



Original research article

Same but different: On the applicability of fuel poverty indicators across countries—Insights from France

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ABSTRACT

In 2012, the Low Income High Costs (LIHC) indicator was proposed as an alternative way of measuring fuel poverty (Hills, 2012) [27]. Since its publication, the indicator has received considerable attention, not only in Great Britain, but also in other European countries. The applicability of the indicator is, however, highly contingent on detailed household and building data. This leads to the question of whether it is feasible to use the indicator in countries with less extensive available data. In this study, we test the applicability of the LIHC indicator in France, using an innovative approach to estimate energy requirements in locations with limited availability of physical building data. We show how this enables us to conveniently adapt the two most frequently used indicators to the French context (and possibly to other countries) and how to compare their results.

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1. Introduction

In the wake of recent transformations in European energy markets, fuel poverty has become a topic of increasing social and political interest to many member states [2,7,8,24,25,30,49]. Conventionally, fuel poverty is defined as the difficulty that households experience in coping with the cost of domestic energy. In spite of current interest in the topic, very few countries officially acknowledge the existence of fuel poverty, or systematically monitor its occurrence and evolution over time. Great Britain, a pioneer in fuel poverty research and political analysis, and France are two of the exceptions to this tendency. In 2009, the French government launched a fuel poverty working group to analyse the nature and extent of the phenomenon in France [12]. The working group proposed a definition of fuel poverty that was passed into law (Grenelle II) in 2010.¹ Furthermore, the working group presented the first assessment of the number of French households living in fuel poverty, based on the 10% indicator proposed by Boardman in

1991 [5]. According to this indicator, households that need to spend more than 10% of their disposable income on fuel costs in order to reach a certain level of comfort, are considered to be fuel poor. In France in 2006, this indicator found 3.4 million households (13%) to be fuel poor.

The way the 10% indicator is used in France differs considerably from its original version, thus we refer to these two versions of the indicator as “10% British version” and “10% French version”. The British version uses modelled ‘energy requirements’ or the energy needed to attain a level of convenient domestic thermal comfort, while the French version uses real declared energy consumption. This difference has an impact on who is considered to be fuel poor, since households restricting their consumption would not be identified as fuel poor when using declared energy consumption.

In recent years, there has been increasing concern about the 10% indicator's² adequacy in correctly depicting the fuel poverty phenomenon [7,26,27,37,38]. Alternative approaches are being discussed, including modifications to the 10% indicator [19,24–26,32,38,40] and subjective indicators [16,26,52] as well as an approach based on a minimum income standard [37] or yet a consensual measure [23,50]. Furthermore, qualitative approaches,

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¹ Loi n° 2010-788 du 12 juillet 2010 portant engagement national pour l'environnement (in English: Law nb. 2010-788 from the 12th of July 2010 concerning the national engagement for the environment).

² We use the term “10% indicator” when referring to the indicator in a general way, regardless of the differences between the French and the British version.

mainly based on interviews with affected households, have been proposed as a way of assessing fuel poverty [10,22,35]. In 2011, the UK Department of Energy and Climate Change commissioned a review of the 10% indicator (British version), which led to a new indicator proposed by John Hills and his research team. This indicator, called Low Income High Costs (LIHC), seeks to overcome the shortcomings of the 10% indicator and incorporates relevant insights from poverty research. Recently, the LIHC indicator has received considerable attention in France and the French Fuel Poverty Observatory (ONPE) seems inclined to recommend its application to the French context (among others, see chapter 4) [38].

Regardless of the indicator used, one main concern is whether it is possible to correctly transfer the indicators to the French context given the data requirements they impose. It has become a convention in fuel poverty research to use data on energy requirements rather than data from real energy consumption to ensure that the households that restrict their consumption are not excluded from the population of potentially fuel poor households. In France, the precise data on building characteristics for modelling energy requirements is not yet available. Primarily, the research question we are interested in is whether it is possible to transfer fuel poverty indicators based on energy requirements, to countries with limited data availability, such as France. We present an innovative approach for modelling energy requirements using available data. Building on this, our second research interest is to carry out a case study on fuel poverty in France by applying the 10% indicator (British version) and the LIHC indicator to the French context. We concentrate on these two indicators because, to date, the 10% indicator is the most widely known and used fuel poverty indicator and because the LIHC indicator is the one that has received the most attention in the discussion on alternatives to the 10% indicator.

