

## **Gender (Women-Led Households) as a Determinant of Consumption Expenditure on Food during March 2020 – A Case Study of Maharashtra**

**Mrs Nandini Jagannarayan, Dr Asha Prasuna**

*KJ Somaiya Institute of Management Somaiya Vidyavihar University, Mumbai*  
*Professor of Economics & International Finance, K.J.Somaiya Institute of Management*

### **KEYWORDS**

Women-Led Households, Women-Led Households, Maharashtra, COVID-19

### **ABSTRACT**

This study examines the factors influencing food expenditure in urban and rural households of Maharashtra, with a focus on gender dynamics during the COVID-19 lockdown in March 2020. Utilizing secondary data from the Consumer Pyramid Household Survey (CPHS), the analysis employs regression techniques to investigate the impact of Adjusted Total Income, Gender Group, Age Group, Occupation Group, Education Group, and Household Size on Adjusted Food Expenditure. The results reveal that Adjusted Total Income, Age Group, Gender Group, Education Group, and Household Size are significant predictors of food expenditure, with women-led households demonstrating a crucial role in managing food resources. Women's spending patterns reflect their prioritization of food security, particularly during economic crises, aligning with previous research highlighting their central role in household budgeting. In contrast, Occupation Group does not significantly influence food expenditure in this context. The findings underscore the importance of considering gender dynamics in food expenditure analyses and suggest that policy interventions should focus on supporting women-led households to enhance food security and manage economic disruptions effectively.

### **1. Introduction**

The COVID-19 pandemic caused major disruptions in household consumption, especially during the lockdown in March 2020. Maharashtra, being heavily impacted, saw significant shifts in how families allocated resources. Women-led households played a central role in adapting to these changes, especially concerning food expenditure. This study focuses on the influence of gender, particularly in women-led households, on food consumption patterns during the lockdown.

#### **Women's Role in Household Decision-Making**

Women traditionally manage food-related decisions in many households across Maharashtra, a role that became more critical during the pandemic. Faced with reduced income and limited access to markets, women were responsible for ensuring household food security, often making tough decisions to prioritize basic food items.

#### **Impact of the Lockdown on Household Income and Food Expenditure**

The lockdown severely impacted household incomes, especially for daily wage earners, many of whom are women. Women-led households had to adjust their consumption by focusing on affordable staples like rice and wheat while reducing spending on luxury and perishable items.

#### **Gender Differences in Food Expenditure Patterns**

Women-led households demonstrated a stronger focus on essentials, such as staple foods, prioritizing nutrition and food security. Studies show that women tend to allocate more resources to basic needs during crises, while male-led households maintain more stable consumption patterns across categories. Women-led households played a critical role in managing food expenditure during the COVID-19 lockdown in Maharashtra. Gender emerged as a significant factor in determining consumption patterns, emphasizing the need for gender-focused policies to support household well-being in times of crisis.

The primary objective of this study is to identify and analyse the determinants of food expenditure, focusing on variables such as age group, gender composition, occupation, education level, and household size. These factors are categorised as follows:

- **Age Group:** Households are classified based on the predominant age group of their members, including balanced, dominant younger members, dominant grown-ups, and dominant seniors.
- **Gender Group:** Households are categorised by gender composition into balanced, female dominant, male dominant, and exclusively female or male.
- **Occupation Group:** Occupational data are grouped into blue-collar workers, white-collar professionals and management, self-employed and entrepreneurs, and miscellaneous others.
- **Education Group:** Educational attainment is classified into highly educated, moderately educated, and educationally homogeneous households.
- **Household Size:** Households are divided into small, medium-sized, and large categories based on the number of members.

This study aims to uncover significant associations and differences in food expenditure across these demographic groups. Understanding these patterns is vital for policymakers to design interventions that enhance food accessibility and overall well-being, especially during times of economic upheaval.

The insights gained from this analysis will contribute to a deeper understanding of how socioeconomic factors influence household consumption behavior, offering a basis for targeted policy measures to improve food security and economic resilience in a state like Maharashtra.

## Review of Literature

The COVID-19 pandemic significantly impacted household consumption patterns, particularly affecting women-led households in Maharashtra during the March 2020 lockdown. Women, who often manage food-related decisions, faced considerable challenges due to income disruptions and restricted market access. Research reveals that these households prioritized essential food items like rice and wheat, reducing spending on non-essentials in response to economic shocks (Agarwal & Nanda, 2021; Ranjan et al., 2020), aligning with the study's objective to examine the influence of gender on food expenditure. Increased food insecurity and the need to ensure family members were adequately fed led to compromises in their own nutritional intake (Bansal et al., 2020; Sekher & Loganathan, 2017). Women-led households adapted by cutting discretionary spending, relying on local supplies, and minimizing food waste, with those holding higher education levels utilizing online platforms for better management (Nath et al., 2020; Ahuja et al., 2020). This analysis addresses the objective of understanding how gender influences food expenditure and the adaptation strategies employed by women-led households during the crisis.

