



Impact of COVID-19 on Food and Non-Food Consumption Behaviour of People in the Western Zone of Tamil Nadu

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The purpose of this study is to examine the effect of the global pandemic COVID-19 on household income, expenditure, and consumption behaviour of farmers in the western zone of Tamil Nadu during the year 2020. The Annur block in the Coimbatore district was purposively chosen for this study since majority of the farmers cultivating horticultural crops were affected significantly due to COVID-19 situation. A total of 210 farmers were selected using a proportionate sampling technique by covering the vegetable (Tomato, Brinjal, and Bhendi) and flower crops (Jasmine, Mullai, and Rose). The study helped in analyzing the changes noticed in the livelihoods of the farmers as a consequence of the emergence of this global pandemic situation. The findings of the study indicated that the average annual income of farmers has been lowered about 17 per cent due to COVID-19

along with subsequent effects on household consumption expenditure and savings being reduced about 16 per cent and 35 per cent, respectively. Further, the expenses on food items had increased about 8 per cent, while non-food group expenses had plummeted about 46 per cent. On the other hand, medical expenses significantly enhanced to an extent of about 38 per cent among the sampled households.

Keywords: COVID-19; Household Income; Consumption Expenditure; Fruit & Vegetable Crops; Livelihood.

1. INTRODUCTION

Humankind has experienced different pandemics during the past such as *Spanish flu*, *Asian flu*, *Hong Kong flu*, *Ebola*, *Spine flu*, which had a significant impact on the world economy, the environment, and human activities. Agriculture, tourism, transportation, health, education, and other industries have all been severely affected by past pandemics. Presently the world is facing one such pandemic situation called Corona Virus Disease 2019 (COVID-19). COVID-19 has now spread around the globe, with varying degrees of severity and speed. On 31st December 2019, the first instance of infection with a new coronavirus (2019-nCoV) was reported in Wuhan, China [1]. Since the first incidence of the infection, the number of internationally confirmed cases of infection has risen alarmingly, making it the world's most serious public health hazard, threatening society's normal growth and development and all of its associated components [2]. COVID-19 is particularly risky because of its rapid spread across Europe and America, even though it was first noticed in East Asia. The number of infection and deaths were reported worldwide, which had surpassed three million and 2,00,000, respectively by the end of April 2020 [3]. The epidemic was declared a public health emergency of worldwide concern by the World Health Organization (WHO) on January 30, 2020, and with an alarming increase in mortality rate over seven per cent, it was declared a pandemic on March 11, 2020 [4,5].

The current COVID-19 related impacts have created havoc on global economic activity and supply lines, which have a detrimental impact on India too. COVID-19 has infected millions of individuals worldwide, and the number of deaths was also high. COVID-19 and the lockdown that began in March 2020 to contain its spread have had a significant economic impact that has impacted all sectors of the economy. Agricultural markets and the agricultural sector are no exception. In India, unlike many other nations, the agricultural industry employs nearly 60% of

the rural population and is hence the single most important source of income [6]. The impact was felt not only on the production side but also on the consumption side. Hence this adverse impact of COVID -19 on agriculture and allied sectors had affected the farmers' household income, resulting in decreased livelihood security. Food products were not available at required time in desired quantity and unethical price led to food inaccessibility. Unlike previous food-borne zoonotic diseases and outbreaks, COVID-19 has generated threat to global food security [7,8,9] as concerns about COVID-19's impact on agricultural production are mounting and it could pose a serious danger to long-term food supply and security. Due to COVID-19, there is a massive decrease in demand for farm products from secondary sectors which along with restrictions in labour, processing, and storage have led to disturbance of farm economy on prospects of agriculture and sustainability of food production at the macro level. Panic in buying of food has occurred in numerous nations since the onset of the epidemic and some governments have even imposed export restrictions [10].

1.1 Impact on Global Economy

Unlike other natural disasters, COVID-19 has created multi-faceted shock which interrupts labour market operations, destroying capital and hurting social and physical well-being of the people. It has been demonstrated in previous pandemics that quarantines and panic harmed global economic growth and human activities, however; the effect also tends to happen in agricultural activities [11,12,13]. Any interruptions in global agricultural systems would cause demand and supply shocks, which would have immediate and long-term repercussions on the agriculture sector's economic performance and contribution to food security. Consequently, the COVID-19 pandemic is expected to result in a 3.11 per cent loss in aggregate agricultural production in Southeast Asian regions during the first quarter of 2020, (17.03 million tonnes) due to a fall in agricultural farm labour affecting the

livelihood of 100.77 million people. This issue could result in a 1.4 per cent drop in Southeast Asia's GDP of USD 3.76 billion [14].

1.2 Indian Scenario

The COVID-19 pandemic has also affected India, however early action was initiated to limit the spread of COVID-19, ordering a nationwide lockdown to safeguard its population of 1.3 billion people starting March 25, 2020. The immediate impact of the lockdown on India's agricultural sector was seen in the interruption of harvesting and selling activities for agricultural produce and commodities given the government's efforts on multiple fronts, marketing of farm goods remains a key concern due to a lack of customers in the market, post-harvest losses and transportation delays caused by uncertainty and misinformation [15]. Several key services (especially transportation) are affected severely due to COVID-19 during the lockdown period, which has hampered the operation of various farm activities while the impact of the shutdown has varied according to the region and commodity. The shutdown, which began on March 25, 2020, interrupted transactions in agricultural markets and affected agricultural supply lines. COVID-19 had a considerable impact on agricultural markets from March to August 2020, as seen by the drop in market arrivals. During the lockout, vegetable arrivals were hit the hardest and major produce arrivals dropped by 60 per cent. During the early stages of the pandemic, households' spending on food and non-food commodities, and services was reduced due to income losses caused by the disease. Private and business investment has also decreased in part as a result of the decline in demand. Household spending fell by 27 per cent in real terms in the first quarter of FY 2020-21, while investments fell by 47 per cent. The government has increased spending by 16 per cent and proposed a series of measures to boost employment, income, and investments as a response to the effects (Abimanyu *et al.*, 2020).

