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AN EMPIRICAL ANALYSIS OF HOUSEHOLD CONSUMPTION IN URBAN MAHARASHTRA DURING MARCH 2020

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Abstract

This empirical research investigates household consumption patterns in urban Maharashtra during March 2020, with a focus on understanding the socio-economic dynamics influencing consumption behaviors. Utilizing data from CMIE-CPHS, the study explores the impact of various factors on household expenditures, considering both food and non-food categories. Notably, non-food expenses, encompassing Health, Vacation, Recreation, and restaurant expenditures, are examined in relation to household income. Despite evident income disruptions, the study uniquely emphasizes the nuanced effects on expenditures during the specified period. Employing descriptive tools such as graphs and tables, alongside inferential methods like chi-squared tests and regression analysis, the research aims to provide valuable insights into the intricate relationship between household income and consumption trends in urban Maharashtra.

Keywords : Maharashtra, Consumption, Covid-19, Urban

Introduction

The economic ramifications of the COVID-19 pandemic have been diverse, with consumption spending emerging as a vital aspect in assessing its impact. Studies by Blundell and Preston (1998) and Krueger and Perri (2006) highlight the importance of analyzing consumption expenditure distribution as a key indicator of household well-being. Throughout the pandemic, numerous demographic, economic, and COVID-related factors have influenced and reshaped spending patterns.

This exploration focuses on two primary inquiries central to understanding consumption dynamics during the pandemic. Firstly, we delve into the intricate interplay of various demographic factors, economic conditions, and the pandemic's influence on household spending. Secondly, we examine which factors exerted the most significant impact in elucidating consumption variations across different geographic areas.

Given the pandemic's dynamic nature, a comprehensive exploration of these questions is essential. To examine the socio-economic status of households, our study integrates data on age groups, gender, occupation, education, household size, and regional characteristics. Through frequency tables, we present a detailed analysis of these variables to unveil the nuanced patterns that emerged during the economic upheaval of the pandemic.

In March 2020, urban Maharashtra witnessed dynamic shifts in food consumption expenditure due to factors such as economic fluctuations and the onset of the pandemic. Official statistical reports and research studies offer valuable insights into the nuanced patterns of food spending during this period, contributing to a comprehensive understanding of the region's economic landscape.

Urban Maharashtra experienced a significant decline in expenditure on recreation, vacations, and dining out during this period. The COVID-19 pandemic led to cautious spending as residents prioritized safety over leisure activities. Closed venues and travel restrictions significantly impacted consumer behavior, reshaping urban lifestyle patterns across the region. However, health expenditure surged notably, overshadowing recreational spending. The pandemic prompted heightened concerns about health and safety, leading residents to redirect funds towards medical supplies, health insurance, and preventive measures.

As we embark on this exploration, it becomes clear that understanding consumption spending intricacies provides a crucial lens through which to decipher broader socio-economic implications of the pandemic. By examining various factors and their differential impact across diverse demographics and regions, we aim to contribute to a more nuanced comprehension of the economic fallout and inform future policy considerations.

Review of Literature

Using CMIE–CPHS data for India, Gupta et al. (2021) found a substantial median decline in consumption expenditure by 40%, alongside a median income decline of 65%. In a separate study focusing on a financially modest rural region in West Bengal, Gupta et al. (2021) observed over a 50% reduction in consumption expenditure and variety in April 2020 compared to baseline averages from November 2018 to October 2019. Our research, utilizing state-level data, bridges between nationwide and village-focused analyses, aiming for a nuanced perspective on the economic downturn's impacts.

Regarding consumption, Dreze and Somanchi (2021) revealed from post-pandemic surveys that significant proportions of respondents, typically around half, were reducing food consumption, items, or meals following the initial pandemic-driven lockdown. Analyzing CMIE–CPHS data from April to May 2020, they observed slight national average expenditure decreases for cereals and pulses but noted more substantial declines in expenditure for nutritionally crucial items like fruits, eggs, fish, and meat. These reductions underscore the pandemic's impact on dietary patterns and overall nutrition.

