

TOO COMPLEX TO DELIVER? ADMINISTRATIVE CAPACITY,  
GOVERNANCE, AND WASTE MANAGEMENT IN PERUVIAN  
MUNICIPALITIES

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For my wife, Kely, the love of my life, and our son, Fabio, the light of my days.

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## Preface

In 2018, I traveled to Peru to understand the process of providing waste services on the ground. I wanted to explore how municipalities manage waste collection and disposal and see if, by tracing the mechanisms for delivery, I could uncover the common problems affecting their performance. My original concern was that municipalities in the Global South received scarce attention for the insurmountable tasks they are expected to carry out while facing significant administrative limitations. Thinking about the increasing damages observed in recent years associated with climate change that these local governments have to tackle puzzled me when comparing them to how little we knew about what is happening inside these small but intricate bureaucracies. As a direct service responsibility of municipalities with non-negligible climate change implications, waste management seemed like a suitable case to study.

My previous work experience as a public servant and public sector consultant was helpful. It showed me that to understand performance problems, we not only need to learn about the internal characteristics of public agencies and the involved offices but that we can also discover important explanations—and particularly bottlenecks—by delineating the contours of the processes followed up to the final provision. Thus, I was not convinced that limiting my research design to statistical analysis using aggregate municipal statistics would give me an honest and actionable picture as to why and the degree to which local governments are struggling administratively. Through my research, I wanted to address important service provision problems with consequential and expansive implications.

While conducting exploratory fieldwork in Peru on the waste management processes in a small set of municipalities, I gathered information about specific municipal office-level characteristics and the service provision process. This led me to discover three intriguing

situations, including one that was not entirely on my radar. First, we tend to think —and even take for granted— that services in the same policy domain managed by a given municipality share similar performance levels, because, after all, they are usually provided by the same office. In fact, we rarely stop to notice the nuanced distinctions between related public services, as happened in my case. Yet, contrary to this assumption, I found that distinct waste services such as collection and disposal have differential performance levels. This was the first puzzling finding at this early stage of my research.

Second, typically, we also expect municipal offices to have differentiated capabilities since they lead the provision of not one but multiple services simultaneously. The rationale is that even if services are in the same policy domain, they can have different requirements for implementation, so local government units should have the administrative capacity each of those services needs. This expectation seemed distant from the truth for waste service provision on the ground. When conducting exploratory interviews in Peru, I realized that municipal offices were not giving the same level of attention to both waste services. This revealed these services received unequal administrative treatment, in which one was favored over the other, and by far. This was my second unexpected discovery.

Why was there a pattern of differences in waste service performance and capacity, favoring waste collection in both instances? A closer look at interview and ethnographic notes from this early-stage exploratory fieldwork and waste management literature showed me that waste collection and disposal are two very different services to manage, where one is more operationally and technically complex than the other. Such realization was a surprise because, in my review of the relevant literature, I had not come across recent research on administrative capacity and service provision that comparatively analyzed local governments and service

performance based on the relative complexity of services within the same policy domain.

Similarly, I had not found studies that went beyond evaluating general measures of municipal capacity to assess office-level capacity specific to a service to explain performance.

These surprising findings led me to revise my underlying research question, giving birth to the core puzzle of this dissertation project. They had methodological implications, producing an iterative, dynamic updating of my research design (Kapiszewski et al. 2022; MacLean et al. 2019). As a result, my research engaged in a two-way dialogue between quantitative and qualitative methods to obtain profound answers and a more complete, nuanced understanding of waste service performance differences and their core drivers, particularly the role of service-specific administrative capacity at the municipal office level.

Finally, the role of CSO involvement in waste service provision was not part of my original research question. I was aware that some localities, one in particular, carried out waste services through a group of low-income mother heads of households, but, at the time, I did not fully grasp the extent of their involvement. I had not stopped to carefully think about how, more broadly, CSOs' organizational conditions and relationship with the municipality or even the extent to which how local authorities perceived them mattered for waste service provision performance. After all, like other public services, waste management is the sole responsibility of governments such as municipalities.

This was my third fortuitous finding from exploratory fieldwork. It was puzzling to see how two strongly structured community-based CSOs did all the heavy-lifting of the waste collection service in one locality. They thoroughly cleaned the streets, even after highly active wet market weekends where small agricultural producers brought and directly sold all their fresh produce. Blocks full of discarded fruit, vegetables, and sometimes animal bones and meat

surrounded the markets at the end of the day at 10pm, entirely covering the streets and sidewalks. You had to step on all that to walk around the area. Street sweeping teams would arrive a few hours after midnight and, upon my return at 4am, it was a completely new place. You could not see a single plastic bag lying on the floor.

Walking with them for hours overnight when they conducted their rounds throughout the city streets further revealed how they worked. The level of diligence of the entire operation was comparable to that of a professionally run, exceedingly efficient, and likely profitable business. The workers were committed, field supervisors were motivated and oversaw all implementation details on the ground in real-time. A management team thoroughly planned the logistics and strategically handled client relations. With 28 years of working experience, back in 2018, they had a long-standing institutional knowledge that could hardly fail. This is how I noticed that the two CSOs were top-level waste collection experts.

The waste suboffice itself rarely intervened as a result. They had fully allowed the CSOs to take over all the implementation parts. Other municipalities I visited during this exploratory stage did not have this provision setup. Yet, as I continued exploring this municipality's waste disposal services, I was perplexed to learn about its state of abandonment, particularly after comparing it with the provision of collection services. At the dump, only a handful of CSO members were manually accommodating bags as best they could. Disposal tasks were carried out with great limitations.

So, I began to ask myself: Why are these CSOs not as involved in waste disposal? And, why are CSOs in other municipalities not working with the waste suboffice if they are struggling with waste service provision, particularly disposal? I realized that I needed information on CSOs' organizational characteristics to learn whether their internal workings could provide some

answers to these puzzles and, more importantly, find additional explanations for the performance differences between collection and disposal.

Through these experiences and thought processes, I began developing my dissertation into what it is today. It led me to closely see the inner workings of local governance for service provision, particularly one with significant implications for global environmental sustainability. It showed me how little attention we give to essential services, such as waste collection and disposal. This process also led me to realize that practitioners and researchers could do more to support the arduous jobs of local public servants and communities, who somehow preserve the environment and their livelihoods with minimal resources and recognition. I hope this dissertation will, in some way, help improve service provision in Global South cities, especially for the most vulnerable groups, through research designs based on interacting with those most affected on the ground by the issues we study.

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Too Complex to Deliver? Administrative Capacity, Governance, and Waste Management in Peruvian Municipalities

**Abstract.** Global South cities vary in their ability to provide complex social services, like environmentally proper solid waste disposal, but typically perform better with simple services, like trash collection from the streets. This dissertation examines whether core local governance factors determine these performance disparities to help bring light to a consequential pattern of service delivery issues in Global South municipalities. Three crucial factors are studied to answer the following overarching puzzle: *Why are some local governments successful at providing simple services while at the same time blatantly failing at providing complex services, when other, similar municipalities can do both?* I focus on service-specific municipal administrative capacity, formal community-based civil society organizations (CSO) involvement, and local collaborative governance.

In this dissertation, I make four principal arguments. The first argument is that it is insufficient to examine municipality-wide administrative capacity to understand what is happening to service performance in a particular policy area. Instead, the second argument states that it is more accurate to assess service-specific administrative capacity, and such capacity may differ across simple and complex tasks, even in the same service. Drawing on comparative quantitative and qualitative evidence, I show that similarly-resourced municipal waste suboffices that can do *both* simple and complex services differ from those that fail in that they have multi-level capacity tailored to service complexity level.

The third argument is that CSOs can substitute for or complement local government in implementing *simple* service provision, but *complex* service provision requires strong,

specialized capacity within the local government offices. CSOs are unlikely to be able to provide such complex services in the absence of administrative capacity. I show that, at least in Global South cities like those in Peru, organizationally strong CSOs can manage waste collection efficiently and effectively, but their missions, planning, operational, and leadership capabilities limit their involvement in disposal due to the complexity of disposal's requirements. Moreover, most CSOs do not have the type of relationship with municipal government —nor the respect of local officials— needed to provide complex services. The fourth argument claims that local collaborative governance contributes to performance improvements if it addresses performance issues equally across services. I find that cogovernance venues matter locally, in the Global South, for improving simple service performance.

This work employs a mixed-methods research design. It uses a unique panel dataset of all Peruvian municipalities across three years for quantitative analysis of the effect of municipal capacity, CSO presence, and cogovernance on simple collection and complex disposal. It also draws on qualitative interview and ethnographic data from four and a half months of intensive fieldwork in three municipalities, which was used for comparative analysis of the conditions in which municipal capacity and CSO participation affect both waste services.

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## Chapter 1: Introduction<sup>1</sup>

Municipalities in the Global South vary in their ability to provide public services. These government actors struggle not only with complex public services, like environmentally proper solid waste disposal, but even simple services, like waste collection from the streets. While it is generally challenging to provide services in these contexts, one is more likely to find clean streets with most waste collected than properly disposed of waste, even while both are managed by the same local government office. Three cases help illustrate why this has global significance.

Walking through the streets of urban and rural towns of Cusco, in the southern Andes of Peru, you rarely see large amounts of uncollected waste accumulating and rotting for several days. In Sicuani, for instance, which is one of the largest cities, waste pickers check their schedules, team up, and readily get to the streets during the wee hours. Even after a busy wet market weekend that makes its environment look like a waste battleground, the market is left anew with a few rounds. Waste collection is delivered by low-income single mothers from indigenous communities who are also members of a poverty-alleviation local civil society organization (CSO) — they cannot afford to underperform their job. Waste disposal, on the contrary, is neglected territory. These women are seldom involved in this waste service, and the municipal waste manager struggles to deal with it in a two-person office with a sluggish computer. To compound these issues, the dumpsite is within the land of an indigenous community that is now seeing how its soil, rivers, and downstream fields and animals are

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<sup>1</sup> Some portions of this chapter were originally published in my following two articles: 2021. "Exploring Administrative Capacity and Local Governance in the Peruvian Waste Sector: Implications for Complex Service Delivery in the Global South." *State and Local Government Review* 53(2): 122-141; 2022. "Do Cogovernance and CSOs Supplement Municipal Capacity for Service Delivery? An Assessment of Differences in Simple Versus Complex Services." *Journal of Public Administration Research and Theory* 32(1): 1-22. I include them here with permissions from SAGE and Oxford University Press, respectively, in agreement with their policies for reuse in dissertations.

gradually becoming contaminated by mismanaged waste and its fluids. Local collaborative governance—or the multi-stakeholder relationship to form partnerships in key local decisions—is also frail and often absent because mayors and managers do not invite community members to the table. Thus, the dumpsite is a series of informal<sup>2</sup> open holes where trash overflows, flies away, and decomposes.

Bagua Grande—a comparable city located in the northern Amazonas Region of Peru—faces similar performance challenges but a particularly insurmountable one for waste disposal. Temporary municipal employees start their waste picking routines early in the morning. After working full-day and making several rounds across the city’s most active and accessible areas, waste gets collected from most streets. Employees do their best at this task, even risking their own lives<sup>3</sup> for a poor salary. They say they do it because the government job provides some stability to vulnerable households such as theirs. Still, the large amount of waste manually gathered each day is informally dumped—and forever forgotten—on the bare soil of a large municipal open field outside the city. This practice is part of the regular waste disposal process. “We do a really good job delivering waste services overall, we just need the money to turn this dumpsite into a landfill<sup>4</sup> to dispose of it better,” I recalled being told by a municipal waste officer as I walked over rotting, scattered organic material and hospital needles covering all the dumpsite’s area (Int-BG-1). Formal recyclers come and go from this area, gathering reusable material to make a living. They are usually joined by cows, dogs, and vultures searching for food. Run by a single manager supported by two untrained collection supervisors, this waste

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<sup>2</sup> Informal dump holes are uncontrolled and typically untreated dumpsites that are not officially approved because they involve potential human and environmental danger.

<sup>3</sup> Risks for waste workers in this context involve breathing contamination, injuries from used needles and glass found in waste bags, falling from an improvised collection truck, among others.

<sup>4</sup> A dump refers to an uncontrolled and usually untreated disposal site that is not officially approved due to its potential for human and environmental harm. A landfill is an officially approved disposal site that has protective measures and infrastructures that typically prevent human and environmental damages.

office is limited to basic collection procedures. Unlike Sicuani, Bagua Grande does not involve community CSOs in their waste service provision scheme, despite urgent need and having active CSOs in the area. Although local collaborations could serve to collectively address these waste problems, local authorities express disdain or unawareness of such arrangements.

While Satipo—in the central Peruvian region of Junin—has similar socioeconomic and geographic conditions, it fairs significantly better in the delivery of both waste services relative to the other two cities. Overnight waste collection teams and trucks follow their routines under the leadership of the waste collection deputy manager and field supervisors. The process is not immune to difficulties, such as personnel absences or compactor truck mechanical problems, but they are minor or quickly addressed by dedicated public servants. All streets and markets start the day pristine. Local communities are also engaged in the collection process. Neighborhood associations—formal, community-based CSOs led by neighborhood leaders that represent their collective interest—communicate with their residents about sorting waste into recyclables, non-recyclables, and organic waste and the days and times that specific trucks will come around to separately take each classified bag. These CSOs receive the information from the municipality's Community Governance Unit that leads local interactions regarding public services with environmental implications, such as waste. Community involvement helps the disposal process conducted by the municipality, which as a result can recycle, compost, and minimize pressure and contamination in the landfill. Unlike Sicuani and Bagua Grande, Satipo has a complete and formal infrastructure to professionally treat disposed of waste in a landfill managed by a team of well-equipped, trained operators and two landfill engineers. The community that houses the landfill—also under a formal agreement—occasionally complains about strong smells coming out of the facility but is normally rapidly addressed by the waste office manager and its compact

team of environmental engineers. While local collaborations can be difficult, this municipality can effectively handle its relationship with local CSOs, neighboring local governments, and other key stakeholders to tackle waste management and environmental issues.

In terms of outcomes, this illustrates how Bagua Grande and Sicuani struggle to dispose of their waste but do an acceptable job collecting waste from the streets, although Satipo performs exceedingly well in both. The experiences of the three municipalities are not isolated among low- and middle-income countries. They represent service performance disparities that are observed globally. To systematically explore this empirical phenomenon, this dissertation accounts for the varying performance between a simple service, like waste collection, and a more complex service, such as waste disposal, in Peruvian municipalities. These differences generate a fundamental question in comparative public administration: *Why are some local governments successful at providing simple services (e.g., collecting waste) while at the same time blatantly failing at providing complex services (e.g., disposing of waste), when other similar municipalities can do both?* An array of answers is possible, such as waste collection's political salience or the lack of resources for costly infrastructural investments for waste disposal. Yet, these only get to the surface of a more intricate problem.

What is suggestive of a deeper issue is the worldwide pattern in the gap between the two services. This is noted in the fact that, for instance, municipalities in lower and lower-middle income countries can collect 39 percent and 51 percent, respectively, of the waste they generate but adequately dispose of 7 percent and 34 percent (Kaza et al. 2018, 35). Upper-middle income countries also show a similar struggle, collecting 82 percent and adequately disposing of 70 percent of their waste but still improperly dispose of 30 percent, which ends up in informal open dumps (Kaza et al. 2018, 35).

This evidence from around the world shows that municipalities, mostly in the Global South, have relatively higher waste collection rates but lower proper waste disposal rates. A relevant caveat regarding this aggregate, national-level data—which is based on municipal-level data—is that it likely masks larger local disparities and is thus biased by the performance of larger, better resourced local governments. A closer look at disaggregate municipal-level statistics reveals this discrepancy. Municipalities in some upper-middle income countries like Peru have below-average waste performance, showing wide gaps between the two services.

Thus, searching for detailed answers about why these divergences in waste service provision occur, and the conditions under which they emerge, is of global importance. Beyond its public health and property value consequences, decaying waste, which usually results from failed waste service provision, also has implications for environmental sustainability. It produces a highly contaminant greenhouse gas (GhG) called methane that causes much more damage than carbon dioxide (IPCC 2007, 212). To make matters worse, when it rains, as it does in the three cities discussed and across the Global South, improperly collected or disposed of waste blocks drainage and sewage systems, further complicating the consequences of heavy rain and flooding (which, in turn, are increasingly aggravated by climate change).

I argue that three core local governance factors determine these performance disparities, helping bring light to a consequential pattern of service delivery issues in Global South cities. In particular, I examine how service-specific municipal administrative capacity, formal community-based CSO involvement, and local collaborative governance matter when services increase in relative complexity. I find that having service-specific capacity has a twofold effect: unlike general capacity and other measures, it improves both simple and complex services' performance and supports the influence of the other two factors on performance.

Looking beyond common expectations of widespread failure in municipal service provision found in the Global South —where local governments sometimes experience rampant inefficiency and corruption— can lead us to recognize that some key services are regularly handled well by these bureaucracies but that they are especially challenged by services with distinctly complex characteristics. What is similarly intriguing is the significant variation observed in all three local governance factors across municipalities. Office-level capacity to manage each service ranges from some with no administrative specialization and pooled resources for both services in cluttered offices to others with highly differentiated procedures, experienced and trained human resources, and equipment for each one. Community CSO involvement encompasses informal, fragmented groups expecting a call from the mayor for participation alongside sophisticated, formal organizations with robust structures and membership that lead parts of local services. In terms of local collaborations, there are localities where they go overlooked as well as those carrying out joint action plans with formally designated responsibilities by stakeholder. An in-depth analysis of Peruvian municipalities shows these patterns when comparing waste collection and waste disposal outcomes and the role of the three determinants.

Surprisingly, most studies on service performance concentrate on local governments' general capacity, assume that any civil society participation suffices to influence service delivery, or insufficiently study the collaboration-performance relationship, regardless of task complexity. Likewise, most services are typically treated as if they had monotonous features, implying equal complexity across the board. In contrast, in this dissertation I classify services by their complexity level, learning about their distinct features to contrast their relative performance. To assess the drivers of these performance variations, I trace the contours of

administrative capacity at the municipal waste office level to identify the degree to which such capacity is specific (or not) to the administrative and operational needs of a service, simple or complex. Similarly, I delve into the internal characteristics of formal community CSOs and local collaborative governance venues —and, in turn, their interaction with municipal waste offices— in relation to each service.

This dissertation helps to advance knowledge on issues related to local governance and complex service delivery in the Global South. It engages with research on government capacity, CSO participation, and collaborative governance, in the context of local waste service provision in public administration, comparative politics, and environmental studies. Its nuanced, deductive-inductive approach to studying service performance matters for comparative public administration research because it makes five theoretical contributions that could also be relevant for the study of a range of local governments around the world. First, it provides a more detailed understanding of the role of administrative capacity on service performance by disaggregating and capturing this concept through tighter, more proximate measures. Second, it shows CSOs' differential role on service performance when services vary in complexity. Third, when they work, local collaborative governance venues are found crucial for improving simple service performance and the efficient use of scarce municipal resources. Fourth, unpacking the analysis of services and service performance based on complexity levels helps reach a more detailed, nuanced understanding of service provision limitations. Finally, it incorporates a classification of services by their relative complexity to others within their policy domain, based on three task dimensions.

This work is built through a mixed-methods research design. It uses a unique quantitative panel dataset of all Peruvian municipalities in 2014, 2016, and 2018. Using this methodological

approach, this study captures the main drivers of performance and their differential effects on services of varying complexity. These quantitative results guided the collection of qualitative data from four and a half months of intensive fieldwork via interviews, ethnography, systematic social observations, and secondary sources in three municipal case studies also in Peru (Baggetta and Bredekamp 2021; Falletti and Lynch 2009; Fulton and Baggetta 2021; Hendren et al. 2018; Kapiszewski et al. 2015; MacLean et al. 2019; Raudenbush and Sampson 1999; Smith 2005). The qualitative approach provides in-depth evidence on the three local governance drivers examined and helps trace the causal mechanisms leading to waste service performance differences. Greater insights from findings are obtained through a mixed-methods research design, which is crucial to answer the core research question while also contributing to identifying alternative explanations and illustrating quantitative results with more precision.

### **1.1 Local Governance Differences**

Why are some local governments successful at providing simple waste collection services while at the same time blatantly failing at providing complex waste disposal services, when other similar municipalities can do both? To address this fundamental question, the argument of this dissertation centers on three elements of local governance —administrative capacity, CSOs, and local collaborative governance— to elucidate *why* and *how* waste service performance disparities occur.

Exploratory fieldwork in Peru shows that these three factors drive very different outcomes between the two services, regardless of the population size and resources of a city (de la Riva Agüero 2021). Waste offices have adequate capacity to deliver waste collection. This means that they are specialized and equipped to carry out its provision correctly and that local

politicians, CSOs, and joint local decision-making venues are usually supportive because it is a salient service. Waste disposal, conversely, has very poor performance. A combination of poor planning capacity and discriminatory attitudes toward waste service employees in the field — many of which are low-income, indigenous female members of community CSOs— may partly restrain waste managers from involving them in the disposal process. This qualitative assessment of elements that appear to be important for understanding why some services are performed better than others also points toward a more accurate consideration and measurement of certain factors. For instance, general capacity typically signals some favorable overall municipal conditions or local political decisions to support the allocation of relatively more resources to waste management. However, general capacity features do not reflect whether they effectively translate into more waste management capacity and, particularly, what waste service benefits and how substantial these investments are for their performance. This indicates that studying capacity focused on *service-specific* administrative capacity, rather than *general* capacity, provides a more accurate understanding of public service performance issues.

Although municipal waste office capabilities in Peru are neither ideal nor abundant and, in fact, have many weaknesses, particularly in administrative terms for smaller or under-resourced municipalities, they systematically keep collection teams operating effectively to clean the streets. While this service is not negligible, its management is not intricate. The opposite occurs with waste disposal. Municipalities do not have formal landfills and dispose of much of their waste in uncontrolled, poorly supervised, and overflowing dumpsites lacking minimal infrastructural requirements. These facilities thus lack official permission from the national government. Evidently, waste offices have serious capacity flaws to administer this service. Their management teams and policies are not particularly tailored nor trained or equipped to

handle the demands associated with it. CSO participation in the disposal provision process is usually substantially limited and venues of local joint decision-making are commonly weakly organized to address such a complex matter. Regardless of these disposal management difficulties, some waste offices can do a remarkable job in the provision of waste collection services even with moderate administrative capacity to handle it. This means that, for collection, having well-drafted collection routines, diagnostic documents, and basic supporting equipment is sufficient, even with absent CSO participation and local collaborative governance venues that address key service issues. On the contrary, it is not uncommon to find municipalities that structure their waste disposal capacity based on a dumping routine, makeshift trucks, and computers for a handful of office workers, which is blatantly insufficient for the adequate provision of disposal services.

Waste management, as a whole, requires a range of capabilities for core functions like contracting, procurement, and human resource management to more specialized skills such as forecasting changes in waste generation over time, devising differentiated management strategies, and coordinating with numerous stakeholders (Abarca-Guerrero et al. 2013; Kaza et al. 2018; Okot-Okumu and Nyenje 2011; Srivastava et al. 2015). But this comprehensive service also has requirements that vary by service. For instance, on the one hand, key to waste collection services is planning routines and assigning routes and schedules to waste picking personnel, cleaning equipment, and vehicles. The task is simple but requires having an accurate inventory of the office's resources. Problem-solving during collection implementation receives more immediate attention than the more complex but less noticeable waste disposal service because an interruption in collection is highly visible and has social and thus political implications. The latter likely affects the allocation of resources between such services as well. Another

characteristic of waste policies in Global South cities is that about 80 percent of waste management budgets are allocated to the less complex collection services, while higher-income countries —that have higher disposal capacity— spend 10 percent on collection (Aleluia and Ferrão 2017; Kaza et al. 2018; Lohri et al. 2014).

Disposal services are more complex, and costly. Their technical, infrastructural, and managerial requirements make it so. Landfills to treat and contain waste are critical, employing specialized equipment such as leachate containment geomembranes and tanks to hold runoff, as well as fencing surrounding the area. Specialized chimneys and piping are also used to safely treat methane gases generated by decomposing waste. Heavy machinery is key to organize and cover waste in layers alternated with soil to minimize any filtration of contaminated fluids to the ground. Managing these inputs require more lead time, technical knowledge, and well-documented policy tools and regulations (Abarca-Guerrero et al. 2013; Jeswani and Azapagic 2016; Kjeldsen et al. 2002). Moreover, because these infrastructure- and technical knowledge-intensive projects are typically sited on the outskirts of cities, creation of one may simultaneously suffer from insufficient political support and trigger NIMBY (not-in-my-backyard) resistance from communities near the proposed site. In some cases, however, disposal sites are located within the property of indigenous communities, usually the result of negotiations and a formal agreement outlining the conditions in which they temporarily lend the space to the municipality. For this to work, high community-municipality collaboration and a delicate balancing task from the waste office are necessary — while simultaneously managing its traditional administrative and operational challenges along with community expectations. Conflict management capacity is vital for these municipal offices.

Given these unique features, assuming that all waste services can be equally provided without adapting local governance capabilities to service complexity is a mistake, especially if one is more complex than the other. Thus, to understand these diverging outcomes more accurately it is central to examine the office-level specific administrative capacity to deliver each service, the organizational characteristics and extent of involvement of CSOs, and whether and how local collaborative governance venues operate and make joint decisions for each service's pressing needs. Further analysis confirms that it is pertinent to empirically assess these three elements. Municipal waste offices' service-specific administrative capacity has crucial implications for understanding the performance of both relatively simple and complex waste management services. Unlike general municipal administrative capacity improvements that enhance only simple waste service provision, waste management administrative capacity illustrates that greater waste office *specialization and equipment* benefits *both* collection frequency and proper disposal services. The presence of neighborhood-based CSOs and local collaborative governance venues —engaged in the joint local planning and budgeting— only appear to enhance waste collection performance. A reason why these CSOs may not influence complex waste disposal is because they are centered on waste collection frequency or are more effective at supplementing the state when services are relatively simple. Local collaborations may not be associated with waste disposal performance as its issues are likely not a discussion priority in these specific local venues or are considered non-urgent matters.

Therefore, based on these evaluations and the evidence on waste service performance differences this dissertation addresses critical questions about the three elements of local governance:

- Do cogovernance and CSOs supplement municipal capacity for service delivery?
- Under what conditions does *service-specific municipal administrative capacity* affect the performance of both simple and complex services? Under what conditions does it make a difference on the performance of the two services?
- Under what conditions does *community-based CSO involvement* affect the performance of simple services but not of more complex services? What CSO characteristics affect their successful participation in the service provision process, leading to improved performance? How do they interact with the municipality?

In Chapter 2, I discuss how these concepts are theorized, defined, and operationalized.

## **1.2 Arguments**

I make four arguments. The first one asserts that it is **sufficient** to have *low service-specific municipal administrative capacity* or a *formal, community-based CSO involved* to deliver a *simple* service (i.e., waste collection) adequately. This means that for the streets to be clean, municipalities in the Global South must have at least one of these two conditions met. This claim also illustrates that the streets can be clean, or at least partially clean, even if municipal administrative capacity is low. Municipalities can thus continue to provide this simple service, despite administrative difficulties. Such performance could not be expected in the case of complex service provision (i.e., waste disposal), however, because services of this nature require a higher level of municipal administrative capacity that cannot be otherwise replaced.

A second argument states that it is **necessary** to have *high service-specific municipal administrative capacity* to perform adequately in the delivery of *complex* services. This means that it is **necessary** that the service-providing municipal office is *specialized* and *equipped* to manage a specific complex service to achieve high performance. It is thus **not sufficient** to have *formal, community-based CSOs involved* in the *direct* provision of waste disposal to guarantee acceptable performance levels. This dissertation hence argues that the involvement of such CSOs is particularly important when service-specific capacity is low, and the service is *simple*. More *complex* services, however, could benefit from the involvement of formal, community CSOs when they have a robust organizational capacity that is relevant for these services, especially when municipal service-specific capacity is low but enough to handle CSO participation in the delivery process, and in the absence of gender, racial, ethnic, or socioeconomic discrimination. What this indicates is that, on the one hand, well-organized community CSOs could supplement government in the provision of services when these are more complex and, on the other, that the level of administrative capacity may be a central determinant of performance when service complexity increases.

A third related argument holds that the *general administrative capacity* of a local government is **not sufficient** to improve the performance of more complex services. Having this type of overall municipal capacity—which is likely supportive but is typically distant from the actual service management and implementation—does not guarantee that service-specific capacity exists at the responsible office level or that such unit will receive the specific administrative support to manage a complex service. Approaching service provision in this way leads to inaccurate identification and misrepresentation of the issues that affect performance, particularly for more complex services.

Finally, this leads to a fourth argument, that claims that to minimize performance differences when services vary in complexity, such as waste collection and disposal, it is **necessary** that *local collaborative governance arrangements*—where local political authorities, municipal managers, community CSOs, and other stakeholders jointly participate— exist and address performance issues equally across services. Local collaborative governance is expected to occur when municipal bureaucracies have higher administrative capacity as it implies managing the simultaneous involvement, inputs, and tasks of multiple actors. Therefore, local cogovernance venues may represent an alternative and more strategic way in which local stakeholders jointly make key decisions and coordinate efforts (and available capabilities and limitations) about both simple and complex services.

### **1.3 Why does all this matter? Broader Implications for Policy and Research**

This dissertation, broadly speaking, is a contribution to equity and inclusion from an environmental justice perspective. The study of local governance and simple and complex waste service provision also has significance for environmental sustainability. As discussed earlier in this chapter, inadequate waste collection and waste disposal, first, produces GhG strongly associated with severe rainfall resulting from warmer temperatures and, second, clogs sewage and drainage systems that cause destructive flooding (Douglas et al. 2009; IPCC 2007; Satterthwaite et al. 2007). Insufficiently studying these issues thus impact people’s livelihoods, wellbeing, and public service infrastructures, principally in vulnerable Global South localities. Most importantly, these damaging consequences have disproportionately adverse effects on the poor in the developing world (Hallegatte et al. 2016; IPCC 2015), further undermining equity, inclusion, and thus democracy as a government form. Understanding why and how service-

specific government capacity, community CSO involvement, and local collaborations matter for the provision of increasingly complex services with environmental relevance is hence crucial.

This has great import for weak cities, especially in the Global South.

Having a timely, solid grasp of the policy implications can similarly impact the extent to which inequality, exclusion, and environmental sustainability are worsened by the consequences of mismanaged waste services, in a context of rapid flux and uncertainty led by climate phenomena. Since environmental issues are rising poverty and inequality worldwide, precise actionable knowledge grounded in *nested inference* is both essential and urgent (Collier et al. 2010). Policymakers, civil society, and entire communities benefit from thorough research to inform their decisions. That is why how scholars approach a research puzzle is so significant (Ragin 2014, 164-167), not only for methodological rigor and stronger causal inference but for human sensibility and real-world insights and impact. Not talking to people on the ground and seeing them as data points and regression coefficients is not an option for questions such as the ones studied in this dissertation. Capturing their views and sentiments helps put their challenges in the right dimension, and learning face-to-face how they handle large problems with scarce resources uncovers a much-needed understanding of the processes connecting causes and outcomes in social science research.

For all these reasons, studying waste service provision disparities in municipalities in a country like Peru through a mixed-method comparative case study research design is broadly important.

## 1.4 Outline of Dissertation

**Chapter 2** presents the theory and research design. **Chapter 3** is a regression-based quantitative chapter that addresses the following question: *Do cogovernance and CSOs supplement municipal capacity for simple versus complex services?* The results show that, in Peru, while stronger waste offices, the presence of neighborhood CSOs, and cogovernance venues increase simple service performance, only waste office strengthening—but not neighborhood CSO involvement or cogovernance venues— help improve complex service provision.

Building on the quantitative methods used for Chapter 3, Chapters 4 and 5 draw on qualitative methods to analyze two crucial local governance factors: administrative capacity and CSO involvement in service provision. **Chapter 4** examines the following question: *Under what conditions does service-specific municipal administrative capacity affect the performance of both simple and complex services?* It looks at the conditions and causal mechanisms of waste services to argue that service-specific administrative capacity is critical for improving the performance of *both* simple collection and complex disposal. The results show that similarly-resourced municipal waste suboffices that can do *both* simple and complex services differ from those that fail in that they have multi-level capacity tailored to service complexity level. While most municipal capacity tends to be centered on simple waste collection, differentiated capacity to equally understand and carry out both waste services at the top leadership, management office team, and field worker levels is fundamental for improving the performance of more complex services.

**Chapter 5** evaluates the following question: *Under what conditions does community-based CSO involvement affect the performance of simple services but not of more complex*

*services?* It analyzes the conditions and causal mechanisms of waste services to argue that the organizational capacity of CSOs matters for its effects on services that vary in complexity. The results show that organizationally strong CSOs can manage waste collection efficiently and effectively, but their missions, planning, operational, and leadership capabilities limit their involvement in disposal due to the specialized, complex requirements of this service. Moreover, most CSOs do not have the type of relationship with municipal government —nor the respect of local officials— needed to provide complex services.

**Chapter 6**, concludes, bringing the threads from Chapters 3 to 5 together, analyzing this dissertation’s broader contributions for public administration research, real-world problems, summarizes the main findings of what might be generalizable elsewhere, and briefly discusses what this means for policy.

This dissertation draws on material from my 2021 article “Exploring Administrative Capacity and Local Governance in the Peruvian Waste Sector: Implications for Complex Service Delivery in the Global South,” *State and Local Government Review* 53(2): 122-141 as well as from my 2022 article “Do Cogovernance and CSOs Supplement Municipal Capacity for Service Delivery? An Assessment of Differences in Simple Versus Complex Services.” *Journal of Public Administration Research and Theory* 32(1): 1-22. Chapters 1 and 2 include portions of both articles. Chapter 3 draws entirely on material from my 2022 article “Do Cogovernance and CSOs Supplement Municipal Capacity for Service Delivery? An Assessment of Differences in Simple Versus Complex Services.” *Journal of Public Administration Research and Theory* 32(1): 1-22. I include these previously published materials with permission from SAGE and Oxford University Press, respectively, in agreement with their policies for reuse in dissertations.

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## Chapter 2: Theory and Methods<sup>5</sup>

### **2.1 Puzzle: Divergent Service Delivery in Peruvian Municipalities**

#### **2.1.1 Waste Service Performance Gaps**

One of the primary administrative responsibilities attributed to municipalities<sup>6</sup> in Peru is the delivery of waste management services. Waste tends to be collected daily or every other day, though some municipalities do so with less frequency. In a context like Peru's, collection frequency is crucial. The reason is that most localities do not have large community dumpsters, for residents and businesses to throw away their waste any time, or large trash containers at home that in other countries are provided by the municipality to all residents. For waste disposal, local governments employ several different methods, including the use of landfills, dumpsites, recycling, burning, and composting, with only the first one considered a proper disposal method when the landfill is professionally managed. Most municipalities utilize more than one strategy simultaneously due to the lack of landfills or insufficient space in those available (MINAM 2016, 21). Since there are 56 formal landfills in the country<sup>7</sup> serving 192 municipalities, most

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<sup>5</sup> Some portions of this chapter were originally published in my following two articles: 2021. "Exploring Administrative Capacity and Local Governance in the Peruvian Waste Sector: Implications for Complex Service Delivery in the Global South." *State and Local Government Review* 53(2): 122-141; 2022. "Do Cogovernance and CSOs Supplement Municipal Capacity for Service Delivery? An Assessment of Differences in Simple Versus Complex Services." *Journal of Public Administration Research and Theory* 32(1): 1-22. I include them here with permissions from SAGE and Oxford University Press, respectively, in agreement with their policies for reuse in dissertations.

<sup>6</sup> Peru currently has a total of 1,874 municipalities distributed across 25 regional governments (comparable to US states but with less political and fiscal autonomy). It has two types of municipalities or local governments: Provincial municipalities, which are similar to US counties, and district municipalities, equivalent to US cities. Both provincial and district municipalities have specified jurisdictions and functions, with provincial governments prevailing over districts on specific tasks. Provincial municipalities manage their territories apart from the district municipalities it contains, and serve as the provincial capital. Overall, Peruvian cities vary in size, capacity, as well as the extent of civil society involvement in the delivery of services (Aragón and Casas 2008; Jaramillo and Wright 2015; Loayza et al. 2011; McNulty 2013; World Bank 2010). Urbanization level and ecological region are key features associated with differences across cities.

<sup>7</sup> As of March 2021.

Peruvian municipalities resort to a combination of the other environmentally unsustainable methods. Municipal waste management is, therefore, a significant problem in Peru.

Data illustrate performance differences between simple waste collection and complex waste disposal. The national average waste generation per capita has remained approximately the same in recent years,<sup>8</sup> at 0.52 kilograms per day, ranging from 0.65 to 0.41. There are some significant differences at the municipal level within each regional government, nonetheless (MINAM 2018). Some noteworthy discrepancies persist when analyzing municipal waste generation and waste management over time. In 2002, the estimated total municipal solid waste generation was 12,986 metric tons per day, or about 4.74 million metric tons that year. While municipalities collected 73.7 percent of this total, they only disposed of 19.7 percent in formal landfills (MINAM 2016, 13). Waste production notably increased in 2014 to approximately 7.5 million metric tons of municipal solid waste, of which roughly 32 percent, or 2.4 million metric tons, were adequately disposed of in landfills. Of the remaining 5.1 million metric tons, 3.6 million metric tons were dumped in informal open-air dumpsites by municipalities themselves, after their personnel had collected it from the streets. This amount represents 48 percent of the total amount of waste generated that year (INEI 2015, 324).

More recently, in 2016, about 8.36 million metric tons were collected by 1,818 municipalities, which is 98 percent of all 1,851 municipalities existing that year. Although only 23 percent (or 433) disposed of some portion of their collected waste in landfills, about 79 percent (or 1,463) used open-air dumpsites to get rid of some part of it (INEI 2018, 465-467). In 2017, 1,836 municipalities collected 8.13 million metric tons of waste, adding 18 more municipalities in one year. This indicates that less waste was collected by more cities but

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<sup>8</sup> The period considered for this calculation is 2013 through 2017.

representing the same proportion of municipalities as the previous year, or 98 percent, out of a total of 1,872 cities existing in 2017. Twenty two percent (or 416) of municipalities used landfills to dispose of part of their waste and 79 percent (or 1,484) used informal dumpsites (INEI 2019, 448-450).

Compared to 2015, however, 2016 and 2017 show increasingly worse waste disposal conditions. In 2015, 1,777 municipalities collected approximately 7.63 million metric tons of waste, which is 95 percent of all 1,842 municipalities found that year (INEI 2016, 422). Yet, regarding disposal, 572 municipalities used landfills (or 31 percent, compared to 23 percent in 2016 and 22 percent in 2017) and 1,278 dumped their trash in open locations (or 69 percent, compared to 79 percent in 2016 and 2017) (INEI 2016, 424). As a result of this declining waste disposal performance over the years, about 5,859 acres of land were deteriorated across 1,585 different locations in 2018 (MINAM 2018). Waste collection services show fewer complications, even improving over time, as 94 more municipalities managed to collect waste at least every other day in 2013 (1,019) relative to 2016 (1,113) (INEI 2015, 2016, 2018). Performance challenges for the delivery of waste disposal, relative to collection services, are hence evident and profound, denoting a puzzling service provision problem that demands deeper evaluation.

## **2.2 Theoretical Framework**

### **2.2.1 Administrative Capacity**

Central to adequately tackling environmental sustainability in the Global South is understanding the critical local governance conditions that municipalities currently have, so as to uncover how they might provide more complex services with environmental implications moving forward. On the one hand, limitations in *general administrative capacity* constitute a significant impediment

for municipal performance, particularly in the Global South (Grindle 2007; World Bank 2003). Public administration scholars have shown convincingly that general capacity affects public organizations' performance (Christensen and Gazley 2008; Ingraham et al. 2003; O'Toole Jr. and Meier 1999). This approach operationalizes capacity through generic measures associated with an agency such as organizational structure; human resource quality, quantity, and empowerment; financial resources; leadership and management characteristics, and; information systems.

While the general administrative capacity of a bureaucracy is crucial for service performance, less knowledge exists about *service-specific administrative capacity* and how it may matter when services increase in complexity. This refers to capacity *within* the office or unit directly managing and implementing the service. It is critical because, at its core, local service provision is led by the specific municipal unit in charge — if its capacity is weak, the finance team or the mayor's office will not take over their duties. Within-unit capacity gains significance as service delivery responsibilities become more complex. Knowing this is essential when comparing the performance of simple waste collection — a labor-intensive task centered on routine planning— with complex waste disposal — which demands specialized technical knowledge and infrastructure.

While this study does not attempt to provide a universal definition of service or task *complexity*, simple and complex services are conceptually differentiated here along three task-related dimensions: managerial and operational, technical knowledge, and cost requirements when comparing services within the same domain, in this case waste management (see Table 2.1 below). In each task dimension, the complex service's characteristics include components that are more asset-specific compared to the simple service, simultaneously requiring more components. Using definitions from Williamson (1991), physical and human asset specificity are

key features of waste service complexity, pertaining the managerial and technical dimensions, respectively, because these resources cannot be easily redirected to other services. Asset specificity and extra service features thus make waste disposal more costly and complex overall.

For example, whereas waste collection requires generic management knowledge and no specialized infrastructure, waste disposal needs specific technical expertise on waste treatment and leachate management and specialized infrastructure such as landfills and leachate geomembranes. The provision of collection services entails matching routines with available waste picking personnel and resources that can be organized with a minimal level of planning by municipal managers. However, planning the implementation and management of disposal services' infrastructures requires more elaborate policy tools and procedural regulations, including skills to manage community participation and social conflict. Differences in cost and human resource needs between both services are also remarkable (Table 2.1). Examining complexity in other services may involve considering different task nuances.

**Table 2.1.** Task Complexity Differences between Waste Collection and Disposal

Task Dimensions Assessed	Waste Service Inputs	
	Simple: Collection	Complex: Disposal
<b>Managerial and Operational<sup>a</sup></b>	<p><i>Low Physical Asset Specificity and Operational Complexity</i></p> <ul style="list-style-type: none"> <li>• Personnel and routine management: waste picking routine planning/implementation/supervision</li> <li>• Item procurement: <ul style="list-style-type: none"> <li>○ General: personnel cleaning equipment</li> <li>○ Specialized: compactor or dump trucks<sup>9</sup></li> </ul> </li> <li>• Specialized infrastructure: NA</li> <li>• Operation and maintenance: Compactor or dump trucks; minimal regulations</li> </ul>	<p><i>High Physical Asset Specificity and Operational Complexity</i></p> <ul style="list-style-type: none"> <li>• Personnel and routine management: routine planning/implementation/supervision for waste treatment/recycling/composting</li> <li>• Item procurement: <ul style="list-style-type: none"> <li>○ General: personnel cleaning equipment</li> <li>○ Specialized: compactor or dump trucks; heavy machinery; landfill inputs, recycling, composting or treatment; land</li> </ul> </li> <li>• Specialized infrastructure: landfill; leachate geomembranes and tanks; gas treatment; recycling facilities, composting or treatment; fences</li> <li>• Operation and maintenance: disposal facilities for treatment/recycling/composting; heavy machinery; complex regulations</li> </ul>
<b>Technical Knowledge<sup>b</sup></b>	<p><i>Low Human Asset Specificity</i></p> <ul style="list-style-type: none"> <li>• General management</li> <li>• Community participation management</li> </ul>	<p><i>High Human Asset Specificity</i></p> <ul style="list-style-type: none"> <li>• Waste treatment/recycling/composting</li> <li>• Leachate and gas management</li> <li>• Waste disposal facility construction/management/operation</li> <li>• Community participation and social conflict management</li> </ul>
<b>Cost<sup>c</sup></b>	<p><i>Lower</i></p> <ul style="list-style-type: none"> <li>• Personnel</li> <li>• Equipment</li> <li>• Vehicles</li> </ul>	<p><i>Higher</i></p> <ul style="list-style-type: none"> <li>• Personnel</li> <li>• Equipment</li> <li>• Vehicles</li> <li>• Heavy machinery</li> <li>• Infrastructure construction/maintenance</li> </ul>

Sources: <sup>a</sup>Abarca-Guerrero et al. (2013), Kaza et al. (2018), UN-Habitat (2010); <sup>b</sup>, Jeswani and Azapagic (2016), Kjeldsen et al. (2002), Shekdar (2009); <sup>c</sup>Aleluia and Ferrão (2017), Hoornweg and Bhada-Tata (2012), USAID (2018).

