

Impact of Organised Retailing of Fruits and Vegetables on Neighbourhood Traditional Marketing in Punjab

Danishbir Kaur and Sukhpal Singh

Department of Economics and Sociology, Punjab Agricultural University, Ludhiana, Punjab, India

Abstract

This study examined the impact of organised retailing of fruits and vegetables on neighbourhood traditional marketing in Punjab. The total sample was of 114 which comprised of organised retailer, unorganised retailer and consumers from Amritsar and Ludhiana districts during the year 2019-20. The sale volume of vegetables and fruits of traditional retailers decreased by 41 per cent and 11 per cent on weekly basis after the opening of organised retail formats respectively. The profit margin of traditional retailers declined by 18 per cent due to a decrease in sale volume and a rise in procurement costs. Availability of products under one roof, digital payment and availability of imported products at organised retailing have attracted the consumers by eventually decreasing the number of consumers visiting traditional retailers.

Keywords: Consumer, Fruits and vegetables, Organised retailer, Street vendors, Unorganised retailer

JEL Classification: Q12, O13, N54

Introduction

India's agro-food sector has undergone rapid transformation towards consolidation and greater market share of modern food retail. Substantial changes in the patterns of production, consumption and trade of fruits and vegetables led to the growing importance of modern agricultural marketing channels, including large-scale retail outlets. In the global food economy, supermarkets and retail chains are emerging as important players in developing countries, are coordinating and controlling the global food sector. Changing consumer behaviour over time acts as an important reason leading to the vogue of retailing, as consumers are believed to be the final beneficiaries of retail success.

Traditionally, the retail sector in India consists of *kirana* stores, street markets, hawkers and neighbourhood retailers selling items of daily needs, fruits and vegetables. The practices in early times were usually labour intensive and slow, and the number of customers to be attended at once was limited. Unorganised retailing refers to the traditional formats of low-cost retailing, for example, the local *kirana* shops, owner-manned general stores, convenience stores etc (Corporate Catalyst India 2010). The journey of the organised retail sector in India can be classified broadly into four main phases, namely, initiation phase (pre – 1990s),

conceptualization phase (1990 – 2005), expansion phase (2005 – 2010) and consolidation phase (2010 onwards) (Azeem, 2012). As going through these phases, within a few decades the shopping landscape changed from one dominated by category-specific outlets to one that featured integrated 'one-stop' shops. Big players like Reliance, Bharti, Tatas and ITC entered the organised retail segment. Small retailers no longer remain the primary source for the basic monthly shopping basket. The organised retailing in food is constrained by underdevelopment of the supply chain, lack of infrastructure, and government concern with increasing food prices (Mondal, 2015). The evolution of the retail sector includes continuous improvement in the supply chain management, distribution channels, technology, back-end operations and so on which lead to making consolidations, mergers and acquisitions and huge investments. Presently, the retail chains are focusing to cut cost and survive in the market considering the challenges faced by the industry (Haritha *et al*, 2017). Retailing contributes about 10 per cent of India's GDP and 8 per cent employment (IRIS services New Delhi 2020) making it the second largest employer next to the farm sector (Kumar *et al*, 2008). India ranked 73 in the United Nations Conference on Trade and Development's Business-to-Consumer (B2C) e-commerce Index 2019. Likewise, it ranked 63 in World Bank's Doing Business 2020. In Global Retail Development Index 2019 India ranked second, after China, backed by rising middle class and rapidly growing

consumer spending.

