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Arif Abad and Rais Ahmad

Research Journal of Agricultural Sciences
An International Journal

P- ISSN: 0976-1675
E- ISSN: 2249-4538

Volume: 12
Issue: 03

Res Jr of Agril Sci (2021) 12: 860–864

CARAS

Res. Jr. of Agril. Sci. (May-Jun 2021) 12(3): 860–864
www.rjas.org

Full Length Research Article

An Assessment of Marketing Channel Efficiency in Agribusiness- A Select Study of Delhi State

Arif Abad*[1] and Rais Ahmad[2]

Received: 24 Mar 2021 | Revised accepted: 13 May 2021 | Published online: 24 May 2021

A B S T R A C T

India is categorized by a vastly delimited and meticulous market where main focus is on food grains and major portion of the agricultural sector is dominated by poor, uninformed and uneducated farmers, therefore belligerent concerns of efficiency and equity as well as those amid efficiency and sustainability affects the growth justifiably. Thus, there is an enormous requirement to assess the efficiency of various marketing channels functioning for agricultural products so that remedial/innovative actions could be taken to attain/sustain marketing channel efficiency. This study is therefore focused on assessing the marketing channel efficiency of agricultural marketing channels. This study purposely selected Delhi as the study area and rice as the studied crop. This study then with the help of a structured questionnaire interviewed 60 farmers, 30 middlemen, and 40 consumers. This study identified six marketing channels and calculated price spread for each of the identified channel. This study uses Acharya's method to assess the marketing efficiency. The results show that channels having less number of middlemen are more efficient than channels with more middlemen. Moreover, the study indicates that if the numbers of other channel members are same then the channels having cooperative societies are more efficient.

***Key words*:** Marketing efficiency, Price spread, Agribusiness, Agriculture marketing, Marketing channels

Agriculture sector is of massive importance irrespective of the type of country [1] because it has the potential to improve the economy of any country. Agriculture sector is like the main pillar of almost all developing and under developed countries because of the fact that a large population is engage directly or indirectly in this sector [2]. India also falls into this category as in India more than 65% people are engaged in agriculture and its allied activities [3] but the contribution of agriculture sector to gross domestic product is not proportional [4] because of many reasons as suggested by [5] such as outdated relations to production, usurious capital, rural indebtedness, labor market dichotomy, out-of-date farming techniques, variations and instability in crop output, diversities in the sector and the problem of generalization. To do away these teething troubles and to achieve economic progress the government should focuses on refining facilities like communication, infrastructure, management trainings, improved marketing channel networks and new markets [6]. There is undisputed opinion amongst the scholars that inefficient marketing channels are one of the major explanations for low performance of the agriculture sector [7-11]. Marketing channels are like the backbone of any sector as marketing channels are the chain of intermediaries through which produce moves from producers to consumers [12] thus influencing the entire sector. It is thus evident that for the success of agriculture sector one of the prerequisites is efficient marketing channels. Efficiency is described differently by different researchers some famous definitions include [13-15]. Efficiency is just the capability with which a market accomplishes its desired function [16]. Efficiency acts as an operative agent of modification and imperious way of levitating the income levels of the producers and customer satisfaction levels. Furthermore, efficient marketing system helps in improving the life of masses [17]. A marketing channel is said to be efficient if it has following three components; first one is effectiveness with which marketing services are accomplished, second one is the cost at which the service is performed, and the last is the consequence of this cost and the way of accomplishing the service on production and consumption [18]. Efficient marketing channel maintain improved prices for all the channel members and generate a price balance in the complete channel [19]. India is characterized by a vastly delimited and meticulous market where main focus is on food grains and major portion of the agricultural sector is dominated by poor, uninformed and uneducated farmers, therefore belligerent concerns of efficiency and equity as well as those amid efficiency and sustainability affects the growth justifiably [20]. Therefore, there is an immense need to assess the efficiency of various

* Arif Abad
✉ arifabad252@gmail.com
[1-2] Department of Agricultural Economics and Business Management, Aligarh Muslim University, Aligarh - 202 002, Uttar Pradesh, India

marketing channels operating for agricultural products so that corrective/innovative measures could be taken to achieve/maintain marketing channel efficiency.

