



# Unleashing Waste-Pickers' Potential: Supporting Recycling Cooperatives in Santiago de Chile



Pablo Navarrete-Hernandez <sup>a,b</sup>, Nicolas Navarrete-Hernandez <sup>c</sup>

<sup>a</sup> London School of Economics and Political Science, London, UK

<sup>b</sup> Universidad San Sebastián, Facultad de Arquitectura, Santiago, Chile

<sup>c</sup> University of Warwick, Coventry, UK

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## SUMMARY

The informal economy currently provides two out of three jobs worldwide, with waste-picking activities providing employment for millions of the poorest of society. Moreover, waste-picking could provide a sustainable solution for solving the waste management crisis that affects the 3 billion people lacking access to waste services. Governmental policies toward waste-pickers in particular, and the informal economy in general, have been fundamentally based on four policy approaches: (1) dualist and voluntarist, which proposes repressive policies against waste-picker activity and the expansion of formal solid waste management systems; (2) structuralist, which argues for weak supporting policies aimed at reinforcing waste-picker associations; (3) legalist, which promotes the competition of waste-picking with other recycling alternatives without government intervention; and (4) co-production, which supports waste-picking with local policies as a means of enhancing waste-pickers' productivity. Both qualitative, and particularly quantitative evidence testing the impact of these four approaches is scarce. In this paper, we attempt to fill this gap in the literature by operationalizing concepts, building a waste-picker sustainable performance index, and estimating the impacts of these four competing policy approaches. An exploratory sequential design method is used to analyze data: first, a thematic analysis to examine 40 in-depth interviews, and then multiple linear regressions to analyze a census survey of 100 waste-pickers in four cooperatives in Santiago de Chile. Our empirical results suggest a positive association between the level of government support and waste-pickers' sustainable performance. Consequently, further positive government intervention, particularly in supporting a stronger structural organization for the waste-picker recycling system, is advocated as the primary policy recommendation of this paper.

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## 1. Introduction

The World Bank (2012) estimates that 1.3 billion tons of waste is generated worldwide every year—resulting in 205 billion dollars of collection costs. Achieving an Integrated and Sustainable Waste Management (ISWM) system (comprised of maximizing reduction, reuse, recycling, and minimizing disposal) thus represents a great challenge for developing countries both financially and administratively. Indeed, thirty-five years after the first city recycling system was implemented in the United States (Miller, 2000), three billion people in developing countries still live in cities where waste is not even collected (UNEP, 2015). These figures are not improving, as developing countries also face the phenomenon of urbanization, which is likely to increase the budgetary, environ-

mental, and sanitization crises that result from an inadequate solid waste management<sup>1</sup> system (Beall, 1997, p. 1; United Nations Habitat, 2010).

In this landscape of a solid waste management “crisis”, the informal sector—particularly waste-pickers—seem to provide part of the solution. For instance, waste-picking accounts for 70% of the waste recycled in Santiago de Chile,<sup>2</sup> thus recycling 10.1% of all waste produced and saving 12 million dollars each year

<sup>1</sup> We use also the term “Solid Waste Management” as it is commonly used by several authors (Dias, 2016; Sharholly, Ahmad, Gauhar, & Trivedi, 2008; Shekdar, 2008; Velis & Vrancken, 2015) to refer to a combination of several stages in the management of the flow of waste materials within the city and the region.

<sup>2</sup> Waste-pickers collect materials for recycling, removing 810 tons of waste from landfill each day (CONAMA, 2005).

(CONAMA, 2005). Even higher rates are achieved in Cairo, where waste-pickers handle one-third of all city waste, and recycle around 80% of the waste collected (Salah-Fahmi, 2005, p. 158). In this sense, waste-picking provides a spontaneous solution that is labor intensive, compared with the high-cost, capital-intensive alternatives of establishing an ISWM system in developing countries (Ackerman, 2005). Furthermore, Medina (2007, 2010) and Wilson, Velis, and Cheeseman (2006) stress that waste-picking plays a significant role in sustainable development, as it increases the amount of waste collected, reused, and recycled, resulting in pollution prevention as well as an extension of the useful life of landfills (see also Geng & Cote, 2002; Troschinetz & Mihelcic, 2009). Waste-picking may have further relevance in achieving other objectives such as economic growth, as it reduces raw material costs for local enterprises. Finally, it also contributes to social objectives by providing jobs and a significant income for more than 15 million poor people in developing countries (Ahmed & Ali, 2004; Chaturvedi, 1998; Medina, 2007, 2010).

