

# Heterogeneity of the fuel poor in Poland – quantification and policy implications



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Konstancja Świącicka

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# Agenda

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1. What is fuel poverty?
2. How we measure it?
3. Research question
4. Method
5. Results

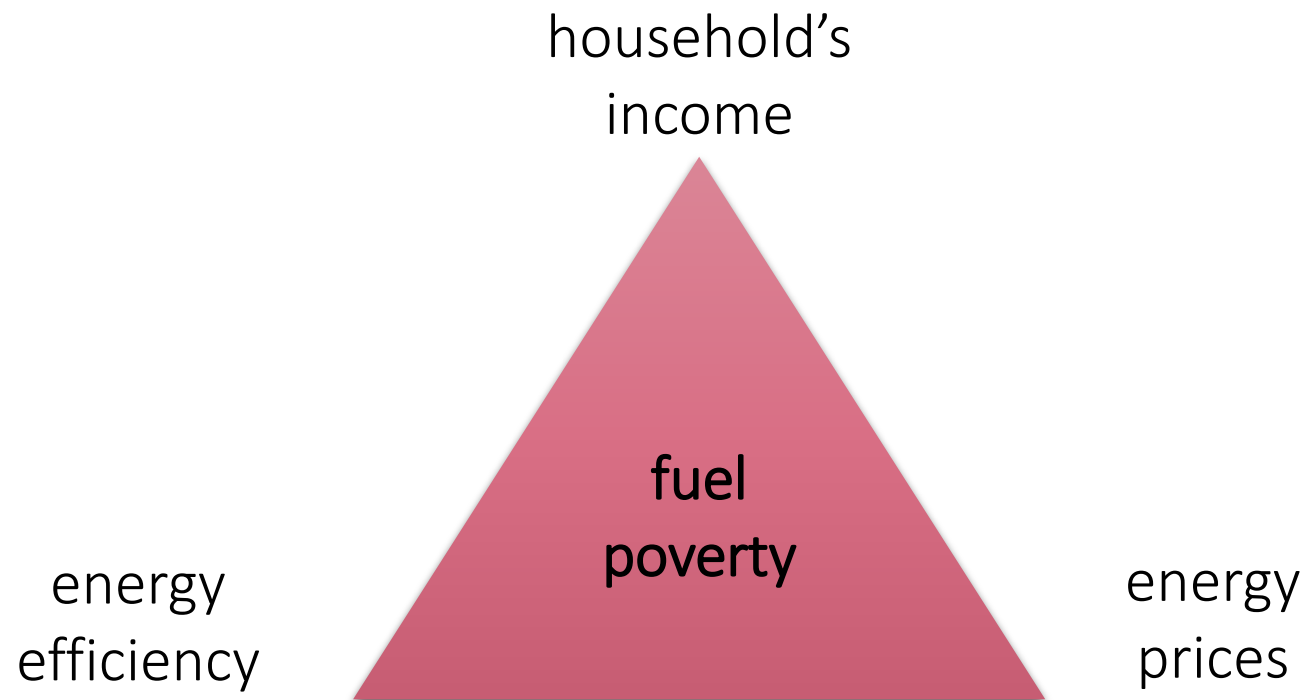
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# What is fuel poverty?

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**Fuel poor household** - one that cannot afford an adequate level of energy services at home, particularly warmth, at reasonable cost.



