

## Including justice in renovation policies considering the socio-spatial vulnerability to energy poverty

## A Case Study-Mixed Methods (CS-MM) approach

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## Including justice in renovation policies considering the socio-spatial

# vulnerability to energy poverty; a Case Study-Mixed Methods (CS-MM) approach

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### **Abstract**

Driven by climate change and energy crises, an increasing number of households in the European Union are becoming vulnerable to energy poverty. However, current renovation programs fall short in effectively targeting and addressing the needs of vulnerable groups, particularly in underprivileged neighborhoods where low effectiveness rates and resident resistance to renovation measures persist. This exacerbates the risk of social and spatial inequity, calling for an urgent integration of justice considerations in European renovation policies.

To address this challenge, this study proposes a novel case-study mixed methods (CS-MM) approach to include justice in renovation policies, considering the socio-spatial vulnerability to energy poverty. The case of Amsterdam Zuidoost is examined to achieve four main objectives: [1] identify systematic challenges in tackling energy poverty in underprivileged neighborhoods, [2] develop a vulnerability framework encompassing social, economic, energy, and building-related factors, [3] identify and localize energy vulnerable groups, and [4] tailor policy strategies in a multi-stakeholder environment based on the characteristics and needs of the identified vulnerable groups. The findings illustrate how the CS-MM approach can be applied to incorporate justice into renovation policies, informed by local insights on energy poverty.

From a scientific perspective, this study contributes to the existing knowledge by providing insights into the identification of vulnerable groups, the inclusion of justice in renovation policies, and the deployment of a CS-MM approach to address socio-spatial vulnerability to energy poverty. From a societal standpoint, the findings empower local decision-makers to identify vulnerable groups and tailor policies accordingly.

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