



# Planning for food secure cities: Measuring the influence of infrastructure and income on household food security in Southern African cities



Bruce Frayne<sup>a</sup>, Cameron McCordic<sup>b,\*</sup>

<sup>a</sup> School of Environment, Enterprise, and Development, University of Waterloo, 200 University Avenue West, Waterloo, ON N2L 3G1, Canada

<sup>b</sup> Department of Environment and Resource Studies, University of Waterloo, 200 University Avenue West, Waterloo, ON N2L 3G1, Canada

## ARTICLE INFO

### Article history:

Received 2 September 2014

Received in revised form 19 April 2015

Accepted 25 June 2015

### Keywords:

Urban  
Food security  
Poverty  
HFIAS  
MAHFP  
LPI

## ABSTRACT

This paper presents correlation and regression analyses designed to assess the respective relationships between the Household Food Insecure Access Scale/Prevalence (HFIAS/HFIAP) (as a measure of food access), the Months of Adequate Household Food Provisioning (MAHFP) (as a measure of food access stability) and (1) the Lived Poverty Index (LPI) (as an infrastructure access measure) and (2) household income. The data is drawn from a survey of 6453 households from 11 Southern African cities. The findings indicate that infrastructure access significantly predicted HFIAP and MAHFP scores. The regression analyses demonstrated that households with inconsistent or no access to a cash income, cooking fuel, medical care, electricity, or water had 11 times greater odds of being categorized as food insecure in the HFIAP and 8.5 times greater odds of having less than 12 months of adequate food provisioning in the last year. Household income alone does not sufficiently account for these relationships. The correlation analyses demonstrate a strong association between all the LPI subscales and household food access. These results clarify the differential impact of social and physical infrastructure on household food security and demonstrate that the prevailing conditions of an urban environment may better explain (and predict) urban household food security than household income alone. This investigation emphasizes the central role that urban planning and development can play in reducing food insecurity in poor urban neighborhoods.

© 2015 Published by Elsevier Ltd.

## 1. Introduction

Urban food security is now recognized as a major development dynamic in rapidly growing cities of the global south (Tacoli et al., 2013; FAO, 2012; Crush et al., 2012; Sonnino, 2009; Krausmann et al., 2009; Steel, 2008). While urban environments have been associated with economies of scale and improved wellbeing, rapid urbanization is also responsible for rising poverty, increases in population density, escalating land costs and informal living and working conditions (Parnell and Pieterse, 2014; Sassen, 2012; Glaeser, 2011; Saunders, 2011; Yu et al., 2010; Pugh, 2000; Beall and Fox, 2009; Ruel et al., 1999). In many cities and towns in the global south, at least half the population lives below the poverty line (Ravallion, 2007; UN-Habitat, 2008). These communities typically live under conditions of extreme economic hardship and are often the most vulnerable to food insecurity (Frayne et al., 2010). However, while inadequate and unreliable incomes may well be

a cause of food insecurity, Tacoli argues that “inadequate housing and basic infrastructure and limited access to services contribute to levels of malnutrition and food insecurity that are often as high if not higher than in rural areas” (Tacoli et al., 2013: iv).

It is in this context of urban informality and economic marginality that this paper examines the extent to which infrastructure and income determine food insecurity at the household level. This paper is based on the baseline survey conducted by the African Urban Food Security Network (AFSUN) in 11 cities in nine countries in Southern Africa. The survey sampled 6453 households from poorer neighborhoods in these cities. The analysis demonstrates that the limited availability of infrastructure does impact household food security negatively; conversely, planning for and investing in physical and social infrastructure in poor urban communities may be an important strategy for improving household food security. This conclusion speaks clearly to the view that food supply and availability are not the primary food security challenges in urban areas. Rather, the challenge is about access to food and the ability of households to store and use food effectively – these conditions are ultimately about access to infrastructure and not about food production (Crush et al., 2012). The research

\* Corresponding author.

E-mail addresses: [bfrayne@uwaterloo.ca](mailto:bfrayne@uwaterloo.ca) (B. Frayne), [c2mccord@uwaterloo.ca](mailto:c2mccord@uwaterloo.ca) (C. McCordic).

objective of this paper is to empirically demonstrate the relationship (in terms of association and likelihood) between *household infrastructure access* and *household food security* among poor urban households in Southern Africa.

## 2. Literature review

In her former role as the Executive Director of UN-Habitat, Anna Tibaijuka writes in the UNEP publication *Our Planet* that ‘while it may be difficult to overcome relative poverty, it is perfectly possible to ensure that the poor are provided with adequate shelter and basic services. The history of cities in the developed world proves the point’ (2005: 12). This apparent causative association between infrastructure and development is echoed elsewhere in the literature (Turok, 2014; Mitlin and Satterthwaite, 2013; Pieterse and Simone, 2013; UN-Habitat, 2011; Glaeser, 2011; Beall and Fox, 2009; World Bank, 2009). Infrastructure is viewed as a hallmark of urban development, yet the towns and cities of the global south have not been able to meet the demand for infrastructure arising from rapidly urbanizing populations.

