



Who should take the garbage out? Public opinion on waste management in Dar es Salaam, Tanzania[☆]



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ABSTRACT

Across the developing world, rapid urbanization is creating new governance problems. This article investigates the challenge of municipal waste management in Dar es Salaam, Tanzania. We conducted a survey of 450 respondents across all three municipalities of Dar es Salaam to analyze the relationship between satisfaction with waste management services and preference for government leadership in the sector. We find that people who are dissatisfied with their current waste management service are twice as likely to prefer government leadership over alternatives, such as community organizations, than people who are satisfied. The finding is consistent with the hypothesis that, since the government is currently not active in waste management, citizens prefer more policy intervention if they consider their current situation unacceptable. To our understanding, this is the first article to use survey data to analyze the role of public opinion in waste management in a major city in a developing country.

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Introduction

Rapid urban growth in developing countries has contributed to difficult environmental problems, including waste management. High population densities and growing affluence, together with lacking institutional capacity, have resulted in the growth of waste generation without adequate facilities for its disposal (Vergara & Tchobanoglous, 2012). As the cities of developing countries continue to grow (Montgomery, 2008; UN-HABITAT, 2010b), the challenge of municipal waste management grows more serious. The absence of effective waste management is not only a nuisance, but also an environmental problem and a health hazard. Without proper disposal, waste can attract disease vectors, pollute water bodies, and spread harmful substances (Vergara & Tchobanoglous, 2012: 279–280).

One critical aspect of municipal waste management in developing countries is public opinion. From the people's perspective,

the long-run success of a municipal waste management scheme depends on popular support and the positive perceptions of the urbanites whose lives are shaped by the success or failure of waste management. And yet, there is little research on the preferences of urban citizens in developing countries with respect to waste management. Who, according to the people, should be responsible for waste management? Should the government organize waste collection and disposal services? Or, does the public prefer that private corporations and civil society organizations provide this basic service?

The existing literature offers few answers to these questions. Kironde and Yhdego (1997) analyze obstacles to effective governance of waste management in Dar es Salaam, but they do not consider the issue of public opinion. They propose to reduce the centrality of government regulation, but they do not base the recommendation based on people's preferences. In Thailand, Charuvichaipong and Sajor (2006) note that there are many obstacles to increased civil society participation in the governance of waste management, but they also do not investigate the local people's preferences on waste management. Tadesse (2009) conducts an analysis of the relationship between environmental concern and recycling behavior in Mekelle, Ethiopia, finding that pro-environmental attitudes are important for explaining recycling behavior. Again, however, the focus is not on policy preferences.

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Consequently, there is a clear gap in the literature on public preferences concerning waste management.

We contribute to answering this question by analyzing public opinion data from Dar es Salaam, Tanzania. As discussed below in detail, this context is interesting because of rapid urban growth, the poor quality of waste management, and the central role that the informal sector plays in *de facto* waste management. While Tanzania's democracy is imperfect due to the hegemonic presence of one party, the Chama Cha Mapinduzi (CCM), the country does hold regular elections and there are opposition parties that can challenge the CCM. In collaboration with a local university, we conducted in the spring of 2013 a survey of 450 households in three municipalities that form the city of Dar es Salaam. The survey included questions about people's preferences regarding waste management, as well as their current satisfaction with the situation.

In addition to a descriptive analysis of preferences, this setting allows us to examine if dissatisfaction with the current system is a good predictor of preferences for government leadership in waste management. In this context, government is represented by the municipal corporation, as opposed to, say, agencies at the national level. In Dar es Salaam, the government is formally responsible for all waste management, yet in practice the government's ability to provide proper waste services is limited because of lacking resources (Breeze, 2012; Kironde and Yhdego, 1997; Lindeman, 2012). The answer to this question is therefore not at all clear. On the one hand, dissatisfaction could prompt people to demand less governmental responsibility, given that the public waste management system has not been successful. On the other hand, dissatisfaction could lead people to demand more activity by the government, given that the *de facto* responsibility for waste management in Dar es Salaam lies with waste pickers in the informal sector. Given how fast and uncontrolled urban growth in Dar es Salaam is (Kombe, 2000; Kombe & Jackson, 2005), the policy relevance of waste management is equally clear.