1.3 Impact on Household Income and Expenditure Pattern

According to the Centre for Monitoring Indian Economy (CMIE), unemployment rose to 23 per cent in the first week of April 2020 from 8.4 per cent in mid-March, 2020. As of April 5, 2020, unemployment in urban areas had risen to 30.9 per cent. Following the lockdown, in India household income fell sharply for 37.9 percent of

surveyed households on March 29, increasing to 43.5 per cent on April 5, and 43.7 per cent on April 12 [16]. In Pakistan, it was reported an overall drop of 64 per cent in household income [17]. According to the Food and Agricultural Organization, the surge in purchases could be followed by a downward trend in demand as a result of a loss of ability to acquire food and a drop in people's purchasing power as a result of rising unemployment and global economic downturn [8].

The closure of nearly all the foodservice outlets led to the realignment of fresh produce supply chains which was the impact of COVID-19 in the short term and changes in the consumer's online food purchasing habits, in the long run, resulting in the disappearance of local and niche markets which would ultimately affect the rural poor households due to reduced purchasing power [18]. Food demand in emerging nations is significantly correlated with income, and income losses have an impact on consumption. As per [19] although those households with fixed incomes had not shown any substantial shift in food demand, it was evident from various data that they had experienced the disruption caused by the pandemic since food demand and availability are directly affected by income, which has a direct impact on food and nutrition security.

1.4 Problem Focus

Although the COVID-19 does not have any direct impact on the biological growth of crops, it has led to various unintentional and serious effects on food availability and accessibility of resources. The non-availability of agricultural labors for farm operations due to various restrictions imposed by the state to keep the spread of infectious disease (COVID-19) in control led to disruptions in timely farming activities. The horticultural commodities are highly perishable and need timely harvest and marketing and postponement of operations lead to huge post-production losses. This is the exact issue that happened as a result of COVID-19 since severe restrictions imposed had adversely affected the vegetable and flower growing farmers' household income, resulting in decreased livelihood security. As previously discussed, the impact was felt not only on the production side but also on the consumption side. Non-availability of food products at the required time and in needed quantity at desired price led to food inaccessibility leading to reduced food availability to the consumers. With this background, the present study was carried

out to study the impact of COVID-19 on household income, expenditure, and consumption behavior.

2. METHODOLOGY

2.1 A Brief Outlook of the Study Area

Coimbatore district of Tamil Nadu was selected as the study area based on the purposive sampling technique because it is one of the most prominent horticultural crops growing regions in the western zone of Tamil Nadu. The district favors the production of all horticultural crops due to its favorable agro-climatic conditions. Horticulture produce in the western region has contributed significantly to the state's agricultural economy and Coimbatore shares the major area and output of fruits, vegetables and flowers through the constant enhancement of area during the recent decades. Returns per unit of land area are higher in horticultural crops than agricultural crops, and thus there is a voluntary movement of farmers towards horticulture-based farming due to better returns and technological know-how through universities, agriculture departments, and conducive market through export and ideal logistical infrastructure. Coimbatore produces 11.36 lakh metric tonnes of horticultural crops on an average annual basis, with average area of 1.25 lakh hectares, during the year 2020 (www.tnhorticulture.tn.gov.in). The district has been seriously influenced agriculturally as a result of the influence of the COVID-19 pandemic and hence Coimbatore district was purposively selected to study the impact of COVID-19 on agriculture and livelihood of farming community.

2.2 Sampling Technique

2.2.1 Selection of Block and Village

The district of Coimbatore has three revenue divisions viz., i) Coimbatore North, ii) Coimbatore South, and iii) Pollachi and consists of 11 Taluks (Anamalai, Annur, Karamadai, Kinathukadavu, Madukkarai, Periyayakkanpalayam, Pollachi (North), Pollachi (South), Sarcarsamakulam, Sultanpet, Sular, and Thondamuthur) and 12 blocks. Since the focus of this study is on the impact of the current pandemic (COVID-19) on production, post-production, and marketing of highly perishable crops in the Coimbatore district, Annur block was purposively selected due to its highest area under horticultural crops, such as vegetables and flowers. There are 22 revenue

villages in Annur block. Villages were chosen based on the highest area cultivated for the respective crop and the sample respondents were chosen using a proportionate sampling procedure. Fig. 1 shows the profile of the study area.

2.3 Selection of Crops

Six perishable crops that were commonly and predominantly grown by the farmers in this block were purposively selected for this study which included three vegetable crops (Tomato, Brinjal, and Bhendi) and three flower crops (Jasmine, Mullai, and Rose).

2.4 Collection of Data

For the study 210 farmers cultivating six distinct crops were chosen as respondents with 35 farmers cultivating each crop. To achieve the goal of evaluating the impact of COVID-19 on farmers' household expenditure and consumption behavior, respondents were inquired regarding their income and share of income on various food and non-food commodities for both the years 2019 and 2020. A well-defined interview schedule and questionnaire were drafted, pre-tested, and used to collect the primary data from the sample respondents. The direct personal interview method was employed to gather the above-mentioned information. Even though the farmers did not keep any form records or accounts, they were able to provide the necessary information. However, proper cross-checks were carried out to reduce memory recall bias. Fig. 2 shows the sampling procedure.

