0	0	42.22(10.24)	51.66(14.26)
iv.	Electricity and communication	45.61(8.62)	0	0	38.88(9.43)	40.66(11.22)
v.	Shop rent	26.66(5.04)	0	0	29.22(7.09)	36.96(10.20)
vi.	Transport	15.43(2.91)	0	0	62.22(15.09)	35.00(9.66)
vii.	Spoilage @ 3%	56.94(10.76)	0	0	48.00(11.64)	48.91(13.50)
viii.	Sub Total	254.14(48.05)	0	0	286.22(69.44)	303.88(83.87)
	Total marketing costs	**528.87(100.00)**	**691.21(100.00)**	**11637.68(100.00)**	**412.16(100.00)**	**362.31(100.00)**

Note: Figures in the parentheses show percentage to the total marketing costs.

Super markets incurred a cost of Rs. 517.63 per quintal of potatoes which accounted for 74.88 % of the total marketing costs. The share of packaging and weighing was 36.16% to the total marketing costs which is a major item in the marketing costs at super market level, followed by labor charges (16.27%), taxes (5.80%), electricity and communication (4.29%), shop rent (4.25%), transport (2.29%), spoilage losses (2.90%), market fee (1.45%) and storage charges (1.44%).

It can be understood that in channel II, the super market has incurred highest marketing cost (74.88%) followed by producer (25.11%). Thus it is evident that the super market plays dominant role in channel II.

3. Marketing channel III (P-APMC-PR-C): In this channel the producer incurred an amount of Rs. 176.33 per quintal of potatoes that accounted for only 1.51 % in the total marketing costs. The share of packing, transport, commission charges, labor charges and spoilage losses to the total marketing cost was 0.48%, 0.42%, 0.34%, 0.12% and 0.12% respectively.

The processor incurred a cost of 11461.35 per quintal of potatoes which accounted for 98.48 % of total marketing cost. The raw material cost incurred Rs. 6000 per quintal of potatoes which is a major item in the marketing costs of processor that accounted for 51.55% in the total marketing costs. The labor cost was Rs. 3499.98 accounted for 30.07%. The share of shop rent, packaging, storage, electricity, taxes, transport, spoilage and marketing fee to the total marketing cost was 9.30%, 3.03%, 1.05%, 1.19%, 0.34%, 1.14%, 0.69% and 0.08% respectively.

It is observed that the channel III is more dominated by processor, very least share of marketing cost incurred by producer. The raw material and labor costs were very high both together accounted for 81.62% in this channel.

4. Marketing channel IV (P-W-R-C): In this channel the producer on an average incurred a cost of Rs.53.07 per quintal of potatoes which accounted for 12.87% of the total marketing costs. Producer incurred an amount of Rs. 16.73 towards packing and weighing, which is the major item of marketing cost and accounted for 4.05% of the total marketing costs. The other important items were transportation (2.94%), spoilage losses (3.61%) and labor charges (2.25%).

The wholesaler incurred a cost of Rs. 72.87 per quintal of potatoes which accounted for 17.68% of the total marketing costs. The share of packing cost was 4.85% followed by spoilage losses (4.82%), transportation (4.32%), labor charges (3.16%), shop rent (0.34%) and electricity and communication (0.16%). The retailer incurred a cost of Rs. 286.22 per quintal of potatoes which accounted for 69.44 % of the total marketing costs. The share of labor charges, spoilage losses, electricity, packing, shop rent, transport and storage and in the total marketing cost was 14.09%, 11.64%, 9.43%, 10.24%, 7.09%, 15.09% and 1.83% respectively.

It is observed that in channel IV, the retailer incurred the highest marketing cost to the extent of 69.44 % followed by wholesaler (17.68%) and producer (12.87%). The retailer had incurred highest costs for labor charges and transportations.

5. Marketing channel V (P-R-C): In this channel the producer incurred an average cost of Rs. 58.43 per quintal of potatoes, which accounted for 16.12 % of the total marketing costs. The share of important costs was transportation (3.76%), labor charges (2.61%), packaging (4.68%) and spoilage losses (5.06%).

The retailer incurred a cost of Rs. 303.88 per quintal of potatoes which accounted for 83.87 % of the total marketing costs. The share of labor charges was 23.00 % to the total marketing costs which is a major item in the marketing costs at retailer level, followed by packaging (14.26%), spoilage losses (13.50%), electricity and communication (11.22%), shop rent (10.20%), transport (9.66%), and storage charges (2.02%).

It can be concluded that in channel V, the retailer has incurred highest marketing cost (83.87%) followed by producer (16.12%). Similar results were reported by Ananth[1], Hatai *et al.*[4], and Nikam *et al.*[6]

Price Spread in Potato Marketing under Different Channels

It is clear from the Table.2 producers share in consumer's rupee was highest in channel-V (62.65%) and lowest in channel- III (3.05%), because of more marketing costs and margins of processor. In channels - I, II and IV the producer's share in consumer rupee was 44.75%, 31.52% and 51.04% respectively.

Even though the producers share in consumers rupee was low in channel –I and II when compared to channels – IV and V, most of the farmers preferred these channels because of less risk and uncertainty in these channels.