MATERIALS AND METHODS

Delhi is being selected purposefully as the study area for this study because farmers from four major agricultural states of India namely Punjab, Haryana, Rajasthan and Uttar Pradesh supply produce to Delhi. Additionally**,** it is the capital of India and it has many marketing channels with availability of nearly all types of crops. After selecting the study area this study goes forward to select the crop and selected rice purposefully because rice accounts for 40% of the total food grains production in India and it is estimated that rice will accounts up to 70% of the total food grains production (First Advance Estimates of Production of Foodgrains 2020). Globally, India is largest producer of rice and even in India this crop is most used crop. This study then identified all available marketing channels for rice (Table 1, Channel Identification). After all the channels have been identified this study then defined the sample size of all the channel members (Table 2, Identified Channel Members). Data is then collected with a structured questionnaire and after that this study calculated the price spread analysis (Table 3, Price spread calculations). At last, this study uses Acharya's method to calculate marketing efficiency of the identified channels (Table 4, Calculation of Marketing efficiency) and presents discussion and conclusions. Acharya's method is being selected because from all the available methods this method is superior and presents a good image of marketing efficiency because it takes total marketing cost, net marketing margins, prices received by the farmer, and price paid by the consumer into consideration [21].

Table 1 Channel identification

Channel I	Channel II	Channel III	Channel IV	Channel V	Channel VI
Farmers	Farmers	Farmers	Farmers	Farmers	Farmers
↓	↓	↓	↓	↓	↓
Wholesalers in Market (Mandi)	Wholesalers in Market (Mandi)	Wholesalers in Market (Mandi)	Cooperative societies	Cooperative societies	Cooperative societies
↓	↓	↓	↓	↓	↓
Retailers	Rice Millers	Consumers	Rice Millers	Consumers	Retailers
↓	↓		↓		↓
Consumers	Retailers		Retailers		Consumers
	↓		↓		
	Consumers		Consumers		

Explanation

Channel I (Farmers- Wholesalers- Retailers- Consumers) - In channel I farmers go to the Markets (Mandis) to sell their produce (Paddy) to wholesalers. Wholesalers sell to the retailers and retailers the sell to consumers.

Channel II (Farmers- Wholesalers- Rice millers- Retailers- Consumers) - In channel II farmers approaches to the Markets (Mandis) and sell their produce to the wholesalers available in these Mandis (Markets). Wholesalers then sell to the Rice millers and they sell to the retailers from where consumers purchase the produce.

Channel III (Farmers- Wholesalers- Consumers) - In channel III farmers emanates to the Markets (Mandis) and sell their produce (Paddy) to the wholesalers. Consumers come to the market & purchase the produce from wholesalers directly.

Channel IV (Farmers- Cooperative societies - Rice millers- Retailers- Consumers) - In channel D farmers pool their produce in the cooperative society which then sells the produce to the Rice millers and Rice millers sell to the retailers and consumers purchase from retailers.

Channel V (Farmers- Cooperative societies- Consumers) - In channel V farmers pool their produce in the cooperative society which then sells the produce directly to consumers by their own retail outlet.

Channel VI (Farmers- Cooperative societies- Retailers- Consumers) – In Channel VI farmers pool their produce in the cooperative society after that cooperative society then sell the produce to the retailers and retailers then sell the produce to consumers.

Table 2 Identified channel members

Channels	Farmers	Middlemen	Consumers	Total
Channel I (Farmers- Wholesalers3- Retailers3- Consumers)	14(23.33)	6(20)	7(17.5)	27
Channel II (Farmers- Wholesalers2-Rice Millers2- Retailers3-Consumers)	16(26.66)	7(23.33)	10(25)	33
Channel III (Farmers- Wholesalers4 -Consumers)	5(8.33)	4(13.33)	5(12.5)	14
Channel IV (Farmers- Cooperative societies1-Rice Millers2- Retailers2-Consumers)	15(25)	5(16.66)	8(20)	28
Channel V (Farmers- Cooperatives2- Consumers)	3(5)	2(6.66)	4(10)	19
Channel VI (Farmers- Cooperatives1-Retailers5-Consumers)	7(11.66)	6(20)	6(15)	19
Total	60 (100)	30 (100)	40(100)	

Explanation

The table represent all the respondents that have been found while doing field survey for each of the identified channel. This study interviewed 60 farmers and the results indicate that for farmers Channel II is the most preferred channel followed by Channel IV, Channel I, Channel VI, Channel III and Channel V. This study interviewed 30 middlemen and in 30 middlemen there are 4 cooperative societies, 9 wholesalers, 4 Rice millers, and 13 retailers. Total number of consumers is 40. Channel II has the highest number of middlemen involved followed by channel IV, Channel I, Channel V/Channel VI, and Channel III.

