



Impact of COVID-19 on Consumers' Buying Behaviour and Consumption Pattern towards Milk in Nagpur City of Maharashtra

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Authors' contributions

This work was carried out in collaboration between both authors. Author AAU designed the study, performed the statistical analysis, wrote the protocol, managed the literature searches and wrote the first draft of the manuscript. Author MGT guided for various aspects for this manuscript. Both authors read and approved the final manuscript.

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ABSTRACT

Understanding and monitoring the behaviour of consumers is vital for producers of products and services which help them for market development, new product design, packaging and promotional efforts, so as to suit for milk consumers. Also, to know about how the milk sales were affected during COVID-19, the project was undertaken. The descriptive cross sectional research design was used. The place of study was Nagpur City of Maharashtra and duration was 1st July to 31st July 2020. The data has been collected from 100 milk consumers. Non-Probability Convenience sampling method was used. Primary data was collected through Personal Interview Method by meeting consumers. Secondary data was collected from journals, Research papers, and Company website. Descriptive Statistics method such as Percentage, Averages, Rankings, etc. was used to analyze the data. Graphical analysis was used to achieve the objectives of the study. It was found that Roadside vendors (54.29%) were the major source for purchase of packaged milk followed by Kirana stores (37.14%). Major important source for getting information about the milk

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brands was Television (47.14%), followed by Newspapers (37.14%), Retailers (14.29%) respectively. It was observed that among various attributes that affect purchase of milk, Taste was the most important attribute, followed by Quality, Brand Image, Packaging and Price respectively. The study with reference to homemade dairy products revealed that majority of the respondents (76%) were not making dairy products at home, only near about 1/4th respondents (24%) were making dairy products at home. During Lockdown majority of the respondents (63%) had no change in their milk consumption, while for near about 1/4th respondents (23%) consumption was increased and for some respondents (14%) consumption was decreased. For 23% respondents 250ml increase in milk consumption was seen. For majority of the respondents (65.22%) the reason for increase in milk consumption was All family members staying at home and for rest of the respondents (34.78%) it was Work from home. For 10% respondents 250ml decrease in milk consumption was seen and for 4% respondents 500ml decrease was seen. For majority of the respondents (78.57%) the reason for decrease in milk consumption was Financial issues.

Keywords: Milk sales in COVID-19; Mahanand dairy Nagpur; buying pattern; lockdown.

1. INTRODUCTION

The term consumer behaviour can be defined as the behaviour that consumers display in searching for purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs. To succeed in this dynamic and rapidly evolving industry as in all others, marketers need to know everything they can do about consumers – what they want, what they think, what they buy, how, when and why.

In order to enter and tap the potential of markets in India, thorough understanding of consumer behaviour is the need of the hour. Understanding and monitoring use behaviour of consumers is also vital for producers of products and services which help them for market development, new product design, packaging and promotional efforts, so as to suit for milk consumers. Also, to know about how the milk sales were affected during COVID-19, the project was undertaken.

The study helps the company to recognize its position in the market of milk sales in Nagpur city and identify behaviour of milk consumers, also to know about the Buying and Consumption Pattern of Consumers towards Milk during the Lockdown Period due to COVID-19 Pandemic in Nagpur City of Maharashtra at a particular point of time during 1st July to 31st July 2020. The data was collected during the Unlock 2.0 period, when going out of home is permitted. All the precautionary measures were taken during the data collection such as Social Distancing, use of Mask, Sanitizer, etc.

2. LITERATURE REVIEW

Bhosale [1] in her article mentioned that, as the lockdown gives people a chance to rustle up

dishes just like chefs do, the broadening culinary engagement is pushing up consumption of dairy products. Aiding sales, industry veterans say, is the growing preference for nutritious vegetarian food. Some large dairies across the country have reported 50-100% jump in monthly sales of cheese, butter, paneer, cream and dairy whitener in april, the month that saw offices adopting the work-from-home model to align with the government's lockdown order and help contain the spread of coronavirus.

Biswas [2] in his post wrote that, the ongoing lockdown due to Covid-19 case surge, and the resultant dip in demand, are once again plaguing the dairy industry. The sector, which was enjoying good returns till about a month ago, is now worried about the adverse impact if the lockdown continues for a longer time. As shops, restaurants and hotels remain closed, sale of commodities such as butter, cheese and paneer have dropped. Sale of liquid milk has also been hit due to the closure of tea shops and sweet marts. Even the soaring temperatures have not led to higher sale of ice cream, which is a money churner for dairies during summer.

Chandel et al. [3] has mentioned in article that, the decrease in demand of milk and milk products during COVID-19 lockdown has adversely impacted the milk producers and processors. The preliminary estimates of economic losses to the milk producers stand at 112.3 crore per day which is highly concentrated in nine states out of which two states, namely, Uttar Pradesh and Rajasthan alone are accounting for more than one fourth of these losses. The improvement in the welfare of consumers on to compensate the producers leaving 66.7 crore per day of economic losses

uncovered. The dark shadow of lockdown is expected to last long with of dairy industry subject to the mitigation strategies adopted in the coming periods.