Various schools of thoughts have proposed contrasting policies in their approach toward waste-pickers. Dualist, voluntarist, and structuralist arguments regarding the urban informal economy are generally reflected in their negative perception of waste-picking activities: dualists suggest that waste-picking is the consequence of a lack of growth and keeps people in poverty (Geertz, 1963; Huysman, 1994; Lomnitz, 1977; Santos, 1979); voluntarists consider waste-picking to be a symptom of underdevelopment, as the lack of sufficient law enforcement allows certain workers to avoid paying taxes while opting in only to the social protection programs that suit them (Maloney, 2004, p. 1165; Perry, Maloney, & Ebrary, 2007, p. 2); while structuralists such as Birkbeck (1978, 1979) and Roberts (1989) see in this activity a source of capitalist exploitation. Contrary to these views, legalists have recognized in waste-picking a means of achieving sustainable development (De Soto, 1989; Medina, 2007). Here, legalization and deregulation serve as the paths toward reaching efficiency in a free-market framework with minimal government intervention. Finally, theories of co-production suggest that waste-picking may be the best available alternative as a means of providing an ISWM system in developing countries (Fergutz, Dias, & Mitlin, 2011, p. 597; see also Josie & Moore, 2004; Ostrom, 1996). Co-production interventions are being supported and implemented with increasing frequency in Latin America and Asia (Besen, Ribeiro, Jacobi, Günther, & Demajorovic, 2007; Dias, 2016; Fergutz et al., 2011; Medeiros & Macêdo, 2006).

Although these schools of thought have a long history, few empirical studies have attempted to evaluate the impacts of their competing policy recommendations. The primary contribution of our paper is thus to provide what we believe is the first attempt to bridge the gap between theory and policy impacts. Our analytic sample consists of the entire population of four Greater Santiago waste-picking cooperatives, each of whom are affected by various municipal policies.

## 2. Literature review

The debate surrounding the urban informal economy provides a theoretical framework with which we can understand the logic behind the competing policy approaches toward waste-pickers. Consequently, it provides a useful entry point for the aims of this study. Chen, Carr, and Vanek (2004) identify four main schools of thought (see also WIEGO, 2014a, 2014b): dualist, structuralist, legalist, and voluntarist. To this four-fold theoretical framework, we add the more recent development of co-production theory. Although there are debates within each of these schools and certain policies and strategies do not always fit neatly within these

theoretical categories,<sup>3</sup> this classification allows for an understanding of the fundamental elements of current waste-picker debate, its policy implications, and allows us to operationalize concepts and test policy impacts.

The Dualist School contends that there are few direct economic links between waste-picking and other formal economic sectors (Santos, 1979). From this perspective, waste-picking emerges as the result of a lack of economic growth and availability of formal employment in developing countries. It is perceived as a “last resort” or marginal survival activity in the absence of other formal work, with a low productivity potential (Geertz, 1963). This dualist conception is widespread among academics and policymakers (Lomnitz 1977; Souza, 1980). To expand the formal economy in the context of waste management, organizations such as the World Bank have promoted the privatization of municipal solid waste management systems (Beall, 1997, p. 6). Salah-Fahmi (2005), in Egypt, and Beall (1997, p. 6), in Pakistan, report how waste-pickers have been displaced and excluded from formal municipal solid waste management following this process of privatization. As a survival activity, dualists have argued that the number of people working as waste-pickers is counter-cyclical to economic strength: it expands in times of economic crisis as the need for survival activities becomes more pronounced, and shrinks with economic expansion as people tend toward formal employment. Such counter-cyclical reactions have been observed in analyses of waste-picking activities in the 1994 Mexican and 2001 Argentinean economic crises, when economic turndown was followed by a dramatic increase in waste-picking activity (Schamber & Suarez, 2007). Dualist policies toward waste-pickers are based around repression and the creation of formal jobs in waste management to reduce the number of people working as waste-pickers (Furedy, 1984; González, Cadena, & Suremain, 1993; Keyes, 1974; Navarrete, 2010; Salah-Fahmi, 2005; Schamber & Suarez, 2002, 2007).

Voluntarists conceive the formal and informal labor markets as a continuum, where workers make rational decisions to maximize their utility (Maloney, 2004). Informal self-employment, including the types of activities performed by waste-pickers, arises when the monetary and non-monetary benefits become more appealing in informal activities than in the formal sector (Maloney, 2004, p. 1162). Although the Voluntarist School explicitly underlines informal workers as being entrepreneurs, voluntarists remain skeptical of their role in promoting development: the combination of low-skilled workers and undercapitalization means that most small informal enterprises face low productivity and high rates of failure, thus perpetuating the poverty cycle. Moreover, the popularity of informality is regarded as a symptom of underdevelopment, since the lack of adequate law enforcement allows some workers to pick and choose particular social protection programs, for example a specific health or pension scheme, enabling them to reduce their total payments (Maloney, 2004, p. 1165; Perry et al., 2007, p. 2). Voluntarists mainly interpret the informal economy as being counter-cyclical to economic dynamics (given the lack of labor market flexibility) (Fiess, Fugazza, & Maloney, 2010, p. 211), but consider that occasional situations will lead to the development of a pro-cyclical relationship (for example, when a growth shock within a sector with a high number of informal enterprises increases the demand for “micro-entrepreneur” products) (Bosch, Goni-Pacchioni, & Maloney, 2012, p. 655). Studies using aggregated data show the plausibility of this voluntary movement into informality in Argentina, Brazil, Chile, and Mexico (Maloney, 2004) while Fiess et al. (2010, pp. 220–221) show that

<sup>3</sup> We would like to break down these five different theoretical approaches further, and particularly to address all the criticisms of co-production, but for the sake of operationalizing concepts and due to space constraints, in this paper we focus on the mainstream positions within each school of thought.

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