India’s e-commerce market is also set to grow at a compound annual growth rate of 30 per cent to reach \$200 billion by 2026 (www.investindia.gov.in). India is the world’s second largest producer of fruits with 12 per cent and vegetables with 13 per cent. The retailers follow the organised and unorganised retail sector strategies in making the products available to the end-user. Unorganised retailing is a dominating business that stands for 95 per cent of Indian retailing (Kartheka *et al* 2019). The share of the organised sector in Indian retailing is 18 per cent which provides employment to 50 lakh people and generates a value of Rs. 35,000 crore. On the other hand, the unorganised sector generates a value of Rs 9,00,000 crore (Kartheka *et al* 2019). In Punjab, the traditional marketing of fruits and vegetables is prevalent, which is mainly unorganised. There is a lack of grading, sorting and processing of the produce in the traditional market. However, modern marketing is focused on the grading, standardization, processing and storage of the produce. The organised retailing sector in Punjab still being at its initial stage of expansion and growth. The simultaneous act of globalization and liberalization in the Indian economy triggered accelerated industrial growth across the various spectrums of market segments in India. With the intervention of organised retail in form of modern retail formats such as supermarkets, the retail scenario in preferences of consumers

has witnessed a remarkable shift. Punjab’s consumption is more than most other states and is significantly higher than the all-India average in the retailing sector (Anonymous 2006). Keeping the expansions of supermarkets in view, it is significant to study the impact of organised retailing of fruits and vegetables on the sales, profit and consumer base of neighbourhood traditional marketing in Punjab.

Data Sources and Methodology

Organised retailing is prevalent in all the cities of Punjab. But some cities namely, Ludhiana, Jalandhar, Amritsar, Patiala and Mohali are among the leading cities in the rise of organised retailing. Out of these cities, Amritsar and Ludhiana were randomly chosen for the study. A total sample of the study was 114, which comprised of four organised retailers two from each city such as Reliance Fresh, Big Bazaar and Easy Day, 30 neighbourhood retailers 15 each from both city and 80 consumers comprising of each 20 from organised retailing and 20 from unorganised retailing. The primary data were collected through personal interview methods for the agricultural year 2019-20.

To identify the factors affecting sales/profit/consumer base of traditional retailers, following regression analysis was used. Various regression models were run to identify the factors.

$$\text{Log } y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n$$

Models studied in present study

Variables	Model I	Model II	Model III
Y	Sales (Rs.)	Profit (Rs.)	Consumer base (Number)
X ₁	Organised retailing (Dummy variable)	Organised retailing (Dummy variable)	Organised retailing (Dummy variable)
X ₂	Family size (Number)	Age (Years)	Vegetable retailer (Number)
X ₃	Fruit and vegetable retailer (Number)	Gender	Fruit retailer (Number)
X ₄	Vegetable retailer (Number)	Education	Education
X ₅	Working hours per day	Family size (Number)	Working hours per day
X ₆	Cooling facility	Street vendor (Number)	Cooling facility
X ₇	Seasonal/Off-seasonal produce handled by retailer	Rerhiwala (Number)	Seasonal/Off-seasonal produce handled by retailer
X ₈	Quantity of vegetables handled (Weekly)	Fruit and vegetable retailer (Number)	—
X ₉	Quantity of fruits handled (Weekly)	Vegetable retailer (Number)	—
X ₁₀	—	Quantity of vegetables handled (Weekly)	—
X ₁₁	—	Quantity of fruits handled (Weekly)	—
X ₁₂	—	Cooling facility	—
	β ₁ , β ₂ , β ₃ to β ₉ are regression coefficients of X ₁ to X ₉	β ₁ , β ₂ , β ₃ to β ₁₂ are regression coefficients of X ₁ to X ₁₂ .	β ₁ , β ₂ , β ₃ to β ₇ are regression coefficients of X ₁ to X ₇ .

