

Supermarket Supply Chains in Horticulture in India: The Novel Marketing Models, Effects and Policies

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Abstract

The super market revolution has been underway in developing countries. Market research says that larger the numbers of economic agents involved in marketing and lesser their incomes' share in consumer price'. The prospective solution to this problem may be consolidation of supply chain. However, one of the possible solutions emphasized by market research is linking supermarket and farmers. The main motive of this paper is to explore the ways or super markets models that will integrate the small and marginal farmers with supply chain system in India. Information on marketing models and marketing institutions which deal fruits and vegetables in the country were analyzed. The features and effects of different super markets operating for marketing of fruits and vegetables were studied. <http://www.ifpri.org/publication/supermarket-revolution-developing-countries>.

The fruits and vegetable commodities reach the final consumer through various channels. Among all the channels the direct market models are the best because the producer share in consumer rupee is 100 per cent and will eliminate middlemen completely. India opened up post-1990, a number of new liberalized public markets operating direct marketing model with forward linkages for fruits and vegetables. The economic reforms also lead to the emergence a number of new private retail markets for fruits and vegetable with direct marketing models with backward linkages. The results reveal that private super markets will save farmers from transport, marketing cost and other charges and complete eliminate middlemen. Farmers who supply to private super markets have many advantages it includes technical guidance, market information on prices, perfect weights and spot payments etc. The opportunities include development of high value commodities market supply chain.

The farmers are suggested for effective and efficient marketing of fruits and vegetables, the super markets have to purchase entire quantity brought by the farmer irrespective of grading, Export linkage is suggested, Government has to regulate prices, Government has to open and operate retail outlets, Government should assess the production and consumption level and announce the MSP accordingly.

Even the farmers of the most of the states are adopting traditional marketing channels. The study suggests that modern direct marketing models to adopt. Therefore, there is an immediate need to replicate such models in a much larger scale to cover not only the cities but also the interior villages in the country. The study advocates that it is necessary to amend outdated laws restricting the establishment of markets to allow cooperatives and private entrepreneurs to set up modern supermarkets, both public and private retail markets. Shifting Indian farming from a rural lifestyle to an agribusiness sector and linking farmers to super markets is a key driver for industrialization of agriculture. Similarly this study advocates similar linkage mechanism for Dc's to make it agriculture as an industrial farming. Super markets are miracle in agriculture: These will lead to industrial farming in dc's agriculture.

Keywords: Super markets; Marketing models; Traditional; Public and private markets; Government policies

Introduction

The super market revolution has been underway in developing countries. As far as retail opportunities in emerging markets go, the undoubted leaders are the BRIC nations of Brazil, Russia, India and China. Not only are these countries outrunning the developed world with their slew of economic reforms, but they have also managed to stay ahead of other emerging markets with their already sizeable retail markets.

In USA, early 1930s, the concept of supermarket originated with the Michael Cullen's idea of "selling everything a shopper needed under one roof" during world economic crisis [1]. Implementation of this idea rapidly spread across the USA since 1940. By the early 1960s, two-thirds of food sale took place in supermarket. Gradually idea of supermarket spread to Europe; especially in UK, it was first established [2]. Later, there was a wave of super market in Latin America.

As part of the globalization process, the past decades have seen a rapid rise of multinational supermarket chains in the developing part of

the world [3]. The consequences for the agricultural sector are discussed in the literature, but with no conclusive answer. Empirical analyses find that farmers supplying supermarkets are relatively more productive, but many farmers are excluded from the supermarket supply chain due to capacity constraints in production and marketing [4,5].

Proponents of economic globalization and trade liberalization of the view that it can help communities to improve rural incomes by reducing poverty, provided complementary policies are in place and economic benefits are shared sufficiently and widely among the

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economic agents [6,7]. However, these benefits of any economic agent may be compromised due to inadequate planning, infrastructure or governance, adoption of new technology etc., on their part [8]. These inadequacies can arise anywhere in the marketing chain which is from the point of production to consumption. As this chain gets larger with shortfalls (inefficiency), larger the numbers of economic agents involved in it and lesser their incomes' share in consumer' price with high unpredictability. This is especially true in the case farmers in developing countries including India and also to under developed countries where farmers are resource poor and highly vulnerable to production and marketing risks and their production surpluses does not necessarily materialize into higher income.

