

The European Renovation Wave: Co-Producing Energy Transitions with Vulnerable Communities

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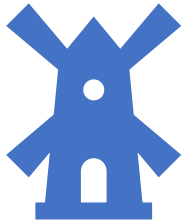
European Academy of Management
University of Florence, Italy

40%



28%

The EU aims to:



Renovate 35 million buildings by 2030

at least **double the annual rate** of energy renovations



Improve energy efficiency

a **60% reduction** in building-related emissions by 2030



Combat energy poverty

With around **40 million Europeans unable to afford adequate heating**, the initiative seeks to **reduce energy bills** and **improve living conditions**, especially for vulnerable populations

UUDISED

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Miks Narvas jäädi ilma unikaalsest renoveerimisvõimalusest? Kas tegu oli hirmu või teadmatusega? (46)

— Linna arhitekt: „Selliseid soodustusi pole isegi kaubanduskeskustes!”

Aasta tagasi esitles **Narva** linnavalitsus nn demokraadi kvartali projekti. Vanalinna viie hruštšovka elanikele (need asuvad äsja remonditud raekoja, uue kolledžihoone ja Stockholmi platsi läheduses) pakuti võimalust osaleda hoonete täielikus renoveerimises. Tasuda tuli vaid 20% – meetme raames, mis sai võimalikuks tänu õiglase ülemineku fondile, pakuti tõeliselt „kuninglikke” tingimusi.



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Anastassia Merimaa
Maalehe veebitoimetaja



30



Hiilgus ja vaesus. Linn soovis uuendada just neid hruštšovkasid – Viru 11, 13, 15, 17 ja 19. Eeldati, et vanalinn muutub kaunimaks ning et Raekoja plats, kolledžihoone ja Stockholmi