<sup>9</sup> Dump trucks are known as *camión volquete* in Spanish.

### 2.2.2 Collaborative Governance

Scholars have also examined *collaborative governance* relationships between government and civil society to understand service delivery (Batley 2011; Gazley 2010; Gazley and Brudney 2007; O'Neill 2019; O'Neill et al. 2013; Ostrom 1996). This partnership, particularly through cogovernance and coproduction, aids decision-making and delivery and is more important in local governments facing multifaceted limitations, which is common in the Global South (Brass 2016; Cheng 2019). However, some research finds that collaboration does not always lead to better service delivery performance. In part, this is due to administrative capacity limitations of local governments, preventing them from implementing participation venues as well as CSOs' lack of involvement, precluding proper collaboration with the communities needing these services the most (Agranoff 2007; Babiak and Thibault 2009; Brass et al. 2012; Brinkerhoff 2002; Cammett and MacLean 2011; Gazley 2010; Jaramillo and Alcázar 2017; Loeffler and Bovaird 2016; McNulty 2019; Page et al. 2015).

Current research, nonetheless, has not assessed the role of collaborative governance on service performance sufficiently, especially when service complexity varies (Voorberg et al. 2015). The studies that examine the relationship between local collaborations and public service performance focus on *cogovernance*, involving joint planning, designing, budgeting, decision-making in general, and *coproduction*, which is the joint management, delivery, or evaluation of services (Brinkerhoff and Brinkerhoff 2011; Emerson et al. 2012; Osborne and McLaughlin 2004). The difference between the two is that while local coproduction helps solve immediate implementation issues affecting performance, local cogovernance allows civil society actors to influence more strategic, structural public service matters that drive performance inefficiencies, giving voice to key local service priorities in decision-making processes and serving as critical

support for local governments facing multifaceted limitations in the Global South. That is why this dissertation focuses on *local cogovernance*, particularly the institutionalized venues in which this type of collaboration takes place.

### **2.2.3 CSO Involvement**

*CSO involvement*, which in some cases is a form of coproduction, is important for service provision (Putnam et al. 1993). Yet, this may be true only if the CSOs' capabilities are pertinent to the service they are engaging with (AbouAssi et al. 2019). Since the provision of services determines the livelihoods and wellbeing of local communities in the Global South, it is natural to expect the involvement of CSOs in service provision to have a crucial role when services are underprovided. Some research finds that civil society involvement improves delivery performance. What is unclear, however, is whether the involvement of *any* CSO in service provision can help improve performance as services become more complex.

While research in political science identifies that service performance is enhanced when a CSO has certain characteristics that suggest CSO strength—such as being formal, locally rooted, and well managed—similar organization-level attributes are not addressed enough in the collaborative governance literature, particularly regarding those in the Global South (AbouAssi et al. 2019; Auerbach 2017; Brass 2016; Breslin 1987; Cammett and MacLean 2014). This work signals the role of CSOs' organizational robustness, underscoring characteristics about the strength of the civic community, as proposed by Putnam et al. (1993), and illustrating the extent to which participating CSOs are formal and locally embedded in their communities. Such qualities are key because they imply that these CSOs are likely more transparent and internally organized, when formal, and have a better understanding of community priorities and solutions

and are thus more participatory and legitimate, when rooted locally. Thus, better service performance may not just result from CSOs' participation in the delivery process but may hinge on specific organizational features (Brinkerhoff and Wetterberg 2016; O'Meally 2013), namely from *formal, community-based CSO involvement*. These types of CSOs are studied in this dissertation to assess diverging waste service outcomes.

Two other mechanisms also help explain the influence CSOs may have on performance, unrelated to their capabilities. While civil society in the Global South tends to organize to demand better services from weak local governments (Alam and Rabbani 2009; Auerbach 2020; Kruks-Wisner 2018; McNulty 2013; Remy 2004), it is possible that poor municipal planning capacity precludes CSO inclusion in service delivery, regardless of CSO strength (de la Riva Agüero 2021).

Discrimination may also be a limitation. Because most CSOs and individuals involved in waste are usually informally employed and from vulnerable groups, such as low-income non-white women and their children, they tend to be discriminated against by administrators due to their gender, socioeconomic status, race, ethnicity, or the work they do (de la Riva Agüero 2021; Fredericks 2009; Kaza et al. 2018). In a highly ethnically diverse country like Peru, indigenous peoples are relatively more vulnerable to these problems. Systemic discrimination introduces hard barriers to overcome, significantly affecting their individual opportunities for growth and the development of their communities (Hall and Patrinos 2012; Torero et al. 2004). This is likely a critical factor that weakens the organizational strength of indigenous community CSOs and the degree to which they become involved in or influence service provision (Arroyo and Irigoyen 2005; Remy 2004, 130-131).

## **2.3 Conceptualization**

### **2.3.1 Main Outcomes**

Two measures are used to capture the main outcomes of simple and complex service provision: *solid waste collection* and *solid waste disposal performance*. I examine service performance focusing on physical conditions and the extent to which they are provided, which is based on their conceptual definitions in the waste management literature (Abarca-Guerrero et al. 2013; Aleluia and Ferrão 2016; Kaza et al. 2018; Shekdar 2009; UN-Habitat 2010; USAID 2018). Both dependent variables are assessed quantitatively and qualitatively.

*Collection performance* refers to the extent to which waste is collected, assessing whether the streets are clean after waste is gathered. It is operationalized using both quantitative and qualitative data. Quantitative data from panel dataset provides measures on the amount of waste collected and the number of times municipal employees perform the task each week. I also use qualitative data from three comparable case studies to estimate the degree to which the streets are clean or have areas where trash overflows, accumulates, and rots. Changes within and across sites of these conditions during the fieldwork period are also assessed. Collection performance also refers to the territorial coverage, or the extent to which waste is collected throughout the jurisdiction of each municipality, which is also obtained from the three qualitative case studies. It is operationalized by the proportion of the territory that receives this service based on estimates obtained from SSO.

*Disposal performance*, on the other hand, is defined as the degree to which waste is properly disposed of (or not), focusing on the disposal method (i.e., where waste is disposed of) as well as on how this method is managed (i.e., its infrastructure and waste treatment). The proper disposal of waste by municipalities is operationalized quantitatively, using panel data, by

calculating the proportion of waste that is properly disposed of in landfills or through recycling or composting relative to non-environmentally sustainable methods. To qualitatively assess proper waste disposal, using fieldwork data from three case studies, I evaluate the infrastructural conditions and treatment of waste in these facilities. Changes on these characteristics during the fieldwork period are also assessed. See Table A2.1 in the appendix below for a summary of the definition of all measures.

### **2.3.2 Key Determinants**

Three local governance factors are studied to explain why we observe a discrepancy in the performance of the two waste services studied. The first one is *service-specific administrative capacity*. It is conceptually defined as the internal administrative capabilities or competences of a (municipal) bureaucracy, at the level of the unit responsible for service management and implementation, that are specifically required for the effective and efficient provision of a particular service to achieve its expected societal outcomes. To operationalize this concept, I use deductive reasoning in accordance with the work of classical organizational theory scholars (Galbraith 2002; Lawrence and Lorsch 1967; Mintzberg 1983; Thompson 1967) and factors identified in current research on general capacity (Andrews 2010; Boyne 2003; Christensen and Gazley 2008; O'Toole Jr. and Meier 1999; Rainey and Steinbauer 1999; World Bank 2003). I also conduct inductive theory-building based on exploratory field research. This combined deductive-inductive approach helps show the differences in the type of administrative capacity necessary for each service. As a result, I measure two internal dimensions of the office providing these services: the degree to which the office or unit is internally *specialized* and *equipped*. *Specialization* refers to having *differentiated* organizational structure, coordination processes,

diagnostic and policy documents, management system, and tasks specific to each service.

*Equipment* denotes having *differentiated* trained personnel, budget allocation, and operational machinery and infrastructure, specific to each service (see Table A2.1 in the appendix for all measures' definition). Thus, the operationalization approach of service-specific administrative capacity is informed both deductively, by analyzing existing theory on capacity, as well as inductively, building theory using evidence from exploratory fieldwork.

Administrative capacity can range from low to high, depending on the degree to which a municipal bureaucracy office or unit has these features. To quantitatively evaluate this factor, I use a composite index of the variables pertaining specialization of environmental and waste management. The index includes measures on the existence of waste management and environmental management policy instruments, organizational structure, and decision-making space. Service-specific equipment is also assessed through variables on waste collection vehicles and waste disposal equipments. I also gather qualitative data on whether the specialization and equipment components are tailored to a specific waste service, how they are used, processes followed, and the challenges faced. Part of this field-based approach also helps reveal possible causal mechanisms involving the administrative context and stakeholder interactions of the delivery process of each service.

The second factor is *community-based CSO involvement*. It is conceptually defined as whether formally organized civil society groups that are embedded in their community directly participate in the provision of either waste management services at the local level (Bovaird 2007; Cammett and MacLean 2014; Putnam et al. 1993). It is hence deductively informed by the literature. It is centered on the involvement of CSOs with these particular features in waste collection and disposal services. Broadly speaking, these CSOs include organizations such as

community-based organizations, neighborhood associations, labor unions, faith-based groups, nongovernmental organizations, among others, if they are formal, rooted in the community, and involved in the provision of the two studied waste services (see Table A2.1 in the appendix for all measures' definitions). The involved CSOs' organizational attributes are thus crucial to this concept.

Two additional distinctions are incorporated to the definition, however, using inductive reasoning from exploratory fieldwork to identify the occurrence of these CSOs' involvement more precisely in the Peruvian context. One is about the type of involvement CSOs' have in waste service provision. Since the country has a national legal mandate establishing that municipalities are the sole responsible government actors of providing waste management services, and that full abandonment of that task is not authorized (MINAM 2017), it is expected that in the cases where CSO involvement occurs it would be to *supplement* municipal efforts (weak or otherwise) and not to *substitute* their role to some extent. Unlike well-documented expectations of community organizing for service delivery in cases of government failure and abandonment of its tasks (Batley and Mcloughlin 2010; Brass 2012, 2016; Cammett and MacLean 2011; Nelson-Nuñez 2019; Post et al. 2017), interviews with 28 mayors across diverse types of municipalities and fieldwork in Peru confirms that substitution by CSOs, full or partial, for the provision of these services to assist entire local communities is rare within the jurisdictions that local governments are mandated to cover. This dissertation, therefore, concentrates on the supplementary role of CSOs in waste service provision. This is understood as the complementary or supportive involvement for service provision under the leadership of a municipal office, even in situations in which CSOs are responsible of providing an important portion of a given waste service. As long as CSO participation is conducted in coordination,

supervision, and at least partial involvement in solving problems by the responsible municipal office, their role will be regarded as supplementary to that of the municipality in the context of this dissertation.

The second key distinction further specifies how CSO involvement is judged as occurring. For the purposes of this study, CSO involvement takes place when waste management tasks are provided by the organization itself or their individual members, and may take place with or without a contract between the organization and the municipality. This way, the delivery of waste services by individual members of a CSO will still classify as CSO involvement *as long as* the following three conditions exist: First, these individuals are allowed to provide (some aspect of) a waste service by a municipality (contract or not) as a result of their membership to a CSO; second, the municipality treats and regards them as members or representatives of a CSO and not individual, unaffiliated citizens, and; third, the CSOs' self-governance, social orientation, and societal representation is not altered by any contractual relationship with a municipality (Andrews et al. 2010, 1192-1196; Arnstein 1969, 222; Bovaird 2007, 849-850; Cammett and MacLean 2014, 13-14). What this means is that whether a contract exists or not, with a CSO or its members, is not relevant for the definition of involvement used in this dissertation because the CSO directly leads the service provision process (not its individual members) while maintaining its socially oriented organizational mission and roots. CSO involvement hence occurs, directly, when it participates as an organization or, indirectly, through the participation of their members acting as representatives of the CSO.

This clarification is inductively informed by exploratory fieldwork in Peru. For instance, one municipality had a formal agreement with two CSOs to collect and dispose of waste. Yet, due to public sector procurement procedures and internal considerations of the CSO, they

decided together with the municipality to, instead, hire their members individually and on a rotational basis. The service would then be provided by the CSOs' individual members, but the management of the whole process was conducted by the CSOs' leadership with its members acting as representatives. Using this definition of CSO involvement avoids excluding such cases and other classification errors produced by simply focusing on the type of contractual relationship with a municipality. Accuracy on this definition is crucial for the qualitative part of this dissertation.

To operationalize the concept, I use two different variables to quantitatively capture community CSO involvement: first, a composite index of neighborhood-based CSO presence that measures organizational and participation features of neighborhood associations, including variables of whether they are formal, active, participatory, and on their membership size, and; second, the territorial concentration of poverty alleviation CSOs, in terms of their quantity relative to municipal population. Both are formal and locally rooted organizations. Qualitatively, I collect data on CSOs' organizational characteristics, whether and how they are involved in the provision of each waste service, and challenges for participation.

Finally, *local collaborative governance* broadly refers to multi-stakeholder interactions, usually led by local government authorities, that typically occur in some type of formal space with the purpose of gathering efforts and their unique resources and capabilities to address issues with societal implications that otherwise could not be individually achieved (Bryson et al. 2015; Emerson et al. 2012). However, in this dissertation, I make an important distinction noting that it specifically refers to the local decision-making that mayors, municipal managers, council members, and CSO representatives make, formally and jointly, for planning and budgeting critical policies (Bovaird 2007; Bovaird and Loeffler 2012; Nabatchi et al. 2017). These

collaborations are materialized through convenings that are more accurately known as *local cogovernance venues* as they center on jointly deciding on (as opposed to implementing) critical aspects of local services, including those affecting the provision of key local services such as waste collection and disposal (Brandsen and Pestoff 2006; Cheng 2019; Voorberg et al. 2015) (see Table A2.1 in the appendix for all measures' definition).

Collaborations more generally can take a variety of forms, structured or not, and involve a few or many actors across different levels, sectors, and service stages (i.e. inter-governmental collaborations, cross-sector collaborations, public-private partnerships, coproduction). Yet, the specific form of local collaboration studied here is very relevant for waste management because these are the main venues where joint decision-making between local stakeholders take place and (potentially) tackle structural and strategic elements affecting the performance of its services. This is not to be conflated with the coproduction form that traditionally emphasizes formal or informal collaborations between government and civil society (organized or not) for the direct implementation of services (Bovaird 2007; Bovaird and Loeffler 2012; Brandsen and Honingh 2016; Ostrom 1996).

The way CSO involvement is studied here is also distinct from the latter two concepts (i.e., cogovernance and coproduction) because it is not focused on the government-CSO relationship per se but on the organizational characteristics of the CSOs participating in waste service delivery, centered on understanding the role of a specific type of CSO and how its formal, community-rooted nature may influence diverging performance outcomes for the two services studied.

To quantitatively assess this concept, given the available data, I construct a composite index of cogovernance, which captures the extent to which a venue such as Local Coordination

Councils engage in local planning and budgeting. Local Coordination Councils are formal venues led by the mayor where municipal authorities, managers, council members, and CSO leaders make planning and budgeting decisions for key local policy issues. The index includes measures on Local Coordination Councils' actions for planning and budgeting as well as on the proportion of civil society and total representatives in the council relative to municipal population. Qualitatively, I collect data on the structure, organization, decision-making processes, policy priorities, and limitations of local cogovernance venues such as Local Coordination Councils and Municipal Environmental Commissions that, among other local environmental issues, are tasked to tackle waste-related problems jointly with municipal and local CSO leaders.

## **2.4 Methods**

### **2.4.1 Research Design**

**Comparative, Mixed-Methods, and Nested Case Study Research.** To assess disparities in waste service provision, this dissertation examines three local governance factors in Peruvian municipalities. Service-specific municipal administrative capacity, community-based CSO involvement, and local collaborative governance are explored as possible drivers of the differential performance observed between waste collection and waste disposal. This research thus uses a “causes of effects” approach (Goertz and Mahoney 2012, 41), where the objective is to understand how an outcome occurred, after deductively identifying the crucial factors from existing research, empirically noticing puzzling results, and inductively building theory on what drives waste service delivery at the local level.

The study focuses on Peru but the problems have clear global implications. Recent evidence worldwide shows that municipalities in the Global South perform highly in waste collection but poorly in proper waste disposal (Kaza et al. 2018). This is exemplified in a country like Peru that recently reported having important improvements in municipal waste collection (more municipalities collected 6.6 percent more waste in 2017 compared to 2015) while fewer municipalities used proper disposal methods such as landfills (22 percent in 2017, down from 31 percent in 2015, with 79 percent using open-air dumpsites) (INEI 2019, 448-450). While national-level data classify Peru as an upper-middle income country, based on its national GDP per capita, municipal data reveal wide spatial wealth disparities (Escobal and Torero 2005; World Bank 2005) — a common characteristic across Global South countries regardless of aggregate GDP levels. Thus, studying Peru’s municipal waste service delivery issues gives us insights into a range of country conditions.

To capture these complex empirical phenomena, I use a varied methodological toolkit. I trace both their causal effects and causal mechanisms using a mixed-method strategy to strengthen the internal and external validity, hence improving causal inference (Collier et al. 2010; George and Bennett 2005; Gerring 2017; Hendren et al. 2018; Hendren et al. 2022; Lieberman 2005; Mele and Belardinelli 2019; Ragin 2014; Raudenbush and Sampson 1999; Seawright 2016). One single method cannot accurately approximate understanding of the fundamental question guiding this dissertation. The research design thus consists of a quantitative, regression-based analysis of an original panel dataset and a qualitative, comparative case study approach drawing on intensive fieldwork. The methodologies are mixed and hence equally supplementary to each other in the overall analysis of findings, what is termed *nested inference* by Collier et al. (2010) or *integrative approach* by Seawright (2016). The back-and-

forth process of evaluating fieldwork and large-N data underscores the reciprocity between the two approaches. However, it also uses a *nested analysis approach* geared to the selection of fieldwork cases that originates from a large-N quantitative analysis of municipal characteristics from the panel dataset (Lieberman 2005). In the following lines I explain how I used each methodology.

**Comparative Case Studies: Case Selection.** This dissertation examines three medium-sized cities in Peru (see Figure 2.1 below for the map of Peru). Studies on local governance and service provision in the Global South tend to concentrate on large, metropolitan cities, however (Anguelovski et al. 2014; Auerbach 2020; Buntaine et al. 2020; Henry et al. 2006; Herrera 2014; Jaramillo and Alcázar 2017; Kaza et al. 2018; Kumar et al. 2022; Lazzarini et al. 2020; Post 2018; Rai et al. 2019). Although attention to localities of this size is valuable, the unique, outlier characteristics of these contexts—in terms of better structured and equipped municipal offices, more CSOs with stronger organizational capabilities, and relatively functional local collaborative governance venues—make them likely unrepresentative of most municipalities and the steep battles that relatively smaller or less resourced municipalities confront to deliver services. Similarly, while generalizability would not be an issue if small-sized municipalities were evaluated due to their extensive presence, small-scale service provision typically entails simplified operations, administrative conditions, and CSO involvement, for instance, that would also limit the ability to obtain sufficient information to learn about key local governance determinants. Focusing on medium-sized local governments thus strengthens generalizability as well as provides a greater chance of more clearly revealing why and how capacity, CSOs, and collaborative governance matter for explaining waste service performance gaps.

Figure 2.1. Map of Peru



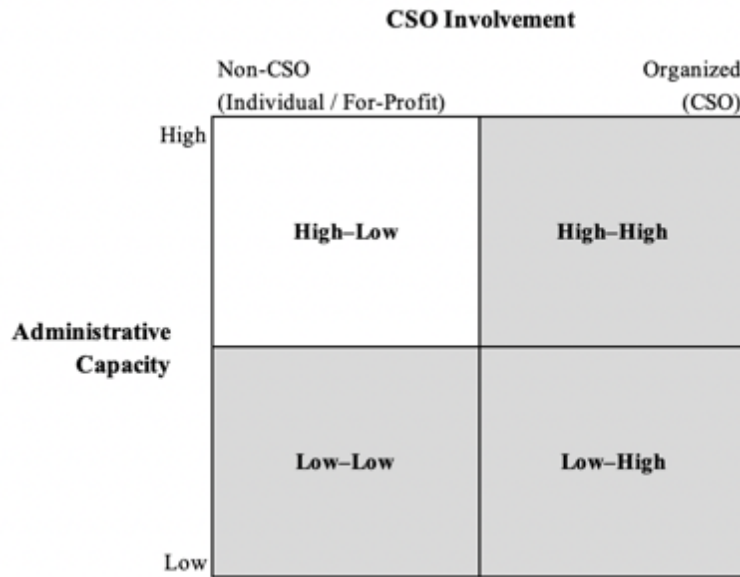
Notes: The white lines are the limits between administrative regions (equivalent to states in the US). The colors represent the three main geographic areas. The coastal areas are colored in white, the mountains in dark grey, and the rainforest in light grey.

The case selection strategy is based on assessing possible waste service performance outcomes resulting from a joint analysis of two dimensions. This approach helps control for variations in two main drivers to examine how such changes influence waste service performance disparities. Four possible scenarios are produced (see Diagram 2.1). The two dimensions are municipal *waste management administrative capacity* and *community CSO involvement*, which are core elements of local governance for service provision. Waste management capacity can range from low to high and CSO involvement from none or privately-

provided outsourced services to the participation of formal and locally embedded CSOs. Since these two factors are also key components of the third determinant evaluated in this dissertation, local collaborative governance (AbouAssi et al. 2019; Ostrom 1996), focusing on the former two likely reflects some key conditions in the latter, thus supporting the decision to examine the two indicated dimensions as part of the case selection strategy. Given these characteristics, municipal capacity and CSO involvement are critical for the identification of sets of municipalities that would fit in possible combinations of varied levels between the two dimensions. Of the resulting four categories only three were the matter of this dissertation, selecting one municipal case study for each from a sample of comparable *provincial* municipalities. The categories represented three different combinations of different levels of waste management administrative capacity and community CSO involvement locally:

- High waste administrative capacity — High CSO involvement
- Low waste administrative capacity — High CSO involvement
- Low waste administrative capacity — Low CSO involvement

**Diagram 2.1.** Case Selection Model



Notes: The three highlighted boxes represent the categories used for case selection.

The remaining category, high waste administrative capacity — low CSO involvement, was left out. Two important reasons explain this decision, based on what is hypothesized in this dissertation. First, it is expected that both services would perform equally well in municipal cases with high administrative capacity that seemingly do not need CSO participation, which is no longer within the scope of the puzzle of this dissertation. Second, not observing CSO involvement in service provision would provide insufficient insights about the role of core elements of local governance in waste service disparities.

Once the dimensions and categories were correctly mapped, I identified the criteria that would help ensure *contextual* similarity and comparability across cases before deciding upon specific localities. Thus, these criteria needed to be unrelated to measures of administrative capacity or CSO involvement. The reason is that it was necessary for these two key dimensions to vary across cases to assess waste service performance differences based on the case selection strategy summarized in Diagram 2.1. To do so, I held constant population size, to account for

corresponding administrative and service delivery demands; poverty level, as a proxy of wealth and socioeconomic conditions, and; ecological location and altitude, to control for similar exposure to weather and rainfall patterns that influence waste service provision. Using data from the panel dataset, I analyzed population size, poverty level, and ecological location and altitude to obtain a smaller group of comparable municipalities. Most importantly, the size of the population had to be large relative to most municipalities in the country to capture cases with greater local activity, considering that the average population size of all municipalities is quite small, of approximately 16,842 people.<sup>10</sup> Only municipalities with populations between 30,000 and 70,000, or between the 90<sup>th</sup> and 95<sup>th</sup> percentiles, hence remained.

To include more typical cases, I excluded municipalities within Metropolitan Lima due to their size and outlier characteristics. For socioeconomic conditions and wealth at the local level, I looked at poverty levels. Only municipalities one standard deviation (17 percentage points) above and below the mean municipal poverty of 35 percent (in 2018) were kept.<sup>11</sup> These are municipalities with 18 to 42 percent of their population living in poverty. Regarding ecological context and altitude, a key criterion was whether a municipality was from the coast or not, since coastal municipalities are not only relatively larger in size and wealthier but also experience very different weather patterns of rain relative to the rest of the country. This was also observed in my statistical analyses, showing that coastal cities performed statistically significantly different — and many times better— in the performance of some waste services compared to those in all other geographic locations. Coastal municipalities were thus excluded, keeping only those from all other ecological locations and altitudes.

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<sup>10</sup> Average population at the municipal level calculated using 2018 data. Considers all municipalities in Peru.

<sup>11</sup> The poverty level used includes all municipalities except those in Metropolitan Lima.

To find cases within the resulting group of municipalities that would fit into the three categories prioritized, I used the waste management administrative capacity index and the neighborhood association index created from the quantitative dataset. The waste capacity index captures the existence of waste and environmental management organizational and policy specialization on waste. On the other hand, the neighborhood association index measures organizational and participation characteristics of these locally embedded CSOs. These indices' averages were evaluated to find high and low levels of capacity and CSO involvement.<sup>12</sup>

The availability of variables capturing direct CSO participation in waste services presented some limitations, however. The neighborhood association index captures the *presence* of this type of CSOs locally, but not the actual *involvement* in waste management. To more precisely identify municipalities where CSO participation in waste was low or high—and to further narrow down the set of possible cases—I directly contacted a set of municipalities that fit into the categories using all the measures discussed above. Reaching out was important not only to have better and more detailed information on CSO involvement but also on waste management administrative capacity. Before going to the field, it was critical to accurately determine the set of cases that were the best fit for each category. As a result, between January and May 2021, I held 28 phone interviews via WhatsApp with mayors and municipal managers, ranging from 20 to 60 minutes depending on their availability. I collected information about the organizational and administrative characteristics of waste management offices (including the environmental office, to which it usually belongs), the type of involvement of community CSOs in waste management, and main challenges faced to provide waste collection and disposal.

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<sup>12</sup> Means for municipalities with population  $30,000 \leq x \leq 70,000$ : waste management administrative capacity index: 1.014731; neighborhood association index: 0.4144798; waste collection vehicles per square mile: 0.5150438; waste disposal equipment per 1,000 people in each municipality: 0.0495041. All use 2018 data and exclude municipalities in Metropolitan Lima due to their outlier characteristics.

The rich qualitative data gathered before fieldwork supplemented these quantitative data limitations, significantly strengthening the case selection strategy. Three municipal cases were finally chosen for their precise fit in one of the three categories. They were the provincial municipalities of Bagua Grande, in the Amazonas Region (northern rainforest); Satipo, in the Junin Region (central rainforest), and; Sicuani, in the Cusco Region (southern Andes) (see Table 2.2 below for information on their characteristics and Figure 2.2 for their locations).

**Table 2.2.** Similar Municipal Cases: Comparing Key Characteristics

Basic indicators	Bagua Grande	Sicuani	Satipo	Mean	St. Deviation
<b>Contextual Dimensions</b>					
Municipality Type	Provincial Capital	Provincial Capital	Provincial Capital	–	–
Population (2018)	56,257	62,983	41,659	45,343	11,545
Poverty (% , 2018)	24.50	23.51	21.84	22.13	13.80
Altitude (mt./ft.)	444/1,457	3,593/11,788	676/2,218	1,202/3,943	1,341/4,399
Ecological Region	High rainforest	Suni	High rainforest	–	–
Malnutrition (2009)	30	42	15	24.73	14.66
Mayor’s Vote Share (% , 2014 elections)	22	28	48	31.57	8.65
Mayor’s Party is Local/Regional	Yes	Yes	Yes	–	–
Mayor’s Party Type (Regional vs. National)	Regional Movement	Regional Movement	Regional Movement	–	–
<b>Key Dimensions</b>					
<b>Administrative Capacity</b>					
Waste Management Capacity Index	1.95	1.95	2.10	1.01	0.91
General Capacity Index	–0.34	–0.46	1.00	0.39	0.34
Municipal Final Budget, per capita (USD, 2018)	169.33	304.05	798.16	367.64	306.44
Waste Management Budget Spent, per capita (USD, 2018)	12.50	13.26	132.26	13.69	16.10
<b>CSO Involvement</b>					
Neighborhood Association Index <sup>13</sup>	1.18	–0.65	1.18	0.41	0.89
Total Number of CSOs	211	193	48	105	55
CSOs per 1,000 People	3.75	3.06	1.15	2.40	1.24

*Sources:* Ministry of Environment; Ministry of Finance; National Jury of Elections; National Statistics Institute.

*Notes:* The *contextual factors* are criteria used to control for overall comparability of the cases. The *key dimensions* show some characteristics related to administrative capacity and CSO involvement that are allowed to vary to study the differences in waste service performance outcomes. Data on the means and standard deviations are for all municipalities that have populations between 30,000 and 70,000, excluding those in Metropolitan Lima for their outlier features. For the mayoral vote share, the 2014-2015 elections were used because they are the most recent data on elections available in the panel dataset created for this dissertation. The last column accounts for the size of one standard deviation of each measure.

<sup>13</sup> The value of the neighborhood association index in Sicuani is low, which is one main reason why I conducted WhatsApp phone interviews before fieldwork. The issue with this variable is that it captures the *presence* of neighborhood associations, not their actual *involvement* in waste management.

These are similar and comparable cases of municipalities in *contextual* dimension such as socioeconomic, ecological, certain political and administrative characteristics, as shown in Table 2.2. However, they differ in the *key* dimensions used for the case selection strategy. For example, for administrative capacity, the average *municipal final budget per capita* —a measure of *general* capacity— in 2018 is USD 367.64 and one standard deviation equals USD 306.44. The average *waste management budget spent per capita* —a measure of *specific* capacity— in 2018 is USD 13.69 and one standard deviation equals USD 16.10. These statistics show that Satipo has *general* capacity levels almost within one standard deviation above the mean while Bagua Grande and Sicuani are within one standard deviation below, although they differ significantly in *specific* capacity. Thus, the municipality of Satipo is similar to Bagua Grande and Sicuani in general capacity, while Satipo has better specific administrative capacity compared to the other two. For CSO involvement, Bagua Grande and Sicuani have higher numbers of CSOs and CSO concentration than Satipo but are roughly within one standard deviation from the mean. These similarities —in contextual dimensions— and differences —in key dimensions— are accounted for case selection purposes, with additional data on their characteristics obtained through the WhatsApp interviews to increase accuracy.

**Figure 2.2.** Location of the three Case Studies



*Notes:* The three municipal case studies are colored in black. The provinces they are part of are in dark grey, encompassing the three municipalities.

## 2.4.2 Analysis

**Quantitative Panel Data.** To test the hypotheses, this dissertation uses a unique panel dataset of all 1,874 Peruvian municipalities covering the years 2014, 2016, and 2018. It uses two-way fixed effects regression methods to identify how variations in municipal waste management administrative capacity, formal and locally embedded CSO presence, and cogovernance for municipal planning and budgeting affect waste collection and proper waste disposal performance, controlling for general capacity and political, socioeconomic, and geographic factors. Details on the variables and models are provided in Chapter 3. The panel uses municipal-

level data from multiple Peruvian public sector agencies such as the Ministry of Environment, Ministry of Finance, National Jury of Elections, National Statistics Institute, and the Strategic Planning National Center (see Table A2.2 for specific variables and sources and Table A2.3 to find the links to the original datasets in this chapter's appendix). I received personal guidance and support from public servants in some of these agencies, making a significant difference in obtaining access to datasets when it became difficult due to format or download issues.

For transparency and replication of the data analysis, it is important to describe how the new dataset was built. Each year's data was downloaded from its original source (Table A2.3 in the appendix). Then, the relevant variables were identified and cleaned, renamed, recoded, and labeled to standardize the code across the three years used. After standardizing the coding, the annual datasets from the same source were merged. The final merging of all the eight sources was completed once all datasets were cleaned and merged. The merging process was performed using the municipality identification number, or *ubigeo* in Spanish, which is a unique number officially assigned to each municipality. A major issue in this process was the inconsistency in some variables' original coding, question structure, and categories. An example is the waste collection quantity variable of the National Registry of Municipalities, which had a categorical variable for its 2014 data but a continuous variable for 2016 and 2018. This issue needed a detailed variable examination. This work produced a unique dataset from eight publicly available secondary sources.

**Qualitative Case Study Research and Data Collection.**<sup>14</sup> The qualitative approach provides in-depth information about three municipal cases. This way, it was possible to zoom in to specific organizational characteristics of municipal waste offices, community CSOs' features and involvement in the provision of each service, and the structure and decision-making processes of local collaborative governance venues regarding waste. Likewise, detailed data was gathered on both waste services' performance in each jurisdiction, getting a close grasp on waste actually collected from the streets and the conditions and activities at disposal, recycling, and composting sites. With this case study evidence, I trace whether and how these local governance factors help account for performance differentials between waste collection and waste disposal. This information is not available in the panel dataset and thus adds valuable evidence regarding the conditions and causal mechanisms leading to performance disparities in waste services.

Between the months of June and September 2021 I conducted 94 interviews with 118 people including municipal authorities, waste management personnel, and CSO members; 28 ethnographic observations of waste service sites, service delivery processes, and CSO meetings; 114 systematic social observations of representative parts of each municipality across multiple days, to assess the performance of waste collection and disposal, and; a review of municipal diagnostic and policy documents to supplement the information gathered. Phone interviews with 28 mayors and municipal managers were also carried out between January and May 2021 to obtain an overview of local governance and waste service issues, detailed information for case selection, and establish local contacts before going to the field. Exploratory interviews and ethnographic observations on the same topic were carried out from June to August 2018 in four Peruvian municipalities. They provided foundational evidence for the questions, hypotheses,

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<sup>14</sup> Indiana University's IRB approved this fieldwork under protocol # 2006003944.

research design, and findings of this dissertation. In the following lines, I present details on the data collection process of determinant and outcome variables as well as on case selection.

The data collection techniques I used to gather qualitative evidence on the key variables were semi-structured interviews, participant and direct observations, and secondary source analysis (national and municipal policy documents). In the following lines I provide details on how each technique was used.

***Interviews.***<sup>15</sup> Semi-structured interviews covered topics such as organizational features and resources of waste offices and CSOs; waste service management procedures and challenges; workers' sentiments about their waste-related jobs; CSOs and cogovernance venues' membership, internal decision-making, and involvement in waste services, and; local political priorities. Other topics were also discussed depending on respondents' concerns and experiences. I selected respondents by formally requesting the support of the municipal Environmental Office manager as well as through snowball sampling. Before going to the field, I had 28 preliminary phone interviews with them where they verbally agreed to support my research. This was followed by a formal letter submitted to the municipality with details on my visit. My first interview or conversation in each locality was with the head of this office or directly with the Waste Management Suboffice manager if advised by the Environmental Office manager. I did this to respect the organizational hierarchy and avoid misunderstandings that would complicate

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<sup>15</sup> Interviews sources are cited in the following format: Int-XX-##. The "XX" section represents two letters to indicate the city and the "##" section provides the interview number conducted in that city. "BG" is used for Bagua Grande, "SI" for Sicuani, and "SA" for Satipo. The same citation structure and city codes are used for sources from ethnographic observations and systematic social observations, replacing only the first portion to identify the type of method used to obtain the data. This coding is deliberately used to honor the requirements of confidentiality of the Office of Research Compliance of Indiana University.

my interactions in each city. These managers would then refer me to other important actors. In turn, interviewees also connected me with other relevant individuals and organizations.

***Ethnographic Methods.***<sup>16</sup> Participant and direct observations focused on how municipal workers and CSOs carried out their waste service routines and operations, noticing unspoken challenges in their activities as part of the final stages of delivery. Observations also captured how some CSOs discussed their most pressing concerns and reached decisions, giving a closer understanding about their internal organizational management, involvement in waste, and interaction with the municipality. Since there were no meetings of local collaborative governance venues during my visits, I was unable to observe how these were carried out, key topics discussed, and the overall management of their convenings. Thus, all the information on local collaborative governance venues came from the interviews. One fieldwork research assistant helped document observations pertaining the independent variables after receiving training on the concepts and in the field. We used open-ended guiding questions to help direct our attention to these aspects.

***Systematic Social Observation.***<sup>17</sup> To examine performance, I used direct observation, particularly systematic social observation (SSO), to learn about the dependent variables regarding the physical characteristics and extent of provision of waste collection and waste

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<sup>16</sup> Ethnographic observation sources are cited in the following format: Ethno-XX-##. The “XX” represents two letters to indicate the city. The “##” section provides the number of each ethnographic observation (per site, activity, or event) conducted in that city.

<sup>17</sup> Systematic social observations are cited in the following format: SSO-SERV-XX-##. The “XX” represents two letters to indicate the city. The “##” section provides the number of each SSO visit conducted in that city. In the case of collection services, the “##” section changes to “##\_#” with the “\_#” portion indicating the sector of the city where the observation was conducted. The “SERV” section of this format represents the first letters of the type of waste service, where “COLL” is used for collection, “DISP” for final disposal at the dump or landfill, “COMP” for composting, and “RECYC” for recycling.

disposal services (see Figure 3 below for the SSO questionnaire used in this dissertation).

Systematic social observation is a technique largely used in sociology to collect standardized and precise quantifiable data from observations that can be replicated across different sites or events. Structured protocols are at the core of the replicability of this technique. Its core features allowed the gathering of detailed comparable results over time and in all three locations, which is why its use was so relevant to evaluate the outcome variables (Baggetta and Bredenkamp 2021; Fulton and Baggetta 2021; Raudenbush and Sampson 1999; Reiss 1971).

The implementation of SSOs across the three cities required the support of the same fieldwork research assistant. An environmental engineer with work experience on municipal waste management in Peru was selected. Her main tasks were to help plan the data collection routines and gather data on the dependent variables in the three localities using the SSO technique. Previous knowledge on waste issues was critical to inform ethnographic observations about issues and patterns otherwise unnoticeable to the untrained eye. However, all observations were documented and described as they occurred. She received training on the contents, meaning, and objectives of the questionnaires as well as how to conduct the technique before going to the field. While in the field, I walked with her during the first few rounds in each locality's sectors to identify and clarify any doubts or address unexpected problems.

To obtain data on waste collection, each municipality was divided in two to four sectors, depending on the territorial size. Since each city has commercial and residential areas of different sizes distributed across different parts, this segmentation was necessary to capture representative samples of waste activity in the streets, making sure that each sector included areas with most residents and commercial activities as well as less populated ones. To organize each sector, we numbered each block on our routes and only collected data from our right side to

avoid duplication in the data collected. Each walk lasted for about one hour and a half. Walks were carried out two times a day for three alternate days in each sector, for a total of six walks per sector. Daily walks were done before waste collectors and street sweepers took to the streets and after they concluded their activities to have before and after data that would reveal daily performance changes within and across sectors in a municipality, and for comparison between municipalities. Implementing this process required detailed planning, involving the use accurate maps showing blocks, streets, and neighborhoods to determine the sectors and routes. Maps were requested to waste management suboffices who kindly supported us with the electronic or printed copies. Planning meetings with waste management personnel in each municipality were key to obtain information on the specific schedules and routes of waste collection teams before starting our work. To avoid personal safety risks, the research assistant and I identified the specific locations of the most insecure areas with their help and had a fieldwork policy of only walking through those areas together. These data gathering procedures allowed me to obtain precise, quantifiable evidence on the extent to which waste was collected by block and sector: block characteristics, pre- and post-collection conditions, changes in the proportion of waste collected, streets and neighborhoods receiving better services, and patterns of specific problems burdening waste collection in the streets.

To gather waste disposal data, each site —whether it was for final dumping, recycling, or composting— was divided into their core activities and each activity was assigned a number. This type of segmentation was necessary to more precisely document patterns and changes throughout each visit since these facilities' operations are carried out in large areas with markedly different conditions and tasks. Final dumping locations, such as landfills and informal dumpsites, were organized by well-defined holes or portions of areas where waste was regularly

or irregularly dumped. Recycling and composting are performed in more or less sequential processes, so they were separated into their core routines. All these facilities were visited two times a week during our 30-day stays in each municipality, for a total of eight visits per facility. Observations lasted for one to two hours, walking around the area while taking detailed notes about each identified hole or section, for landfills and dumpsites, or each task, for recycling and composting sites. Three questionnaires were developed, one for each type of facility and were used in all three municipalities. They included SSO questions, to quantify the sites' observable infrastructural conditions and resources, as well as open sections to document ethnographic observations on the sequential activities carried out during each visit as well as noticeable issues and patterns of unusual events. To unpack and assess waste disposal performance, it was important to understand the process through which activities were carried out at each site as was registering their conditions over time.

***Secondary Source Analysis.*** Policy and operational documents were obtained from municipalities for further analysis of specifics on how each waste service's relative operations were planned, monitored, and evaluated. National policy documents were also consulted.

**Scope Conditions.** The scope conditions of the theories and research design outlined in this chapter are few: medium-sized cities defined by weak local government capacity, CSOs challenged by poverty, limited local collaborations, and service provision problems. This describes developing democracies in low- and middle-income countries in the Global South.

## **2.5 Conclusions**

This chapter discusses the puzzle, theory, conceptualization, and methodology that support the analysis conducted in this dissertation. The major theories are included in this chapter, but a more extensive literature review is also provided in the chapters dedicated to each local governance factor. The rationale justifying the data collection techniques and case selection strategy used to conduct a comparative case study is also explained in detail in this chapter. The three chapters that follow focus on the analysis of the results obtained.

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## APPENDIX

**Table A2.1.** Definition of Measures

Measures	Definition	Methodology	Data Collection Method
<b>Main Outcomes</b>			
Collection performance	Extent to which waste is collected, assessing whether the streets are clean after waste is gathered.	Quantitative and qualitative.	Panel dataset, SSO.
Disposal performance	Degree to which waste is properly disposed of, focusing on the disposal method (i.e., where waste is disposed of) as well as on how this method is managed (i.e., its infrastructure and waste treatment).	Quantitative and qualitative.	Panel dataset, SSO.
<b>Key Determinants</b>			
Service-specific administrative capacity	Internal administrative capabilities or competences of a (municipal) bureaucracy, at the level of the unit responsible for service management and implementation, that are specifically required for the effective and efficient provision of a particular service to achieve its expected societal outcomes.		
<i>Specialization</i>	<i>Differentiated</i> organizational structure, coordination processes, diagnostic and policy documents, management system, and tasks, specific to each service.	Quantitative and qualitative.	Panel dataset, interviews, ethnography.
<i>Equipment</i>	<i>Differentiated</i> trained personnel, budget allocation, and operational machinery and infrastructure, specific to each service. Vehicles for waste collection are: dump truck ( <i>camión volquete</i> ), compactor truck ( <i>camión compactador</i> ), stakebed truck ( <i>camión baranda</i> ), tricycle, and; cargo motor tricycle ( <i>motocarguera</i> ). Vehicles for waste disposal are: backhoe loader ( <i>cargador frontal</i> or <i>retroexcavadora</i> ), excavator ( <i>excavadora</i> ), skid steer loader ( <i>minicargador</i> ), track loader ( <i>cargador oruga</i> ), tanker truck ( <i>camión cisterna</i> ), and dump truck.	Quantitative and qualitative.	Panel dataset, interviews, ethnography.
Community-based CSO involvement	Formally organized civil society groups that are embedded in their community that directly participate in the provision of either waste management services at the local level. Includes community-based organizations, neighborhood associations, labor unions, faith-based groups, nongovernmental organizations, among others.	Quantitative and qualitative.	Panel dataset, interviews, ethnography.
Local collaborative governance	Multi-stakeholder interactions, usually led by local government authorities, that typically occur in some type of formal space with the purpose of gathering efforts and their unique resources and capabilities to address issues with societal implications that otherwise could not be individually achieved	Only quantitative.	Panel dataset.