The results from a regression analysis indicate that people who are dissatisfied with the *status quo* strongly prefer increased government leadership. According to our models, almost 80% of the least satisfied respondents prefer government responsibility. Among the most satisfied citizens, however, the share is only about 40%. In other words, satisfaction with current waste management halves the respondent's interest in government responsibility. This relationship is robust and the estimate of the effect of dissatisfaction versus satisfaction stable across model specifications. Since most respondents in the survey are not satisfied with their waste management, this finding could also explain high levels of preference for greater government involvement.

The results are of general importance. As Vergara and Tchobanoglous (2012) note, inadequate municipal waste management is now a truly global problem that reduces quality of life in urban settings across different continents. According to Medina (2007), millions of people around the world make a living as waste pickers due to the lack of a municipal governance solution. Our results indicate that, at least in the case of Dar es Salaam, the public prefers government involvement in the typical condition of poor results. From a policy perspective, this suggests that governments of growing cities in developing countries have both political and economic incentives to invest in waste management to avoid environmental and health problems.

Our results also speak to the debate on privatizing waste management. As Samson (2009) notes, the privatization of waste management is an important, if politically controversial, topic in many developing countries. While our results do not address the question of whether or not private contractors should play some role, they do highlight the public's preference for government leadership. This result suggests that a privatization strategy, if any,

should consider the public opinion and, as far as our results from Dar es Salaam travel to the context at hand, give the government an active, central role. Our finding suggest that, despite – or maybe because of – the municipal government's lackluster performance in Dar es Salaam, people prefer more government action. This indicates that the municipal corporation should become more active, instead of looking for alternatives. Since other developing cities also experience rapid urban growth and suffer from difficult waste management problems, this finding could be of importance in different cities around the world.

Waste management in the developing world: a government responsibility?

Although waste management has traditionally been the responsibility of municipal governments, the reality in many developing countries is different (UN-HABITAT, 2010a). As Vergara and Tchobanoglous (2012: 289) write, waste management as “informal public good provision” is increasingly common in developing countries. According to Medina (2007), as many as 2% of the world's population – more than a hundred million people – is somehow dependent on waste collection, processing, and recycling for a livelihood. While there is considerable variation in the operation and activities of the informal waste sector across different urban settings, in general people working in this sector are motivated by the profits made from collecting, processing, and selling waste. For example, waste pickers can make money by selling plastic, metal, and cardboard to middlemen who, in turn, sell the materials to industries.

In practice, the informal sector operates in the shadow of the government. There is variation in the ability of municipal corporations in the developing country to manage waste, and the informal sector can be thought of as an endogenous, organic, and adaptive response to gaps in this ability. For example, if the municipal corporation is unable to prevent illegal landfills from forming, waste pickers may enter these areas to scavenge valuable materials, in effect substituting for the lack of recycling at the source. In Kenya, for example, municipal corporations are unable to keep up with the increasing generation of solid waste due to a variety of problems, including political interference and lacking capacity (Henry, Yongsheng, and Jun, 2006). Alternatively, waste pickers may go door-to-door, separating and sorting household waste for sales. Waste pickers may also form a union or collaborate with non-governmental organizations (Kironde and Yhdego, 1997). In practice, the developing world features a continuum of solutions from pure informality to the dominance of the municipal corporation, with a variety of hybrid solutions in the middle. Our focus here is on public opinion about who should have the primary responsibility for waste management.

In recent times, a third alternative, privatization, has also become increasingly relevant. In Johannesburg, South Africa, for example, a 2001 policy dissolved existing public waste management units and created a private company, Pikitup, with a service delivery agreement for all waste management services that the municipal government used to provide (Samson, 2007:125). This solution is very different from relying on waste pickers in the informal sector. A private company is given an explicit mandate to deal with waste, and the private company is compensated for this effort by the municipal government. Unlike waste pickers, privatization is costly to the municipal government. However, the solution is not dependent on the availability of private markets for scavenged resources and may, therefore, be more comprehensive than what the informal sector would provide.

Given the challenges that municipal governments face in managing the waste of rapidly growing cities, the policy choice is critical for the welfare of urban dwellers. This article examines the issue

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