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TO HEAT OR NOT TO HEAT? ON (IN)PERCEPTIBLE ENERGY POVERTY AMONG THE POOR

Key words: poverty, energy poverty, social policy, social beneficiaries, subjective needs

ABSTRACT. This research investigates energy poverty among social assistance beneficiaries in the Masovian Voivodeship, focusing on both objective and subjective dimensions. Energy poverty, characterized by the inability to afford adequate energy services, is examined through the Low Income High Cost (LIHC) measure and respondents' subjective experiences. The study, based on a 2023 survey of 625 individuals, compares the Warsaw Capital Region and the Masovian Regional Region within the voivodeship. Results reveal that a significant proportion of beneficiaries face challenges in meeting energy needs, with 75% exceeding the 10% LIHC threshold. Strategies for coping include relying on social assistance, limiting current needs, seeking help from relatives, and dressing appropriately for indoor temperatures. The research covers energy poverty with economic, social, and health factors, emphasizing the need for targeted interventions and financial support mechanisms. Findings also highlight the impact of energy prices, varied energy consumption patterns, and subjective perceptions of energy poverty. The study contributes valuable insights into the complex phenomenon of energy poverty among social assistance recipients in the region.

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INTRODUCTION

The phenomenon of energy poverty is a situation in which a household is unable to provide a sufficient amount of energy necessary to meet basic needs related to daily functioning [cf. Owczarek and Miazga 2015, Bouzarovski and Petrova 2015, Simcock et al. 2021, Gradziuk et al. 2022]. This phenomenon is directly related to difficulties, such as the inability to pay energy bills or replace energy sources. Energy and economic poverty often coexist, they are not identical [Boguszewski and Herudziński 2018, 2019]. However energy poverty should be considered strongly linked to poverty understood economically as a lack of the ability to satisfy certain material needs [Dudek and Szczesny 2021, Kalinowski et al. 2022, Łuczak and Kalinowski 2022].

The issue of energy poverty is highly significant in light of the rising prices of energy carriers driven, among other factors, by the political and economic situation in Poland, Europe, and globally. It is directly related to economic difficulties such as the inability to pay energy bills, problems with proper housing insulation, and restricted access to materials necessary for heating or air conditioning spaces.

In Europe, it is widely acknowledged that such a situation arises from high energy prices, low household incomes, low energy efficiency of buildings, and specific needs of household members, including those related to chronic illnesses [Thompson et al. 2017]. The literature suggests that every European Union country should ensure its citizens' access to electricity, hot water, and heating. "Guaranteeing these basic goods to people experiencing energy poverty is a sine qua non condition for them to realize other freedoms and rights, e.g., related to their development, education, or social participation" [Hałub-Kowalczyk 2021, p. 59].

The Energy Poverty Advisory Hub [EPAH 2021] identifies three main causes of energy poverty: low income levels, low economic efficiency of households, and high energy prices. Various factors underlie this phenomenon. Katarzyna Świerszcz [2019] lists factors including relatively low household incomes, high energy costs, and attitudinal factors, which involve inefficient and non-conservative use of available energy.

The presented research focuses on characterizing energy poverty, understood as a lack or limitation of the ability to acquire energy services to meet daily needs, as well as excessive expenditures for this purpose according to households' subjective assessments [Kalinowski et al. 2023]. It can be expressed in political, economic, health, infrastructure, social, energy transfer, and climate dimensions (Figure 1).

The analysis utilized the results of a survey conducted on a sample of 625 social assistance beneficiaries in the Masovian Voivodeship in 2023. Comparative analyses were conducted between two regions within the voivodeship: the Warsaw Capital Region – WCR (with a central character) and the Masovian Regional Region – MRR (with a peripheral character), allowing for a more detailed understanding of the manifestations