Minister of State for Agriculture and Food Processing Industries [9], speaking at a conference organized by the PHD Chamber, said, "too many layers of middlemen, weak supply chain and lack of proper information to farmers are some of the factors leading to wastage and inefficiency in the supply chain." The prospective solution to above said problem may be consolidation of supply chain, to achieve, there can be many number of way out. However, one of the possible solutions emphasized by author is linking supermarket and farmers. The possible rationalization are, due to price and supply fluctuations in a complex global market, for rural produce affect resource and infrastructure, planning and access to credit, at both farm and national levels on the one hand [10], and rate of spread of supermarkets in developing countries and its potential important impact on farming and food business Trail WB [11] on the other hand. The main drivers of super marketization are westernization of Asian diets, the development of supermarkets, fast food chains and exports in Asian countries [12].

Constant increase in per capita income and urbanization in India has augmented the demand for fruits and vegetables. This change in consumer tastes and demand has critical implications for the entire Indian food supply system [13]. Despite significant contribution to production (8% of the world's fruit and about 15% of the world's production of vegetables), India characterized by small and marginal farming, the average size of land holding came down to 1.06 ha in 2003 [14]. According to NSSO report, 88% of the holdings in India are below 2 hectare which constitute 44% of gross cropped area and contributes 51% of Value of Agriculture output. To make situation worse, unless or otherwise, agriculture is not profitable and sustainable, most of the farmer likely to leave agriculture in near future. Yet, owing to their labor intensive nature, horticulture enterprises are recognized as important alternative by the policy makers and experts for nutritional security, poverty alleviation and employment generation programs. But, there is a weak firm-farm linkages and inefficiency in the supply chains, the level of value addition is quite low [15]. For instances farmer cultivating fruits and vegetables receive less than 20% consumer price [16]. According to study conducted by IFPRI 2008 [17], and World Bank 2007 [18] in India, farmers' share in consumer price is quite low and moving toward private marketing networks benefits the farmers. These explain the significance of linking farmers and supermarkets. Also, strengthen the bargaining capacity of farmers in India with large retailers; it is necessary for the farmers to come in groups, be it in the form of cooperatives, farmer companies or farmer clubs. These not only reduces the transaction cost of doing business but also correct the balance of market power within the stakeholders in negotiating the terms of doing business, especially prices [15].

In India, though concept of supermarket is not a new one, the wave of spread began exceptionally in the last decade. During 2002-07, the average annual growth rate of top 10 Indian food and grocery

retailers was more than 70% per annum. Considering the demand potential and investment opportunities, India is being considered to be the top third most attractive country in the world for foreign direct investment in retail [15,19]. The spread of supermarket is an ongoing, even accelerating process that we will soon see supermarkets as the dominant food suppliers around the world [11]. The implication of spread of supermarket has got potential to integrate agro-food supply particularly it has crucial role to play in the small and marginal farming. The main motive of this paper is to explore the ways or super markets models that will integrate the small and marginal farmers with supply chain system in India.

This study analyzes the effect of supermarkets supply chains on agriculture in general and its impact on horticulture producers, farm income, and local retailers in particular during WTO regime and suggests policy measures for linking of farmers with supermarkets to benefit in agriculture. The main objective of the paper is to trace innovative models and study functions, mandate, strategies and policy principles practicing by different innovative marketing institutions in horticulture marketing in India. The specific objectives of the study are:

1. To study the different innovative marketing institutions, their functions and mandate in horticulture marketing in India.
2. To trace marketing models, strategies and policy principles practicing by different marketing institutions in horticulture marketing in India.
3. To study the economic benefits and effects of supermarkets on farmers, traditional retailers and local vendors.
4. To suggest the most profitable marketing models for horticulture marketing to benefit farmers in India.

