The Spatial Efficacy of the Levelling Up Initiative in Improving Educational Outcomes: A Study Utilising New Order Construction Awards.

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Background and Motivation:

The Levelling Up initiative aims to reduce spatial inequalities across the UK. The project is motivated to assess the effects that the 'Levelling Up Fund' for infrastructure development could potentially have on educational outcomes across England and Wales. The study uses data from the New Order Construction Award and the 2021 Census for England and Wales to analyse how infrastructure can improve educational outcomes quantitatively at the LSOA and LAD levels. Also, there is a strong focus within the dissertation to assess both the barriers and facilitators of the present Levelling Up initiative.

Data and Methods:

Data Source:
- New Order Construction Awards (2018-2023): to analyse the magnitude of the direct impact that infrastructure development can have on the outcome variable[1].
- 2021 Census for England and Wales: to provide detailed socioeconomic data and educational attainment levels[2].

Methods:
- **Variable Considerations**: All models in the analysis are controlled for the socioeconomic variables: ill health, routine occupation, unemployed, and ethnic minority.
- **Regression Analysis**: Utilising multilevel modelling, fixed-effects modelling (with dummy- -effects), and geographically weighted regression to understand the relationship between infrastructure development and educational outcomes.
- **Spatial Analysis**: Conducted to assess the spatial impact of infrastructure development and other socioeconomic factors on poor educational outcomes.

Limitations:
- The new order awards dataset did not include every LSOA in England and Wales, hence the observable white space in Figure 1.

Key Findings:

1. The primary finding is a consistently negative correlation between infrastructure development and poor educational outcomes. However, the impact of infrastructure is relatively small in magnitude compared to socioeconomic variables.
2. Infrastructure volume should be prioritised over value. The optimal range for infrastructure volume is between 21-30 units, evidencing a 1.6% decrease in poor educational outcomes.
3. At the LSOA level, geographically weighted regression shows that the global decrease for total_project (volume) is -0.0020 and -0.0013 for log_avg_Value (value) on poor educational outcomes.
4. The visualisation of GWR suggested that infrastructure development alone cannot practically reduce poor educational outcomes, particularly in so-called 'educational cold spots' such as Norfolk[3].
5. The empirical evidence presented throughout the project emphasises the potential for the Levelling Up Fund to have a positive, albeit small magnitude, impact on educational outcomes in England and Wales. However, any tangible positive results of devolved governance would be the facilitator; a one-size-fits-all policy would be counter-intuitive and potentially widen spatial educational inequality[4].

Value of the research:

The research project contributes to the building contribution to the literature that indicates the importance of localised policy planning and enforcement. For example, Figure 1 highlights that infrastructure development could significantly impact the West Midlands, Wales and North West. For Levelling Up to resonate profoundly and produce discernible outcomes in education, it is paramount to underscore the salient role of governmental devolution[5].
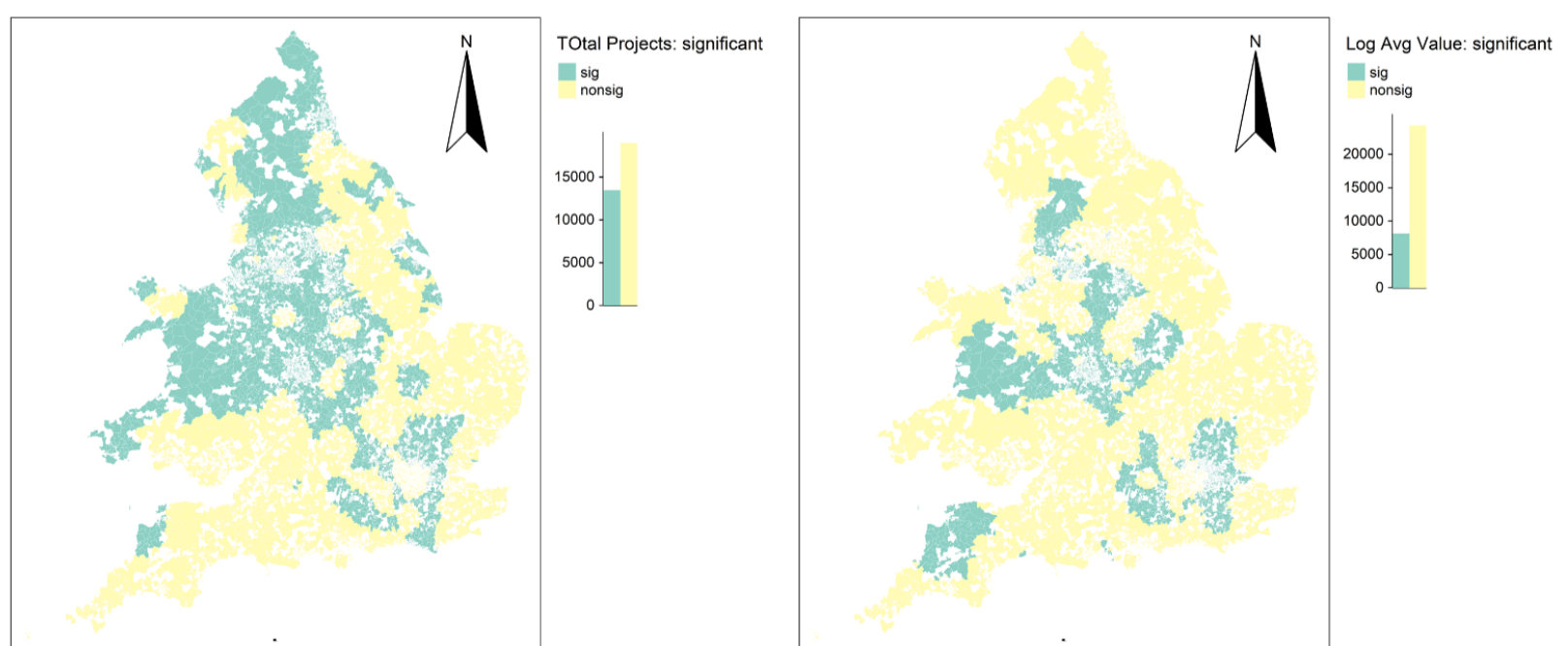

Figure 1: Understanding the Spatial Significance of Infrastructure Development[6]

[1] Barbour ABI., 2023. Construction New Order Data. Unpublished data set, exclusive to "The Spatial Efficacy of the Levelling Up Initiative in Improving Educational Outcomes: A Study Utilising New Order Construction Awards".
[2] Ons.gov.uk., 2023. Census 2021 - Office for National Statistics. Available at: https://www.ons.gov.uk/census (Accessed: June 2023).
[3] Ralston, R., Smith, K., O'Connor, C.H. and Brown, A., 2022. Levelling up the UK: is the government serious about reducing regional inequalities in health?. *bmj*, 377.
[4] Paun, A., Nice, A. and Rycroft, L., 2022. How metro mayors can help level up England. *Institute for Government*, 17.
[5] GWR Statistical Significance Visualisation for Project Volume and Value. Source: Author's Map Adapted from (Barbour ABI; 2023; ons.gov.uk, 2023; ons.gov.uk., 2023a)
[6] McCann, P., 2021. The Fiscal Implications of Levelling Up and UK Governance Devolution. *Productivity Insights Paper*, (008).