2.5 Analytical Framework

The percentage and average analysis were carried out to estimate farm income and consumption expenditure.

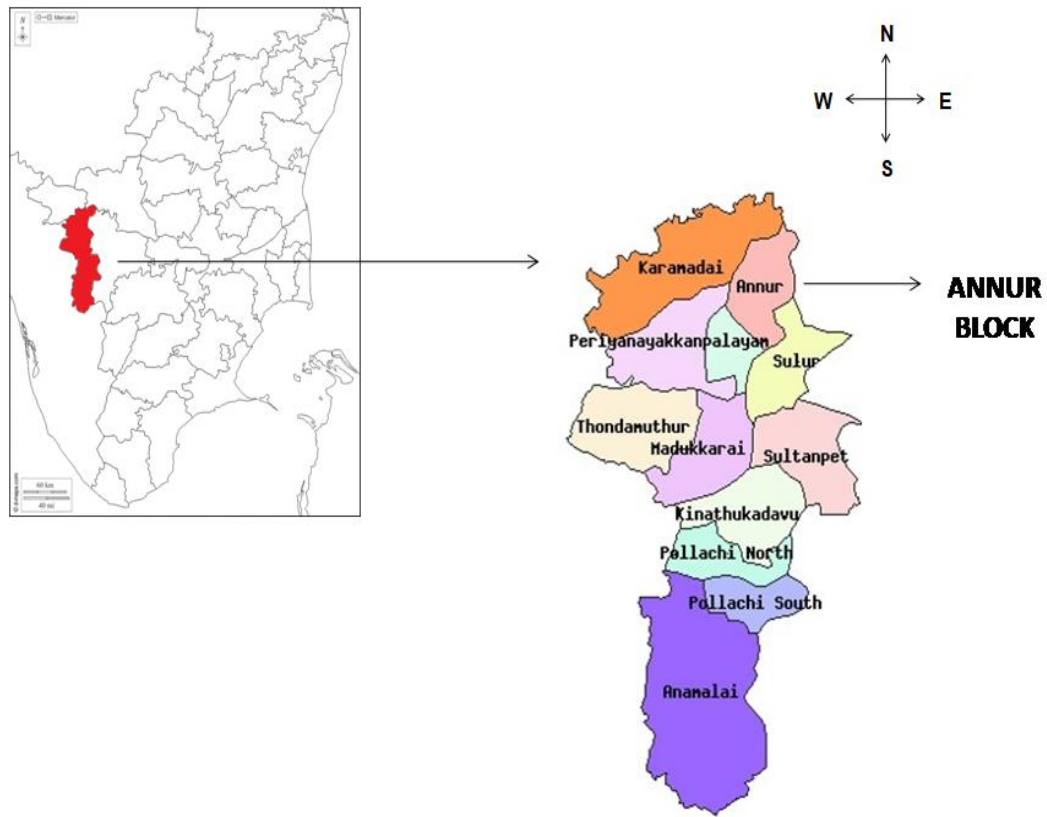
2.5.1 Arithmetic Mean

The arithmetic mean or average is the value derived by dividing the sum of observations by the total number of observations.

Arithmetic mean =
Sum of the observations ÷ Total number of observations

$$\text{Arithmetic Mean} = \frac{(a_1 + a_2 + a_3 + \dots + a_n)}{n}$$

Where, $a_1, a_2, a_3, \dots, a_n$ = values of observation ;
 n = Total number of observations



Map showing Blocks of Coimbatore District

Source: TWAD Board

Fig. 1. Map of the Study Area

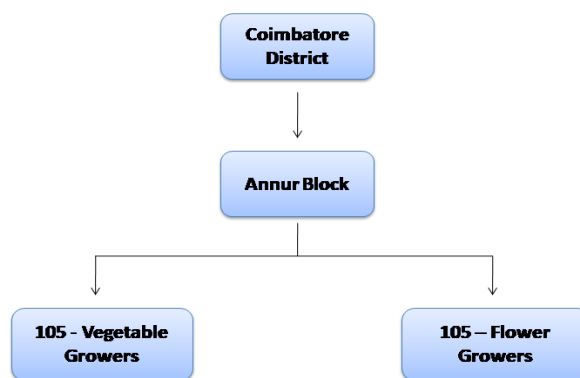


Fig. 2. Sampling Procedure

Following standard analytical tools were used to analyse the collected information

2.5.2 Percentage Analysis

Percentages were used for making comparisons in descriptive analysis. To calculate percentages, the frequency of a particular cell (f_i) was divided by the total number of respondents in that particular cell and the value obtained was multiplied by 100.

$$\text{Percentage} = \frac{f_i}{\sum_i f} \times 100$$

Where, f_i = frequency of a particular cell

2.5.3 Percentage Change

$$= \frac{\text{Percentage Change}}{\text{Observation of the current year} - \text{Observation of the previous year}} \times 100$$

Observation of the previous year

3. RESULT AND DISCUSSION

3.1 Socio-Economic Characteristics of the Sample Households

The general socio-economic characteristics of the sample farmers such as age, educational status, family size and experience in farming were analysed and presented in Table 1.

The results furnished in the Table 1 revealed that majority of the sample respondents are in the age group 43-64 years (68.10 per cent) with nearly 22 - 49 years of farming experience. Majority of the sample respondents have primary education (50.48 per cent) and only very few sample respondents (5.71 per cent) are degree holders. It was observed that about 79 per cent of the sample households had medium family size with four to five persons per family and 7.62 per cent of household had less than four members in the family.