# How to measure fuel poverty?



fuel poverty indicators

objective

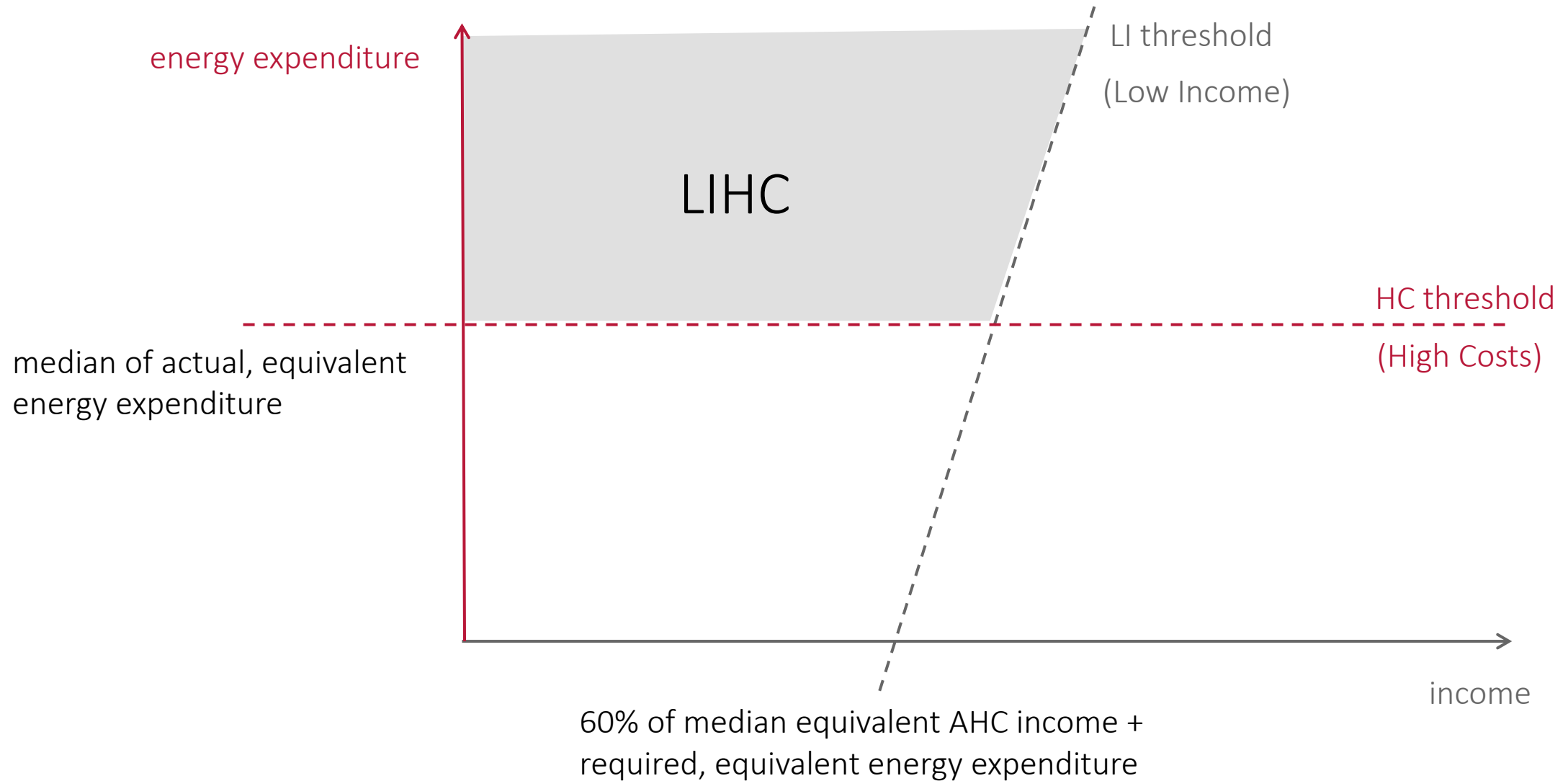
subjective  
(cold in winter)

relative  
(Low Income High Costs)

absolute  
(‘10%’)

**Data:**  
Polish Household  
Budget Survey 2014  
approx. 37 thous. observations

# Low Income High Costs (LIHC) indicator



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# Research question

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## The fuel poor in Poland – who are they?

- single HH? Big families?
- cities? rural areas?
- dwellings' characteristics?
- habits?

