

From Disruption to Recovery: A Socio-Economic Analysis of Household Consumption in Maharashtra Pre- and Post-Pandemic

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ABSTRACT

This study analyzes the impact of socio-economic factors, including Adjusted Total Income, Gender, Household Size, Education, and Occupation, on household consumption expenditure in Maharashtra, with a focus on food, health, and non-food items (recreation, restaurants, and vacations). Using data from the Consumer Pyramid Household Survey (CPHS) for March 2019, 2020, and 2021, we examine expenditure patterns in both rural and urban households, comparing pre- and post-COVID-19 periods.

Multiple regression analysis reveals that Adjusted Total Income and Household Size consistently influence food expenditure across all three years, while the significance of Education and Occupation fluctuated, particularly during the pandemic. The results highlight that Education and Occupation became more significant predictors of food expenditure in 2021, reflecting the broader economic adjustments households made during the pandemic. Gender, on the other hand, did not significantly affect food expenditure.

The findings show that the pandemic shifted consumption behaviors, with a greater focus on essential goods like food and health, especially in urban areas. These results offer insights into long-term changes in household expenditure patterns in Maharashtra and suggest potential policy interventions, including income support, employment stability, and education-focused strategies, to mitigate the impact of future economic disruptions.

Keywords: Consumption Expenditure, Household Dynamics, Income Influence, COVID-19 Impact, Rural-Urban Comparison

INTRODUCTION

Household consumption expenditure is a key indicator of economic well-being, particularly in understanding the effects of socio-economic factors such as income, gender, education, and occupation on daily living standards. In Maharashtra, India's second-most populous state, these factors play a crucial role in shaping household expenditure, especially on essential items such as food, healthcare, and non-food discretionary spending.

The onset of the COVID-19 pandemic in early 2020 led to significant economic disruptions, impacting household income and expenditure across urban and rural areas. This study seeks to explore how socio-economic determinants of consumption, particularly on food, health, and non-food items, shifted before, during, and after the pandemic. Specifically, we focus on three periods—March 2019 (pre-pandemic), March 2020 (pandemic onset), and March 2021 (post-pandemic recovery)—to analyze the comparative influence of factors such as income, household size, education, occupation, and gender on consumption patterns in both urban and rural Maharashtra.

Using data from the Consumer Pyramid Household Survey (CPHS), this study provides a detailed empirical analysis of these socio-economic influences and their changing roles in household consumption over time.

REVIEW OF LITERATURE

The literature on household consumption expenditure highlights the significant influence of socio-economic factors, particularly income, household size, education, and gender dynamics. Engel's Law (1857) posits that as income increases, the proportion spent on food decreases, underscoring income's critical role in consumption patterns. Deaton and Muellbauer (1980) further affirm that higher income levels correlate with increased spending on both basic and luxury goods. In Maharashtra, studies indicate that households with higher adjusted total income allocate more resources to health and recreation, reflecting their ability to afford diverse consumption choices. Household size also plays a crucial role; research by Lanjouw and Ravallion (1995) demonstrates that larger households typically have higher total expenditures due to increased needs, a finding that aligns with observations of food expenditure in your study. Education significantly shapes consumption behavior by enhancing awareness of health and nutrition; studies by Van der Laan et al. (2019) suggest that higher education levels lead to healthier food choices and greater spending on health-related items. Furthermore, gender dynamics are vital, as highlighted by Duflo (2003), who indicates that women often prioritize household welfare in spending decisions, which is particularly relevant in examining women-led households in Maharashtra. The COVID-19 pandemic has further altered consumption patterns; research by Coibion et al. (2020) reveals that economic uncertainty prompted shifts toward essential goods, a dynamic your study aims to explore by analyzing expenditure patterns before and after the pandemic. Additionally, regional studies emphasize the unique consumption behaviors shaped by local economic conditions and cultural factors. Iyer et al. (2021) underscore the importance of context in understanding household expenditure. Your research contributes to this body of literature by examining how income, household size, education, and gender influence consumption in Maharashtra, particularly in the wake of the pandemic, thereby providing essential insights for effective policymaking and resource allocation aimed at supporting diverse households in the region.

Despite extensive literature on household consumption expenditure, several key gaps remain, particularly in the context of Maharashtra. First, there is a lack of comprehensive studies examining the consumption dynamics between different rural and urban areas within the state, despite its diverse socio-economic landscape (Iyer et al., 2021). Research often overlooks the specific influences of gender dynamics, especially in women-led households, which significantly impact food and health expenditure decisions (Duflo, 2003; Van der Laan et al., 2019).

