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Conceptualization and Practical Strategies for Sufficiency in Buildings: a Systematic Literature Review

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Abstract

To address the need to achieve a net-zero greenhouse gas (GHG) emissions building stock by 2050 in Europe, the concept of sufficiency has gained momentum in recent years. Nevertheless, a comprehensive conceptualization of sufficiency for buildings is still lacking in the scientific literature. This systematic literature review of 54 articles and conference papers analyses the current understanding of the concept of sufficiency by studying its theoretical framework. It examines: firstly, the terminology employed to define sufficiency, alongside the context of the study; secondly, the practical strategies to implement sufficiency in buildings, as presented in the literature; and finally, the existing approaches to assess sufficiency. Results indicate that sufficiency is mostly studied in European countries, and closely associated with the concept of energy use. Three types of conceptualizations emerge: sufficiency as a minimum threshold for human well-being, sufficiency as a maximum threshold for environmental impact, and sufficiency as a safe space defined between these thresholds. The practical strategies vary widely and mostly target modifications to the physical environment to reduce the use of resources such as energy, land, material or water. The most discussed strategies include refurbishing, downsizing or a more resilient urban planning. Other dimensions, such as water or land sufficiency, have received little attention to date. Finally, this study observes that, as most research is conducted in European countries, where overconsumption is a major challenge, the practical strategies are tailored to address the specific issues of these countries.