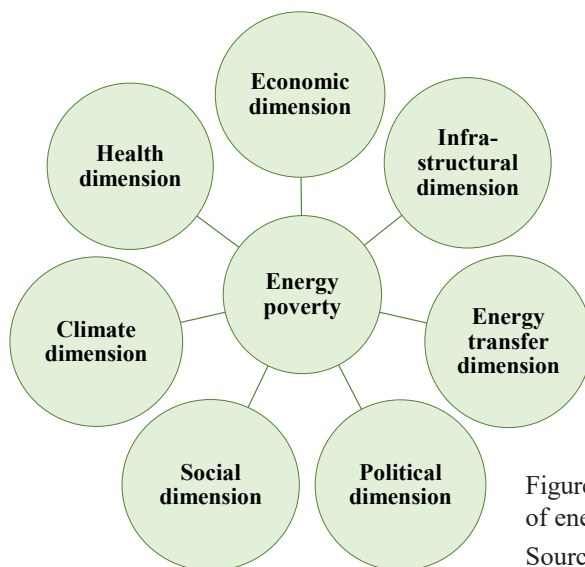


Figure 1. Dimensions of energy poverty
Source: own study

of energy poverty in Masovia. The study results can help identify specific challenges and dynamics faced by social assistance beneficiaries in the central and peripheral regions of the Masovian Voivodeship, contributing to the understanding of the complex phenomenon of energy poverty. This understanding requires a multifaceted approach, encompassing both objective and subjective aspects. Discussions regarding whether to heat and how to heat underscore the need for increased awareness and efforts to improve access to energy for those in greatest need [Hills 2012].

MATERIAL AND METHODOLOGY

The aim of this article is to analyze the manifestations of energy poverty among social assistance beneficiaries in the Masovian Voivodeship. We aim to draw attention to the existence of this problem among impoverished individuals who are social assistance beneficiaries. The available data allows us to describe the objective measure of energy poverty, i.e., the Low Income High Cost (LIHC) measure, as well as the subjective experiences of beneficiaries related to their ability to meet energy needs or the necessity to limit energy consumption. Our analysis results should be considered as a snapshot of the situation for the surveyed group of respondents in the year 2023. This approach limits the possibilities of generalizing conclusions but, at the same time, allows for formulating specific conclusions concerning this particular group of individuals, in this case, social assistance beneficiaries, where deprivation of other needs is widespread.

In 2022, the at-risk of poverty and social exclusion rate among residents of the province was 17.9%, while the at-risk of poverty rate was slightly lower at 15.5% [Kalinowski et al. 2022]. However, there is no available data on the scale of energy poverty. This lack of information underscores the need to address this issue. As mentioned earlier, in this study, we will focus on social assistance beneficiaries.

The presented results in the article are the outcome of a project titled “Conducting a study on the causes of energy poverty in the Masovian Voivodeship, along with the preparation of a report (diagnosis)” (1/MCPS/-5/2023/B/BS). They constitute a part of more detailed and broader research outlined in the document titled “Diagnosis of the causes of energy poverty in the Masovian Voivodeship. Final report from the research” [Kalinowski et al. 2023].

The sample included beneficiaries from social assistance centers in the Masovian Voivodeship. The research was conducted in the summer of 2023 with a quota sample of 625 individuals (Table 1). Respondents were selected from all counties in the Masovian Voivodeship. The data collection employed PAPI techniques (Paper And Pencil Interview) and individual in-depth interviews (IDI).

Table 1. Study population and sample in 2022

Specification	Masovian Voivoidership	Warsaw Capital Region (WCR)	Masovian Regional Region (MRR)
Number of people who were granted benefits by decision	115,044	52,094	62,950
Number of surveyed beneficiaries (N)	625	261	364

Source: own study based on [Kalinowski et al. 2023] and Central Statistical Office [GUS 2022]

Among respondents, two-thirds were women and one-third were men. The majority of participants fell within the working age range of 40 to 59 years, with 23.1% in the 40-49 age group and 20.0% in the 50-59 age group. One in four participants was between 60 and 69 years old. Similar proportions were observed among respondents from the WCR and the MRR. However, it is worth noting that among respondents in the WCR, a significant group were individuals over 70 years old – as much as 27%. In contrast, in the MRR, young individuals between 30 and 39 years old constituted 22.7%. Every third person in the surveyed sample lived in villages or towns with over 200,000 inhabitants. 14% of respondents lived in cities under 20,000 inhabitants, and in cities ranging from 20,000 to 99,000 was 20% of the group. Single-person households predominated (47%). Multi-person households with up to 5 people constituted 48% of respondents, and the largest

households (6 and more people) constituted 6% of the group. Almost 63% respondents had no dependent children, 24% supported up to 2 children, and 13% supported 3 or more children. Furthermore, for over 60% of respondents, the primary source of income was non-employment-related sources such as allowances, donations, or alimony, while over 18% of respondents primarily relied on pensions. It should also be added that no more than one in five respondents identified wage labor as their primary source of income. Noteworthy is the fact that 54% of respondents indicated that their current financial situation was poor, about 33% respondents declared that it was neither good nor bad, and only 10% claimed to have a good financial situation. A similar pattern of main income sources and self-assessment of financial situations was noted in both WCR and MRR – differences between regions were not significant.