FOTO: JEVGENIA PARV | DELFI MEDIA

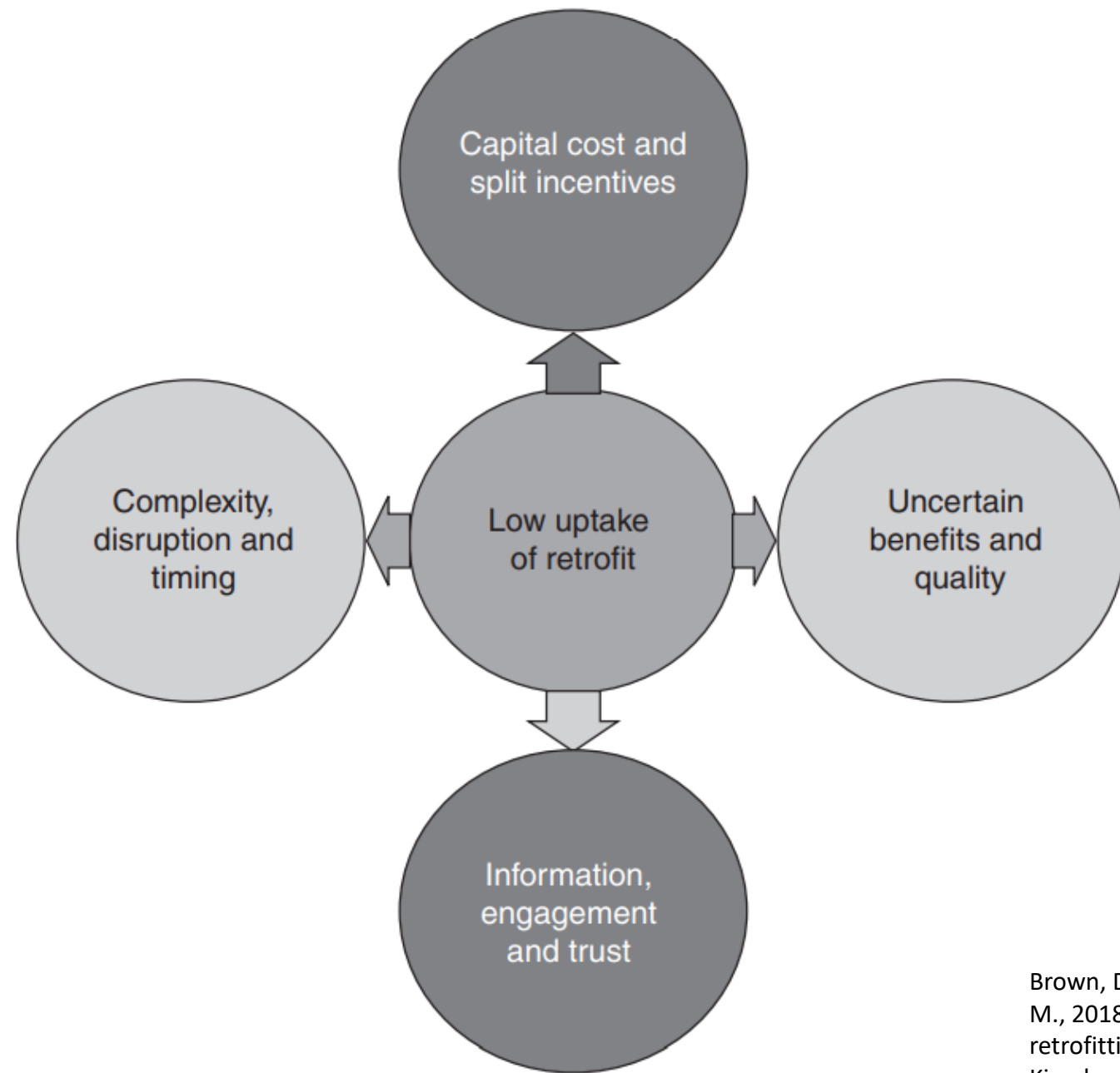


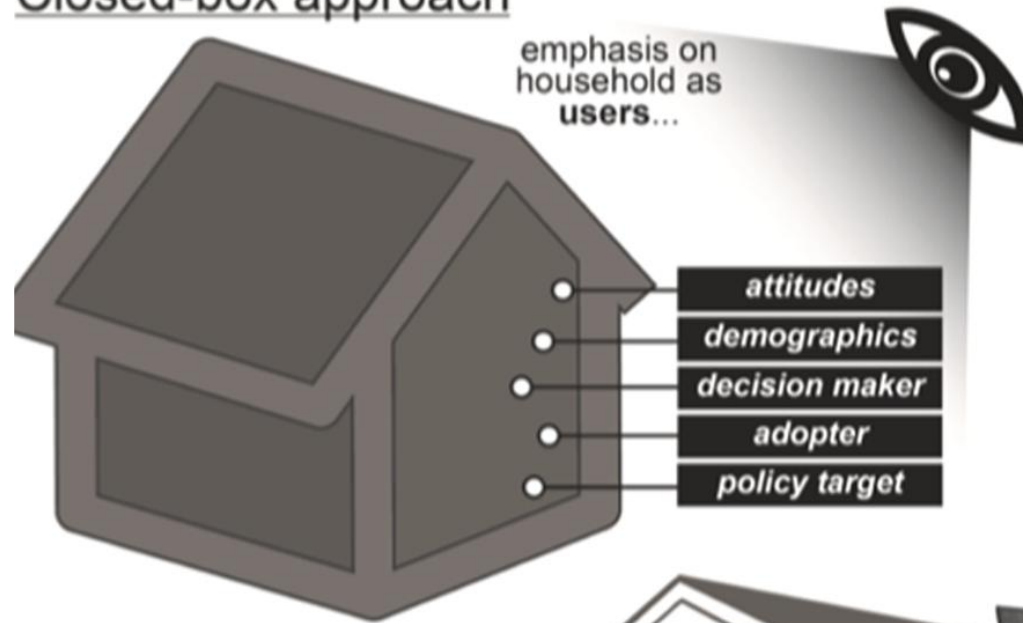
Figure 7.1 Key systemic challenges for driving retrofit uptake.

Brown, D., Kivimaa, P., Rosenow, J. and Martiskainen, M., 2018. Overcoming the systemic challenges of retrofitting residential buildings in the United Kingdom. In: *Transitions in Energy Efficiency and Demand: The Emergence, Diffusion and Impact of Low-Carbon Innovation*.

Renovation wave as a co-production challenge

- The renovation wave is fundamentally based on the ability of residents **to self-organize and develop constructive co-production relationships** with the public and private sector stakeholders.
- As the pressure to renovate amounts, the **conflict between the ‘forced’ transition and self-efficacy** of homeowners becomes increasingly evident.
- The ability to empower vulnerable groups is key both socially and politically.
- Yet, mass-renovation is too often approached as a top-down, ‘rationalized’ transition policy challenge where the lived experience of people gets ignored