Huffstutter [4] in his post wrote that, despite strong demand for basic foods like dairy products amid the coronavirus pandemic, the milk supply chain has seen a host of disruptions that are preventing dairy farmers from getting their products to market. Mass closures of restaurants and schools have forced a sudden shift from those wholesale food-service markets to retail grocery stores, creating logistical and packaging nightmares for plants processing milk, butter and cheese. Trucking companies that haul dairy products are scrambling to get enough drivers as some who fear the virus have stopped working and sales to major dairy export markets have dried up as the food-service sector largely shuts down globally. The sudden shift in demand from restaurants - now closing en masse - to grocery stores creates severe logistical challenges. Suppliers struggle to make the shift from wholesale packaging for restaurants to preparing retail products for stores.

Hussain [5] in his article mentioned that, the recent crisis of low milk prices is due to destruction of demand in the hotel, restaurant and catering sector (horeca), which is estimated to consume about 25% of the total marketable surplus. The farmers are forced to sell milk at about Rs 30 per litre while they were getting Rs 45 per litre before the lockdown in March 2020. If milk producers had a clout similar to that of sugar mill owners (in the name of sugar cane farmers), the government would have come out with a relief package, including the creation of buffer stock of skimmed milk powder (SMP). Another impending cause of concern for dairy farmers is India's ongoing trade talks with the US for a 'quick deal'. It is feared that in order to get market access for textiles and information technology etc., the government may agree to bring down the import duty on milk from 60%. This will enable import of higher value milk products as well as SMP from the US.

Khan and Siddiqui [6] observed that, consumer prefer to look into every factor before buying milk with adequate labelling and enough amount of information provided on the packaging of the dairy product more especially when it comes to high involvement product category includes health care products and daily consumable items. Moreover, country of origin and prices

also plays crucial role in consumer buying pattern.

Parmar and Misra [7] has mentioned in the article that, to understand the challenges faced by the dairy cooperatives during the lockdown, Verghese Kurien Centre of Excellence (VKCoE) at IRMA conducted a study on the effect of Covid-19 on the dairy cooperative sector of Gujarat. The respondents of the survey were Banaskantha District Co-operative Milk Producers' Union Ltd and Rajkot District Co-Operative Milk Producers' Union Ltd. As per the survey findings, milk procurement at village cooperative societies witnessed an increase. The milk pulling grew as unorganised players stopped procuring milk due to the shutdown of the hotel, restaurants and café (HoReCa) segment during the lockdown. The milk producer at the village level during COVID got uninterrupted supply of input services such as feed and fodder, artificial insemination, and veterinary services from district cooperative societies (DCS). This did have a direct effect on the quality and quantity of milk produced. This could be a reason for surplus milk inflow at the village cooperative societies (VCS) level. The survey showed that there was surplus milk collection, which led to increased time for collection and the requirement of more storage facilities.

Sampal [8] has mentioned in his article that, according to dilip rath, chairman of the national dairy development board (nddb), ice cream sales have reduced by almost 50 per cent in the lockdown period from 24 march. "restaurants, retail stores, street vendors and ice cream parlours have been completely shut in the lockdown, and as a result, sales have reduced by almost 50 per cent," rath told theprint. "ice cream sales in india usually peak during the summer months, but this time the still escalating covid-19 outbreak has badly affected business".

Shashidhar [9] has mentioned in the article that, the Rs 100,000 crore Indian dairy industry has suffered a 25-30 per cent dip in demand ever since the country shut down for the COVID-19 lockdown over two weeks ago. While the first two days did witness a 15-20 per cent surge in demand with consumers hoarding milk, there has been consistent fall in demand from the third day onwards. A large portion of the dip in demand is due to out-of-home consumption, which contributes 15 per cent of the milk consumption, coming to a grinding halt. "Restaurants, road-side eateries, all of them have shut down. Even

marriages are not happening. All the bulk buyers have vanished," says Aditya Jha, Agriculture and Dairy Expert. However, despite the demand dipping, milk procurement hasn't come down as the dairy cooperatives are forced to adhere to the government notification of not meddling with the livelihood of farmers. This has led to surplus milk in most states. Jha says that a lot of the smaller private dairies which depend on institutional sales have been selling their milk to the cooperatives. "Cooperatives such as GCMF (Amul) and the Karnataka Milk Federation and Mahanand in Maharashtra are buying extra milk just to help farmers," he points out. Karnataka Milk Federation is known to be buying 7-8 lakh litres of additional milk per day. "But the not so well-off cooperatives in the states of Odisha, Jharkhand and West Bengal are not able to buy as much and farmers are forced to throw milk," Jha further points out.

