



The housing market impacts of building energy efficiency regulation

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Context

Residential buildings globally...



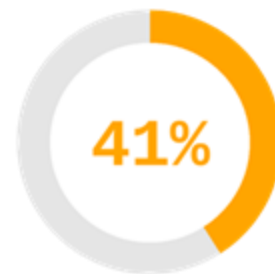
CO2 emissions

(source: IEA, 2023.)



Energy consumption

(source: IEA, 2023.)



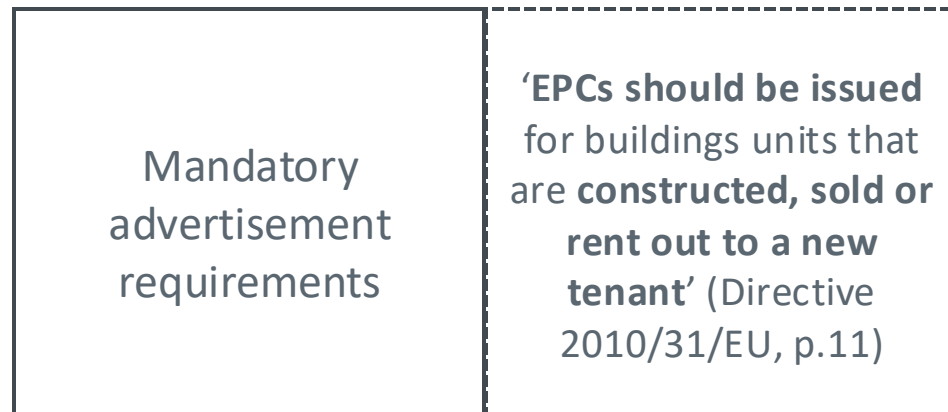
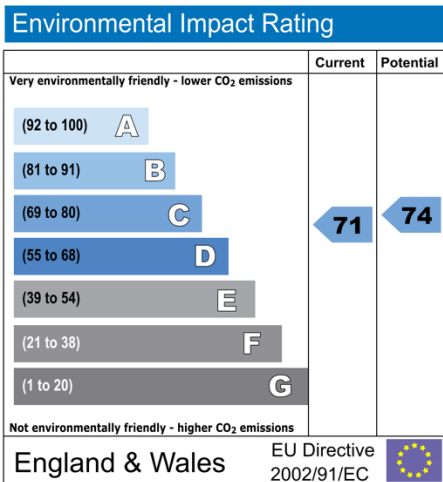
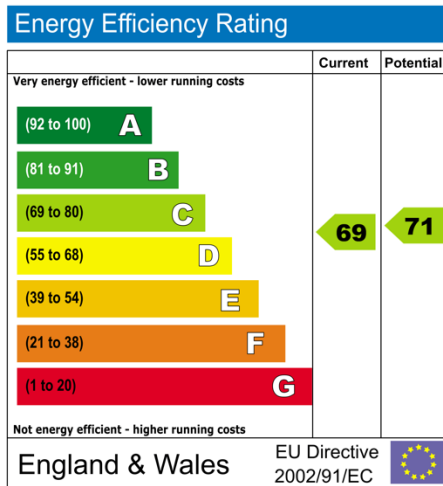
Countries have mandatory 'building energy code'

(source: IEA, 2022.)



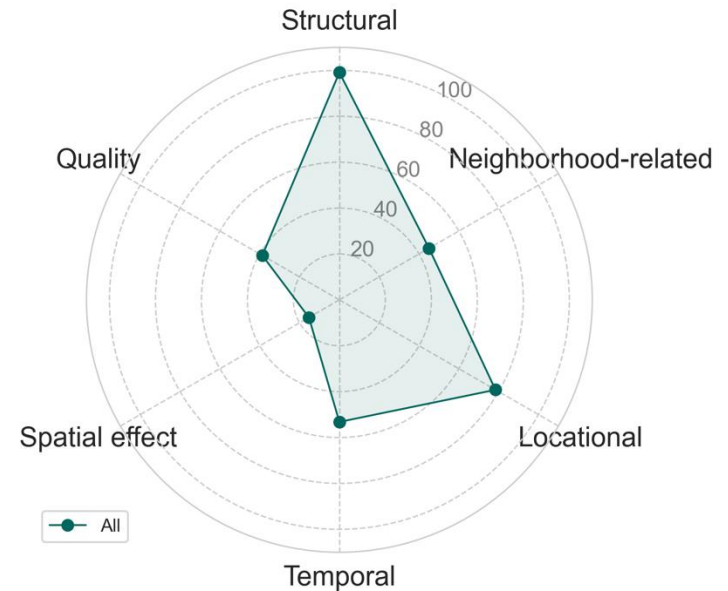
Problem

Market incentive – effective?



Methodology challenge

- Traditional hedonic model
 - Explainability
 - Rely on structures data - Omitted variable bias
- ML/DL
 - Leverage unstructured dataset e.g. images/texts
 - Lack of clear explainability



Method

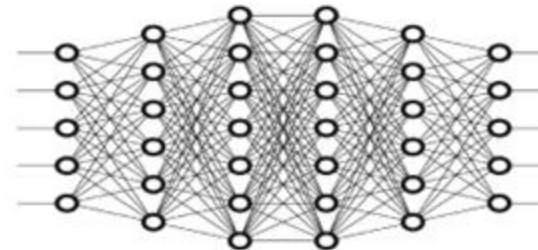
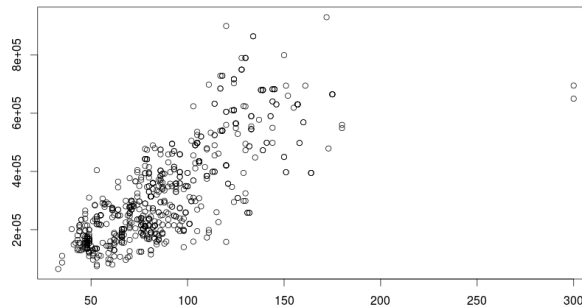
Advancing data



Omitted Variable Bias Esp. 'housing interior quality'



Modelling



Preliminary Results

Dependent variable: log of listing price	
	Coefficient (P-value)
EPC A	0.0388 (0.013)
EPC B	0.0128 (0.000)
EPC C	0.0010 (0.120)
EPC D	-
EPC E	-0.0065 (0.000)
EPC F	-0.0166 (0.000)
EPC G	-0.0536 (0.000)
R-squared	0.803
N	133,224
Housing characteristics	Yes
Neighbourhood characteristics	Yes
Local authority fixed effects	Yes
Year fixed effects	Yes