3.2 Changes in the Income and Consumption Expenditure

3.2.1 Changes in the Income

The sample households were divided into three groups Low Income group - category I (<Rs.200000), Middle Income group - category II (Rs.200001 to 300000) and High Income group - category III (>Rs.300000) based on their annual household income. This categorization had been done by using mean and standard deviation. The details on the number of households in each income group as well as their proportion to the sample households during the year 2019 and 2020 are furnished in Table 2.

Table 1. Socio- Economic Characteristics of the Sample Households

Age of the Heads of the Sample Households*			
Sl.No	Age (Years)	Number	Percentage
1	<43	30	14.29
2	43-64	143	68.10
3	>64	37	17.62
Educational Status of the Heads of the Households			
Sl.No	Education Status	Number	Percentage
1	Illiterate	62	29.52
2	Primary	106	50.48
3	Secondary	30	14.29
4	Degree	12	5.71
Family Size of the Households*			
Sl.No	Family Size	Number	Percentage
1	Small (<4)	16	7.62
2	Medium (4-5)	166	79.05
3	Large (>5)	28	13.33
Experience of Heads of the Households in Farming*			
Sl.No	Number of Years	Number	Per cent
1	<22	38	18.10
2	22-49	141	67.14
3	>49	31	14.76

*Classified based on mean and standard deviation

Source: Computed by the author

Table 2. Categorization of Sample Households based on Annual Income

Type of Farmers*	No. of Sample Respondents	
	2019	2020
Low Income (< Rs. 2,00,000/Annum)	42 (20.00)	97 (46.19)
Middle Income (Rs. 2,00,001 – Rs. 3,00,000/Annum)	147 (70.00)	98 (46.67)
High Income (>Rs.3,00,000/Annum)	21 (10.00)	15 (7.14)
Total	210 (100)	210 (100)

Figures in parenthesis indicate the percentage to the total

Source: Computed by the author

*Classified based on mean and standard deviation

Before the occurrence of the pandemic, it was observed that during 2019, majority of farmers (80 per cent) earned an annual income of more than Rs. 2 lakhs, whereas only 54 per cent of the farmers fell into the income category II and III due to COVID-19 pandemic occurred during the year 2020. Further, the results of the study revealed that about 46 per cent of the sample respondents earned less than Rs. 2 lakh per annum due to pandemic compared to 2019, which clearly indicates the significant impact of COVID-19 on farmers' income curve.

3.2.2 Changes in the Consumption Expenditure

The consumption pattern and expenditure on food and non-food items is directly related to income which varies across different types of

sample households. This study has considered six major food and seven non-food commodities to analyse the changes in the pattern of changes in the consumption expenditure due to pandemic. The details are presented below.

3.2.2.1 Household expenditure pattern on food commodities

The average annual household food expenditure and changes in consumption pattern of sample respondents for various food items during the years 2019 and 2020 are reported in Table 3. Before the pandemic (2019), the average annual household expenditure on food items was Rs. 1,38,645 with rice accounting for 27.89 per cent, fruits and vegetables (24.50 per cent), and milk & milk products (16.35 per cent).

Table 3. Average Annual Food Expenditure of the Sample Respondents (Rs.)

Food Commodities	2019		2020		Percentage Change
	Per Household	Per Capita	Per Household	Per Capita	
Rice	38675 (27.89)	41.59	48129 (32.04)	51.75	24.44
Pulses	20011 (14.43)	21.52	28274 (18.82)	30.40	41.30
Fruits & Vegetables	33973 (24.50)	36.53	33090 (22.03)	35.58	-2.60
Milk & Milk Products	22669 (16.35)	24.38	28004 (18.64)	30.11	23.53
Meat & Meat Products	18828 (13.58)	20.25	8819 (5.87)	9.48	-53.16
Other Food Products	44909 (3.24)	4.83	3884 (2.59)	4.18	-13.48
Total Expenditure on Food Items	138645 (100)	149.08	150202 (100)	161.51	8.34

Figures in parenthesis indicate the percentage to the total

(Source: Computed by the author)

It was observed that the expenditure on rice and pulses increased by 24.44 and 41.30 per cent respectively during the pandemic year, whereas expenditure on meat products was drastically reduced by 53.16 per cent due to low income and high price during the pandemic period. Overall, the expenditure on food items increased by 8.34 per cent compared to the year 2019 which affected the farming communities who earned low income during pandemic. In the selected 210 sample households, a total of 930 members were present and the per capita consumption expenditure on food commodities was calculated for the household members. Overall the per capita food consumption expenditure had increased from Rs. 149.08 to Rs. 161.51 (8.34 per cent increase).

The household expenditure pattern on food commodities for the years 2019 and 2020 is depicted in Figs. 3 and 4. The statistics show a significant shift in meat and meat products consumption, with a 14 per cent increase in 2019 and a sharp decrease in 2020 (6 per cent), whereas consumption of the remaining food items did not vary significantly. This could be due to the fact that, as necessary goods, food cannot be substituted for other comfort and luxury goods as household income has decreased during the pandemic session.

The average annual food expenditure of sample respondents under different income categories for various food items are given in Table 4. Food consumption varied significantly across the three income categories, among which rice, pulses, and meat products have seen a considerable change in their consumption patterns among three income groups.