Table 1. Distribution of neighbourhood traditional retailers on the basis of their weekly sale of vegetables before and after organised retailing in Punjab (Number)

Vegetables handled (qtls)	Before		After	
	No.	%age	No.	%age
Upto 10	3	13.04	5	21.73
11 – 20	6	26.08	7	30.43
21 – 30	6	26.08	4	17.39
31 – 40	4	17.39	2	8.69
Above 41	3	13.04	4	17.39
Total	23	100.00	23	100.00

Results and Discussion

Impact on sale of neighbourhood traditional retailers

Sale volume of vegetables

The sale volume of neighbourhood traditional retailers depicts the income of retailers. The data given in Table 1 shows the overall range of vegetables handled by traditional retailers before and after the commencement of organised retailers. The traditional retailers in the range of 21 – 30 quintals and 31 – 40 quintals have decreased from 26 per cent to 17 per cent and from 17.39 per cent to 8.69 per cent. The retailers handling 21-40 quintals were affected by the opening of organised retailers, this resulted in an increase of retailers for a range of up to 10 quintals and 11 – 20 quintals. Similarly, the number of retailers increased from three to four (from 13.04 per cent to 17.39 per cent) of handling above 41 quintals.

Category-wise sale volume of vegetables

The category-wise sale volume of neighbourhood traditional retailers is given in table 2. It can be clearly observed from the table that there is a decline in the proportion of quantity handled by all types of retailers. The maximum decline in the quantity is observed in the case of shopkeepers by about 42 quintals from 72.8 quintals to 30.9 quintals after the opening of supermarkets followed

by a much lesser decline in quantity handling by three-four quintals in case of *rerhiwala* and street vendors. Overall, the quantity handled decreased by 16.07 quintals with a decrease of 41.51 per cent. The results of chi-square test revealed the degree of association differs for the variables i.e showing a significant change.

Sale volume of fruits

A perusal of Table 3 shows the quantity of fruits handled by neighbourhood traditional retailers. The table shows that the fruits retailers in the neighbourhood increased by five retailers after the opening of an organised retail outlet. The increase in the number of retailers is seen in case of retailers handling quantity up to six quintals, seven to nine quintals and more than 16 quintals. In the case of proportion handled up to 6, the retailers increased from five retailers (35.71 per cent) to nine retailers (47.36 per cent). Presently 10.52 per cent of retailers handle the fruits in the proportion of 7 - 9 quintals, which increased from 7.14 per cent. The retailers handling quantity in the proportion of 10 - 12 quintals neither show a decrease nor increase in the proportion of quantity after the commencement of organised retailers. The retailers handling fruits in the proportion of 13 - 15 quintals show a decline from two retailers (14.28 per cent) to one retailer (5.26 per cent). The chi-square test analysis revealed the same degree of association among variables.

Table 2. Category-wise distribution of neighbourhood traditional retailers with regard to weekly sale volume of vegetables before and after organised retailing in Punjab

Type of traditional retailers	Average quantity of vegetables (qtls)		Difference	%age change	p value
	Before	After			
Shopkeeper (10)	72.8	30.9	-41.9	57.55	0.328
Rerhiwala (12)	23.57	20.57	-3	12.73	0.206
Street vendor (8)	19.83	16.5	-3.33	16.79	0.371
Average	38.73	22.65	-16.07	41.51	0.266

Note: $\chi^2 = 25.5917$

$Pr = 0.012 > 0.05$ (significant)

Table 3. Distribution of neighbourhood traditional retailers on the basis of their weekly sale of fruits before and after organised retailing in Punjab (Number)

Fruits handled (qtls)	Before		After	
	No.	%age	No.	%age
Upto 6	5	35.71	9	47.36
7 - 9	1	7.14	2	10.52
10 - 12	4	28.57	4	21.05
13 - 15	2	14.28	1	5.26
Above 16	2	14.28	3	15.78
Total	14	100.00	19	100.00

Note: χ^2 (Chi-square value) = 4.1640

Pr = 0.707 < 0.05 (non-significant)

Category-wise sale volume of fruits

The information given in table 4 described the category-wise sale volume of fruits for neighbourhood traditional retailers. It can be clearly observed from the table that there is a decline in the proportion of quantity handled by all types of retailers. The quantity handled by shopkeepers is declined by 1.3 quintals, from 9.70 quintals to 8.40 quintals after the opening of supermarkets followed by a much lesser decline in quantity handling by *rerhiwala* and street vendors. Overall, the quantity handled decreased by 1.10 quintals with a percentage decrease of 11.55 per cent.