*Notes:* Waste service equipment names in Spanish are included in parentheses.

**Table A2.2.** Description of Variables

Variable Name	Variable Description	Data Source
<b>Dependent Variables</b>		
Waste Collection Frequency	Number of days per week waste is collected (days/week)	RENAMU
Waste Collection Quantity	Average amount of waste collected daily per 1,000 people (metric tons/day)	RENAMU
Waste Properly Disposed	Percent of waste disposed of via landfills, recycling, composting, or treatment of the total disposed through reported methods	RENAMU
<b>Independent Variables</b>		
Waste Management Capacity (Overall)		
WM Admin. Capacity Index	Factor score of waste management administrative capacity (all waste services)	RENAMU
WM Integral Plan	Muni. has an Integral Plan for the Environmental Management of Solid Waste (1=Yes)	RENAMU
WM Plan	Muni. has a solid waste management plan (1=Yes)	RENAMU
WM Collection System	Muni. has a solid waste collection system (1=Yes)	RENAMU
WM Transformation Program	Muni. has a solid waste transformation program (1=Yes)	RENAMU
Other WM Instruments	Muni. has other solid waste removal management instruments (1=Yes)	RENAMU
Environmental Office	Muni. has an environmental unit or office (1=Yes)	RENAMU
Environmental Diagnostic	Muni. has an environmental diagnostic (1=Yes)	RENAMU
Environmental Action Plan	Muni. has a local environmental action plan (1=Yes)	RENAMU
Environmental Policy	Muni. has an environmental policy (1=Yes)	RENAMU
Environmental Commission	Muni. has a Local Environmental Commission (1=Yes)	RENAMU
WM Budget	Muni. budget spent on waste management, per capita (USD)	MEF
Waste Management Capacity (Specific for Each Service)		
Waste Collection Vehicles	Number of waste collection vehicles, per square mile. This includes collection trucks such as dump ( <i>volquete</i> ) and compactor ( <i>compactador</i> ) trucks; tricycles, and; cargo motor tricycle ( <i>motocarguera</i> ). All are used to provide this service.	SIGERSOL, CEPLAN
Waste Disposal Equipment	Number of waste disposal equipments, per 1,000 people. This includes gatehouses ( <i>garita de control</i> ), weight scales ( <i>balanza de pesaje</i> ), backhoe loaders ( <i>cargador frontal</i> or <i>retroexcavadora</i> ) and track loader ( <i>cargador oruga</i> ), and wheelbarrows employed for this service.	SIGERSOL, Population Estimations
CSO Presence		
Neighborhood Association Index	Factor score of neighborhood delegate associations	RENAMU
Neighborhood Association Approved	Neighborhood Delegate Association officially approved by the Municipal Council (1=Yes)	RENAMU
Neighborhood Association Active	Neighborhood Delegate Association is active (1=Yes)	RENAMU

<b>Variable Name</b>	<b>Variable Description</b>	<b>Data Source</b>
Neighborhood Association Pop. Participation	Population participates in Neighborhood Delegate Associations (1=Yes)	RENAMU
Neighborhood Association Total Members	Total number of Neighborhood Delegate Association members as a proportion of municipal population	RENAMU
CSO Concentration	Number of poverty alleviation CSOs, per 1,000 people	RENAMU, Population Estimations
Collaborative Governance		
Cogovernance Index	Factor score of cogovernance	
LCC Implementation	Muni. implemented activities of the Local Coordination Council (LCC) (1=Yes)	RENAMU
LCC Sessions	LCC sessions held (1=Yes)	RENAMU
LCC Sessions Number	Number of LCC sessions held as a proportion of municipal population	RENAMU
LCC Local Plan	LCC participates in drafting the Concerted Muni. Development Plan (1=Yes)	RENAMU
LCC Participatory Budgeting	LCC participates participatory budgeting processes (1=Yes)	RENAMU
LCC Civil Society Representatives	Number of civil society representatives participating in the LCC as a proportion of municipal population	RENAMU, Population Estimations
LCC Total Representatives	Total number of representatives participating in the LCC as a proportion of municipal population	RENAMU, Population Estimations
<b>Controls</b>		
General Admin. Capacity Index	Factor score of the overall municipal administrative capacity	RENAMU, Population Estimations
Muni. HR	Total municipal personnel, as % of total population	RENAMU
Online PCs	Number of computers with internet access, per municipal worker	RENAMU
Cadastre Info. Systems	Muni. has a cadastre information system (1=Yes)	RENAMU
Municipal Cadastre	Muni. has a cadastre or has conducted a cadastral survey (1=Yes)	RENAMU
Global Final Muni. Budget	Global final muni. budget, per capita (USD)	MEF
Results-Based Budgeting (RBB) Management Capacity		
Goal Match	Goals of Concerted Muni. Development Plan match Rural Development Plan (1=Yes)	RENAMU
Indicators	Indicators verify completion of goals of Concerted Muni. Development Plan (1=Yes)	RENAMU
RBB Units	Muni. has units responsible of implementing goals of the Concerted Muni. Development Plan (1=Yes)	RENAMU
Mid-Term Goals	Concerted Muni. Development Plan mid-term goals (1=Yes)	RENAMU

Variable Name	Variable Description	Data Source
Plan-Budget Correspondence	Budget lines and the Concerted Muni. Development Plan correspond (1=Yes)	RENAMU
Statistics	Generates social, economic, and environmental statistics (of tasks within its responsibilities) (1=Yes)	RENAMU
Performance Indicators	Muni. has performance indicators of expenses (1=Yes)	RENAMU
Budget Transparency	Budget information is available to the population through website (1=Yes)	RENAMU
Donor Support	Budget reports include income/expenses of donor-financed projects (1=Yes)	RENAMU
HR Incentives	Payroll/personnel evaluation systems incentivize attainment of muni. results (1=Yes)	RENAMU
Service Delivery Quality	Muni. has strategies to improve quality of public service delivery (1=Yes)	RENAMU
Public Consultations	Muni. regularly uses public consultation to improve public services (1=Yes)	RENAMU
Public Service Coverage	Muni. has efficiency/effectiveness indicators to assess public service coverage (1=Yes)	RENAMU
Mayor Reelected	Mayor in 2014 remains in office in 2016 and 2018 (1=Yes)	InfoGob
Mayor's Vote Share	Vote share obtained by municipal election winner (%)	InfoGob
Local Party	Mayor's party is a local/regional political party (No=Natl Party or Alliance)	InfoGob
Mayor Female	Elected mayor is female (1=Yes)	InfoGob
Poverty	Poverty percent (2013 and 2018)	Poverty Map
Total Population	Total population estimations, district level (2018-2020)	Population Estimations
Ecological Region	Ecological regions (coast compared to all others, 2017)	Populated Centers Registry

*Notes:* The data source acronyms correspond to dataset or agency names in Spanish. Complete source names (by agency): Solid Waste Management Information System (SIGERSOL), of the Ministry of Environment (MINAM); Government Budget Spending database (monthly), of the Ministry of Finance (MEF); Government Information Database (InfoGob), of the National Jury of Elections (JNE); National Registry of Municipalities (RENAMU), Provincial and District Poverty Map, Population Estimations and Projections by Department, Province, and District, and the National Registry of Populated Centers of the 2017 National Census, all of the National Statistics Institute (INEI); and, Regional, Provincial, and District Level Information, of the Strategic Planning National Center (CEPLAN). Waste service vehicle and equipment names in Spanish are included in parentheses. Specific links to access the databases are provided in Table A2.3.

**Table A2.3. Access to Data Sources**

<b>Agency</b>	<b>Source</b>	<b>Link</b>
Ministry of Finance (MEF)	Government budget spending database, by month	<a href="https://apps5.mineco.gob.pe/transparencia/mensual/">https://apps5.mineco.gob.pe/transparencia/mensual/</a>
Ministry of Environment (MINAM)	Solid Waste Management Information System (SIGERSOL)	<a href="https://sigersolreporte.minam.gob.pe/sigersolreporte/">https://sigersolreporte.minam.gob.pe/sigersolreporte/</a>
National Jury of Elections (JNE)	Government Information Database (InfoGob)	<a href="https://infogob.jne.gob.pe/Eleccion">https://infogob.jne.gob.pe/Eleccion</a>
National Statistics Institute (INEI)	National Registry of Municipalities of Peru (RENAMU); Provincial and District Poverty Map	<a href="http://inei.inei.gob.pe/microdatos/">http://inei.inei.gob.pe/microdatos/</a>
	Population Estimations and Projections by Department, Province, and District	<a href="https://www.inei.gob.pe/media/MenuRecur sivo/publicaciones_digitales/Est/Lib1715/libro.pdf">https://www.inei.gob.pe/media/MenuRecur sivo/publicaciones_digitales/Est/Lib1715/libro.pdf</a>
Strategic Planning National Center (CEPLAN)	National Registry of Populated Centers of the 2017 National Census	<a href="https://www.inei.gob.pe/media/MenuRecur sivo/publicaciones_digitales/Est/Lib1541/index.htm">https://www.inei.gob.pe/media/MenuRecur sivo/publicaciones_digitales/Est/Lib1541/index.htm</a>
	Regional, Provincial, and District Level Information	<a href="https://www2.congreso.gob.pe/sicr/cendoc bib/con5_uibd.nsf/8CB9BB79495ACE5F052582780056A821/\$FILE/Informaci3n-departamental-provincial-distrital-al-31-de-diciembre-VF.pdf">https://www2.congreso.gob.pe/sicr/cendoc bib/con5_uibd.nsf/8CB9BB79495ACE5F052582780056A821/\$FILE/Informaci3n-departamental-provincial-distrital-al-31-de-diciembre-VF.pdf</a>

*Notes:* The agency and data source acronyms are in parentheses and correspond to their names in Spanish.

### **Chapter 3: Do cogovernance and CSOs supplement municipal capacity for service delivery? An assessment of differences in simple versus complex services<sup>18</sup>**

Decaying waste is usually a result of deficient waste service delivery. However, in the Global South, it is more likely to have clean streets with most waste collected than properly disposed of waste that is treated or not overflowing (de la Riva Agüero 2021; Kaza et al. 2018). In addition to its sanitary consequences, inadequately managed waste also generates a highly pollutant GhG and obstructs drains and sewages that aggravate the damages from extreme rainfall and flooding. This situation disproportionately affects municipalities with weak local governance capabilities to address complex service implementation needs, facing constant climate change-related threats (IPCC 2015).

Limitations in *general administrative capacity*, such as overall structure, human and financial resources, managerial experience and education, and information systems, constitute a significant impediment for municipal performance, particularly in the Global South (Christensen and Gazley 2008; Grindle 2007; Ingraham et al. 2003; O'Toole Jr. and Meier 1999; Rainey and Steinbauer 1999). However, less knowledge exists about *service-specific administrative capacity, at the office level*, and how it may matter when services increase in relative complexity. Similarly, it is unclear whether the *presence of organized civil society groups and cogovernance for local planning and budgeting* can help improve performance as services become more complex. Understanding how municipal administrative capacity, civil society organizations (CSO), and *cogovernance* influence the delivery of services of relatively distinct complexity is thus crucial. This article suggests more nuanced analyses of service performance and a deeper

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<sup>18</sup> This chapter was originally published in my 2022 article "Do Cogovernance and CSOs Supplement Municipal Capacity for Service Delivery? An Assessment of Differences in Simple Versus Complex Services." *Journal of Public Administration Research and Theory* 32(1): 1-22. I include it here with permission from Oxford University Press in agreement with their policies for reuse in dissertations.

assessment of administrative capacity. Examining these three factors may also guide practitioners concerned about the performance of relatively complex services on the set of measures that they could strategically prioritize in challenging contexts with limited resources.

The waste sector is relevant to examine this question for several reasons. Waste management is a critical municipal responsibility that has multiple social and economic implications. When it fails, it generates public health and disease control problems; lowers property value and private investment; and, exposes municipal employees, usually low-income women, to risk (Akinbile and Yusoff 2011; UN-Habitat 2010). Waste management also has climate change mitigation and adaptation consequences. It produces methane, a GhG, from poor collection, disposal, incineration, and management that is significantly more contaminant than carbon dioxide (Ackerman 2000; IPCC 2007, 212; UNEP 2010). Poorly managed waste in cities experiencing heavy rain and flooding associated with climate change can also obstruct drainage and sewage systems and destroy dumpsites, landfills, and other vital waste infrastructure, all of which worsen flooding and related damages (Douglas et al. 2009; Kaza et al. 2018, 119). Vulnerability to environmental disasters is further aggravated by the outcomes of waste mismanagement and poor local governance (Satterthwaite et al. 2009).

Not all waste management services are equally intricate. Each entails specific types of administrative capacity, CSOs, and cogovernance. This is especially observed in the developing world where it is harder for municipalities to provide waste management services of relatively greater complexity, such as properly disposing of waste in landfills or through recycling, composting, or treatment, vis-à-vis relatively more simple ones, such as waste collection from the streets (Kaza et al. 2018). In practice, this translates into sufficiently clean streets, but at the same time waste dumped in informal open holes with no control or treatment. To assess this

puzzle, this study examines Peruvian municipalities using panel data methods, asking the following principal question: Could service-specific municipal administrative capacity explain differences in performance between relatively simple and complex services? Two secondary research questions are also addressed: Could the presence of formal, locally embedded CSOs produce similar performance disparities between services varying in relative complexity? Is local cogovernance another important driver of performance discrepancies?

This research helps advance knowledge on local governance and complex service delivery in the Global South. It engages with research on administrative capacity, CSO presence, local cogovernance, service provision, and waste management in public administration and political science. It contributes to this literature by, first, looking beyond general capacity measures to focus on service-specific administrative capacity; second, differentiating service complexity and their relative performance; third, examining whether and how service-specific administrative capacity, CSO presence, and community cogovernance influence performance when service complexity increases; and, fourth, analyzing how these three governance factors matter for public services with clear climate change implications in Global South municipalities. I theorize that while improvements in municipal waste management administrative capacity and local CSO presence support simple service performance, such as waste collection, only more robust waste management administrative capacity, and not CSO presence, helps increase complex service performance, such as waste disposal. Cogovernance for local planning and budgeting should also theoretically raise simple and complex service performance. The results confirm the expectations about the role of administrative capacity and CSOs but partially on cogovernance.

### **3.1 Literature Review and Hypotheses**

#### **3.1.1 Administrative Capacity**

Scholars have shown convincingly that administrative capacity affects public organizations' performance (Andrews 2010; Avellaneda 2009, 2012; Bello-Gómez 2020; Boyne 2003; Christensen and Gazley 2008; Fernandez 2004; Fernandez and Moldogaziev 2013; Grindle 2007; Ingraham et al. 2003; Nicholson-Crotty and O'Toole Jr. 2004; O'Toole Jr. and Meier 1999, 2003; Olvera and Avellaneda 2019; Rainey and Steinbauer 1999; World Bank 2003). This research focuses on *general administrative capacity*, operationalizing it through measures of organizational structure; human resource quality, quantity, and empowerment; personnel stability; available financial resources; leadership characteristics; managerial outputs and public managers' experience and educational attainment; and, information systems. These factors represent general administrative features of a public agency.

While the *general administrative capacity* of a bureaucracy is crucial for service performance, limited research has examined how the administrative capacity *within* the office or unit directly managing and implementing the service matters for performance, especially as service delivery responsibilities become relatively more complex. Research on administrative capacity and service delivery, in both developed and developing countries, leaves unnoticed the degree to which relevant offices within a bureaucracy are *sufficiently specialized and equipped* to deliver specific services. Not understanding these distinctions reduces our knowledge about how this type of *service-specific administrative capacity* matters when analyzing services' performance, particularly if a municipal office can provide simple services but largely fails to provide relatively more complex ones.

Thus, it is crucial to examine municipal waste offices' *internal* conditions to learn about the *direct* impact of administrative capacity within the waste management team on the performance of services of different complexity. This information can be gathered at the office or unit level by looking at the administrative resources available, how appropriate or specialized these resources are for a specific service, and how they ultimately influence that service's performance, as classical organizational theory suggests (Galbraith 2002; Lawrence and Lorsch 1967; Mintzberg 1983; Thompson 1967). Features of organizational structure and procedures — including office or unit specialization in relation to tasks— as well as their resources, may thus be critical for performance.

The evidence raises questions about how much complexity municipal bureaucracies are capable of handling when delivering a service, such as waste disposal, in a context that increasingly requires them to do so urgently and efficiently. For instance, in Peru, 60% of all 1,874 municipalities perform waste collection activities each day or every other day at a minimum, but 70% improperly dispose of it using informal open-air dump sites (MINAM 2016; INEI 2015). Differences between waste collection and disposal services are observed throughout the developing world (Kaza et al. 2018). It may not be accurate to assume that services provided by a given public agency sharing the same administrative and governance capabilities, and managed by the same unit, will experience equal performance levels. Since services vary in complexity, their performance will likely be commensurate to unit capabilities. Therefore, examining conditions and processes *within municipal units* is essential to understand whether the available administrative capacity is sufficient to adequately provide services regardless of their complexity (Lawrence and Lorsch 1967; Mintzberg 1983; Thompson 1967).

This classical, applied approach to administrative capacity centered on the within-unit service-specific administrative capacity is often overlooked by current approaches to the study of administrative capacity and performance, waste management, and climate action in a context of increasing environmental threats (Anguelovski et al. 2014; Hawkins et al. 2016; Krause et al. 2016; Krause et al. 2019). Additionally, the challenges of climate change and its associated uncertainties are likely to aggravate already existing limitations in municipalities, including deeply embedded administrative structural and operational weaknesses. Contrasting the performance of waste services with different complexity and examining their corresponding administrative capacity is, therefore, a necessary contribution.

The first hypothesis suggests that:

**H1:** Administrative capacity specific to waste management is positively associated with improvements in both waste collection performance (i.e., a *simple* service) and proper waste disposal performance (i.e., a *complex* service).

### 3.1.2 CSO Presence

While scholars have found that service performance is also enhanced with CSOs' actions (Auerbach 2017, 2020; Cammett and MacLean 2014; Jaramillo and Wright 2015) further research is necessary to elucidate if these improvements are possible when services increase in relative complexity. In the Global South, mainly in cities with less state presence and greater vulnerabilities, civil society tends to participate in public issues through an array of mechanisms by organizing and demanding better services from local governments (Auerbach 2020; Kruks-Wisner 2018; McNulty 2013; Remy 2004). In the case of waste, stakeholders discuss and

organize local action regarding service issues, including taking part in the sweeping, recycling, and disposing of waste (UN-Habitat 2010; USAID 2018).

Yet, improvements in service performance may not just result from the action of any CSO but may depend on specific CSO features (O'Meally 2013). Some research finds that adequate service delivery is more likely when civil society is organizationally strong, participatory, and rooted in the context in which it operates (Batley 2006; Brass 2016; Cammett and MacLean 2014; Devas and Grant 2003; Putnam et al. 1993; Robinson and White 1997). This may be crucial for municipalities with high poverty levels, regardless of the number of non-state actors present (Torpey-Saboe 2015). The outcomes and relationship types, however, may depend on the service sector, objectives, context, and extent of the involvement of civil society actors, and how government (or elite interest) reacts to their presence (Coston 1998; Jaramillo and Alcázar 2017; Nelson-Nuñez 2019).

Thus, there are no guarantees that civil society alone will enhance delivery outcomes, especially for the most vulnerable sectors and if the most connected and wealthy are more proactively engaged (Beall 2001; Devas and Grant 2003; Grillos 2017; Jaramillo and Alcázar 2013; McNulty 2013; Sheely 2015). This means that simply examining participation will not directly elucidate questions regarding civil society's influence on service delivery. In line with the argument of Putnam et al. (1993) on the civic community, to better understand whether and how CSOs affect service delivery it is necessary to assess the presence of CSOs that are formal and embedded in their context. Their presence can be important in two ways: first, a CSO that is formal likely has more transparent and established administrative, membership, and operational norms and protocols, enhancing the efficiency of its actions; and, second, a locally embedded CSO tends to have a greater understanding of its community's priorities and how to address them

effectively, which may increase its commitment and societal engagement, improving its representation and legitimizing its actions (Cammett and MacLean 2014; Jaramillo and Wright 2015; Putnam et al. 1993).

The presence of CSOs with such characteristics is expected to facilitate influence and organized collective action, which are crucial to address public service issues (Auerbach 2017; Ostrom 1990; Putnam et al. 1993). For instance, formal and locally-based CSOs, such as neighborhood associations or community-based poverty alleviation organizations, may be more effective at articulating and strategically demanding municipal offices to address community priorities of better public services or, alternatively, at directly taking charge of the problem through organized collective action. This benefits the service receiving attention, usually the one considered more salient, which may in turn generate performance differences with other services. While CSO influence on service delivery performance may depend on the group's characteristics, service performance might also be contingent on the relative complexity of the service itself, regardless of the CSO's characteristics. Therefore, this study challenges the assumption that the effect on service performance of CSO presence remains unchanged even if the complexity of a service varies. The second hypothesis posits:

**H2:** The presence of formal and locally-embedded CSOs is positively associated with improvements in waste collection performance (i.e., a *simple* service) but is *not* associated with increased proper waste disposal performance (i.e., a *complex* service).

### 3.1.3 Cogovernance for Local Planning and Budgeting

When governments (national or local) fail to provide essential services adequately, non-state actors organize at the local or community levels to collaborate with municipal bureaucracies to find a way to provide needed services (Brass 2012; Cammett and MacLean 2011; Post et al. 2017). To understand these interactions, the collaborative governance literature focuses on the study of collaboration characteristics, determinants of collaboration and coproduction outcomes, civil society involvement types and their relationship with state agencies (Ansell and Gash 2018; Austin 2000; Bovaird 2007; Bryson et al. 2006, 2015; Cheng 2019b; Loeffler and Bovaird 2016; McLoughlin 2011; Nelson-Nuñez 2019; Selsky and Parker 2005; Zambrano-Gutiérrez et al. 2017). However, understanding the interaction between bureaucracies and CSOs also requires examining how collaborative governance may explain service performance in general, on the one hand, as well as performance differences when contrasting services of different complexity, on the other. Exploring this distinction is crucial because many studies in public administration on collaborative governance, particularly cogovernance and coproduction, do not concentrate on service performance outcomes or discuss why it matters, less so when services vary in complexity (Cheng 2019a; Voorberg et al. 2015).

Some research does explore a range of governance relationships between multiple government levels and civil society to understand performance (Batley 2006, 2011; Brinkerhoff and Brinkerhoff 2011; Brinkerhoff 2002; Denhardt and Denhardt 2015; Emerson et al. 2012; McGuire 2006; Osborne and McLaughlin 2004; Ostrom 1996). However, others study *local collaborations* and their implications on public service performance, which, in practice, generally occur when both paid public employees and (usually unpaid) service users (individuals or groups) make significant, active, and explicit joint contributions to the cogovernance (i.e.

planning, designing, budgeting, or decision-making in general) or coproduction (i.e. managing, delivering, or evaluating) of public services locally (Bovaird 2007; Bovaird and Loeffler 2012; Brandsen and Honingh 2016; Brandsen and Pestoff 2006, 497; Brass 2016; Cheng 2019a, 205; Nabatchi et al. 2017, 771; Nabatchi et al. 2016; Osborne et al. 2013; Ostrom 1996; Voorberg et al. 2015).

While local coproduction may help solve immediate implementation issues affecting performance, local cogovernance may allow civil society actors to influence more strategic and structural public service matters that also drive performance inefficiencies. Having a voice in the discussion and agreement processes of local government service deliberations is key to ensure that societal needs are prioritized. The delivery of services with direct societal implications, like waste collection and disposal, may benefit from local cogovernance relationships between a municipal government and civil society groups, where the latter participates in some aspect of the planning, designing, and thus decision-making of local policy measures and participatory budgeting plans. This interaction is expected to be particularly crucial in local governments facing multifaceted limitations for public service provision, which is common in the Global South. Thus, this article examines *local cogovernance* for planning and budgeting.

Some research finds contrary evidence, indicating that this form of local collaboration does not always lead to better service delivery performance. In part, it is due to administrative capacity limitations of municipal governments, preventing them from setting up proper participation venues and mechanisms to incorporate societal voices. Another reason is CSOs' lack of involvement and representation. These are two key factors that tend to preclude proper cogovernance with the communities needing these services the most (Brass et al. 2012; Brinkerhoff 2002; Cammett and MacLean 2011; Jaramillo and Alcázar 2017; Loeffler and

Bovaird 2016; McNulty 2019). However, since cogovernance is expected to allow CSOs to voice some priorities at the decision-making table, in one way or another, this collaboration form should increase the likelihood that issues that would otherwise go unaddressed—due to their complexity or lack of salience—receive adequate attention, ultimately influencing service performance. Third hypothesis proposes:

**H3:** Cogovernance for *municipal planning and budgeting* is positively associated with performance improvements in *both* waste collection and proper disposal services.

## **3.2 Data and Methods**

Details on the quantitative panel dataset are provided in section 2.4.2 of Chapter 2.

### **3.2.1 Dependent Variables**

The two dependent variables measure *solid waste collection* and *solid waste disposal performance*, as suggested in the waste management literature (Abarca-Guerrero et al. 2013; UN-Habitat 2010; USAID 2018).

**Collection performance** is evaluated through the extent to which waste is collected, examining whether the streets are clean after waste is gathered. This is operationalized in two ways. One, *collection frequency*, which is the number of times waste is collected from the streets. It reflects the frequency, in days per week, in which collection routines are deployed around the municipality to gather waste from households and public spaces. Two, the *quantity of waste*

collected by the municipality, which is operationalized by the reported average amount of waste collected, in metric tons per day, per 1,000 people.<sup>19</sup>

**Disposal performance** is defined as the degree to which waste is properly disposed of. *Proper disposal* performance is operationalized by adding the percent of waste disposed of in landfills, or through recycling, composting, or treatment methods, out of the total waste disposed of by each municipality annually. Improper disposal methods include dumping waste on informal open-air holes and burning.

### 3.2.2 Independent Variables

Three independent variables of interest are waste management administrative capacity, the presence of formal and locally embedded CSOs, and cogovernance for municipal planning and budgeting.

**Waste management administrative capacity** refers to a municipal bureaucracy's internal capabilities that support the planning, management, and implementation of waste management policy to achieve its expected outcomes effectively and efficiently. Based on the approach of

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<sup>19</sup> The National Statistics Institute, through the 2014 National Registry of Municipalities, reported municipal-level data on waste quantity for that year in one of six categories, some of which had wide quantity ranges, such as “from 50 to less than 100 tons per day” (category five). To obtain a more accurate waste collection quantity value for this year, I followed three estimation steps. First, I calculated the growth or decline rate from 2016 to 2018 and used it to obtain a 2014 collection quantity. Second, I adjusted those cases with an estimate from the first step that was below or above their selected category range in 2014 to the mid-point of that category. I applied this only to those cases belonging to categories one through three (below one ton/day, one to less than three tons/day, or three to less than nine tons/day, respectively). However, I applied a third step to those cases with an estimated value outside their 2014 quantity range and that fell under category four, five, or six that year (nine to less than 50 tons/day, 50 to less than 100 tons/day, or 100 or more tons/day, respectively). This involved performing a random data check to confirm that the resulting estimates approximated their 2016 and 2018 values and were within their selected 2014 waste collection quantity category.

classical organizational theory scholars (Lawrence and Lorsch 1967; Thompson 1967) and recent research suggesting the use of more specific measures of capacity (Krause et al. 2016; Krause et al. 2019), this concept is operationalized by examining two components. First, the degree to which the municipal office responsible for waste management is internally *specialized*, which means having differentiated management features or components for this service (i.e., organizational structure, internal and external coordination processes, policy documents). Exploratory factor analysis is used to capture waste management administrative capacity through different dimensions. A *waste management administrative capacity index* is thus used in the analysis based on variables measuring the existence of waste management and environmental management policy instruments, structure, and decision-making space (see Table A3.2 in the Appendix).

Second, two additional key variables are included in the model to capture administrative capacity specifically related to each waste service. The concept of *service equipment* measures whether the municipality has differentiated operational resources or components (i.e., trained personnel, operational office resources, budget allocation, operational waste trucks) for each of the two waste services. Given the data available, this concept is operationalized through the number of *waste collection vehicles*, in the models using waste collection as the dependent variable, and the number of *waste disposal equipment*, for the models assessing waste disposal. The waste collection vehicles variable adds the total vehicles the municipality has, such as the number of collection trucks (i.e. dump and compactor trucks), tricycles, and cargo motor tricycle, all of which are used to provide this service. The result is standardized by municipal surface area. The waste disposal equipment variable computes the total number of gatehouses, weight scales,

waste loaders (i.e. backhoe and track loaders), and wheelbarrows employed for this service. Disposal equipment is standardized by population size.

**CSO presence** is conceptually defined as the degree to which locally rooted and formal CSOs exist in the municipality's jurisdiction (Cammett and MacLean 2014; Putnam et al. 1993). It is operationalized by analyzing neighborhood associations, which have evident roots in the community, are formal, and tend to be actively involved in local issues (Jaramillo and Alcázar 2013; Jaramillo and Wright 2015; Remy 2004). In Peru, neighborhood associations are umbrella organizations officially created by municipal ordinance, upon request of its members or neighbors, and composed of representatives from diverse community groups. Their primary purpose is to discuss and propose local policy and investment priorities, oversee the implementation of local development plans, and improve service delivery (DFID 2003; Law Decree No. 27972 2003, Title VII, Chapter IV; Remy 2004).

While they have recognized weaknesses, neighborhood associations are the principal means for evaluating solutions of local community issues and are independent of cogovernance venues like Local Coordination Councils (Jaramillo 2009, 122; McNulty 2019, 139; Remy 2004). Studying neighborhood associations' presence allows us to better understand whether and how these actors influence performance differences between waste collection and disposal services. Exploratory factor analysis is performed to create two *neighborhood association indices* using different organizational and participation features of neighborhood associations — with one including its membership size relative to the municipality's population— to capture the

local variation of formal, locally embedded CSO presence more fully (see Table A3.3 in the Appendix).<sup>20</sup>

An alternative measure, CSO concentration, is included to examine another type of formal and locally embedded CSO assessing the concentration, in number of organizations per 1,000 people, of community-based poverty alleviation CSOs in the municipality. These groups include community kitchens, nutrition organizations (i.e., “glass of milk”), mothers’ clubs, youth organizations, and others. All exclusively provide social services and support to low-income families, especially single mothers and their children (DFID 2003; McNulty 2013). Poverty-alleviation CSOs are also crucial because they also serve as collective action groups for a range of other community-related problems, ad-hoc or otherwise (Arroyo and Irigoyen 2005, 77; de la Riva Agüero 2021). Examining these CSOs’ concentration, standardized by population size, helps capture the influence of other formal and locally rooted CSOs’ presence.

**Cogovernance** evaluates the extent to which CSOs and local government authorities jointly participate in the planning and budgeting of local policies. It refers to the formal interaction between a local government and CSOs within its jurisdiction for jointly making plans and budget allocation decisions to address issues of local importance, which usually includes discussions about the provision of public services such as waste management (Cheng 2019a; Nabatchi et al. 2017; Voorberg et al. 2015). Cogovernance is operationalized through an index capturing the extent to which Local Coordination Councils (LCC) engage in local planning and budgeting. Exploratory factor analysis is used to create the *cogovernance index* (see Table A3.4 in the

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<sup>20</sup> Two indices are used, first, to examine the sensitivity of the model from adding a key variable to the index and, second, because the index with the variable of membership size relative to population only has 756 observations in 2018, causing an important reduction in the sample size when running the regressions. Both indices help assess variations in neighborhood associations’ characteristics across municipalities.

Appendix). It includes variables on LCC's actions for planning and budgeting and measures on civil society and total representatives relative to the municipality's population. In Peru, LCCs are the main municipal cogovernance venues. The mayor leads LCCs and are composed of municipal council members and CSO representatives that can have 40% of the seats (Law Decree No. 27972 2003, Title VII, Chapter III). Their mandate is to coordinate the joint planning and approval of local development policies and budgets (Jaramillo and Alcázar 2013; McNulty 2019; Remy 2004), making them essential to assess cogovernance in this context.

### 3.2.3 Control Variables

The first set of controls looks at overall municipal administrative capacity. Exploratory factor analysis is used to create an index for *general administrative capacity* (see Table A3.5 in the Appendix).<sup>21</sup>

To control for political capital and experience as proxies of local politics' influence on service performance (Avellaneda 2012), the model includes the mayor's electoral vote share in the 2010-2011<sup>22</sup> and 2014-2015<sup>23,24</sup> elections.<sup>25</sup> This measure captures electoral support for the

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<sup>21</sup> It includes measures of the proportion of its total employees out of the total population, number of computers with internet access per municipal worker, whether the municipality has a cadastre of its jurisdiction and a cadastral information system, total municipal budget per capita, and different binary variables assessing its capacity to manage its results-based budgeting (RBB) program (Christensen and Gazley 2008; Ingraham et al. 2003).

<sup>22</sup> Elections were declared null in 34 municipalities in 2010. They were carried out again in different times during 2011. Available through:

[https://portal.jne.gob.pe/portal\\_documentos/files/procesoselectorales/Documentos%20%20Procesos%20electorales/Elecciones%20Municipales%20Complementarias%202011/RADIO-URBANO.pdf](https://portal.jne.gob.pe/portal_documentos/files/procesoselectorales/Documentos%20%20Procesos%20electorales/Elecciones%20Municipales%20Complementarias%202011/RADIO-URBANO.pdf).

<sup>23</sup> Elections were declared null in 31 municipalities (two provincial, 29 districts) in 2014. They were carried out again in different times during 2015. Available through:

[https://portal.jne.gob.pe/portal\\_documentos/files/procesoselectorales/Informacion%20Electoral/Elecciones%20Municipales%20Complementarias%202015/DS%200011-2015-PCM%20-%20Convocatoria%20EMC%202015.pdf](https://portal.jne.gob.pe/portal_documentos/files/procesoselectorales/Informacion%20Electoral/Elecciones%20Municipales%20Complementarias%202015/DS%200011-2015-PCM%20-%20Convocatoria%20EMC%202015.pdf).

<sup>24</sup> Another group of 10 municipalities (one provincial, nine districts) were created in 2014, so no elections were held that year. Available through: <https://gestion.pe/peru/politica/jne-34-501-electores-votaran-elecciones-municipales-2015-99435-noticia/>.

<sup>25</sup> The 2011 and the 2015 elections are considered extemporaneous elections. However, the elected administrations' tenure periods still ended in 2014 and 2018, respectively.

2011-2014 and 2015-2018 tenure periods, respectively. The model also controls for the influence of mayoral reelection, whether the mayor belongs to a local or regional party (as opposed to a national party or alliance), and if the mayor is female (Jaramillo and Alcázar 2017).

Peruvian municipalities have significantly diverse ecological and geographic areas, primarily associated with different altitudes, weathers, and natural environments. The most prosperous cities in the country are on the Pacific coast (Escobal and Torero 2005). A binary variable is included to control for such differences, comparing coastal municipalities with other regions as base category. Socioeconomic factors are accounted for using municipal poverty and total population. Descriptive statistics are included in Table 3.1, in Chapter 2 variable description (Table A2.2), and in the Appendix key variables' temporal variation (Graphs A3.1-A3.3), and the correlation matrix (Table A3.1).

**Table 3.1.** Descriptive Statistics

	<b>N</b>	<b>Mean</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>
<b><i>Dependent Variables</i></b>					
Waste Collection Frequency (days/week)	5,561	3.97	2.58	0	7
Waste Collection Quantity, per 1,000 People (metric tons/day)	5,435	0.56	2.94	0	181.03
Waste Properly Disposed (%)	5,593	27.78	40.51	0	100
<b><i>Independent Variables</i></b>					
<b>Waste Management Capacity (Overall)</b>					
WM Admin. Capacity Index	5,525	0.00	0.85	-0.80	2.26
WM Budget (per Capita \$)	3,998	11.57	39.85	0	996.06
<b>Waste Management Capacity (Specific for each Service)</b>					
Waste Collection Vehicles (per square mile)	5,591	0.08	0.74	0	27.75
Waste Disposal Equipment (per 1,000 people)	5,561	0.12	0.64	0	33.11
<b>Organized Civil Society Presence</b>					
Neighborhood Association Index					
Without total membership variable	5,507	0.00	0.94	-0.87	1.18
With total membership variable	4,443	0.00	0.94	-1.07	2.08
CSO concentration (per 1,000 people)	5,561	6.01	4.43	0	46.65
<b>Collaborative Governance</b>					
Cogovernance Index	5,360	0.00	0.90	-0.56	22.03
<b><i>Controls</i></b>					
General Admin. Capacity Index	5,362	0.00	0.79	-1.17	2.38
Mayor Reelected	5,416	0.18	0.38	0	1
Mayor's Vote Share	5,513	34.98	10.46	0	91.67
Local Party	5,513	0.65	0.48	0	1
Mayor Female	5,417	0.03	0.17	0	1
Poverty	5,555	40.14	20.71	0.06	97.38
Total Population	5,561	16,410	52,099	151	1,123,889
Ecological Region	5,561	3.59	1.95	1	8

### 3.2.4 Estimator

All models use ordinary least squares regressions with two-way fixed effects by province and year. Not much within variation is expected at the municipal level over time across the three years used in the panel and the standard errors are higher when fixing effects at that level. Moreover, given that Peru is a very heterogeneous country at the provincial level<sup>26</sup> — socioeconomically, geographically, environmentally, administratively, politically, and in other factors— it is crucial to control for unobservables between provinces that may bias the coefficients of both the independent and dependent variables. It is also more likely to observe variation over time within provinces in the three-year panel used. Thus, I account for unobserved location-specific time-invariant correlations with regressors using fixed-effects at the provincial level. Using fixed effects via provincial dummy variables instead of municipal dummy variables is hence more appropriate. Following that logic, standard errors are also clustered on provinces to use fewer clusters and adjust for correlations between observations across different years and municipalities in each provincial group (Cameron and Miller 2015).

### 3.2.5 Data Limitations

A limitation of the datasets used, particularly the National Registry of Municipalities of Peru, is that they do not report on CSOs involved in either waste service or CSO capacity relevant for these services. Similarly, this study does not account for local cogovernance focused on waste service planning and budgeting. Future research would shed light, for instance, on how CSOs' specific involvement on waste or the decision-making processes of cogovernance venues

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<sup>26</sup> Peru has two types of local governments: *Provincial municipalities*, which are similar to US counties, and *district municipalities*, equivalent to US cities. They are distributed across 25 regional governments (comparable to US states, with less political and fiscal autonomy). However, the term *municipalities* in this study refers to district municipalities.

regarding waste issues matter for waste service performance differences. More nuanced analyses by regional or municipal subgroups could also provide important insights. Municipal-level qualitative and survey research methods are ideally suited for these tasks.

### **3.3 Findings**

The findings from the main regression models are presented in Table 3.2. It contains four models of waste collection performance, two assessing *collection frequency* (models 1 and 2) and two *collection quantity* (models 3 and 4), and two models of waste disposal performance, evaluating *proper disposal* (models 5 and 6). Two models are run for each dependent variable, with the main difference being that each includes one of the two neighborhood association indices.

The primary independent variable of interest is the waste management administrative capacity index, including the measures of waste management capacity specific to each service. Two secondary independent variables of interest are the neighborhood association indices, and the cogovernance index. The waste management capacity index is statistically significant in all the *collection frequency* and *proper disposal* models, with positive coefficients, but not significant in the *collection quantity* models. This suggests that, all else equal, strengthening administrative capacity, at the municipal waste office level, is associated with increased waste collection frequency and proper waste disposal in landfills or through recycling, composting, or treatment methods. A one standard deviation increase in waste management administrative capacity is associated with a half-day increase in collection frequency per week, at the 0.1% level in both models, and an additional 2 percentage points of waste properly disposed annually, at the 5% and 10% levels in models 5 and 6, respectively. Waste management capacity thus improves the performance of both simple and complex waste services.

Similarly, the specific waste management capacity measures are positive and significant on all six models, confirming that these capacity equipments also raise waste service performance. Adding one more waste collection vehicle per square mile is associated with an increase in collection frequency of 0.11 days per week, or about 2.6 more hours according to model 1, and of 0.13 days per week or 3.1 more hours according to model 2. Both are significant at the 0.1% and 1% levels, respectively. An extra collection vehicle per square mile also increases the amount of daily waste collected in about 0.04 metric tons per day per 1,000 people, which translates into roughly 40 kilograms or 88.2 pounds according to models 3 and 4 and significant at the 0.1% level. Likewise, an extra disposal equipment per 1,000 people improves proper disposal performance by 2.6 percentage points each year per model 5, at the 10% level, and by 2.9 percentage points annually per model 6, at the 5% level. While results with  $p$ -value  $< 0.10$ , such as in model 6 for the waste management capacity index and model 5 for waste disposal equipment, do not meet the standard threshold for statistical significance of  $p$ -value  $< 0.05$ , they still have important implications for public administration research and practice (Gelman and Stern 2006; Gill 1999).

The presence of formal and locally embedded CSOs, such as neighborhood associations, is only positively and significantly associated with improved collection frequency performance using both indices. Examining the index without the total membership variable, a one standard deviation increase in the neighborhood association index is associated with an increase of 0.15 days per week in collection frequency, or approximately 3.6 hours per week. Similarly, using the index with the total membership variable, model 2 shows that a one standard deviation increase in the neighborhood association index increases collection frequency in 0.16 days per week, or about 3.8 hours. Both models are significant at the 1% level. The presence of neighborhood

associations does not show a statistically significant association with collection quantity and proper disposal performance, even though the coefficients are positive. However, the other measure of CSO presence, examining the role of the concentration of poverty alleviation local organizations per 1,000 people, is negatively and significantly associated with collection frequency, at the 5% level in both models. It reduces frequency by about 1 hour as their territorial density increases. This type of CSO shows no association with collection quantity and proper disposal, although the coefficients are positive, except in model 6.

Cogovernance, on the other hand, is only significantly associated with the two waste collection dependent variables, frequency and quantity, although it has negative coefficients on collection frequency and positive coefficients on collection quantity. This indicates that cogovernance venues such as LCCs are important to make planning and budgeting decisions, improving the amount of waste collected in about 0.13 or 0.14 metric tons per day per 1,000 people, which is equivalent to 287 or 309 pounds, per models 3 and 4, respectively. Simultaneously, cogovernance through LCCs helps reduce the number of times collection teams make their rounds in roughly 13 hours per week.

