

The use of space as decision-making process. Valuation of mobility, residential, and workplace choices in the Munich Metropolitan Region

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How important is a good public transport connection for inhabitants when they decide on a location to live or work? How are locational characteristics valued by people? What does the aggregate of individual choices on these issues tell us about the existing and aspired quality of the provision of public services and amenities, as well as spatial economic structure? Good knowledge about the inherent sets of preferences regarding locational qualities in different regional, temporal and societal contexts is crucial for successful urban development and planning, especially as far as transport is concerned.

In this research paper, I will employ a revealed preference approach with hedonic regression modelling to estimate the importance of locational characteristics such as proximity to public transport to individuals in the Munich Metropolitan Region (MMR), Germany, using a sample of more than 7,000 people who responded to a web-survey regarding their residential and workplace location choices in late 2014 and early 2015. In the survey, people who moved or changed their workplace to or within the MMR in the last three years were asked about their previous and current residential as well as workplace location, in addition to alternative residential locations they considered during their search for a new apartment. Critically, for all locations, we also asked about the rental or purchase price of the object as well as household income and commuting costs. The project has the objective to identify relocation patterns in the Munich Metropolitan region, i.e. whether centralisation, dispersal, or a combined form of both can be observed with respect to residential and workplace locations. Under the premise that at any point in time a spatial equilibrium of land values and

rental prices exists, i.e. that residents and employees “welfare is equalized across space” (Glaeser and Gottlieb 2009, 2) it becomes possible to decompose the price according to the locational characteristics and quantify the value of the single characteristics.

Stated preference approaches tend to deviate from observed choice patterns, since respondents usually need not consider budgetary constraints. A ‘revealed preference’ approach, which requires the collection of more data and the use of statistical-mathematical methods, can yield more accurate results regarding the value individuals ascribe to certain locational characteristics of their residences and workplaces. Only rarely has a revealed preference approach been employed on a larger geographic scale and with a wide set of location characteristics, particularly since comprehensive and interlinked data on location choices over time is rarely available.

The Munich Metropolitan Region has for several decades been one of the most prospering and growing regions in Europe. Strong economic and population growth, together with recently asserted trends “back to the cities” and a diversification of lifestyles (Becker 2005) as well as a more polycentric spatial dynamic (Goebel, Thierstein, and Lüthi 2007) can be assumed to lead to a shift in patterns of preference. Can such an influence be detected in recent data, when compared with other regions and timescales?

This paper is linked to two strands of research in the field of economic geography and planning: (1) location theory with its recent, more dynamic complements, and (2) a more recent strand of literature concerned with the value of public amenities and planning interventions.

The first strand goes back to the works of German economists and geographers von Thünen (1826), Weber (1922) and Christaller (1968 [1933]). Location theory is concerned with the mechanisms behind the distribution of land uses and economic activity across space. (1974 [1959]) later extended the von Thünen model to the built environment, formulating a general theory of location and land use with rents as main mediator. All models have in common that transport costs and distances feature as an important driver behind locational choice. Often, they rely on a monocentric

conception of space as opposed to recent, more polycentric or polycentralising theories (Kinigadner et al. 2015; Bentlage and Thierstein 2009). Nevertheless, they are still applied in human geography and planning due to their undiminished usefulness (Parr 2015b), along calls for their more dynamic, relational (Witlox 2000; Bathelt and Glückler 2003) and systematic (Parr 2015a) adaptation.

On the other hand, there is a recent fruitful recent strand of research – also indebted to location theory – that is considered with the value estimation of amenities to inform public policy and planning. The most known application is in cost-benefit analysis of new transport infrastructure (Gibbons and Machin 2004; Waights 2014), but also for other types of market interventions for the common good. These can encompass heritage conservation, agglomeration effects (Ahlfeldt and Wendland 2013), polycentricism (McDonald and McMillen 1990), provision of schools (Black 1999) or air quality (Chay and Greenstone 2005), all analysed using hedonic pricing methods. This approach still yields many opportunities for more research. The paper aims at linking the two strands and providing a concrete and relevant addition.

The paper also builds on previous as well as ongoing research at our institution on locational preferences (Thierstein et al. 2013; Büttner et al. 2014) as well the effects and conditions of infrastructure, especially airports (Conventz and Thierstein 2015; Wiese and Thierstein 2014; Conventz and Thierstein 2013), inter alia.

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