Regression analysis was used to determine various factors affecting sale volume of neighbourhood traditional retailers as shown in Table 5. Organised retailing is negatively related to the sale volume of neighbourhood traditional retailers, as organised retailing increases by 1 unit then the profit of traditional retailers would decline by 23.8 per cent. Out of all the independent variables, seasonal/off-seasonal produce handled by retailer, the quantity of vegetables and fruits handled per kg (weekly), working hours were found significant at $p < 0.05$ and are positively related to the sales volume of neighbourhood traditional retailers. As the quantity of produce handled with retailers increases their sale volume would increase.

Impact on profit of neighbourhood traditional retailers

Profit Level

The data shown in table 6 revealed the estimated profit earned by neighbourhood traditional retailers of fruits and vegetables. Overall the profit earned decreased from Rs.1900 to Rs.1563 showing a decline of 17.72 per cent. The p-value 0.00085 (<0.05) signifies a 10 per cent significance level. In Amritsar, profit earned decreased by Rs336 from Rs1406 to Rs1070. Around 24 per cent of decline is seen in profit earned by retailers. The p-value 0.000899 (<0.05) shows a significant level of 10 per cent. In Ludhiana, profit earned decreased from Rs2393 to Rs2056 by 14 per cent. The p-value 0.062 (<0.05) shows a significant level of 5 per cent. It is clear that the profit of neighbourhood traditional retailers is significantly affected after the commencement of organised retailers in Punjab.

Profit margin

The profit margin kept by retailers before and after the opening of organised retailers is depicted in Table 7. It can be clearly seen from the table that a large number of retailers keep 10 per cent margin in selling fruits and vegetables. Before the commencement of organised retailing 23 retailers (76.67 per cent) were selling at 10 per cent of profit margin but after the opening of supermarkets, the number decreased

Table 4. Category – wise distribution of neighbourhood traditional retailers with regard to weekly sale volume of fruits before and after organised retailing in Punjab

Category	Average quantity of fruits (qtls)		Difference	%age change
	Before	After		
Shopkeeper	9.70	8.40	-1.30	13.40
Rerhiwala	10.64	9.56	-1.08	10.15
Street vendor	8.33	7.40	-0.93	11.16
Total	9.56	8.45	-1.10	11.55

Table 5. Determining the factors affecting sale volume of neighbourhood traditional retailers in Punjab

Particulars	Coef.	Std. Err.	t value	P value
Constant	7.047***	0.517711	13.61	0.000
Organised retailing	-0.238*	0.132872	-1.79	0.079
Fruit and vegetable traditional retailer	1.036***	0.144118	7.19	0.000
Vegetable retailer	0.725***	0.176658	4.11	0.000
Working hours per day	0.044*	0.032613	1.35	0.183
Cooling facility	0.121	0.115309	1.06	0.296
Seasonal/Off-seasonal produce handled by retailer	0.097*	0.052912	1.85	0.07
Quantity of vegetables handled (weekly)	-0.004***	0.001574	-2.83	0.007
Quantity of fruits handled (weekly)	0.041***	0.010055	4.15	0.000

Note: *, ** and *** represents significant level at 10,5 and 1 per cent respectively

Table 6. Distribution of neighbourhood traditional retailers based on average weekly profit before and after organised retailing in Punjab

Average profit (Rs)			Percentage change	p value
Before	After	Difference		
1900	1563.33	-336.67	17.72**	0.00085

Note: ** represents significance level at 5 and 1 per cent respectively.

to 21 retailers (70 per cent). Similarly, three retailers (10 per cent) were selling produce at eight per cent margin which later on decreased to only 1 retailer (3.33 per cent) selling at this profit margin. With the setting up of organised retailers, the retailers enhanced their profit margin in order to earn better as earlier four retailers (13.33 per cent) were keeping profit margin of 15 per cent which later on increased to seven retailers (23.33 per cent).