Results from the control variables show a significant and positive association between the general administrative capacity of the municipality and collection frequency, but none with collection quantity and proper disposal performance. A one standard deviation increase in the general administrative capacity index is associated with roughly 3.8 or 4 hours added to the collection frequency routine each week. However, an inverse and significant association is observed between mayors' vote share and collection frequency, at the 0.1% level in model 1 and 1% level in model 2. Poverty is statistically significant and only negatively associated with collection quantity. The ecological region variable is only significant and positively associated

with collection frequency when comparing coastal municipalities with those in other regions as base category.

**Table 3.2.** Two-Way Fixed Effects Regressions for Waste Collection and Disposal Performance

	Waste Collection				Waste Disposal	
	Frequency (days/week)		Quantity (metric tons/day, per 1,000 people)		Properly Disposed (%)	
	M1	M2	M3	M4	M5	M6
<b><i>Waste Management Capacity (overall)</i></b>						
WM Admin. Capacity Index	0.485*** (0.062) [0.000]	0.507*** (0.065) [0.000]	-0.030 (0.058) [0.599]	-0.043 (0.066) [0.520]	2.112* (0.981) [0.033]	1.853+ (1.104) [0.095]
WM Budget (per Capita \$)	0.003* (0.001) [0.048]	0.003+ (0.002) [0.054]	0.000 (0.001) [0.436]	0.000 (0.001) [0.444]	0.001 (0.015) [0.963]	-0.017 (0.017) [0.340]
<b><i>Waste Management Capacity (specific for each service)</i></b>						
Waste Collection Vehicles (per sq. mile)	0.105*** (0.028) [0.000]	0.130** (0.042) [0.002]	0.036*** (0.007) [0.000]	0.040*** (0.009) [0.000]		
Waste Disposal Equipment (per 1,000 people)					2.614+ (1.351) [0.054]	2.862* (1.348) [0.035]
<b><i>Organized Civil Society Presence</i></b>						
Neighborhood Association Index						
Without total membership variable	0.146** (0.044) [0.001]		0.061 (0.038) [0.105]		0.443 (0.757) [0.559]	
With total membership variable		0.162** (0.054) [0.003]		0.077 (0.049) [0.120]		0.469 (0.953) [0.623]
CSO Concentration (per 1,000 people)	-0.043* (0.018) [0.018]	-0.049* (0.021) [0.018]	0.009 (0.007) [0.208]	0.009 (0.008) [0.253]	0.016 (0.281) [0.955]	-0.122 (0.318) [0.701]
<b><i>Collaborative Governance</i></b>						
Cogovernance Index	-0.527** (0.163) [0.001]	-0.560** (0.159) [0.001]	0.128** (0.045) [0.005]	0.138** (0.051) [0.007]	-0.701 (2.044) [0.732]	-0.059 (2.140) [0.978]

	Waste Collection				Waste Disposal	
	Frequency (days/week)		Quantity (metric tons/day, per 1,000 people)		Properly Disposed (%)	
	M1	M2	M3	M4	M5	M6
<b>Controls</b>						
General Admin. Capacity Index	0.159** (0.050) [0.002]	0.165** (0.055) [0.003]	0.069 (0.078) [0.380]	0.078 (0.092) [0.395]	0.483 (0.831) [0.561]	0.752 (0.961) [0.435]
Mayor Reelected	-0.098 (0.145) [0.501]	-0.056 (0.148) [0.704]	-0.043 (0.046) [0.345]	-0.032 (0.052) [0.540]	0.963 (2.539) [0.705]	0.897 (2.700) [0.740]
Mayor's Vote Share	-0.018*** (0.005) [0.000]	-0.018** (0.005) [0.001]	-0.000 (0.002) [0.862]	-0.001 (0.002) [0.473]	0.150 (0.092) [0.105]	0.137 (0.104) [0.187]
Local Party	0.072 (0.099) [0.468]	0.144 (0.104) [0.167]	0.067 (0.063) [0.287]	0.068 (0.070) [0.336]	-0.152 (1.850) [0.935]	0.193 (2.033) [0.925]
Mayor Female	-0.024 (0.222) [0.912]	0.051 (0.212) [0.809]	0.006 (0.091) [0.952]	0.043 (0.103) [0.674]	-3.177 (4.089) [0.438]	-3.233 (4.287) [0.452]
Poverty	-0.006 (0.004) [0.185]	-0.004 (0.005) [0.462]	-0.007** (0.002) [0.001]	-0.007** (0.002) [0.001]	0.021 (0.073) [0.773]	0.023 (0.081) [0.777]
Total Population	0.000 (0.000) [0.169]	0.000 (0.000) [0.154]	0.000 (0.000) [0.173]	0.000 (0.000) [0.218]	0.000 (0.000) [0.257]	0.000 (0.000) [0.363]
Ecological Region (coast)	1.157*** (0.279) [0.000]	1.198** (0.339) [0.001]	0.072 (0.122) [0.556]	0.068 (0.147) [0.644]	-7.886 (6.182) [0.204]	-7.219 (7.253) [0.321]
Intercept	5.717*** (0.377) [0.000]	5.579*** (0.416) [0.000]	0.636*** (0.170) [0.000]	0.754*** (0.172) [0.000]	44.600*** (6.428) [0.000]	50.659*** (7.539) [0.000]
Observations	3,614	2,949	3,588	2,923	3,614	2,949
R-squared	0.41	0.42	0.07	0.09	0.30	0.30
BIC	15,176.74	12,363.86	14,406.90	12,230.27	36,029.69	29,484.10

Notes: Standard errors clustered at the provincial level in parentheses. + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001, exact p values provided in brackets.

### 3.4 Discussion

The results presented here support the first two hypotheses that waste management administrative capacity and formal, locally rooted CSOs have a positive association with improvements in simple waste collection performance while only waste management administrative capacity has a positive association with complex waste disposal performance. The presence of such CSOs does not influence proper waste disposal performance. These findings also partially support hypothesis 3 that cogovernance for planning and budgeting is positively associated with performance improvements in both waste collection and disposal services, regardless of their relative complexity differences. Cogovernance increases collection quantity, reduces collection frequency, and has no effect on disposal.

This suggests that the service-specific administrative capacity of municipal waste offices, captured through an index and waste capacity equipments, has crucial implications for understanding the performance of both relatively simple and complex waste management services. Unlike general municipal administrative capacity improvements that enhance only simple waste service provision, waste management administrative capacity illustrates that improved waste office *specialization and equipment* benefits *both* collection frequency and proper disposal services. Having relevant waste and environmental planning and policy instruments, as well as specific equipment, are critical for simple and complex service performance. This contrasts with non-direct, general municipal capacity factors such as more personnel, technological hardware and software, or a results-based budgeting program.

As occurs across the Global South, many municipalities in Peru struggle to provide relatively complex disposal services while keeping their streets clean. While this study's results show that service-specific capacity is critical, other evidence finds that, on the ground, the

primary waste-related duties of municipal waste offices are to oversee the monthly hiring of trash collection teams, the occasional acquisition of gears (e.g., mouth masks, uniforms, boots, gloves), and solving other administrative issues. These shortcomings and collection-centered waste operations are further aggravated by the fact that some municipalities simultaneously share their waste duties with the provision of other public services and lack trained personnel (de la Riva Agüero 2021). In this context, waste administrators make decisions regarding the delivery of services of different complexity levels. Examining waste offices' internal conditions and addressing limitations of service-specific waste management administrative capacity may have consequential results to correct these performance gaps.

While it is generally expected that the presence and thus active involvement of well-organized civil society actors, particularly those embedded in the communities in which they operate, is likely to produce better performance outcomes for *all* public services, the initial results reject those assumptions. The findings indicate that formal and locally embedded CSOs, such as neighborhood associations, may support simple service performance, such as waste collection frequency, but their participation's influence disappears for more complex services. This could mean that these CSOs may be able to effectively supplement the state when services are relatively simple. Given the low waste management administrative capacity of municipal offices, on average, it is likely that some type of supplementation occurs for simple collection frequency.

The findings are consistent across models using either neighborhood association index. This suggests that while strong, service-specific administrative capacity might be necessary to deliver this relatively more complex service, the presence of CSOs may not suffice to help improve its performance. Two additional mechanisms could explain this result, unrelated to

CSO's capabilities. One, limited service-specific administrative capacity in waste units may preclude their managers from planning the involvement of CSOs in complex proper disposal (de la Riva Agüero 2021). Two, gender and socioeconomic discrimination may bias waste managers' perception against CSOs led by women and low-income people (Fredericks 2009). Further research on the mechanisms of CSO involvement in collection and disposal services would elucidate these findings.

Another interesting result is that these local CSOs increase collection frequency but not collection quantity. This might mean that when CSOs such as neighborhood associations are present, they tend to prioritize setting up waste collection activities and teams focused on going out more often to pick up trash. However, increased attention to frequency does not necessarily equate to a greater collection quantity. These CSOs—but mainly municipalities, who acquire most waste vehicles—face equipment limitations that affect the quantity of waste they can carry each time. The model results show a positive and significant association with collection quantity; more vehicles increase the amount of waste collected. Another possibility is that local governments are allowing neighborhood associations to go out as collection teams, supplementing or substituting municipal collection personnel, to appease public pressure for trash pickup through visible waste picking teams but that are not necessarily doing much about improving collection quantity. The limited human resource capabilities that municipal waste offices generally have, compounded with equipment limitations, may preclude them from rigorously supervising how well neighborhood associations' collection teams carry out their routines, how much of the waste is collected, or the proportion of a municipality's jurisdiction that is covered by them. Additional research is needed to assess these possibilities.

The concentration of poverty alleviation CSOs is positively correlated with municipal poverty levels, indicating that it is likely that poorer local governments have more such organizations, which in turn have more members. Some poor municipalities also tend to employ their most vulnerable residents, formally or not, to deliver waste management services, usually related to collection (de la Riva Agüero 2021). An increase in the concentration of these CSOs, and in turn of their members, is negatively associated with collection frequency, with very small coefficients, suggesting that their participation in waste collection, as a group, may require them to go out less often although not necessarily changing the amount collected. As a labor-intensive activity, waste collection frequency performed by the municipality may fall because these CSOs are taking over some of these responsibilities. The local government benefits from more people willing and available to do the job, likely costing less, and who may be more committed for several reasons, such as their community or organizational cohesiveness, concern for their community's environment and health, or expectations of commensurate municipal support to their urgent livelihood needs through their CSOs or direct in-kind or in-cash rewards.

Regarding cogovernance, the reduction it produces in collection frequency while at the same time increasing collection quantity in important amounts may result from LCC's planning and budgeting decisions that likely prioritize a more efficient waste collection strategy involving, among other measures, the purchase of necessary waste equipment. One possible reason why cogovernance is not associated with waste disposal performance is that its associated issues are likely not a matter of pressing discussion in LCCs. At the very least, the disposal-related topics brought to the table are not relevant to produce a significant influence on this service's performance, possibly due to its relative complexity and low immediate salience. More urgent topics such as municipal infrastructure construction, poverty-alleviating measures, local

economic development and support for local businesses, waste collection issues and vehicle purchase, and budget allocation to other critical services may have more significance. Research on Peruvian local collaborative decision-making argues that cogovernance venues such as LCCs do not function effectively in general due to two possible reasons: first, the high participation costs faced by poor people and the organizational limitations of the CSOs representing them and, second, municipalities' lack of capacity to manage these cogovernance arenas or implement agreements (Jaramillo and Alcázar 2017; McNulty 2011, 2019). However, this article finds that, on average, they are at least helping improve waste collection performance and efficiency in two concurrent ways: minimizing routine frequency and simultaneously rising the amount removed from the streets.

### **3.5 Conclusions**

One of the most pressing questions of our time is how governments can better respond to complex or unexpected events. This is particularly true for municipalities in the Global South, which face constant climate change threats with weak local capabilities and severe hazards that increase vulnerability. These impacts surpass the local capacity to address them effectively via service provision, despite the involvement of organized civil society actors that tend to enhance performance and increased collaborations. Additionally, service performance varies depending on the relative complexity level of the service. Unfortunately, little public administration or political science scholarship has examined how local governance factors, such as service-specific administrative capacity, the presence of locally embedded CSOs, and local collaborative governance for planning and budgeting (or cogovernance), affect performance when services become relatively more complex. Complex service provision is especially demanding for

struggling municipalities that attempt to creatively act with limited administrative capacity to specifically deliver them. This difficulty may extend to CSOs engaged in public service issues in their communities, challenging the notion that service performance improves when they are formal and locally rooted, regardless of a service's relative complexity. Similarly, cogovernance venues may not equally support more complex service performance. This study's nuanced assessment of these relationships, particularly capacity, service complexity, and performance, is important.

This research uses waste service provision as a case to examine how variation in local governance factors may have differential effects on the performance of two services of distinct complexity. Particularly, it compares the performance of a relatively simple service, waste collection from the streets, and a relatively more complex service, proper waste disposal, to understand how the three local governance factors influence their performance. The empirical analysis of Peruvian municipalities shows that while more robust waste offices, the presence of neighborhood-based CSOs, and cogovernance for planning and budgeting decisions enhance simple service performance, only waste office strengthening boosts complex service performance.

The findings have implications for studying the complexity of other services sharing a sector, with differences in the three task dimensions used to compare waste collection and disposal. For instance, in the health sector, while malaria prevention and tuberculosis services imply low operational complexity and low human asset-specificity, HIV/AIDS services require higher levels on both dimensions (Schäferhoff 2014). The classification approach to service complexity suggested here may be valuable to assess the relative complexity of services in the same domain.

This study is also useful for practitioners managing relatively complex services that juggle policy trade-offs in difficult contexts with scarce resources. The policy implications of these findings suggest that strengthening service-specific administrative capacity in local governments is fundamental to provide increasingly complex services in the Global South. This means that investments that reinforce office capacity specific to a relatively complex municipal service is especially crucial to improve performance. Similarly, policymakers, local and national, may benefit from supporting formal and locally embedded CSOs and cogovernance venues, which seem to have a significant influence on simple service provision. Paying attention to these three local governance factors, particularly service-specific capacity, may lead to better delivery of relatively complex services.

### **3.6 Data Availability**

The data underlying this article are available in the Dryad Digital Repository, at <https://doi.org/10.5061/dryad.m0cfxpp44>.

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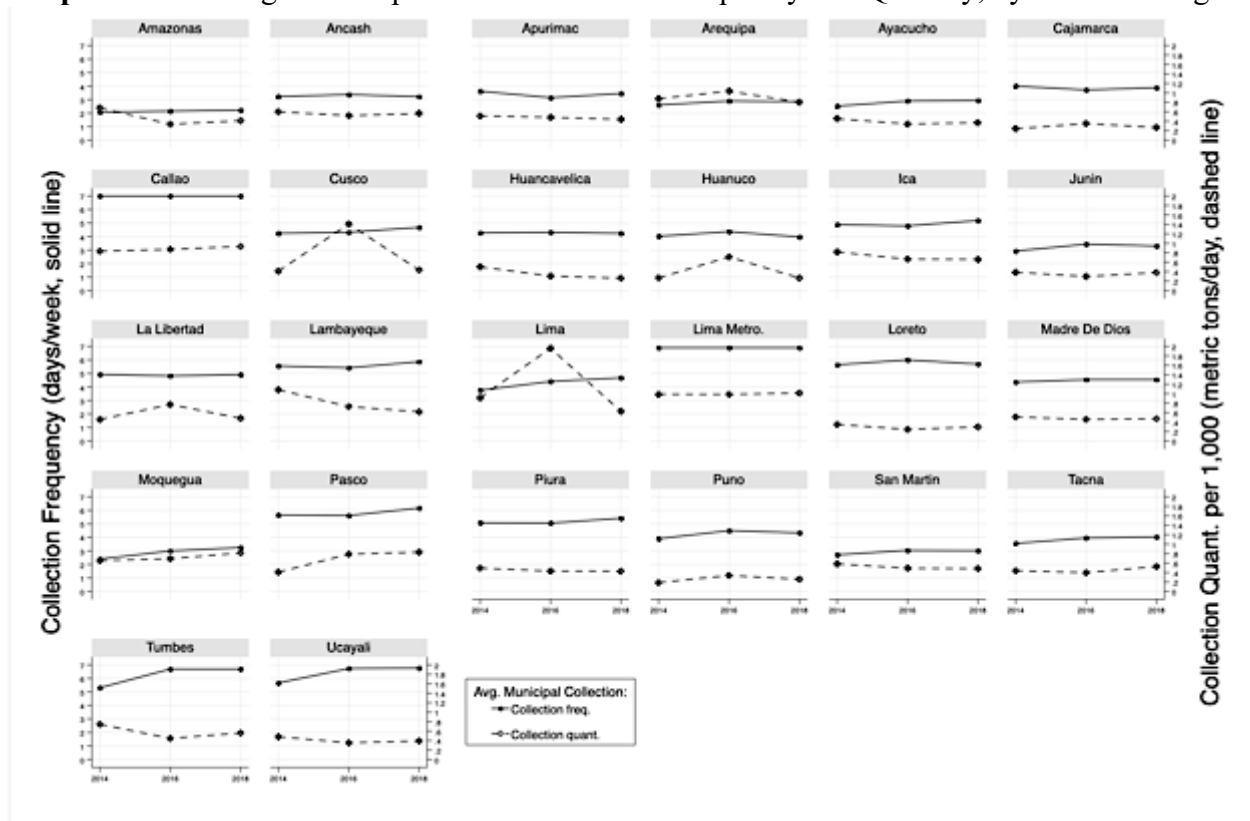
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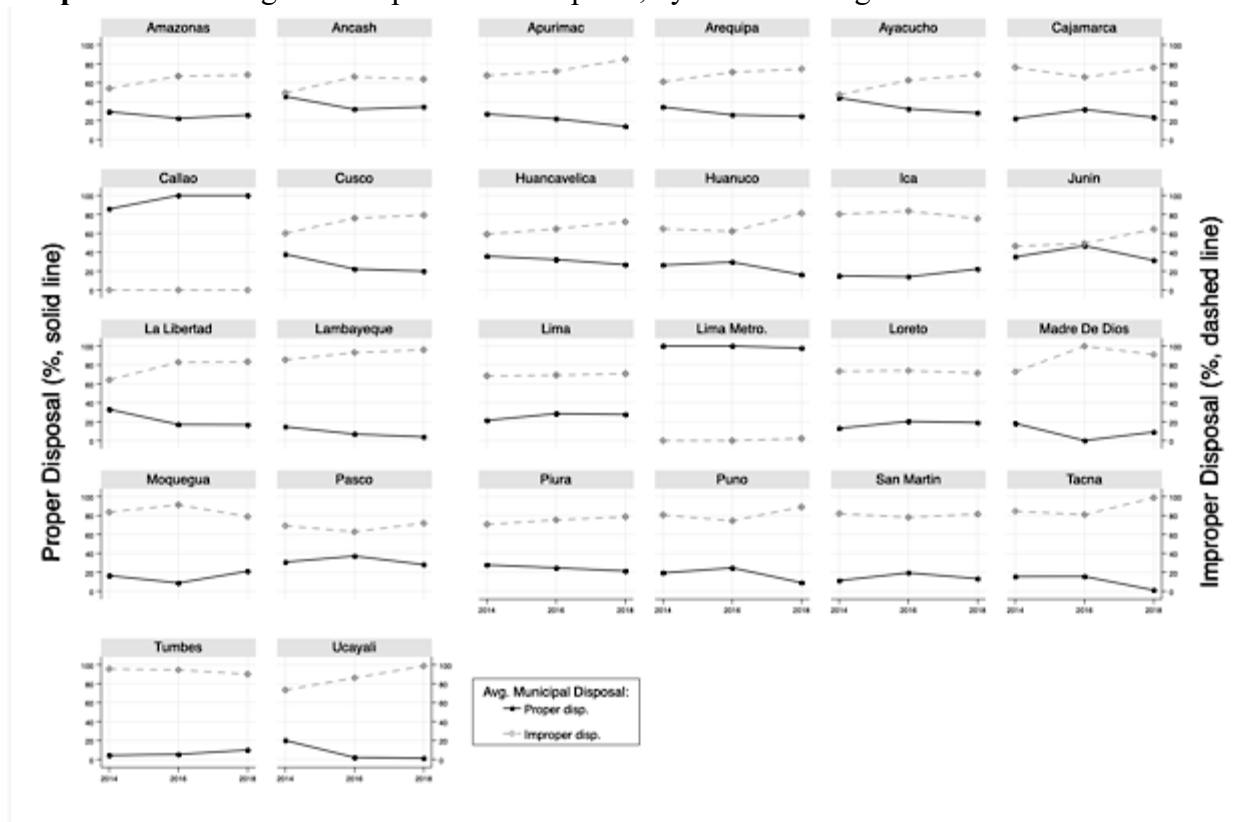
## Appendix

**Graph A3.1.** Average Municipal Waste Collection Frequency and Quantity, by Year and Region

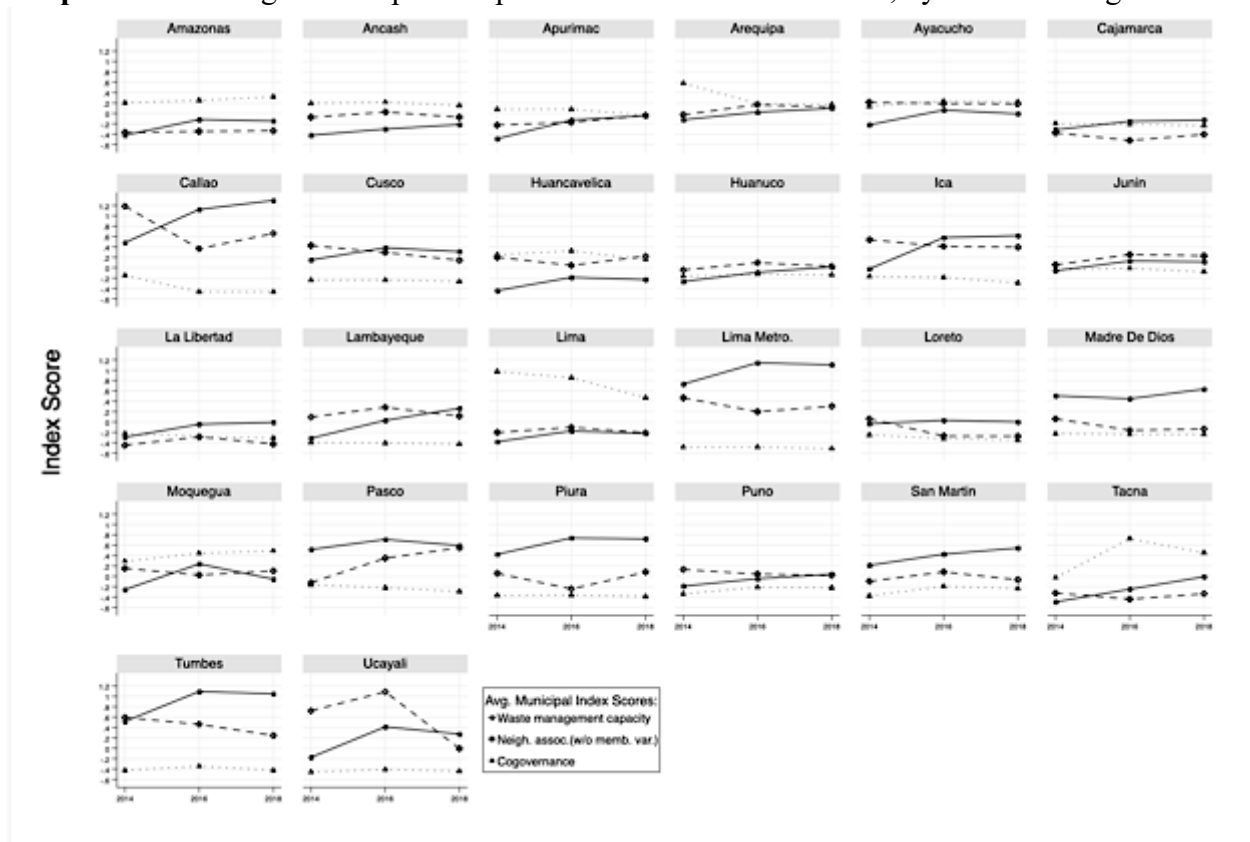


*Notes:* Graphs A1-A3 show municipal averages at the regional level, not for each municipality, to visually note local variation over time. Twenty-five regions plus the Metropolitan Municipality of Lima are examined, treating the latter as a region due to its size and outlier characteristics.

**Graph A3.2. Average Municipal Waste Disposal, by Year and Region**



**Graph A3.3.** Average Municipal Independent Variable Index Scores, by Year and Region



*Notes:* Only one measure included for each of the three independent variables of the study to show main trends.

**Table A3.1. Pairwise Correlations**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) WM Admin. Capacity Index	1.000															
(2) WM Budget (per Capita \$)	0.051*	1.000														
(3) Waste Collection Vehicles (per sq. mile)	0.116*	0.041*	1.000													
(4) Waste Disposal Equipment (per 1,000 people)	0.034*	0.046*	0.011	1.000												
(5) Neighborhood Association	0.240*	0.015	0.062*	0.015	1.000											
(6) Neighborhood Index (w/o total membership)	0.268*	0.048*	0.078*	0.028	0.999*	1.000										
(7) CSO Concentration	-0.251*	0.027	-0.096*	0.021	-0.117*	-0.121*	1.000									
(8) Cogovernance Index	-0.243*	0.148*	-0.051*	0.008	-0.145*	-0.156*	0.273*	1.000								
(9) General Admin. Capacity Index	0.197*	0.027	-0.005	0.015	0.118*	0.119*	-0.061*	-0.050*	1.000							
(10) Mayor Reelected	0.043*	0.008	0.060*	-0.027	-0.034*	-0.038*	-0.049*	0.012	0.013	1.000						
(11) Mayor's Vote Share	-0.117*	0.040*	-0.023	-0.003	-0.085*	-0.083*	0.038*	0.172*	-0.028*	0.187*	1.000					
(12) Local Party	0.047*	-0.011	-0.012	-0.010	0.023	0.045*	0.057*	0.023	0.024	-0.044*	0.013	1.000				
(13) Mayor Female	0.029*	0.023	0.002	0.001	0.002	0.003	0.000	0.025	0.006	0.034*	-0.026	-0.003	1.000			
(14) Poverty	-0.297*	-0.099*	-0.137*	-0.024	-0.203*	-0.279*	0.311*	0.027*	-0.064*	-0.063*	0.037*	0.014	-0.068*	1.000		
(15) Total Population	0.315*	0.028	0.115*	-0.031*	0.097*	0.103*	-0.220*	-0.160*	0.077*	0.063*	-0.033*	-0.074*	0.021	-0.245*	1.000	
(16) Ecological Region	0.001	-0.027	-0.098*	-0.008	-0.043*	-0.037*	0.023	-0.031*	0.061*	-0.033*	-0.030*	0.112*	0.001	0.188*	-0.156*	1.000

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A3.2.** Waste Management Administrative Capacity Index<sup>27</sup>

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness
WM Integral Plan	0.3232	0.3776	-0.0641	-0.0030	0.7488
WM Plan	0.1798	-0.2234	0.3475	0.0204	0.7966
WM Collection System	0.1702	0.3230	-0.0540	-0.0042	0.8638
WM Transformation Program	0.1380	0.2208	0.1053	0.0733	0.9158
Other WM Instruments	0.1580	0.0060	0.1406	-0.0200	0.9548
Environmental Office	0.5058	0.1054	0.2856	-0.0358	0.6502
Environmental Diagnostic	0.6715	0.0572	0.0748	0.0301	0.5394
Environmental Action Plan	0.5822	0.0140	0.0185	0.0307	0.6595
Environmental Policy	0.6740	0.0364	-0.0037	-0.0034	0.5444
Environmental Commission	0.5800	0.1595	0.0731	-0.0547	0.6298
<b>Eigenvalues</b>	2.1770	0.3778	0.1297	0.0123	

**Table A3.3.** Neighborhood Association Indices

Variable	Factor 1	Factor 2	Uniqueness
<b>Without total membership</b>			
Neighborhood Association Active	0.9160		0.1610
Neighborhood Association Approved	0.8849		0.2170
Neighborhood Association Pop. Participation	0.6548		0.5712
<b>Eigenvalues</b>	2.0508		
<b>With total membership</b>			
Neighborhood Association Active	0.9142	0.0304	0.1633
Neighborhood Association Approved	0.8624	0.0443	0.2543
Neighborhood Association Pop. Participation	0.7140	-0.0428	0.4884
Neighborhood Association Total Membership	0.3443	0.1093	0.8695
<b>Eigenvalues</b>	2.2102	0.0142	

**Table A3.4.** Cogovernance Index

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness
LCC Implementation	0.0496	0.6263	0.1982	0.0255	0.5654
LCC Sessions	-0.0086	0.1384	0.5451	0.0987	0.6739
LCC Sessions Number	0.2704	-0.0079	0.4717	-0.2093	0.6605
LCC Local Plan	-0.0314	0.2638	0.2237	0.1861	0.8448
LCC Participatory Budgeting	0.0080	0.6379	-0.0656	0.0036	0.5887
LCC Civil Society Representatives	0.8165	0.0075	-0.0612	0.1079	0.3179
LCC Total Representatives	0.8625	0.0216	0.1143	-0.1107	0.2302
<b>Eigenvalues</b>	1.5370	0.9869	0.4965	0.0983	

<sup>27</sup> Tables A3.2 through A3.5 show rotated factor loadings from exploratory factor analysis.

**Table A3.5.** General Administrative Capacity Index

<b>Variable</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>	<b>Uniqueness</b>
Muni. HR (% of total pop.)	0.0430	-0.0456	-0.0284	0.5209	0.7240
Online PCs (per muni. worker)	-0.0024	0.0859	0.0355	-0.0811	0.9848
Cadastre Info. Systems	0.0983	0.1020	0.4864	-0.0603	0.7397
Municipal Cadastre	0.0505	0.0780	0.4571	-0.0525	0.7796
Global Final Muni. Budget (per capita USD)	-0.0225	-0.0183	-0.0700	0.4814	0.7625
Results-Based Budgeting (RBB)					
Management Capacity					
Goal Match	0.1783	0.4954	0.1202	-0.0538	0.7055
Indicators	0.2007	0.5785	0.0598	-0.0240	0.6209
RBB Units	0.2499	0.5228	0.0630	-0.0045	0.6602
Mid-term Goals	0.2569	0.5204	0.0112	-0.0292	0.6622
Plan-Budget Correspondence	0.2511	0.5528	0.0409	-0.0063	0.6296
Statistics	0.4356	0.2652	0.0588	-0.0326	0.7354
Performance Indicators	0.5003	0.2516	0.0748	0.0235	0.6803
Budget Transparency	0.3861	0.2327	0.2376	-0.0017	0.7403
Donor Support	0.4014	0.2522	0.0528	-0.0020	0.7724
HR Incentives	0.5203	0.1990	-0.0147	-0.0083	0.6894
Service Delivery Quality	0.5286	0.2697	0.0819	0.0012	0.6411
Public Consultations	0.5277	0.1800	0.0137	0.0149	0.6887
Public Service Coverage	0.5132	0.2608	0.0698	0.0177	0.6635
<b>Eigenvalues</b>	<b>3.6519</b>	<b>0.6251</b>	<b>0.4631</b>	<b>0.3800</b>	

#### **Chapter 4: Under what conditions does service-specific municipal administrative capacity affect the performance of both simple and complex services?**

In Satipo, the Waste Management Suboffice does a respectable job in delivering both simple waste collection and complex waste disposal. Two different teams are in charge of each service, which are in turn subdivided into different subunits, showing that waste service management is specialized despite their complexity differences. Collection has two subunits, one cleaning the streets at night and the other collecting sorted waste bags in the morning. Disposal also has two main subunits, one working on reusing waste through composting and recycling and the other dedicated to landfill management. For this to work, they have based the provision of these services on standardized procedures that experienced environmental engineers oversee. All this effort requires community involvement, which is why there is a Governance Suboffice that manages the participation of community CSOs in permanent coordination with the Waste Suboffice's tasks.

On the contrary, the Bagua Grande Waste Management Suboffice deals with both services through the same personnel and resources, almost entirely dedicated to waste collection. With hardly any protocol or equipment assigned for waste disposal management, this complex service is in a state of abandonment. Highly specialized administrative capacity thus is a fundamental driver for the adequate performance of these two waste services with distinct complexity.

However, public sector administrative capacity is usually studied by examining general structures, budgets and spending, personnel quantity and quality, top management features, and information technology (Andrews 2010; Christensen and Gazley 2008; Fernandez 2004; Fernandez and Moldogaziev 2013; Grindle 2007; Ingraham et al. 2003; O'Toole Jr. and Meier

2003; Olvera and Avellaneda 2019; Rainey and Steinbauer 1999). They are essential measures to study government capacity and its role in performance — these aggregate resources of public agencies matter for the provision of services. Thus, this work provides the theoretical background regarding key administrative factors that guides my dissertation’s deductive reasoning from a general perspective.

Three underlying assumptions tend to guide the study of administrative capacity in public organizations. One is that the more resources an organization has, the more likely it will internally distribute them proportionately across all units and services. Similarly, a second assumption is that the larger the organizational budget, the more likely all its units will have equal capacity levels. Based on these two assumptions, a third is that the wealthier the organization, the more capacity its units have, and thus the higher its service provision performance regardless of the type of service or its complexity. While this is possibly true in some localities, this dissertation demonstrates that such assumptions are flawed because the aggregate capacity and resources that a bureaucracy has are likely unevenly distributed throughout its different offices to favor the services that are more socially urgent and politically salient (Avellaneda 2012; Johnson 2009; Leonard 2010; McDonnell 2020). Moreover, in the case of local governments, as discussed in Chapter 3, general administrative capacity measures — such as overall human resources, budget, and information systems, for instance— capture organizational features that are distant and likely unrelated to the performance of a particular service. The issue is that these measures aggregate data from all its units.

This approach indicates that it is more accurate to assess performance by examining the capacity that is directly involved in the provision of a service. Understanding the performance of a particular service through assessing administrative capabilities that are not related to its

delivery or are distant to the office (or offices) managing it may likely lead to biased results and flawed analyses. While the general administrative capacity is crucial, since offices not involved in provision participate one way or another, service performance and its intricacies are more precisely comprehended by looking at the administrative capacity proximately used in its management and provision. In other words, studying the administrative capacity of the office responsible for service provision will more likely reveal the insights we need to understand public service performance better.

This approach is not new. Research on organizational theory conducted by early public administration scholars was concerned with the internal administrative conditions of public organizations, starting with the work of Simon (1948). What insights did early organizational theorists leave us to consider? Simon spearheaded interest in uncovering what occurred inside public organizations to explain outcomes by focusing on the decision-making processes to get to the “real flesh and bones of an organization” (1948, xi). Other scholars have followed the path of analyzing organizations' features and interactions (Galbraith 1974, 2002; Lawrence and Lorsch 1967; Mintzberg 1983; Thompson 1967).

Classical organizational theorists such as Lawrence and Lorsch (1967) argued that the *differentiation* among subunits within an organization, and the extent of their internal *integration* and *coordination*, improve their capacity to manage pressures from their external environment and hence performance. The following statement illustrates this perspective on the value of examining the internal conditions of organizations:

Since the primary concern was with the internal functioning of organizations, it appeared that one useful way to conceive of the environment of an organization was to look at it from the organization outward. This approach is based on the assumption that an organization is an active system which tends to reach out and order its otherwise overly complex surroundings so as to cope with them effectively. Then as the organization becomes differentiated into basic subsystems, it segments its environment into related sectors ... The importance of this variability can easily be obscured by the usual approach of thinking of an organization's environment as a single entity (Lawrence and Lorsch 1967, 4-5).

This means that to perform well, it is crucial that an organization's internal functioning – such as specializing or differentiating subunits and adopting internal coordination procedures— *matches* or *fits* the complexity of the task, and thus its environment. It is argued that “[a] poor fit between structure and environment leads to failure; a close fit leads to success” (Jones 2010, 111). Therefore, these scholars regarded organizational performance as dependent on their capacity to internally adapt to process the complexity of a task and its external environment (Fernandez and Rainey 2006, 3; Jones 2010; Scott and Davis 2007, 95).

Organizational differentiation and integration are thus two dimensions of organizational structure, meaning the division of labor into more specialized tasks coordinated through diverse mechanisms. For Mintzberg (1983), differentiation and integration are essential to achieve organizational goals effectively. Increasingly complex organizational tasks would benefit from implementing coordination mechanisms based on standardizing work processes, output, or skills required (Mintzberg 1983). Galbraith (1974, 2002) studied flexible internal coordination arrangements, or lateral coordination processes, that facilitate rapid internal response to organizational structures that are difficult to reform or operate in increasingly uncertain external environments. Thompson (1967), however, was concerned with organizational processes or mechanisms and argued that the tasks and units of the technical core are operationally linked

through something he called *organizational rationality*, referring to the input, process, and output activities internally set up for organizational performance.

These studies represent some of the most prominent classical views about public organizations. They show that the internal capacity of organizations—in terms of specialized structure and coordination—affects performance. Budgets are crucial but cannot be used efficiently without the specialized capacity to manage a particular service. Internal capacity adjustments should hence correspond to service complexity according to this perspective. This means that opening the administrative black box of bureaucracies was a central matter for classical organizational theory researchers. Their approach is still relevant today for the study of organizations, mainly to understand the role of service-specific administrative capacity on the provision of services varying in complexity more accurately.

Applying this classical organizational theory approach, this dissertation studies waste management services in Global South cities by focusing on their administrative capacity specialization to understand service performance when their tasks vary in complexity. Thus, by looking at different hierarchical levels involved in waste service provision, I unpack features of municipal organizational structure—including unit specialization for service provision, coordination, and the processes and resources within them—to examine their specialization. I also study other important drivers from the literature on political support and organizational behavior to understand top management decision-making and commitment as well as worker motivation, satisfaction, and empowerment concerning their role in waste service performance (Colquitt et al. 2007; Crabtree and Durand 2017; Fernandez and Moldogaziev 2013; Goggin et al. 1990; Grindle and Hilderbrand 1995; Hameduddin and Fernandez 2019; Heller 1996; Herrera

2017; Isen and Reeve 2005; Jones 2003; Kahneman 2002; Kumar et al. 2022; Lyubomirsky et al. 2005; March and Olsen 1984; March and Simon 1993; Vroom 2000).

All these factors vary with the complexity of the service, affecting its ultimate performance. The degree of waste service complexity, such as when comparing collection with disposal, may thus require equivalent specialization of the internal management and resources of the local government. Yet, specialization, mainly for more complex services such as waste disposal, is challenging in localities with limited administrative capacity. What tends to happen on the ground is that waste management offices in local governments put all their administrative efforts—including procedures, personnel, and equipment—into collection services at the expense of the higher technical and managerial needs of disposal services.

However, the quantitative results from Chapter 3 correspond with the theories of classical organizational theory scholars. They show that more specialized internal capacity and equipment, in the case of waste services, improve the performance of both simple collection and complex disposal in Global South municipalities. Thus, it is likely that unspecialized administrative capacity for complex service provision lowers performance relative to those services for which they are sufficiently specialized and equipped with relevant resources, typically the more simple ones as collection. What remains unclear are the conditions that lead to better performance, particularly when services increase in complexity.

To uncover the causal mechanisms, this chapter answers the following question: *Under what conditions does service-specific municipal administrative capacity affect the performance of both simple and complex services?* I argue that the specialization of capacity for the provision of each service, collection and disposal, is key at three levels: top leadership, management office staff, and field workers. Therefore, it is necessary that simple collection and complex disposal

have the following for better performance: top municipal leadership, managerial and political, that is committed and understand their distinct implementation implications; differentiated organizational structure, team qualifications, policies and procedures, and equipment that correspond to each service's requirements at the management office level, and; field workers that are respected and recognized regardless of whether they pick up waste in the streets or cover dump holes. The section that follows discusses the findings to illustrate the principal causal mechanisms. The final section concludes.

#### **4.1 Administrative Capacity and Waste Services Performance Differences: Conditions and Causal Mechanisms**

To better understand the performance differences observed between waste collection and waste disposal locally, I examine the internal conditions of the waste suboffices in three local governments to explain why this occurs. As discussed in Chapter 2, I study three medium-sized municipal cases with differences in two key characteristics, administrative capacity and CSO involvement, to assess how variations in these two crucial drivers influence waste service performance disparities. The municipality of Bagua Grande represented the low waste administrative capacity — low CSO involvement case, the municipality of Sicuani the low waste administrative capacity — high CSO involvement case, and the municipality of Satipo the high waste administrative capacity — high CSO involvement case.

I identify conditions and causal mechanisms at three different hierarchical levels within municipalities: top leadership, management office, and field workers. The patterns show possible administrative capacity conditions and processes occurring at each level that appear to be associated with diverging waste service outcomes. First, the degree to which top leadership —

which includes local politicians and high-level managers— understands the implementation intricacies of a service and is committed to it determines how much support they provide for problem-solving. The result is that relatively complex services like waste disposal receive less attention and support.

Second, waste management suboffice specialization is also crucial. Those that have a poorly specialized organizational structure, with supervisors mainly qualified to set up basic collection routines, implementation procedures only for collection, and are equipped mainly with brooms, dustpans, and tricycles are more likely to provide collections services adequately but struggle significantly for disposal.

Finally, most field workers are underappreciated and many times belittled by municipal authorities and citizens. They continue to work with dedication due to their need of an income to sustain their families. However, given the complexity of disposal services, their job at the dump is more challenging. Because these sites are outside the city, they are not seen and hence their struggles are neglected. Management provides them with less support, perceiving their issues and risks as similar to collection workers in the streets, which complicates their ability to do a better job for waste disposal.

This overview shows that the presence or absence of these conditions and mechanisms likely have important implications over the performance of waste collection and waste disposal, thus explaining the performance gaps between them. A summary of the findings is provided in Table 4.1.

**Table 4.1.** Administrative capacity characteristics

Categories	Bagua Grande	Sicuani	Satipo
<i>Specialized Administrative Capacity</i>			
Top Leadership	Poor	Moderate	High
Management Office	Poor	Poor	High
Field Workers	Poor	Moderate	High
<i>Waste Service Performance</i>			
Collection	High	High	High
Disposal	Poor	Poor	High

Sources: Fieldwork.

Notes: Category classifications are: none, poor, moderate, and high.

To sum up, I found that both the municipalities of Bagua Grande and Sicuani have adequate performance in the provision of waste collection services while blatantly failing in the provision of waste disposal services. Although their waste suboffices face some limitations to cover certain sections of their cities, overall, they can keep their streets clean. On the contrary, the municipality of Satipo was successful both in the provision of waste collection and waste disposal services. This local government kept most of its streets fully clean without accumulated or uncollected waste and, simultaneously, adequately disposed of its waste using managerially, operationally, and technically more elaborate methods.

Why do all succeed in providing *simple waste collection*? Why do Bagua Grande and Sicuani fail to provide *complex waste disposal* properly? What is different in Satipo? The lines that follow provide details on the administrative capacity conditions and causal mechanisms leading to these differential outcomes. The findings uncover the extent to which top leadership understands and is committed to both services, waste suboffices are specialized and equipped to equally provide both waste collection and waste disposal services, and the morale and bias in the treatment experienced by field workers in collection and disposal. Looking at administrative

capacity in this way partly reveals why complex waste disposal tends to underperform relative to simple waste collection and the conditions in which both can be adequately provided.

