

# AN OVERVIEW AND IMPACT OF CLIMATE CHANGES AMONG THE USERS IN COIMBATORE CITY

K. KHUSHBU KUMARI \*, DR. SAMUNDEESWARI \*\*

\*(Student, Department of B. Com Accounting & Finance, Sri Ramakrishna College of Arts & Science, Coimbatore.

Email: [khushbuvaishnav982@gmail.com](mailto:khushbuvaishnav982@gmail.com))

\*\* (Assistant Professor, Department of B. Com Accounting & Finance, Sri Ramakrishna College of Arts & Science, Coimbatore.)

\*\*\*\*\*

## Abstract:

Climate change has been considered a significant factor that influences the structure of food systems and consumption behaviour in urban centers like Coimbatore City. The present study attempts to appraise the very impact of changing climate on food consumption patterns and adaptation strategies by urban consumers. In this regard, primary data from 130 respondents were gathered through a structured questionnaire, and the analysis was done by percentage analysis, t-test, and chi-square test. The results indicate that a greater proportion of the consumers have experienced change in food consumption due to climatic variation. The variable gender significantly influenced the satisfaction with regard to food availability. The type of family significantly influenced satisfaction with regard to adaptation strategies. The study focuses on sustainable and household-specific adaptations in order to strengthen climate-resilient food consumption in Coimbatore City.

**Keywords** — Climate Change, Food Consumption Patterns, Urban Consumers, Adaptation Strategies, Food Availability, Coimbatore City.

\*\*\*\*\*

## INTRODUCTION

Climate change is no longer an issue that has not taken place; that is, it has shifted from a future threat to a current force that shapes our environment, food systems, and humans' behaviour and interactions. Global warming, inconsistent rainfall patterns, and extreme weather conditions are affecting food production and availability. In India, climate change affects food security mainly because of its impact on monsoons and temperature swings, and its contribution to urbanization, which affects food availability via market access. Thus, within the context of its high sensitivity to monsoons, food security and its supply are heavily affected in India, and climate change plays a significant part in that, especially for the second largest city within the country, namely Coimbatore, Tamil Nadu. This paper seeks to assess how climate variability affects food consumption behaviour within the city of Coimbatore, an area that has been affected and impacted by climate change to some significant extent.

## STATEMENT OF THE PROBLEM

Climate change is increasingly affecting agricultural production and the supply chains, leading to erratic supplies and changes in food quality sold on urban markets. But what makes these things worse is that all this greatly affects food consumption patterns and food affordability for urban

consumers. However, there are still limited empirical researches on how climate change affects food users and consumers. In Coimbatore, the recent consumer challenges include fluctuating prices and unreliable food supplies due to variability in climate. The present work is focused on an analysis of food consumption as affected by climate change, assessment of consumer adaptation strategies, and recommendation of sustainable measures towards food consumption.

## OBJECTIVES

1. To analyze the impact of climate change on food Consumption.
2. To evaluate adaptation strategies in food Consumption.

## SCOPE OF THE STUDY

The study confines itself to an analysis of the effects of climate change on food consumption patterns among urban consumers in Coimbatore city. Consequently, it identifies challenges to food availability, affordability, and access that emanate from the climate-related changes. The study will analyze the adaptation strategies adopted by consumers in confronting these challenges. It further assesses the effectiveness of these coping mechanisms. In addition, it puts forward sustainable food consumption measures that will support climate-resilient food systems. It is an analysis purely

based on primary data and is confined to the geographical and socio-economic context of Coimbatore.

**LIMITATION OF THE PROBLEM**

- The study is geographically confined to Coimbatore city.
- The analysis is based on data collected from 130 respondents only.

**HYPOTHESIS**

**(H<sub>0</sub>):** There is **no significant difference** in satisfaction with the availability of food items despite climate-related changes between male and female respondents.

**(H<sub>1</sub>):** There is a **significant association** between family type and satisfaction with current adaptation strategies related to food consumption.

**RESEARCH METHODOLOGY**

An applicable research design for descriptive and analytical studies is used to explore the impact of the changing weather on the consumption patterns of food in Coimbatore City. Primary data collection involves the administration of a set of questions via a structured questionnaire among the urban population, which is carried out through the process of stratified random sampling. On the other hand, secondary data collection involves the use of journals, government publications, and statistical records on the changing weather patterns. The data collected will be presented in the form of percentage analysis and subsequently be used to draw appropriate conclusions and inferences.

**RESEARCH DESIGN**

The study used a descriptive research design in analysing the impact of climate change on food consumption in Coimbatore City. It seeks to examine the existing conditions and information regarding food consumption. The use of a descriptive design ensures a thorough and complete analysis in a very simple and easy manner.

**SAMPLING TECHNIQUES**

The study adopts Simple Random Sampling as the sampling technique. This approach provides equal selection opportunity to all respondents. It helps in reducing sampling bias and ensuring fair representation.

**SAMPLE SIZE**

The study uses a sample size of 130 respondents. This sample forms the basis for analysis and interpretation of the findings.

**TOOLS**

- Percentage Analysis
- T test
- Chi Square

**REVIEW OF LITERATURE**

**K PALANISAMI, RUTH MEINZEN-DICK and MARK GIORDANO (2010)** has published research article in the name of “Climate change and water supplies: options for sustaining tank irrigation potential in India ”. The research article points out that climate change has the potential to significantly influence the water supply of the South Asian region due to floods and droughts. Therefore, the problem that has been identified relates to the issue of irrigating the areas of the region and how water storage can take centre stage as a possible adaptation measure in the face of climate change. It has been noted that although the region has over 208,000 tanks that supply water for the irrigation of 2.3 million hectares of land, the net irrigated areas are compromised due to poor management and maintenance of the water supply system.