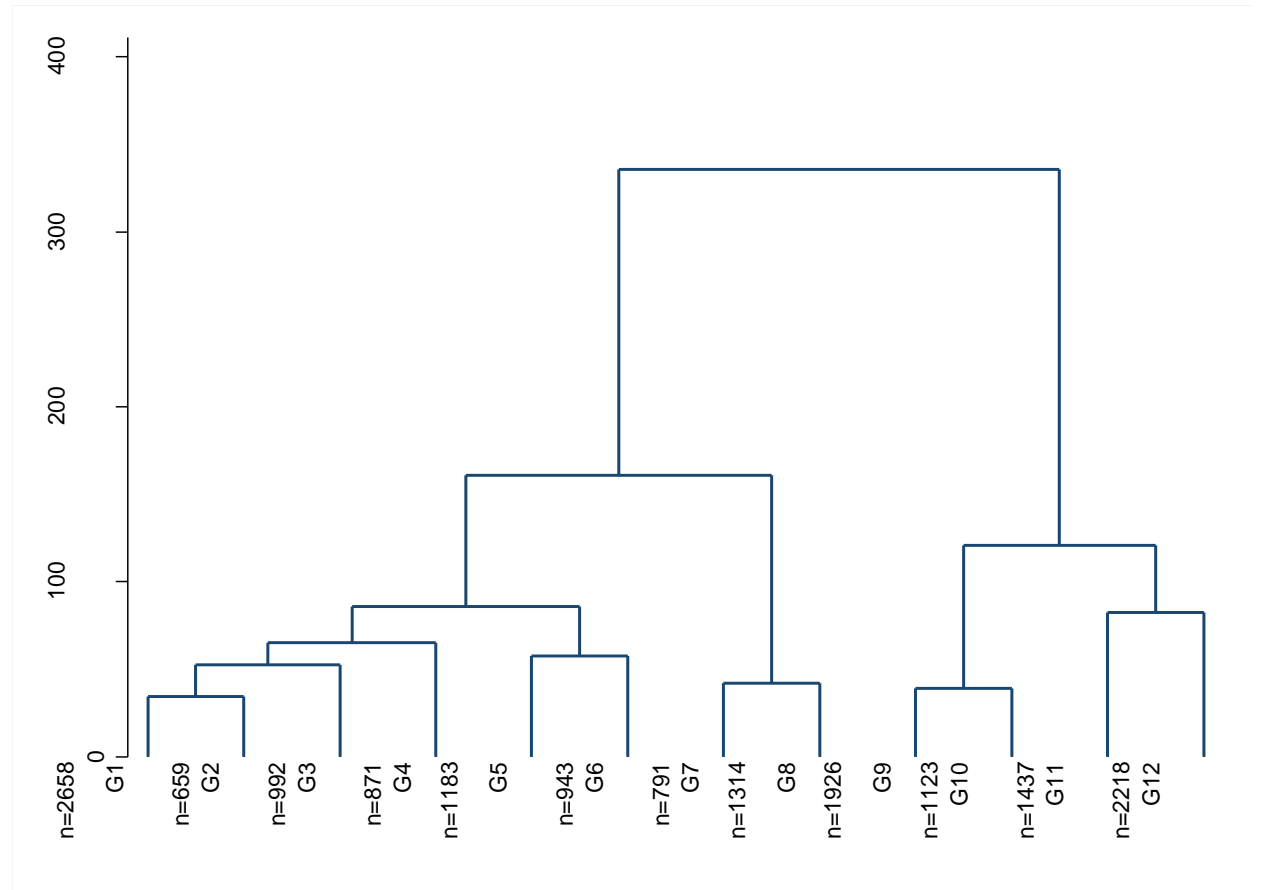
# Cluster analysis



The variables covered:

- energy efficiency
- expenditure on heat
- expenditure on electricity
- income
- consumption