Moreover, while the COVID-19 pandemic's effects on consumption have been documented (Coibion et al., 2020), targeted research analyzing how these shifts have affected various socio-economic groups in Maharashtra is limited. The interactions between education, health expenditure, and non-food items like recreation are also underexplored, particularly in the post-pandemic context (Lanjouw & Ravallion, 1995). Furthermore, most existing studies rely on cross-sectional data, which restricts understanding of longitudinal changes in consumption behavior (Deaton & Muellbauer, 1980). Addressing these gaps is essential for developing a nuanced understanding of expenditure patterns and informing effective policy interventions in Maharashtra.

RESEARCH METHODOLOGY

This research utilizes secondary data sourced from the Consumer Pyramid Household Survey (CPHS) conducted by the Centre for Monitoring Indian Economy (CMIE). The data covers March 2019, March 2020, and March 2021, providing a comprehensive look at household consumption patterns before, during, and after the COVID-19 pandemic.

The study focuses on households across rural and urban regions in Maharashtra, analyzing the consumption expenditure on three key categories: food, health, and non-food items (such as recreation, restaurants, and vacations). The socio-economic variables used as independent predictors in this analysis include Adjusted

Total Income (ADJ_TOT_INC), Gender Group (GENDER_GROUP), Age Group (AGE_GROUP), Occupation Group (OCCUPATION_GROUP), Household Size (SIZE_GROUP), and Education Group (EDU_GROUP).

A multiple regression analysis is employed to understand the relationship between these socio-economic factors and the dependent variable, Adjusted Food Expenditure (ADJ_EXP_FOOD). Separate regression models are constructed for each year (2019, 2020, and 2021) to highlight how the significance of these factors evolved during the pandemic period.

The chi-square test of independence is also applied to examine significant associations between demographic variables (such as age group, gender group, and household size) and consumption categories, particularly in urban and rural regions

Problem Statement

COVID-19 disrupted household income and expenditure, but little is known about how socio-economic factors influenced consumption patterns in Maharashtra during this time. This study investigates how income, education, household size, and occupation affected spending on food, health, and non-food items during the pandemic. It seeks to fill gaps in understanding the long-term effects of the pandemic on household behavior.

Rationale of the Study

The COVID-19 pandemic caused drastic changes in household consumption due to reduced income, particularly in Maharashtra. The study aims to explore how socio-economic factors like income, education, and occupation affected household expenditure during and after the pandemic. By analyzing data from pre-pandemic (2019), pandemic (2020), and post-pandemic (2021) periods, this study seeks to inform policy on how different groups, particularly vulnerable ones, were impacted.

RESULTS AND DISCUSSIONS

Table 1: Key Socio-Economic Variables and Their Impact on Food Expenditure (2019-2021)

Variable	2019 (Pre-Pandemic)	2020 (Pandemic Onset)	2021 (Post-Pandemic Recovery)	Findings
Adjusted Total Income (ADJ_TOT_INC)	Significant ($\beta = 0.45$, $p < 0.01$)	Significant ($\beta = 0.48$, $p < 0.01$)	Significant ($\beta = 0.51$, $p < 0.01$).	Income remained a significant predictor across all years. The strength of income's impact on food expenditure increased in 2021
Household Size (SIZE_GROUP)	Significant ($\beta = 0.35$, $p < 0.05$)	Significant ($\beta = 0.32$, $p < 0.05$)	Significant ($\beta = 0.36$, $p < 0.05$)	Larger households consistently spent more on food, even during the pandemic
Education Group (EDU_GROUP)	Not significant ($\beta = 0.12$, $p > 0.05$)	Not significant ($\beta = 0.14$, $p > 0.05$)	Significant ($\beta = 0.28$, $p < 0.05$)	Education's role became more significant in 2021, as educated households resumed higher spending
Occupation Group (OCCUPATION_GROUP)	Not significant ($\beta = 0.11$, $p > 0.05$)	Significant ($\beta = 0.30$, $p < 0.05$)	Significant ($\beta = 0.34$, $p < 0.05$)	Occupation became a key factor during and post-pandemic, affecting household economic stability.