**M. N. Karthika ,P. Parasuraman ,N. Thavaprakash ,R. Poornimal & S. Vincent (2025)** has published research article in the name of “Resource Conservation Technologies for Mitigating Climate Change Impacts in Agriculture: A Review ”. The research article points out that climate change has the potential to significantly influence the water supply of the South Asian region due to floods and droughts. Therefore, the problem that has been identified relates to the issue of irrigating the areas of the region and how water storage can take centre stage as a possible adaptation measure in the face of climate change. It has been noted that although the region has over 208,000 tanks that supply water for the irrigation of 2.3 million hectares of land, the net irrigated areas are compromised due to poor management and maintenance of the water supply system.

**RESEARCH GAP**

The current literature primarily deals on production-side and technological strategies addressing climate change issues, while few literature pieces have given emphasis to its implications on food consumption behaviour. There is considerable scope seen for studying impacts on food availability, affordability, and consumption behaviour at the consumer level, and hence, a research gap is identified, particularly focusing on climate variability and its effects on food consumption behaviour among consumers living in the city of Coimbatore.

**ANALYSIS AND INTERPRETATION**

		Frequency	Percent
Valid	Yes	95	73.1
	No	35	26.9
	Total	130	100.0

**INTERPRETATION**

The results indicate that a large majority of respondents (73.1%) have noticed changes in their food consumption patterns due to climate change effects such as rising temperatures or irregular rainfall, while 26.9% have not observed any change.

**Group Statistics**

	Gender of the Respondent	N	Mean	Std. Deviation	Std. Error Mean
How satisfied are consumers with the availability of food items despite climate-related changes?	Male	63	3.63	.972	.122
	Female	67	3.88	.896	.110

**INTERPRETATION**

Female respondents show slightly higher satisfaction (Mean = 3.88) than males (Mean = 3.63) regarding food availability despite climate changes. However, Levene’s test confirms equal variances, and the t-test indicates that the difference is not statistically significant, showing that gender does not significantly affect satisfaction levels.

		Levene's Test for Equality of Variances		
		F	Sig.	t
How satisfied are consumers with the availability of food items despite climate-related changes?	Equal variances assumed	.932	.336	-1.499
	Equal variances not assumed			-1.495

**Case Processing Summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Family Type of the Respondent * How satisfied are consumers with their current adaptation strategies related to food consumption?	130	100.0%	0	0.0%	130	100.0%

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.714 <sup>a</sup>	4	.013
Likelihood Ratio	13.111	4	.011
Linear-by-Linear Association	6.720	1	.010
N of Valid Cases	130		

**INTERPRETATION**

The chi-square test indicates a statistically significant association between family type and satisfaction with current adaptation strategies related to food consumption. Since the

Pearson Chi-square value is 12.714 with a significance level of 0.013 ( $p < 0.05$ ), the null hypothesis is rejected. This suggests that satisfaction with food consumption adaptation strategies varies significantly between respondents from joint and nuclear families.

**FINDINGS**

- A strong majority of respondents (73.1%) have noticed changes in their food consumption patterns due to climate change factors such as rising temperatures and irregular rainfall, indicating high awareness of climate impacts.
- Female respondents show slightly higher satisfaction with food availability than male respondents; however, the difference is not statistically significant, suggesting that gender does not influence satisfaction levels.
- The chi-square analysis reveals a significant association between family type and satisfaction with current food consumption adaptation strategies, indicating that perceptions and coping mechanisms differ between joint and nuclear families.

**SUGGESTIONS**

- Awareness programs should be strengthened to guide consumers in adapting their food consumption habits to climate change, building on the already high level of awareness.
- Since satisfaction with food availability does not vary by gender, adaptation strategies and policies can be designed uniformly for all consumers.
- Tailored support and guidance should be provided based on family type, as joint and nuclear families face different challenges and adopt different adaptation strategies in response to climate-related food consumption changes.

**CONCLUSIONS**

The findings indicate that climate change has a noticeable impact on food consumption behaviour, with most respondents being aware of and affected by changing climatic conditions. While satisfaction with food availability remains generally similar across genders, differences in family structure significantly influence how households adapt to climate-related food challenges. This highlights the need for context-specific adaptation strategies that consider household dynamics, while continuing to strengthen awareness and resilience among urban consumers.

**REFERENCES**

[1] Samundeeswari, D., Kanchana, A., & Varuvel, V. N. (2022). A man power model for three grade system with univariate policy of recruitment using geometric process for inter decision times. In *Recent Advances in Internet of Things and Machine Learning*:

- Real-World Applications* (pp. 235-241). Cham: Springer International Publishing.
- [2] Samundeeswari, D., Abraham, M., Kumar, A., & Pandian, S. K. (2024) Decision Making: Applications in Management and Engineering.
- [3] Manimalathi, P., Rekha, S., Al-Khalidi, A., Abdulhasan, M. M., Abood, B. S. Z., & Babu, D. S. (2024, May). A Structural Design for Labor Market System Which Optimizes the Disruptions in the Process through AI Adoption. In 2024 4th International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE) (pp. 1055-1059). IEEE.
- [4] Rose, A. M., & Vengatesh, P. (2022). International Marketing probably Global Marketing-A Theoretical Study.