Data and Methodology

This study is based on both primary and secondary data. The different marketing institutions, their functions, and marketing models for fruits and vegetables are collected from the respective institutions, websites, published secondary sources and analyzed and put in matrix format. The status, growth and future plans, marketing models and strategies of public and private retailing markets in fruits and vegetables are analyzed. The recent changes in marketing models of fruits and vegetable marketing institutions, public and private retail markets were documented. The different traditional and modern marketing models or channels for different horticultural crops are studied. The features of different supermarkets operating for marketing of fruits and vegetables were studied as case study through a survey conducted with the officials of Department of Marketing, Hyderabad and discussion held with management of government controlled Rythubazar, Hyderabad. Regression equation with dummies used to measure the effect of supermarkets on farmers, local retailers, vendors and consumers. The effects of super market supply chains particularly, Reliance, More and Heritage on farmers, retailers and local vendors studied by survey. The study was conducted on marketing channels in 8 states for horticultural commodities. 29 crops were studied and for each crop 120 farmers were selected. The data pertains to the year 2009-10. The study used Delphi survey method to validate the results obtained through secondary data from concerned officials of institutions. Finally, suggestions are made to advocate the superb marketing models of fruits and vegetables in India.

Results and Discussion

Marketing models or channels

The fruits and vegetables reach the final consumer through various

channels depending on the season and price movement in the market. The different traditional and modern marketing models or channels for different horticultural crops are presented in the table 1 [20]. The results show that the most common marketing channel for all crops is that P-W-R-C and some of the cases middlemen will come in the place of whole seller followed by P-R-C and P-C. The result shows that in different states for the same crops the different marketing channels are adopted because of the situations and convenience. Even now, the farmers of most of the states are adopting traditional markets channels in spite of modern market models are available. Punjab is the only state is practicing direct marketing models and the next state Karnataka is also practicing direct market model through HOPCOMS. The direct market models are the best because the producer share in consumer rupee is 100% and will eliminate completely middlemen.

New novel public marketing models

It has been realized that the marketing models or channel for fruits and vegetables should be as short as possible. Perishable horticulture produce should move quickly from farmers to consumers without much loss. If farmers directly sell their produce to the consumers, it will not only save losses but also increase farmer's share in the price paid by the consumers. Therefore, direct marketing by the farmers is being encouraged as an alternative channel.

India opened up post-1990, a number of new innovative public liberalized markets for fruits and vegetables in the WTO regime and their key functions and market models were given in the table 2. The main functions of farmers markets are empowering the farmers to participate effectively in the open market to get a remunerative price for their produce, to avoid the exploitation of both the farmers and the consumers by the middlemen and increase by enhancing the distributional efficiency of the marketing system. It will eliminate middlemen, links producers and consumers directly, reduce price spread, and enhance producer shares in consumer rupee. Forward and future markets have been identified as important tools of price stabilization and risk management. Commodity exchanges for futures trading narrows the marketing, storage and processing margins, thereby benefiting both growers and consumers. E-trading based on buying and selling of electronic warehouse receipts and with the latest price information has also become a widespread practice. These are the forward linkage marketing models which are beneficial to the farmers but the farmers have to incur transport and incidental charges.

New liberalized supermarket chains in India

The economic reforms lead to the emergence a number of new

private super markets, dealing with both agricultural commodities and non-agricultural consumables. Traditional markets were seen making way for new formats such as departmental stores, hypermarkets, supermarkets and specialty stores. Most of them were started with foreign collaboration or in line with western retail markets. Before 1991, Nilgiris and Trinethra were the only retail chains existing in the country. However, other retail groups like Margin free, Spencers, Subhiksha, Reliance retail, Food Bazaar and many others were added to the list in the post-reforms era. The list of these new generation super markets chains along with their functions, area of operation, ownership, formats etc are presented in table 3 [21]. Most of these operators have highly ambitious plans of extending their operations to more areas by increasing the number of outlets and scale of operation in the coming years. These are the backward direct marketing linkage models which are beneficial to the farmers because it will cost him nothing marketing, storage and incidental charges and also provide technical knowhow and storage facilities. These markets will eliminate middlemen completely.