#### **4.1.1 Top Leadership: Local Politicians and High-Level Managers**

Services are attended based on decision-makers' prime concerns. In turn, their priorities are likely shaped by a combination of what or how much they know about a service's management, its implications for society, and their own political interests from issue salience (Avellaneda 2012; Bélanger and Meguid 2008; Goggin et al. 1990; Kumar et al. 2022; World Bank 2003). Bounded rationality and information accessibility leads decision-makers to rank order services in certain way (March and Simon 1993; Simon 1948). This means that, using heuristics, the complex services—which are more difficult to comprehend—are likely regarded as having similar implications as simple ones because these are more accessible for understanding (Kahneman 2002). Through these information processing mechanisms local leaders may struggle to have an accurate grasp of complex services such as waste disposal, causing them to have insufficient commitment to their performance and not provide necessary support (Fernandez 2004). Differentiated capacity in leadership tends to be low for complex services.

The findings show that top decision-makers in the municipalities struggling with waste disposal performance, Bagua Grande and Sicuani, have an inadequate understanding of this complex service while a solid one for waste collection. In Satipo, where performance is high for both waste services, leaders have detailed knowledge of both services. Table 4.2 summarizes these characteristics by municipal case study.

**Table 4.2.** Top leadership involvement

Categories	Bagua Grande	Sicuani	Satipo
<i>Collection</i>			
Service Understanding	High	High	High
Commitment	High	High	High
<i>Disposal</i>			
Service Understanding	Poor	Poor	High
Commitment	Poor	Poor	High

*Sources:* Fieldwork.

*Notes:* Category classifications are: none, poor, moderate, and high.

Politicians and top managers in Bagua Grande and Sicuani have limited awareness of the managerial and implementation requirements of disposal. Likewise, their commitment to strengthening its provision or developing solutions that are at least temporary is low. Even though they tend to be aware of problems that disposal services confront, this is superficial. Inaction is typically the response. This situation is not due to budgetary allocation problems, that are also in part a product leadership priorities. The findings show that the differential interest is likely due to issues of decision-making capacity—from complex information processing—and the higher political and social salience of waste collection. The subsections that follow discuss the results in detail.

**a. Overall misconception of waste disposal service implications.** Waste managers and top political and administrative authorities in the two underperforming cases, Bagua Grande and Sicuani, are aware of the broad infrastructural, cost, and material needs for disposal (trucks, excavators, backhoe loaders). However, unlike managers in Satipo, authorities in the other two cases are not sufficiently aware of its managerial, technical knowledge, and health implications.

*Bagua Grande and Sicuani*. The discussions on disposal problems in these two cities are focused on the lack of financial resources for the infrastructural investment project needed to implement a fully-equipped disposal facility (Int-BG-30, Int-SI-74). “The challenge of the dump is to make the disposal project viable, which is 20 million Peruvian Soles [USD 5.15 million] ... it is impossible to do it with municipal resources,” said a top waste manager (Int-BG-30).<sup>28</sup>

Although important budgets for spending on waste disposal are available, they are not efficiently spent or go unused (Int-BG-20, Int-SI-24). Even if financing these investments were the problem, innovative or accessible techniques for disposal are not on the decision-making table or scaled up. The blame is somewhere else, sometimes the budget or the equipments, and others on citizens: “[I]f the residents of the urban area would help, 70-80% [of waste] would be reused and only 20% would reach the dump,” said another manager complaining about the amount of waste sent to the disposal site (Int-SI-4).

Therefore, the understanding of the service is superficial and hence limited to costs and big machinery, working under the assumption that the only solution to address the dire situation of waste disposal in both cities is through full-fledged infrastructural projects. “[I support] final disposal with logistics, budget, and personnel,” added a local politician (Int-SI-25). Another one indicated that their political commitment is observed by “sending my truck to make holes and cover them when they are full, there is no alternative” (Int-BG-31). Since waste collection is fundamentally based on routines and trucks, these politicians and managers equate this simple service to the more intricate needs for the provision of complex waste disposal. Their views of the problems and solutions are thus generally simple, lineal. Intermediate solutions are not

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<sup>28</sup> The exchange rate used in this chapter is the nominal annual average for 2021, which is when the interview took place, at 3.88 Peruvian Soles per US dollar as reported by the Peruvian Central Bank. The data was obtained from: <https://estadisticas.bcrp.gob.pe/estadisticas/series/anuales/resultados/PM05242PA/html/2015/2022/>.

sufficiently discussed, any effort toward the service is regarded as futile. This partly produces the state of abandonment of disposal services in Bagua Grande and Sicuani.

*Satipo.* In Satipo, politicians and managers are significantly more aware of what it takes to implement disposal services, including managing a landfill. “We were afraid of using the [disposal] plant because we did not know anything ... but we learned to manage it,” explained a top manager (Int-SA-23). In this city, the top leadership understands the entire recycling and composting processes, and provide a technically-oriented treatment of nonreusable waste even considering the health of their employees (Int-1-SA, Int-3-SA, Int-14-SA). Regarding the process of setting up management capacity and a disposal facility in Satipo, a politician explained: “We raised awareness [among local authorities and stakeholders from civil society] and the facility was built ... [for this to work,] we did an organizational restructuring so that [the office] can execute budget and formulate policy. We saw its priority because we developed the Provincial Plan for Environmental Development” (Int-SA-35). This means that the top leadership takes disposal services seriously. There is a more nuanced, detailed, and planned understanding of the complexity of the service. Its implications are hence not compared or extrapolated from those of waste collection.

*Conditions and Mechanisms.* The evidence shows that politicians and top managers in Satipo are informed about the managerial, technical knowledge, and health implications of waste disposal. The reason is that they regarded as a crucial service for waste management from a larger view and commitment of proper local environmental management. The series of steps and planning taken for its implementation demonstrate this. However, the misconceptions about how to

address service problems observed in Bagua Grande and Sicuani emerge from the low priority given to the provision of this service. This is likely complemented by issues of bounded rationality and the accessibility of using information from an associated service that is more simple, such as waste collection. This is how service understanding is a key factor contributing to waste service performance gaps.

**b. Low leadership commitment to problem-solving for waste disposal.** Leadership commitment, and competency, are crucial for waste service performance. Political leadership and managerial entrepreneurship to gather support and resources within the municipality have an important role on the level of attention provided to each waste service. Their actions for problem-solving also matter for how service challenges are prioritized and addressed. When these actions are inclined toward greater involvement in one service, performance gaps are likely enhanced as is observed in waste service performance outcomes. In addition to the discussion on service misconceptions, the evidence shows how waste disposal is a neglected service by leadership relative to collection in the localities where it underperforms. Leadership commitment as well as competency are essential.

*Bagua Grande.* The role of leadership is evident in Bagua Grande. A deputy waste manager recognized a set of waste service priorities and crucial problems to work on, revealing a bias. The administrator stated that “my main role ... [is to] give a good solid waste collection service ... [it’s my] main task,” adding that a major challenge of the Waste Suboffice is “organizing [the teams and tasks] well and to achieve the collection goals ... [b]ut in the office, not much [problem]” (Int-BG-1). This statement exemplifies a pattern in this municipality of not even

considering waste disposal, especially at the dump, as a main waste service priority. Even if this Suboffice carries out some composting, these activities are at a very small scale and implemented with little policy and resource support and thus with great difficulty by the teams in their makeshift compositing facility.

What is observed in this Suboffice, and the Environmental Office, is that to provide adequate disposal services, management leadership expect to receive budgetary resources from the central government. “The [technical] studies are expensive ... we are checking with the Ministry of Environment and the Territorial Development Investment Fund [of the Ministry of Finance],” said a top administrator from the Environmental Office (Int-BG-30). They also complain that the current dump is expensive to maintain. “Complications are ... [t]he dump that requires regular maintenance and costs machine-hours to the municipality,” added the same administrator even though no work is carried out there (Int-BG-30).

However, a lack of resources is not the problem. Their internal managerial limitations for the provision of disposal services likely is. A top manager from the Planning and Budget Office clarified this point:

The municipality ... has a landfill on its way without financing. Lack of responsibility of previous civil servants, because the 2015 pre-investment [technical] study for the landfill was financed by the Territorial Development Investment Fund of the Ministry of Finance to cover the capital cities of Jamalca, Bagua Grande, and El Milagro ... the study was not properly executed. They [environmental and waste managers] neglected preparing the required quarterly accountability reports, which caused the blocking of the accounts and thus the resources ... This could have been corrected sending the reports but it was not done because the municipality did not want to pay the contractor. This is how the project got stuck several years ... And this hinders improving [revenue] collection to improve the services (Int-BG-20).

This illustrates a serious mismanagement of a very intricate processes for the provision of a highly complex service. Likely, these inactions result from poor political commitment on this service, prioritizing other payments, and the lack of interest on the part of managers to address disposal problems. It also shows that the problem to manage a complex service such as waste disposal it is not fundamentally a matter of resources but of managerial commitment and competency. The case of Satipo further illustrates this statement.

*Sicuani.* A similar problem is found in Sicuani, where leadership is not prioritizing waste disposal in their daily tasks and problem solving. A waste manager noted that when starting the job “[t]he dump was fully abandoned — it needed maintenance, cleaning of drainage channels ... we did pipes, fences, we did the toilet, planted plants, maintenance of the perimetric fences” (Int-SI-2). Despite the structural, personnel qualifications, and procedural issues for waste disposal in Sicuani (discussed in the next subsection of this chapter), leadership deflects the problem elsewhere. When asked about key waste disposal issues, a top waste administrator highlighted personnel deficiencies and pressure from the indigenous community CSO who owns the land where the dump is located:

It is difficult to demand the people of the community [working at the dump] because they are very sensitive to be told something because they are from the community. There is manipulation, ‘if you don’t give me this, I will close [the dump]’ ... they play with this. It is an ongoing conflict and must be handled wisely, if they want A, we must give them A (Int-SI-6).

In contrast, leaders can provide full and accurate details of the state of the waste collection service. They can specify the exact routes and streets that collection women cover, and the amount of weight typically collected.

Top management of the Environmental Office—which contains the Waste Suboffice—is aware of the core operational problems for waste disposal performance (Int-SI-1). Yet, the previous quote shows that there are coordination issues between managers, with those in the Environmental Office clear on key disposal limitations but those in the Waste Suboffice seemingly confused. If the leadership inside the waste management structure is trapped by contradictory priorities and muddled coordination and communications, then addressing the performance problems of a complex waste service such as disposal is likely to fail. Attempts to gather support from the Finance Office or top political authorities would also be unsuccessful.

To further illustrate these internal management issues affecting waste disposal, a manager from the Budget Suboffice stated:

The [Waste Suboffice] does not adequately program its budget spending ... There is no leadership from the [Environmental] Office to prioritize. Sometimes they do not even spend their budget. They do not define the main goals of the service ... They do not follow up the activities in their operational plan ... For instance, since the start of 2021 they have 409,000 Peruvian Soles [USD 105,412] for the maintenance of the dumpsite, for leachate, for activities and hiring of personnel, and their spending today is 0% ... The great problem is that the area does not know how to do planning and budget programming (Int-SI-24).

Managerial planning and proper budget spending are critical for service performance (Christensen and Gazley 2008; de la Riva Agüero 2022; Lewis 2006; World Bank 2003). Yet, the fact that the dump is in such a chaotic situation while significant financial resources are available, although unused, is highly revealing of leadership biases. Leadership priorities, managerial skill, and problem solving are prioritized mainly for waste collection, at the expense of disposal service performance.

*Satipo*. Satipo demonstrates how committed leadership can make a difference for the provision of services that vary in complexity. Managers in the Environmental Office and Waste Suboffice are proactive and committed to solving issues and getting the resources for all waste services, both collection and disposal. One clear evidence of how, despite waste disposal challenges, leadership in this municipality takes full responsibility to address its problems was expressed by a top manager of the Environmental Office:

We learned to manage the disposal facility alone, without guidance or support from the Ministry of Environment ... [W]e threw ourselves into the pool ... The population of Portillo has protested several times threatening us because of the smell, so we felt it was important to treat this issue very carefully. I have even gone there at night to see the conditions of the facility and the next day told those responsible why things were in a certain way when they should not be. I'm demanding because I want things to be done well, I demand a lot from my teams. I tell them that 'I want things for now, you will see how you do it, you are intelligent for a reason, you should find the solution (Int-SA-23).

The budget they receive is not a limitation for these managers. "For me there is always money. It is all based on technically developing the proposal of what is needed and putting it within the legal framework that requires it to be done," added the same manager (Int-SA-23).

Another top waste administrator stated:

[T]o obtain the [extra budget] from the incentive plan [of the Ministry of Finance] I have to make several plans and coordinations. If I stayed here waiting, nothing happens. I substantiate well and they give us the budget extension and this is how we cover the expenses ... I go directly to the heads ... [and] give detailed reports ... to the municipal manager, the administration manager, the budget manager (Int-SA-1).

Thus, both services' problems are equally treated and supported, showing that high performance in collection is as important as in disposal. The motivation and technical orientation

of disposal managers are also very high. They are committed to planning and make projections for the service's progress (Int-SA-5, Int-SA-6). Committed leadership and a hands-on, evidence-driven management approach to problem solving, particularly for a complex service such as waste disposal appears crucial for its performance.

*Conditions and Mechanisms.* Leadership priorities are biased against waste disposal in Bagua Grande and Sicuani. Their Waste Suboffices have essentially given up on turning it into a better service, continuing the dumping of all sorts of waste in open and inadequately treated areas without significant changes in this service's management. Budgetary issues are used as an excuse for their limited interest in committing to a more complex and less politically and socially salient service, such as disposal. Thus, all their efforts are directed toward the more simple but highly visible waste service, as is collection. The extent of attention, understanding, and commitment to solving disposal problems are significantly different to how its management is approached in Satipo. Leaders in this city are focused on the technical aspects specific to disposal and hence dedicated to ensuring high performance in its provision despite its complexities. Both waste services receive their full attention. How leadership works through the challenges for a waste service such as disposal has important implications over its performance.

#### **4.1.2 Management Office Staff**

The waste suboffices studied show some organizational diversity upon a detailed examination of their characteristics. All three units have somewhat different internal structures, team qualifications, procedures, and tasks for the provision of waste collection and waste disposal. While all are sufficiently specialized and equipped to provide collection services, the most

puzzling feature across the three cases is how differently is these waste suboffices' capacity to manage disposal services relative to collection services but also when compared to each other.

The organizational structure is sufficient to provide waste collection in all three localities. All three waste management suboffices are within an Environmental Office, which oversees the work. The waste suboffices are subdivided into distinguishable tasks, such as street sweeping and waste bag pickup through trucks. This specialized structure is managed by experienced teams that have set up clear standardized procedures with sufficient equipments, all of which is necessary to provide collection services adequately. In the case of Sicuani, however, the service is entirely managed by two CSOs. Yet, only Satipo has a specialized organizational structure within its Waste Suboffice to provide the disposal service, managed by teams of experienced and trained environmental engineers that operate under well-defined protocols with proper equipment. Waste disposal provision in Bagua Grande and Sicuani is not supported by a structure, protocols, and equipments. Insufficiently trained or no workers are characteristic of Sicuani and Bagua Grande's approach to disposal management. Table 4.3 below summarizes the specific features found in the waste suboffice of each municipality.

**Table 4.3.** Waste management office characteristics

Categories	Bagua Grande	Sicuani	Satipo
<i>Collection</i>			
Organizational Structure	Moderate	Poor	High
Team Qualifications	Poor	Poor	High
Standardized Procedures	Moderate	Moderate	High
Equipment	Moderate	Moderate	High
<i>Disposal</i>			
Organizational Structure	Poor	Poor	High
Team Qualifications	Poor	Poor	High
Standardized Procedures	Poor	Poor	High
Equipment	Poor	Poor	High

Sources: Fieldwork.

Notes: Category classifications are: none, poor, moderate, and high.

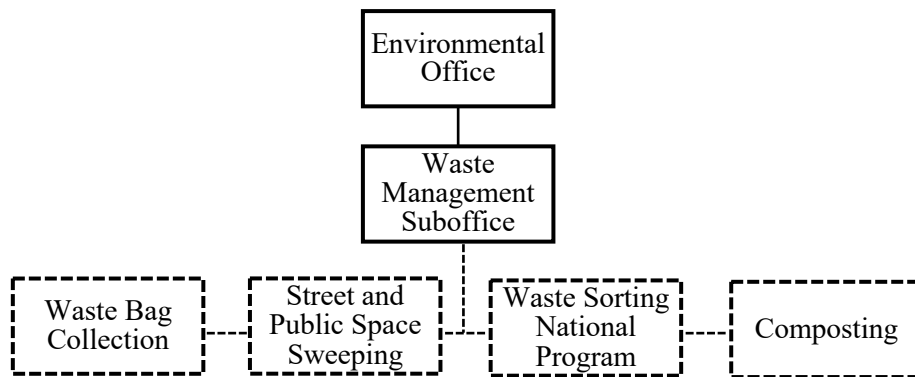
These suboffice administrative capacity characteristics partly explain the conditions that lead to high waste collection but low waste disposal performance. Waste collection services can be adequately provided under incomplete conditions whereas disposal services cannot. These outcomes are produced through management mechanisms that are supported by the available suboffice capacity. In the case of collection, the sweeping and bag collection routines can be carried out with the administrative conditions available. More importantly, what is necessary for its provision is having a basic structure, procedures, and some basic equipment. Yet, planning, procurement, and activities related for disposal, such as composting, recycling, and dumpsite treatment, can hardly be implemented with unspecialized administrative capacity. Therefore, the capacity that is available for simple collection is not sufficient for complex disposal.

**a. A specialized organizational structure for collection exists, but none for disposal.** All three waste management suboffices formally exist in the municipal organizational structure as units within an Environmental Office. There are structural differences at the suboffice level that

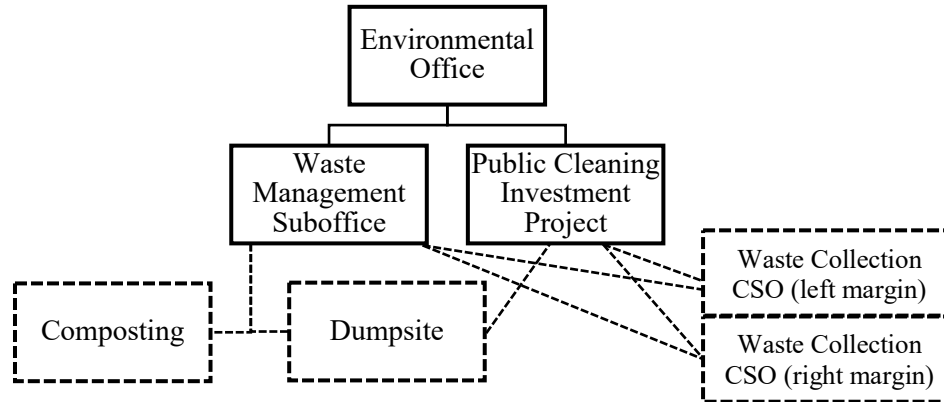
illustrate why the two services perform differently, however. The core structure and functions of the waste suboffices failing in the provision of waste disposal are concentrated on collecting waste bags and sweeping the streets and public spaces. The formal—and in these cases also the informal—organizational setup of the Bagua Grande and Sicuani suboffices thus do not adequately incorporate disposal service provision within its core responsibilities. Unlike these two suboffices, Satipo has an intricate organizational structure within its suboffice for the provision of both collection and disposal services. Figure 4.1 below shows the organizational structure for waste management in each municipality.

**Figure 4.1.** Waste management organizational structures

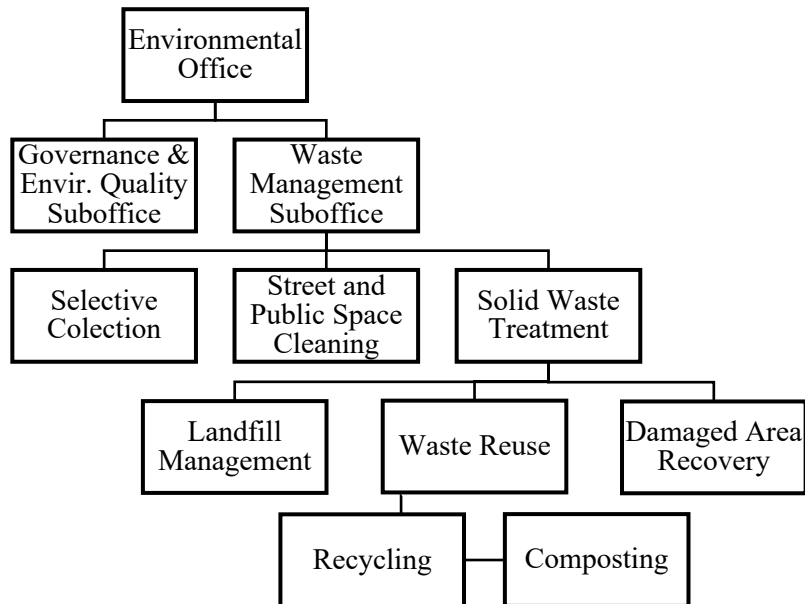
**a. Bagua Grande**



**b. Sicuani**



**c. Satipo**



Sources: Fieldwork.

Notes: Dashed boxes and lines denote activities not formal units in the organizational structure.

This lack of attention in the organizational structure to waste disposal not only reflects a limited understanding of this complex service among local politicians, as discussed in section 4.1.1, who in the past have approved the current structure (Int-SI-1, Int-SA-23, Int-SA-35). Perhaps most importantly, it shows that managers and their technical teams leading these suboffices do not fully grasp the differences in the administrative and technical requirements involved in the provision of waste disposal relative to waste collection (Int-BG-1, Int-BG-13, Int-SI-4, Int-SI-6).

While administrators do not manifest this explicitly, the fact that waste supervisors, managers, and their superiors in the environmental offices in Bagua Grande and Sicuani do not acknowledge the need for further structural changes reveals that the current suboffice structure is regarded as enough. The evidence shows that their waste management teams operate under the assumption that they can somehow manage to, minimally, provide waste disposal services with the exact same organizational, human, and operational resources that are used for waste collection. This is reflected in the lack of urgency to restructure the office to formally incorporate a separate waste disposal subunit specialized to strategically lead this service's operations (Int-BG-1, Int-BG-30, Int-SI-1, Int-SI-6). Satipo, however, specialized its suboffice's organizational structure to address its provision problems for both services (Int-SA-23).

*Bagua Grande.* The Waste Suboffice of Bagua Grande has five main areas. However, rather than formally grouped areas within the suboffice structure they operate as tasks or activities performed by different subgroups. Two are related to waste collection, with one leading waste bag pick up and the other street sweeping. Other two areas conduct work related to waste disposal, as are the composting activities and the dumpsite. The fifth area within the suboffice is

gardening but its work is unrelated to waste management as it focuses on the maintenance and cleanup of public gardens (Int-BG-1, Int-BG-30).

Both collection activities are not identified as part of a comprehensive waste collection strategy and are not part of a formal waste collection subunit within the Waste Suboffice. In fact, they are treated as more or less independent tasks (not necessarily subunits within a structure) that address general street cleaning services (Int-BG-2, Int-BG-5, Int-BG-27). There is a smaller task focused on collecting organic waste from a very limited number of households, but since it is a crucial activity that serves the composting area rather than the waste collection service itself it is not considered part of the latter service (Int-BG-4).

For disposal, while not part of the formal structure, the suboffice has a nationally-mandated program requiring two waste sorting activities (Int-BG-1). These are sorting organic waste, to dispose of it via composting, and sorting recyclable waste as another disposal method. However, they are very small-scale activities leading to waste composting and, in the case of recycling, the only task performed by the municipality is the collection of recyclables from commercial areas that ends with its delivery to a local CSO of recyclers (Int-BG-3, Int-BG-4). Waste disposal at the dump does not exist in the structure and the only attention it receives is that of a marginalized security guard (Int-BG-23). Except for the dumpsite, all other areas of the waste suboffice have a supervisor and personnel. Therefore, the overall hierarchical relationships in this municipality are straight forward, with all area supervisors reporting directly to the waste suboffice deputy manager.

*Sicuani.* Sicuani is like Bagua Grande in its loose, informal approach to the internal organizational structure of its waste suboffice. Waste collection in this municipality comprises

both waste bag pick up from the streets and street sweeping. The entire service is provided and fully managed by two community-based CSOs, one for the west or left margin of the city and the other for the east or right margin. Thus, while not a formal area, collection is organized as one service component on its own, unlike what is observed in Bagua Grande (Int-SI-1, Int-SI-4, Int-SI-6).

What is unusual in this case is that, since waste collection is completely managed and run by two CSOs, the service does not have permanent municipal employees assigned to it, further signaling the informal position of this task in the suboffice's internal structure. However, the service is financed with the budget of a public cleaning investment project that is structurally dependent on Environmental Office and directly overseen by the waste suboffice even though the project has its own project manager (Int-SI-4). This means that, in terms of internal accountability, the waste collection service is monitored by two principals: the waste suboffice deputy manager and the public cleaning project manager (Int-SI-1).

Sicuani's two disposal-related areas are composting and the dumpsite, which have a similar informal treatment in the suboffice structure as that of collection (Int-SI-6). Composting is performed by temporary municipal employees as is not associated with the dumpsite (Int-SI-7). In the case of the dumpsite, unlike Bagua Grande, Sicuani does have municipal employees assigned to conduct work on it. Yet, these composting and dumpsite workers formally belong to the suboffice and not to a specific composting and dumpsite unit within the suboffice's structure since they do not exist (Int-SI-2, Int-SI-7). This means that both tasks are overseen by the waste suboffice deputy manager, but each is directly managed by a designated supervisor. The public cleaning investment project, however, has a partial oversight role over some activities at the dumpsite, particularly the new leachate tank that was recently constructed (Int-SI-2, Int-SI-4).

This means that the dumpsite supervisor reports to two different principals (Int-SI-2). Thus, while this supervisor has direct responsibility to manage the whole dumpsite, under the direction of the waste suboffice deputy manager, the investment project manager is responsible for the new leachate tank and can intervene, make decisions, and give orders to the dumpsite supervisor over this tank and activities related to it without having to coordinate with the waste suboffice deputy manager (Int-SI-2, Int-SI-4).

The municipality itself does not conduct any recycling activities, which are independently carried out by the two waste collection CSOs (Int-SI-13, Int-SI-17). However, the suboffice — and the municipality as a whole— benefits from the CSOs' work because it gathers data on quantity recycled from these organizations to report to the nationally-mandated program (Int-SI-14). This data helps the suboffice fulfill some national waste management goal requirements in exchange of an additional annual budgetary support from the Ministry of Finance, provided as an incentive.

*Satipo.* The waste suboffice in Satipo presents the opposite situation. It has a formal internal structure that includes four distinct areas within the organization dedicated to both waste collection and disposal. The areas are: Selective Collection; Street and Public Space Cleaning; Solid Waste Treatment, which includes two subunits such as Waste Reuse —managing recycling and composting also as two separate tasks— and Landfill Management, and; Damaged Area Recovery (Int-SA-1). These four areas and the two subunits are each led by a supervisor who oversees a team of workers. Hierarchically, all supervisors report directly to the Waste Suboffice deputy manager. In the case of the two subunits within the Solid Waste treatment area, there is flexibility for their supervisors to report to the overall area supervisor as well as to the Suboffice

deputy manager (Int-SA-5, Int-SA-6). Since their work is fairly independent, given their experience and high-level training as environmental engineers, this does not produce major disorders to the structure and hierarchy in the office (Int-SA-1).

Core to the waste management activities conducted by these four areas that are part of the Waste Management Suboffice is the interaction with CSOs and civil society at large (Int-SA-4, Int-SA-23). The implementation of waste management strategies needs CSOs and communities to be informed and collaborate with the Suboffice. For instance, sustained interaction is necessary for the adequate sorting of waste into different materials for reuse or final disposal, taking out the correct waste bags at specific times and days, and communicating problem-solving measures (Int-SA-4). Since the Waste Suboffice focuses on the technical and operational aspects of the provision of waste services, the management of community relations in the context of these services are led by another suboffice within the Environmental Office: the Governance and Environmental Quality Integral Management Suboffice (Int-SA-1, Int-SA-23). This unit carries out the central task of involving and informing CSOs in the provision of both waste collection and disposal services.

The case of Satipo shows a high level of organizational specialization to provide a differentiated treatment of both waste collection and waste disposal services. This approach is materialized in the way its internal office is formally structured. It is also manifested in the more detailed specialization of the Solid Waste Treatment area—which is essentially the waste disposal service area—that is subdivided into two subunits according to the different methods of disposal. At the structural level, these are profound distinctions from what is observed in Bagua Grande and Sicuani that have an informal and loose structure within the suboffice.

*Conditions and Mechanisms.* The existence of a structure is not sufficient on its own, but it is necessary for the implementation of innovative service strategies, especially for the provision of more complex services. The technical, operational, and cost requirements to provide a complex service as waste disposal demand high specialization, and this begins with a formal structure fully focused on its management. Management planning is developed mainly in formally established units in traditional public organizations such as Peruvian municipalities. The same happens for budget allocation and personnel hiring. Thus, having a specialized organizational structure is critical for these services. More importantly, the evidence on collection and disposal performance in the three municipalities —contrasting Satipo with Bagua Grande and Sicuani— shows that it is necessary that the specialized suboffice formal structure takes into account the administrative differences between these services that vary in complexity. The assumption that any internal organizational structure —in which resources are shared across tasks at the suboffice level— can serve all waste services is inaccurate, at least for the provision (by the same unit) of services that are quite different in complexity.

**b. Management teams are mainly qualified and experienced to set up collection routines.**

The professional training and experience of managers is crucial for performance in public service provision (Andrews and Boyne 2010; Avellaneda 2009; Fernandez 2004; Rainey and Steinbauer 1999). This means that their expertise should correspond with the task, especially if the task is more complex or requires specialized knowledge. With the right skills, service operations are run efficiently and problems solved in a timely manner. However, if relevant training and experience is lacking, performance is likely to fail.

The qualifications and experience of managers and supervisors are significantly different when comparing waste collection and disposal management in the three municipalities. Findings from fieldwork reveal that all waste managers and supervisors of the Satipo Waste Suboffice are highly trained, with specialized experience in each service. Yet, the waste suboffices in Bagua Grande and Sicuani struggle to hire and retain qualified personnel whose preparation and experience is typically low but sufficient for collection, although not adequate for disposal service provision. This is a critical problem for waste disposal management that requires high technical knowledge and experience.

*Bagua Grande.* The only qualified worker in the Waste Suboffice of Bagua Grande is the person leading it, the waste deputy manager. He is an environmental engineer that has been working in the suboffice in different tasks since 2015 (Int-BG-1). However, most of the supervisors of all waste services, such as the waste pick up, street sweeping, and composting, are former manual labor workers without professional training and management experience in relevant fields (Int-BG-1, Int-BG-2, Int-BG-5, Int-BG-22, Int-BG-27). “The [waste] supervisors, they are from the field ... with complete high school but without technical studies,” explained an administrator (Int-BG-1). The exception is the composting supervisor who has a technical degree in agronomy and has been in this position since 2019 (Int-BG-22). No one is assigned to lead or perform work for waste disposal services at the dump (Int-BG-1, Int-BG-23). The evidence illustrates insufficient qualifications to conduct waste management services as a whole but, particularly, the complete abandonment of the disposal service since no one is assigned the task at the supervisory or manual labor levels.

Turnover is another problem. This is due to contracts not being immediately renewed for manual labor workers such as compactor truck drivers, bag pickers, and street sweepers (Int-BG-1, Int-BG-2, Int-BG-6, Int-BG-7, Int-BG-10). Thus, in addition to low managerial expertise, the Suboffice is limited by a politically-decided municipal policy of only approving contracts up to three months (Int-BG-1, Int-BG-2, Int-BG-30). The rationale is to minimize worker stability to avoid paying employee benefits (Int-BG-2, Int-BG-22, Int-BG-30). However, a few of workers have been there for years, such as in the composting area, although still under precarious working conditions (Int-BG-21). Waste collection performance is affected due to the learning and adjustment curves its tasks have (Int-BG-1). Despite all the skill limitations, waste collection is adequately provided in this city.

*Sicuani.* Sicuani is led by a few more people at the top of the Suboffice. Its Environmental Office is led by a biologist with more than 10 years of experience in municipal waste management in this city, including serving as deputy manager of its Waste Suboffice (Int-SI-1). This administrator is not currently leading the Suboffice but is very involved in overseeing how it is led. The current deputy manager is a biologist with waste management experience in other municipalities but is new to this position (Int-SI-1, Int-SI-6). The other Suboffice leader in Sicuani's disorganized internal organizational structure is the public cleaning investment project manager. This person is an agricultural engineer with management experience but in areas unrelated to waste services (Int-SI-4). Since collection services and recycling activities are fully and efficiently provided by two community CSOs, no major capacity or personnel have been added to the office.

None of the three Suboffice management leaders have professional training or experience leading waste disposal services, and landfills or dumpsites in particular (Int-SI-1, Int-SI-4, Int-SI-6). The same occurs with the supervisors overseeing the two disposal-related services provided by the municipality. The dump's supervisor had one month working in that position and was a recent college graduate with a chemical engineering degree (Int-SI-2). This supervisor was gaining experience on the job, and was already having to manage serious technical problems and personnel conflict at the dump (Int-SI-2). Trying to improve leachate treatment, the supervisor was running some tests with microorganisms. Yet, this was conducted under precarious conditions and using makeshift equipments (Int-SI-3, Ethno-SI-2). Improvised, unsupported attempts proved insufficient for improving the performance of the disposal service. "Leachate treatment beats us, even though we try," expressed a helpless administrator (Int-SI-1). A similar situation occurs with the composting supervisor, who is a biologist by training with municipal experience but in areas that are unrelated to waste management or composting (Int-SI-7).

Turnover among supervisors, staff, and manual labor employees is also high in Sicuani. The Waste Suboffice is affected by a policy limiting contracts between one to three months, and they are typically not immediately renewable. Dumpsite and composting supervisors, office staff, and street sweepers, for instance, are hired each month and dumpsite and composting field workers every three months (Int-SI-1, Int-SI-2, Int-SI-7). Performance is thus affected by the learning curves of these tasks, particularly affecting disposal.

*Satipo.* The Satipo waste Suboffice, on the other hand, is not only led by an environmental engineer but has four environmental or forestry engineers directly supervising its services (Int-

SA-1). The supervisor of the Selective Collection area is a forestry engineer that has been on the job for more than two years and has diverse public management experience in different sectors and government levels (Int-SA-3). The Street and Public Space Cleaning supervisor is also a forestry engineer that has been leading the area since 2019 (Int-SA-2).

Similarly, for the services related to disposal, the Solid Waste Treatment area supervisor has a technical degree and has been working in the disposal sector in Satipo for 13 years (Int-SA-32). He was part of the unit since before it became a landfill and led the controlled dumpsite at the time, where he acquired detailed technical knowledge on waste disposal management (Int-SA-32). The subunit supervisor for Waste Reuse has two degrees, one in agricultural engineering and another in environmental engineering, and ample experience working in public sector projects, leading teams, and composting (Int-SA-5). The supervisor of the Landfill Management subunit has a degree in environmental engineering with some local level experience on waste disposal (Int-SA-6). Their skills allow them to efficiently apply their knowledge to composting bed control, secure methane management and burning, and leachate treatment, for example.

What is additionally important in this Suboffice is that its manual labor workers, for both waste collection and waste disposal, also have ample experience on the tasks they perform. Some have even worked in their positions for years. Their experience has important implications for understanding operational procedures and carrying out tasks with speed and efficiency, which range from street sweeping to managing a backhoe loader, an excavator, or preparing microorganisms for leachate treatment (Int-SA-8, Int-SA-11, Int-SA-14, Int-SA-19). Experience on the job is highly valued on the ground, and managers suffer when turnover of manual labor workers is a regular municipal policy (Int-SA-1, Int-SA-2, Int-SA-3, Int-SA-5, Int-SA-6, Int-SA-

36). Skilled manual labor workers are essential for waste disposal due to its high technical requirements.

Waste service performance is further strengthened by the work led by the deputy manager of the Governance Suboffice in community relations. This person is also an environmental engineer with relevant experience interacting with communities in the context of environmental management, complementing the skillset in the waste management team (Int-SA-4).

*Conditions and Mechanisms.* The evidence from the three cases illustrates that having, first, people with high levels of relevant skills, training, and experience and, second, assigned to lead the management of the two studied waste services are necessary conditions for performance. These conditions are especially important for a complex service as waste disposal. Having low-skilled managers and supervisors leading a complex service with high technical knowledge requirements is hence detrimental for performance. The concentration of experienced manual labor workers is also crucial as turnover leads to a learning curve that affects a service like disposal but also simple collection tasks. When trying to run operations efficiently, turnover leads to delays and mistakes in waste service provision. The suboffice of Satipo is an exemplary case because it has well-qualified managers, supervisors, and manual labor workers with low turnover for the provision of both collection and disposal. On the contrary, Bagua Grande and Sicuani do not have skilled and experienced managers and staff, with precarious working conditions particularly for those involved in disposal services. Therefore, the evidence shows that even with limited management and personnel skills waste collection services are provided adequately. More importantly, however, it illustrates that personnel qualifications help explain

why disposal services underperform and the conditions and mechanisms that lead to higher performance levels.

**c. Standardized implementation procedures are only available for collection.** Procedures are important because they formally and informally establish the working protocols and routines for the management and implementation of public services. When these are unclear, hard to follow, or nonexistent it is easy to confuse those working on the ground—such as supervisors and manual labor workers—on how to carry out their jobs, leading to service implementation problems and thus underperformance. Improvisation becomes the norm, and provision is more chaotic with changes in the immediate leadership positions that tend to produce new work processes each time. On the contrary, when service provision procedures are proven to work, standardized, specialized, and followed, implementation is easier, and problems and solutions more quickly identified. More complex services such as waste disposal, therefore, benefit and are more dependent on detailed and standardized procedures relative to more simple services such as waste collection that are based on straightforward routines and tasks.

The three cities have standardized waste collection procedures, which is a key element for this service's high performance. However, in Bagua Grande and Sicuani, disposal tasks—including those for the dump, composting, and some recycling—are not structured. Procedures lack formal standardization, complicating task implementation and supervision. Turnover of the few workers assigned to disposal results in the loss of valuable but informal knowledge on procedures, slowing down implementation and increasing errors. Disposal performance is thus diminished. In contrast, in Satipo, all collection and disposal procedures are formally standardized. The teams conduct them as part of the daily routine with occasional coordination

with managers or supervisors. They are also capable of addressing problems by quickly and temporarily rearranging the work, which is also based on procedural knowledge. The performance of both services is hence regularly high, showing that procedure standardization is likely necessary for high service outcomes, especially for more complex ones such as disposal.

*Bagua Grande.* On the ground, in Bagua Grande, the routines and resources involved for waste bag pick up and street sweeping are clear and carried out like clockwork. The waste bag picking routine has two schedules, as detailed by the supervisor:

There are two shifts in the city. The first shift from 6am to 1pm. Four units go out, two compactor trucks and two dump trucks. A cargo motor tricycle also goes out that helps carry the accumulated trash and take it to the dump truck. They do that near the municipal market, there they pick up: one from 10:30am to 12pm and the other from 2-4pm. The routes are by sector ... The second shift, from 1-8pm, covers the outside sectors [of the city] (Int-BG-27).

The shifts are done in each sector every other day except in the three accumulation points where they pick up waste daily. The street sweeping routine is performed by all women teams, from 6am to 12pm the morning shift and from 2-4pm the afternoon shift. “From Monday through Friday, all day. Saturday and Sunday, they only do the morning shift,” indicated the street sweeping supervisor (Int-BG-5).

For composting, the routines are based on collecting organic waste from 180 households and restaurants, taking it to the small composting facility for a quick cleaning and grinding, and then putting the organic waste in piles (Int-BG-4). After that, waste is moved periodically and treated to eliminate flies and ensure proper decomposition. This process takes approximately 60 days. It receives the careful, methodical supervision of three manual labor workers who take pile

temperatures, provide treatment, and move the piles at specific decomposition stages based on the number of days passed.

However, since this municipality does not carry out disposal activities at the dump there are no procedures for it. Only occasionally the Suboffice formally coordinates with the Infrastructure Office to have them lend them heavy machinery to remove some waste around so that the trucks can have more access to certain areas of the dump. “We request it every two months but due to the availability of machinery they take five to six months — we make the requests 10 to 15 days before but not,” noted an administrator (Int-BG-1).

This means that waste removal activities at the dump happens twice a year, if at all. Compared to waste bag pickup and street sweeping, procedures for disposal or more specifically for composting are less structured, unsupervised, and lacking in personnel assignment for work deployment. This illustrates that these procedures, while not recently improvised they are not formally standardized and the activities are not documented. If the three manual labor workers were removed from their position the procedures for each composting task would likely have to be rediscovered, relearned, and redesigned.

*Sicuani*. In Sicuani, the collection routines are led by the two community-based CSOs, who plan the routes and teams for both waste bag pick up and street sweeping like clockwork. Each CSO is responsible for one side of the city, with one in charge of the west or left margin and the other of the east or right margin. “The board distributes the routes according to age and stamina, because the routes some are heavy and this way we look to make the work equitable. Each [CSO] partner works twice a year. All work equally, no one more and no one less,” the board members of one of the CSOs indicated (Int-SI-12). Ninety-six women, partners of the CSOs, go

out with their brooms and tricycles at 1am to their assigned routes (Int-SI-11, Int-SI-12). All of them work for one month.

Each of the CSOs assigns four field supervisors who are also members of the board, and they rotate every other month (Int-SI-13). From Sunday to Friday, they start with the sweeping process of both sides of every street in the urban area, putting all material in their tricycles that each one pushes until their assigned routes are completed (Int-SI-4, Int-SI-6). At approximately 4am they stop at determined points to unload their waste in compactor or dump trucks, whichever is operations on a given night. They get together, chat for a bit, and continue (Int-SI-16, Ethno-SI-9). The collection of waste bags from households and commercial areas begins at 4:30am until around 11am or 1pm, depending on the amount of trash and if the trucks are not having issues. On the other hand, since recycling is carried out independently by the two CSOs without municipal support, the Suboffice does not have any responsibility.

Composting procedures are also small-scale in Sicuani and involve: collecting organic waste from market sellers registered to participate in the composting program that are in three different markets, sorting inorganic or plastic material from the organic waste collected, grinding the material, and setting them up in piles (Int-SI-7). Then, the process entails temperature measurement, moving the piles for oxygenation and treatment, cleaning the area, and then moving the piles to another section of the facility according to the number of days that have passed (Int-SI-9, Int-SI-10). Work is performed from 8am to 4pm Mondays, to move piles around and give them treatment, and Tuesdays, and from 8am to 7pm on Wednesdays and Saturdays when they also go to collect the organic waste from markets.

At the dump, the tasks performed are focused on manually accommodating the trash unloaded by the trucks (Int-SI-2, Ethno-SI-2, Ethno-SI-3, SSO-DISP-6). This is done three times

a day and involves spreading the trash throughout the designated area and burying it with soil using rakes and wheelbarrows. “[The workers] use rakes that actually break the bags. Waste is accumulated in groups or clumps to then get it dispersed. They use wheelbarrows where they carry the soil to throw over the waste” (Int-SI-3). Workers on the site also clean any waste left outside the dump holes, dig and clean leachate holes, build a latrine for their use, and prepare the tracks to safely guide collector trucks to dump in the right places near the holes (Int-SI-5, Ethno-SI-2). A waste management administrator provided details on the work schedule at the dump:

Work up at the dump starts at 8:30am — they get there tired. In practice, the schedule is from 8:30am to 3pm, as the job is finished, but formally it is until 4pm. At 4:30-5am, the security guards open the gate — they are at night, from 6pm to 6am. Work is from Monday to Sunday but on Saturdays no one is here because there is no [waste] collection (Int-SI-2).