3. METHODOLOGY

Research Design: Descriptive cross sectional research designs were followed.

Area of Study: The Nagpur district of Maharashtra.

Source of Data: Primary data was collected with the Structured Interview Schedule and Secondary data was collected from journals, Research paper, and Company website.

Sampling Unit: Milk Consumers were taken as the sample unit and data were collected from them.

Sampling Size: 100 milk consumers were selected and interviewed.

Sampling Method: Non-Probability Convenience sampling method.

Duration of the Project: The project was undertaken from 1st July 2020 to 31st July 2020.

Method of Data Collection: Primary data was collected through Personal Interview Method by meeting consumers. Secondary data was collected from journals, Research papers, and Company website.

Analytical Tools: Descriptive Statistics method such as Percentage, Averages, Rankings, etc.

was used to analyse data. Graphical analysis was used to achieve the objectives of the study.

4. RESULTS AND DISCUSSION

Table 1 shows that majority of respondents were male (58%) with (42%) females. The age groups 20 - 35 (47%) and 36 – 50 (33%) are in majority. Majority of respondents of the survey have joint family (54%) and (46%) nuclear family. Most of the respondents have completed their graduation (43%) and H.S.C. level education (28%). (43%) respondents were employed in private sector and (24%) were self-employed. (31%) of respondents fall in 15001-25,000 monthly income group and (29%) of respondents had below 15,000 monthly income group.

Table 2 shows that out of 100 respondents surveyed, 70% consumed Packaged Milk and 30% consumed Loose Milk. Considering the 70 respondents preferring Packaged Milk, out of the 70 respondents surveyed, 97.14% preferred milk pouch size of 500ml, 2.86% preferred milk pouch size of 200ml. 54.29% preferred Roadside Vendors, 37.14% preferred Kirana stores, 5.71% preferred Bakeries and 2.86% preferred Home Delivery as a Purchase Point for Packaged Milk. 42.86% of respondents sometimes check the MRP and expiry date on milk pouch, 41.43% check always, 15.71% check rarely.

Table 3 shows that out of 70 respondents who prefer Packaged Milk, 47.14% got information about Milk Brands from Television, 37.14% from Newspapers, 14.29% from Retailers and 1.43% from Friends/Relatives. 54.29% respondents Strongly Agree that they were influenced by the Advertisements, 24.29% Agree, 17.14% were Undecided and 4.29% respondents Disagree that they were influenced by the Advertisements. 35.71% preferred Haldiram, 34.29% preferred AMUL, 11.43% preferred Mahanand, 10% preferred Dinshaw and 8.57% preferred Mother Dairy. Considering the alternate purchase plans of respondents, 75.71% respondents buy other brand of milk and 24.29% go to other shop.

Table 4 shows that, the attributes that affect the purchase of milk among the respondents, Taste ranks first, Quality ranks second, Brand Image ranks third, Packaging ranks fourth and Price ranks fifth.

Table 1. Socio-economic profile of the respondents

Demographics	No. of Respondents	Percentage
Gender		
Male	58	58%
Female	42	42%
Total	100	100%
Age		
<20 years	6	6%
20-35 years	47	47%
36-50 years	33	33%
>50 years	14	14%
Total	100	100%
Family Type		
Joint Family	54	54%
Nuclear Family	46	46%
Total	100	100%
Education		
Illiterate	7	7%
Highschool	8	8%
S.S.C.	10	10%
H.S.C.	28	28%
Graduation	43	43%
Post-Graduation	4	4%
Total	100	100%
Occupation		
Employed (Govt.)	11	11%
Employed (Pvt.)	43	43%
Self Employed	24	24%
Unemployed	22	22%
Total	100	100%
Monthly Income (Rs.)		
Below 15000	29	29%
15001-25000	31	31%
25001-35000	26	26%
35001-45000	9	9%
Above 45000	5	5%
Total	100	100%

Table 2. Type of milk, milk pouch size, purchase point preferred and MRP, expiry date checking by the respondents

Parameters	No. of Respondents	Percentage
Type of Milk preferred by Respondents		
Loose Milk	30	30%
Packaged Milk	70	70%
Total	100	100%
Milk pouch size preferred by the Respondents		
200ml	2	2.86%
500ml	68	97.14%
1000ml	0	0%
Total	70	100%
Preferred purchase point for Packaged Milk		
Roadside Vendors	38	54.29%
Kirana Stores	26	37.14%
Bakeries	4	5.71%
Home Delivery	2	2.86%
Total	70	100%

Parameters	No. of Respondents	Percentage
Checking of MRP and Expiry Date on Milk Pouch by Respondents		
Always	29	41.43%
Sometimes	30	42.86%
Rarely	11	15.71%
Never	0	0%
Total	70	100%