Altogether 22 variables

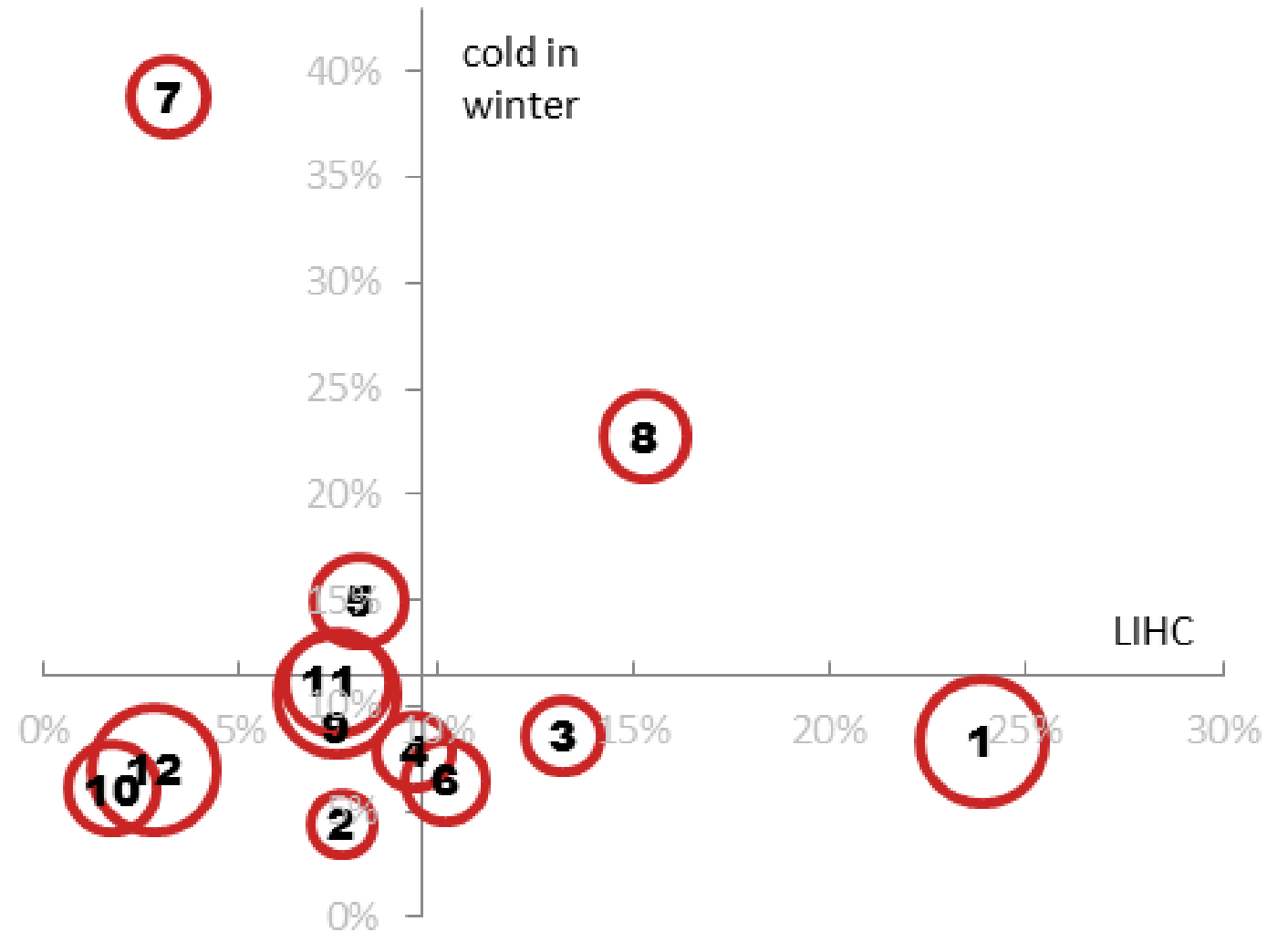


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# Results

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6 fuel poor clusters –  
according to at least one  
indicator



○ Percentage of each type in subjectively poor households

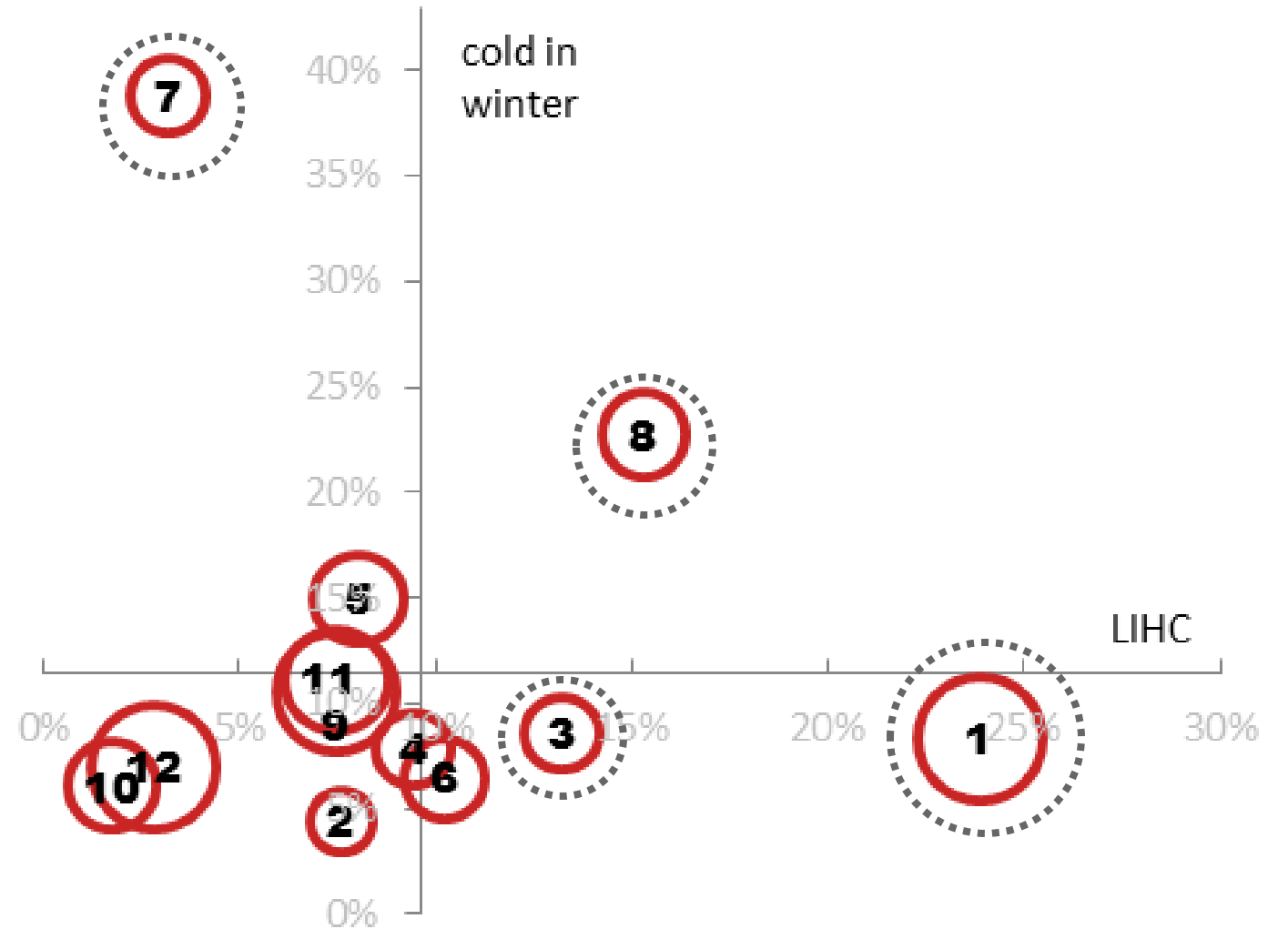
*Note: The axes intersect at the average values for each variable.*

*Source: Own calculations based on the 2014 Polish HBS data.*



# Results

- **type 7** – income poor inhabitants of old, pre-war tenement houses
- dwellings too small for their needs (25%)
- municipal properties (49%)
- solid fuel stoves (92%)