Regression analysis was used to determine various factors affecting profit of neighbourhood traditional retailers as shown in Table 8. The data given in table exhibits various factors related positively and negatively in affecting the profit of neighbourhood traditional retailers. With a unit increase in organised retailing, the profit of traditional retailers would decline by 43.9 per cent. Cooling facility, fruits handled (weekly), street vendors, fruit and vegetable retailers, family

size and vegetable retailer are positively related to profit. Increase in these factors would eventually increase the profit of neighbourhood traditional retailers.

Impact of organised retailing on consumer base of neighbourhood traditional retailers

Consumer visiting weekdays

The consumers visiting (weekdays) traditional retailers are studied in Table 14. The consumers are categorised as very low (less than 25), low (25-50), medium (51-80), high (81-100) and very high (above 100). It reveals that the visits of medium range consumers decreased from 23.33 per cent to 13.33 per cent and the very high range decreased from 23.33 per cent to 16.67 per cent before and after the opening of organised retailers. This decrease led to an increase in high and low range consumers from 16.67 per cent to 23.33 per cent and from 3.33 to 6.67 per cent respectively. The number

Table 7. Distribution of neighbourhood traditional retailers on the basis of profit margin before and after organised retailing in Punjab (Number)

Profit margin at % of cost procured	Before		After	
	No.	%age	No.	%age
8	3	10.00	1	3.33
10	23	76.67	21	70.00
15	4	13.33	7	23.33
Total	30	100.00	30	100.00

Table 8. Determining the factors which affect the profit of neighbourhood traditional retailers in Punjab

Particulars	Coef.	Std. Err.	t value	P value
Constant	6.612	0.435	15.200	0.000
Organised retailing	-0.439 ***	0.112	-3.940	0.000
Age	-0.008	0.007	-1.220	0.227
Gender	-0.383 *	0.215	-1.780	0.081
Education	-0.029 **	0.014	-2.170	0.035
Family size	0.116 **	0.047	2.450	0.018
Fruit and vegetable traditional retailer	1.489 ***	0.184	8.080	0.000
Vegetable traditional retailer	0.935***	0.218	4.300	0.000
Quantity of vegetables handled (weekly)	-0.004*	0.002	-2.370	0.022
Quantity of fruits handled (weekly)	0.041 **	0.013	3.250	0.002
Cooling facility	0.274 *	0.144	1.910	0.063

Note: *, ** and *** represents the significant level at 10,5 and 1 per cent respectively.

of consumers increased in the low range from 33.33 per cent to 40 per cent after the opening of organised retailers.

Consumer visiting weekend

A perusal of Table 15 describes the consumers visiting the traditional retailers during the weekend before and after the commencement of organised retailers. The consumers are categorised as very low (less than 35), low (36-70), medium (71-100), high (101-150) and very high (above 150). The consumers in low and very high proportion remained almost similar after the opening of organised retailers. The range of very low consumers increased from 3.33 per cent to 6.67 per cent after the commencement of organised retailers. A decline of consumers can be seen in the medium and high range consumers from 26.67 per cent to 23.33 per cent and 10 per cent to 6.67 per cent respectively. The consumers' in very high range remained unaffected by the opening of organised retailers.

Average consumer visiting

The changing number of consumers visiting traditional

retailers have been shown in Table 16. It reveals that on average 108 consumers were visiting traditional retailers before the opening of organised retailers which decreased to 86 consumers during weekdays. The calculated p-value 0.00855 (<0.05) shows that the change in consumers is significant. During the weekend, the proportion of consumers also declined from 102 consumers on average to 86 consumers after the opening of organised retailers. The calculated p-value 0.0351 (<0.05) shows that the change in consumers during the weekend is significantly affected by the opening of organised retailers at 10 per cent significance level. On daily basis, the consumer visiting have also been affected by the opening of organised retailers as 110 consumers on average were visiting traditional retailers on a daily basis which declined to 84 consumers after the commencement of organised retailers. The calculated p value 0.0042 (<0.05) indicates a change in consumers significantly. It clearly shows that there is a reduction in the number of customers visiting the retail entities.