Table 3. Source of information, influence of advertisement for milk brands, brand preferences and alternate purchase plans by the respondents

Parameters	No. of Respondents	Percentage
Source of Information for Milk Brands		
Television	33	47.14%
Newspapers	26	37.14%
Friends/Relatives	1	1.43%
Retailers	10	14.29%
Total	70	100%
Influence of Advertisement on Purchase of Milk Brands		
Strongly Agree	38	54.29%
Agree	17	24.29%
Undecided	12	17.14%
Disagree	3	4.29%
Strongly Disagree	0	0%
Total	70	100%
Milk Brand most preferred by the Respondents		
Mahanand	8	11.43%
Dinshaw	7	10%
Haldiram	25	35.71%
AMUL	24	34.29%
Mother Dairy	6	8.57%
Total	70	100%
Alternate Purchase Plans by the Respondents		
Go to other shop	17	24.29%
Buy other brand	53	75.71%
Total	70	100%

Table 4. Attributes that affect purchase of milk

Parameters	Extremely Important (5)	Very Important (4)	Important (3)	Somewhat Important (2)	Least Important (1)	Cumulative Score	Mean	Rank
Quality	(42)210	(18)72	(6)18	(4)8	0	308	4.40	2
Taste	(52)260	(18)32	(6)18	(4)8	0	318	4.54	1
Brand Image	(8)40	(47)188	(9)27	(6)12	0	267	3.81	3
Price	(12)60	(8)32	(11)33	(25)50	(14)14	189	2.70	5
Packaging	(7)35	(36)144	(16)48	(8)16	(8)16	24	3.51	4

Table 5 shows that out of 100 respondents surveyed, 53% Respondents were consuming only Tea, followed by 47% consuming Tea and Milk Both. For 63% of the Respondents No

Change was there in Milk Consumption, for 23% of the Respondents Consumption was increased and for 14% of the Respondents Consumption is decreased. For 77% Respondents there was no

Increase in Milk Consumption and for 23% there was 250ml Increase in Milk Consumption. In case of 23 respondents the consumption was increased, so among these 23 respondents, for 65.22% Respondents the Reason for Increase in Milk Consumption was All Family Members Staying at Home and for 34.78% Respondents the Reason was Work from Home. Out of 100 respondents surveyed, for 86% Respondents there was no Decrease in Milk Consumption, for

10% there was 250ml Decrease and for 4% there was Decrease in Milk Consumption. In case of 14 respondents the consumption was decreased, so among these 14 respondents, for 78.57% Respondents the Reason for Decrease in Milk Consumption was Financial Issues, for 14.29% Milk Provider Can Spread COVID-19 Virus and for 7.14% Respondents the Reason was Strictly Following Social Distancing.

Table 5. Consumption pattern of milk during lockdown period by the respondents

Parameters	No. of Respondents	Percentage
How the milk is consumed by the Respondents		
Only Tea	53	53%
Only Milk	0	0%
Tea and Milk Both	47	47%
Only Coffee	0	0%
Total	100	100%
Change in milk consumption of the Respondents		
Consumption Increased	23	23%
Consumption Decreased	14	14%
No Any Change	63	63%
Total	100	100%
Increase in milk consumption of the Respondents during Lockdown		
No Increase	77	77%
250ml	23	23%
500ml	0	0%
Total	100	100%
Reason for Increase in milk consumption of the Respondents during Lockdown		
Work from Home	8	34.78%
All family members staying at home	15	65.22%
To increase immunity	0	0%
Total	23	100%
Decrease in milk consumption of the Respondents during Lockdown		
No Decrease	86	86%
250ml	10	10%
500ml	4	4%
1 litre	0	0%
Total	100	100%
Reason for Decrease in milk consumption of the Respondents during Lockdown		
Milk can spread COVID-19 virus	0	0%
Milk provider can spread COVID-19 virus	2	14.29%
Strictly following Social Distancing	1	7.14%
Other People not following Social Distancing	0	0%
Financial Issues	11	78.57%
Total	14	100%

5. CONCLUSION

The study revealed the changing and dynamic consumer behaviour in nagpur. Marketers have to frame appropriate marketing strategies keeping the city scenario and dynamics of consumer behaviour. Milk, being a routine component of everyday consumption of balanced diet, its purchase and consumption largely remain unaffected during the lockdown period in nagpur city of maharashtra. Most of the people don't have any change in their milk consumption, while increase in milk consumption of some people was seen. However, the consumers were found to be more concerned than before about the health issues related to milk like expiry date, MRP, adulteration, etc. During the lockdown period. Further, as Mahanand dairy is lagging behind its competitors like AMUL and haldiram, it should try advertising campaigns in local newspaper emphasizing on factors like quality and taste as well as it should motivate the dealers and retailers; to capture more market share.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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