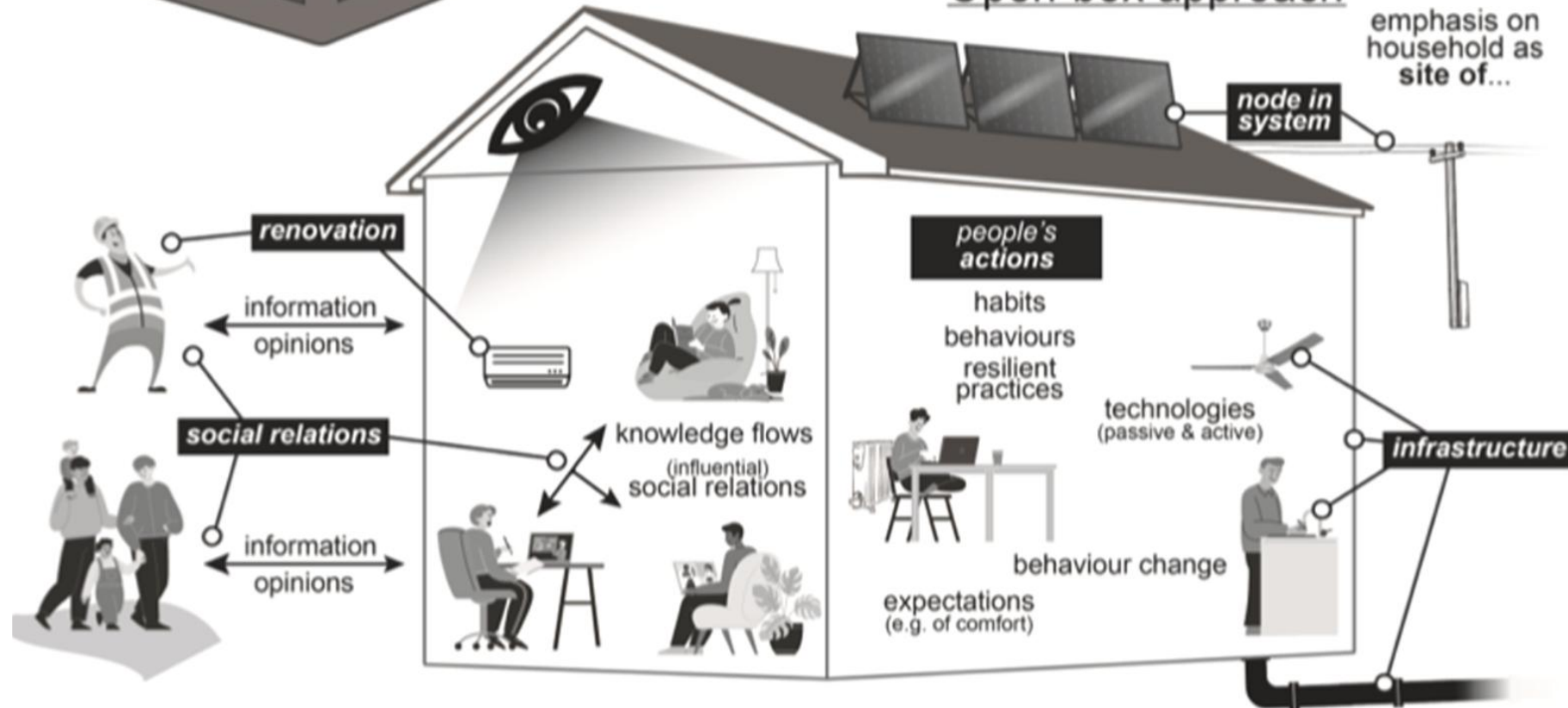
Closed-box approach

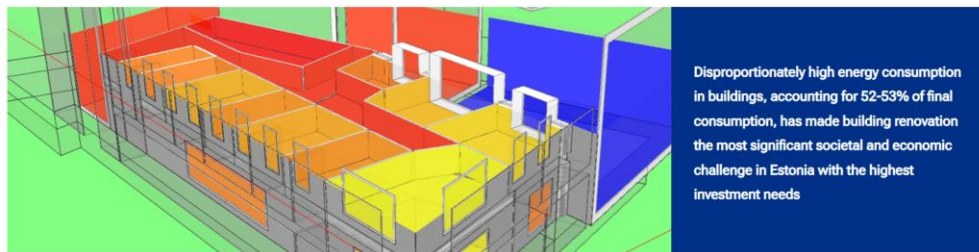


Visualisation of closed-box and open-box conceptualisations of households in sustainability transitions

(Rob Raven et al., 2021, Environmental Innovation and Societal Transitions, <https://doi.org/10.1016/j.eist.2025.100987>).