Table 3 Price spread calculations

Particulars	Channel I	Channel II	Channel III	Channel IV	Channel V	Channel VI
Price received by producer	1678	1678	1678	1735	1835	1795
Producer's cost of marketing	190	190	190	180	130	150
Wholesaler's cost	90	90	140	-	-	-
Wholesaler's margin	110	120	150	-	-	-
Cooperative societies 'cost	-	-	-	60	95	55
Cooperative societies' margin	-	-	-	65	95	55
Rice Millers' cost	-	250	-	245	-	-
Rice Miller's margin	-	365	-	370	-	-
Retailer's cost	90	90	-	110	-	100
Retailer's margin	85	160	-	140	-	180
Consumer's purchase price	2243	2943	2158	2905	2155	2335

Explanation-

Channel I (Farmers- Wholesalers-Retailers-Consumers) - In channel I growers just get the MSP for their crop which is Rs1868/quintal. Farmers bear bags and transportation costs which add up to Rs. 190/quintal for farmers. Hence, the net price received by farmers is Rs. 1678/quintal. Wholesaler's bear Rs. 25 for bags, Rs. 35 for storage and Rs. 30 for transportation cost. Overall marketing cost for wholesalers is Rs. 90 per quintal of rice and marketing margin is Rs. 110. Retailer's marketing cost is Rs. 90 per quintal and their marketing margin is Rs. 85. Consumer's purchase price is Rs. 2243/quintal.

Channel II (*Farmers- Wholesalers-Rice Millers- Retailers-Consumers*)

In this channel just similar to channel I, farmers get MSP for their produce which is Rs. 1868/quintal. Thus, the net price received by farmers is Rs. 1678/quintal which is same as Channel I. Bags and transportation costs add to Rs. 190/quintal for farmers. Wholesaler's marketing cost per quintal is Rs. 90. Bags, storage, and transportation costs are Rs. 20, Rs. 30, and Rs. 40, respectively. Marketing margin of wholesalers is Rs. 120/quintal of rice and this is because rice millers purchase in bulk quantities. Cost of rice millers is Rs. 250/quintal and their marketing margin is Rs. 365. Marketing cost of retailers is Rs. 90/quintal and their marketing margin is Rs. 160. Consumer's purchase price is Rs. 2943/quintal. This channel has increased the form utility of the produce by converting rice into rice and due to the fact that consumers rarely purchase rice in quintals from retailers thus the consumer's purchase price is converted in quintals by multiplying the amount by 100 (1 quintal = 100kg).

Channel III (*Farmers- Wholesalers -Consumers*)

In this channel also farmers are getting minimum support price (MSP) for their produce which is Rs. 1868/quintal. Farmers' Marketing cost is Rs. 190/quintal thus net price received by farmers is Rs. 1678/quintal. Wholesalers' marketing costs per quintal is Rs. 140 and their marketing margin is Rs. 150/quintal. Consumer's purchase price is Rs. 2158/quintal.

Channel IV (*Farmers- Cooperative Societies- Rice Millers-Retailers-Consumers*)

Farmers in this channel get Rs. 1915/quintal and marketing cost incurred by them is Rs. 180/quintal, thus farmers' net price received is Rs. 1735/quintal. This is due to the fact that cooperative societies have strong bargaining power than individual farmer. Moreover, wholesalers are not in picture and cooperative societies are directly selling the produce to rice millers. Cooperative societies' marketing cost in this channel is Rs. 60/quintal which is lower than the marketing costs in channel I, II and III, the reason to this is that the cost is divided among all the members. Furthermore, transport and other activities cost less when bulk quantity is handled. Cooperative societies' marketing margin is Rs. 65/quintal. Marketing cost of rice millers is Rs. 245/quintal and their marketing margin is Rs. 370/quintal. Retailer's marketing cost is Rs. 110 and their marketing margin is Rs. 140. Consumer's purchase price is Rs. 2905/quintal.

Channel V (*Farmers- Cooperatives- Consumers*)

Farmers receive Rs. 1965/quintal in this channel and per quintal marketing cost is Rs. 130, thus farmers' net price received is Rs. 1835/quintal. Cooperative societies' marketing cost is Rs. 95/quintal and their marketing margin is Rs. 95/quintal. Marketing cost in this channel is higher than channel IV and it is because of the fact that distributing produce to different consumers increase marketing cost. In this channel consumer's purchase price is Rs. 2155/quintal.

