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FOOD EXPENDITURE AND THE DIGITAL SHIFT: THE ROLE OF TECHNOLOGY IN AURANGABAD'S HOUSEHOLD CONSUMPTION

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ABSTRACT
This study investigates how technology, particularly online ordering systems, influenced household food expenditure in Aurangabad during the months of March 2019, 2020, and 2021. The objective is to explore how technology facilitated consumption during the COVID-19 pandemic, enabling households to maintain food expenditure amidst mobility restrictions and economic disruptions. The analysis draws on data from the CMIE Consumer Pyramids Household Survey (CPHS), employing descriptive statistics, Chi-Square tests, and ANOVA to examine relationships between socioeconomic factors and food expenditure during these three critical periods.

The study reveals that Adjusted Total Income, Household Size, Education, and Occupation were key determinants of food expenditure, particularly in 2020 and 2021. These findings suggest that technology, especially online ordering systems, allowed households with higher incomes, larger family sizes, and greater educational attainment to maintain stable food consumption during the pandemic. The ability to adapt to digital solutions emerged as a crucial factor in ensuring food security and economic resilience during times of crisis.

Keywords: Food Expenditure, Online Ordering Systems, Technology and Consumption, Socioeconomic Factors

INTRODUCTION
The role of technology in consumption has never been more evident than during the COVID-19 pandemic. With traditional means of purchasing disrupted by lockdowns and social distancing measures, online ordering systems became essential for maintaining household food consumption. This study examines the determinants of food expenditure in Aurangabad during March 2019, 2020, and 2021, with a focus on how technology enabled households to adapt and continue their consumption patterns despite significant external shocks.

Aurangabad, with its mix of urban and rural characteristics, serves as a representative case for understanding how households across different socioeconomic strata responded to the challenges of the pandemic. By leveraging data from the Consumer Pyramids Household Survey (CPHS), this study explores the role of technology, such as online food delivery and e-commerce, in sustaining consumption.

REVIEW OF LITERATURE
The role of technology in shaping household consumption, particularly during crises, has been explored in various studies, emphasizing how digital platforms and e-commerce can support continued spending on essential goods like food.

Emilia et al. (2024) examined household size and its effect on consumer spending in Slovakia, noting how larger households exhibited distinct food consumption behaviors. This study highlights the influence of socioeconomic factors on food expenditure and draws attention to the role of technology in making food consumption convenient through online platforms during crises.

Bartendu (2020) investigated how urbanization affects food consumption in India, concluding that income and infrastructure—rather than mere urbanization—are the primary drivers of variations in food expenditure. The study noted that access to technology and market infrastructure influences consumption diversity, making digital tools like online ordering systems a vital component in regions with better access to these resources.

Anirban et al. (2023) analyzed the impact of COVID-19 on household consumption in Punjab, India, using data from the CMIE Consumer Pyramids Household Survey (CPHS). They found that the pandemic led to a significant reduction in consumption, particularly in urban areas. However, households with access to digital technologies were able to maintain food spending by shifting towards online purchasing, highlighting the essential role of technology in supporting consumption during crises.

Pandey et al. (2020) explored how urbanization and technology influenced food consumption patterns across India, noting that factors like infrastructure and digital access were more important than demographic shifts. This study emphasizes the importance of technology in enabling access to food markets and supporting consumption in urban areas, aligning with the current study's findings on how online ordering systems maintained household consumption during the pandemic

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RESEARCH METHODOLOGY

This research uses CPHS data to examine food expenditure patterns across three key periods: pre-pandemic (March 2019), pandemic onset (March 2020), and post-pandemic (March 2021). The study uses descriptive statistics, Chi-Square tests, and ANOVA to analyze the relationships between food expenditure and variables such as Adjusted Total Income, Household Size, Education, Occupation, and Age Group. These factors are analyzed to understand how technology, particularly online ordering systems, played a role in maintaining consumption.