Open-box approach





Disproportionately high energy consumption in buildings, accounting for 52-53% of final consumption, has made building renovation the most significant societal and economic challenge in Estonia with the highest investment needs

Work Packages

- Zero emission buildings
- Smart and efficient Electric Solutions
- Data Infrastructure and Data-Driven Energy
- Social and Regional Impacts

Energy Efficiency Centre of Excellence

The Energy Efficiency Centre of Excellence (ENER) is a seven-year project (2024-2030) aimed at breaking the rising energy consumption trend and supporting a breakthrough in full renovation of residential buildings. ENER brings together the best expertise in engineering, data science, and social sciences in Estonia and contributes to addressing Estonia's societal and economic challenge of transforming 75% of the existing low-energy-efficiency building stock into emission-free buildings by 2050, maximizing the accompanying benefits and improvements in quality of life.



Eluasemeuuringute uurimisrühm Housing Inequalities research group



Prof. Tiit Tammaru
University of Tartu,
Department of Geography,
Chair of Human Geography

Introduction

The Housing Inequalities research group, led by **Tiit Tammaru**, brings together researchers from various disciplines at the University of Tartu. The group is dedicated to understanding the mechanisms shaping residential segregation and housing inequalities across different welfare and housing regimes. Its primary research areas include residential mobility and how sorting into housing tenures and neighbourhoods is linked to access to broader urban opportunities such as schools, workplaces, and leisure spaces. This research contributes to the evolving discourse on segregation and housing from the longitudinal and activity space-based perspectives, where housing plays a central role in shaping urban opportunities and inequalities. The group has introduced the concept of a "vicious circle of segregation", which examines how housing-related inequalities are generated and perpetuated across generations, being correlated with inequalities in other important activity places, including workplaces, schools, and leisure activities.



Avaliku sektori innovatsiooni uurimisrühm Public Sector Innovation research group



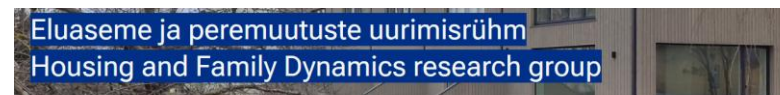
Prof. Veiko Lember
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Governance

Introduction

The Public Sector Innovation (PSI) research stream brings together various researchers from TalTech's Ragnar Nurkse Department of Innovation and Governance. Led by Veiko Lember, the team includes Vasilis Kostakis, Peeter Vihma, Chris Giotitsas, Johanna Vallistu, Marc Kristerson, Karin Krupu and Jinxiao Luo.

Our research uniquely focuses on and combines the theory and practice of:

- public governance (e.g. citizen engagement and co-production; public-private partnerships);
- public sector innovation (e.g. innovation labs; policy operations rooms; digital transformation; experimental policy implementation);
- technology governance (e.g. governance of 'twin transitions')
- innovation policy (e.g. demand-side policies such as public procurement of innovation)
- commons (e.g. energy cooperatives; digital commons)



Eluaseme ja peremuutuste uurimisrühm Housing and Family Dynamics research group



Research Fellow Hannaliis Jaadla
Tallinn University,
School of Governance,
Law and Society

Introduction

The Housing and Family Dynamics (HFD) research group is based on the Estonian Institute for Population Studies of the School of Governance, Law and Society at Tallinn University. The Institute is a leading unit in Estonia in the field of demographic studies that offers a demography program at the doctoral level. The HFD research group conducts research on a wide range of topics related to family dynamics and fertility, including union formation and dissolution, educational and ethnic differences in childbearing and partnership processes, gender roles, effects of family policy measures, etc. Research on family dynamics and fertility is conducted from both country-specific and comparative perspectives, and covers both contemporary and historical developments. Members of the HFD research group have also contributed to research on population ageing (living arrangements of older persons, impact of pension age reforms, material deprivation of older persons and its risk factors). Results of the analyses are regularly published in respected international demography journals (Demography, European Journal of Population, Population Studies, Population Research and Policy Review, Demographic Research, Population, Place, and Space, Spatial Demography, etc.). The HFD research group has been successful in applying for competitive funding from domestic as well as international sources. Members of the research team have been actively involved in various advisory activities with governmental and non-governmental institutions (Ministry of Social Affairs, Committee for Population Issues at Riigikogu, Statistical Office of Estonia).

Research Group Highlights:



Prof. Allan Puur

The HDF research group has made a major contribution to the development of data infrastructure for

Thank you!

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