Features of super market models for marketing of fruits and vegetables: A case study in Hyderabad, A.P

The features of different super market models operating for marketing of fruits and vegetables were studied through a survey conducted with the officials of Department of Marketing, Hyderabad and discussion held with management of government controlled Rythu bazaar, Hyderabad. Other models being followed in marketing of fruits and vegetables were also studied, these included Reliance Fresh and Subhiksha. The features of these marketing models have been presented in table 4.

The table 4 compares the Rythu bazaars in operation in Andhra Pradesh with the new generation super markets like Reliance fresh and Subhiksha. It was found that in private super markets the horticulture produce was mostly procured directly from the farmers at the farm gate. The farmers get higher share as the length of the channel was reduced and the associated costs like transportation, margins of the market intermediaries and other incidental costs. The middle men were completely eliminated which resulted in greater efficiency of these retail markets in comparison to the rythu bazaars models where large numbers of intermediaries eat away a major chunk of the margins. It was also found that grading and sorting of the produce were appropriately done in private retail markets which helped the consumers in easy purchase of the commodities. However, it is mentioned that the rythu bazar markets were operating at a no-profit no-loss basis while the private super markets derive certain amount of profit from the operation. The

| A.P | Crops | Potato | Tomato | Baby corn | Rose | Grape |
|-------------|-------------------|---------------|-------------|---------------|------------------|--------------|
| | Preferred channel | P-W-R-C | P-M-W-R-C | P-M-R-C | P-W-R-C | P-M-W-R-C |
| Tamil Nadu | Crops | Brinjal | Potato | Tapioca | | |
| | Preferred channel | P-W-R-C | P-W-R-C | P-R-C | | |
| West Bengal | Crops | Brinjal | Bhindi | Tomato | Guava | Marigold |
| | Preferred channel | P-F-W-R-C | P-F-W-R-C | P-F-W-CA-R-C | P-F-W-R-C | P-F-W-CA-R-C |
| Manipur | Crops | Tomato | Cabbage | Passion Fruit | Anthurium Flower | |
| | Preferred channel | P-R-C | P-W-R-C | P-W-R-C | P-R-C | |
| Rajasthan | Crops | Tomato | Carrot | Aonla | Kinnow | |
| | Preferred channel | P-CON-C.A-R-C | P-T-C.A-R-C | P-T-C.A-R-C | P-C-W-R-C | |
| Punjab | Crops | Potato | Tomato | Green Peas | Brinjal | Okra |
| | Preferred channel | P-C | P-C | P-C | P-C | P-C |
| Karnataka | Crops | Banana | Tomato | | | |
| | Preferred channel | P-HOPCOMS-C | P-HOPCOMS-C | | | |

Note: P=Producer, W=whole seller, M=middlemen, CA=commission agent, R=retailer, C=Consumer, CON –contractor; HOPCOMS-horticultural produce cooperative marketing societies

Table 1: The different marketing channels or models for horticultural crops in different states in India.