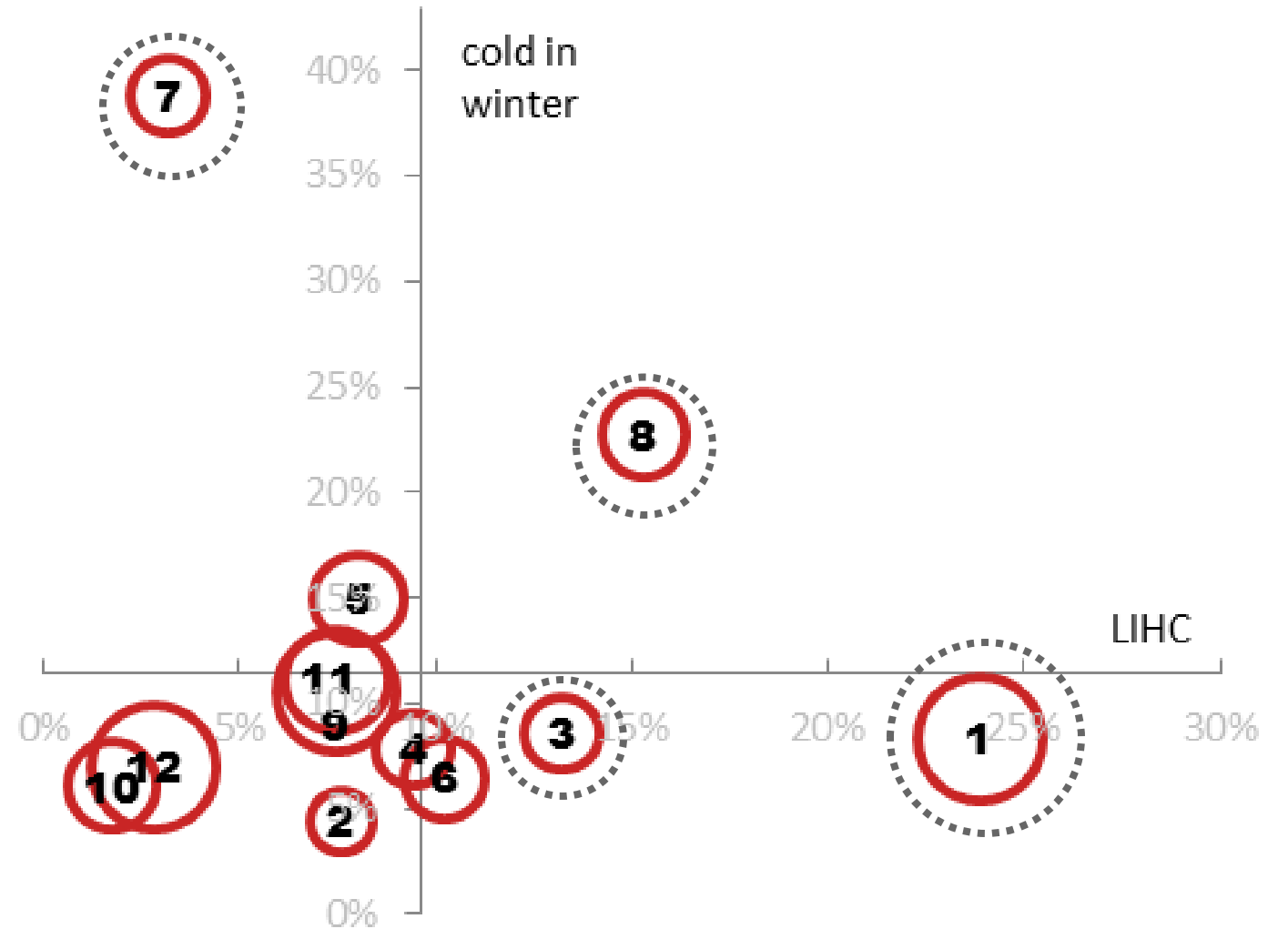
○ Percentage of each type in subjectively poor households

*Note: The axes intersect at the average values for each variable.*

*Source: Own calculations based on the 2014 Polish HBS data.*

# Results

- **type 8** – income poor inhabitants of old detached houses located in rural areas
- lack of toilet flushed with running water (25%)
- solid fuel stoves (96%)



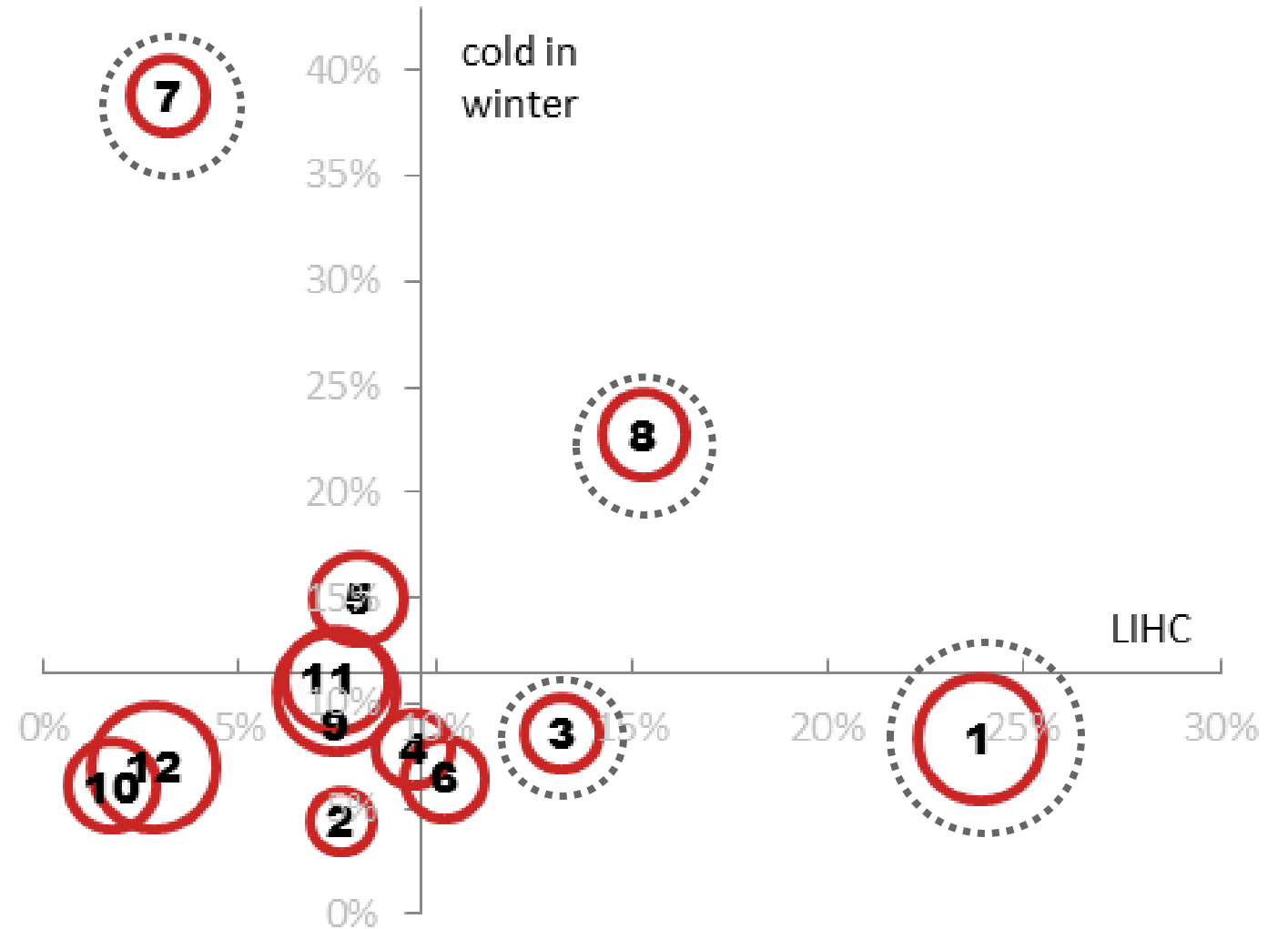
○ Percentage of each type in subjectively poor households

*Note: The axes intersect at the average values for each variable.*

*Source: Own calculations based on the 2014 Polish HBS data.*

# Results

- **type 1**– families with children living in big detached houses in rural areas and in towns
- large floor area (110 m<sup>2</sup> on average)