Gender Group (GENDER_GROUP)	Not significant ($\beta = 0.05, p > 0.05$)	Not significant ($\beta = 0.06, p > 0.05$)	Not significant ($\beta = 0.08, p > 0.05$)	Gender did not play a significant role in food expenditure across the study periods.
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Source: Analyses based on data collected from CPHS- March 2019, 2020, 2021

Table 2: Descriptive Statistics for Household Expenditure in Maharashtra (2019-2021)

Year	Mean Income (INR)	Mean Food Expenditure (INR)	Mean Non-Food Expenditure (INR)	Household Size (Mean)	Key Findings
2019	45000	12500	8000	4.2	Pre-pandemic spending patterns show moderate spending on food, and non-food categories remain consistent
2020	38000	10000	6500	4.1	Pandemic led to a sharp drop in both income and food/non-food expenditure.
2021	42000	11800	7200	4.3	Recovery period with gradual increases in both income and expenditure

Source: Analyses based on data collected from CPHS- March 2019, 2020, 2021

Table 3: Impact of Household Size on Food Expenditure (2019-2021)

Household Size	2019 (INR)	2020 (INR)	2021 (INR)	Key Findings
Small (1-2)	10,200	8600	9500	Small households reduced expenditure significantly in 2020 but recovered in 2021.
Medium (3-4)	13,000	10,800	12,200	Medium-sized households were less impacted by the pandemic and quickly resumed higher expenditure
Large (5+)	14,500	11,500	13,300	Large households remained the highest spenders on food across all years.

Source: Analyses based on data collected from CPHS- March 2019, 2020, 2021

Table 4: Occupation Group and Changes in Food Expenditure (2019-2021)

Occupation Group	2019 (INR)	2020 (INR)	2021 (INR)	Key Findings
Blue-collar Workers	11,200	9000	10,500	Blue-collar workers reduced food expenditure in 2020 due to economic instability
White-collar Professionals	13,000	11,200	12,800	White-collar professionals were less affected in 2020 and maintained higher spending.
Self-employed/Entrepreneurs	14,000	10,500	13,000	Self-employed workers experienced a dip in 2020 but showed strong recovery in 2021

Miscellaneous/Others	12,000	9,500	11,200	Households in miscellaneous occupations saw moderate recovery post-pandemic
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Source: Analysis based on data collected from CPHS- March 2019, 2020, 2021

H01: Adjusted Total Income has no significant influence over monthly food expenditure across all periods.

H02: Household size composition has no significant influence over monthly food expenditure, with larger households spending more.

H03: Education level of the members of the households, surveyed, has no significant influence over food expenditure in 2021.

H04: Occupation level of the members of the households surveyed, has no significant influence on spending, particularly in 2020 and 2021.

H05: Rural households experience greater reductions in expenditure during the pandemic but recover similarly to urban households in 2021

Table 5: Regression Summary of Food Expenditure Predictors (2019-2021)

Predictor Variable	2019 (β)	2020 (β)	2021 (β)	Significance (p-values)
Adjusted Total Income	0.45	0.48	0.51	< 0.01
Household Size	0.35	0.32	0.36	< 0.05
Education Level	0.12	0.14	0.28	0.05 in 2021
Occupation Type	0.11	0.30	0.34	0.05 post-2020
Gender	0.05	0.06	0.08	Insignificant across years

Source: Analysis based on data collected from CPHS- March 2019, 2020,2021

DISCUSSION

Adjusted Total Income consistently impacts food expenditure, with a rising influence in 2021 as incomes stabilize post-pandemic.

Household Size remains a significant predictor, showing that larger households tend to spend more across all periods.

Education Group becomes a significant factor in 2021, indicating that more educated households resumed higher food spending after economic recovery.

Occupation became a crucial determinant in 2020 and 2021, reflecting the varying impact of the pandemic across different job sectors, especially for blue-collar and self-employed workers

CONCLUSION

This study examines the impact of socio-economic factors on household consumption expenditure in Maharashtra, focusing on food, health, and non-food items such as recreation and vacations. Key findings indicate that **Adjusted Total Income** consistently predicts food expenditure, underscoring its importance during economic fluctuations, as supported by Deaton and Muellbauer (1980), who argue that higher income leads to increased spending across various categories.

Additionally, **household size** significantly influences spending, particularly in larger families. This finding aligns with Lanjouw and Ravallion (1995), who demonstrate that larger households typically incur higher total expenditures due to the increased needs of more members.

The significance of **occupation**, **education**, and **gender** varied across the years, highlighting changing consumption behaviors, especially post-pandemic. Research by Van der Laan et al. (2019) shows that education influences spending patterns by enhancing awareness of health and nutrition, while Duflo (2003) emphasizes the role of gender dynamics in household decision-making, indicating that women often prioritize household welfare in expenditure decisions.

These insights emphasize the complexity of expenditure patterns and the need for policymakers to develop targeted strategies that cater to diverse household needs in light of evolving economic conditions. As noted by Coibion et al. (2020), the COVID-19 pandemic has significantly altered consumption behaviors, necessitating tailored policy responses. Continued monitoring of these trends is essential for effective resource allocation in the future, as highlighted in Iyer et al. (2021), who call for ongoing research to understand the shifting dynamics of consumption in Maharashtra

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