



Management

FOOD SUPPLY CHAIN PLAYERS: WITH DIRECT AND TRADITIONAL CHANNELS

Dr.N.Arunfred¹, Dr.D.Kinslin²

¹ Assistant Professor, Department of Management Studies, NMCC, Marthandam, India

² HOD, Department of Management Studies, Noorul Islam University, Kumaracoil, India

DOI: <https://doi.org/10.5281/zenodo.819979>

Abstract

We study a dual channel supply chain in perishable agricultural products. In which one channel is producer (farmer) sells the produce directly to the customer and the other channel is about transfer of produce to different channel players and reach the final customer. Consumers choose the purchase channel based on price, availability, accessibility, product quality, trust-ability and service qualities. The producer decides the price of the direct channel and the intermediaries decides both price and order quantity in the traditional method. We show that the difference in problem faced by the producers' of the two channels plays an important role in determining the existence of dual channels in equilibrium. For the study Erode and Kanyakumari districts were chosen purposively. A sample of 80 farmers was selected randomly who are involved in both of the channels. In the case that the producer and the retailer coordination and to follow a centralized decision approach, we find that a direct channel will be an optimum solution for improving the overall effectiveness. Our results show that an increase in retailer's service quality may increase the producer's profit in dual channel and a larger range of consumer service sensitivity may benefit both parties in the dual channel. The results suggest that both the channel have problem and the optimum solution lies in between two channels.

Keywords: Distribution Channel; Food Supply Chain Management; Direct Marketing.

Cite This Article: Dr.N.Arunfred, and Dr.D.Kinslin. (2017). "FOOD SUPPLY CHAIN PLAYERS: WITH DIRECT AND TRADITIONAL CHANNELS." *International Journal of Research - Granthaalayah*, 5(6), 189-195. <https://doi.org/10.5281/zenodo.819979>.

1. Introduction

These are unique times in the world history. Never before have the standard of living been so high and, in fact, both are still on the rise. Consequently, human activities are at unexplained levels with regard to volume, rate of change and consequences, and among those activities food production takes a distinct place. Food article travel long mile but Buying local is a current global trend. A term has been coined that describes those who are concerned about where their

food comes from and committed to buying locally-grown and produced food. In a trend towards more ethical or morally acceptable consumption, consumers are increasingly demanding foods that are healthy, spray-free, organic, bio-dynamic, non-genetically modified organisms (GMO), have low food miles, are ethically produced, and/or fair-trade. These constructs all require the consumer to be aware of the conditions under which food has been produced, who produced it and the trustworthiness of that producer. So these all suggest the importance of building strong distribution channel in an area.

After production, postharvest treatment, and packaging, fruit and vegetable produce enter the distributing system, either locally or overseas. The condition of produce depends on the duration of the marketing period, and how and under what climatic conditions fruit is handled and it also depends on the distribution channel. Distribution can be cooperative-based, controlled by private functionaries, state-organized or directly by farmers. The distribution of perishable commodity is not at all organized and regulated in underdeveloped and developing countries. Inefficiencies in distribution systems cause losses. Report suggest that nearly 30% of perishable produce is wasted due to poor or unorganized distribution in India Facilities for storage and display are not available at the retail level in most parts of the developing and underdeveloped world.

In Tamilnadu, marketing fruits is organized mainly in three ways. (1) The pre-harvest contractors, or traders, purchase the produce before harvest and pack the fruit in itself or at their packinghouses located in production areas, and then send it to distant markets. (2) Growers directly send the produce to distant city markets as packed or lose by different mode of transportation (direct marketing). (3) Growers sell the produce in local markets through an auction process where buyers from different markets purchase the produce and send it to distant markets either loose or packed. The commission agent is an important functionary in all distribution channels.

The traditional important channels fruit distribution in the state are:

- 1) Grower → Local trader/pre-harvest contractor/subcontractor →Wholesaler → retailer → consumer
- 2) Grower → Wholesaler → Retailer → Consumer
- 3) Grower → Commission agent → Wholesaler → Retailer → Consumer → Buyer (distant market) → Wholesaler → Retailer → Consumer.

This article addresses these research gaps by analyzing trade relations between farmers and buyers in different marketing channels. The rest of the article proceeds as follows. The next section gives some background information about the empirical database and the excising literature reviews in the field of the distribution channel. This was followed by the background, need, objectives of the study. Subsequently, in the next step different institutional arrangements between farmers and traders are compared with farmers market and reasons for farmers' marketing decisions are analyzed, and results are discussed. The last section concludes the result.

2. Objective of the Study

- To describe trade relations of coexisting marketing channels and highlight differences between traditional and direct supply chains.

- To examine farmers' subjective motivation to participate in particular marketing channels.
- To analyse farmers' attitudes and problem towards direct and different traditional contract designs.

