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Gauging energy poverty: a multidimensional approach

Shinichiro Okushima

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#### **ACCEPTED MANUSCRIPT**

## Gauging energy poverty:

## a multidimensional approach

#### Shinichiro OKUSHIMA

Graduate School of Systems and Information Engineering, University of Tsukuba,
1-1-1, Ten-nodai, Tsukuba-science-city, Ibaraki, 305-8573, Japan.

E-mail: okushima@sk.tsukuba.ac.jp

#### **ABSTRACT**

This study presents a new approach to gauging energy or fuel poverty for developed countries. It develops a multidimensional energy poverty index (MEPI), which can evaluate energy poverty from a multidimensional angle. The MEPI is composed of three attributes (dimensions) of energy poverty, specifically for developed countries: energy costs, income, and energy efficiency of housing. The study applies this measure to gauge energy poverty in Japan after the 2000s, focusing on the years around the 2011 Great East Japan Earthquake (GEJE) and the Fukushima nuclear accident. Based on unique microdata, the results show that energy poverty has been aggravated in Japan since the 2000s. Mother-child and single-elderly households (vulnerable households) are in a serious situation and the elderly are at high levels of energy poverty. In addition, the results indicate the grave impact of energy price escalation after the Fukushima accident on energy poverty aggravation, especially for vulnerable households or the elderly.

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