| No | Public Agricultural Marketing Institutions | Direct Marketing Models with Forward Linkages |
|-----|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Rythu Bazaar in Andhra Pradesh | -First started in Andhra Pradesh in the direction of empowering the farmers to participate effectively in the open market to get a remunerative price for their produce. -To avoid the exploitation of both the farmers and the consumers by the middlemen by creating a positive atmosphere of direct interface between them. -direct market model with forward linkages -linking farmers to rythu bazaars |
| 2. | Apni Mandi | - First started in Punjab in the direction of ensuring direct contact of the producer-farmers and consumers and thereby enhancing the distributional efficiency of the marketing system. This system does away with the middlemen. -The price spread is considerable low. These are working satisfactorily in the case of fruits and vegetables. -These 'Apni Mandis' are similar to the Saturday markets of United Kingdom and United States of America. - direct market model with forward linkages -linking farmers to rythu bazaars |
| 3. | Farmers markets | -Farmers markets initiated in Tamil Nadu in Nov, 1999 to eliminate middlemen and traders from the marketing of vegetables in the farmers markets, and to establish direct contacts between farmers and consumers. - direct market model with forward linkages. -linking farmers to rythu bazaars. |
| 4. | Hardaspar Vegetable Market | - Hadaspar vegetable market is a model market for direct marketing of vegetables in Pune city. - This is one of the ideal markets in the country for marketing of vegetables. - The market has modern weighing machines. - Linking farmers to vegetable markets. |
| 5. | Shetkari Bazar | - Shetkari bazaars were established in the Maharashtra state for marketing of fruits and vegetables. - It will eliminate middlemen, links producers and consumers directly, reduce price spread, and enhance producer share's in consumer rupee. - Thus these markets increase the farm income, wellbeing of the farmers and bring stability in prices of horticultural crops. - direct market model with forward linkages - linking farmers to rythu bazaars. |
| 6. | Krushak Bazars | - Established in the state of Orissa in 2000-01. - The purpose is to empower farmer-producer to compete effectively in the open market to get a remunerative price and ensure products at affordable prices to the consumer. - direct market model with forward linkages. - linking farmers to rythu bazaars. |
| 7. | Mother Dairy Booths | - Mother dairy, basically handling milk in Delhi. But it was asked to handle retail vegetable marketing. - Mother dairy management has opened retail outlets in the city for providing vegetables to the consumers at reasonable prices. |
| 8. | Cooperative Marketing Society | - The need for cooperative marketing arose due to many defects in the private and open marketing system. - A cooperative marketing society can eliminate some or all of the intermediaries. - This will make commodities cheaper and ensure good quality - Few successful cooperative marketing societies for fruits and vegetables. eg. Maha-grape- cooperative federation marketing, Maharashtra, Cooperative marketing, pomegranate, Co-operatives marketing banana in Jalgaon district, Vegetables co-operatives in Thane District, Milk co-operatives in Maharashtra, HOPCOMS, Bangalore and Gujarat and Co-operative cotton marketing society. - Direct marketing with forward linkages. |
| 9. | Contract Farming/Contract Marketing | - Essentially is an agreement between farmer-producers and the agribusiness firms to produce certain pre-agreed quantity and quality of the produce a particular price and time. - This is an important initiative for reducing transaction costs by establishing farmer-processor linkages. - Successful contract farming includes Organic dyes- Marigold farmers and extraction units in Coimbatore, Pepsi Company and farmers of Punjab and Rajasthan for tomato growing. - Direct marketing with forward linkages. |
| 10. | Safal Market | - NDDDB started a fruits and vegetable unit of SAFAL at Delhi was one of the first fruit and vegetable retail chain. - NDDDB has set up an alternate system of whole sale markets in Bangalore as a pilot project. - This market is a move to introduce a transparent and efficient platform for sale and purchase fruits and vegetables by connecting growers through Grower's associations. |
| 11. | Forward and Future Markets | - Forward and Futures markets have been identified as important tools of price stabilization and risk management. - Extension of forward and futures markets to all major agro commodities has, therefore, assumed great importance. - Commodity futures markets in the country are regulated through Forward Contracts (Regulation) Act, 1952. - Direct marketing with forward linkages. |
| 12. | Commodity Exchanges | - Commodity exchanges for futures trading narrows the marketing, storage and processing margins, there by benefiting both growers and consumers. - NAFED started National Multi-Commodity Exchange of India Ltd. on 26th November, 2002, for cash crops, food grains, plantations, spices, oilseeds, metals and bullion among others. - National Commodity and Derivate Exchange of India Ltd. was established in Dec, 2003 at Mumbai with a similar purpose. |
| 13. | E-trading | - Trading based on buying and selling of electronic warehouse receipts and providing the latest price information - The services can be accessed by internet, telephone (by interactive response), from mandi administration as well. |
| 14. | Food retail super markets | - Food retail markets in India during 1990s and early 2000 opened up the availability of food products dramatically. They key functions are • Higher standards • Lower prices Direct marketing model |