The average annual food expenditure of respondents in low income was calculated to be Rs. 1,26,603 per year, while it was Rs. 1,35,784 and Rs. 1,82,759 per year for the middle and high income groups, respectively. However, due to the commencement of the pandemic and its subsequent impact in 2020, a large fluctuation in farmers' household income and consumption expenditure was noted. The average annual household expenditure of low income group on food items in 2020 was Rs. 1,31,598 with rice accounting for 32.50 per cent (Rs.42,749), followed by fruits and vegetables (22.80 per cent), and milk products (17.78 per cent) respectively. Similarly, food consumption expenditures increased by 17.32 per cent and 15.50 per cent for middle and high income categories, respectively. Low and middle income groups had lower consumption expenditures on fruits and vegetables, while high income groups had higher expenditures. This could be due to rising public health awareness and higher prices during the pandemic.

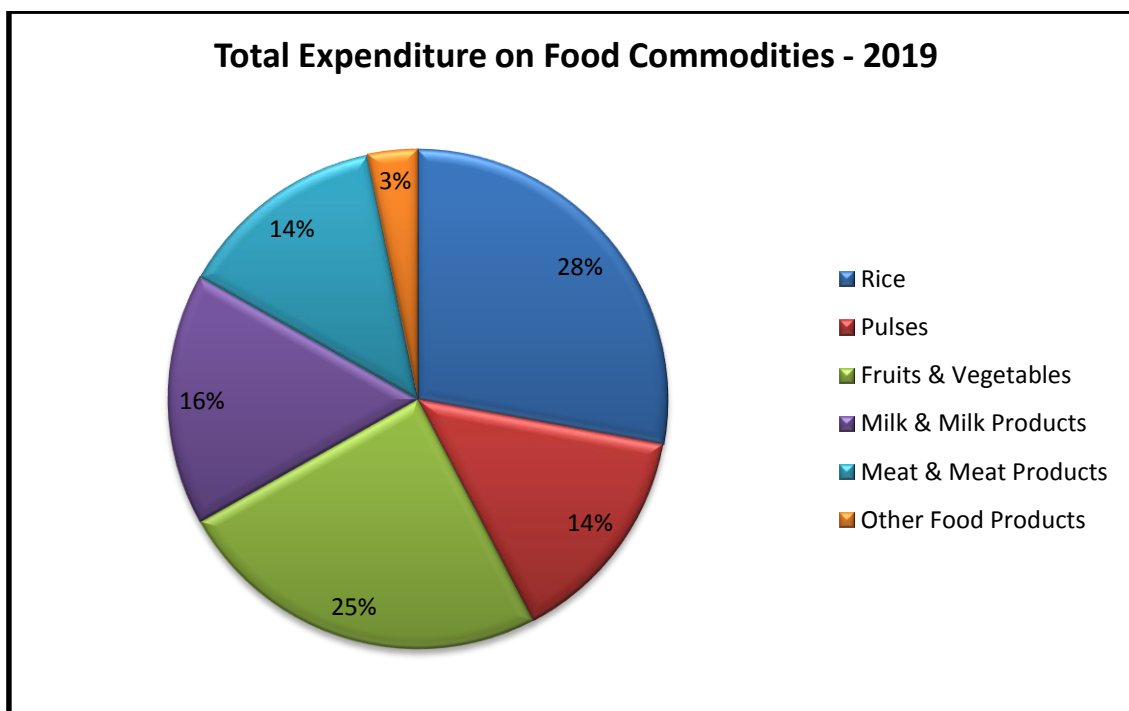


Fig. 3. Household Expenditure Pattern on Food Commodities for the year 2019

Table 4. Category-wise Average Annual Household Food Expenditure of the Sample Respondents (Rs.)

Food Commodities	Low Income			Middle Income			High Income			Overall Households		
	2019	2020	Percentage Change	2019	2020	Percentage Change	2019	2020	Percentage Change	2019	2020	Percentage Change
Rice	35075 (27.70)	42759 (32.50)	21.90	37909 (27.92)	51627 (32.41)	36.19	51236 (28.03)	60000 (28.42)	17.11	38675 (27.89)	48129 (32.04)	24.44
Pulses	18304 (14.46)	24829 (18.85)	35.65	19389 (14.28)	29900 (18.77)	54.21	27776 (15.20)	39933 (18.92)	43.77	20011 (14.43)	28274 (18.82)	41.30
Fruits & Vegetables	30223 (23.87)	30000 (22.80)	-0.74	33839 (24.92)	33449 (21.00)	-1.15	42411 (23.21)	50730 (24.03)	19.62	33973 (24.50)	33090 (22.03)	-2.60
Milk & Milk Products	20729 (16.37)	23394 (17.78)	12.86	22000 (16.20)	30700 (19.27)	39.55	31236 (17.09)	40204 (19.05)	28.71	22669 (16.35)	28004 (18.64)	23.53
Meat & Meat Products	16772 (13.25)	7303 (5.55)	-56.45	18520 (13.64)	9523 (5.98)	-48.58	25099 (13.73)	14028 (6.65)	-44.11	18828 (13.58)	8819 (5.87)	-53.16
Other Food Products	5500 (4.34)	3312 (2.51)	-39.78	4128 (3.04)	4099 (2.53)	-0.70	5000 (2.74)	6186 (2.93)	23.72	44909 (3.24)	3884 (2.59)	-13.48
Total Expenditure on Food Items	126603 (100)	131598 (100)	3.95	135784 (100)	159298 (100)	17.32	182759 (100)	211081 (100)	15.50	138645 (100)	150202 (100)	8.34

Figures in parenthesis indicate the percentage to the total
(Source: Computed by the author)

Table 5. Average Annual Non-Food Expenditure of the Sample Respondents (Rs.)