The results confirm the method used and show that the two indicators differ concerning the number and type of households that are identified as being fuel poor (as has been shown for England as well).

Even though the focus of our study is on fuel poverty in France, we believe that our research yields important insights that go beyond this case study context. The method we present may be replicated in all those other countries with restricted data availability (the detailed data available in the UK is an exception rather than the norm).³ We believe that research in this domain may contribute to a better understanding of fuel poverty and may thus enhance political engagement and the willingness to collect more detailed data.

Through inquiry into the way fuel poverty indicators can be used in countries with restricted data availability, our paper contributes to the literature on environmental justice and energy governance [3,4,17,18,20,21,31,33,39,41,42,45–48,51,53,54]. As Falkner [17] recalls, we are today confronted with an energy trilemma, i.e. the challenge of addressing the three demands of energy security, climate change mitigation and the reduction of fuel poverty [17,p. 192]. This poses the question of how to attain the objective of a low-carbon society while at the same time assuring that this happens in a socially balanced manner. The option of using viable indicators that allow the measurement and tracking of fuel poverty evolving over time are of crucial importance to this goal. These indicators allow evaluation of the impact of climate change policies on low-income households and to take it into account in the design of socially just policies.

The article is structured as follows: In Section 2, we give a concise overview of the indicators used in this study and discuss the related

proposals from the French Fuel Poverty Observatory (ONPE). In Section 3, we outline our method, focusing on the approach for estimating energy requirements. Section 4 is dedicated to presenting our results and discussing our findings. The concluding fifth section summarises the objectives and the findings of the article, discusses the impact of our study on the current French debate on choosing a fuel poverty indicator, the implication of our research for other countries with restricted data and provides ideas for further research.

2. Short description of indicators

This section gives a short overview of the indicators presented in the paper, including those indicators proposed by the French Fuel Poverty Observatory (ONPE). The indicators have been discussed in great detail elsewhere [5,26,27,32]. This section thus merely summarises the main characteristics of each indicator, enabling the reader to understand the description of our calculation model and the discussion of results.

2.1. Comparison of the 10% and the LIHC indicator

The origins of the 10% indicator (British version) date back to 1988, when British households spent on average 5% of their income on domestic energy. Twice this amount (10%) was considered disproportionate spending [5,29]. In addition, the three lowest income deciles effectively spent, on average, 10% of their income on domestic energy [5]. This led to the definition of the first, and still most widely-used, fuel poverty indicator which determines that a household is fuel poor if it needs to spend more than 10% of its income on energy services in the home. In Great Britain, the indicator operates with modelled energy bills rather than real expenditure. This accounts for the phenomena of restriction (real consumption being less than energy requirements) and excessive consumption (real consumption being greater than energy requirements) [27,p. 30]. To date in France, the use of real consumption data is justified by the lack of appropriate data [38].

Apart from the question of whether it is still appropriate to use a fixed threshold based on obsolete data [26,27,32], one of the main criticisms of the 10% indicator relates to the way the indicator deals with income. While definitions of fuel poverty assume a relationship between low income and fuel poverty, the indicator does not provide any mechanism to exclude wealthy households. Thus, under the 10% indicator, a wealthy household can be considered fuel poor if the size of the home results in high energy requirements [27,p. 30].

One major issue with the 10% indicator (British version) is its sensitivity to energy prices.⁴ Fuel poverty is commonly described as the interplay between high energy prices, poor energy efficiency in housing stock and low household incomes [6,p. 21]; [26,p. 36]. A reliable indicator should correctly reflect changes in each one of these variables [26,p. 13]. The Hills report illustrates how the number of fuel poor households in Great Britain fluctuates unduly with changes in energy prices when using the 10% indicator. This masks the impact of the other two key elements of fuel poverty, namely energy efficiency and income. Furthermore, it presents fuel poverty as a cyclical problem rather than a structural one. It goes without saying that a fuel poverty indicator should respond to energy price changes. However, it seems that the 10% indicator (British version)

³ Even though the method will have to be adopted according to the available data and national specificities.

⁴ The 10% indicator (French version) is less sensitive because households may adapt their consumption to rising energy prices. This is, however, a weakness in this indicator, because households restricting their consumption can no longer be identified as fuel poor.

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