



Distribution pattern of unorganised milk in consumers' perspective

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Abstract

India currently represents the world's biggest market for milk and milk products. In light of its growing population, higher incomes and growing health consciousness, the demand for milk is steadily increasing in the country. Currently around 80% of the total milk produced is distributed through the highly fragmented unorganised sector. Some factors which help in deciding the mode of distribution of milk are keeping quality of milk, perishable nature of milk, possible contamination, proper supervision and control of distribution, cost of distribution of milk etc. The pattern of its distribution to public is affected by the topography of the area, number of customers, distance of the area from dairy plant, temperature of milk at delivery, type of delivery vehicles etc. This study analyzes the scope for better performance of the unorganized private milk vendors to withstand the competition from branded milk suppliers. The study focus on the distribution pattern of unorganized private milk in Thanjavur District, Tamil Nadu. The objectives are (i) To review the mode of working of the milk procurement and distribution (ii) To examine the problems faced by the unorganized milk-vendors with respect to procurement, processing and distribution of milk. Snowball Sampling method was adopted to collect the data from the unorganized milk-vendors using structured schedule. Five hundred and fifty private milk-vendors were identified as sample for this study by gathering information from one another since the vendors are unorganized and scattered. The study concludes that the milk-vendors need to develop ideas in all spheres like entrepreneurial skills, innovative approach and values like social responsibility and ethics to sustain in the market in the long run. A systematic and planned approach is necessary to enhance efficiency.

Keywords: organised dairy industry, unorganised milk-vendors, mode of distribution

1. Introduction

Dairying, an agro-based industry, one of the expanding branches came out of the Green Revolution, is expanding fastest throughout the world. Milk trade has become a cottage industry providing employment opportunity in rural areas, particularly to the women folk thereby supplementing the family income. Rising income levels have led to a rapid increase in the consumption of milk and milk products among Indian households. Brands will become more important. Many international dairy companies are viewing India with an eye to tap its vast growing market for dairy products.

Organized dairy industry accounts for 18.81 percent of the milk produced in India during 2016 - 17. The rest of the milk is either consumed at farm level, or is sold as fresh, non-pasteurized milk through unorganized channel. The share of the organized sector is expected to rise rapidly -especially in the urban regions. India, with its status as the largest milk producer in the world, is on the verge of assuming an important position in the global dairy industry. The total milk production in the country is over 164 million tones in 2016 – 17, according to sources. The annual growth rate of the dairy industry in India is 15 percent CAGR, which is almost 3 times the average growth rate of the global dairy industry. Milk processing level is 35 percent, which is, 13 percent in the organized and 22 percent in the unorganized sector.

By far the major part of the liquid milk consumed in urban areas is supplied by the traditional or unorganised sector and milk shops. In the organised sector, while cooperative dairies

sell 90 per cent of the milk they process as liquid milk, the private sector converts 80 per cent of its throughput into products.

2. Problem Statement

Tamil Nadu is one among the states in India which faces brand-war for milk. But still, in this highly competitive market, the private unorganized milk sectors play a predominant role especially in bulk sales and holds substantial market-share throughout the state. Being exposed to the hectic competition, these unorganized private milk-vendors strive hard for survival. Hence the study attempts to suggest the improved method of distribution system of milk. Now-a-days, branded milk is getting more importance because of perceived quality, scientific processing, hygienic packaging and storage convenience. Hence the researcher makes an attempt to enable the unorganized private milk vendors in Thanjavur District to compete with branded suppliers. This study was undertaken to provide an insight into the intricacies of distribution system of the private unorganized milk vendors in Thanjavur District in a view to develop new platforms to operate in systematic manner. This study analyzes the scope for better performance of the unorganized private milk vendors to withstand the competition from branded milk suppliers.

3. Objectives

The purpose of this study was to frame innovative distribution system by identifying and overcoming the hurdles in the

distribution system in practice. This can be achieved with the specific objectives as given below

1. To review the mode of working of the milk procurement and distribution
2. To examine the problems of procurement, processing and distribution of milk faced by the private unorganized milk-vendors

4. Research Design

The study is about the distribution pattern of unorganized private milk in Thanjavur District, Tamil Nadu. Snowball sampling method was adopted to collect the data from the unorganized private milk vendors. Five hundred and fifty private milk-vendors identified as sample for this study by gathering information from one another since the vendors are unorganized and scattered. Schedule was used as tool for data collection.

The researcher relied on unorganized milk vendors for primary data; In addition to percentile method, advanced statistical tools like Friedman’s Chi-Square test, Regression analysis and t-test are used for analysis in SPSS package.

The study results suffer limitations. The study unit is quite unorganized which is not professionally managed. So statistical data are not available with the vendors. The data provided by the vendors are estimate and not accurate. Also, the study results may or may not conform with other parts of the state or Nation because of diverse nature of market.

5. Data Analysis

5.1 Distance covered and quantity supplied

The milk-vendors could enjoy cost benefit only if more quantity of milk is supplied to the customers at the distant places. Regression analysis was applied to find the effect

among the variables - Distance Covered and Quantity of milk supplied by the milk vendors.

Table 1

R	R Square	Adjusted R Square	Std. Error
.419	.176	.170	2.22834

Source: Compiled from Respondents’ Schedule

The R² value (.176) indicates that there is 17.6 percent of variation in the distance covered and quantity of milk supplied regression.

5.2 Distance Covered

Distance between the milk-vendors’ place and the customers’ delivery point plays an important role in distribution of milk, due to its perishable nature. That too in the absence of storage facilities, distance covered by the milk-vendor to reach the customers becomes more significant. Hence t-test is applied to explore if distance has impact over the milk-vendors and presented in the following table.

Table 2: One-sample Statistics for Distance Covered

Variables	Mean	Std. Deviation	Std. Error
Less than 1 km	3.83	.788	.034
1 km to 3 km	4.62	.627	.027
3 km to 5 km	3.42	1.010	.043
5 km to 7 km	4.01	1.021	.044
Above 7 km	4.35	.782	.033

Source: Compiled from Respondents’ Schedule

The above table reveals that the mean value is highest for ‘1 km to 3 km’ with standard deviation 0.627 whereas lowest for ‘3 km to 5 km’ with standard deviation 1.010.

Table 3: One-Sample ‘t’ test for Distance Covered

Variables	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference
					Lower
Less than 1 km	24.632	549	.000	.827	.76
1 km to 3 km	60.426	549	.000	1.616	1.56
3 km to 5 km	9.794	549	.000	.422	.34
5 km to 7 km	23.228	549	.000	1.011	.93
Above 7 km	40.578	549	.000	1.353	1.29

Source: Compiled from Respondents’ Schedule

Table 3 shows that all the variables are significantly influencing (P<0.05) the distribution pattern of unorganized milk.

5.3 Problems faced by milk-vendors

The unorganized milk-vendors face many problems with

respect to distribution like unforeseen demand, keeping up delivery schedule, marketable surplus, transport facilities, storage facilities and collecting the price. Hence t-test is applied to explore the problems faced by the milk-vendors and presented in the following table.

Table 4: One-sample Statistics for problems faced by milk vendors

Variables	Mean	Std. Deviation	Std. Error
Unforeseen demand	3.83	1.191	.051
Delivery time	2.94	1.080	.046
Marketable surplus	3.45	1.033	.044
Transport facilities	3.70	.967	.041
Storage facilities	3.45	.962	.041
Collecting the price	3.67	1.166	.050

Source: Compiled from Respondents’ Schedule

The above table reveals that the mean value is highest for ‘Unforeseen demand’ with standard deviation 1.191, followed by Transport facilities, Collecting the price, marketable

surplus and storage facilities; whereas the mean value is lowest for ‘Delivery time’ with standard deviation 1.080.

Table 5: One-Sample ‘t’ test for problems faced by milk vendors

Variables	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Unforeseen demand	16.292	549	.000	.827	.73	
Delivery time	-1.264	549	.000	-.058	-.15	
Marketable surplus	10.194	549	.000	.449	.36	
Transport facilities	16.974	549	.000	.700	.62	
Storage facilities	10.991	549	.000	.451	.37	
Collecting the price	13.384	549	.000	.665	.57	

Source: Compiled from Respondents’ Schedule

Table 5 shows that all the variables are significantly influencing (P<0.05) the problems faced by the unorganized milk-vendors.

and delivery to the first customer. Milk, being a perishable product and also an essential commodity, need to be supplied to the customers at time. The following table shows the time-lapse for morning and evening session.

5.4 Time-Lapse of delivery

Time-lapse of delivery means the time gap between milking

Table 6

Variables	Mean	Std. Deviation	Mean Rank	Chi-Square	df	Sig.
30 Minutes	4.15	.856	3.35			
60 Minutes	3.60	1.115	2.57			
90 Minutes	3.71	1.248	2.83	188.06	4	.000
120 Minutes	3.76	1.249	2.76			
150 Minutes	4.09	1.230	3.48			

Source: Compiled from Respondents’ Schedule

The results of Friedman’s Chi-square test show that there is a significant difference in the time lapse of milk delivery (P<0.05 at degrees of freedom 4). The mean ranks revealed the fact that the ‘75 minutes’ is the major concern for delivery time.