RESULTS OF THE ANALISYS

Discussion on the phenomenon of energy poverty among social assistance beneficiaries in the Masovian Voivodeship began by indicating the objective measure of energy poverty – the LIHC measure (Low Income High Cost) [Hills 2012], which considers low income and high energy expenditures. This indicator helps determine whether households incur excessively high energy costs compared to their incomes – if it exceeds 10%, it can be considered indicative of energy poverty. Among the surveyed individuals, a significant proportion has a high LIHC indicator. Nearly 75% of respondents were individuals whose LIHC indicator exceeds 10%. It's worth noting that about 30% of respondents declared allocating between 26% and 50% of their budget to energy costs. In the case of approximately 39% of beneficiaries, energy expenditures exceed 10% but do not exceed 25% of their income (Table 2). In the WCR, there was a slightly higher proportion of

Table 2. Share of energy expenditure in the budget of beneficiaries' households

Share of energy expenditure	Share of social assistance beneficiaries [%]		
	Masovian Voivoidership	WCR*	MRR*
Under 10%	24.0	25.0	23.1
11-25%	38.9	40.6	37.5
26-50%	29.3	25.7	32.4
Over 50%	7.8	8.7	7.0

* Warsaw Capital Region, ** Masovian Regional Region

Source: own study based on [Kalinowski et al. 2023]

beneficiaries who spend up to 25% of their budget. In the MRR, individuals whose energy expenditures reach 25% but do not exceed half of the incomes of the households of beneficiaries predominate.

The LIHC indicator values complement the subjective indications of respondents regarding their ability to meet energy needs. The conducted research indicates that a significant majority of beneficiaries had difficulties in this regard. As much as one in five respondents stated that they were unable to meet their energy needs, one in ten could only afford to heat one room, and over half were forced to limit their energy consumption (Table 3).

Table 3. Meeting energy expenses of social assistance beneficiaries in Masovia

Degree of satisfaction of expenses	Beneficiaries of social assistance [%]		
	Masovian Voivoidership	WCR*	MRR**
Yes, without problems	17.4	15.8	18.7
Yes, but I have to limit my energy consumption	51.5	50.4	52.4
Yes, partially, I can only afford to heat the room where I sleep	10.6	10.9	10.4
No, I do not meet my energy and heat needs	20.5	22.9	18.5

* Warsaw Capital Region, ** Masovian Regional Region

Source: own study based on [Kalinowski et al. 2023]

The responses of the surveyed social assistance beneficiaries, similar to the LIHC indicator, did not differ significantly between the two regions in the province. There were slightly more individuals meeting their energy needs in the MRR, while in the WCR, the proportion of individuals not meeting their energy needs was over 4 percentage points (p.p.) higher.

Allocating significant amounts to energy expenditures while simultaneously limiting energy needs leads to the necessity of compensating for energy needs. Therefore, strategies for coping with meeting energy needs by social assistance beneficiaries were analyzed in situations where incomes do not allow for full coverage. Individuals experiencing energy poverty are forced to take various actions to ensure acceptable living conditions, including thermal comfort, for themselves and their families. Often, they are compelled to use inefficient energy sources, such as electric heaters, which generate high costs and lead to arrears in electricity payments. “The agency space of the energy poor is limited by structural factors over which these individuals have little influence” [Lis et al. 2016, p. 3].

It turns out that the primary – and most commonly indicated (44.8% of respondents) – way of coping in situations challenging in terms of meeting energy needs was using social assistance (Table 4). Every third respondents (32.8%) declared that they were limiting current needs. Less frequently mentioned strategies for compensating energy needs included relying on help from relatives and dressing appropriately for the temperature inside the home, with 12.2% and 11.2% of respondents giving these respective responses. Other activities involving remedial measures in this area were marginal.

