

Who brings the emissions home? Investigating the effect of female breadwinner household in greenhouse gases emissions patterns

Topic: Gender issues in Input-Output Analysis: New challenges and new perspectives - II

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The field of research focusing on the relationship between household consumption and environmental impact has been increasing since the pioneering work of Herenden and Tanaka in 1976. It has been found that households consume more energy indirectly through the purchase of goods and services than directly through the consumption of energy itself. Household income has been identified as one of the main factors that influence the environment, with several studies indicating a strong correlation between household income and energy requirement or emissions. Moreover, household demographic characteristics have a great influence on the household environmental footprint. Changes in population size, urbanization, and household composition have implications on consumption growth and production activities, affecting emissions.

This study aims to examine the effect of evolving characteristics of modern western societies on greenhouse gases emissions, focusing on the phenomenon of female breadwinner households, a term used to refer to women being main economic income producer on households, that represent a relatively new scenario around the world, representing a significant proportion of households across developed countries today. Different studies support the idea that increase of female breadwinner household has consequences in internal household organization and increase in economic resources provided by women leads to an increase in female bargaining power within the household. Therefore, an increase in female breadwinner household might be reflected in decision-making power and, consequently, in the demand for different goods and services, such as food, transport, or fashion commodities. Furthermore, the demand for different products may be influenced by differences in women's and men's concern and knowledge of environmental issues.

Given that a significant proportion of greenhouse gas emissions are generated by private household consumption, an increase in female breadwinner households may have significant effects on global greenhouse gas emissions. However, the potential effect of feminization on greenhouse gas emissions has not yet been fully studied. This research aims to test the hypothesis that female and male breadwinner households present significant differences in greenhouse gas emissions patterns induced by consumption.

We investigate this issue by studying a sample of Spanish households' consumption baskets for 2008, 2014, and 2018, linking consumption levels with emissions through Input-Output approach. The analysis focuses on the aggregation of 6 greenhouse gases, 62 industries, and 39 products grouped into 12 categories under the COICOP classification. The study combines three statistical data sources: Input-Output Tables estimated from Supply and Use Tables, the Environmental Accounts, and the Household Budget Survey. Furthermore, the datasets are combined with additional information that allows linking sectorial indicators in the Input-Output Tables with Household Budget Survey microdata (Bridge Matrices). After calculating a vector of direct and indirect greenhouse gas emissions for each household sampled, the Propensity Score Matching estimator is applied to capture the mean differences in emissions between female and male breadwinner households with identical characteristics isolating the effect of gender.

The preliminary results indicate a significant negative effect of female breadwinner households on greenhouse gas emissions patterns derived from household consumption, primarily due to the use of private transport by male breadwinner households. The study highlights the importance of

considering gender as a relevant factor when analyzing the environmental impact of household consumption. The findings suggest that an increase in female breadwinner households may lead to a reduction in greenhouse gas emissions. Moreover, the study contributes to the growing demand for research linking the environment and gender, to the collection of environmental data disaggregated between women and men, and to expose the role of women in sustainable production and consumption.