The perusal of Table 17 identifies and determines the factors affecting the consumer base of neighbourhood

Table 14. Distribution of neighbourhood traditional retailers according to the number of consumers' visiting during weekdays before and after organised retailing in Punjab

Number of consumers' (Weekdays)	Before		After	
	No.	%age	No.	%age
Less than 25	1	3.33	2	6.67
25 – 50	10	33.33	12	40.00
51 – 80	7	23.33	4	13.33
81 – 100	5	16.67	7	23.33
Above 100	7	23.33	5	16.67
Total	30	100.00	30	100.00

Table 15. Distribution of neighbourhood traditional retailers according to the number of consumers' visiting during weekend before and after organised retailing in Punjab

Number of consumers' (Weekend)	Before		After	
	No.	%age	No.	%age
Less than 35	1	3.33	2	6.67
36 – 70	14	46.67	15	50.00
71 – 100	8	26.67	7	23.33
101 – 150	3	10.00	2	6.67
Above 150	4	13.33	4	13.33
Total	30	100.00	30	100.00

traditional retailers. The regression analysis performed shows that working hours of traditional retailers per day and seasonal/Off-seasonal produce handled by retailer being positively related determine that, as these factors increases, the consumer base increases. With unit increase in working hours, profit of retailers increase by 27 per cent.

Conclusion and Policy Implications

It can be inferred that organised retailing have impacted traditional retailers in terms of their working hours, seasonal/Off-seasonal produce handled and consumer base. It has also declined the profit earned by traditional retailers by decreasing their sale volume and increasing the cost of procurement,

transportation and so on. The sale volume of vegetables and fruits of traditional retailers decreased by 41 per cent and 11 per cent on weekly basis after the opening of organised retail formats respectively. A unit increase in organised retailers lead to decreases in the profit of traditional retailers by 43 per cent. With the setting up of organised retailers, the retailers enhanced their profit margin in order to earn better. Availability of products under one roof, digital payment, and availability of imported products at organised retailing have attracted the consumers by eventually decreasing the number of consumers visiting traditional retailers. The consumers visiting neighbourhood retailers have declined approximately by 25 per cent on daily basis. Overall, it can be concluded

Table 16. Average number of consumers' visiting neighbourhood traditional retailers during weekdays, weekend and daily before and after organised retailing in Punjab

Before	After	Difference	Percentage change	p value
Average consumers visiting (weekdays)				
108.42	86	-22.42	20.68***	0.00855
Average consumer visiting (weekend)				
102.09	86.58	-15.51	15.19**	0.0351
Average consumer visiting (per day)				
110.83	84.08	-26.75	24.14***	0.0042

Note: ** and *** represents significance level at 5 and 1 per cent respectively.

Table 17. Determining the factors affecting consumer base of neighbourhood traditional retailers in Punjab

Particular	Coef.	Std. Err.	t	P value
Constant	-94.095	122.598	-0.77	0.446
Organised retailing	-116.601***	31.447	-3.71	0.001
Vegetable traditional retailer	-69.719**	28.813	-2.42	0.019
Fruit traditional retailer	-103.625***	33.633	-3.08	0.003
Working hours per day	27.164***	7.518	3.61	0.001
Seasonal/Off-seasonal produce handled by retailer	19.653	14.079	1.4	0.169

Note: *, ** and *** represents the significant level at 10, 5 and 1 per cent respectively.

that organised retailing has widely impacted the traditional neighbourhood fruits and vegetable retailers in Punjab.

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