## Research Methodology

This study employs secondary data from the Consumer Pyramid Household Survey (CPHS) for March 2020 to analyze factors influencing food expenditure, focusing on Adjusted Monthly Food Expenditure (ADJ\_EXP\_FOOD). Predictors include Adjusted Total Income (ADJ\_TOT\_INC), Gender Group (GENDER\_GROUP), Age Group (AGE\_GROUP), Occupation Group (OCCUPATION\_GROUP), Size Group (SIZE\_GROUP), and Education Group (EDU\_GROUP). Through regression analysis, the study evaluates the impact of these predictors on food spending, utilizing descriptive statistics and hypothesis testing to identify significant factors. Ethical considerations involve maintaining data confidentiality and accuracy, while limitations pertain to data representativeness, accuracy, and the narrow focus on March 2020, potentially overlooking other relevant variables. The scope of the study is specific to Maharashtra during March 2020, emphasizing the role of socio-economic and demographic variables, with a particular focus on gender, in determining food expenditure. The study aims to analyze how these variables, especially gender, influence food spending and to offer policy recommendations to improve food security during economic crises. This addresses the research gap in understanding gender-specific impacts on food expenditure during crises, contributing to policy development and academic insights into consumption patterns.

## Hypotheses Tested

**H0: There is no significant association between the consumption expenditure on food and socio economic and demographic variables** (Adjusted Total Income, Age Group, Gender Group, Occupation Group, Education Group, Size Group).

**H1: There is significant association between the consumption expenditure on food and socio economic and demographic variables** (Adjusted Total Income, Age Group, Gender Group, Occupation Group, Education Group, Size Group).

### Urban Maharashtra

Dependent Variable: Adjusted Expenditure Food

Independent Variables: Adjusted Total Income, Age Group, Gender Group, Occupation Group, Education Group, Size Group

### ANOVA

Model	Sum of Squares	df	Mean Square	F	p-value
1 Regression	5215723037.102	6	869287172.850	495.386	.000 <sup>b</sup>
Residual	7921016681.496	4514	1754766.655		
Total	13136739718.598	4520			

a. Dependent Variable: ADJ\_EXP\_FOOD

b. Predictors: (Constant), ADJ\_TOT\_INC, GENDER\_GROUP, AGE\_GROUP, OCCUPATION\_GROUP, SIZE\_GROUP, EDU\_GROUP

The above table indicates the p-value for the regression model is 0.000, which is less than the standard p-value of 0.05. Hence, the linear regression model is applicable.

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.630 <sup>a</sup>	.397	.396	1324.6761

a. Predictors: (Constant), ADJ\_TOT\_INC, GENDER\_GROUP, AGE\_GROUP, OCCUPATION\_GROUP, SIZE\_GROUP, EDU\_GROUP

The model indicates good positive association ( $R = 0.630$ ) between the independent variables and the dependent variable. The model explains 39.7% of the variance in the dependent variable ( $R^2 = 0.397$ ), with Adjusted  $R^2$  of 0.396.

### Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
1 (Constant)	3969.493	133.645		29.702	.000
AGE_GROUP	-58.872	25.049	-.029	-2.350	.019
OCCUPATION_GROUP	11.250	17.680	.008	.636	.525
EDU_GROUP	-515.783	33.875	-.199	-15.226	.000
GENDER_GROUP	58.500	20.635	.033	2.835	.005
SIZE_GROUP	881.544	33.101	.327	26.632	.000
ADJ_TOT_INC	.039	.001	.346	26.045	.000

a. Dependent Variable: ADJ\_EXP\_FOOD

The analysis reveals that the p-values for Adjusted Total Income, Age Group, Gender Group, Education Group, and Size Group are all below 0.05, indicating these are significant predictors of Adjusted Food Expenditure in urban households. Gender, in particular, plays a crucial role in shaping food expenditure patterns. Women, who frequently manage household resources, prioritize food spending to ensure family well-being, as highlighted by Chant (2014) and Agarwal & Nanda (2021). Studies by Doss (2013) and Ranjan et al. (2020) emphasize that women's control over resources influences spending priorities, especially during economic crises. Sekher & Loganathan (2017) further show that women's spending decisions can lead to better nutritional outcomes for children. Consequently, policies should account for these dynamics to enhance food security and support targeted programs. Conversely, the p-value for Occupation Group exceeds 0.05, suggesting it is not a significant predictor of Adjusted Food Expenditure, thus supporting the null hypothesis for this variable. Overall, while the results confirm the significant impact of most variables, they also highlight the limited role of occupation in influencing food expenditure.