Also noticed the differences in strategies for compensating energy needs among social assistance beneficiaries in the two regions of Masovia. The first two indications – using social assistance and limiting current needs – were similar for residents of the WCR and

Table 4. Ways of coping with a situation in which income does not allow meeting the needs of social assistance beneficiaries in Masovian Voivoidership

Ways to deal with difficult situations	Share of social assistance beneficiaries [%]		
	Masovian Voivoidership	WCR*	MRR**
I use social assistance	44.8	55.3	36.0
I limit my current needs	32.8	31.9	33.5
I dress appropriately for the temperature in the apartment	11.2	14.2	8.8
I use other help	8.1	10.7	6.0
I use the help of relatives	12.2	8.8	15.1
I give up using electrical devices	7.7	7.1	8.1
I give up heating part of the apartment	7.1	6.3	7.8
I use my accumulated savings	6.4	4.6	8.0
I take out loans and credits	3.9	3.0	4.6
I take no action	2.0	2.8	1.2
I use other fuel (wood from the forest, garbage, waste paper)	6.0	2.5	9.0
I do extra work	9.5	1.6	16.1
I am selling my property	0.6	0.0	1.2

* Warsaw Capital Region, ** Masovian Regional Region

Source: own study based on [Kalinowski et al. 2023]

the MRR. However, it should be emphasized that using social assistance was indicated by 55.3% of beneficiaries in the WCR and one in three in the MRR. On the other hand, limiting current needs was reported by 31.9% of individuals in the WCR and 33.5% in the MRR, respectively. The third most commonly mentioned forms of compensating needs differed significantly between the surveyed regions. For beneficiaries in the WCR, dressing appropriately for needs was indicated (similarly to the entire province) by 14.2%, while in the MRR, taking on additional work was mentioned by 16.1%.

In the vast majority of cases, activities compensating for the inability to meet energy needs have a conservative and passive nature. At the same time, it can be observed that each of these activities deepens existential poverty in different ways. While reducing energy consumption may help minimize costs, excessive limitation of basic needs such as food, a healthy diet, or access to medication can lead to a deterioration in overall quality of life and the ability to perform daily activities.

Due to varied energy supply tariffs, many households are unable to precisely estimate their expenses for this purpose, for example, on a monthly basis. In the case of the poorest households, which only fulfill part of their needs, fluctuations in energy costs may prevent them from meeting other essential life needs.

Among social assistance beneficiaries in the Mazovian province, the vast majority spent no more than 150 PLN per month on gas. This applied to about 80% of beneficiaries in the WCR and over 90% in the MRR (Table 5). As many as 40% of beneficiaries from the WCR and 20.2% from the MRR spent up to 50 PLN on gas. Bills for gas in higher amounts, exceeding 150 PLN per month, were more common for WCR beneficiaries (19.4% of respondents) than for MRR beneficiaries (7.6%). For many people using gas only for stove cooking with a cylinder, the measure is the number of cylinders used per month. In the case of households paying the lowest bills, not exceeding 50 PLN per month, this corresponds to the threshold of “less than one gas cylinder per month”. This mainly applied to single-person households that conserve energy.

Electricity bills among beneficiaries most commonly was in the range of 50 to 150 PLN per month. This applied to about half of the WCR beneficiaries and about 40% of the MRR beneficiaries. Subjective assessments of the beneficiaries showed that the respondents did not exceeded monthly electricity consumption of more than 500 PLN. The highest bill amounts (above 250 PLN) were more frequent in WCR (21.4%).

In the case of heating costs for the residences of beneficiaries, the amounts vary widely compared to other sources of heat. The least common heating cost bracket among social assistance beneficiaries in the province is up to 50 PLN per month (3.4%). Although the bills of beneficiaries were most frequently in the “500 and more” group (28.2%), relatively often bills amounted to less, with 25% of people paying up to 150 PLN.

Table 5. Monthly fees for gas, electricity and heating

Amount of monthly fees [PLN]	Beneficiaries of social assistance [%]		
	Masovian Voivoidership	WCR*	MRR**
Gas			
0-50	30.1	40.0	20.2
50-150	56.3	40.6	72.2
150-250	5.0	6.1	3.8
250-500	4.4	7.2	1.6
Over 500	4.2	6.1	2.2
Electricity			
0-50	5.1	2.9	7.2
50-150	45.5	50.6	40.6
150-250	26.5	25.1	28.0
250-500	5.0	5.9	4.0
Over 500	17.9	15.5	20.2
Heating			
0-50	3.4	2.1	4.7
50-150	21.6	28.7	14.4
150-250	25.5	26.2	27.5
250-500	21.3	16.8	21.3
Over 500	28.2	26.2	32.1

* Warsaw Capital Region, ** Masovian Regional Region

Source: own study based on [Kalinowski et al. 2023]

Many aspects of meeting needs and their deprivation are influenced by subjective feelings, which can differ regardless of an individual's situation [Lis et al. 2016]. It is also crucial to identify those individuals who directly declare difficulty in covering their energy expenses. Assessing the difficulty in covering these costs is one of the measures used to determine energy poverty. The results may be influenced by factors such as varied access, needs, as well as users' personal preferences.