Table 2: New public agricultural marketing institutions in India during WTO regime.

| Private Retailer markets | Year entered | Ownership | Formats | Outlets/plans | Locations |
|--------------------------|--------------|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------|
| Nilgiri's | 1971 | Local (part ownership by Actis, U.K.) | supermarkets, convenience stores | 40; plans for 500 stores by 2010 | Major cities in South India |
| Trinethra/ Fabmill | 1986 | Local (Aditya Birla Group) | supermarkets, convenience stores, | 170 | Major cities in A.P., Tamil Nadu, Karnataka and Kerala |
| MarginFree | 1994 | Local Cooperative (Consumer Protection and Guidance Society) | Discount stores, Supermarkets | 350 | Major cities in Kerala, Tamilnadu, and Karnataka |
| Spencers | 1996 | Local (RPG Group) | Hypermarkets, supermarkets, convenience stores | 97; plans to add 50 hypermarkets by 2008 | Major cities in South India |
| Subhiksha | 1997 | Local (Subhoksha Trading Services Pvt. Ltd) | Discount stores | 520; plans for 1200 stores all over the country by 2007/08 | Major cities in Tamilnadu, A.P, Pondichery and Delhi region |
| Foodworld | 1999 | Local (Subsidiary of Dairy Farm International) | Supermarkets | 55; plans to expand in South India | Banglore, Hyderabad |
| Trumart | 2001 | Local (Pyramid Retail) | supermarkets, convenience stores | 29; plans for 90 stores by end of 2007 | Maharashtra and Gujarat, Bangalore, Chennai, Hyderabad, |
| Food Bazaar | 2002 | Local (Future Group) | Hypermarkets, supermarkets, | 90; Plans for 250 store by 2010 | National (major metros and large cities) |
| Metro Cash & Carry | 2003 | Foreign (Metro AG, Germany) | Wholesale "Cash& Carry" | 3; plans to add 15-18 new outlets by 2009 | Bangalore, Hyderabad, Mumbai, Kolkata, Chennai |
| My Dollar Store | 2004 | Local (Franchisee of My Dollar Store of the US) | convenience stores | 50; plans for 400 stores by 2007 | Nationwide |
| Shoprite | 2004 | Local (Subsidiary of Shoprite (PTY0 Ltd; South Africa) | Hypermarket | 1; plans to add 2-3 new outlets by 2007 | Mumbai |
| Star India Bazaar | 2004 | Local (Trent; division of Tata Group) | Hypermarket | 3; plans to add 23 | Nationwide |
| Reliance Retail | 2006 | Local (Reliance Industries Ltd.) | Hypermarkets, supermarkets, convenience stores | 230; plans for 3,000 stores, 2500 super markets and 500 hypermarkets by 2010 | Nationwide |
| Spinach | 2006 | Local (Wadhwan Retail) | Super markets | 89; plans to add 1500 stores in 90 cities by 2010 | Nationwide |
| Max Hypermarkets | 2007 | Local-foreign joint venture (Spar International, Neth.) | Hypermarkets | Plans to develop 7 stores by 2009 | Nationwide |
| Bharti1 | 2007 | Local (Bharti Enterprises) | Hypermarkets, Supermarkets | Plans to invest \$2.5 billion by 2014 | Nationwide |
| Bhart Walmart | 2007 | Local-foreign joint venture (Wal-mart, USA) | Wholesale "cash & carry) | Plans for 15 stores by 2014 | Nationwide |
| Birla "More" | 2007 | Local -Birla | Super markets \$2 billion by 2010 | 1000 stores | Nationwide |

1: Retail Partner of Wal-Mart

Table 3: Growth of India's chain food new private super marketing institutions or models (Direct Marketing Models with Backward Linkages).

study concludes that the marketing model adopted by private super markets particularly reliance and Subhiksha is more efficient than government markets like Rythu bazaar.

The Benefits & Effects of Supermarket Chain: A Case Study in Hyderabad, A.P.

