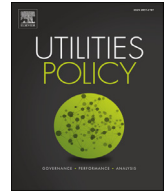




Contents lists available at ScienceDirect

Utilities Policy

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

Delivering basic infrastructure services to the urban poor: a meta-analysis of the effectiveness of bottom-up approaches

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ARTICLE INFO

Article history:

Received 12 June 2015

Received in revised form

10 January 2017

Accepted 10 January 2017

Available online xxx

Keywords:

Basic infrastructure services

Urban slums

Participation

Tenure security

ABSTRACT

In the provision of basic infrastructure services to the urban poor, limited rigorous evidence on the most effective service delivery approaches is available. This meta-analysis synthesises the evidence on the effectiveness of bottom-up approaches that is characterized by the strong involvement of alternate service providers such as NGO's and CBO's in improving access to electricity, water supply, and sanitation services for the urban poor. Although bottom-up approaches are espoused, we find that they do not have a statistically significant effect. This trend was consistent for all dimensions of access: connectivity, affordability, adequacy, and effort and time. However, our findings also show that bottom-up approaches may be more effective in the water and sanitation sectors than in the electricity sector. When bottom-up approaches involve active participation from the community, the results are significantly positive. Our study suggests that innovations to bottom-up approaches that facilitate active community participation can be an effective way to increase access to basic services among the urban poor.

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1. Introduction

Providing access to basic infrastructure services such as water, sanitation, and electricity to the urban poor in Low and Middle Income Countries (LMICs) poses a major challenge to policy makers. The overall progress made on achieving the targets set for providing basic services to slums has not been enough to match the expansion of informal settlements in developing countries. Close to 828 million or 33 percent of the urban population in developing countries reside in slums without access to basic services (UN-Habitat, 2012). Though the international community had responded to the challenge with an increased commitment for Official Development Assistance (ODA) to the poorest countries (OECD, 2013), much remained to be achieved. In sanitation, for example, 2.5 billion people still lacked access to toilets and latrines (MDG, 2013). Unprecedented growth in slums, poor urban planning, and supply-side challenges widened the gap between the demand and supply of basic infrastructure services (Bakker, 2007).

Perspectives on access to basic services have expanded over time from state-led initiatives to include market-based, private sector-oriented, and user-participative approaches (Dagdeviren

and Robertson, 2011). Traditionally, government agencies were vested with responsibility for providing universal access to services such as water, sanitation, and electricity. However, governments lacked the financial resources, the institutional capacity, and often the political will required to extend coverage of basic services to the slum settlements (Brooke and Smith, 2001). The state-owned utilities, which were the main providers of infrastructure services in developing countries, were characterized by high costs and poor performance. In order to increase efficiency and improve performance, several governments implemented a program of reform and restructuring of their utilities from the mid-1990's (Kessides, 2004; Clifton et al., 2011).

While these reforms may have served to bring about overall fiscal discipline and managerial efficiency, they often did not include an institutional mechanism to reinforce the responsibility of the state to provide basic services to slums and low-income groups (Brooke and Smith, 2001). This had resulted in the emergence of alternate service providers led by non-government organizations (NGOs), community-based organizations (CBOs), and other small-scale service providers to fill the gap in basic infrastructure services in urban slums (Nijman, 2008; Ibem, 2009). In tandem, some state agencies, having understood their limitations in being able to service slums, started orchestrating the involvement of these alternate service providers (Dagdeviren and Robertson, 2011; Nijman, 2008; Brooke and Smith, 2001;

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UNCTAD, 2008; and Baud and Dhanalakshmi, 2006). Formal partnership arrangements among governments, communities, and service providers have been seen as a practical solution to address the problems of access to basic services in slums (Ibem, 2009).

1.1. Dimensions of service delivery

Three main players are involved in the provision of basic services to the urban poor: the state, the private sector, and the voluntary sector. The extent of involvement of each of the players in the slums is influenced by economic, social, and political factors. Although the government once was the main provider of basic services in several countries, a brief look into the history of reforms suggests that in recent years various forms of private sector participation has been put in place (Kessides, 2004; Clifton et al., 2011). Whilst there have been cases of successful infrastructure reform through privatisation, under-investment in infrastructure in developing countries remains a concern (UNCTAD, 2008; Dagdeviren and Robertson, 2011). Devkar et al. (2013) in their systematic review found that privatisation has had varying effects on access to basic services by the poor. They claim that the involvement of private sector does not improve access to the poor unless specifically supported with targeted investment programs and different forms of assistance from the public sector. Sector-wise differences in impact are also relevant; reforms in the electricity sector have led to expanded coverage across the urban populace, including the urban poor (Brooke and Smith, 2001) whereas the water and sanitation sectors remain neglected (Otiso, 2003).