3. Need and Background of the Study

At a time when the natural resources of the earth are straining under the weight of an exponentially growing population, it is unconscionable that a hugely-populated country like India lets 35 per cent of perishable produce to go waste due to lack of proper distribution system. India is world's third largest producer of agri-produce after China and USA. India holds about 8% of world's fruit and about 15% of vegetables of world's production. India has a vast amount of cultivable land, good agro climate suitable for production of varieties of fruits and vegetables. After green revolution in agriculture sector the yield of the produce has increased drastically. But still there are lots of problem faced by rural farmers due to lack of efficient distribution system.

4. Methodology

To study the existing traditional distribution channel and direct marketing channel we have selected kanyakumari and Erode district of Tamilnadu with respect to fruits and vegetables. The selection of the study area and product is based on purposive sampling. From the selected sample frame a sample of 80 farmers were selected based on stratified random sampling. Observational study was conducted to the samples to analyze the traditional functioning of supply chain and its distribution efficiency. Based on the detailed interview scheduler the response of farmers was recorded and different analytical tools are used to test the efficiency of both the channels.

5. Result and Discussion

5.1. Problems Faced by the Farmers in both the Channels

In a first step, we are interested in the importance of the knowing the difficulties faced by the farmers in both the distribution channel. By the non-parametric testing, we find that limited buyers in the chain ranks first in the problems faced by the farmers. Table 1 shows different problems faced by the farmers in Tamilnadu. Nearly 60% of agricultural lands are with marginal and small farmers, which are a great worry for an organised market structure. Ranking next is the labour related issues like non availability of labours during bumper season, high labour cost etc which affects the profit and increases wastages in the chain. Next important aspect is the pricing issue the farmers are not exposed to market price. The traders and intermediaries fix the price and the farmers are expected to sell at those price. But in direct marketing the price fixation is done by the government officials and there is a significant difference between direct and traditional channel with respect to price fixation. Few other problems identified in the study are lack of knowledge about the subsidy offered by the government, lack of coordination and cooperation among the farmer who are nearby, non-availability of infrastructural facilities.

Table 1: Problem faced by farmers

Particulars	Mean Rank	Chi value	P Value
Tiny land holdings	7.88	254.29	0.00
Selling produce at same price at farm gate	4.77		
No storage facility nearby	4.61		
No alternate buyers except few brokers	8.78		
No accurate weather forecast	4.89		
No market near by	6.29		
Lack of unity among farmers	5.58		
Lack of farming labours	7.81		
lack of transparency in pricing	7.32		
lack of knowledge about Govt. subsidy	5.08		
Lack of education	3.00		

5.2. Supply Chain Problems Faced by the Farmers in both the Channels

In a next step, of our analysis is about the impact of supply chain factors over the distribution channel. The study with the help of the literature review found out different supply chain factors which affect the efficiency in the channel. From the table 2, it was found that there is no significant difference between direct and traditional channel with respect factors of supply chain management as P value in the table is above 0.051. From the analysis of mean it was found that factors like demand forecasting in direct channel was made easy as the farmers are in direct contact with the customers. Transportation is the real problem faced by the farmers in the direct distribution channel as they have to carry all their produce from their farm gate to the market at their own risk. This is the main reason of farmers not using this channel. The farmers in the traditional distribution channel sell their produce in the farm gate or to the near intermediaries due to lack warehousing, poor inventory management, lack of handling equipment and processing technique. As both the channel provide very limited scope of supply chain management, the problems of farmers are common.

Table 2: Supply Chain Factors

Supply chain Factors	Channel	N	Mean	Std. Deviation	F value	P value
Inappropriate warehousing	direct	17	2.71	.772	0.632	0.429
	traditional distribution	63	2.79	.845		
Inappropriate transportation	direct	17	4.53	.800	0.42	0.837
	traditional distribution	63	4.46	.779		
Lack of equipment to handle	direct	17	3.35	1.115	5.602	0.020
	traditional distribution	63	3.29	.771		
Inappropriate processing technique	direct	17	4.59	.712	1.848	0.178
	traditional distribution	63	4.40	.834		

demand forecasting	direct	17	2.24	.752	1.740	0.191
	traditional distribution	63	2.46	.877		
Poor inventory management	direct	17	4.18	.883	0.010	0.921
	traditional distribution	63	3.94	.914		
Product damage during transportation	direct	17	4.18	.883	0.010	0.921
	traditional distribution	63	3.94	.914		
Lack of knowledge to handle products	direct	17	3.18	.951	0.491	0.486
	traditional distribution	63	3.03	.822		

Source: Primary Data

5.3. Reason for Selecting Distribution Decision

In the final step, we had analyzed the reason for selecting the particular distribution channel by the farmers. Based on the means of both direct and traditional distribution channel we can come to conclusion that farmers prefer the direct channel because they get credit facility and the service rendered by the government like free transportation, free storage fees and the technical guidance provided by the marketers. Farmers selected the traditional channel because they get payment on the spot and they no need to worry of post harvesting losses as it is barred by the traders. The farmers are satisfied to sell their produce at farm gate as they are not incurring any holding cost and the risk is diverted to other chain players. From table 3 it is found that in storage, transportation facility has a significant difference between direct and traditional distribution. All other factors had no significant difference the two channels. From the analysis it is found that both the channel is inefficient and has lot of chaos within itself.