Among social assistance beneficiaries in the Mazovian province, the most frequently reported difficulty was covering electricity bills (28.6%), with residents of the WCR more likely to declare this issue (36.7%) than those in the MRR (22.8%) (Table 6).

Table 6. Share of beneficiaries who have difficulties paying for gas, electricity and heating

Difficulties in paying	Beneficiaries of social assistance [%]		
	Masovian Voivoidership	WCR*	MRR**
Gas	18.7	22.9	15.6
Electricity	28.6	36.7	22.8
Heating	24.8	27.5	22.8

* Warsaw Capital Region, ** Masovian Regional Region

Source: own study based on [Kalinowski et al. 2023]

To a relatively lesser extent (by 4 p.p.), beneficiaries reported similar difficulties in covering heating costs (24.8%). Differences between regions remained at a similar level, with these difficulties more common among beneficiaries from WCR (27.5%) than MRR (22.8%). The least frequently reported difficulties were with gas bills (18.7%). Bills for this source of heat, like other analyzed sources, were more challenging to pay among residents of WCR (22.9%) than MRR (15.6%).

The primary manifestation of energy poverty that should be mentioned is having debt for energy bills. Debt itself is a complex issue that has both causal and resultant aspects. Debt is a cause of the poor economic situation of households. Individuals who are unable to regularly pay their energy bills often find themselves in a difficult financial position. Additionally, households are unable to invest in improving the energy efficiency of their homes or heating installations. This leads to excessive energy consumption and increased costs, contributing to a kind of vicious circle of energy poverty.

For over half of the surveyed beneficiaries, the period of arrears did not exceed three months. In the WCR, the share of such individuals was 45%, while in the MRR, it was higher, reaching almost 62% of respondents. Nevertheless, this means that even among those in debt, many households are able to pay off their overdue bills in a relatively short period. This is mainly due to the brief suspension of energy supply for individuals who have not settled their dues. The relatively low percentage of indebted individuals, who are also in a difficult financial situation, results from the belief that paying bills has a high priority compared to other expenses. The need for energy must, therefore, be met, even at the cost of other needs, including basic ones. It should be noted, however, that nearly 12% of beneficiaries had debts covering a period longer than one year. This percentage was higher among respondents living in the WCR area – 17.1% (Table 7).

Table 7. Debt period of arrears with fees

Okres zadłużenia	Beneficiaries of social assistance [%]		
	Masovian Voivoidership	WCR*	MRR**
1-3 months	53,7	45,0	61,7
4-6 months	20,1	19,1	21,1
7-12 months	14,3	18,9	10,2
13-24 months	3,4	3,5	3,3
Over 24 months	8,5	13,6	3,8

* Warsaw Capital Region, ** Masovian Regional Region

Source: own study based on [Kalinowski et al. 2023]

The above considerations can be complemented by the respondents' declarations regarding energy conservation and their opinions on energy prices. As expected, throughout the entire province, as well as in the regions, as many as four out of five surveyed beneficiaries indicated that they save energy (Table 8). It should also be emphasized that a significant majority respondents (73%) believed that energy prices are too high, undoubtedly contributing to the difficulties the respondents face in regularly covering

Table 8. Subjective indications of respondents that may indicate experiencing energy poverty

Subjective indications	Beneficiaries of social assistance [%]		
	Masovian Voivoidership	WCR*	MRR**
Saves energy	80.4	80.3	80.5
Believes that energy prices are definitely high and high	73.0	74.0	72.2
Assessment of the ability to cover energy bills compared to the previous year:			
– definitely harder and harder	68.1	64.7	71.0
– same	20.1	22.5	18.0
– definitely easier and easier	6.6	4.3	8.5
– hard to say	5.2	8.5	2.5

* Warsaw Capital Region, ** Masovian Regional Region

Source: own study based on [Kalinowski et al. 2023]

energy or heating expenses. This opinion was expressed more often by respondents from WCR, but MRR residents were more likely to believe that paying bills is more difficult (the sum of the answers “definitely difficult” and “difficult”) – by 6 p.p.

