Available online at www.sciencedirect.com
ScienceDirect
Journal of Housing Economics 17 (2008) 34–64
JOURNAL OF HOUSING ECONOMICS
www.elsevier.com/locate/jhe

What are public services worth, and to whom? Non-parametric estimation of capitalization in Pune

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Received 26 June 2006
Available online 30 August 2007

Abstract

The availability and quality of basic public services are important determinants of urban quality of life. In many cities, rapid population growth and fiscal constraints are limiting the extent to which urban governments can keep up with increasing demand for these services. It therefore becomes important to prioritize provision of those services to best reflect local demand. We present a strategy to estimate the demand for public services, which is sensitive to heterogeneity in preferences across types of households, and the non-parametric estimation addresses problems arising from functional form restrictions. Using data from Pune, India, we estimate the demand for public services, as represented by the marginal change in the self-assessed monthly rental price of dwellings from the services. We find that the value of publicly-provided services accruing to the poor is greater than that going to wealthier households, and even untargeted across-the-board investment in specific services can be progressive.

JEL classification: H40; R21

Keywords: Public services; Hedonic models; Non-parametric estimation; India

1. Introduction

1.1. What are public services worth?

The provision of public goods and services is the major function of governments, and governments have traditionally been the major providers and financiers of services.

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1051-1377/$ - see front matter © 2008 Published by Elsevier Inc.
doi:10.1016/j.jhe.2007.07.001

Governments, particularly in developing countries are facing increased demand for services and greater responsibilities in the face of more rising financial constraints. This compels policymakers to set priorities, and to enhance the efficiency of service delivery. The World Development Report of 2004 (World Bank, 2004) focused on the efficiency and management of public service delivery, emphasizing the importance of accountability and outcomes. That report provided new insights on the supply side; that is, how governments can improve service delivery. The demand side however has received less attention. One of main objectives in this paper is to examine the demand for services—the motivation comes from two disparate fields: first, the estimation of explicit reduced-form demand functions or demand systems, in which the quantity consumed is determined by prices and incomes; second, the work on capitalization and Hedonic estimation of house prices.

We use a variant of the Hedonic method to estimate the private returns to public services. That is, we estimate the change in house prices resulting from the provision of selected public services. This is implicitly a measure of the household's own subjective estimate of the value of public services. This paper focuses exclusively on the *private* value of public services.[1] The services that we examine here are those that are important for improving a household's quality of life. These include access to piped water supply and sanitation, solid waste management, basic transport services, education, and crime prevention. Although the private willingness to pay may be an underestimate of the social benefits of improved service delivery,[2] we believe that there will be many cases where the level of public service delivery is inadequate to meet even the *private* valuation of the benefits of improvements. Households may be willing to pay for improvements, but for a variety of reasons (coordination failure on both the demand and supply sides, institutional constraints), neither the public nor private sectors have risen to meet the demand.

1.2. To whom?

It is well accepted that the distribution of public services is inequitable. The 2004 World Development Report reports that the poorest fifth of the population generally receives less than a fifth of public service expenditures, while the richest fifth receives more than one fifth of expenditure (World Bank, 2004). In this view, the distribution of public services is inequitable because the value of public services provided to the wealthy is greater than the value of services provided to the poor. This claim is unarguable—if a public goal is to provide education, it is difficult to claim *a priori* that educating the wealthy is more expensive than educating the poor, to the same standard. But this view of distribution conflicts with a slightly different conception, in which distribution is defined relative to a particular index. This leads to the measurement of the *concentration* of the value of services at various points of (e.g.,) the income distribution; and distribution of a good or service is considered progressive if it is more equitable than the prevailing distribution of income.

In this paper, we empirically assess the value of public services and apply this to examine demand for public services in the Indian city of Pune. While the empirical application focuses on household data collected for Pune, the estimation strategy outlined in the paper has broader applicability and can be used to examine similar issues across cities.

[1] We can't estimate the public value—the externalities—explicitly.

[2] Availability of these services are likely to generate significant positive externalities.