The study was conducted in Vontimamidipalli, Hyderabad, which is a hub of private supermarkets. The discussion was held with officers of supermarket supply chains namely, Reliance, More and Heritage. Discussion was also held with farmers and collected information.

The detailed information collected on products they are dealing, supply development programs initiated, benefits of linking farmers to super markets, effects of supermarkets on farmers, local retailers, consumers, vendors, opportunities, constraints and suggestions for betterment of market players are shown in table 5.

The results reveal that these super markets are adopting direct marketing models with backward linkages thus it will save farmers from market cost and other charges and complete elimination of middlemen. Farmers who supply to super markets have many advantages it includes

technical guidance, market information on prices, perfect weights and spot payments, etc. The opportunities include development of high value commodities market supply chain.

The farmers are suggested for effective marketing efficiency of fruits and vegetables, the super markets have to purchase entire quantity brought by the farmer irrespective of grading, export linkage is suggested, government has to regulate prices, government has to open and operate retail outlets, government should assess the production and consumption level and announce the Minimum Support Price (MSP) accordingly.

Regression results of effects of super markets on farmers, local retailers, vendors and consumers: To capture the effects of supermarkets on different market player's regression equation with dummies used and results presented in the table 6. The results show that farmers who are supplying to supermarkets are more productive and significant. Supermarkets are not at all effecting the procurement of local retailers and vendor's procurement and business. Consumers are purchasing more from supermarkets and supermarkets themselves are profitable. So supermarkets are not meant of the rich, by the rich and for the rich.

| Sl No. | Items | Rythu bazaars | Reliance | Subhiksha |
|--------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Marketing model | Government acts as facilitator bet Farmer and consumer Direct marketing model with forward linkages | Directly purchase from farmer. Direct marketing model with backward linkages | Directly purchase from farmer. Direct marketing model with backward linkages |
| 2 | Farmers share in consumer rupee | Farmers get good share compare to retail markets because of prices are fixed higher than local retail shops but less than reliance and subhiksha markets | Farmers get higher share than rythu bazars because of marketing model as it saves transport cost, marketing cost and other incidental charges | Farmers get higher share than rythu bazars because of marketing model as it saves transport cost, marketing cost and other incidental charges |
| 3. | Role of middlemen | Partially and indirectly existing | Complete elimination of middlemen | Complete elimination of middlemen |
| 4. | Consumer status | Below Poverty Line people, Middle Class, village middle class | High income group, Software professional, metro people | High income group, Software professional, metro people |
| 5. | Organization | Government | Private | Private |
| 6. | Goal | No profit/loss | Commercial/profit | Commercial/profit |
| 7. | Consumer choice of grading | No grading | Grading | Grading |
| 8. | Prices | Prices low | Low/high | More or less similar to reliance |
| 9. | Marketing channel | Farmer-government- consumer | Company-farmer | Company-farmer |
| 10. | Participants | Farmers, unemployed women, self help group, unemployed youth Government Agencies: Civil Supplies corporation, OILFED, MARKFED, Girjana Cooperative societies | Company | Company |

Table 4: Features of super market models of fruits and vegetables under different supermarket supply chains.

| S. No | Particular | Reliance | More | Heritage |
|-------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Products they deal with | Deal with many types of vegetables and fruits. | They said that they will procure all types of crops grown in the locality. | Deal with all fruits and vegetables. |
| 2 | Market model | Direct market model with backward linkages. | Direct market model with backward linkages. | Direct market model with backward linkages. |
| 3 | Development initiatives by the respective companies | Arranging meetings with farmers and presentation of success stories from states like Karnataka. | Technical guidance sometimes offered by visiting farmers' fields. | Custom farming (agriculture diploma candidates will be formed into teams and sent to the fields for technical guidance). |
| 4 | Benefits of linking farmers with companies | Perfect payment - Perfect weighing - Fixed rate per each day - Returning Gunny bags | Low transport charges - No commission - Correct weighing | Wholesale is unassured, but selling to company is having assured market -Productivity will increase because of assured markets and proper planning |
| 5 | Constraints | - Initially it is taking time to acclimatize to collection centers | - Now paying 1% cess to government | - No credit is advanced |
| 6 | Effects | Effects | - Spiraling of prices and cobweb phenomena observed - Absence of middlemen | - Spiraling of prices and cobweb phenomena observed - Absence of middlemen |
| 7 | Opportunities | Development of high value commodities market supply chain | Development of high value commodities market supply chain | Development of high value commodities market supply chain |
| 8 | Suggestions | - Have to purchase entire quantity brought by the farmer irrespective of grading. -Seeds should be with high quality - Farm schools and Market schools to open | - Should supply seeds - Export linkage is suggested - Government has to regulate prices - Government has to open and operate retail outlets - Farm schools and Market schools to open | - Government should assess the production and consumption level and announce the MSP accordingly Farm schools and Market schools to open |