Non-Food Commodities	2019		2020		Percentage Change
	Per Household	Per Capita	Per Household	Per Capita	
Clothing	21029 (18.94)	22.61	5020 (8.32)	5.40	-76.13
Transport	24729 (22.28)	26.59	6475 (10.73)	6.96	-73.82
Education	26119 (23.53)	28.08	18215 (30.18)	19.59	-30.26
Health & Medicine	17843 (16.07)	19.19	24688 (40.90)	26.55	38.36
Social & Religious Ceremonies	11934 (10.75)	12.83	2375 (3.93)	2.55	-80.10
Recreational Activities	6020 (5.42)	6.47	2033 (3.37)	2.19	-66.23
Other Expenses	3338 (3.01)	3.59	1560 (2.58)	1.68	-53.27
Total Expenditure on Non-Food Commodities	111011 (100)	119.37	60365 (100)	64.91	-45.62

*Figures in parenthesis indicate the percentage to the total
(Source: Computed by the author)*

Table 6. Category-wise Annual Household Non-Food Expenditure of the Sample Respondents (Rs.)

Non-Food Commodities	Low Income			Middle Income			High Income			Overall Households		
	2019	2020	Percentage Change	2019	2020	Percentage Change	2019	2020	Percentage Change	2019	2020	Percentage Change
Clothing	19130 (19.57)	4418 (8.56)	-77.00	20278 (18.45)	5200 (8.14)	-74.36	30083 (20.69)	7730 (8.22)	-74.30	21029 (18.94)	5020 (8.32)	-76.13
Transport	22167 (22.68)	5340 (10.35)	-76.00	24082 (21.92)	6966 (10.91)	-71.07	34377 (23.64)	10605 (11.28)	-69.15	24729 (22.28)	6475 (10.73)	-73.82
Education	23061 (23.59)	15485 (30.01)	-32.85	25874 (23.55)	19566 (30.62)	-24.40	33946 (23.35)	27048 (28.76)	-20.32	26119 (23.53)	18215 (30.18)	-30.26
Health & Medicine	17415 (17.82)	22503 (43.62)	29.22	17477 (15.90)	24804 (38.82)	41.92	21265 (14.62)	38058 (40.47)	78.97	17843 (16.07)	24688 (40.90)	38.36
Social & Religious Ceremonies	9079 (9.29)	1792 (3.47)	-80.26	12481 (11.36)	2717 (4.25)	-78.23	13810 (9.50)	3912 (4.16)	-71.67	11934 (10.75)	2375 (3.93)	-80.10
Recreational Activities	4898 (5.01)	1056 (2.05)	-78.44	6119 (5.57)	2639 (4.13)	-56.87	7573 (5.21)	4392 (4.67)	-42.00	6020 (5.42)	2033 (3.37)	-66.23
Other Expenses	2000 (2.05)	1000 (1.94)	-50.00	3575 (3.25)	2000 (3.13)	-44.06	4350 (3.00)	2300 (2.45)	-47.13	3338 (3.01)	1560 (2.58)	-53.27
Total Expenditure on Non-Food Commodities	97750 (100)	51594 (100)	-47.22	109886 (100)	63892 (100)	-41.86	145404 (100)	94045 (100)	-35.32	111011 (100)	60365 (100)	-45.62

Figures in parenthesis indicate the percentage to the total
(Source: Computed by the author)

