



ELSEVIER

Contents lists available at ScienceDirect

Journal of Comparative Economics

journal homepage: www.elsevier.com/locate/jce

Rail access and subjective well-being: Evidence from quality of life surveys

Wenjie Wu

Urban Studies, School of Social and Political Sciences, University of Glasgow, 25 Bute Gardens, Glasgow G12 8RS, UK

ARTICLE INFO

Article history:

Received 18 September 2013

Revised 22 March 2014

Available online xxxx

JEL classification:

D62

H41

P35

Keywords:

Transport infrastructure

Quality of life

Welfare

China

ABSTRACT

Wu, Wenjie—Rail access and subjective well-being: Evidence from quality of life surveys

The development of rail transit infrastructure is a key policy focus—particularly in countries like China, which have experienced fast urbanisation over the past decade. This paper uses unique data and innovative methods to explore the perceived satisfaction impacts of transport improvements at a very detailed geographical scale. The results quantify new evidence on the links between rail access and perceived satisfaction measures with respect to different dimensions of living environment. The empirical evidence suggests that rail access is significantly valued by households and that these subjective valuations are not distributed evenly across space or social groups. The results also reinforce the impression that changes in perceived satisfaction measures might be reflected in changes in housing demand so in some way may be capitalized into local real estate markets. *Journal of Comparative Economics* xxx (xx) (2014) xxx–xxx. Urban Studies, School of Social and Political Sciences, University of Glasgow, 25 Bute Gardens, Glasgow G12 8RS, UK.

© 2014 Association for Comparative Economic Studies Published by Elsevier Inc. All rights reserved.

1. Introduction

The economic effects of transport infrastructure are substantial and wide-ranging (Baum-Snow, 2007; Luo et al., 2007; Wu et al., 2009; Duranton and Turner, 2012; Gibbons et al., 2012). Many countries are implementing transport improvement policies to increase poor accessibility conditions. But for emerging economies with rapid socio-economic transitions, little is known about the subjective wellbeing effects of new rail infrastructure within cities.

This paper provides direct evidence on how the configurations of transport improvements have affected residents' perceived satisfaction (often loosely termed happiness)¹ in a large Chinese city (rather than looking at house price or other economic outcomes). To conduct the investigation, this study implements a credible research design that defines the *treatment* as places that have experienced effective station-distance reductions due to the building of new rail stations. Although treated places that are located near new stations are likely to differ in both observable and unobservable ways from those that do not, these differences can be minimized by focusing on locations very close to stations. Thus, a difference-in-difference (DiD) framework is the preferred approach to obtain more reliable impacts of changes in rail access.

E-mail address: Wenjie.Wu@glasgow.ac.uk

¹ As suggested by McGillivray and Clarke (2006), happiness and satisfaction can be used interchangeably with wellbeing without explicitly discussing about their theoretical differences.

The results suggest that new rail transit infrastructure tends to significantly increase residents' happiness about their overall living environment and such impacts are not distributed evenly across different dimensions of the living environment. To further substantiate the empirical findings, and for comparison with the economic literature that values rail access through real estate markets, this study goes on to link happiness measures to land prices prevailing in the same geographical area, and explores whether happiness measures are capitalized into prices. The results provide suggestive support for this argument.

This study contributes to the literature in several important ways. First, it adds to the work on perceived assessments for improvements in transport infrastructure. Despite the central role of subjective wellbeing in theoretical models of individual's welfare (Layard, 2006; Adler and Posner, 2008), the empirical literature of perceived happiness consequences of transport improvements remains a relatively unexplored field in economics. It has instead emphasized the benefits of rail access by using revealed preference techniques—like the hedonic valuation approach (Cheshire and Sheppard, 1995; Bowes and Ihlanfeldt, 2001; McMillen and McDonald, 2004; Gibbons and Machin, 2005; Zheng and Kahn, 2008; Wu et al., 2014). However, one potential concern is that one cannot separately identify the direct and indirect benefits associated with changes in rail access. Whilst it is true that property price outcomes matter, there may be wider aspects of socio-psychological developments that are at least as important as property price premiums in evaluating local public goods improvements.