The research indicates that approximately one-fifth comprises individuals who do not reported a change in their ability to cover energy bills. In the WCR, 4.3%, and in the MRR, 8.5%, believed it is easier for them to pay for energy, which may be an indication that their financial situation has improved, they started receiving support in this area, or their housing conditions have changed. Perceiving their situation as better was also influenced by a one-time payment of a coal or energy supplement. However, the responses of a significant portion of the respondents suggest that, compared to the previous year, they faced greater difficulties in covering energy bills in 2023. This was declared by over 68% of the respondents, with slightly more people in the MRR region than in the WCR region.

CONCLUSIONS AND DISCUSSION

The question “to heat or not to heat?” posed in the title of this article draws attention to the issue of energy poverty among impoverished individuals. The article addresses the problem of energy poverty in households benefiting from social assistance in the Masovian province. The research aimed to diagnose the issue of energy poverty and characterize the manifestations of overlapping unfavorable social phenomena, i.e., problems that require the use of social assistance support. Individuals at risk of energy poverty can be identified by considering technical and socio-economic factors. In this study, the focus was primarily on economic factors expressed, among others, in the ratio of energy costs to household income. Attitudes adopted influence the ways individuals cope with securing their energy needs. Therefore, subjective indications from the respondents were taken into account, which may indicate that they experience the issue of energy poverty.

The objective measure LIHC indicates that even three-quarters of the surveyed social assistance beneficiaries may be at risk of energy poverty. These are individuals who allocate more than 10% of their income to meet their energy needs. In this regard, the situation in the two regions, WCR and MRR, did not differ significantly. However, attention should be paid to individuals who spend more than 25% of their income on energy-related expenses – these individuals were most prevalent in MRR, constituting about 40% of the population (in WCR their share was 34.4%, with the provincial level at 37%). It is worth noting that these findings overlap with the respondents’ declarations, as one-fifth of them indicated that they do not satisfy their energy needs. In this case, the differences between WCR and MRR were not clearly outlined.

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OGRZEWAĆ CZY NIE OGRZEWAĆ? O (NIE)DOSTRZEGALNYM UBÓSTWIE ENERGETYCZNYM WŚRÓD UBOGICH

Słowa kluczowe: ubóstwo, ubóstwo energetyczne, polityka społeczna, beneficjenci
pomocy społecznej, subiektywne potrzeby

ABSTRAKT. Celem badań było zdiagnozowanie problemu ubóstwa energetycznego wśród beneficjentów pomocy społecznej w województwie mazowieckim, zarówno w wymiarze obiektywnym, jak i subiektywnym. Ubóstwo energetyczne, charakteryzujące się brakiem możliwości zakupu odpowiednich usług energetycznych, bada się za pomocą miernika niskich dochodów i wysokich kosztów (LIHC) oraz subiektywnych odczuć respondentów. Badania ankietowe przeprowadzono w 2023 roku na grupie 625 osób, porównując Region Warszawski Stołeczny z Regionem Mazowieckim Regionalnym w obrębie województwa. Wyniki pokazują, że znaczna część beneficjentów stoi przed wyzwaniem związanym z zaspokajaniem potrzeb energetycznych, a około 75% badanych osób przekracza próg 10% LIHC. Respondenci najczęściej radzili sobie z tymi wyzwaniami przez korzystanie z pomocy społecznej, ograniczanie bieżących potrzeb, szukanie pomocy u krewnych oraz dostosowanie odzieży odpowiednio do temperatury panującej w pomieszczeniu. Badania wskazują na powiązanie ubóstwa energetycznego z czynnikami gospodarczymi, społecznymi i zdrowotnymi. Jednocześnie należy podkreślić potrzebę ukierunkowanych interwencji i mechanizmów wsparcia finansowego. Zaznaczyć należy również, że na przejawy ubóstwa energetycznego mają wpływ ceny energii, zróżnicowane wzorce zużycia energii i subiektywne postrzeganie problemu. Badania dają wgląd w złożone zjawisko ubóstwa energetycznego wśród beneficjentów pomocy społecznej w regionie.

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