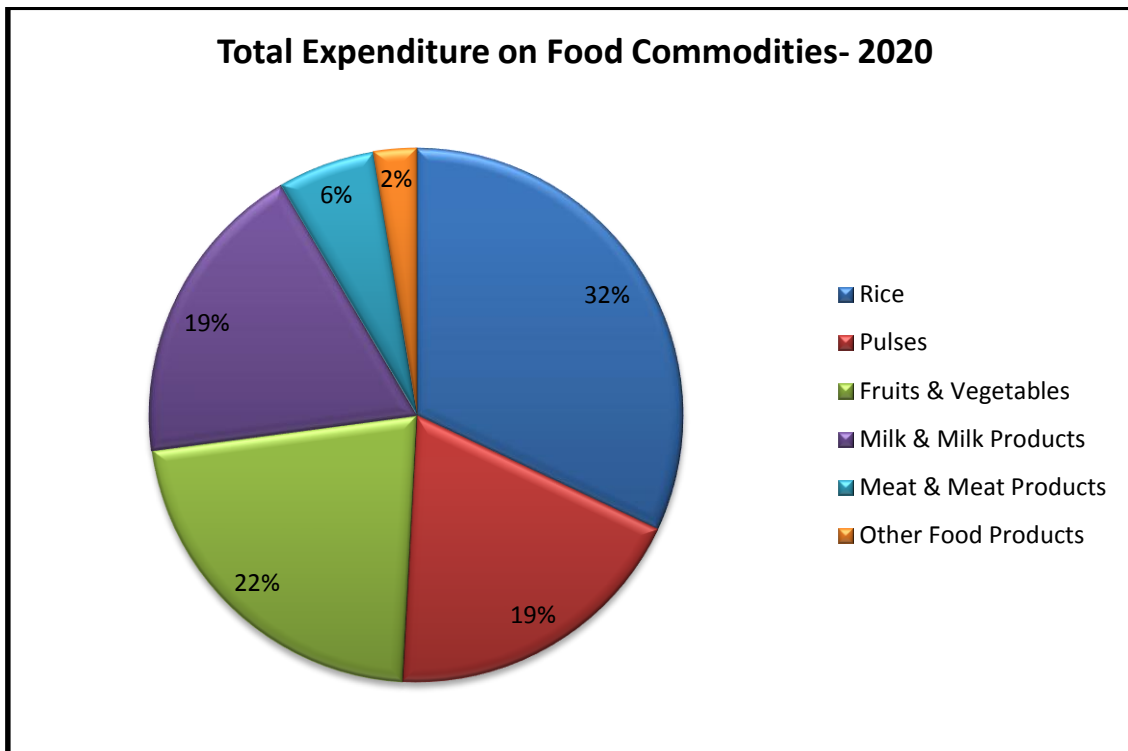


Fig. 4. Household Expenditure Pattern on Food Commodities for the year 2020

Rice consumption climbed by 21.90 and 36.19 per cent, and pulse consumption increased by 35.65 and 54.21 per cent under low income and middle income respectively. Among the examined food commodities, meat and meat products showed a significant difference in consumption across all income levels, with 56.45, 48.58, and 44.11 per cent reductions found in low, middle and high income groups respectively. This is primarily due to misinformation spread on social media claiming that while meat and meat products would be the primary carriers of COVID-19 in the early stages of infestation while during the later stages the reduction was due to the non-availability of meat products as a result of lockdown restrictions and price hikes. The findings of the study indicated that there was a huge variation in the expenditure on food items among various income groups due to COVID-19 incidence.

3.2.2.2 Household expenditure pattern on non-food commodities

The average annual household and per capita non-food consumption expenditure of the sample respondents for the years 2019 and 2020, as well as the percentage change in consumption expenditure observed are presented in Table 5. The major non food commodities taken for this

study includes clothing, transport, education, health & medicine, social & religious ceremonies, recreational activities and expenses on other non food commodities.

The average annual household non-food consumption expenditure of the sample respondents in 2019 was Rs. 1,11,011 which was reduced by 45.62 per cent in 2020. The biggest share of income was spent on education (Rs. 26,119) and transportation (Rs. 24,729) in 2019, while the expenditure on the same reduced by 30.26 and 73.82 per cent, respectively in the year 2020, mainly because of the lockouts and restrictions imposed on physical movement while the fees structure also got reduced during this pandemic session. Consequently in 2020, medical expenses was accounting for 40.90 per cent of total non-food expenditures, which was the only non-food category to show an upward trend among the non food items. Preventive health care medicines and frequent visit of at least one or two members in a family to hospitals had added up to the total health cost expenses and income spent on all other non-food commodities showed negative during the COVID-19 period. Overall the per capita non food expenditure had decreased from Rs. 119.37 to Rs. 64.91 (45.62 per cent reduction).

Fig. 5 and 6 show the pattern of household expenditure on non-food goods in 2019 and 2020. It was noticeable that expenditure on transportation, clothing, and social and religious ceremonies were all drastically reduced. Due to the fact that these non-food commodities are not necessary goods, the money spent on them is diverted to the most essential commodities, such as food.

The average annual non food expenditure of sample respondents among various income groups for various non food commodities are presented in Table 6. The consumption pattern of the aforementioned non-food commodities varied significantly across the three income groups.

The findings revealed a downward trend in consumption behavior across all three income groups. Despite the differences in their wealth, expenditures on clothing, transportation and social and religious events had substantially decreased across all three groups. The imposition of lockdown and transportation limitations was the causes of this dramatic reduction in transportation and clothing expenditures. Due to fee reductions and the closure of educational institutions during the pandemic (2020), educational costs have fallen marginally. Expenses for health and medicine alone had increased during this pandemic as a result of preventive health care medications and

hospital visits. It could be observed from the findings that high income group had spent more on Health & medicine (Rs. 38,058) during 2020 followed by middle income group (Rs. 24,804) and low income groups (Rs. 22,503).

3.3 Comparison between the Household Expenditure on Food and Non-Food Commodities

The information on the annual household income, spending on food and non-food commodities and savings across the sample households for the years 2019 and 2020 were compared and the details are reputed in Table 7.

It can be understood from Table 7 that household consumption before and during the pandemic showed significant changes. During the study period, average annual household income dropped by 17.29 per cent, resulting in 15.66 per cent reduction in consumption and about 35 per cent decline in savings. Despite the reduction in the household income there was an overall increase in food expenditure, which was compensated by household savings. There was a 45.62 per cent reduction in non-food consumption expenditures among the households, with only health care expenditures showing a positive sign. Preventive health care medicines and physician costs added to the total health expenses.