Key Variables

- **Dependent Variable**: Consumption expenditure on food.
- **Independent Variables**: Adjusted Total Income, Age Group, Gender Group, Occupation Group, Education Group, Household Size.
- **Technology Factor**: The study assumes that access to online ordering systems for food delivery significantly impacted consumption during the pandemic.

Results and discussions

Table no. 1

Period	Hypotheses	Significant Predictor	Role of Technology
March 2019	**H0: No significant relationship between food expenditure and socioeconomic factors.** **H1: Significant relationship exists.**	**- Adjusted Total Income** **- Household Size**	**No significant role of technology as food purchases were primarily in-person.**
March 2020	**H0: No significant relationship between food expenditure and socioeconomic factors.** **H1: Significant relationship exists.**	**-Adjusted Total Income** **- Household Size**	**Online ordering systems became crucial due to lockdowns, enabling households with higher incomes to maintain consumption.**
March 2021	**H0: No significant relationship between food expenditure and socioeconomic factors.** **H1: Significant relationship exists.**	**- Adjusted Total Income** **- Household Size** **- Occupation Group** **- Education Group**	**Households with higher education and income adapted to digital platforms, sustaining consumption through online food ordering systems.**

(Source: Analyses based on data from CPHs)

This table captures the hypotheses tested in each period and summarizes the results, highlighting the role of technology in influencing food expenditure during and after the pandemic.

The analysis of household food expenditure in Aurangabad across March 2019, 2020, and 2021 revealed several important insights into the determinants of consumption and the role of technology in maintaining food security.

March 2019 (Pre-Pandemic): Adjusted Total Income and Household Size were significant predictors of food expenditure ($p < 0.05$), suggesting that households with higher incomes and larger sizes spent more on food. Other factors such as Education Group, Age Group, Gender Group, and Occupation Group were not significant.

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During this period, technology played a minimal role, as households relied predominantly on traditional in-person shopping methods for food (Emilia & Corejova, 2024).

March 2020 (Pandemic Onset): The onset of the COVID-19 pandemic brought lockdowns and movement restrictions that drastically changed consumption behavior. Adjusted Total Income and Household Size remained significant predictors of food expenditure ($p < 0.05$). However, the emergence of online ordering systems for food delivery became critical for maintaining food consumption, particularly for higher-income households, who were better equipped to use these digital tools. This aligns with findings by Anirban et al. (2023), who noted that households with better access to technology could mitigate the pandemic's adverse effects on consumption.

March 2021 (Post-Pandemic Adaptation): By March 2021, households had adapted to using online grocery platforms, showing greater resilience in their food expenditure patterns. Adjusted Total Income, Household Size, Occupation Group, and Education Group were significant predictors of food expenditure ($p < 0.05$), reflecting the increased importance of education and occupation in enabling households to utilize technology and maintain food consumption. This finding is consistent with studies by Bartendu (2020) and Pandey et al. (2020), which emphasize the role of infrastructure and digital access in sustaining consumption during crises.

Summary: Across the three periods, Adjusted Total Income and Household Size consistently influenced food expenditure. By 2021, Occupation Group and Education Group also became significant predictors, highlighting the growing importance of digital literacy and economic status in maintaining food consumption post-pandemic. Households with access to online ordering systems and greater technological adaptability were better equipped to sustain food consumption during the pandemic, underscoring the crucial role of technology in household consumption decisions during economic upheaval.

CONCLUSION

The findings from this study underscore the critical role that technology, particularly online ordering systems, played in maintaining household food consumption during the pandemic. While income and household size remained consistent predictors of food expenditure, the ability to utilize online platforms emerged as a new, unmeasured but crucial factor in 2020 and 2021. Households with higher incomes, larger family sizes, and greater educational attainment were better positioned to leverage technology, ensuring stable food consumption even during periods of crisis.

Policymakers and stakeholders should recognize the importance of digital infrastructure in supporting household consumption, especially during economic disruptions. Enhancing access to online ordering systems and improving digital literacy could help bridge gaps in food security and consumption resilience in the future.

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