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Using financial digital footprints data to estimate the affordability of retrofitting for net zero in Scotland.

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Introduction & Background

The Scottish Government Heat in Buildings Strategy (2021) sets out the government's ambition to achieve net zero greenhouse gas (GHG) emissions from all buildings in Scotland by 2045. Part of this transition requires improving the energy efficiency of 2.5million domestic buildings and the replacement of direct-emissions heating systems with systems that have no direct emissions.

Objectives & Approach

With the total capital cost required to achieve these goals estimated to be in excess of £33bn, the likelihood is that homeowners will meet with significant upfront costs to decarbonise their homes, despite potentially not seeing a significant reduction in heating bills to offset such costs for many years. As 1.6million homes in Scotland are owner-occupied, there is a significant challenge in understanding how affordable it would be for homeowners to shoulder the costs of retrofit.

Relevance to Digital Footprints

To model affordability, Smart Data Foundry has combined estimates of retrofit costs with digital footprints data on people's financial situations. Using consumer financial transaction data for a representative sample of people in Scotland ($n \approx 100,000$), we estimate degrees of 'disposable' income as income that is not fixed to any standing category of expenditure over the course of a year. We then combine these with retrofit cost estimates for different property archetypes from a study commissioned by WWF Scotland. Over a postcode district level, we estimate and categorise affordability distributions over estimated costs, factoring in age and main source of income.

Results

Initial findings indicate that a plurality of individuals would only be able to afford retrofit with grant subsidies over 5 years, and that only 20% would be able to find retrofitting costs easily affordable. Orkney and the Scottish Border regions appear

to have the lowest affordability, suggesting both that individuals in these areas are 'asset-rich, cash-poor', and in properties with the highest average retrofitting costs.

Conclusions & Implications

The implications of this are therefore that the Scottish Government may have to find alternative ways to leverage capital to achieve its targets. Further work is also ongoing to understand consumer behaviour relating to incentivising the spend of 'disposable' income on retrofit, and to better establish the costs of retrofit beyond the WWF Scotland report.

Keywords

Net Zero, Retrofit, Climate, Financial Data, Affordability

