| Volume 02 | Issue 06 | November 2026 | ISSN: 3139-1737

International Journal of Advances and Applications in Convergent Studies & Transdisciplinary (IJ-AACST)

Bridging Disciplines, Bridging Knowledge

Aligned with the Vision of NEP 2020 and UGC Guidelines

Website: https://aacstij.org || Email: journaleditor@aacstij.org

Household Cooling, Electricity Bills and the Energy-Efficiency Gap in Nagpur District (2019–2023)

DOI: https://doi.org/10.5281/zenodo.24102809

Akhil Kishor Chattamgiri[1]*, Dr. Kavita B. Hingane[2]

*Corresponding Author: [1] Research Scholar, SLKMIMSR, Gondwana University, Gadchiroli, Maharashtra, India

chattamgiriakhil@gmail.com

[2] Asst. Prof., Sau. Leena Kishor Mamidwar Institute of Management Studies and Research (SLKMIMSR), Chandrapur, Maharashtra, India

kavitahingane18@gmail.com

Abstract

In Nagpur, a hot summer isn't something households can simply wait out. Most of them own at least one cooling appliance, and many pay for it every month. This paper looks at what 560 households in Nagpur District told us about the appliances they own, how often they use them, what they pay, and what they do (or don't do) about energy and the environment. Ceiling fans were nearly universal (88.0%), and air conditioners and coolers each reached close to half of the households. About 62% said cooling pushed their electricity bill up. Awareness was high: 75.4% knew about energy-efficient appliances, and 67.3% knew cooling has an environmental cost. But only 34.6% owned an efficient appliance, and 59.3% had taken no specific step to reduce their impact. The gap between knowing and doing is the main story here. We close with practical ideas aimed at the moments when households are most open to change: just before summer and just before a purchase.

Keywords: cooling appliances; household electricity cost; energy efficiency; environmental awareness; consumer behaviour; Nagpur District.

1. INTRODUCTION

1.1 Background of the Study

In hot Indian cities such as Nagpur, cooling appliances are no longer a luxury. Ceiling fans, table fans, evaporative coolers and air conditioners are part of everyday household life, because they affect sleep, work, study and health. The World Health Organization (2021) describes extreme heat as a serious health threat, particularly for older adults, children, outdoor workers and low-income groups, and access to cooling is one-way households protect themselves.

The same appliances also draw a great deal of electricity, especially during the hottest hours of the day. The International Energy Agency (2018) identified space cooling as one of the fastest-growing sources of future electricity demand. Davis and Gertler (2015) explained part of the reason: as incomes rise in warm countries, more households adopt air conditioning, and the energy impact grows with them. At the national level, the India

© 2026 The Author(s). This article is published by the AACST in the IJ-AACST under the Creative Commons Attribution 4.0 International (CC BY 4.0) License. The authors retain copyright and grant AACST a non-exclusive license to publish, distribute, and archive the work.