Understanding the economic impact of COVID-19 crucially involves consumption spending. Studies by Blundell and Preston (1998) and Krueger and Perri (2006) emphasize the distribution of consumption expenditures as an indicator of household well-being. This prompts our exploration of how various demographic, economic, and COVID-related factors influenced spending patterns and which among these factors played the most significant role in elucidating consumption variations across different geographic areas during the pandemic. Addressing these questions comprehensively requires consideration of the pandemic's dynamic characteristics. Our research provides evidence of income's impact on consumption expenditure, both on food and non-food items (Health, recreation, restaurant, and vacation) during March 2020 in urban parts of Maharashtra.

Research Methodology

Based on the existing literature, this study centers on evaluating the socio-economic circumstances of urban households in Maharashtra. Recognizing their pivotal role in the income-consumption dynamic, the research utilizes data sourced from CMIE-CPHS published in March 2020. It delves into examining the influence of both food and non-food expenditures on income, scrutinizing non-food expenditures in categories such as Health, Vacation, Recreation, and restaurants. Despite the evident impact on income affecting respondents' household expenditures, the study particularly concentrates on investigating the repercussions on these expenditures stemming from the affected income during the study period (March 2020). Descriptive tools like graphs and tables, along with inferential methods such as chi-squared tests and regression analysis, are employed by the researchers to elucidate and derive insights from the collected data.

Rationale of the study:

By examining expenditure on non-food items such as health, recreation, restaurants, and vacations, the study seeks to identify any shifts in household spending priorities during the pandemic. This can reveal insights into changing consumer preferences, priorities, and lifestyle choices in response to the crisis in urban Maharashtra.

Results and Discussion

To study the socio-economic status of the households, data on the age group, gender group, occupation group, education group, household size and region type are considered. The frequency tables are obtained and are presented as follows.

To examine the socio-economic conditions of the urban households in Maharashtra.

To study the above objective, only the households of urban regions and the following question on the age group, gender group, occupation group, education group, household size are considered to understand their socio-economic conditions and is used for analysis. The following null and alternate hypotheses are designed for the study of each condition.

Hypotheses Tested

H_{01A}: There is no significant difference in the proportion of the age groups of the urban households in Maharashtra.

H_{11A}: There is a significant difference in the proportion of the age groups of the urban households in Maharashtra.

To test the above null hypothesis, the non-parametric Chi-square test is applied. The results are as shown in the below table.

Table 1 Age profile of the members of the households surveyed

Test Statistics	AGE_GROUP
Chi-Square	1786.558[a]
df	3
p-value	.000

Source: Analysis based on data collected from CPHS- March 2020

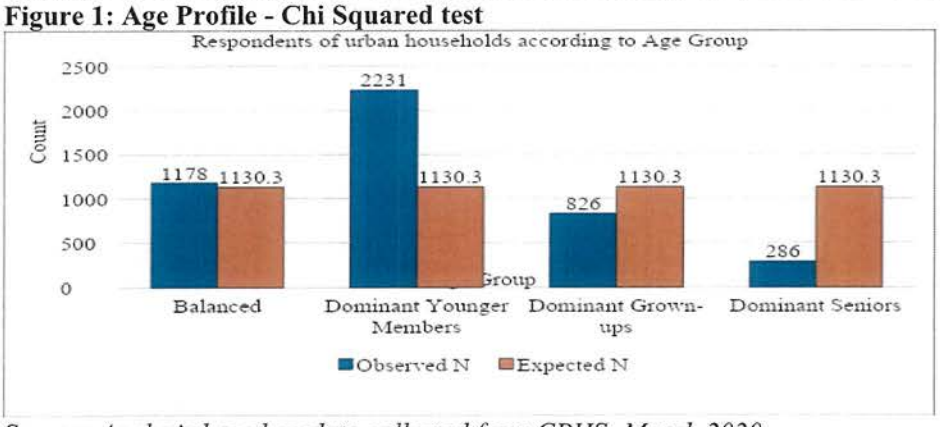
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1130.3.

