A survey of private landlords in Karlsruhe and their perception of deep energy retrofit

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Content

- Motivation and introduction
- State of the art
- Concept design and approach
- Selected survey results
- Discussion and conclusion
- Outlook
Motivation and Introduction

- 30% of the in/direct greenhouse gas emissions in Germany are caused by the heat supply of buildings\[^{1,2}\] 

- 70% of the energy consumption in residential buildings is used for space heating and there is a large potential for improvement \[^{1,2}\] 

- In 2050 Germany wants to have a nearly climate neutral building stock, but the building owners must act \[^{1,2}\]  

Ownership structure in Germany

- 54% of the 40.5 million apartments are rented and a total of 15 million are let by “amateur” landlords \[^{8,16}\] 

- 74% of the rented residential building stock was built before thermal and heating system regulations came into force. This is about 10% more than owner-occupied \[^{8,16}\]
How much do we know about private landlords in the residential building stock?

- There are many studies on decision-making of deep energy retrofit (DER)\(^7,17,18\)

- Much of the scientific literature either focuses on owner-occupiers or neglects the point of view of the building owners

- The perception of private landlords in Germany is little known

- Only few survey-based scientific studies of private landlords in Germany exist:

<table>
<thead>
<tr>
<th>Authors</th>
<th>Survey type and sample size</th>
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<tbody>
<tr>
<td>Schätz et al. (^{22})</td>
<td>survey among 1,354 landlords (2005-2006)</td>
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<tr>
<td>Testorf et al. (^{31})</td>
<td>survey among participants of subsidy programs, n=5,546 of which 13.2% were private landlords (2009-2010)</td>
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<tr>
<td>Renz &amp; Hacke (^{24})</td>
<td>interview of 18 private landlords (2016)</td>
</tr>
<tr>
<td>Steven März (^{25})</td>
<td>interview of 18 private landlords (2018)</td>
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Research objective

- Investigation of the perception of deep energy retrofit (DER) of private “amateur” landlords

- In-depth survey of private “amateur” landlords with consideration of real estate market and local context

- Identification of motives and barriers concerning DER

- Recommendations for increasing DER activity within the target group

Approach

- Use of multiple methods: Face2Face interviews, conventional questionnaire, preference experiment

- Survey in a defined area and with target group-specific sampling strategy
Investigation Area: Karlsruhe
Urban Transition Lab 131 (Research project)

- Parts of this contribution originate from this project (ended 2018)
- Oststadt is the lab district (red)
- Mixed use areas with a high share of residential buildings

**District facts:** [8,11]

- Above-average demand-driven real estate market
- Population ~21,000
- More than 10,000 apartments in 1,255 residential buildings
- 83% of the apartments are rented
- 85% of the residential buildings were built before 1978
Survey and approach

- Face2Face interviews,
- **Conventional questionnaire** (2016),
- Preference experiment

The conventional questionnaire comprises:

- A variant of snowball and convenience sampling
- 85 individual complete responses from N ~450
- Online participants quit rate of about 77%

**Topics**

- Motives
- Barriers
- Occasions
- Experiences with DER and information channels

Further content and more detailed results can be read in the proceedings contribution.
Basic data of the respondents

- 70% are older than 55, gender is mixed
- 60% of the respondents do not dedicate any funds to DER
- Concerning investment planning two groups were identified
  - focus on tax-based evaluation of investments
  - focus on amortization assessment
- Concerning information on DER, no direct information channel is used, most chosen channel is technical press/the internet
- For finance and legal advice landlords have specialized information channels with professional advisors
Likert scale question with total 19 items, the 3 highest and lowest approvals are presented

- The ecofriendly attitude of the respondents has limited transferability to decision making behavior of not self-occupied buildings as ecological criteria play a minor role in DER decisions

- DER is not explicitly regarded as a rent increase instrument, but avoiding vacancies has a strong approval amongst a large group, apart from that it is a split field
Barriers

You hesitate or refuse a DER, because...

- Your properties have good energy performance (70% strongly agree, 30% disagree)
- Such a project is generally too cost-intensive (49% agree, 51% disagree)
- You have doubts about the savings effect (47% agree, 53% disagree)
- The protection of historical monuments is an obstacle (18% strongly agree, 82% disagree)
- You fear a move due to an increase in rent (17% strongly agree, 83% disagree)
- You have had negative experience with DER (12% strongly agree, 88% disagree)

Likert scale question with total 20 items, the 3 highest and lowest approvals are presented:

- It seems private landlords overestimate the buildings’ energy performance (based on reply and the analysis of the supplied Energy performance certificates (EPC)-data)
- Barriers are mainly related to doubts about DER effectivity and costs
- Technical implementation, monument protection, rents change and previous experience seem not to pose barriers
Occasions, causes and windows of opportunity

Likert scale question with total 15 items, the 3 highest and lowest approvals are presented:

- Regulation and legal requirements are important triggers of DER
- Maintenance comes on 4th
- The own sense of eco-friendliness and awareness does not correlate with past or planed DER activities or with EPC values
- Synergistic relationship of DER and e.g. reconstruction measures are not associated with each other and are not perceived as window of opportunity
Experiences with DER

- Experiences are mainly neutral or positive and promise to invalidate some of the commonly believed barriers.
- Dealing with the principal-agent dilemma seems to cause negative experiences.
Conclusion

- The importance of considering private landlords is evident
- Many studies assume business-like and total rational behavior of private landlords which cannot be fully backed by the survey
- For organized private landlords in demand-driven rental markets we could conclude:
  - Private landlords are motivated to save energy and convinced of the ecological advantages of DER, but doubt the promised energy savings
  - Building performance is often overestimated
  - The main strategy for investments is conservation of property value and compliance with legal requirements
  - Despite an ecofriendly attitude, ecological criteria have a minor part in the DER decision
  - Financial subsidies are the preferred type of financial incentives
- Sample size is rather small and could be biased
Four areas of policy improvement

- **Economic incentives**
  - private landlords prefer grants more than subsidized loans

- **Markets**
  - Real estate markets are not reflecting the energy performance sufficiently. EPC fail their informative purpose. Adequate access to data about prices, rent levels and energy performance could improve this.

- **Enforcement**
  - Some DER measures are mandatory. However, these requirements are merely enforced. A stricter enforcement would raise awareness, responsibility and place DER higher on the agenda of legal and financial advice.

- **Lack of knowledge and awareness**
  - Better access to DER roadmaps/EPC information could yield significant improvements. A higher focus of campaigns on landlords’ and tenants’ perspectives could raise awareness and mitigate the landlord-tenant dilemma.
Outlook

- Further results and data from the survey will be published
- Our different preference experiments enable modeling individual landlords (n=42)
- Group/cluster judgements can be computed, as well as group/cluster utility/preference functions can be modeled
Acknowledgments

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Thank you.

Q&A

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