Only a handful of papers have taken steps to separate out the relationship between local public goods improvements and subjective wellbeing based on survey data. Luechinger (2009) finds the negative effect of air pollution on life satisfaction based on individual survey data in Germany. Cornaglia and Leigh (2011) use an area panel data from Australia to estimate the direct impact of changes in crimes on mental wellbeing of resident non-victims. They find that crime has a negative impact on people's mental wellbeing at the local area level. Gibbons and Silva (2011) find a strong impact of school quality, measured by test scores, on parents' satisfaction about education effectiveness based on the longitudinal survey of young people in England. As a complementary inquiry, this paper relies on variations in station-to-residence distances due to the opening of new rail transit lines to estimate the effects of transport improvements on residents' happiness dynamics at the local area level.

Finally, this work is also related to the large literature dealing with the welfare impacts of local public goods improvements. By measuring the marginal utility of income and the marginal utility of local amenities, recent studies provide convincing evidence that it is possible to evaluate subjective welfare benefits of local public goods improvements based on reported survey data. Oswald and Wu (2010) summarised and critiqued this line of research. Recent excellent examples at least include noise (van Praag and Baarsma, 2005; Weinhold, 2012), terrorism (Frey et al., 2009) and urban slum schemes (Takeuchi et al., 2008). In a similar vein, this study contributes to the literature by quantifying the average and distributional welfare impacts of the transport improvement programme.

The paper is structured as follows. Section 2 explains the theoretical framework. Section 3 discusses the econometric model. Section 4 describes the institutional context and the data setup. Section 5 presents the results and Section 6 concludes.

2. Theoretical framework

Under the standard 'hedonic' assumptions, housing prices serve as a summary measure to track household welfare, and any shift in the desirability of a local area—such as changes in rail access—can be reflected in equilibrium housing prices.² Nevertheless, some amenities associated with local public goods improvements are invisible and may not be fully reflected from housing values though they can be observed by households' perceived living experiences. For example, if housing prices fully compensated utility differences across amenity sets, in theory economists should not see differences in happiness (or subjective wellbeing) caused by variations in rail access across homeowners. However, many frictions, informational asymmetry, and other transactions costs in fact likely do lead to residual variations in happiness.

Assuming that happiness can serve as a valid approximation for households' subjective wellbeing, it offers one alternative way to evaluate local public goods improvements (Luechinger, 2009). The simplified theoretical model can be set up as follows:

$$SWB_{ij} = F(A_{ij}, I_j, Z_{ij}) \quad (1)$$

where the welfare of individual i in terms of subjective wellbeing (SWB) living in area j depends on rail access A_j , amenities Z_j , and income (I_j). Each individual i has some idiosyncratic preference for residential locations, which is independently and identically distributed across households and assumed to possess a continuous multivariate distribution with mean zero.

For example, consider a policy shock stemming from the transport improvement programme without increasing the living cost of residents in their residential locations. This policy innovation can be assumed as a marginal improvement in urban productivity through increasing residents' quality of life. If this is the case, this will help to increase wages in both near and far locations relative to stations. Without heterogeneity in location preferences, all individuals will locate in the community that offers the maximum subjective wellbeing of amenities. With heterogeneity in tastes, the completion of the programme thus creates a positive externality for residents receiving effective station-distance reductions through, for example, better commuting and living convenience. Taking the derivative of residents' welfare with respect to the policy shock associated with the transport improvement programme yields the marginal willingness to pay (MWTP) expression, if one holds wellbeing constant (setting $dSWB = 0$):

² See the classic exposition in Rosen (1974). See a recent survey in Busso et al. (2013).

Download English Version:

<https://daneshyari.com/en/article/5092175>

Download Persian Version:

<https://daneshyari.com/article/5092175>

[Daneshyari.com](https://daneshyari.com)