Table no 1 indicates that the p-value is 0.000. It is less than the standard p-value of 0.05. Therefore, the Chi-square test is rejected. Hence the null hypothesis is rejected, and we infer that there is a significant difference in the proportion of the age groups of the urban households in Maharashtra.

To understand the findings, the expected and observed frequency table of the responses are obtained and presented as follows.

This concludes that there is a significant difference in the proportion of age groups, with the majority number of households being in the Dominant Younger Members group and very few being in the Dominant Seniors group. The above information is represented in a bar chart as shown below.

Figure 1: Age Profile - Chi Squared test



Source: Analysis based on data collected from CPHS- March 2020

Null hypothesis H_{01B}: There is no significant difference in the proportion of the gender groups of the urban households in Maharashtra.

Alternate hypothesis H_{11B}: There is a significant difference in the proportion of the gender groups of the urban households in Maharashtra.

To test the above null hypothesis, the non-parametric Chi-square test is applied. The results are as shown in the below table.

Table 2 Gender profile of the members of the households surveyed

Test Statistics	GENDER_GROUP
Chi-Square	1149.146[a]
df	3
p-value	.000

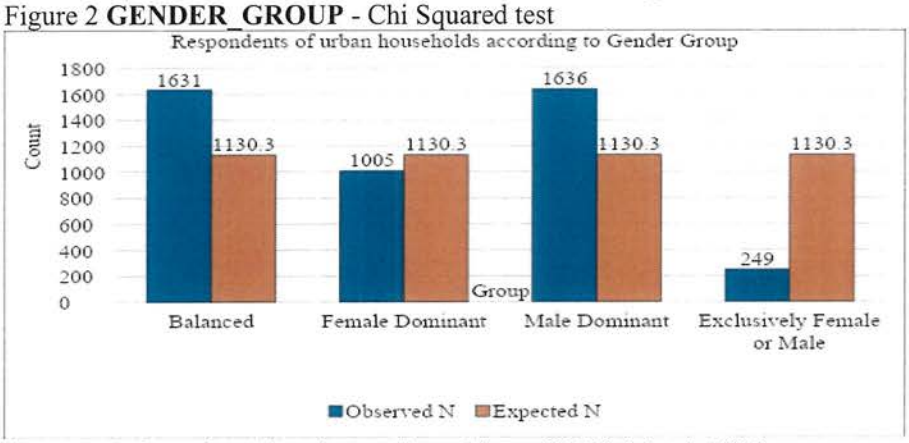
Source: Analysis based on data collected from CPHS- March 2020

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1130.3.

The above table indicates that the p-value is 0.000. It is less than the standard p-value of 0.05. Therefore, the Chi-square test is rejected. Hence the null hypothesis is rejected, and the alternate hypothesis is accepted.There is a significant difference in the proportion of the gender groups of the urban households in Maharashtra.

This concludes that there is a significant difference in the proportion of gender groups, with the majority number of households being either Balanced or Male Dominant, and very few being Exclusively Female or Male. The above information is represented in a bar chart as shown below.

Figure 2 **GENDER_GROUP** - Chi Squared test



Source: Analysis based on data collected from CPHS- March 2020

Null hypothesis H_{01C}: There is no significant difference in the proportion of the occupation groups of the urban households in Maharashtra.

Alternate hypothesis H_{11C}: There is a significant difference in the proportion of occupation groups of the urban households in Maharashtra.

To test the above null hypothesis, the non-parametric Chi-square test is applied. The results are as shown in the below table.

Table 5 Occupation profile of the members of the households surveyed

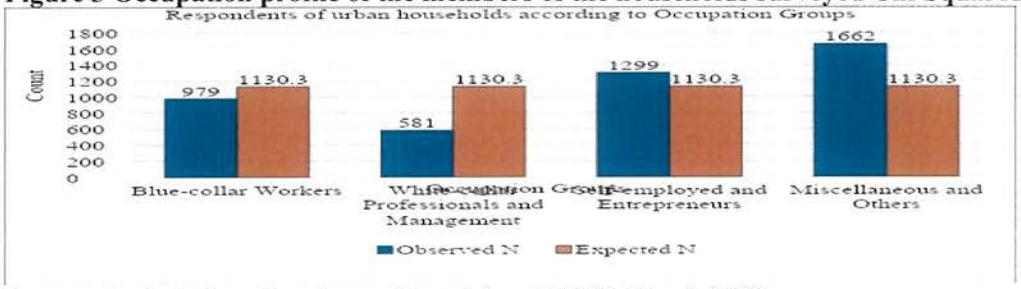
Test Statistics	OCCUPATION_GROUP
Chi-Square	562.519[a]
df	3
p-value	.000

Source: Analysis based on data collected from CPHS- March 2020

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1130.3.