Table 3: Distribution Channel selection decision

Variables	Direct distribution (N=17 nos)	Traditional distribution (N=63 nos)	T value	Pvalue
1) Provide credit facility	1.12(0.33)	1.22(0.45)	3.616	0.061
2) Service rendered by them	1.71(1.105)	1.91(1.082)	0.022	0.88
3) Provision for technical guidance	1.35(0.493)	1.17(0.423)	4.63	0.034
4) Getting storage and transport facility by them	1.24(0.437)	1.49(0.948)	6.432	0.013
5) Absence of middlemen	1.18(0.393)	1.13(0.336)	1.008	0.318
6) Correct weight	3.06(0.748)	2.76(0.734)	1.164	0.284
7) Spot payment	3.06(0.748)	2.76(0.734)	1.164	0.284

Notes: Mean values are shown. Standard deviations are shown in parentheses.

6. Conclusion and Recommendations

We have analyzed the marketing channel behavior based on two distinct channels of fruit growing farmers in Tamilnadu. In particular, we examined the role and details different services provided by the distribution channel members in the supply chain. Our descriptive comparison of marketing channels and direct marketing features confirms that there is no significant difference, which influences farmers' choices. Apart from the output prices, farmers also value other service aspects such as access to inputs, credit, and information, as well as independence and flexibility in direct marketing. But the main problem here is the farmers are in the risk of handling the produce till it reaches the end customer inclusive of holding losses which is estimated as 35% in perishable produce. In direct marketing the farmer has to learn art of marketing and also spend his time in selling the produce in spite of his production activity. Government policies also have impact over the proper functioning of this channel, leading major farmers to stay away from the channel. Traditional channel with lot of intermediaries fix the price based on season and availability leaving behind the farmers demand. Here intermediaries are price makers and the risk of post harvesting losses in the produce is less in this channel for the farmers.

In many developing countries, the role of modern supply chains involving contractual agreements between farmers and agribusiness firms or their agents is growing. Hence, the question of how smallholder farmers can be linked successfully to these emerging markets is of high policy relevance. Hence the solution for these problems lies between the two distribution channels. To overcome these problems in the channel few suggestions are recommended as follows. Instead of farmers directly marketing the produce, collection centers can be developed by the government with private partnership for every blocks based on the availability of the produce. These collection centers can act as a source of information center to the farmers about market demand and related information. Farmers could make a corporation among the nearer farming place and collect the produce and dispatch to the nearest collection center. This would ease away the problems faced by the farmers due to wastage of time and the transportation difficulties and the transportation channel could be built by private- public partnership.

References

- [1] Aramyan, L. H., Oude Lansink, A. G. J. M., van der Vorst, J. G. A. J., & van Kooten, O. (2007). Performance measurement in agri-food supply chains: A case study. *Supply Chain Management: An International Journal*, 12(4), 304–315.
- [2] Armistead, C.G., Mapes, J., 1993. The impact of supply chain integration on operating performance. *Logistics Information Management* (4), 9–14.
- [3] Aviv, Y., 2001. The effect of collaborative forecasting on supply chain performance. *Management Science* 47 (10), 1326–1343.
- [4] Christin Schipmann, Matin Qaim(2011). Supply chain differentiation, contract agriculture, and farmers' marketing preferences: The case of sweet pepper in Thailand: *Food Policy* 36, 667–677.
- [5] COLIN POULTON, ANDREW DORWARD and JONATHAN KYDD: The Future of Small Farms: New Directions for Services, Institutions, and Intermediation: doi:10.1016/j.worlddev.2009.06.009.
- [6] Cheung, K.I., Lee, H.L., 2002. The inventory benefit of shipment coordination and stock rebalancing in a supply chain. *Management Science* 48 (2), 300–306.

- [7] Gumataw K. Abebe, Jos Bijman, Ron Kemp, Onno Omta, Admasu Tsegaye: Contract farming configuration: Smallholders' preferences for contract design attributes: Food Policy 40 (2013) 14–24.
- [8] Ju-Chia Kuo, Mu-Chen Chen: Developing an advanced Multi-Temperature Joint Distribution System for the food cold chain: Food Control 21 (2010) 559–566.
- [9] Karkkainen, M. (2003) 'Increasing efficiency in the supply chain for short shelf life goods using RFID tagging', International Journal of Retail and Distribution Management, Vol. 31, No. 10, pp.529–536.
- [10] Omar Ahumada, J.ReneVillalobos(2011). Operational model for planning the harvest and distribution of perishable agricultural products', Int. J. Production Economics 133, 677–687.
- [11] Viswanathan, V., 2005. Competing across technology-differentiated channels: The impact of network externalities and switching costs. Management Science 51 (3), 483–496

*Corresponding author.

E-mail address: arunfredeie@gmail.com