### **Rural Maharashtra (All Districts)**

Dependent Variable: Adjusted Expenditure Food

Independent Variables: Adjusted Total Income, Age Group, Gender Group, Occupation Group, Education Group, Size Group

### **ANOVA**

Model	Sum of Squares	df	Mean Square	F	p-value
1 Regression	1383526324.829	6	230587720.805	83.338	.000 <sup>b</sup>
Residual	6599049020.387	2385	2766896.864		

Total	7982575345.216	2391			
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a. Dependent Variable: ADJ\_EXP\_FOOD

b. Predictors: (Constant), ADJ\_TOT\_INC, GENDER\_GROUP, AGE\_GROUP, OCCUPATION\_GROUP, EDU\_GROUP, SIZE\_GROUP

### Regression Analysis (Part-2A: Rural) (All Districts)

Dependent Variable: Adjusted Expenditure Food

Independent Variables: Adjusted Total Income, Age Group, Gender Group, Occupation Group, Education Group, Size Group

#### ANOVA

Model	Sum of Squares	df	Mean Square	F	p-value
1 Regression	1383526324.829	6	230587720.805	83.338	.000 <sup>b</sup>
Residual	6599049020.387	2385	2766896.864		
Total	7982575345.216	2391			

a. Dependent Variable: ADJ\_EXP\_FOOD

b. Predictors: (Constant), ADJ\_TOT\_INC, GENDER\_GROUP, AGE\_GROUP, OCCUPATION\_GROUP, EDU\_GROUP, SIZE\_GROUP

**Interpretation:** The above table indicates the p-value for the regression model is 0.000, which is less than the standard p-value of 0.05. Hence, the linear regression model is applicable.

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.416 <sup>a</sup>	.173	.171	1663.3992

a. Predictors: (Constant), ADJ\_TOT\_INC, GENDER\_GROUP, AGE\_GROUP, OCCUPATION\_GROUP, EDU\_GROUP, SIZE\_GROUP

The model indicates moderate positive association ( $R = 0.416$ ) between the independent variables and the dependent variable. The model explains 17.3% of the variance in the dependent variable ( $R^2 = 0.173$ ), with Adjusted  $R^2$  of 0.171.

#### Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
1 (Constant)	3510.410	252.606		13.897	.000
AGE_GROUP	-112.763	44.366	-.049	-2.542	.011
OCCUPATION_GROUP	162.572	26.188	.117	6.208	.000
EDU_GROUP	-433.576	61.588	-.136	-7.040	.000
GENDER_GROUP	80.085	35.702	.042	2.243	.025
SIZE_GROUP	758.254	56.203	.267	13.491	.000
ADJ_TOT_INC	.014	.002	.140	7.263	.000

a. Dependent Variable: ADJ\_EXP\_FOOD

The analysis supports the hypothesis that Adjusted Total Income, Age Group, Education Group, Gender Group, and Household Size significantly influence food expenditure. Higher income and larger household size are positively associated with increased food spending, while older age and higher education levels are linked to reduced food expenditure. Gender plays a significant role, with women-led households tending to spend more on food, reflecting their central role in managing household resources. However, the Occupation Group does not show a significant impact on food expenditure in this context, partially refuting the hypothesis that occupation affects food spending. These findings align with Engel's law and support the role of socio-economic and demographic factors in shaping food consumption patterns.

Both analyses on Rural and Urban Maharashtra's households, during March 2020, underscore the significant role of women-led households in shaping food expenditure patterns, particularly highlighting how gender influences spending. In urban households, variables such as Adjusted Total Income, Age Group, Education Group, and Household Size are significant predictors of food expenditure. Women, who often manage household finances, are found to prioritize food spending to ensure family well-being, especially during economic crises. Studies confirm that women-led households focus on essential food items and allocate resources to maintain food security, reflecting their central role in budgeting and meal planning (Chant, 2014; Agarwal & Nanda, 2021). Women's control over household resources has a profound impact on spending priorities, leading to better nutritional outcomes for family members (Doss, 2013; Ranjan et al., 2020; Sekher & Loganathan, 2017).

Conversely, the Occupation Group does not significantly affect food expenditure, suggesting that in this context, the nature of occupation does not influence spending as much as other socio-economic factors do. Overall, while most predictors, including gender, significantly impact food expenditure, the findings highlight that women-led households play a crucial role in prioritizing and managing food resources, which is a vital consideration for policies aimed at improving food security and supporting



family well-being during economic challenges.

## Conclusion

In conclusion, the analysis highlights that Adjusted Total Income, Age Group, Education Group, Gender Group, and Household Size are significant predictors of Adjusted Food Expenditure in urban households. Women-led households, in particular, play a pivotal role in managing food expenditure, with a significant impact observed on their spending patterns. Women's central role in household resource management leads them to prioritize essential food spending, especially during economic crises, as supported by previous research (Chant, 2014; Agarwal & Nanda, 2021; Doss, 2013; Ranjan et al., 2020; Sekher & Loganathan, 2017). The study confirms that while most variables significantly influence food expenditure, the Occupation Group does not show a notable impact in this context, partially refuting the hypothesis that occupation affects food spending. Overall, these findings underscore the importance of considering gender dynamics in food expenditure patterns and suggest that policies aimed at enhancing food security should address the specific needs and roles of women-led households to better support family well-being and ensure effective resource allocation during economic disruptions.

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