The producer incurred Rs.177.71, Rs. 173.58, Rs. 176.33, Rs. 53.07 and Rs. 58.43 per quintal of potatoes in channels I, II, III, IV and V respectively. The net price received by producer Rs. 876.34, Rs. 828.83, Rs. 827.83, Rs. 941.44 and Rs. 1164.38 in respective channels.

In channels I, II and III commission agent realized a profit margin of 7.08, 3.48 and 0.27 respectively. Comparatively commission agent got less percentage of profit margins in channel III as higher profit margins are gained by processor.

In channels I and IV the wholesaler incurred 18.34 and 17.68% of total marketing costs and realized a price margin of 45.85 and 27.03% to the total profit margin respectively.

In channel II the super markets incurred 74.88% of costs per quintal of potatoes and realized a profit margin of 96.51% in the total profit margin.

In channel III the processor incurred 98.48% of costs to total marketing costs and realized 99.72% of

Table 2
Price spread under different marketing channels (Rs per Qtl)

S.No	Particulars	Channel I	Channel II	Channel III	Channel IV	Channel V
1	Producer					
	Marketing costs	177.71	173.58	176.33	53.07	58.43
	Net price received (PP)	876.34	828.83	827.83	941.44	1164.38
	Percentage share of costs	33.60	25.11	1.51	17.68	16.12
2	Commission agent					
	Market margin	42.16	40.09	40.16		
	Percentage share of margins	7.08	3.48	0.27		
3	Wholesaler					
	Purchase cost	1054.06			994.42	
	Marketing costs	97.02			72.87	
	Market margin	272.90			132.69	
	Percentage share of costs	18.34			17.68	
	Percentage share of margins	45.85			27.03	
4	Processor					
	Purchase cost			1004.11		
	Marketing costs			11461.35		
	Market margins			14645.64		
	Percentage share of costs			98.48		
	Percentage share of margins			99.72		
5	Super market					
	Purchase cost		1002.35			
	Marketing costs		517.63			
	Market margin		1109.42			
	Percentage share of costs		74.88			
	Percentage share of margins		96.51			
6	Retailer					
	Purchase cost	1423.68			1200.00	1222.83
	Marketing costs	254.14			286.22	303.88
	Market margin	280.07			358.22	331.62
	Percentage share of costs	48.05			69.44	83.87
	Percentage share of margins	47.05			72.96	100.00
7	**Total marketing costs**	528.87	691.21	11637.68	412.16	362.31
	Percentage share of total marketing costs	47.05	37.55	44.21	45.63	52.21
8	**Total market margins**	595.13	1149.52	14685.81	490.92	331.62
	Percentage share of total marketing margins	52.94	62.44	55.78	54.36	47.78
9	**Consumer purchasing price (CP)**	1957.89	2629.41	27111.11	1844.44	1858.33
10	**Price spread (CP-PP)**	1081.54	1800.57	26283.27	903.00	693.95
11	**Producer share in consumer rupee (%)**	44.75	31.52	3.05	51.04	62.65

margins to the total margins. This indicates that the processor is highly dominated in channel III.

In channel I, IV and V the retailer incurred 48.05, 69.44 and 83.87% of costs to the total marketing costs and realized 47.05, 72.96 and 100.00 of profit margins to the total profit margins.

The price spread in channel -I is Rs.1081.54. The commission agent, wholesaler and retailer realized a profit margin of Rs. 42.16, Rs. 272.90 and Rs. 280.07 per quintal of produce which forms 2%, 14% and 14% of consumer rupee. The percentage of marketing costs is 26% in final consumer.

The price spread in channel II is worked out as Rs 1800.57. The commission agent and super market realized a profit margin of Rs. 40.09 and Rs. 1109.42 which forms one and 42 % of consumer rupee. The marketing costs accounted for 26 % in final consumer rupee.

The price spread in channel III is worked out as Rs. 26283.27. The commission agent and processor realized a profit margin of Rs. 40.16 and Rs. 14645.64 which forms 0.12 and 54 % in final consumer rupee. The marketing costs account for 43% in consumer rupee.

The price spread in channel IV is worked out as Rs. 903.00. The share of wholesaler, retailer and marketing costs in final consumer rupee was 7, 20 and 22% respectively.

The price spread in channel V is worked out as Rs. 693.95. The share of retailer and marketing costs in consumer rupee was 18 and 19 % respectively. The producer share is high in this channel i.e., 62.65%.

Similar results are reported by Dahiya *et al.*[2], Hasimranjeet *et al.*[3], Karam *et al.*[5] and Shelke [7] in their studies conducted at different places.

From this it can be inferred that the potato farmers were realizing higher share of consumer rupee in channel V compared to other channels. The price spread was very low in channel V as the produce was sold to the retailer directly by the producer.

CONCLUSIONS

Higher marketing costs incurred by processers in the study area was observed, hence there is need to establish more processing units for value addition of potatoes to increase the producer share in consumer rupee. And also need to purchase the produce directly from the farmers' i.e encouraging the contract farming so that they may also get the benefit of the plant. The facilities of packing, grading and transportation of potatoes to distant markets should be subsidized so that the farmers get remunerative price of their produce.

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