Since the implementation of the Millennium Development Goals, the target set under Goal 7(d) to improve the lives of people living in informal housing by 100 million has been surpassed (UN, 2015). However, there are now more people living in slums than ever before, with another two billion expected by mid-century (UN, 2015; Burdett and Sudjic, 2010; Neuwirth, 2005). Informality is therefore now recognized as a key dimension of urban systems in the global south and is considered a development challenge that must be addressed in order for societies to move out of poverty (Parnell and Pieterse, 2014; Parnell and Oldfield, 2014; UN-Habitat, 2014; Watson, 2009; Simone, 2004).

Not only is informality now a major characteristic of rapidly growing cities, the nature of that informality is an important dimension of how populations experience urban environments. The extent of deprivation within the informal urban fabric is the most extreme in Sub-Saharan Africa (SSA) (Fig. 1). Not only does almost two thirds of the urban population in SSA live in slums, another third live under conditions described by the United Nations as ‘severely deficient’ (UN-Habitat, 2008: 93–95). Within this context, soft infrastructure (social services) and hard infrastructure (physical utilities) are recognized as important determinants of urban household livelihoods (Ogun, 2010).

In the context of SSA, Pieterse and Parnell argue that ‘poverty, informality and the absence of a strong local state with a clear and unchallenged mandate to manage the city are arguably the leitmotifs of African urbanism today’ (2014, 10). Moreover, the failure of governments to adequately address the infrastructure needs in rapidly urbanizing contexts has roots in the persistence of

outdated planning systems and tools and a planning education inherited from Europe (principally Britain) that are not designed to cope with the nature and scale of urban growth in Africa (Rakodi, 1997; Robinson, 2011). These challenges combine to create a set of institutional, fiscal and political bottlenecks in the ability of urban managers to meet the infrastructure needs of their cities (Duminy et al., 2014).

The impact of infrastructure access on urban household poverty appears to be mediated by the inequitable costs (or complete lack) of physical infrastructure access, where poor urban households tend to pay a higher cost (in absolute terms) either for access to physical infrastructure services than wealthy urban households or are required to cover the cost of installing physical infrastructure post hoc (Pieterse, 2014; Amis, 1995). This differential cost of infrastructural services among the urban poor is in part explained by informal living conditions. Poor urban households are often forced to set up semi-permanent shelter informally on land that has not been designated by municipalities as residential (Turok, 2014; Satterthwaite, 2014). As a result, urban planners provide post hoc household access to utilities and social services in these informal settlements, although in some cases these services are never provided by urban planners but by international NGOs. In a review of South African urban development, Joseph (2009) found that there is insufficient capacity, and political will, among local urban governments to implement holistic infrastructural development, leading to piecemeal infrastructure projects in urban areas. These piecemeal projects also result from municipal politics, which may put poor urban areas at a disadvantage. The challenge of planning effective infrastructure access in informal settlements is exacerbated by the continued immigration of poor rural migrants (Crush and Frayne, 2010). These rural–urban migrants at times aggregate in these informal settlements, resulting in the continued growth of settlements with limited infrastructural access.

Infrastructural development may, therefore, offer one means of addressing the growing challenge of urban poverty (Parnell and Oldfield, 2014; Pendleton et al., 2006). In their seminal report, Canning and Bennathan (2000) argue that the social returns on soft or hard infrastructural development diminished quicker over time when the infrastructure was developed in isolation, suggesting that development dividends from investment in soft and hard infrastructure are complementary. In a recent series of computational simulations using national level data, Ogun (2010) concluded that investment in social infrastructure was more effective in reducing levels of household poverty than investment in physical infrastructure. While infrastructure may play a role in reducing urban poverty, is it possible that infrastructure could play a role in the associated phenomenon of urban food insecurity?

There is a well-established literature that argues that urban poverty is associated with household food insecurity (for example,

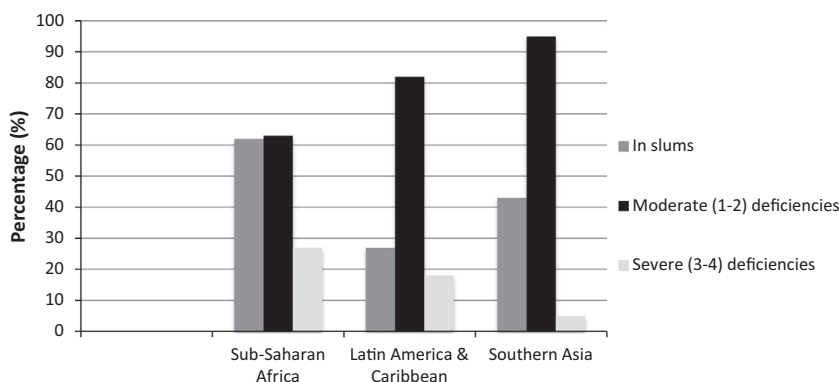


Fig. 1. Percentage of households living in slum conditions by region (2005). Adapted from Parnell and Pieterse (2014, p. 10) and UN-HABITAT (2008, p. 90).

Download English Version:

<https://daneshyari.com/en/article/5073788>

Download Persian Version:

<https://daneshyari.com/article/5073788>

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