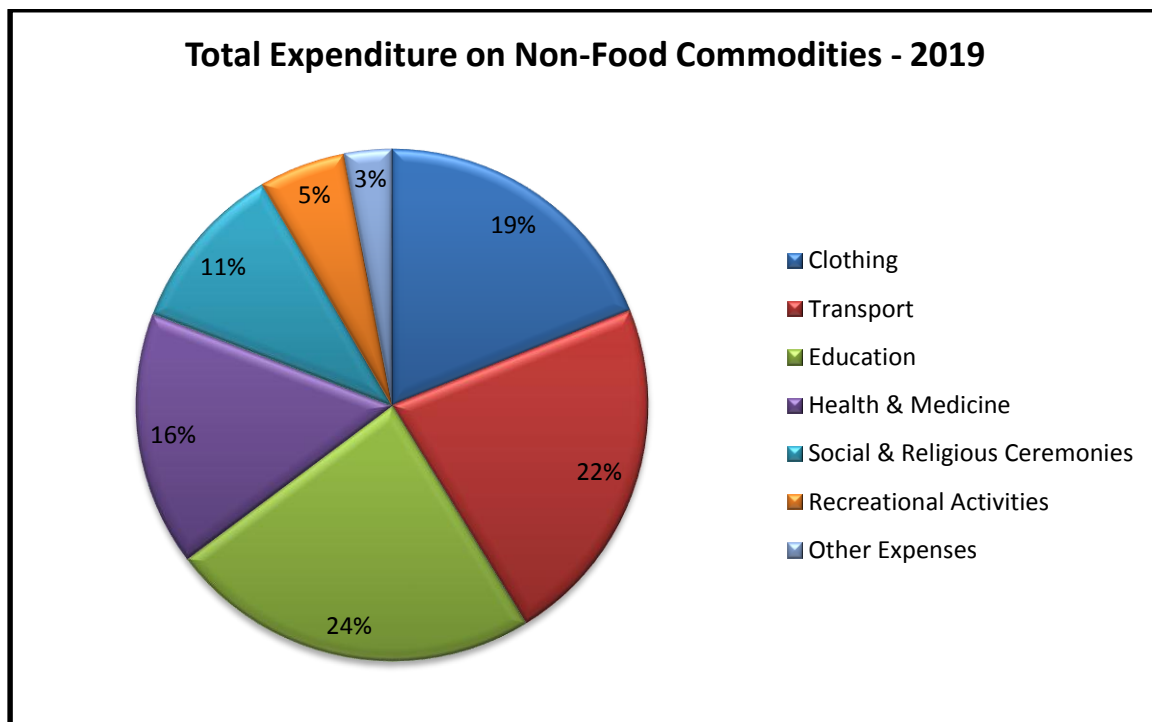


Fig. 5. Household Expenditure Pattern on Non-Food Commodities for the year 2019

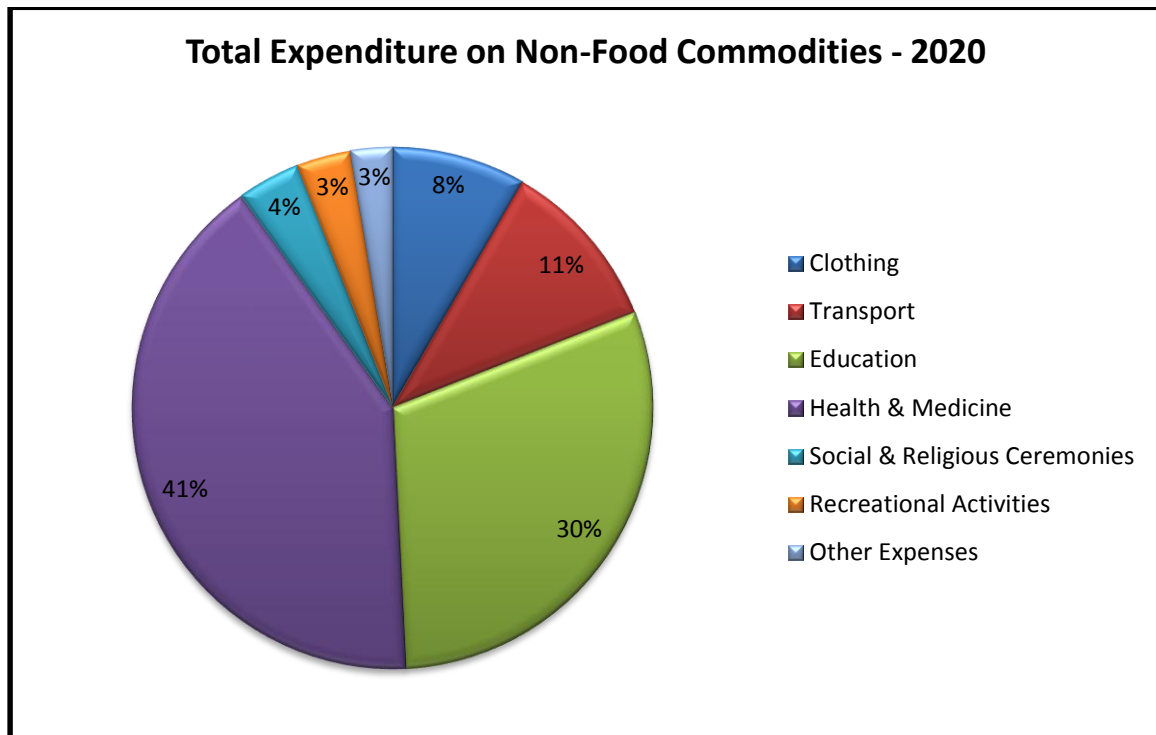


Fig. 6. Household Expenditure Pattern on Non-Food Commodities for the year 2020

Table 7. Comparison of Household Income, Expenditure and Savings

Particulars /Year	2019	2020	Percentage Change
Average Annual Income	272204	225143	-17.29
Expenditure on Food Commodities	138645	150202	8.34
Expenditure on Non-Food Commodities	111011	60365	-45.62
Total Annual Expenditure	249656	210567	-15.66
Average Annual Savings	22548	14576	-35.36

(Source: Computed by the author)

4. CONCLUSION

The emergence of this global pandemic in the early 2020s has a wide range of (negative) ramifications, not only on the key sectors of the economy, but also everyday living of the people. On comparison to the non-pandemic year (2019), income of the sample respondents declined about 17 per cent in 2020. As a result, people's overall expenditures and savings have shrunk. People's food expenditures increased by 8.34 per cent, while non-food expenditures showed a drastic reduction of 45.62 per cent except the health care expenses which showed significant increase. Among non-food expenditures, spending on social and religious ceremonies, transportation, and clothing decreased drastically, whereas education related expenses declined to a significant extent. Health care expenses increased by 38.36 per cent among

non-food expenses during the pandemic, because of frequent hospital visits and consumption of preventive health-care medications like vitamin supplements by the sample respondents. Thus, of course the emergence of the global pandemic had a negative impact on the overall livelihood status of the people in the western zone of Tamil Nadu.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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