The inadequate provision of infrastructure by the government has led to the emergence of small-scale providers who attempt to fill the infrastructure gap based on local knowledge and innovative business practices (Kjellén and McGranahan, 2006). Outside of the formal utility system in developing countries, several private, small-scale service providers are actively involved in filling the infrastructure service gap (Nijman, 2008).

Small-scale providers include water vendors, local community groups, and NGOs. Their role in ensuring access to basic services has gained prominence in recent years. Multilateral institutions such as the World Bank, UN-Habitat, and DFID have recognised the need to include the small-scale suppliers in the supply chain by providing them with formal recognition as well as regulatory and policy adjustments (Mundial, 2004; UN-Habitat, 2003; Kjellén and McGranahan, 2006). UN-Habitat went a step further to recommend community-based water-supply schemes for low-income peri-urban areas (UN-Habitat, 2003). Strengths attributed to these small-scale providers include the local knowledge that helped to tailor-make service delivery in slums facing constraints such as tenure security, poor layouts, and low affordability (USAID, 2004; Burra et al., 2003; Weitz and Franceys, 2002). Although small-scale operators are recognised as important service providers in informal settlements, they often function illegally and take considerable risk in providing services to the urban poor (Dagdeviren and Robertson, 2011).

The nature of service and the infrastructure network required for service delivery also determines the type of service provider and the service delivery approach in slums. For instance, the electricity sector exemplifies a service that required centralised planning and implementation (Manzetti and Rufin, 2006; Scott et al., 2005, Shrestha et al., 2008). While provision of water follows a networked approach similar to that of electricity, government agencies have only been partially successful in improving access to water in slums (Hossain, 2012; Connors, 2005; Ghafur, 2000). Some of the pitfalls of the top-down approach in water sector are attributed to the lack of stimuli to make progress in addressing poor service delivery, lack of legal mandates and financial resources for network

expansion in informal slums, and the lack of knowledge required to overcome the challenges of cost-recovery in slums (Hossain, 2012; Connors, 2005; Ghafur, 2000). Water supply also lends itself to the implementation of decentralized solutions, such as wells.

Sanitation in slums is even worse when compared to that of electricity and water due to the failure of government service providers in terms of planning, design and construction, and the lack of maintenance (Bapat and Agarwal, 2003; Burra et al., 2003; Hobson, 2000). Few authors conclude that the top-down service delivery in sanitation has resulted in the construction of community or public toilets that are neither adequate nor well maintained in most developing countries (Ghafur, 2000; Roma and Jeffrey, 2011).

Apart from infrastructure requirements, an important aspect that affected service delivery is the legal status of slum settlements. Scott et al. (2005) state that the extent to which urban slums are provided connections hinged on the legal status of the slum settlement. Informal slums that had no legal status have lesser access to services when compared to formal slums that enjoy de jure tenure security (Chandrasekhar, 2005).

A factor that distinguishes the government providers from the small-scale providers is the extent of the involvement of the slum community and its inclusivity in formulating specific strategies to improve living conditions. There exists a spectrum of approaches that not only involve varying levels of inclusivity but also different forms of organisation that participate in the planning and delivery of services. Participation by different stakeholders, such as community residents, government officials, NGOs and CBOs, determine whether the approach is top-down or bottom-up. Literature on slum up gradation and slum resettlements show that providers in none of the three service sector can single-handedly meet the growing needs of the urban poor (Otiso, 2003). Therefore, there is an urgent need to understand the results of the different approaches to service delivery in urban slums in order to assess the efficacy of the various interventions implemented so far and to design appropriate interventions and policy frameworks based on these observations (Brooke and Smith, 2001).

1.2. Focus and structure of the paper

The gap in evidence-based research in basic services delivery in urban slums has also impacted policy-making. Despite several initiatives, there is limited evidence regarding the best choice of context-specific delivery models for programming (DFID, 2012). UNCHS (2006) also noted that there are very few studies that demonstrate the extent to which local communities have been involved in the provision of infrastructure in slums (UNCHS, 2006). Although studies such as the one done by Bel et al. (2010) use meta-regression analysis to provide empirical evidence on the impact of privatisation on the cost of local municipal services, such as water supply and solid waste management, the study provides limited evidence on the specific factors and context that improve access. The objective of this paper is to analyse the effectiveness of involving alternate service providers in the provision of basic infrastructure services for slums and low-income settlements. While various city or region specific studies have analysed the impact of alternate service providers, a holistic perspective on the effectiveness of alternate service providers has been missing. We attempt to provide such a perspective by synthesizing the evidence from different studies using meta-analysis techniques.

The rest of this article is organized as follows. In Section 2 we describe the key concepts, methodology, and data. Section 3 presents the results of the meta-analysis and discusses the findings. Summary and implications for policy are discussed in Section 4.

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