While there are some disposal procedures in Sicuani, at the dump and for composting, they are not standardized and are in fact improvised. Thus, these are very basic and insufficient processes to properly treat disposed of waste and the leachate generated in a city of its size. Most of the detailed procedural effort is placed on the collection part of waste management, which is ultimately fully managed by the two CSOs with some logistical support and coordination with the Suboffice.

*Satipo.* Satipo, on the other hand, employs more elaborate processes for the implementation of both its waste collection and disposal activities. The street sweeping process is very much like Bagua Grande and Sicuani and is carried out by term-contract manual labor workers, usually six months and renewable, and are monitored and organized by the area’s supervisor. Each is assigned a route and rotate locations every month (Int-SA-2). This service is carried out

overnight, from 2am to 8am to avoid accidents as the streets are narrow and traffic can be heavy. Workers get together at 1am for coordination and equipment checkup. “The average performance per manual worker is a trajectory of 1.5 to 2 linear kilometers per day. I have a street sweeping plan and an Excel with the schedules,” stated a waste administrator denoting the rigor with which the task is planned (Int-SA-2). The area’s supervisor is with them from 1am to 2am twice a week to organize the teams, although still reporting to the Suboffice at 8am. When the supervisor is not present during the overnight shift, the field supervisor, who is also a member of the street sweeping team, takes charge of the group while simultaneously cleaning the assigned route.

The other collection service, selective collection, focuses on picking up waste bags and has differentiated routines according to the type of waste. It has four routes, and all are done daily but each day a different type of waste is collected. Compactor trucks are used to pick up organic or disposal waste bags, depending on the day; a stakebed truck<sup>29</sup> to collect recyclable waste bags, and; a cargo motor tricycle<sup>30</sup> to carry extra waste bags. Each of the trucks has one driver and two waste bag loaders, while the cargo motor tricycle has a driver who also loads bags on the back of the vehicle (Int-SA-3).

There are two shifts: the morning shift is done daily, from 7am to 12:30pm, and the afternoon shift from Monday to Friday from 4pm to 5pm. The morning shift collects organic and recyclable waste on Mondays, Wednesdays, and Fridays. In the two main routes (1 and 2) that have more population, activity, and are closer to the city center, both trucks go out during those days to collect organic and recyclable waste. Only organic waste is collected in the other two less centric and populated routes (3 and 4) on those days due to vehicle limitations (Int-SA-3).

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<sup>29</sup> *Camión baranda*, in Spanish.

<sup>30</sup> *Motocarguera*, in Spanish.

Disposable, single-use waste is gathered in the mornings on Tuesdays, Thursdays, and Saturdays on three routes (1, 2, and 4) using three compactor trucks, one for each route, and one stakebed truck for extra recyclable collection in all those routes. The afternoon shift focuses on collecting waste for one hour from the five markets in the city using two compactor trucks and a cargo motor tricycle. When the routes are finished, only the driver goes to the disposal facility to unload. First, leachate is emptied to a designated sewage pipe that is connected to the leachate tanks and, then, solid waste is unloaded in the section corresponding to the material carried that day, either organic, recyclable, or disposable waste (Int-SA-3).

On the other hand, waste disposal is carried out at the disposal facility outside the city deliberately using standardized procedures. Three methods are implemented: recycling, composting, and final disposal on a landfill. All activities start once leachate is emptied from the trucks and right after the material is unloaded in the corresponding area in the facility according to waste type (Int-SA-1, Int-SA-5, Int-SA-6, Int-SA-32).

However, the first action taken as trucks arrive to the facility is weighing the vehicles. The person assigned with this task—who is also the security guard— handles the weighing process using an electronic scale that has capacity to hold 80 metric tons. This person then transfers all the information into Excel tables once a week to generate graphs based on the time, day, week, month, and by waste type with and without leachate, and when the trucks are ready to leave the facility (Int-SA-7, SSO-DISP-SA-1). The origin of the vehicle is also registered since three other municipalities within the province also dispose of their waste in the facility, based on an agreement with the municipality of Satipo (Int-SA-14, Ethno-SA-2, Ethno-SA-4). The information is used to periodically analyze how much waste is coming in and out, of what type, and changes in their disposal. This is not only to present reports to the deputy manager and the

manager of the Environmental Office but mainly to make real-time decisions for the appropriate management and sustainability of the disposal facility (Int-SA-5, Ethno-SA-3).

Recycling activities involve separating non-recyclable material that came in the bags and then sorting recyclables by type, such as cans, cardboard, colored and white bottles, colored and white paper, plastic, hard plastic, oil bottles, and metal artifacts made of copper, aluminum, and scrap metal (Int-SA-5, Int-SA-9, Int-SA-10, Ethno-SA-1). This is done using a conveyor belt where small materials are placed and passed over to two workers who manually sort the different recyclables and group them into different buckets and large bags. The workers also very quickly remove caps from bottles (Ethno-SA-1). Cardboard does not go through the conveyor belt due to its size. After this sorting stage, two or three times a week, all sets of recyclables are firmly compressed together using a press machine and packed into bales. Finally, once a month all bales are weighted and grouped in piles (Int-SA-5).

The composting area of the facility has a total of 12 piles or beds, a main leachate channel connected to the leachate tanks through pipes, and a storage area for sawdust and efficient microorganisms (Int-SA-5, SSO-COMP-SA-1). The infrastructure has a tall roof for proper ventilation and oxygenation of the piles. The composting pile formation process consists of first adding a 60 cm layer of sawdust, which is a material that absorbs the leachate generated by the decomposition of organic matter. In this case, it is residual leachate since the compactors that transport this type of waste pass by a leachate extraction process. Then, a compactor enters and deposits the organic waste from the selective collection process in the pile. Once the waste is unloaded, the backhoe loader with its hydraulic arm spreads it evenly. A skid steer loader also intervenes, gathering the waste that fell to the ground and placing it on top of the pile. At the same time three manual labor workers using rakes separate specific organic matter such as

coconut shells that due to the hardness of its bark are slow to decompose and delays the process. The workers also separate inorganic waste such as bags and wrappers (Ethno-SA-2, SSO-COMP-SA-1, SSO-COMP-SA-2, SSO-COMP-SA-7).

To accelerate the degradation process of organic waste at this stage of the process, 15 to 25 liters of efficient microorganisms are added. These are stored in specialized tanks (called isotanks) with a 1,000-liter capacity connected to a hose that directs the input to the pile. Finally, the skid steer loader adds compost to the process (raw compost, before being sifted), which is distributed throughout the pile creating a layer of approximately 10 to 20 cm. Efficient microorganisms are added again. The process is repeated from the discharge of organic waste, until reaching a maximum height of 2 meters (Int-SA-5, Ethno-SA-2, SSO-COMP-SA-1). The supervisor or his aide take the temperature of the piles using a digital thermometer and a notebook to register this information and the day, time, and pile number where it was taken. After measuring the temperature, piles are moved for ventilation and rotation (Ethno-SA-2). To do this, the skid steer loader moves the product from the last pile to the next designated empty area, and successively rotating other piles (SSO-COMP-SA-5). After 30 to 32 days of organic matter decomposition, the process for obtaining compost ends and this product is transferred to the external part of the plant using the backhoe loader to place it in the dump truck. Finally, the compost is placed in a different area to go through the final sifting process before it is weighted and stored in bags (SSO-COMP-SA-5).

All other waste that is not recyclable or compostable goes to the landfill (Int-SA-5). The final disposal of waste in the landfill area, has three main stages carried out in three different areas of the facility: weighting of disposable waste, waste confinement, and leachate treatment (Int-SA-6, Ethno-SA-4). Once the entry weighing process is concluded as describe earlier in this

subsection, the trucks are driven to the waste confinement area and more specifically to the *disposal hole section* which is where all non-reusable waste is unloaded. This is one of two sections of the confinement area. The second is the *platform section*, which is the old confinement area no longer used to disposed of waste. However, this latter section has a geomembrane and 10 chimneys with valves to manage the treatment of the GhG (i.e., methane) produced from waste disposed of in the past via burning.

The disposal hole section is a rectangular area covered by a geomembrane, which is not anchored to the ground (Ethno-SA-4, SSO-DISP-SA-1). It also has 6-inch pipes installed to transport leachate and are covered by stones so that the pipes do not suffer damage when depositing waste. Precarious pipes are also used to conduct rainwater and at the left end of the platform they started a makeshift channel that conducts the water and connects with the rainwater pipe. As the waste disposal progresses, these pipe connections are modified or moved around since they are not part of the drainage that corresponds directly to the rainwater drainage process. Vertical pipes are used to conduct the methane for treatment. These pipes have holes separated by 10 to 12cm, surrounded by stones so that waste cover material does not enter the pipes and are secured by a metal mesh. As the amount of waste disposed in the area increases and covered waste in the holes grows horizontally, more methane treatment pipes are added and the existing ones made taller (Int-SA-6, SSO-DISP-SA-1).

The confinement area as a whole has about 75% of free space (Ethno-SA-4, SSO-DISP-SA-1). This is the result of organized work and the expertise of supervisors and manual labor workers that ensure that the final disposal of non-reusable waste follows an order. This means that as waste enters the disposal hole section, it is gradually spread evenly throughout the section and cover material is dispersed on top to make layers of 40 to 60 cm. All piles are then

compacted with pressure from the backhoe loader's hydraulic arm until the pile worked that day is uniform (Int-SA-6, Ethno-SA-4, SSO-DISP-SA-2). To carry out the process the disposal facility has machinery such as a backhoe loader, excavator, skid steer loader, and a dump truck. Two manual labor workers are assigned to the Landfill area, with one in charge of the chimneys, and maintenance of the platform, and cleaning and supervising the current disposal hole's conditions (i.e., cleans the waste that was not covered or moved by the wind or machinery).

Finally, leachate treatment consists of two leachate ponds, each lined with a geomembrane. There is a third, smaller tank that is sealed but is not active (Ethno-SA-4, SSO-DISP-SA-1). The first tank receives the leachate from three different parts of the facility: the confinement area, the composting area, and the leachate discharge pipes from the compactor trucks (SSO-DISP-SA-1, SSO-DISP-SA-4). It has a roof and intersecting iron railings above the tank as safety to avoid people or animals from falling inside. The pipe conducting leachate discharged by the compactor trucks is superficially placed on top of a mesh with fine filters that retain the solids that are brought in the discharge. On the side of the tank, there is an efficient microorganism treatment area with two large containers, one with active microorganism and the other in the process of being activated. A small, motorized pump is used to load leachate into a tanker truck that is driven around the disposal facility dispersing leachate on the soil as a means of supposedly recirculating and letting leachate evaporate faster. The second leachate tank is not active, but they used to apply physical treatment to the leachate using activated carbon, stone, and gravel filters. Currently these filters are overloaded and no longer fulfill their function, which is why they hope to drain the water/leachate to change the material (Int-SA-6, Ethno-SA-4, SSO-DISP-SA-1).

During my fieldwork research, the municipality was affected by political instability due to political polarization and an alleged corruption. The mayor and top managers in Satipo were sent to jail, including the head of the Environmental Office. However, the Waste Suboffice teams kept working like clockwork, without problems. This situation is illustrative of the way waste services are handled. Waste collection and disposal work in Satipo are carried out with a high degree of standardization of each of its tasks, based on careful planning. These processes are closely and diligently followed by workers and managers. This case shows how standardized procedures, supplemented by high personnel qualifications (from the top to the bottom of the structure), are important for provision (Int-SA-23, Ethno-SA-3, Ethno-SA-8). Service implementation is hence straightforward and problem-solving is conducted effectively. The detailed level of process standardization observed in the city is particularly beneficial for a complex service such as waste disposal, heavily relying on this methodical work to ensure top efficiency and performance.

*Conditions and Mechanisms.* The diligently planned processes for both collection and disposal in Satipo demonstrate the high level of specialization and standardization for waste service provision led by the Suboffice, compared to the improvised way the provision processes are carried out in their Bagua Grande and Sicuani counterparts. In addition, the level of technical detail involved in the implementation of the waste disposal procedures further illustrates this service's level of complexity relative to those of waste collection. A key, noteworthy aspect of the Satipo Waste Suboffice is that their standardized disposal procedures are supported by the disposal facility's operational plan, which is closely followed and recognized as useful for the management of the activities within it (Int-SA-5). This strength in their procedures further

protected the work of Satipo's Waste Suboffice in a context of political turmoil. However, to achieve the standardization levels found in this city, and particularly for a more complex service such as waste disposal, it requires a highly qualified management team leading activities both in the office and the field. This is not present in the other two suboffices. Based on the evidence, procedure standardization and specialization are necessary for high service performance, particularly for more complex ones such as waste disposal.

The differences observed across procedures of the two waste services within a Suboffice and across the three suboffices are partly the result of the qualifications gaps found office and field management teams. The limitations in training and experience found in Bagua Grande and Sicuani, in turn, interact with the pressure received from the population and local politicians to prioritize addressing the immediate problems of visible and salient services. Thus, implementation procedures in these two localities are centered on the provision of waste collection.

**d. High competition for heavy machinery with multiple offices.** Another common issue confronted by the Suboffices underperforming in the provision of waste disposal is the lack of equipment. Particularly, heavy machinery is essential for several critical disposal tasks, such as moving all the waste unloaded by the trucks at the dump or landfill to specific parts of a hole to disperse, accommodate, and compress it. This disposal activity is necessary to make neat piles and use the space available efficiently. It also helps assemble layers of waste, sawdust, and other materials. All this work requires permanently having heavy machinery available, such as a

backhoe loader,<sup>31</sup> excavator,<sup>32</sup> skid steer loader,<sup>33</sup> and dump truck,<sup>34</sup> among others. While this type of machinery is readily available in Satipo, the waste suboffices in Bagua Grande and Sicuani face significant delays and difficulties accessing them, instituting an additional complication to waste disposal performance.

*Bagua Grande and Sicuani.* In Bagua Grande and Sicuani, the suboffices compete with other more politically salient tasks such as infrastructure construction. The reason is that their waste suboffices do not own any of these machines. All are owned by the Infrastructure Office, which decides how to schedule their use throughout the year. The Bagua Grande suboffice, for instance, typically has access to these heavy machines once or twice a year because of the lack of political priority of waste disposal at the dump, supplemented by poor managerial planning and skill (Int-BG-1, Int-BG-14). Sicuani faces the same situation. The Suboffice has to enter into a larger municipal lottery with all other units requesting this equipment. “We are missing machinery such as a backhoe loader and dump truck — they come here every 15 days but it is necessary for them to be exclusive [to disposal]. In the municipality we practically raffle [the machines] between different projects — every Friday there is a raffle but sometimes they give you priority due to urgency,” noted a waste supervisor working in the field (Int-SI-2).

Similarly, problems with the compactor truck in these two municipalities force the use of dump trucks, complicating the job of properly disposing of waste (Int-BG-10, Int-BG-14, Int-BG-27, Int-SI-1, Int-SI-2). Since waste collection teams are required to pick up any type of waste bag from the streets —also adding pressure and risk on collection teams— this means that waste

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<sup>31</sup> *Cargador frontal* or *retroexcavadora*, in Spanish.

<sup>32</sup> *Excavadora*, in Spanish.

<sup>33</sup> *Minicargador*, in Spanish.

<sup>34</sup> *Camión volquete*, in Spanish.

comes unsorted to the dump. This produces two problems for disposal: first, more waste would come into the holes, reducing space and thus its sustainability and duration over time, and; second, collected bags will include more organic waste than the usual amount which increases leachate generation and aggravates the already existing problem the dumps in these cities have for adequately treating leachate.

Moreover, many times due to the urgency to gather all bags from the streets quickly when the compactor truck does not work, it brings hospital waste (Int-BG-6, Int-SI-3, Ethno-BG-1, Ethno-SI-2). Of course, hospital waste is not an unusual sight at the Bagua Grande and Sicuani dumps (Ethno-BG-1, Ethno-BG-7, Ethno-SI-2, and Ethno-SI-3). These vehicle problems emerge from poor maintenance planning, because they are old, or sometimes are the result of unexpected events such as flat tires (Int-SI-20). While unexpected flat tires do happen in all three municipalities, Bagua Grande and Sicuani are the ones facing serious issues in the daily operation of their compactor trucks. “Sometimes maintenance is not done on time ... We still go out but the machines can be damaged. Maintenance planning is necessary ... I’m doing the maintenance myself” explained a vehicle operator (Int-SI-20).

Waste collection workers tend to lack basic protective equipment, work clothes, adequate brooms, and dustpans, but this does not significantly limit their ability to carry out the service and their specific tasks (Int-BG-6, Int-BG-10, Int-BG-21, Int-SI-9, Int-SI-14, Int-SI-18). Limited equipment is more extensive and consequential in the case of disposal (Int-BG-30, Int-SI-2, Int-SI-5). Other key disposal equipments are also absent in Bagua Grande and Sicuani. This includes tools or infrastructure such wheelbarrows, rakes, shovels, for moving waste and setting up dump piles (Int-SI-3, Int-SI-5); organic waste bags to bring material to a composting facility, organic waste grinders, thermometers, and pH meters for compost management (Int-BG-21, Int-BG-22,

Int-SI-7, Int-SI-9, Int-SI-10); full face respirators to avoid breathing methane and goggles; scales; inputs for leachate treatment (Int-BG-21, Int-SI-5, Ethno-SI-2); roofed leachate tanks (Ethno-SI-2); geomembranes under the disposal holes and leachate tanks (Int-SI-3, Ethno-SI-2); leachate pipes, and; basic utilities such as electricity and water (Int-SI-3, Int-SI-5).

*Satipo.* Waste collection workers and tasks, for the most part, are well-equipped in Satipo and face very minimal problems to carry out the service efficiently (Int-SA-2, Int-SA-18, Int-SA-19, Ethno-SA-7, Ethno-SA-8). Contrary the other two cases, the Satipo Waste Suboffice owns its own heavy machinery exclusively for disposal activities due to the importance that this service has in this municipality and the commitment of its managers at the office level (Int-SA-1, Int-SA-6, Int-SA-14). The teams have most of these disposal equipments at the facility (Ethno-SA-2, Ethno-SA-4). Yet, they face some problems of unstable electricity system although it is an issue of the city as a whole due to high demand that they address by rearranging activities temporarily (Int-SA-8).

*Conditions and Mechanisms.* The unequal allocation of resources between collection and disposal is therefore a source of major performance problems affecting the latter, increasing the gap between the two services. Not having regular access to heavy machinery for waste disposal like in Bagua Grande and Sicuani is especially detrimental for the provision of waste disposal, which is not a major problem these municipalities have for collection as they have the necessary equipment or can do the job with makeshift tools. Having all the equipment for each service is particularly important for the performance of complex ones, while simple services can manage.

### 4.1.3 Field Workers

Workers in the field include supervisors, coordinators, and manual labor workers.

Waste workers in these positions, especially manual labor workers and indigenous women, tend to be marginalized both by society and their municipal employers. It is a problem that is not limited to Peru (Fredericks 2009, 2018; Kaza et al. 2018). Regardless of whether they work on collection or disposal, manual labor workers and field supervisors in the waste sector experience discriminatory treatment. Unlike municipal waste staff inside the office, that are typically better paid and work under more comfortable and safe conditions, waste employees picking up waste from the streets or treating waste for disposal are underpaid, neglected, and exposed to high risk levels.

Manual labor waste workers are poorly paid (USD 240 to USD 309 per month), highly exposed to risk, face job insecurity, have unstable contracts, are marginalized and verbally abused by society, and receive differential treatment relative to office workers within the local government (Int-BG-6, Int-BG-10, Int-BG-21, Int-SI-5, Int-SI-11). This situation affects worker motivation and wellbeing (Colquitt et al. 2007; Hameduddin and Fernandez 2019; Isen and Reeve 2005; Lyubomirsky et al. 2005) although they remain on the job. However, disposal workers face an additional problem: they are not seen on a daily basis relative to waste pickers on the streets. This is because while waste pickers are seen walking through the streets, dumps are located on the city's periphery. This means that management evaluates the challenges of the job performed by disposal workers as being equal as those faced by waste pickers.

**Table 4.4.** Field worker treatment and conditions

Categories	Bagua Grande	Sicuani	Satipo
<i>Collection</i>			
Unbiased Treatment	Poor	High	High
Work conditions	Poor	High	High
Morale	Poor	High	High
<i>Disposal</i>			
Unbiased Treatment	Poor	Poor	High
Work conditions	Poor	Poor	High
Morale	Poor	Poor	High

Sources: Fieldwork.

Notes: Category classifications are: none, poor, moderate, and high.

#### **a. Low morale and sense of discrimination among field workers, especially in**

**disposal.** Waste workers feel undervalued as the pay is low and working conditions tend to be precarious. This sentiment affects all municipal workers in the sector: truck and cargo motor tricycle drivers, waste bag pickers, street sweepers, route supervisors, organic waste collectors, composting treatment workers, recyclers, disposal hole and leachate workers, and disposal area supervisors. While in Satipo this situation is less severe and, in many cases, adequate, disposal workers in Sicuani and the security guard in Bagua Grande—who is the only employee there—face the direst working conditions. Poor relative treatment between collection and disposal workers—from discrimination, deficient working conditions, and low morale—is another critical factor for the observed performance gaps between the two waste services.

*Bagua Grande.* In Bagua Grande, waste workers are full-time municipal employees paid as little as 930 Peruvian Soles or USD 240 each month, which was the minimum salary in 2021. Many of them are heads of household for families with more than three members, including children, and are thus forced to find occasional manual labor jobs in their spare time. “The salary is not enough

and they have to find other ways to make money,” said a temporary collection supervisor and truck driver (Int-BG-2). They can hardly make a decent living. One waste worker’s comment exemplifies this reality:

We do this out of necessity ... We don’t have any benefits ... and all for the minimum salary, even though we risk much. We are at 30 to 31 [Peruvian Soles, or USD 7.73 to USD 7.99] per day. A laborer earns more. I have three kids with 930 [Peruvian Soles], plus a brother with a disability for whom I am responsible. It’s not enough. During my spare time I work on my parcel [to support ourselves] (Int-BG-10).

Their contracts last for three months and are unusually renewed. “We are out [of work] for three months due to the contract issue. If you are lucky you return, there are many looking [for this job],” noted another waste worker (Int-BG-11).

Added to the low pay and employment insecurity is the high risk they constantly face. They run toward the truck carrying heavy bags that may include broken glass and used needles, dodging traffic, for instance, and drive around not in specialized compactor trucks but on top of plastic waste bags on the borders of dump trucks (Int-BG-6, Int-BG-7). “Drivers give us alcohol. And according to the wound they give us days off ... we stay quiet unless it’s serious ... There is no protocol for accidents. The gloves don’t protect us from broken glass or needles,” stressed a bag collector (Int-BG-7). One of the drivers explained:

That is why there are accidents — those of us in public cleaning are not well protected. We receive one uniform per year that is contaminated ... We must be the first ‘wash and wear’ — I washed [my uniform] last night to put on today. Worse during the pandemic ... We are mistreated but asked to give a good service. But if there are accidents, they are separated and no longer continue working. Those of us in solid waste are the last (Int-BG-6).

To worsen their working conditions, these waste collectors endure mistreatment from society. Citizens who are irritated with the municipality's overall service provision, angered by waste management in Bagua Grande, or just urged to have their waste bags removed from their front doors release their frustrations toward waste collectors on the streets. Three collection workers described how friends and family also make belittling remarks:

In the streets and your friends disparage you. They tell you 'hey brother, isn't there a superior job' or instead 'get a job!' (Int-BG-9).

People treat us as the worst — we receive insults to our mothers; they get upset because we don't go [to their streets since] they take out [their bags] outside the scheduled time or due to lack of coordination (Int-BG-6).

Even if they see you wounded, it's fine. 'You are kept' they tell us. We are very criticized by the majority; the population does not value us (Int-BG-10).

These expressions show how lowly waste collectors are regarded essentially due to the type of job and sector they are employed in. Working with waste, even if it is a service to all the community, is evidently perceived as a demeaning, worthless, or inferior job done by people undeserving of respect and dignity.

While the few disposal workers employed in Bagua Grande face similar problems as collection workers —and considering that disposal is a relatively more complex waste service— there are qualitative differences in terms of the lack of overall support for the service and thus ignorance over its challenges for workers. A composting worker made a comment that revealed their working conditions:

The smell is strong and affects the lungs later due to the strong vapor from ammonia. But we endure out of necessity. Despite the masks we are given [the smell is still felt]. We are not given anything here to detoxify ... I know that later it will affect us; we have told [management] but they do not take it into account because they do not live it and we do (Int-BG-21).

Full face respirators are basic equipment for organic waste composting, particularly for worker safety and health, but they are not provided by this Waste Suboffice despite having only a very small-scale composting facility and three workers. Not providing a key protective equipment denotes a biased treatment. When the workload is heavy, employees also feel unappreciated and exploited. Even though this area requires at least five manual labor workers, it only does the job with three and “sometimes they even take personnel to see other topics, for support, and they take them away every one to two months [from the composting area]” (Int-BG-22).

The only worker at the dump, who is a security guard, is completely unnoticed and even forgotten. This employee is essentially abandoned. There is no supervision of the work. The night shift worker has never been seen and no one at the Suboffice has complained about it (Int-BG-23, Ethno-BG-1, Ethno-BG-5, Ethno-BG-7). There is no place to warm up food, no restroom, and no electricity for light, air conditioning, or a fan. “Because there is no power here, I cannot ask for a fan,” said the dump’s security guard, even though temperatures are typically very warm in this locality (Int-BG-23). This worker has a very delicate health condition and high stress from over 30 years working in the waste sector:

Yesterday I felt ill but still had to come. When I get up my body hurts. I am afraid, I have been told I could have a stroke. I have a 10-year-old girl that I am still raising, I am afraid that my girl will be left alone. Since I don't like to complain, I just come (Int-BG-23).

Moreover, the dump's security guard has confronted serious legal problems due to an accident while working for the municipality behind the compactor truck loading waste bags:

It was five years ago ... I had an accident and he [the mayor at the time] did not support me. Someone died in the car ... the person unloading told me to compress the waste [but] he got inside to get something ... his head was squeezed. The mayor did not support saying it was an accident. I was sued (Int-BG-23).

This occurred while on the job, which means that the municipality should have taken legal and material responsibility over the problem. Instead, they abandoned this worker to confront it individually. This situation reveals two problems: lack of care for manual labor workers and discrimination due to the type of job and socioeconomic background of workers, especially those in the waste sector. Section 4.1.1 of this chapter further discusses bias toward waste workers from top leadership. Thus, to avoid further complications and because the municipality could not get rid of this employee, they sent this person to a place where workers no longer exist: the dump.

While it is clear that all waste workers are mistreated and hence have low morale, the dump's security guard carries out the job in oblivion. Collection is affected by how workers feel treated, but given that it is a relatively simple task it is still adequately provided. For waste disposal, guarding who comes into the dump is crucial to control the amount and safety of disposed waste, helping protect the dump's sustainability. Yet, this service can hardly be carried out well with just one worker whose job is to guard the main entrance. Less so with a mistreated, neglected worker with a diminished motivation. Thus, it is evident that this dump worker receives, relative to collection workers, the lowest consideration and accommodation from the Suboffice to carry out the job, further reducing disposal performance.

*Sicuaní*. Similarly, in Sicuaní, waste workers are discriminated against and those at the dump are especially misunderstood. All waste workers earn 1,200 Peruvian Soles, or USD 309, monthly. They are hired to work for a month, two or three times a year, depending to the agreement between the municipality and the community CSOs.

Collection women, who are members of the two community kitchen CSOs, highlight mistreatment from the population demanding to pick up all sorts of waste. This includes bags full of construction material and tiles that are significantly heavy to carry and damages the tricycles they use to gather waste from the streets. Since they carry out their jobs overnight, they confront higher risk of safety and accidents from intoxicated individuals walking in the streets or driving vehicles. “That is why we work in pairs,” stated a lady that has been in one of the two collection CSOs for 26 years (Int-SI-18).

However, overall, the CSOs’ collection teams have expressions of gratitude and appreciation toward the municipality for the opportunity given to their members to do this job. “We interact with the Environmental Office through our board ... We have always worked cordially, we have had no problem, we always talk,” added a lady working on collection (Int-SI-18).

On the contrary, disposal workers are more clearly marginalized. At the composting facility, the workers feel underestimated. They have no power, water, and restrooms and so they have to figure out makeshift, resourceful solutions with borrowed materials from family and other municipal units to address these limitations and fulfill their duties. Their work is unacknowledged despite the obstacles and effort, as reflected in a comment by a composting worker:

The fact that you are telling me that we have achieved a lot in very little time, that motivates me, that my work gets recognition ... I would like to reward the team a lot but the biologist says 'no.' I motivate them explaining them the job. It is hard for all of us to find a job and so I tell them that we will receive a paycheck at the end of the month and that keeps us going (Int-SI-7).

Workers at the dump face even greater difficulties to do their jobs with dignity. Although the conditions for disposal are blatantly problematic, particularly at the dump, a waste manager stated "yes, I have everything [for disposal], it is adequate" (Int-SI-6). However, a group of disposal workers at the dump, who are also members of the indigenous community who owns the property, talked about their experience illustrating a completely different context:

We walk up a very steep hill, for 1 hour and a half from our community, to work at the dumpsite. We get here [at 12,500 ft.] very exhausted ... There is no restroom to wash ourselves or shower [after moving waste around] ... there is no water [or] electricity ... We are terribly treated ... There is nothing to enjoy (Int-SI-5).

To make matters worse, these workers have not been paid their first two months of work. Disposal workers' differential, discriminatory, and undignified treatment is thus evident from these accounts. The infrastructural conditions to carry out their jobs further exemplifies the extent of the problem. The camp area of the dump has a small room where two workers sleep during the overnight shift to watch over the few equipments they have. There are two old beds and two wood planks over brick used as benches. Another rest area on the way up to the dump holes consists of a bed placed directly on the ground and is covered with plastic bags that are sustained by four vertical and four horizontal logs to protect them from the sunshine. To test and

prepare the chemicals and microorganisms for leachate treatment, the dump's supervisor uses a badly-built, narrow shack barely fitting three people (Ethno-SI-2, Ethno-SI-3).

Waste collection workers in Sicuani receive a more favorable treatment compared to workers at the dump. The former do not express complaints about neglect or discrimination from the Suboffice. In fact, they recognize how well supported their members and the two CSOs are by municipal administrators. Their motivation leads them to do a good job in collection. However, disposal workers feel largely marginalized, discriminated, and working under non dignified conditions. Despite their communications with the Suboffice about these problems, they still receive no response — they are left on their own. Morale is low, affecting disposal performance more.

*Satipo.* The conditions of all waste workers are significantly better in Satipo. There is no significant difference in terms of treatment and morale. Both collection and disposal workers tend to be highly committed, motivated, and receive respect and support from managers and local authorities (Int-SA-5, Int-SA-10, Int-SA-13, Int-SA-19, Int-SA-13, Ethno-SA-3, Ethno-SA-5, Ethno-SA-7, Ethno-SA-8). They are also generally well equipped with all necessary materials and resources to support their jobs and safety in the streets while collecting waste and at the disposal facility (Int-SA-14, Int-SA-20). Although some field workers express a desire for a better salary, they are generally satisfied and content (Int-SA-6, Int-SA-9, Int-SA-10, Int-SA-12).

However, some waste workers do express a sense of discrimination from Suboffice managers and other municipal authorities that ignore their efforts as they feel their strong commitment to the job goes unappreciated (Int-SA-9, Int-SA-18, Int-SA-22). Managers and supervisors do make efforts to regularly have conversations and show openness to address

feelings such as these, including eating lunch and playing sports together, keeping the teams committed (Int-SA-2, Int-SA-3, Ethno-SA-3, Ethno-SA-5, Ethno-SA-7).

Therefore, contrary to the other two cases, waste worker treatment in Satipo is generally positive and constructive, adding to the factors that explain high performance in both collection and disposal services in this city.

*Conditions and Mechanisms.* Field workers in the waste sector tend to be discriminated against, work under difficult and risky conditions, and have a low morale. However, the evidence shows that waste disposal workers tend to experience this type of treatment more severely and are neglected by top leadership and managers. Disposal workers in Bagua Grande and Sicuani candidly illustrated their terrible situation, showing that this is likely an important factor diminishing the performance of this service.

While collection workers are also affected by poor treatment and working conditions, the state of abandonment is not as critical as observed in disposal. Despite the low morale in collection, the service continues to be adequately provided possibly because it is relatively simple. This means that the performance of a simple service, although improved by worker motivation according to the literature, is not significantly reduced by these treatment issues. This observation could be explained by the fact that low income workers, such as those in waste collection, need the paycheck urgently so they try to complete the task as best they can given the limitations.

The evidence also illustrates that poor treatment compensated by workers' livelihood needs is not sufficient to improve disposal performance. However, when workers receive more dignified treatment and working conditions, increasing their morale, both waste services are

more likely to perform highly. The performance of a complex service is especially benefitted by having more committed and focused workers, as a result of such treatment, as found in the case of Satipo. Thus, worker treatment, conditions, and morale are necessary for high service performance, but has significant implications for the adequate provision of complex services such as waste disposal.

## **4.2 Conclusions**

In this chapter, I argue that having specialized administrative capacity is necessary for improved performance in public service provision, especially for complex services such as waste disposal. The evidence on waste management services shows that municipalities can provide simple services well without optimal administrative capacity, as observed for waste collection. However, lacking the required administrative capacity specific for the provision of a complex service leads to deficient performance levels. When service implementation depends on high operational and technical knowledge, general or improvised capabilities cannot compensate for limitations in those areas. Local governments that build the administrative capacity tailored for a complex service are more likely to have high-performance levels.

Given that the core puzzle of this chapter regarding service provision is the underperformance of disposal services relative to collection in terms of administrative capacity, three sets of conditions are identified as *necessary* for better service outcomes in both collection and disposal. First, it is necessary for top municipal leadership—including politicians and managers—to be committed to and aware of the specific implementation implications of complex services. Decision-makers tend to be mindful of the requirements of simple services such as collection, hence providing regular support. After all, these are more politically and

socially visible services. However, they superficially understand the demands of a complex one as disposal (Kahneman 2002). This partly indicates that services with lower technical complexity and higher political and social salience will benefit from more support, and thus have greater performance (Avellaneda 2012; Bélanger and Meguid 2008). Better attention from decision-makers to the specialized needs of complex service operations and their technical aspects would lead to more accurate assessments and higher prioritization of these services.

Second, administrative specialization within the management office is necessary for better complex service outcomes. Simple services like collection can continue being provided under fragile, improvised administrative contexts at the management office level. Complex services like disposal cannot. Differentiated organizational structure, team qualifications, policies and procedures, and equipment corresponding to such service's requirements are essential for improved performance.

Third, field worker treatment must be unbiased, receiving respect and recognition regardless of the task. In the case of waste services, there is a difference in the conditions and exposure to prejudice if they pick up waste in the streets compared to those covering dump holes outside the city limits. All waste workers tend to be disparaged by municipal authorities and society. Yet, disposal workers are not seen —because dumps are far away— and therefore, their challenges are misunderstood or entirely ignored.

On the other hand, these findings have crucial implications for public administration research and policy-making. For research, first, they show that performance gaps between simple and complex services can be more precisely understood by looking at service-specific administrative capacity. To do so, it helps to disaggregate the analysis by appropriate hierarchical levels. In this case, three levels are identified: top leadership, management office,

and field workers. Each level has distinctive capacity features that, according to the findings, contribute to the performance of waste services such as simple collection and complex disposal. This means that municipal administrative capacity varies, even for services in the same office and policy domain — more so when services are more complex. Thus, general capacity measures likely do not capture what we expect.

Second, this approach helps identify more accurate or tighter research measures so that analyses capture what is intended. Third, this approach provides a more detailed understanding of performance by unpacking the analyses of services and service performance based on their complexity level, instead of assuming all services are equal. Finally, for public administration research more broadly, this chapter shows the richness that collecting qualitative data provides for assessing administrative capacity and service performance.

For policy, the evidence goes beyond simple, “low-hanging fruit” policy solutions. When faced with performance problems, typical immediate reactions from decision-makers may include hiring managers and teams with better *general* training to take care of the rest. Increasing the *overall* office budget to procure needed equipment or use it to hire experts directly is another similar approach. The findings from this chapter provide insights with a nuanced perspective for service provision when services vary in complexity, using the case of waste. First, non-specialized capacity is crucial to a simple service, such as cleaning the streets. Waste collection is a resilient service that does not require much specialized organizational structure, personnel qualifications, intricate procedures, and equipment. This means municipalities with resource limitations may likely continue cleaning the city streets.

Second, strengthening municipal service-specific administrative capacity is an essential investment for performance improvements in complex service provision. Fundamental measures

include: specializing the organizational structure for the management of this service, hiring and retaining team members with specific technical qualifications and experience, drafting detailed policies and procedures for such service's administration, and acquiring specialized equipment for service operations. In this case, it is critical to reinforce the specific capacity within the office for this service type.

Third, a holistic approach to administrative capacity is fundamental, focusing on the needs of a specific service, mainly if it is complex. This means that for a given service, it is necessary to assess the structure, policies and procedures, human resources, equipment, and how compassionate the leadership is with field workers.

Finally, the perspective of policy-makers about services matters. This implies that distinguishing policy measures by service complexity would help address service performance issues effectively. If heavily concentrated on simple services or the superficial aspects of more complex services, decision-making will likely be flawed or biased. This is especially important for those services with environmental sustainability implications and weak, vulnerable Global South cities.

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## **Chapter 5: Under what conditions does community-based CSO involvement affect the performance of simple services but not of more complex services?**

CSOs are not significantly involved in waste services in Bagua Grande. The relationship with the municipality is weak or inexistent and many local authorities do not know much about them. Other municipal leaders see them as weak organizations of poor, uneducated people. CSOs are thus typically absent or may have a distant, indirect involvement in service implementation. While some community CSOs used to sporadically participate in waste collection before the pandemic, today, no relationship exists with the Waste Suboffice.

One CSO in particular gathers recyclables at a very small scale, although with minimal interaction with the Suboffice (see Figure 5.1). While this helps with reducing waste build-up and contamination at the dump, it is likely trivial. A couple of CSO members routinely drive a motor tricycle freely inside the dump, where large amounts of waste have accumulated and rotted for years without municipal treatment. They walk around the area for a few minutes until they find a deep, rich waste pile from where they could gather recyclables. They dive through the mounds using only a rake and a bag, many times without gloves or masks. They typically fill up two to four sacks after many hours of work — the heat and the smell are weakening (see Figure 5.2). They collect for their own purposes, part of their livelihood strategies. They go there hoping to find a few valuable items they could later sell but without any real organizational plan. None of this is done as part of a policy or systematic coordination with the Suboffice to address local waste disposal problems, which is why they have not been instrumental in improving waste disposal.

CSOs are relatively disengaged from waste services. They struggle with internal management, affecting membership engagement and making their activities dependent on

occasional leadership proactivity if their board members have those skills. Their organizational mission is led by immediate livelihood needs of sporadic members, resulting in no planning, rather than on an overall community development approach based upon a prepared strategy. Their organizational and membership issues have restricted their ability to interact with the local government systematically. This has thus led to relevant impact on waste collection and disposal performance.

**Figure 5.1.** Municipal driver delivering plastic bottles to CSO for recycling in Bagua Grande



*Notes:* Author photograph (2021).

**Figure 5.2.** CSO members collecting recyclable material at the dump in Bagua Grande



*Notes:* Author photograph (2021).

Next, when you visit Sicuani’s Waste Management Suboffice you are likely to run into at least one of the leaders of the two community CSOs managing the city’s waste collection services. Misinformed stereotypes may lead quite a few people unacquainted with them to think that they are in the building to ask for social assistance. Racial, ethnic, and socioeconomic discrimination may even lead many other municipal workers to ignore or mistreat them. Because of their racial features and outfits showing their indigenous identity, these admirable and hardworking women are not unfamiliar with disparaging attitudes toward them due to their heritage. But these women are in the office to talk about some critical business for the city. After all, they single-handedly manage the entire waste collection service achieving optimal results (see Figure 5.3).

Different reasons motivate their visits to the Suboffice: service problem-solving coordination with managers, providing members’ employment documents, and building relationships to ensure the continued support of their CSOs’ work in collection. Managers from

the waste and environmental offices also visit the CSOs' facilities sometimes, for work meetings or to participate in the CSOs' annual festivities. Cordiality and trust are features of their interactions, especially with the Environmental Office manager who fully supports them after years of work together serving the city. The fact is that the municipality needs them because it cannot provide this waste service on its own, even though some administrators believe otherwise. More importantly, perhaps, despite their poverty, or because of it, these CSOs have a very clear organizational strategy, driven by their members' needs. This is reflected through their efficient operation of the service, which explains why they have done the job so well for 31 years.

On the other hand, leaders of the CSO involved in waste disposal are rarely seen walking through the Suboffice's hallways to hold planning or problem-solving conferences with waste administrators. In fact, they are waiting for managers to visit and present to them their solutions for the dump's mismanagement, which is in their property. While interactions are rare, when they occur mutual distrust is evident, making it hard to address any past and ongoing grievances. This indigenous community CSO does not seem to have drafted an organizational strategy to tackle the damages to their community from inadequate waste disposal service, with or without the municipality. Ultimately, they have not been instrumental in waste disposal performance improvements (see Figure 5.4).

**Figure 5.3.** CSO members conducting the waste collection service in Sicuani



*Notes:* Author photograph (2021). The image shows CSO members cleaning the city, a task for which they are entirely in charge.

**Figure 5.4.** CSO members working at the dump in Sicuani



*Notes:* Author photograph (2021). The image shows a dump full of mismanaged waste bags with a few CSO members manually carrying out tasks.

Finally, CSOs in Satipo coordinate regularly with the municipality to engage their communities in waste sorting and receive approval to their waste disposal activities. To do so, they meet with staff from the Governance Suboffice to receive training on waste and other environmental issues and think of ways to collectively participate. For collection, leaders gather the community together to train members, making sure that they sort their waste bags by reusables and non-reusables. For disposal, leaders report back to the community with any

negotiation outcomes regarding how the disposal facility is working, especially regarding smell control when leachate is not properly treated.

These CSOs are focused on community development, leading their organizations to reach out, negotiate with the municipality, and devise strategies that will benefit most or all members. Access to services and wellbeing is at the core of what leaders do. These organizations have three crucial organizational capabilities: engaged human resources, organizational strategy, and leadership commitment and skills that are relevant to the specific service. Thus, their capabilities produce an effective participation in both waste services. While the Waste Suboffice conducts collection and disposal services efficiently throughout the city, and hence CSO involvement in service provision is not direct, their contribution on these services' performance is crucial. Particularly, despite disposal's relative complexity, CSOs' demands have helped ensure proper municipal management of waste disposal (see Figure 5.5).

**Figure 5.5.** CSO member working at the landfill in Satipo



*Notes:* Author photograph (2021). The image shows the landfill area of the disposal facility. Neat waste piles are found after one hour of work with heavy machinery carried out by the facility's personnel, who are mostly CSO members. This work is done after the collection trucks unload all the waste in the landfill.