6. Results and Discussions

6.1 Findings

The following findings are drawn from the above analysis.

1. Many milk-vendors have employed fast moving vehicles as mode of transport whereas the direct suppliers relied on bicycles or human labour. Usage of mode of transportation depends upon the quantity of milk to be supplied to the customers and the distance covered to reach the customers. Public transportation is normally used by the milk-vendors who supply bulk quantity of milk at distance places. The reason for using bicycle for may be attributed to moderate distance coverage, lesser maintenance cost and cost effectiveness.
2. The milk-vendors are price-takers and set the price at par with the local market trend. Social bindings made rational pricing difficult. Again, dearth of reliable data on low volume of sales, illiteracy of the milk-vedors, processing, transportation and distribution of milk crippled the fixation of sale prices. Whatever be the method of pricing, all the milk-vendors always fix the price for milk lesser than the organized or branded milk-vendors.
3. The milk-vendors procure milk both from their own cattle and outsource. 44% of the milk-vendors procure milk from

other sources and distribute to the market, while 40% of the milk-vendors depend on their own cattle for milk procurement. Rest of the milk-vendors (16%) partially depend on out-sources apart from procuring milk from their cattle. Milk-vendors who could not meet demand for their milk, with their own cattle, buy milk from other sources and supply to the market.

4. Time-lapse between milking and delivery is high. There is remarkable difference in terms of delivery time among the vendors.
5. None of the milk-vendors are either processing or testing the quality of the milk; except a few, majority of the milk-vendors do not have storage facility. none of the milk-vendors are processing the milk before or after procurement. This may be because of lack of knowledge, not realizing the importance of processing, to save time and cost etc., The other major reason may also be due to immediate supply of milk to nearby customers.
6. All the milk-vendors have admitted that they add water to the milk; but they differ in ratio ranging from 25% to 50%. Among the respondents, majority of the milk-vendors add water in the ratio of 1 : 3.
7. Procurement and distribution of milk are not channelized by any of the milk-vendors. The principal problems beset with milk distribution included the scattered and small-scale milk production, inadequate marketing system, stiff competition from private vendors etc.
8. The quality of the milk is not tested by any of the milk-vendors. This may be because of lack of customers’

demand for quality test and government's non-insistence on quality testing.

9. Majority of the milk-vendors do not have the storage facility. The reason could be low volume of sales, cost involved in setting-up of storage facility, policy of not to make stock because of perishable nature of the milk etc. 16% of the milk-vendors have storage facility because of high volume of sales, risk-attitude, affordability and other reasons

6.2 Suggestions

The study recommends different aspects to the unorganized private milk-vendors to sustain in the market and stand out from brand war.

1. The unorganized milk vendors need to focus on the following issues which may hamper their sustainability if not addressed.
 - a. Imparting education or training programs on hygienic conditions, processing, storage, transportation, pricing, testing the quality of milk etc.
 - b. Precluding rampant adulteration
 - c. Improving microbiological quality of milk due to lack of storage facilities
 - d. Highlighting the importance of early delivery of milk
2. The milk-vendors have to precisely estimate the cost for fixing sale prices rather following unscientific method.
3. In order to ensure and preserve the quality of milk, it is suggested that the time lag between time of milking and delivery should be reduced to the minimum possible extent. Suitable equipments for milk testing may be purchased by the milk-vendors. Quality control need to be strictly enforced on private vendors. Apart from ensuring quality of milk we will have to create processing facilities to meet the brand-war.
4. Milk is a perishable commodity and unless one is involved in the complete value chain of production, processing and marketing, the unorganized private milk-vendors may loose the battle. We have to make significant improvements in our raw milk quality. We have to impose strict standards for adulterants, contaminants and microbiological counts and set up an infrastructure of bulk coolers and insulated tankers to preserve the quality of milk after milking.
5. Lack of cold storage is the main problem faced by milk-vendors. Hence, efforts should be made to solve all these constraints.
6. Efforts such as training of quality milk production, feed and fodder cultivation etc., should be made for increasing the quantity and quality of milk distributed by the unorganized milk-vendors.
7. Low price of milk is the most important problem, followed by lack of cold storage, delay in payment, inadequate water for animals, small quantity of marketable surplus of milk and improper treatment. Hence, adequate measures should be initiated to resolve these problems.

6.3 Conclusion

In light of stiff competition and stringent government regulations, the milk-vendors need to develop ideas in all spheres like entrepreneurial skills, innovative approach and

values like social responsibility and ethics to sustain in the market in the long run. A systematic and planned approach is necessary to enhance efficiency.

7. References

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