Channel VI (*Farmers- Cooperatives-Retailers-Consumers*)

Farmers receive Rs. 1945/quintal and the cost of marketing is Rs. 150, thus net price received by farmers is Rs. 1795/quintal. Cooperative societies' marketing cost is Rs. 55/quintal and marketing margin is Rs. 55/quintal. Retailer's marketing cost is Rs. 100/quintal and their marketing margin is Rs. 180/quintals. Consumer's purchase price is Rs. 2335/quintal.

Table 4 Calculation of marketing efficiency

Particulars	Unit	Channel I	Channel II	Channel III	Channel IV	Channel V	Channel VI
Consumer's purchase price	Rs./qntl	2243	2943	2158	2905	2155	2335
Total marketing costs	Rs./qntl	370	620	330	595	225	305
Total net marketing margins	Rs./qntl	195	645	150	575	95	235
Net price received by farmers	Rs./qntl	1678	1678	1678	1735	1835	1795
Value added (1-4)	Rs./qntl	565	1265	480	1170	320	540
Index of Marketing Efficiency							
Acharya's method (MME) = 4 / (2+3)	Ratio	1678 / (370 + 195) = 2.96	1678 / (620 + 645) = 1.32	1678 / (330 + 150) = 3.49	1735 / (595 + 575) = 1.48	1835 / (225 + 95) = 5.73	1795 / (305 + 235) = 3.32
		2.96	1.32	3.49	1.48	5.73	3.32

RESULTS AND DISCUSSION

As per the analysis the sequence of efficient channels from most to least is Channel V (farmers-cooperatives-consumers), Channel III (Farmers- Wholesalers -Consumers), Channel VI (Farmers- Cooperatives-Retailers-Consumers), Channel I (Farmers- Wholesalers-Retailers-Consumers), Channel IV (Farmers- Cooperative Societies-Rice Millers-Retailers-Consumers), and Channel II (Farmers- Wholesalers-Rice Millers- Retailers-Consumers). The most efficient channel is Channel V and in this channel farmers get the highest price, consumer pays the lowest price, middlemen' s margin is lowest and marketing cost is also lowest as compared to other channels. The second most efficient channel is channel III and in this channel farmers get the fourth highest price (Channel I, Channel II and Channel III have the same amount of net price received by farmers), consumer pays the second lowest price, and marketing margin is the second lowest and marketing cost is the third lowest in this channel. Channel VI is the third most efficient channel and in this channel farmers gets the second highest price, consumer pays the fourth lowest price, marketing margin of middlemen is the fourth lowest and marketing cost is second lowest. Channel I is the fourth most efficient channel in this channel farmers get the third highest price, consumer pays the third lowest price, and marketing margin is the third lowest and marketing cost is the fourth lowest in this channel. Channel IV is the second least efficient channel and in this channel farmers get the third highest price, consumer pays the second highest price, marketing margin is the second highest and marketing cost is also second highest. Channel II is the least efficient channel and in this channel farmers get the lowest price (Channel I, Channel II and Channel III have the same amount of net price received by farmers), consumer pays the highest price, marketing margin and marketing cost is also highest. Farmers preferred Channel II the most followed by Channel IV, Channel I, Channel VI, Channel III and Channel V. But the most preferred channel is the least efficient and the least preferred channel is the most efficient channel. Other sequence also represents the similar status. Consumer also preferred the same sequence like farmers and thus they also preferred the inefficient channels over efficient channels. It is clear that less efficient channels are preferred more than efficient channels by farmers as well as consumer.

This efficiency sequence provided by this study is in line with the previous studies like [22-27] which support the fact that channel having less number of middlemen are more efficient. Furthermore, Channel V which is the most efficient channel is the least used or preferred channel and Channel II which is the least efficient channel, is the most preferred. The most efficient channel (Channel V) has just one middleman which is cooperative society and thus this result is supported by [28] who stated that cooperative societies increase channel efficiency. After looking overall sequence, it is evident that if the number of other channel members is same then the channels having cooperative societies are more efficient. Therefore, cooperative societies need to be promoted.

CONCLUSION

Government needs to promote the efficient channels for the maximum benefit of all the channel members and to achieve the development objectives. Policies should be focused on promoting cooperative societies, providing better infrastructural services, safeguarding farmers from malpractices, and making channel selection farmers' choice not compulsion. Due to the limitation of time and efforts this study is focused on one state and one crop. Future Studies can focus on making state-wise comparisons of more than a single crop. An integrative model that helps in reducing the risk and enhancing the efficiency can also be developed. Moreover, qualitative aspects of channel efficiency need to be addressed.

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