ESRI
RESEARCH
BULLETIN
JUNE 2022

ARE FUEL POVERTY METRICS FIT FOR PURPOSE? EVIDENCE FROM IRELAND

MIGUEL TOVAR REAÑOS AND MUIREANN Á. LYNCH

ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

ARE FUEL POVERTY METRICS FIT FOR PURPOSE? EVIDENCE FROM IRELAND[1]

*Miguel Tovar Reaños (ESRI), Muireann Á. Lynch (ESRI)

ESRI Research Bulletins provide short summaries of work published by ESRI researchers and overviews of thematic areas covered by ESRI programmes of research. Bulletins are designed to be easily accessible to a wide readership.

INTRODUCTION

Energy is an essential good, and so the ability to afford sufficient fuel and energy is of concern to policy makers. Consistent and reliable methods of identifying households that cannot afford sufficient energy are therefore critically important. Despite a large literature on the topic, there are multiple definitions of fuel poverty and there can be considerable differences in which households are designated as "fuel poor" under each metric. Some metrics are based on the income of the household, others on the expenditure of the household on energy, and others use both.

This research has several aims. The first is to identify which households are classified as fuel poor under these different metrics, and to compare them to a new metric known as "multidimensional poverty". This new metric identifies households that experience deprivation across several dimensions including living in dwellings with low energy efficiency levels. The second research aim is to explore how fuel poverty differs under changes in carbon taxation.

METHODS AND DATA

We draw data from two different sources. The first is the CSO's Household Budget Survey (HBS), which records expenditure by a representative sample of Irish households. We use the HBS to determine the changes in spending by households of different income deciles in response to changes in energy prices and building efficiency. The second dataset we use is the Building Energy Regulations (BER) database. We use this database to estimate the energy required to heat the dwelling as a metric for efficiency of all dwellings based on building characteristics such as age, size, or type of central heating system.

[1] This Bulletin summaries the findings from: Tovar Reaños, M.A. and Lynch, M.Á., "Are fuel poverty metrics fit for purpose? An assessment using behavioural microsimulation", *Sustainable Cities and Society*, Available online: https://www.sciencedirect.com/science/article/pii/S2210670722001457

*Miguel.AngelTovar@esri.ie

We consider two existing fuel poverty metrics. One metric uses only disposable income after paying for housing and energy costs to classify them in fuel poverty when their income levels are below a minimum threshold. The second existing metric we test designates a household as fuel poor if they face income poverty, and their energy expenditure is higher than the sample median. The multidimensional poverty metric classifies a household as fuel poor if they are in income poverty and have high energy expenditure or low energy efficiency levels. We simulate the impact of carbon taxation on energy poverty, as measured by each of these metrics.

POLICY IMPLICATIONS

We find that in general all analysed metrics perform well at identifying the household types frequently mentioned in the literature as fuel poor. We also show that using a multidimensional metric that includes energy efficiency can track changes in fuel poverty under the analysed scenario of additional carbon taxes and compensatory measures such as additional transfers and improvements in energy efficiency. We find that low-income households identified as fuel poor by the multidimensional metric have the smallest demand responses in the face of higher energy prices. Consequently, increases in fuel prices will increase the burden on these households. Our findings show the importance of combining income support with improvements in energy efficiency to tackle fuel poverty.

Whitaker Square,
Sir John Rogerson's Quay,
Dublin 2
Telephone **+353 1 863 2000**
Email **admin@esri.ie**
Web **www.esri.ie**
Twitter **@ESRIDublin**

ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE