THE ROLE OF HOUSEHOLD INCOME IN IDENTIFYING ENERGY POVERTY
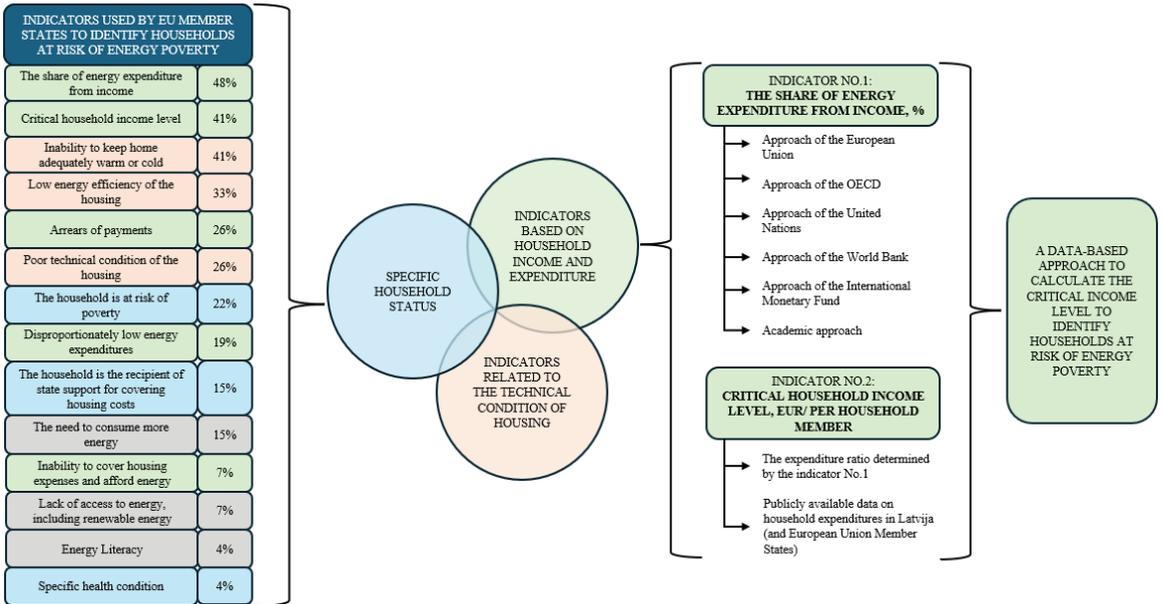
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Abstract – Energy poverty and the identification of households at risk of it have become increasingly important topics for research and national policy implementation. This issue has gained significance due to rising energy resource costs, geopolitical events, income inequality among households, and rapidly occurring climate change. It affects indicators that characterize households' quality of life, such as health status, life expectancy, and education level (or access to education), while also significantly impacting climate change and efforts to reduce greenhouse gas emissions. Reducing the proportion of households at risk of energy poverty is particularly relevant in countries with extreme temperatures, where ensuring a suitable indoor climate is crucial, such as in Latvia, where the concept of energy poverty and its identification has not been sufficiently developed. To develop a data-driven concept for identifying energy poverty that is suitable for Latvia and could be applied by other European Union member states in the long term, this paper analyzes information from the integrated energy and climate plans of EU member states regarding their current approaches and indicators for identifying energy poverty. Using a decomposition method, it was concluded that the most frequently used indicators are the share of household energy expenditure in total household income (%), and the household's critical income level (EUR). Additionally, it was found that member states use different approaches for determining these indicator values, including data from EU databases, national household surveys, and national registers regarding individuals' status. Based on the information mentioned above, the paper analyzes the concept of affordable housing as defined by international organizations and academics, concluding what share of household expenditure in household income should be considered affordable, while also identifying mandatory housing-related expenditures. As the result of study, a datadriven method and formula for calculating the critical income level of a household (EUR/month per household member) is developed, and an insight is provided into what the critical income level of a household at risk of energy poverty might be in Latvia using the developed calculation method and calculation formula.

Keywords – Affordable housing; data-based approach; energy poverty; EU approach; housing costs; household expenses; household income

INDICATORS USED BY EU MEMBER STATES TO IDENTIFY HOUSEHOLDS AT RISK OF ENERGY POVERTY	
The share of energy expenditure from income	48%
Critical household income level	41%
Inability to keep home adequately warm or cold	41%
Low energy efficiency of the housing	33%
Arrears of payments	26%
Poor technical condition of the housing	26%
The household is at risk of poverty	22%
Disproportionately low energy expenditures	19%
The household is the recipient of state support for covering housing costs	15%
The need to consume more energy	15%
Inability to cover housing expenses and afford energy	7%
Lack of access to energy, including renewable energy	7%
Energy Literacy	4%
Specific health condition	4%

SPECIFIC HOUSEHOLD STATUS

INDICATORS BASED ON HOUSEHOLD INCOME AND EXPENDITURE

INDICATORS RELATED TO THE TECHNICAL CONDITION OF HOUSING

INDICATOR NO.1:
THE SHARE OF ENERGY EXPENDITURE FROM INCOME, %

- Approach of the European Union
- Approach of the OECD
- Approach of the United Nations
- Approach of the World Bank
- Approach of the International Monetary Fund
- Academic approach

INDICATOR NO.2:
CRITICAL HOUSEHOLD INCOME LEVEL, EUR/ PER HOUSEHOLD MEMBER

- The expenditure ratio determined by the indicator No.1
- Publicly available data on household expenditures in Latvija (and European Union Member States)

A DATA-BASED APPROACH TO CALCULATE THE CRITICAL INCOME LEVEL TO IDENTIFY HOUSEHOLDS AT RISK OF ENERGY POVERTY

Decomposition method for introducing a data-based approach to calculate the critical income level for identifying households at risk of energy poverty