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Further Reading: Vega, A., Kilgarriff, P., O'Donoghue, C., & Morrissey, K. (2016). The spatial impact of commuting on income: a spatial microsimulation approach. *Applied Spatial Analysis and Policy*, 1-21.

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Spatial Impact of Commuting on Income: A Spatial Microsimulation Approach

During the Irish economic boom years or the so-called Celtic Tiger period, Ireland experienced an unprecedented rise in commuting distances within extended local labour market areas. These new commuting patterns, driven by a dispersed settlement structure and an uncontrolled property bubble that had developed over the previous five years, resulted in an increasingly uneven spatial distribution of commuting costs across Irish regions. Simultaneously, increased employment in professional and managerial posts in the Greater Dublin Area (GDA) and other Irish cities led to higher salaries in urban areas. This paper is concerned with the overall net effect of these developments, where higher salaries were accepted in exchange for increased levels of commuting and urban sprawl, in particular within the GDA. This research sheds light on the impact that dispersed commuting and settlement patterns had on the spatial distribution of employment income across Ireland. To examine this, data from a spatial microsimulation model was combined with a standard travel demand model and estimated subjective values of travel time.

Research Findings

Results from this research show that while there is a relatively better provision of transport infrastructure in the GDA, the net cost of commuting in this region is significantly higher than in other areas. This is particularly evident in the case of the commuter counties adjacent to Dublin City, which also present some of the highest levels of average income in the country. This paper shows that in the case of the GDA, higher income levels do not compensate for the cost of commuting in these areas. Results show that counties such as Meath and Kildare experience the largest impact of commuting relative to employment income followed by Wicklow and the Dublin City suburbs. Further analysis found that other Irish cities show high net commuting costs as a percentage of income, in particular Galway City and its commuter hinterland. In contrast, the relative impact of commuting on employment income is significantly lower outside the primary commuting belts, particularly smaller towns and rural areas.

Overlying these results are longer-term development processes driven by complex patterns of residential and employment location and the subsequent need for longer commuting distances that are only likely to be improved by the implementation of effective spatial planning policies.

Policy Implications

Combining data obtained from a spatial microsimulation model with a travel demand model allows for a novel analysis of the impact of commuting on employment income at the small area level in Ireland. Understanding these impacts has implications for transport policy and transport infrastructure prioritisation at the national and regional level. The type of analysis presented in this paper and the uneven spatial distribution of the impact of commuting on employment income provide policy makers with additional tools for the design and implementation of future transport infrastructure investment strategies.