The above table indicates that the p-value is 0.000. It is less than the standard p-value of 0.05. Therefore, the Chi-square test is rejected. Hence the null hypothesis is rejected, we conclude that there is a significant difference in the proportion of occupation groups of the urban households in Maharashtra.

Figure 3 Occupation profile of the members of the households surveyed Chi Squared Test



Source: Analysis based on data collected from CPHS- March 2020

Null hypothesis H_{01D}: There is no significant difference in the proportion of the education groups of the urban households in Maharashtra.

Alternate hypothesis H_{11D}: There is a significant difference in the proportion of education groups of the urban households in Maharashtra.

To test the above null hypothesis, the non-parametric Chi-square test is applied. The results are as shown in the below table.

Table 7 Educational background of the members of the households surveyed

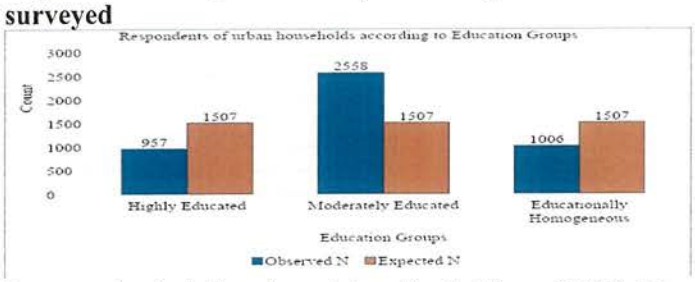
	EDU_GROUP
Chi-Square	1100.267[a]
df	2
p-value	.000

Source: Analysis based on data collected from CPHS- March 2020

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1507.0.

The above table indicates that the p-value is 0.000. It is less than the standard p-value of 0.05. Therefore, the Chi-square test is rejected. Hence the null hypothesis is rejected. There is a significant difference in the proportion of education groups of the urban households in Maharashtra.

Figure 4 Chi Squared analysis analysis of Educational backgrounds of the households, surveyed



Source: Analysis based on data collected from CPHS- March 2020

Null hypothesis H_{01E}: There is no significant difference in the proportion of the household size of the urban households in Maharashtra.

Alternate hypothesis H_{11E}: There is a significant difference in the proportion of household size of the urban households in Maharashtra.

To test the above null hypothesis, the non-parametric Chi-square test is applied. The results are as shown in the below table.

Table 9 Family size of the members of the households surveyed

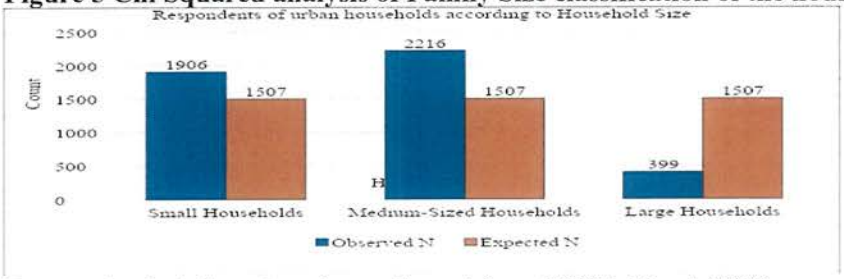
Test Statistics	SIZE_GROUP
Chi-Square	1253.846[a]
df	2
p-value	.000

Source: Analysis based on data collected from CPHS- March 2020

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1507.0.

The above table indicates that the p-value is 0.000. It is less than the standard p-value of 0.05. Therefore, the Chi-square test is rejected. Hence the alternate hypothesis is accepted and there is a significant difference in the proportion of household size of the urban households in Maharashtra.