Table 5: The effects of supermarket chains on farmers, retailers and local vendors in horticulture marketing in Andhra Pradesh.

Conclusions and Policy Implications

The study concludes important results and policy implications on importance of marketing models for fruits and vegetables in the country. The farmers in the most of the states are preferred traditional marketing channels. Punjab is the only state is practicing direct marketing models and followed by Karnataka through HOPCOMS. The direct market models are found to be the best because the producer share in consumer rupee is 100% and will eliminate completely middlemen.

India opened up post-1990, a number of new public markets adopting direct market models with forward linkages for fruits and vegetables in the WTO regime. The main functions of farmer's markets

are to eliminate middlemen, links producers and consumers directly, reduce price spread, and enhance producer shares in consumer rupee. Forward and Futures markets have been identified as important tools of price stabilization and risk management. Commodity exchanges for futures trading narrows the marketing, storage and processing margins, there by benefiting both growers and consumers. E-Trading based on buying and selling of electronic warehouse receipts and providing the latest price information. The economic reforms also lead to the emergence a number of new private super markets operating direct marketing model with backward linkages. Their number and scale of operations have been undergoing a phenomenal growth in the past few years.

| Factors | Coefficient | 't' value |
|--------------------|-------------|-----------|
| Farmer×11 | 0.56 | 9.94* |
| Supermarkets×13 | 0.59 | 10.49* |
| Local Venders×14 | 0.59 | 14.69* |
| Local retailers×15 | 0.57 | 10.00* |
| Consumer×12 | 0.56 | 9.88* |
| R ² | 0.996 | |
| Adj R ² | 0.990 | |

Table 6: Effects of supermarkets on farmers, local retailers, vendors and consumers.

The study concludes that the marketing model adopted by private markets particularly reliance and Subhiksha is more efficient than government markets like Rythu bazaar because the marketing agency directly go to farmers field and collect fruits and vegetable resulting in reduced marketing cost, transport cost and other incidental charges.

The results reveal that these super markets are adopting direct marketing models with backward linkages thus it will save farmers from market cost and other charges and complete elimination of middlemen. Farmers who supply to super markets have many advantages it includes technical guidance, market information on prices, perfect weights and spot payments, etc. The opportunities include development of high value commodities market supply chain.

The farmers are suggested for effective marketing efficiency of fruits and vegetables, super markets have to purchase entire quantity brought by the farmer irrespective of grading, export linkage is suggested, government has to regulate prices, government has to open and operate retail outlets, government should assess the production and consumption level and announce the MSP accordingly.

Even the farmers of the most of the states are adopting traditional marketing channels. The study suggests that modern direct marketing models to adopt. Therefore, there is an immediate need to replicate such models in a much larger scale to cover not only the cities but also the interior villages in the country. The study advocates that it is necessary to amend outdated laws restricting the establishment of markets to allow cooperatives and private entrepreneurs to set up modern markets, both public and private retail markets.

Shifting Indian farming from a rural lifestyle to an agribusiness sector and linking farmers to super markets is a key driver for industrialization of agriculture. Similarly this study advocates similar linkage mechanism for Dc's to make agriculture as an industrial farming. Super markets are miracle in agriculture: These will lead to industrial farming in dc's agriculture.

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