All these conditions of CSO involvement in the three municipal case studies are summarized in Table 5.1 below.

**Table 5.1.** CSO involvement general conditions

Categories	Bagua Grande	Sicuani	Satipo
Municipal Capacity to Manage CSO Involvement	Poor	Moderate	High
Perceptions of CSO Characteristics	Negative	Moderate	Positive
CSO Organizational Capacity	Poor	Moderate	Moderate
Waste Service Involvement			
Collection	Poor	High	Moderate
Disposal	Poor	Poor	Moderate

*Sources:* Fieldwork.

*Notes:* Category classifications are: none, poor, moderate, and high. The category on “perceptions of CSO characteristics” refers to those from municipal workers and the classifications are: negative, moderate, positive, and indifferent. The *indifferent* classification means that the category was not expressed as relevant.

In this chapter I will show four main patterns regarding the participation of community CSOs in waste service provision. The first two points pertain to their relationship with the municipality, the third to their organizational capacity, and the fourth to the complexity of the service. First, capability within the relevant municipal offices to manage relationships with CSOs affects how likely administrators will establish contact and substantial coordination regarding service provision. Waste and environmental offices with weaker administrative capacity and human resource skills are overwhelmed with routine administrative tasks as shown in Chapter 4. Thus, undertaking another demanding responsibility requiring particular abilities, such as interacting with CSOs in the context of waste service provision, may be regarded as too burdensome by management teams.

Second, CSO involvement is also contingent on how waste managers and local politicians perceive the capacity of these community organizations. If negatively regarded —

typically due to the racial, ethnic, or socioeconomic stereotypes of their members, or about their organizational characteristics— CSOs will be dismissed as potential partners for waste service provision. Community CSOs composed of poor individuals, indigenous peoples, or apparently weak organizations, are thus more likely considered as less capable and their involvement limited to simple waste collection services or have none at all.

Third, CSOs' organizational capacity determines both the service they engage in and the degree to which they become involved. As a result of their current organizational capacity, most community CSOs are more likely to participate in simple waste collection with minor, narrow tasks while unusually having a role in the provision of complex waste disposal due to the limited capabilities relevant for such service. CSOs with more organizational capabilities, such as a specialized structure, planning, human resources, leadership skills, and mission-orientation, are more likely to manage more waste service responsibilities and sustain them over time. Yet, these are still circumscribed to waste collection or an indirect, smaller role in waste disposal.

Fourth, the complexity of the service matters for CSOs participation in service provision. More complex services that have physical and human asset specific requirements may not match the organizational capabilities of most CSOs. This is observed in CSOs involved in waste services, particularly waste disposal, who usually have a peripheral role and tend to struggle with more responsibility on this task.

Therefore, an analysis of the patterns obtained from fieldwork findings shows that the provision of more complex services, such as waste disposal, unquestionably necessitates high administrative capacity for performance improvements. The complexity of this service is relatively high due to the specific set of managerial and technical capabilities needed for its provision, compared to the less highly specialized ones typically available in CSOs due to the

broader range of community issues they engage in to bring about development and benefits for their members. In addition, administrative capacity that is not tainted by prejudice is also essential for the effective communication and handling of CSO involvement by waste suboffices — without these units opening the door for participation, CSOs will not have a chance to least try to build capacity to influence the performance of this complex waste service. If CSOs are to have a critical role in any waste service, especially a complex one as disposal, administrative capacity at the waste suboffice level is fundamental.

### **5.1 CSOs and Service Provision: Theory**

When and why do CSOs do service provision? Local community members tend to organize to collectively take action when government —national or local— is absent or fails to provide most needed goods and services (Ostrom 1990; Putnam et al. 1993). Local leaders devise different ways to ensure, in the short or long term, the access of their communities' to basic services and livelihood opportunities (Auerbach 2017; MacLean 2010). At times, this may mean fully substituting government and directly taking responsibility under their own terms; other times, their activities may involve partially substituting (or supplementing) government to work together in specific areas where government capacity is weaker (Brass 2016; Breslin 1987; DFID 2003; Ostrom 1996; Post et al. 2017; Robinson and White 1997). This description closely resembles community CSO participation in waste collection services (Kaza et al. 2018; UN-Habitat 2010).

For poor communities, there is typically too much at stake for inaction. Waiting for government to unilaterally figure out solutions to provide public services —such as waste, water, sanitation, or electricity, for instance— is hardly an option. Thus, communities are urged to form

CSOs or strengthen existing ones to work out their common problems of service provision, livelihoods, and development together. As a result, local politicians and municipal administrators—who directly oversee most basic services—may be forced to at least think twice before quickly dismissing their demands.

However, while CSOs' participation in service provision will likely result in some improvements for their communities, it remains unclear when and how this occurs. Looking at the case of waste disposal could help illustrate this puzzle. CSOs tend to have a minimal involvement in this service, if at all, struggling to organize their actions for a deeper role in its provision. Compared to CSOs' experience in waste collection, the disposal case shows that research has not yet sufficiently explored the conditions under which CSOs may contribute to service performance improvements, especially when service complexity varies. What remains unclear is whether all municipalities would be open to listening and supporting *any* community-based CSO and, similarly, if *all* CSOs would successfully carry out *any* service task regardless of its complexity. To elucidate the role of CSOs in public services, particularly issues regarding the role of community-based CSOs in simple and complex service provision, this chapter discusses the literature to help analyze the conditions of and causal mechanisms obtained from fieldwork data.

Research shows that three conditions are likely necessary for the effective involvement of civil society actors, such as community CSOs, in the provision of public services. Pertaining to CSO-government interactions, first, that local governments have the capacity to manage the relationship and, simultaneously, second, that local governments are open to work with CSOs (de la Riva Agüero 2021; Ngo et al. 2019). Third, CSOs must have some level of organizational capacity (AbouAssi et al. 2019; Andrews et al. 2010; Baggetta et al. 2013; Cammett and

MacLean 2014). I propose a fourth necessary condition, that in the absence of municipal capacity, services must be relatively simple for effective CSO involvement. I will explain this condition throughout the chapter. Despite the recognized challenges from civil society involvement (Grindle 2007), current studies continue to find that CSOs' have a critical role in the provision of public services without fully considering their relationship with local governments and internal capacity, especially as services vary in complexity.

### **5.1.1 CSO–Government Interaction**

Cooperation between government and civil society, particularly CSOs, is necessary when the public sector struggles to efficiently provide services on its own (Brass 2016; Brinkerhoff and Wetterberg 2016). Weak government capacity is a common feature in the Global South, especially at the city level. This is a key reason why CSO involvement in local service provision tends to help address issues of access and responsiveness by contributing with additional organizational capacity, human resources, and legitimacy (AbouAssi and Bowman 2018; AbouAssi and Trent 2016; Arroyo and Irigoyen 2005; Brass 2012; Grindle 2007; Herrold and AbouAssi 2022; Nelson-Nuñez 2019; Remy 2004).

Government capacity. Collaborations do not always lead to better service delivery performance. Municipal administrative capacity limitations may prevent the inclusion of CSOs in service provision, which at times is coupled with ineffective CSO involvement, thus affecting expected outcomes (Agranoff 2007, 157; Babiak and Thibault 2009; Brass et al. 2012; Brinkerhoff 2002; Cammett and MacLean 2011; de la Riva Agüero 2021; Jaramillo and Alcázar 2017; Loeffler and Bovaird 2016; McNulty 2019; Ngo et al. 2019; Page et al. 2015). Poor municipal planning

capacity and a lack of skills and experience to manage community relations may hinder municipal offices from involving CSOs, interfering with proper interaction with the communities. The benefits of collaborative relationships could also be reduced by more specific aspects of the interaction. For instance, the lack of experience on both sides with working under shared objectives, the ad hoc mechanisms entailed, and the additional coordination skills and procedures demanded especially from government may all be unforeseen hindering factors (Bovaird and Loeffler 2012; Loeffler and Bovaird 2016; Thomson and Perry 2006).

Perceptions of CSOs. Similarly, at times, administrators and politicians fearful of losing power or led by discriminatory ideas can also constrain the relationship (Bovaird and Downe 2008; de la Riva Agüero 2021; Fredericks 2009, 2018). This means that the perceptions of government actors may play an essential part. Ethnic and racial diversity tends to increase the marginalization of minorities, affecting their organizational strength, especially of indigenous peoples who have experienced systemic discrimination around the world and mainly in a country like Peru (Arroyo and Irigoyen 2005; Hall and Patrinos 2012; Torero et al. 2004). Yet, in time and if CSOs are allowed to participate as equal partners, trust tends to increase, turning the relationship into a mutually dependent one (Brass 2016, 49; Brinkerhoff 2002; Cheng 2019). This evidence indicates that CSO involvement may not be as straightforward as is commonly thought. Ultimately, success in terms of service outcomes may likely depend, in part, on the degree to which government can incorporate CSOs into the service provision scheme.

### 5.1.2 CSO Capacity

Community-based CSOs are formally organized civil society groups that are embedded in their communities that typically participate directly in the provision of local services as a way to support their members (Bovaird 2007; Cammett and MacLean 2014; Putnam et al. 1993).

Existing research in the Global South shows that service delivery performance improves when CSOs are involved (Auerbach 2017, 2020; Cammett and MacLean 2014). These organizations hold community meetings to decide on how to participate in the provision of services such as waste management when there is less state presence locally (UN-Habitat 2010). Improvements happen when CSOs are well-organized, locally embedded, and formal (Batley 2006; Brass 2016; Cammett and MacLean 2014; Devas and Grant 2003; Putnam et al. 1993; Robinson and White 1997).

However, it remains unclear if successful outcomes are as likely for complex as they are for simple ones. For instance, it is usually the case that individuals directly participating in waste service provision are from vulnerable social sectors, exposed to informal employment and discrimination, such as low-income women and their children (Fredericks 2009; Kaza et al. 2018; Vidanaarachchi et al. 2006). Their involvement, typically limited to street sweeping, waste picking, and recycling, can be trivialized by formal local government employees (Abarca-Guerrero et al. 2013; Botello-Álvarez et al. 2018; USAID 2018) and not directed to address municipal issues of provision. As a result, more complex services such as waste disposal are more likely affected, enhancing the performance gap in favor of waste collection.

Locally embedded, community CSOs are crucial for advancing community interests. This is especially the case if they operate based on the decision-making and work of its members rather than of hired staff, that is, if they are internally democratic (Banks et al. 2015).

Fundamental issues to these communities at large would likely receive attention as a result because these CSOs would be directly mobilized by—and thus respond to—the priorities of their members when engaging with government actors. Most needed transformations by these societal groups get addressed this way.

What are the components of CSO capacity needed? To better understand the role of CSOs in service performance it is crucial to assess organizational characteristics such as structure, operations, human resources, leadership, mission orientation, strategic planning, and transparency. Focusing only on whether these organizations participate or not on service provision would thus be insufficient, and perhaps misleading. More importantly, however, not finding CSO participation in a given service, such as in a complex one like waste disposal, may actually result from internal capacity features of the organization, which in turn affect the scope of tasks they can engage in (AbouAssi et al. 2019; Hall et al. 2003). Research by AbouAssi et al. (2019) and others serves as a guide to disentangle the specific attributes of CSOs' organizational capacity and how that may affect their activities.

For instance, the *structural* and *operational* attributes of a CSO and the extent to which they are relevant to the task, complex or not, may influence the degree to which they become involved in it rather than signaling simple indifference or passivity if they do not. Likewise, when CSOs effectively participate in service provision (or not) it shows that they at least have the *human capabilities* to carry out a service task. In addition to the latter capability, *leadership skills and commitment* is crucial on its own because it allows not only better working teams but also has implications on how they negotiate their role, benefits, and compensations, as well as to navigate problems, stakeholder pressures, and unexpected demands from administrators (Andrews et al. 2010; Baggetta et al. 2013; Han et al. 2011). Leadership thus has wider

organizational consequences. What motivates their involvement is also essential, especially if they are *mission-oriented* organizations led by a commitment to support in collective development and wellbeing, especially for their communities (Brass 2016, 48; Putnam et al. 1993), in contrast to those led by short-term, individualistic goals.

To accomplish their missions, CSOs with greater capacity may draft *strategic plans* that provide a blueprint on the internal resources available, carefully considering when and how these resources will be matched with service tasks they have committed to participate in (AbouAssi et al. 2019). Finally, *transparency* with the communities they represent and with government is another important characteristic of capacity (Devas and Grant 2003; Putnam et al. 1993). Relations based on clientelism and patronage negatively affect service performance (Batley et al. 2012; Grindle 2007, 2012; Nelson 2007). This feature may also be related to the formality of the organization. Over time, and with more participation, transparent CSO management tends to build trust, collaboration, social support networks, and more effective pressure on public authorities. Fundamentally, CSOs with all such capacity features help improve government responsiveness that may produce better service performance, even in non-democratic political regimes (Putnam et al. 1993; Putnam et al. 1988; Putnam et al. 1983; Tsai 2007).

Overall, CSO participation in service provision may thus depend on the organizational capacity and embeddedness of the group. Better managed, collaborative community CSOs that have close, constructive relationships with the local government may more likely help improve service performance. However, if more capacity exists for simple services, meaning they are more focused on this type of services, then their influence on service performance may likely reduce for more complex ones because they may likely lack the specialization needed for such services. While this is a matter of CSO capacity, it also has to do with the complexity of the

service itself regardless of capacity, embeddedness, or partnership with the local government. Municipal capacity to adequately manage CSO involvement across different services, such as in the case of waste collection and disposal, is nonetheless essential.

Upon examination of these theories and the quantitative findings discussed in Chapter 3, certain limitations are revealed for learning about what is truly leading CSOs to have positive outcomes on waste collection but none on waste disposal. With the purpose of uncovering the conditions and some causal mechanisms and finding additional insights, this chapter provides some answers the following overarching question: *Under what conditions does community-based CSO involvement affect the performance of simple services but not of more complex services?* This question is approached through an exploration of two more specific questions: *How does CSOs' relationship with the municipality affect the provision of simple and complex services? What CSO organizational capacity characteristics affect their successful participation in the service provision process, leading to improved performance in collection but not in disposal?*

The next section unravels the causal processes by looking at CSOs' relationship with local governments and their organizational capacity in more detail, using fieldwork qualitative data from CSOs in the three Peruvian municipal case studies. The final section concludes.

## **5.2 CSOs and Waste Services Performance Differences: Conditions and Causal**

### **Mechanisms**

Community CSOs in Peru, such as neighborhood associations, indigenous communities, poverty alleviation CSOs, and recyclers associations usually face significant organizational weaknesses (Arroyo and Irigoyen 2005; Bland and Chirinos 2014; Calzada et al. 2017; De Silva et al. 2007; Remy 2004, 130-131). They tend to struggle to maintain a cohesive group and

engaged membership; internally structure teams and allocate specific tasks; accurately identify and prioritize problems they can address in light of available capabilities; devise actionable plans and strategies to achieve their goals, and; transparently make collective decisions (Interviews 31, 66, and 69). These problems limit their capacity to address community needs effectively.

However, a closer look at the case of waste management shows not only how CSOs participate in services but, perhaps most importantly, their varied organizational attributes. This is observed through their involvement in waste collection and disposal, revealing their strengths and challenges, hence helping explain waste service performance outcomes.

Although CSO weakness can be a core difficulty, these actors also have to deal with equally struggling municipal offices lacking capacity as well as local authorities that regard them as negligible actors due to their socioeconomic and ethnic characteristics. Municipal offices and authorities can hence facilitate or complicate CSOs' participation in waste service provision. This is important because CSOs' role in service performance, while mainly contingent on their capacity, may also result from whether management has the skill to handle the relationship and if decision-makers perceive them as worthy partners to solve local service problems as those pertaining waste.

While this may be true in many cases, there are municipal actors in Peru that appreciate CSOs' capabilities and contributions to service provision and that have some capacity to manage their participation, such as in waste collection in Sicuani. Similarly, there are CSOs that have strong organizational capacity, including leadership skills for negotiation, and are thus delivering benefits for their communities through their involvement in service provision, such as in waste disposal in Satipo. However, municipal capacity, positive perceptions, and CSO capacity also vary depending on a fourth factor: service complexity. For instance, for simple waste collection

in Sicuani, strong CSOs interact with a municipal Waste Suboffice with some specialized capacity and recognition of CSOs' role. For complex waste disposal, however, all three conditions are low. The high physical and human asset specificity of disposal presents management problems to waste suboffices with overwhelmed personnel and low administrative specialization, limiting CSO engagement as observed in Bagua Grande and Sicuani. If CSO involvement occurs, however, weak suboffice capacity or prejudiced perceptions of CSOs, or both, reduce the likelihood that the municipality will fulfill any commitments agreed upon with CSOs in return for their service support.

The three case studies demonstrate the conditions in which CSOs can support improvements in the performance of simple waste collection while struggling to produce the same result for complex waste disposal. First, suboptimal waste office capacity to manage CSO involvement leads to ineffective CSO involvement in collection, unless committed individual top leadership within the office takes charge of making it work. Similarly, if municipal capacity is weak, strong CSOs can help improve simple collection performance. In the case of disposal, suboptimal office capacity—or committed individual leadership in compensation—is insufficient to produce adequate performance even in the presence of strong CSO capacity. This indicates that high municipal office capacity is crucial for CSO involvement and impact on complex disposal. Second, positive, unbiased perceptions of CSO capacity and their members is necessary for CSO's to influence the performance of both collection and disposal. The main role of the perceptions of municipal workers, however, is of allowing CSOs to have a chance to become involved that, in turn, gives them the opportunity to learn about the service and develop the capacity needed. If perceptions are negative, they will have a marginal role or none at all. Third, CSOs can have suboptimal capacity but still have a crucial influence in waste collection

performance. CSOs with a similarly low capacity would have a minor or negligible role in waste disposal performance. This means that some CSO capacity is sufficient to help improve simple collection, but that high CSO capacity is necessary to help in complex disposal. Finally, the role of CSOs in waste service performance is contingent on service complexity.

### **5.2.1 CSO–Municipality Relationship**

CSO participation in waste services is contingent on the type of relationship they have with municipal actors, both administrative and political. One part is explain by how CSOs and their members are perceived by these government actors, affecting the degree to which their involvement is encouraged or hindered. Another part is about the capacity of the municipal office to handle the relationship with CSOs. It is true that some CSOs have low organizational capacity. However, they can still add value to waste service performance with proper municipal capacity to engage and support them in the process as their own capacity is developed.

Collaborations can range from —intentional or unintentional— utter disregard of their existence, skeptical or lukewarm interest, to genuine support and recognition of their contributions. Table 5.2 summarizes CSO–municipal relations by waste service and case study.

**Table 5.2.** CSO–Municipality relations and perceptions

Categories	Bagua Grande	Sicuani	Satipo
<b>Collection</b>			
Municipal Capacity to Manage CSO involvement			
<i>Formal Structure</i>	None	Moderate	High
<i>Management Skills</i>	Moderate	High	High
Perceptions of CSOs characteristics			
<i>Organizational Capacity</i>	Negative	Positive	Positive
<i>Members</i>			
Race	Negative	Indifferent	Indifferent
Ethnicity	Indifferent	Negative	Positive
Socioeconomic Status	Negative	Negative	Negative
CSO-Municipality Relations	None	High	High
<b>Disposal</b>			
Municipal Capacity to Manage CSO involvement			
<i>Formal Structure</i>	None	Poor	High
<i>Management Skills</i>	None	Poor	High
Perceptions of CSOs characteristics			
<i>Organizational Capacity</i>	Negative	Poor	Positive
<i>Members</i>			
Race	Negative	Indifferent	Indifferent
Ethnicity	Indifferent	Negative	Positive
Socioeconomic Status	Negative	Negative	Negative
CSO-Municipality Relations	Poor	Poor	High

Sources: Fieldwork.

Notes: Category classifications are: none, poor, moderate, and high. The category on “perceptions of CSO characteristics” refers to those from municipal workers and the classifications are: negative, moderate, positive, and indifferent. The *indifferent* classification means that the category was not expressed as relevant.

**a) Municipal weakness and perceptions about CSO capacity affect interactions.** CSOs

receive these different treatments from local officials. When their capacity is not fully acknowledged, some municipal actors justify this from not having enough budget to reward their participation, in-kind or in-cash. Others consider them passive organizations or that have problematic leadership. A few others are not explicit but make no tangible effort to engage them

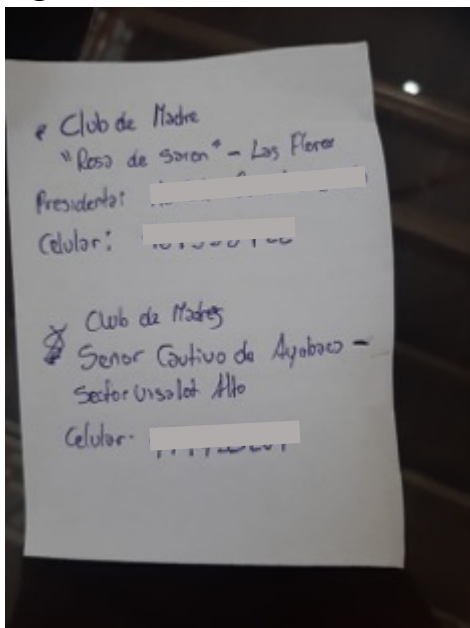
in provision. When valued, however, their diligence in planning, operational capacity, or leadership transparency are praised.

Encouraging their involvement is ultimately a matter of decision. Budgets are evidently not infinite, and many local governments do confront multiple difficulties, but how they are allocated responds to political and managerial priorities. Thus, the varied rationales to leave them aside even though waste service provision struggles signals at least two conditions. First, some managers and politicians have disparaging views about CSOs. Socioeconomic, racial, and ethnic discrimination is implicit, perceivable only by subtle expressions and decisions. Second, other times, however, CSOs are not included because the waste suboffices are simply administratively overwhelmed. All this tends to result in a typically narrower participation that is confined to basic tasks associated with a simpler service, such as waste collection. These causal mechanisms are discussed in more detail in the lines that follow. Since issue of municipal administrative capacity are discussed in Chapter 4 in detail, this section concentrates on the first point which is the perceptions of local authorities.

*Bagua Grande.* Two types of community organizations interact with the municipality in Bagua Grande, mothers and recyclers. In both cases, interactions are limited. From the Waste Suboffice point of view, these CSOs are weak, ineffective organizations composed of poor, unskilled individuals that can hardly contribute to service provision. This means that the Suboffice is not interested in collaborating with them. The degree to which they interact with the local government is thus limited, for both the mothers' clubs and the recyclers' association. The Waste Suboffice and other municipal authorities end up ignoring them as a result.

An indication of this is that, while coordinating fieldwork logistics, the Waste Suboffice could not find any information on community CSOs participating in waste. Some interviewees claim that their participation stopped with the pandemic 15 months ago from the time this fieldwork was conducted. Yet, the municipality had no documentation, registry, or contact information of the CSOs they worked with (Ethno-BG-6). After insisting with several contacts, the only available information was provided by a top manager of the Environmental Office in a hand-written note sent via WhatsApp. It turned out that this piece of paper contained inaccurate information on the CSOs and their leaders — it was not only outdated, but the contact details were not of organizations that had participated in waste services (Figure 5.6). “We no longer have contact, my friend,” said the manager 30 minutes later after sending the note and realizing the error (Ethno-BG-6).

**Figure 5.6.** Contact Information of CSOs Provided by the Bagua Grande Environmental Office



Source: WhatsApp picture sent by top manager to the author.

Twenty mothers' clubs had participated in waste collection in the past, before the pandemic. Even though they have played an important role in sweeping the streets no one has remained in contact with these local leaders. There is not even a directory with the name and cellular phone of at least their presidents. This has a three-way explanation. First, their weak organizational capacity—in terms of skilled leadership, strategic planning, and dedicated membership—has diverted them from developing a systematic relationship with the Waste Suboffice so that they could have a role in waste service provision. This means these CSOs do give the impression of poor commitment and capability to handle collective tasks. Second, poor capacity in the Waste Suboffice to elaborate detailed plans to address waste problems and thus identify ways in which community CSOs could help. Third, implicit prejudice against CSOs based on their members' individual characteristics, such as their race and socioeconomic conditions, is held by local authorities. The assumption is that because they are poor and need social support to make ends meet, if at all, they are less committed or capable of carrying out tasks and following orders efficiently. This is the view of top managers from the Environmental Office, other municipal offices, and local political authorities, implicit or otherwise.

Poor administrative capacity and prejudice are critical limitations for CSO participation. After all, CSOs can develop capacity if given the chance, especially when there is municipal need of working hands to provide struggling services. Waste service conditions show the urgency. For instance, not all neighborhoods in Bagua Grande receive the same level of collection service quality (SSO-COLL-BG-1\_1, SSO-COLL-BG-2\_1, SSO-COLL-BG-3\_1, SSO-COLL-BG-4\_1). The dump forms large mounds of waste every few hours, including hospital waste, with animals feeding from all of it (SSO-DISP-BG-1, SSO-DISP-BG-8, Ethno-BG-5). If there are community organizations with numerous members needing social support and

services urgently demanding labor, the next step is for managers to draft a plan to make this work.

At least some portion of these two services could potentially benefit from less expensive and temporary manual labor. Yet, none of this currently occurs. Even if the budget for waste services were limited, some type of agreement could be reached with these CSOs and their members — they are financially urged by the pandemics' employment consequences. Some in-kind or cash compensation in exchange of their work time could suffice for most of them and, in fact, they are waiting for this. But nothing emerges from the municipality — the Waste Suboffice operates as usual with no new measures to solve its blatant service problems.

A community leader with insider information from the Environmental Office and political authorities explained: “There is a wrong perception in the [Environmental] Office about CSOs. If they were called it would be a great incentive, they would support ... It is not done out of pessimism, because management thinks that there is no interest in the population,” this person explained (Int-BG-26). A manager from said office confirmed the negative view of CSOs: “[m]y opinion about local CSOs is that there is no interest in environmental issues ... There is little participation of CSOs ...” (Int-BG-30). This perspective indicates that CSOs need to reach out to the municipality, not vice versa, denoting a top-down view of CSOs by management and a lack of interest on working with them.

Politicians share the same thought and prejudice. A councilmember who is part of the council's environmental commission explained that CSOs are not involved in waste services “due to their socioeconomic situation ... [which is] an indication of ignoring these processes ... they do not have the necessary knowledge ... [and] are quite ignorant” (Int-BG-19). Another top politician shared the same view, adding that “the problem is capacity building ... They have a lot

of problems, they fight [each other] ... The idiosyncrasy [is not good]" (Int-BG-31). Knowledge of the service is necessary depending on the specific role. Yet, the politicians generalized them as incompetent for being poor. In fact, not much preparation is required for waste picking or accommodating waste at the dump, but even then, many waste-related task can be learned on the job as shown in Satipo and Sicuani. These politicians were also confused about CSOs broadly, showing they are disengaged from community organizations in the city.

Thus, CSOs in Bagua Grande are marginalized and are even less likely to approach the municipality and the Suboffice for any collaboration. There is not distinction between CSOs in waste collection or disposal. Their main challenge is the meager support from the municipality. "We had to demand the municipality, the manager, and the cleaning supervisor," said a leader referring to their waste picking tasks as CSOs (Int-BG-24). They have never had a meeting with the environmental manager and feel abandoned (Int-BG-8, Int-BG-29).

Trust and communication are low on both sides, minimizing their involvement in both waste services. Yet, this situation is more the product of low Suboffice capacity and the biased, presumably discriminatory perceptions that administrative and political leaders have about CSOs. If the CSOs were supported, they would strongly commit and make important contributions to waste services. Collection and disposal performance are equally reduced from misperceptions and biases.

*Sicuani.* CSOs in Sicuani have two types of relationships with the Waste Suboffice: one friendly and supportive, for collection, and; another, tense, marked by discontent, for disposal. Two community kitchens manage the waste collection service and, over three decades, they have developed a solid rapport with the Suboffice for its provision. The Waste Suboffice is not

administratively strong and does not have a Governance Suboffice, as in Satipo. Despite municipal capacity issues, they developed a strong collaborative association. “Everything is coordinated [with the Suboffice] ... We interact weekly, every other day ... there is a deep cooperation,” said a leader (Int-SI-12). “They call us to manage problems and solutions. Always,” stressed another (Int-SI-11). Local politicians also generally approve of their work.

Yet, a few detractors in the municipality believe the service would be more cost-effectively provided if more compactor trucks and street sweeping vehicles were purchased in their stead. There is also an implicit disparaging sentiment that these CSOs receive poverty assistance, despite the cleanliness of the streets from their effort (Int-SI-4, Int-SI-6). However, trust and communication flourish, and the partnership only becomes more solid over time because of the committed support they receive from a tenured top Environmental Office manager. The positive outlook of this CSO before municipal authorities is produced by the highly efficient way they provide the collection service.

On the other hand, the indigenous community who generously conceded a portion of their lands to be used as a disposal site has a complicated partnership with the Suboffice and the political authorities. The municipality has failed to meet its part of the agreement. It did not improve the community’s roads and other infrastructural facilities. Furthermore, rather than implementing protective environmental measures for air, land, and water sustainability they converted the area into a mismanaged —at times unmanaged— informal open dump. “The land was given for a landfill, not a dump. The municipality has not kept its part ... The agreement says that they would do one infrastructure project per year, but nothing ... There is no relationship,” indicated an upset leader of the community (Int-SI-26).

To fulfill a small part of the agreement, the Suboffice has hired 15 community members to work at the dump and composting area. While this municipal failure is true, administrators and politicians believe community leaders exaggerate and are problematic. “There is manipulation [from the community]. ‘If you don't give me this, I'll close the dump’ ... they play with this. It is a lasting conflict and must be handled carefully, if they want A we must give them A,” expressed a Waste Suboffice manager (Int-SI-6). No serious effort is made on either part to address their differences and build a new productive, collaborative relationship.

More importantly, municipal actors have acted upon negative perceptions about this CSO, avoiding alternative solutions to the conflict. If they were not a CSO of poor indigenous peoples, the agreement would likely not be so blatantly trampled over. The core concern of the CSO is to protect its lands and receive community investment, all which are part of the agreement, but the municipality has fully ignored its responsibility for both the agreement and the disposal service. Distrust only continues to grow from mutually negative perceptions, partly influencing the degree to which waste disposal is properly provided.

Therefore, these differences in CSO–municipality relationships help increase the performance gap between the two waste services. The beneficial collaboration context for collection alongside an association mired in conflict for disposal is another mechanism explaining the performance gaps.

*Satipo.* CSOs in Satipo are entrepreneurial. They are neighborhood associations that organize their communities and reach out to the Waste and Governance suboffices for support. They are pressured to act because most are in the city's periphery and have unpaved roads. These CSOs are not too far from the center but enough to periodically receive a different treatment from the

waste collection routines, that in Satipo are closely tied to disposal services due to the municipal policy on waste sorting. This means that if access is unpaved and the area is considered outside the city center, the Suboffice makes decisions on when and what to collect. Disposal services are thus made worse when all waste bags are mixed in the truck, without sorting into organics, recyclables, and disposables.

The Waste Suboffice is administratively strong, but has some capacity issues to sufficiently reach these neighborhoods because “[t]here are not enough staff to fulfill everything planned” (Int-SA-3). “[T]he problem is giving them the service,” added a manager. “It is difficult to promise something that cannot be fulfilled by the logistics of [the] collection service” (Int-SA-4). Resource limitations affect coverage of routes that are in the periphery (routes 3 and 4). Nonetheless, the municipality has performed exceedingly well in the provision of both waste services, including involving CSOs in the provision process. These communities recognize the municipality’s effort even in peripheral areas. “They do call us to meetings [on waste collection and sorting] and ask us to talk to our neighbors. It is two times a year,” a leader explained (Int-SA-26). They were asked by the Governance Suboffice to work together with them on waste sorting tasks —properly separating waste and taking it outside during the scheduled times— and to engage their entire communities for this to be successful. They received training from the municipality on how to do this. (Int-SA-30). Similarly, the community next to the disposal facility, despite some serious conflicts in the past, also recognized the effort made by the municipality to work collaboratively with them and attempting to fulfill the formal agreement they had reached together (Int-SA-15). The Waste and Governance suboffices in Satipo thus coordinate well with CSOs, for both collection and disposal.

Despite these efforts, there has been a recent decline in their interactions and service provision in these communities that is affecting CSOs' trust levels toward the local government (Int-SA-28, Int-SA-30). Unlike Bagua Grande, administrators in Satipo's waste-related suboffices do recognize their logistical limitations to reach certain communities. Discrimination against CSOs in the latter is not an explicit reason to provide less services to CSOs. Some experienced local politicians, however, believe that CSOs in the city are passive organizations without leadership that need to be propped up to act in their own interests, revealing a distant, patronizing approach about community CSOs (Int-SA-33, Int-SA-35). Yet, when waste service resources need prioritizing, the first affected are poor communities in the city's periphery. The higher relative costs to provide waste services a few extra minutes away from the center could be a way to cut some budget expenses on gas and vehicle maintenance. Implicit socioeconomic discrimination in these decision-making processes cannot be fully discarded.

The communities and the Waste and Governance suboffices work hard to keep good communications and working relations with each other — after all, the former seeks better services for their communities and the latter has waste collection and disposal as top service priorities. Therefore, while the interaction may be somewhat strained due to current events, such as the pandemic context, they are both striving to establish a close interaction to ensure that performance is high in both waste services. Despite some challenges in waste collection and disposal performance, possibly by biased decisions against poor CSOs, the local government is responsive and painstakingly trying to address these problems.

*Conditions and Mechanisms.* CSO–municipal relations are critical to the involvement of these organizations in waste service provision, either facilitating or hindering their participation.

Without the support of the relevant waste-related offices, community CSOs can hardly have a role in either simple collection or complex disposal. While the administrative capacity of the municipal office is crucial for the handling of the relationship, as shown in Chapter 4, the perceptions of local authorities about the CSOs and their members are equally determinant. Overwhelmed administrators with limited skills, resources, and leadership can hardly devise ways of integrating CSOs in service provision. The contrary occurs if personnel have the skills, resources, and organizational structure to support collaborations, such as in Satipo. Similarly, if CSOs are regarded as strong organizations, it is more likely that they will be called to support in the service provision efforts. If their organizational capacity is viewed as weak then they will less probably be invited. However, regardless of capacity, the cases show that local authorities' prejudice about their members based on racial, ethnic, or socioeconomic conditions also partly affect the degree to which CSOs are allowed to participate. Given the more complex requirements of some services, such as waste disposal, involvement is more likely allowed in more simple services like collection — this partly results from local authorities' perceptions of the capacity of CSOs and their members.

### **5.2.2 CSO Organizational Capacity**

The community CSOs studied have varied organizational features (AbouAssi et al. 2019). Interviews and ethnographic observations were held with poverty-alleviation CSOs, neighborhood associations, indigenous communities, and recyclers' associations all of which participate in some form in waste service provision. There are common organizational traits among those successfully —or unsuccessfully— participating in the provision of waste collection and disposal services.

Most CSOs have some basic organizational capacity for a favorable involvement in collection, ranging from human capabilities to contribute with manual labor to operational and planning capabilities to manage the entire service. Thus, it is more likely to see them as part of the provision of this simple waste service. However, it is rather unusual to find CSOs with a defined organizational structure, procedures, or members concentrated on supporting waste disposal activities. While some do help organize their communities in the waste sorting stage of disposal, and others select members to work at the disposal site managed by the municipality, their involvement tends to be superficial in this complex waste service. Thus, CSO participation in waste collection tends to help improve its performance but does not influence waste disposal performance significantly.

Their organizational capacity fits better with the less physical and human asset specific requirements of collection. Yet, their capabilities are not specialized enough for a more involved role in disposal. This means that capacity features such as a loosely organized internal structure, missions, operational capacity, leadership skills, and strategic planning—even if weak—are sufficient for an important participation in collection but not in disposal. Table 5.3 summarizes these CSO characteristics by municipal case study.

**Table 5.3.** CSO organizational capacity

Categories	Bagua Grande	Sicuani	Satipo
<i>Collection</i>			
Mission Orientation	Individualistic, short-term view	Collective, long-term view	Collective, long-term view
Structure (internal specialization)	None	High	Moderate
Operations	Poor	High	Moderate
Human Resources	Moderate	High	High
Strategic Planning	None	High	Moderate
Transparency	High	High	High
Leadership (skills and commitment)	Poor	High	High
<i>Disposal</i>			
Mission Orientation	Individualistic, short-term view	Collective, short-term	Collective, long-term view
Structure (internal specialization)	Poor	High	Moderate
Operations	Poor	Poor	Moderate
Human Resources	Poor	Poor	High
Strategic Planning	Poor	Poor	Moderate
Transparency	High	High	High
Leadership (skills and commitment)	Poor	Poor	High

*Sources:* Fieldwork.

*Notes:* Category classifications are: none, poor, moderate, and high. For mission orientation, the classifications are: individualistic vs. collective and short- vs. long-term view.

**a) Developmental, mission-oriented organizing strengthens waste service involvement, but**

**mainly for collection.** CSOs' organizational missions influence whether and how they

participate in service provision. The CSOs involved in waste services in the three case studies are focused on finding ways to support the livelihoods and wellbeing of their communities. Their creation is based on a shared community with members typically living in the same or proximate neighborhoods. Yet, their association as CSOs is generally motivated by a need to address their members' poverty and scarce and many times exploitative employment opportunities. The situation of these communities paired with the service provision challenges faced by municipal waste suboffices generated openings for these CSOs to support waste services. In return, they would receive some form of compensation, in cash or in kind, that would help them cope with

household poverty or community service access problems. Despite the common challenges, these CSOs have different missions and views about themselves that have motivated varying forms and levels of participation in waste collection and disposal.

*Bagua Grande.* Access to food and jobs is what drives CSOs in Bagua Grande. Interviewees recognized that they were created as a strategy to find collective solutions to difficulties finding employment and stable incomes among community members (Int-BG-8, Int-BG-28, Int-BG-29). These CSOs are mothers' clubs and nutrition organizations led by women and a recyclers' association with mixed gender membership. "Most of us are single mothers, we work for our children ... Other supports that we give as a club are for sick mothers" explained a leader (Int-BG-24).

Most CSOs were created to do street sweeping, with the mission of looking "for work and food, due to ... poverty and lack of work for poor mothers" (Int-BG-29). Their core driver to organize is their members' livelihood struggles. "We do not get jobs because we do not meet the [training] requirements," said a leader (Int-BG-8). Women-led CSOs used to conduct street sweeping activities in exchange of some essential groceries, such as rice, oil and sugar. They stopped working with the municipality right before the pandemic started, in April 2020, due to a municipal decision out of precaution and budget limitations that reduced social support (Int-BG-5, Int-BG-24).

Thus, community organizing in Bagua Grande and participation in waste services — whether via waste picking or the gathering of recyclables for sale— are essentially collective survival strategies, and possibly one of last resort. Given the poverty issues that motivate their existence, and their members struggle to make a living, their organizational capacity takes a

second place. Thus, CSO participation in waste collection is weak or entirely absent. For disposal, systematic and effective involvement is not feasible given that their mission is to find immediate livelihood solutions. Minimal organizational capacity is contrary and insufficient for the requirements of a complex waste service.

*Sicuaní.* The material poverty condition of CSO members in Sicuaní is a central feature motivating their actions. Two large women-led community kitchens, with 600 and 250 members each, conduct all waste collection services. For waste disposal, an indigenous community of roughly 5,000 members has temporarily lent a portion of their lands to the municipality. Their members are also connected by shared indigenous ethnic identities and norms.

The community kitchens' members are all females. Their vulnerability is coupled by the fact that they are the sole providers for their children. Most members are single mothers or widows. "We are poor — women, single mothers, abandoned mothers with several children, widows. [Our organization] was created to support each other and that's why we work," said a leader (Int-SI-11). Both CSOs were simultaneously created 31 years ago during a time of severe economic collapse in Peru to collectively help each other. "There was a crisis of poverty ... in 1990. That's how the community kitchens were created, to watch over the nutrition of women from marginal neighborhoods. Then an agreement was made with the municipality for cleaning," explained another leader (Int-SI-12).

Members of the CSO involved in disposal are connected by family, ethnic ties. Their original reason of existence is to preserve their indigenous community. "Our task is to represent all community members ... [and] solve all kinds of problems ... like the dump," clarified a group of leaders (Int-SI-26). As with other CSOs, their difficult economic situation is a factor

motivating their organized action in waste services. “The whole community is in need. Our little piece of land, and its production, is for the family, to survive” (Int-SI-26). This is why they requested that the agreement with the municipality included the hiring of some members in waste disposal.

Poverty is a driving factor leading to the formation of the CSOs involved in waste services in Sicuani. However, their shared experiences and cultural norms from their similar indigenous ethnic backgrounds, coupled with their common household vulnerabilities, also strongly motivate their organized action. While these are strong reasons for the two women’s CSOs to lead waste collection services completely and efficiently, they are not enough to carry out waste disposal services. Similarly, although the dump is in the property of the indigenous community CSO, they have not been successful at enforcing the agreement with the municipality. Their participation does not go beyond selecting 15 community members to work for the municipality at the dump and the makeshift composting facility. Although they could have been more involved, either in the provision of this service or by more thoroughly supervising the municipality’s work to make sure their lands are adequately protected, they are not. Therefore, this illustrates that a collectively oriented, developmental mission—and the resulting committed membership—is not sufficient on its own to engage in the provision of a more complex service directly and successfully.

*Satipo.* Community CSOs in Satipo are mostly neighborhood associations and some indigenous communities. Both have similar responsibilities. Unlike in Bagua Grande, their existence is fundamentally motivated by the urge to improve the living conditions and access to services for their communities. Their collective improvements are seen as in support of their livelihoods.

To improve wellbeing in the community, and expecting municipal support, these CSOs are typically involved in sorting waste into organics, reusables, and non-reusables and making sure waste bags are left outside their members' homes following the correct schedules provided by the Waste Suboffice. Waste sorting contributes to collection services, but also has larger implications (and, in fact, is part of the strategy) for waste disposal. Sorting helps reduce the waste load, leachate, and methane generation in the landfill, while also increasing the production of sustainable byproducts such as compost and items made of recycled materials. This means that their involvement driven by their developmental mission benefits both collection and disposal, though indirectly.

One CSO, also motivated by community wellbeing, makes periodical, forceful demands to the municipality to solve issues of strong smells—from leachate treatment problems. They have a direct involvement with the disposal facility because it is located right next to their community. Their collective concerns lead them to constantly push the Waste Suboffice and its Landfill Management subunit to find more effective solutions.

CSOs in Satipo consistently highlight that their mission is to ensure their communities' wellbeing and promote development. “My greatest desire is to create another production unit, like a fish farm, small animals ... All this is my main function, that the community becomes self-sustaining,” explained a leader (Int-SA-15). Another CSO head mentioned that they work “to bring well-being ... so that [the community] lives comfortably, that is the objective” (Int-SA-26). “The mission of the community is to maintain our culture ... [We want to help] [e]veryone progress mentally,” said a leader from a different CSO (Int-SA-28).

To exemplify their mission of community development, one leader described their improvements during their 14 years of existence, although there are basic services that are still unprovided:

[W]e had no water at home, only one source for the entire neighborhood. Today we have [in-house water supply]. The green areas were a ditch, a hole, [and] today [they are] covered for children to play. We didn't have light, today we do. But there is no drainage (Int-SA-30).