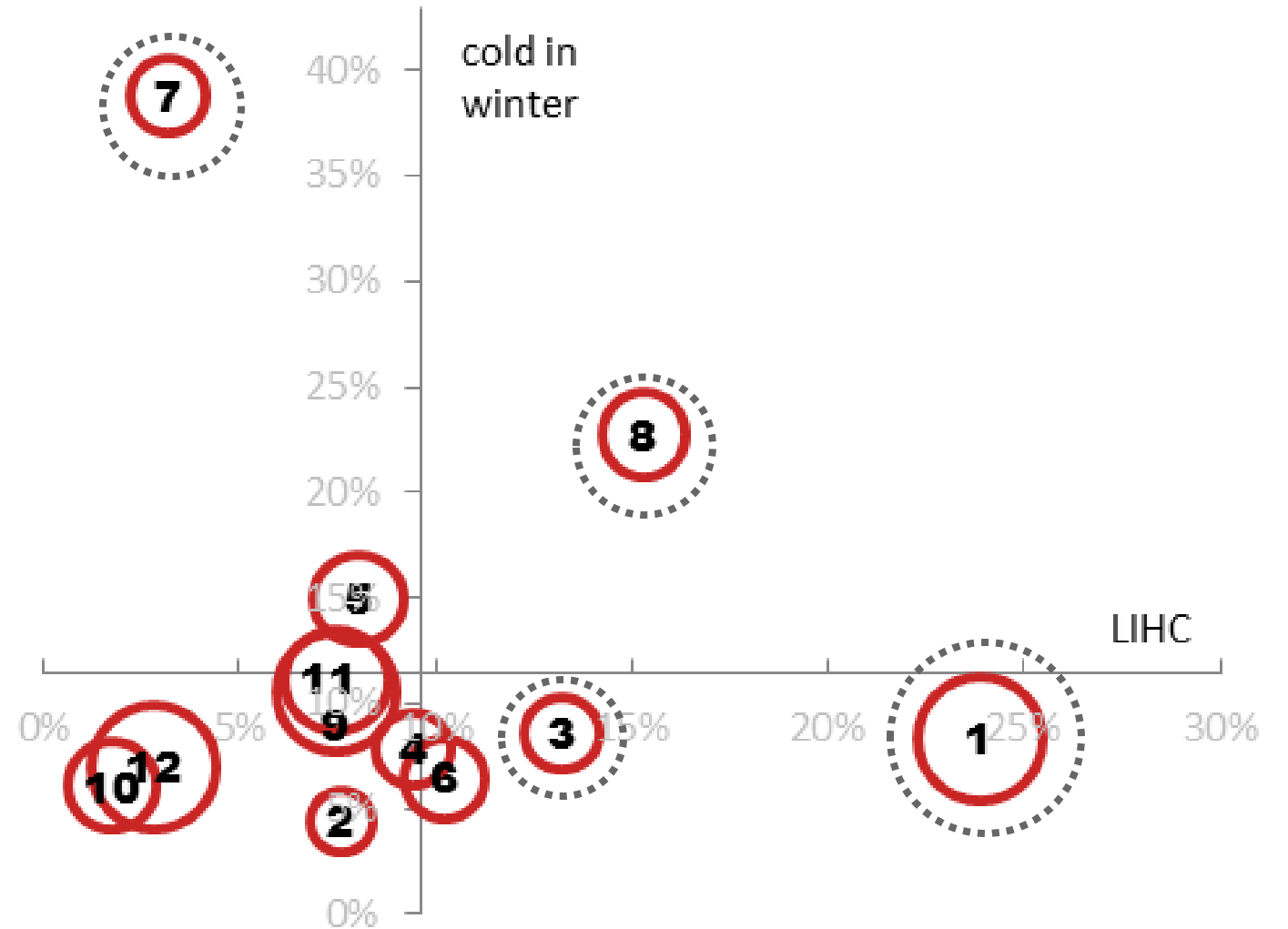
○ Percentage of each type in subjectively poor households

*Note: The axes intersect at the average values for each variable.*

*Source: Own calculations based on the 2014 Polish HBS data.*

# Results

- **type 3** – single elderly persons living in big detached houses in rural areas
- retirees (98%)
- large floor area per person (53 m<sup>2</sup> on average)



○ Percentage of each type in subjectively poor households

*Note: The axes intersect at the average values for each variable.*

*Source: Own calculations based on the 2014 Polish HBS data.*

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