Figure 5 Chi Squared analysis of Family Size classification of the households, surveyed



Source: Analysis based on data collected from CPHS- March 2020

This concludes that there is a significant difference in the proportion of household size, with the majority number of households being either Small or Medium-Sized, and fewer being Large. The above information is represented in a bar chart as shown below.

Ho1: There is no significant association between the consumption expenditure of the households and their income during the study period

H11: There is a significant association between the consumption expenditure of the households and their income during the study period

Dependent Variable: Adjusted Total Income

Independent Variables: Adjusted Food Expenditure, Adjusted Non-Food Expenditure

Adjusted Non-food expenditure : Health, Vacation, Recreation and Restaurant

Table 1: Regression Analysis of Urban Maharashtra

Model – Anova		Sum of Squares	df	Mean Square	F	p-value
1	Regression	270594941622.411	2	135297470811.206	789.927	.000[b]
	Residual	773836062799.362	4518	171278455.688		
	Total	1044431004421.773	4520			

Source: Analysis based on data collected from CPHS- March 2020

a. Dependent Variable: ADJ_TOT_INC

b. Independent variables (Constant), ADJ_EXP_NONFOOD, ADJ_EXP_FOOD

The above table indicates the p-value for the regression model is 0.000, which is less than the standard p-value of 0.01. Hence, the linear regression model is applicable.

Hence, we are unable to accept the null hypothesis and conclude that **there is a significant association between the consumption expenditure of the households and their income during the study period**

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	p-value
		B	Std. Error	Beta		
1	(Constant)	-4855.987	619.891		-7.834	.000
	ADJ_EXP_FOOD	4.522	.114	.507	39.564	.000
	ADJ_EXP_NONFOOD	.100	.046	.028	2.155	.031

Source: Analysis based on data collected from CPHS- March 2020

a. Dependent Variable: ADJ_TOT_INC

In summary, both adjusted food and adjusted non-food expenditure appear to have a statistically significant relationship with adjusted total income. Adjusted food expenditure seems to have a stronger impact on adjusted total income compared to adjusted non-food expenditure based on the coefficient magnitudes and the associated t-values.

In the above results, the p-values for all the independent variables are 0.000 or less than 0.05. It is less than the standard p-value of 0.05. This indicates that independent variables, Adjusted Food Expenditure and Adjusted Non-Food Expenditure, have a significant influence on the (dependent variable) Adjusted Total Income for urban households.

The regression equation is as follows. Adjusted Total Income = -4855.987 + (4.522) Adjusted Food Expenditure + (0.100) Adjusted Non-Food Expenditure.

Summary and conclusion

The regression equation indicates that the scenario is completely an abnormal one, where the total income has declined, and the contents on the right hand side indicate a dissolution. , this can be attributed to job losses and The decline in household income in urban Maharashtra in March 2020 was a direct consequence of the unprecedented global COVID-19 pandemic. Lockdowns and restrictions led to widespread disruptions in employment and income sources, affecting various sectors, particularly hospitality, tourism, and non-essential retail.

Also, people had to cut-off their expenditures on consumption of non-food items like vacations, recreation and restaurants as these were prohibited then and also lockdowns imposed by the government had made it mandatory for them to stay indoors. While, health expenses mounted, as

healthcare became very expensive along with the increase in ailments of people. food expenses were also on the higher side, for the same reasons.

The informal and gig economy workers, constituting a significant part of the urban workforce, faced heightened vulnerability due to restrictions on economic activities. This led to challenges in securing a steady income, exacerbating the overall decline in household earnings.

Supply chain disruptions and economic fallout further limited opportunities for self-employment and entrepreneurship, impacting small and medium-sized enterprises (SMEs) and their employees. The decline in income had cascading effects on consumption patterns, savings, and overall economic stability.

While government interventions, such as relief packages and social assistance programs, provided immediate support, addressing the long-term effects required sustained efforts for economic recovery. The complex interplay of factors during this period highlights the need for targeted policies to foster recovery and ensure the well-being of households in the post-pandemic era

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