



Urban form and daily mobility: methodological aspects and empirical study in the case of Bordeaux

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Abstract

The influence of land use on daily mobility patterns can be described by the two dimensions of urban form: the first is quantitative, that is density, and the second is qualitative, that is land use mix. Empirical studies usually add control variables such as sociodemographic characteristics. They suppose that urban form factors and sociodemographic factors have a separate influence on travel patterns.

In this paper, we first show the possibility of a causal relationship between urban form and sociodemographic characteristics. Thus previous results, which suppose that these two kinds of factors are separated, may be biased. It describes systematic relationships between urban form, socio-demographic characteristics, and daily mobility. As a consequence, we have to use specific econometric methods to test the motives of mobility. We develop a new tool: the “typological regressions”. Travel patterns in the metropolitan area of Bordeaux are then analyzed. Results allow to disentangle the interaction between land use patterns and travel behaviours.

Keywords: Compact city; Urban density; Urban form; Mobility; Land use patterns.

1. Introduction

Sustainable development constitutes a normative framework for thinking as much as for action (Hart, 2002), which sets the necessity for a control of the negative externalities of economic growth. As such, the question of daily travel proves to be crucial. The objective of “sustainable mobility” consists in protecting both environment and health without decreasing the need for travel¹. As cities stand as a pertinent scale for the application of sustainable policies (Camagni *et al.*, 1998), reaching the goal of

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¹ This formulation stems from a french national law, the LAURE of 1996, an equivalent of the american Clean Air Act.