



Solar Project Planning Outcomes: a Quantitative Analysis of the Role of Community Acceptance

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Background

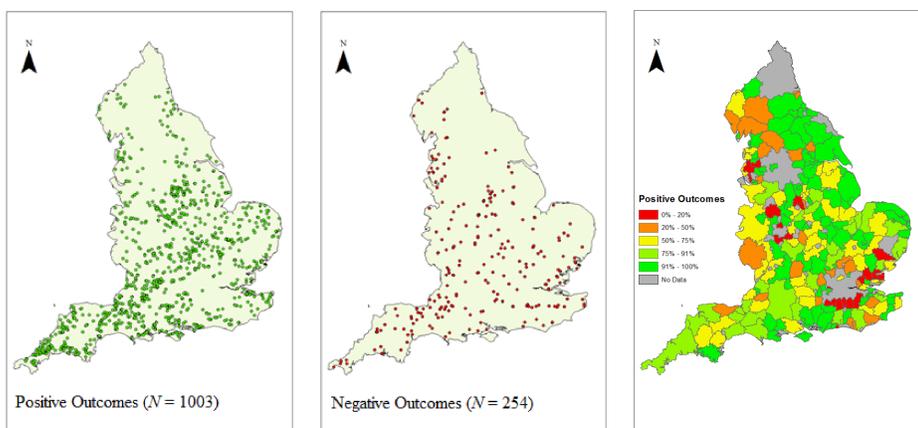
In order to reach climate goals, the shift towards renewable energy is essential. However, despite widespread support for renewable energy, projects still often face strong resistance at the local level due to a lack of community acceptance. This study analyses the role of community acceptance on planning outcomes for solar energy projects in England.

Indicators of Community Acceptance



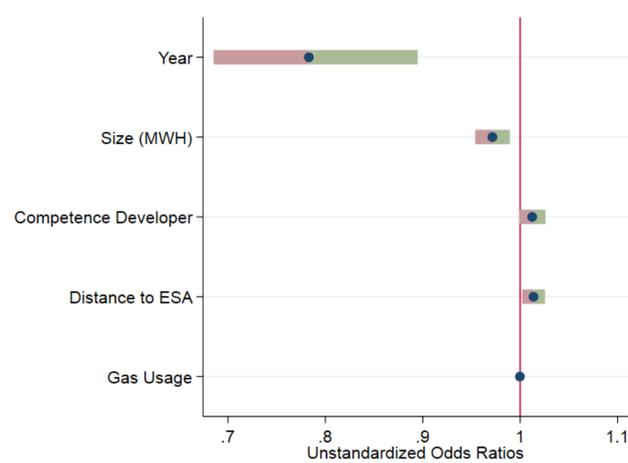
Methods

- Multilevel binary logistic regression to analyse the effect of the indicators of community analysis on planning outcomes.
- Data on planning outcomes obtained from the Renewable Energy Planning Database (REPD) published by the UK government.
- Independent variables calculated based on geospatial data as well as on data supplied in the REPD.
- A total of 1257 cases from 2010-2018 were analysed.



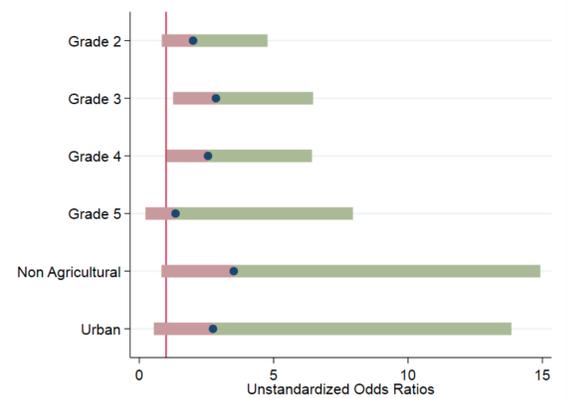
Spatial Distribution of Planning Outcomes for Solar Energy Projects

Results



The bars indicate the odds ratios for a positive planning outcome given a one-unit increase in the independent variables.

- 7 out of a total of 22 independent variables affect the likelihood of a positive planning outcome.
- 16% of the variance around the mean is explained by the model (McKelvey-Zavoina R²).
- 19% of the variance in planning outcomes occurs between Local Authority Districts.



Conclusions

- Factors related to community acceptance appear to be related to planning outcomes for solar energy projects in England.
- Projects developed later in time have a lower likelihood of a positive planning outcome.
- The larger the project, the lower the odds at a positive outcome.
- More experienced developers have higher chances of positive outcomes.
- Projects further away from Environmentally Sensitive Areas have higher odds at a positive outcome.
- Projects developed in Local Authority Districts where gas usage is low have a slightly higher likelihood of a positive planning outcome.
- There are strong regional differences: odds at positive outcomes differ significantly between Local Authority Districts

Recommendations

- To developers: consider community interests, as a lack of community acceptance can complicate implementation.
- To policymakers: develop a policy framework that is supportive of solar energy development nationwide in order to facilitate the shift to renewables.