Although they face important challenges, these CSOs' are driven not exclusively by securing short-term employment or food assistance but, primarily, by a longer-term view. Their missions are concentrated on the improvement of their communities' and the lives of their members. Their members still struggle to make ends meet and need to diversify their sources of income —through a combination of temporary and term jobs. Yet, they are collectively mobilized by a wider temporal vision. This means that livelihood problems are addressed collectively in this municipality. Such organizational perspective leads them to look beyond immediate subsistence. In that regard, while their participation in waste disposal is not in depth in the sense of delivering or leading important parts of the service, they do engage in its early, crucial stages and also on forcing the Suboffice to adequately manage it. The high administrative capacity of Satipo's Waste Suboffice to provide waste disposal services may also reduce the space for these CSOs involvement.

*Conditions and Mechanisms.* Organizational missions generally define the path that CSOs will take when participating in service provision. If driven by members' individual livelihood problems, then the CSO will likely take any opportunity that appears in the short-term, such as

engaging in sporadic waste collection activities with the local government. If that does not work out or stops, they will move on, individually, because their members will need to find other work opportunities that emerge to solve their urgent household income issues. The organization is thus used as a temporary life-saving vehicle. Because little time is available to strengthen it, it is weakened and cannot develop sufficient capacity to engage in service provision more systematically. Thus, the municipality loses sight of them.

When CSOs' missions are more collectively driven, that is to promote community development and wellbeing, they tend to invest more effort in strengthening their organization so they can bring about benefits for all. That is how they are more likely to have a sustained relationship with the municipality, especially if the service is simple such as waste collection. However, while mission orientation is necessary for organizational capacity and service participation, mainly for simple services, it is not sufficient for more complex ones such as waste disposal. That is possibly why CSOs in Satipo and Sicuani are peripherally engaged in waste disposal despite their mission to improve wellbeing in their communities.

**b) Structural specialization, strategic planning, and operational capacity help waste collection, minor disposal contributions.** All CSOs interviewed have an internal structure composed of a president, vice-president, treasurer, secretary, communications person, and auditor. They form the board of directors running a CSO and are elected by members for periods of one to two years. Similarly, decision-making on key topics is done openly with all members and based on vote count. Most of them became formal CSOs with their own groups' means, without external support. Yet, having this structure, open, participatory decision-making, and

formality are not sufficient to determine a CSO's impact on waste collection or disposal performance.

Other capacity features are also key for an effective role in waste collection. For instance, some organizations have some level of task organization and objectives, typically part of strategic planning, to conduct waste collection activities. These characteristics generate committed membership because they contribute to organizational credibility. This type of capacity also allows CSOs to implement strategies that contribute toward the improvement of waste collection services.

On the other hand, the case studies illustrate that when these organizational features are absent, CSOs struggle to devise ways to become involved and address community concerns, even in waste collection. The ability of a CSO to convince the municipality to support their participation is thus hindered as is their capacity to collaborate with other local CSOs to jointly address livelihood and service issues. Members lose hope on the organization and its problem-solving capability, reducing participation. The difficulty to gather support for their actions, like summoning waste collection teams, is also affected.

However, while the case studies show that some CSOs have a role in waste disposal services, these are minor or specific contributions. Even the CSOs with more capacity in municipalities seriously struggling with disposal do not have an active, in-depth participation in its provision. Although other factors may limit CSO involvement in waste disposal, such as managerial capacity in waste suboffices to handle CSO involvement, organizational capacity issues also reveal that CSOs' internal capabilities may be necessary but not sufficient to engage in the provision of a complex service more fully. Partly due to these organizational capacity features, CSOs struggle to participate in complex waste disposal.

*Bagua Grande*. CSOs have established leadership positions in their boards. Given how they have defined their organizational missions, however, their capabilities are circumscribed to manage a narrow set of occasional activities focused on basic livelihood assistance to their members when sick or financially struggling. CSOs do not have subcommittees working on strategic planning for fundraising or targeted activities (Int-BG-8, Int-BG-24, Int-BG-29). Board members do everything, informally delegating some tasks to non-board members that can occasionally volunteer (Int-BG-28).

Mothers' clubs goals' are not part of a strategic plan or backed by well-structured teams and operations. These goals are carried out through small, infrequent fundraisers between them and their relatives. Through neighborhood barbecues, they ask members for donations upon need. Gift baskets, cash, or in-kind contributions are made for members needing support. "When we have activities, we charge one [Peruvian] Sol [or about USD 0.26<sup>35</sup>]," described a leader (Int-BG-29). They also have operational obstacles even to organize these events. "We don't have our own space [as a CSO], we meet at my house or on the sidewalk," added another one (Int-BG-24). Their activities are conducted with difficulty, showing limited planning and operational capacity.

The help provided to members can be insufficient due to low membership numbers, commitment, and resources available. These issues critically limit their operational capacity. Membership commitment and low identification with their organizations is also a contributing factor to operational limitations (Int-BG-28). They are more focused on their individual livelihoods. Some members also join other social support CSOs to further minimize household

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<sup>35</sup> The exchange rate used in this chapter is the nominal annual average for 2021, which is when the interview took place, at 3.88 Peruvian Soles per US dollar as reported by the Peruvian Central Bank. The data was obtained from: <https://estadisticas.bcrp.gob.pe/estadisticas/series/anuales/resultados/PM05242PA/html/2015/2022/>.

vulnerabilities. Even leaders have abandoned their positions without notice: “[t]he initial president left us for a job in Chiclayo [a main city a few hours away], and never came back. She left to work in asparagus” (Int-BG-29). Commitment to the organization itself has a secondary place. With a poor internal structure, strategic planning, and membership commitment, they struggle to conduct most activities.

The recyclers’ association confronts similar problems, but has relatively more clear tasks that have some contribution for disposal. Its core organizational activities are the crushing, sorting, and packing of plastic and cardboards (Ethno-BG-3). Their members also go in small teams of two or three to the dump to collect more recyclables, but what is collected there is for their individual use and sale (Ethno-BG-5). While this action may help reduce waste pressure at the dump, their contribution is minimal because of its very small scale.

As a result of negotiations, the municipality collects some recyclables each week and stores them in a large municipal vehicle parking lot so that CSO members work on sorting. It is not much, however. A team of eight out of the 18 members work there each Monday to prepare all materials for sale once every month or month and a half in the closest major city. As a result of this collective hard work, nonetheless, their profits are also insufficient. Every one to one and a half months, they obtain “1,100 Soles [USD 284], which is divided by 18 [members]. That comes to 70-80 Soles [USD 18-21] per person” (Int-BG-8).

The revenue made is largely insufficient to sustain an individual or family, further showing their weak strategic planning as a CSO —with a small business side— with micro-scale contributions to waste disposal. Similarly, their work is carried out with much improvisation and operational issues. For instance, a municipal motor tricycle driver manually unloads collected recyclable waste in the lot. Cardboards are thrown in front of the storage area assigned to the

CSO and plastics are manually placed in bags by CSO members. Nonrecyclables are hence not sifted and end up packed together with recyclable items (SSO-RECYC-BG-2, SSO-RECYC-BG-3).

Given the unspecialized structure, lack of planning, and member commitment challenges for both collection and disposal, CSOs in Bagua Grande are unable to make major performance contributions to the two waste services.

*Sicuni.* CSOs in Sicuni have a highly specialized internal structure and capacity for waste service provision. The boards are exceedingly diligent, participatory, and thoughtful in the planning of strategies and allocation of work to members. Job opportunities are provided to those with larger household responsibilities and vulnerabilities; a hard task in communities facing widespread poverty. Dedicated and experienced teams conduct the waste service-related activities — if new members are selected to participate, they receive guidance and training by more skilled peers. Membership commitment is thus strong — they trust that their boards work in the benefit of all. Compared to Bagua Grande and Satipo, these CSOs, and especially the two waste collection CSOs, are stronger and more impactful organizations in waste services.

The two community kitchens conduct the waste collection service in its entirety. They are strong, all-women-led organizations conducting this service for 31 years. The Waste Suboffice barely gets involved — mainly solving problems when the trucks brake, but even then, board members take charge. Waste administrators conduct minimal oversight of the CSOs' work. Both are umbrella CSOs, with one representing 15 smaller community kitchens and the other 29. The former works in the left margin of the city and the latter in the right margin.

Their organizational capacity is admirable. Internally, they have subunits and teams planning and setting up different collection-related tasks to implement the operation. Their boards take care of all managerial details for their operations. They gather the paperwork for the monthly contract and payment of their members working on street sweeping, 36 from the left margin CSO and 60 from the right margin CSO (Int-SI-4, Int-SI-11, Int-SI-12). The board also coordinates the maintenance and purchase of equipment such as tricycles, brooms, bolts, tires. They supervise routes and find replacements when someone gets sick, among other tasks. “[We] [w]atch over everything that belongs to the organization — see things that happen with the compactor truck, the tricycles that break down, and find solutions. There are always things that happen,” said one CSO leader (Int-SI-11).

Their operational capacity for waste collection is strong and highly intricate. It responds to thorough planning, aiming to high service performance. Each CSO has four rotating field coordinators supervising every night how the collection duties are carried out in all routes in their corresponding city margin. “We supervise ourselves if some of [the collection teams] don’t do the work responsibly. We don’t wait for the municipality to call us, we talk and fix issues among ourselves,” explained a leader (Int-SI-11). A long-term member of the other CSO clarified their supervisory role: “I am now rotating as a coordinator ... to oversee the entire cleaning routine each day. Each of the 10 members of the board of directors rotate, one month yes, one month no ... We also control the weighing of recycling as part of our coordinator tasks” (Int-SI-13).

As simple as it may seem that street sweeping is, these CSOs take it very seriously. They care about their organizations’ performance. That is why training members for the task is central to the efficiency and quality of the operation. A leader explained:

At the end of each sweeper's shift by the end of each month, one day before, each outgoing sweeper makes her route with the incoming sweepers of the following month. There they train them and teach what they should do and not do. Knowledge is transmitted in practice to do the job well on behalf of our CENCOPPS [standing for Sicuani Community Kitchen Central, one for each city margin] (Int-SI-13).

Collection routes are worked by teams of two members that work for one month and are then relayed by a new team. These teams are selected typically in alphabetical or some other order based on need within each small community kitchen, which have to be members of one of the two umbrella CSOs. Each small community kitchen has a quota of participants that is based on their membership size. Then these smaller CSOs pass along the names to their umbrella CSO which leads the entire operation in their city margin.

Routes are distributed by the umbrella CSOs based on difficulty — the board considers factors such as the age, health, and strength of team members. This is because some streets can go uphill or are longer or rough when pushing tricycles full of waste inside (Int-SI-12). Husbands also participate in the service provision process, mainly following the collection trucks from behind across the different routes during the night. They help unload all the waste in the tricycles into the trucks (Ethnog-SI-9). The work is carried out efficiently even though people mistreat them in the streets.

In response to their strategic planning and leadership commitment to their members, both umbrella CSOs also created offshoot recycling associations with separate boards. Waste collected by each team of two members is weighed and registered by the assigned recycling supervisors. At the end of the month, this is added to account for each team's contribution. Each team gets paid a portion of this once the recycled material gathered by all collection teams is sold

in a major city, either in the cities of Cusco or Juliaca in Puno. “The rest we save as CENCOPPS,” said a leader (Int-SI-13). The recycling operation is also a coordinated family event. Trucks are loaded with all collected recyclables, with husbands and kids helping out putting everything in packs, tying them up, and then accommodating everything until the truck’s roof is full and covered so that nothing falls when it leaves for Cusco or Juliaca (Ethno-SI-7).

Their long-term development vision —supported by a strategic planning capacity and transparent use of funds from collection and recycling— was further revealed by how they make decisions that have future implications: “At the end of the two years of the board of directors’ [term], in a [general] assembly, we decide what to invest it in, in some project for the benefit of all [members] ... We do not have corruption problems internally because we separate the roles very well” (Int-SI-13). Their recycling work is carried out independently and with their own resources, although both CSOs have received some guidance from the municipality to obtain press machines to compress recyclables (Int-SI-17, Ethno-SI-7). Some support was also obtained from a national government program to which they presented a proposal, competed, and won, after having to contribute a portion of the costs to get the machines (Int-SI-17, Ethno-SI-7).

Their role in recycling is essential for waste disposal in the city, helping reduce the amount of waste that would otherwise reach the dump, further aggravating the problem of disposal mismanagement. It is not done systematically, however, and on a large scale. It is also not an easy task. It depends on how each team of two women collecting waste daily can sort through the collected waste bags to separate recyclables simultaneously as they conduct their routes and before they unload everything on the collector trucks. This sorting is hence conducted in an unsystematic and improvised way. Thus, it reveals that it is not part of a CSO or municipal

strategy to improve waste disposal performance in the city, which stands in considerable contrast to what they do for waste collection.

Yet, these CSOs work is not only about efficiency. There is a fellowship that that is developed as members work together picking up waste and recycling, strengthening their commitment to each other and to the organization every night. Exemplifying the depth of genuine care for each other and their organizations, a leader wholeheartedly shared her thoughts as we walked their routes from 2:00am to 4:45am at below freezing temperatures and roughly 12,000 feet above sea level:

Sweeping and picking up waste at night starts with getting together at 1:30am, sipping [together] our *cañazo* [cane liquor] and *pijchando* [chewing] our *coquita* [coca leaf]. This gives us strength for this intense work and protects us from diseases. This is how we have survived the pandemic. We feel the cold [at night], the cold is strong. The cane liquor has a little honey and lemon, it is to strengthen our immunity, it also gives us energy. As coordinator, I bring all this to share with everyone while I do my supervision route. The *compañeras* [comrades] expect that, it is a way of motivating them too. My task is to visit all the routes, see how the work is done, talk to the *compañeras* to see if they are okay, and share which is important for them to feel good. The work is hard and exhausting ... When I make each stop, we chat for a while. We laugh. That's good. They also tell me if there was any problem ... Working overnight is hard for all of us but we do it for our necessities. Sweeping is simple but the cold is tough, the fatigue. But we got used to it. It is good that you come to see how we do it, what the work is like, it is sacrificed and nobody recognizes us (Int-SI-16).

The deep sense of companionship further solidifies their organizational capacity. The planning and implementation are conducted with a sense of duty and meaning, for members and the city. Thus, their contribution to collection performance is significant, and at a smaller scale to disposal through recycling.

Another CSO participates in waste disposal. They are an indigenous community. It selects 10 members to work at the dump and five in composting through a lottery. If they had

worked on one of these tasks before members can still be chosen based on their livelihood urgencies. “To assess the need, we receive requests from each [member] — [for example] for health, for their kids’ higher education studies. If there are these needs, we no longer raffle [the selection], we choose them directly. The rest is drawn through the lottery” (Int-SI-26). The sensitivity to individual problems, as in the case of the collection CSOs, help strengthen the board of directors’ legitimacy. Family ties and the shared ethnic identity and lands also play a role.

Their contributions for waste disposal are also significant, though tainted by municipal mismanagement. The CSO allowed the municipality to operate a disposal site —not a dump— in their communal lands. Without this space, as abandoned as it is, the city’s situation could have been worse with more damaging and dramatic contamination to natural resources, production, and health. However, the problematic conditions of the dump also respond to their own organizational limitations. They do have structural specialization, with six specialized subcommittees. One focuses on environmental issues in the community, including overseeing waste management and work at the dump. These subcommittees directly support the board’s work, informing them of issues needing solutions (Int-SI-26).

Given the dumps serious problems, they struggle to manage their oversight role as a board and Subcommittee. They have not visited the site since around June, which is a gap of three months from the time the interview was conducted. Their diagnostic is clear but without much effective workplan in place. “There is a lack of waste sorting at homes ... But if it is thrown into a single tricycle, why bother to separate? We must make them sort. It is easy for them to throw away, throw away and pile up. It may have consequences later,” mentioned a leader (Int-SI-26). Immediately after that comment, another board member added revealing the

lack of supervision on the matter: “Mr. President, we must make time to go ourselves to the dump” (Int-SI-26).

The lack of strategic planning, operational capacity, and commitment are apparent. While they continuously demand the municipality to manage the dump better, the CSO does not offer any working alternative to solve the problem jointly. An option would be collaborating with the Waste Suboffice to devise together a plan to supplement the evident administrative difficulties of this municipal unit to manage the disposal service. Yet, it is not on the CSOs leaders’ minds hence not an option on the table. Initially, lending part of the CSO's property to the municipality was part of an agreement with other items. The municipality has not respected its part, however. In the meantime, damage is done to the community's land, rivers, and agriculture. Thus, the current CSO's organizational capacity is insufficient: they do not draft plans or actions to help their community’s environmental sustainability by tackling the urgent waste disposal problem.

CSOs in Sicuani are characterized by a profound role and participation in the provision of waste services. Yet, the degree to which they are involved in providing collection services relative to disposal services is much higher and impactful. This contributes to performance differences between the two. CSOs have significant, direct contributions to waste collection performance in Sicuani, led by highly efficient CSOs. In disposal, the CSO’s planning and operational capacity are insufficient to affect waste disposal performance.

*Satipo.* CSOs in Satipo also tend to lack internal subcommittees dedicated to targeted tasks and strategies. What is distinctive, however, is that duties assigned to community members pertaining waste services get carried out adequately without much pressure from leaders. This results from, one, a greater commitment to the CSO and, two, stronger CSO planning and

operational capacity to mobilize their communities and engage with the Waste and Governance suboffices. These features produce closer communications with the municipality to solve community needs.

CSO members sort recyclables, organics, and disposables domestically for municipal collection and the CSO neighboring the dump holds meetings to oversee the disposal facility's management so that it does not cause discomfort or harm the community. Since their approach to problem-solving is more collectively oriented, unlike Bagua Grande that is more individually-inclined, internal coordination to implement these activities is easier and more efficient. Membership engagement is hence higher. Leaders explained how planning, operational capacity, and membership commitment works:

We coordinate with the neighbors so that they sort their waste because it is good for us because otherwise it looks ugly ... I report it in our [general] assembly [meetings]. Those who do not are warned ... There are [general] assembly meetings once a month. We talk about solid waste and improvements, the activities, about providing trash bins to neighbors with stores — there is a lot of garbage and we inform children to [properly] throw it away. Out of three meetings, we touch on the [waste] subject one time — one time every three months (Int-SA-26).

There was a training and they learned to sort waste ... In a meeting we agreed to work for a clean community, but we had to insist. More meetings, more talks [were needed]. Fines were announced in the [general] meeting ... But I never put [fines] because they started to do it, we never had to knock on doors and warn or supervise the streets ... [but] we went [outside] each house to verify the area (Int-SA-28).

One community went a step further to carry out its role in waste services, specializing its internal structure:

Internally, for solid waste, yes, we have an environment secretariat on the board – – 1 responsible per street, there are three in total. They supervise. We have appointed 3 members of the board of directors for this issue, they are three people in three [different] streets (Int-SA-30).

While some CSOs face capacity and commitment challenges, most had these capabilities. These are key conditions for implementing internally and externally agreed upon objectives to improve communities. Their involvement is mostly a contribution to both selective collection and an early disposal stage, hence supporting Satipo's high performance in both waste services. Likewise, the pressure on the municipality by the community neighboring the disposal facility — constantly demanding proper smell control from rotten waste and leachate— while indirect, is also crucial. It keeps the municipality alert and responsive to properly managing waste disposal, contributing to its performance.

The disposal part of CSOs' participation does not necessarily entail conducting a significant part of this complex service or even leading it. However, what they are collectively committed to do at home by diligently sorting their waste in three different types, following instructions on how to do it and when to take the bags out, is a highly critical role for disposal. These are time consuming activities, requiring planning and disciplined community members within the household even though they face livelihood struggles daily.

CSO involvement has great value because it persists despite challenges. They receive limited support. Their community members struggle to make ends meet. Yet, they have all dedicated time to training, supervising, and convincing one by one. This is why their actions are

significant achievements that reflect upon these CSOs' strong organizational capacity for planning, managing teams and operations, and some internal specialization.

*Conditions and Mechanisms.* The evidence from the three cases shows how a specialized structure, strategic planning, and operational capability are essential organizational capacity attributes in CSOs for waste service performance. Having a specialized unit with dedicated teams means more attention is given to a particular service or issue, such as in the case of some CSOs in Satipo and those in Sicuani. A CSO with a strategic plan indicates that they have made a collective effort to think in detail about their problems and needs and the set of actions they can take to address them and promote community development, in the short- and long-term. The two community kitchens in Sicuani leading waste collection are good examples. The opposite would be to take any opportunity believed to help the community immediately, without a clear idea regarding whether and when this will be true, like in Bagua Grande. The operational capacity of a CSO indicates they have both the management capability and the human resources and equipment to lead in some activity, such as a waste service. CSOs in Sicuani and Satipo are also illustrative.

However, while these organizational capacity attributes are necessary to help improve waste collection performance, they do not contribute similarly to waste disposal performance. Unlike what is observed from CSOs in Satipo and Bagua Grande, whose involvement has less relative depth or is absent, respectively, the substantial capacity to thoroughly plan and implement actions is notable in Sicuani. The committed membership —thus strong operational capacity— of the two community kitchen CSOs in Sicuani singlehandedly results in this service's high performance. However, their role in recycling, which helps with disposal, is

minimal. Its small scale shows that some parts are still not as carefully considered. Yet, their contribution is important, reflecting these CSOs' organizational strength. Unlike recycling in Bagua Grande, conducted upon routine without detailed planning, CSOs in Sicuani are relatively better prepared for this task.

On disposal, CSOs' planning and operations are limited. They are insufficient to help waste disposal performance. CSOs have a more direct role in Sicuani, unlike Satipo and Bagua Grande. They also have more at stake because the dump is on one CSOs' property, with currently damaging consequences to their natural resources and members' livelihoods. Although the Sicuani CSO involved in disposal is internally specialized and has a subcommittee focused on waste disposal, with a large membership, they still have not had a meaningful impact on improving disposal performance. No planning, oversight, or collaboration initiatives are in place. In Satipo, the CSO neighboring the disposal facility has been much more effective in influencing disposal performance. Their demands and negotiations, forceful at times, regarding smell control at the facility have led the Waste Suboffice to take corrective measures. Yet, this is also likely a result of the suboffice's higher administrative capacity relative to Sicuani's weak suboffice.

Nonetheless, no CSO in Bagua Grande or Satipo has trusted the municipality and committed to risking a portion of their land with waste disposal to serve its city. This distinguishes the significant contribution of Sicuani's CSO in waste disposal. Regardless of their poor capacity and involvement in service provision, Sicuani's CSO has lent a portion of their lands for disposal — without this generosity, the consequences of a mismanaged dump could have been potentially more damaging for the entire city.

**c) Leadership is more committed and capable to strategize and organize members for collection, but disposal has requirements beyond available skills.** Any organizational capacity built (or not), its membership commitment, and CSOs' role in waste service performance are also the product of leadership (Baggetta et al. 2013; Han et al. 2011). What leaders prioritize, and whether and how they plan their organizational strategies, matter for the relative involvement of a CSO in waste collection and disposal. The management of membership participation, service issues, resource acquisition, and waste suboffice relations partly depends on the leader's work. Leadership mobilization and inspiration of its teams and community are crucial for effective involvement in waste service provision.

However, some factors may hinder leaders from moving forward with their involvement in waste services. The studied CSOs support both collection and disposal in various ways and degrees. However, the more complex features of waste disposal and the magnitude of its problems to adequately provide it could overwhelm leaders. In some cases, this sense of unpreparedness may even occur in the context of waste collection. Upon assessing their management and technical skills, along with their CSOs' operational capabilities, some leaders themselves may decide not to take part in a task collectively. At times, even approaching the Waste Suboffice—or any municipal office—can be perceived by leaders as a burdensome endeavor. Leadership abilities in CSOs are thus crucial for their participation in service provision.

*Bagua Grande.* CSO leaders in Bagua Grande have not developed a systematic or strategic relationship with the Waste Suboffice and local political authorities. Most of what they do gives the impression of being sporadic, specific bureaucratic coordination with the municipality. They

do not appear to have much negotiation power or a planned strategy to demand the Suboffice to commit more fully to work with them. The result is that these CSOs have no significant involvement in waste services.

While this participation could be a much-needed contribution to the livelihoods of their members, leaders have not managed to develop a more formal, sustained support. Resources, such as working equipment and infrastructure, are also limited. Most CSO leaders have more than four years in decision-making positions in their organizations, but they have not secured any of this. “To achieve that, we need more union. We are a divided organization. Before, [another problem] was because the lot is far away, there is no electricity ... we don’t have an organizational budget,” stated a CSO leader referring to not having a more solid, resourceful, and equipped organization (Int-BG-8). CSOs lack street sweeping equipment, illustrating limited leadership skills for organizational strengthening (Int-BG-24). Members are not motivated to participate in waste services due to low municipal interest because CSO leaders had not reached out (Int-BG-26).

CSOs leaders in Bagua Grande have also shown limited negotiation skills. CSOs used to participated in street sweeping. Those that worked received in-kind food assistance from the municipality for 15 days of full-time work. There was no monetary payment. Each received about 55 lbs. of rice, 11 lbs. of sugar, and one gallon of cooking oil for families of at least five with young children. CSOs informally agreed to this unfavorable negotiation and membership participation has declined. “[W]e complemented our [sweeping] teams with mothers from another club ... [Our members] said that the food ration was very little, although they need it,” said a leader (Int-BG-29). Leaders have had limited capacity to advocate for their organizations.

Recyclers had a similar experience. They obtained municipal assistance from a negotiation but is largely insufficient. They obtained working space in a small, abandoned shack with flimsy plastic bag walls in the corner of a municipal vehicle parking lot where they store recyclables. Likewise, municipal workers collect a few bags with recyclables from main streets, which is delivered to the association. Yet, the amount is insufficient to make a living. The municipality, however, receives at least USD 1 or 2 million annually in additional budget from the Ministry of Finance by meeting nationally-established goals for waste sorting using reports from the association's own work (Int-BG-1, Int-BG-8; MINAM 2016). "The municipality receives resources and they only give us the garbage thrown on the floor," complained a CSO leader (Int-BG-8).

CSO leadership does not negotiate successfully for their organizations. Similarly, they hardly find mechanisms to support members' livelihoods. That partly explains their issues with sustained involvement in collection and their ineffective role in disposal, having no contribution to waste service performance.

*Sicuni*. Strong, organized, and dedicated leadership is a feature of CSOs in Sicuni. Their tangible achievements range from having a budget, acquiring waste collection and recycling equipment, and building their organizational establishment. Signed agreements with municipal authorities to support their communities also count toward their material accomplishments. Most importantly, however, are their immaterial gains. These leaders have built internally well-defined and -differentiated organizational structures and highly committed memberships for waste service provision — this is the larger legacy of true leaders and what sustains solid organizations that grow for generations. Both the community kitchens and the indigenous community have

already existed for decades. Yet, these features describe the two community kitchens running the collection service more closely. The indigenous community also has these characteristics. Yet, it has struggled to accomplish more of its goals that are part of the agreement with the Suboffice. Struggling to protect the sustainability of their natural resources resulting from a mismanaged dump by the municipality is one of its main failures as a CSO.

Upon arriving in Sicuani, I was invited to attend the 31st anniversary of one of the community kitchens. It was a marvelous feast. Most noticeable was the level of detailed attention put into organizing the event and how clearly they had defined roles between those leading it, primarily current and former board members. Although the collection work never stops, and they have other jobs to sustain their families, leaders had planned the event's financing ahead of time. Lunch for invited authorities was paid for using the umbrella organization's funds, and each individual community kitchen would provide lunch for its members. This must have involved several coordination meetings, analyzing organizational financial accounts, deciding how to fund the event, and defining multiple activities and roles. Politicians were also present, but these CSO leaders are skilled and know how engage with these actors (Int-SI-14). They are aware politicians have tried to use them for votes, ineffectively. In turn, they have held them closely accountable for their support offerings once in power. In their speeches during the ceremony, they forcefully and candidly expressed that no authority had supported them, that no one had given them anything, neither the mayors nor environmental managers (Ethno-SI-1). These leaders are skilled and tenacious.

Both umbrella community kitchens celebrated the endurance of their organizations for that many years, despite the stark poverty of their members, all vulnerable indigenous women. What they showed, in fact, was how invulnerable they were: full of skill, resourcefulness, and

passion, but above all, a remarkable capacity to plan and diligently follow through to achieve their collective goals for decades. They have constructed two unwavering social support community organizations with nothing else but an atypical asset: caring leadership. This trait has been taught, learned, and passed on to generations of leaders in both CSOs. Under severe material limitations, generous leadership mentoring like this keeps community organizations afloat. One of the leaders recognized this legacy during an interview:

Our organization is strengthened by the knowledge of the leaders of previous boards of directors and the presence of founders. Today there are 10 elder mommies, founders. One of them in her 70s is on my current board of directors. When we don't know something or need guidance, we call on the eldest to ask them to teach and guide us. We consult them to do the job well, to know how something was resolved before (Int-SI-13).

The humility of their leaders and respect for the experience of past generations is a critical asset for the arduous tasks they conduct to manage the city's entire waste collection service. Past experiences contain major lessons, from their view, and they pass on the knowledge to all new leaders (Int-SI-17).

They have also learned that to treat each other with respect and appreciation is essential for the organization. One of several occasions I noticed this was a day when the teams were cleaning up after the overnight collection routine and were sorting the recyclables. I was interviewing one of the leaders. Several women would come to consult her to weigh their bags with recyclables. She stays attending me and hands her records' notebook where she writes down the weight of each pair of tricycles to another lady so that they can continue with the registration process. Another lady approaches her and kindly asks if she could weigh her bags later because she must urgently go to the prosecutor's office due to an issue with her husband. She asks very

respectfully and affectionately. The coordinator agrees, answering in the same manner, and tells her they could weigh the bags on Sunday, two days later (Ethno-SI-5).

This sincere warmth and considerate rapport were also observed in several instances during fieldwork participant observations and interviews (Ethno-SI-1, Ethno-SI-8, Ethno-SI-9; Int-SI-11, Int-SI-16). Besides their carefully developed plans, strategies, and detailed oversight of daily routines, these leaders are perceived as legitimate and appreciated by members, who are committed and work harder. This characteristic adds to the multiple factors explaining these CSOs' key contribution to high waste collection performance in Sicuani as well as its partial benefits to waste disposal through recycling.

Leadership in the indigenous community CSO is less successful. However, the issues they have had to face regarding waste disposal are hardly comparable to those of the two community kitchens managing waste collection, given the complexity of disposal. Relative to brooms and tricycles, the specificity of physical assets, technical knowledge, and the high costs required for waste disposal operations are beyond what a community CSO could afford, particularly if most of its members live below the poverty line. Carefully drafting a collaboration plan with the municipality and closer formal communications and negotiations could have been a safe alternative. This would have involved pressuring the Suboffice to at least make sure that the 409,000 Peruvian Soles [USD 105,412] that —according to a manager from the Budget Suboffice— are available to maintain the dumpsite, were adequately used (Int-SI-24).

However, the community's leadership seems paralyzed due to how disconcerted, disappointed, and overwhelmed they feel over the dump's failed management which they trusted the municipality. "They never call us to think about problems or solutions [for the dump] ... We will request a work plan from the municipality so that more than burying [waste] is done," said a

leader as if they were waiting for the Suboffice to draft a plan and reach out to them to work together (Int-SI-26). Thus, no new ideas flow for alternative, creative solutions to protect the community's health and resources. "We seek to enforce the agreement with the municipality, but it is only partially fulfilled," added another frustrated, helpless leader (Int-SI-26). While the magnitude of the problem is greater, the absence of entrepreneurial leadership is manifest in this community CSO. This context further explains the low performance of waste disposal and the missing contributions of CSOs to its adequate provision in Sicuani.

Therefore, Sicuani has extraordinary leadership in the CSOs involved in waste collection, entirely and efficiently delivering the service, but their absence in waste disposal is notorious. This is partly explained by the leadership limitations faced by the CSO participating in disposal that moves forward without planned strategies for action or negotiation with the municipality to ensure the area's sustainability and proper service provision. Leaders in this CSO is overcome with frustration, having resorted to entirely blaming the Suboffice for the dump's dire state of abandonment. Thus, leadership in Sicuani shows a critical causal mechanism to explain the observed performance gap between waste collection and disposal.

*Satipo.* CSOs in Satipo are successful at achieving their objectives. Their leaders are dedicated and skillful. CSOs are mainly focused on waste sorting that contributes to collection and an early disposal task. One community CSO oversees proper disposal because it is located right next to the disposal facility. This means that leaders in each of these CSOs have different sets of tasks required of them. Thus, the nature of their interactions with the Waste and the Governance suboffices are not the same. Regardless of these distinctions, all CSO leaders are typically characterized by more closely following through their groups' plans and objectives, focused on

community development. Most have seamless communication with community members and demonstrate persistence through their regular visits or calls to the suboffices demanding municipal action on waste services for their people.

CSO leaders' have a different skillset, benefiting how their communities handle waste sorting at the household level. They are highly entrepreneurial, motivated, and experienced as community leaders. Some have more than six years in leadership positions (Int-SA-16, Int-SA-26, Int-SA-28, Int-SA-30). They prepare formal documentation on their own for formal requests to the municipality and are involved in numerous community-related tasks (Int-SA-16, Int-SA-30). They collect inputs from members and make decisions by consensus and dialogue. Thus, they are transparent and aware that better decisions are made collectively. The legitimacy of their decisions, and their leadership, are high (Int-SA-16, Int-SA-26, Int-SA-28, Int-SA-30). To exemplify their strong commitment and close attention to community matters, one leader approached me in his community's streets, asking if I needed help as my research assistant and I did our SSO rounds early in a morning.

The same leadership traits are observed in the community neighboring the disposal facility. They organize the community around a larger development vision, while pragmatic about what is feasible to demand from the municipality. Leaders know their members' limitations and hence work hard to carefully communicate problems in perspective. One leader illustrated how they strategically manage issues regarding the disposal facility:

I seek to explain the community ... the challenges to be solved. I am focused on finding solutions and not making problems to the problem. Many don't understand about technical workshops [on disposal management] ... I focused on [clarifying] that [to them] and today we see the results. It was very difficult ... achieved with constant coordination with the municipality. With the community, [explaining] the administrative part is difficult, but we are achieving results ... [Disposal] performance has improved at 90% ... [P]ersonnel's equipment was renewed, the fulfillment of some commitments, and the tranquility of the population with the disappearance of the [bad] smell almost entirely (Int-SA-15).

These are not easy results to obtain, and are the product of intense pressure and negotiation, carefully conducted by the CSO's leadership. They sat with managers from the Waste and Governance suboffices, the Environmental Office, and municipal political authorities. They understand how to, subtly and skillfully, navigate the passionate views of community members and the municipality to achieve collective objectives.

Leaders in Satipo are thus focused on solving community matters in both collection and disposal. Unlike in Bagua Grande, where leaders are less resourceful, here they have the skills to devise strategies with clear goals and sit in front of municipal authorities to pressure for responsiveness. They also mobilize their communities effectively. Therefore, they have made important progress on both waste services for their communities. While the process is not without setbacks, leaders continue to work toward the goals of improving waste service performance for the benefit of their people. Most of these leaders have the drive and planning capacity to deliver.

*Conditions and Mechanisms.* Leadership skills and commitment have a meaningful influence over CSO involvement in service provision and its contributions to performance. In the case of waste, leaders' actions determine whether the municipality opens the door for participation and their responsiveness to CSO demands. Particularly, the degree to which leaders approach a

municipal office, request meetings to be listened to, negotiate their involvement in waste services and benefits for members, and obtain improvements in the quality of the waste services received are determinant actions for CSO participation. These activities are partly contingent on leaders' abilities to strengthen organizational capacity. This includes drafting organizational strategies, implementing measures that respond to community needs, transparently managing the CSO, and elaborating substantiated arguments to benefit their entire community. All these actions also increase membership commitment and support for the organization.

Effective participation in waste collection occurs when these leadership characteristics are present. Adequate collection performance is associated with the work of involved CSO leaders. However, these leadership skills are more likely to contribute to collection than disposal performance. The increased complexity of disposal likely limits the extent to which CSO leaders know how to make contributions.

If the overall organizational capacity of a CSO does not match the physical and technical knowledge requirements of service operations, which tend to be highly specific when the service is more complex, then it is less likely that leadership will have a crucial role. Even if the leader obtains municipal approval to become involved, if the CSOs do not have the required capacity, then complex service provision improvements may be observed. For example, leaders in Satipo have organized their communities to sort waste and make demands to improve landfill management. However, their role is indirect since the municipality entirely runs the service. In Sicuani, CSOs recycle on a small scale, lend part of their lands for disposal, and contribute only with the few members working at the dump and in composting. Both are also indirect roles. Yet, waste disposal performance is moderate in the former city and poor in the latter, with CSOs having limited participation.

Therefore, the evidence from the three cases shows that CSO leadership is crucial for service provision, mainly if the service is simple, such as collection. If the CSO's overall capacity does not correspond with the needs of a more complex service, then leadership may not have a role, such as in disposal.

### **5.3 Conclusions**

This chapter illustrates the four conditions discussed in the introductory section and the causal mechanisms through which they work. First, the capacity of the municipal office to handle CSO relations is crucial for their involvement. Overwhelmed administrators with scarce resources and support carry out their routine managerial tasks with significant challenges, as shown in Chapter 4. Interacting with CSOs demands considerable effort when this is not part of their daily activities. When administrative capacity exists, managers devise plans for service provision that involve CSOs as key actors to achieve higher performance.

Second, the perceptions of municipal authorities about CSOs and their members influence the extent to which CSOs become involved in service provision. In the case of waste, community CSOs are composed of low-income individuals. In Bagua Grande and Sicuani, their members are primarily women, mostly from indigenous ethnic backgrounds. When people in local positions of power have implicit or explicit prejudices about their members and the organization more generally, CSO participation is limited. These biased views result in these organizations being regarded as less capable—without justification or intention of supporting their strengthening—restricting their involvement with the municipality to more specific tasks typically focused on street sweeping. Even if the local government needs labor to address dramatic waste service problems, CSOs are not considered worthy partners. However, when

discrimination is not part of the decision-making equation, CSOs engage and lead with less barriers. They are provided the support needed to strengthen the organization to help the municipality provide better waste services. Nonetheless, this is mainly observed in waste collection and less in waste disposal. Decision-makers' perceptions about CSOs and their members are thus sufficient to preclude or bolster CSO participation in service provision.

Third, the causal mechanisms also exemplify how CSO capacity is highly relevant for their participation in service provision and their contributions to performance. CSOs with a development-inspired organizational mission with a long-term view of their communities' wellbeing have a more effective service participation. They dedicate more effort to organizational strengthening and have closer relationships with the municipality, especially if the service is simple. Similarly, internally specialized CSOs with a robust operational capacity based on strategic planning provide more effective involvement in service provision. CSO leadership allows them to negotiate their participation better, further strengthen the organization, and mobilize members based on commitment, all of which is crucial for service performance.

Overall, the evidence shows that CSO organizational capacity is a central, necessary factor for service provision performance but mainly when the service is simple, such as waste collection. Current CSO capacity is insufficient to help improve the performance of a more complex service, such as waste disposal. This means that more CSO capacity is determinant when municipal capacity is low, which allows the CSO to have an essential role in supplementing or replacing the municipality in service provision. Yet, this is more likely when the service is simple. When the service is more complex, the evidence does not show CSOs help performance regardless of capacity. This indicates that the literature may need to reconsider that CSOs cannot provide some services. Of course, this is also contingent on the degree to which the

responsible municipal office has the capacity to manage the relationship and involvement of the CSO and if decision-makers are willing to help strengthen CSO capacity so that it can engage in such services.

Fourth, the complexity of the service determines the degree to which CSOs participate and influence performance. Matching CSO organizational capacity with service requirements is a determinant factor. This is observed in the gaps in CSO participation when comparing waste collection and disposal and in the extent of CSO contributions to performance in the two services.

These findings have some important implications for public administration research and policy-making. For research, it shows that CSOs do not necessarily have universal benefits for public service provision. Their organizational capacity—in terms of internal structure, mission, human and operational resources, strategic plans, and leadership—is crucial for how they interact with their municipal counterparts and their impact on service provision. If the service is simple, as in the case of waste collection, more capacity translates into higher involvement and significant performance influence; less capacity leads to less consistent involvement but consequential performance contributions. If the service is complex, like waste disposal, more capacity may entail that some participation may produce some performance effects, contingent on their relevance to service requirements and municipal relationship. Less capacity relative to service needs results in no involvement, thus no effect on complex service performance.

For policy, the results demonstrate that working together with community CSOs has significant and varied positive consequences for service provision and local governance. Primarily supporting their organizational strengthening along with their operational and problem-solving participation for service provision will likely lead to noticeable service provision

improvements on the ground. For simple services, open communication channels and commitment to the relationship are key — they can handle the rest as long as they have basic organizational capabilities to manage parts of such services. For more complex services, a closer CSO–municipality collaboration is critical. Focused involvement with gradual responsibility increases connected to results, paired with targeted organizational capacity-building that matches service requirements and open communication channels, may result in surprising performance contributions.

To sum up, community CSOs have a role in service provision that has yet to reach its potential. The ball is now in the field of local governments to make this happen.

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## Chapter 6: Conclusions

### 6.1 Main Contributions

Municipalities worldwide, mainly in the Global South, struggle to dispose of their waste but can do a good job collecting waste from the streets. However, some perform exceedingly well in both (Kaza et al. 2018). This discrepancy in waste service performance is a global phenomenon illustrating the differential role of local governance in the provision of services when they vary in complexity. But *why are some local governments successful at providing simple waste collection services while at the same time blatantly failing at providing complex waste disposal services, when other similar municipalities can do both?* Studying Peruvian municipalities helps illustrate my dissertation's arguments, where three core elements of local governance —administrative capacity, CSOs, and local collaborative governance— take center stage to reveal *why* and *how* service performance disparities occur.

These factors elucidate a consequential pattern of service provision issues in Global South cities. In particular, I look at how service-specific municipal administrative capacity, formal community-based CSO involvement, and local cogovernance matter when services increase in relative complexity. Overall, my findings suggest that having service-specific capacity has a twofold effect: unlike general administrative capacity and other measures, it improves the performance of *both* simple and complex services and supports the influence of the other two factors on performance.

I make four arguments to address my overarching puzzle, drawing on comparative quantitative and qualitative evidence. First, I claim that it is sufficient to have low service-specific administrative capacity or the involvement of community CSOs to adequately provide simple services like waste collection. On the one hand, I show municipal waste office

specialization improvements for waste collection likely result in higher performance in collection frequency and quantity. Local governments struggling with collection would likely benefit from administrative specialization and equipment for this specific service.

The administrative conditions and mechanisms from three different organizational hierarchy levels expand these insights. I find that local government leaders —such as politicians and top managers— are informed and supportive of the requirements of a simple service like collection. After all, this is a politically and socially visible service that is easier to grasp, likely with important electoral implications (Avellaneda 2012; Bélanger and Meguid 2008; Kahneman 2002). While it is salient, it is also simple one — collection has minimal administrative needs and can continue being provided under fragile, improvised office-level managerial environments. Yet, in the field, the mistreatment of waste workers is common due to the nature of job, regardless of service type — handling trash is socially (but inaccurately) regarded as a task lacking dignity (Fredericks 2018). However, waste pickers are regularly seen working in the streets, unlike disposal workers. This means that waste pickers' jobs and issues are more easily understood — it is thus more likely that local authorities will at least try to address them. The cases of Bagua Grande, Sicuani, and Satipo illustrate these conditions for collection performance.

On the other hand, CSOs' organizational capacity is a crucial factor for service provision performance but mainly when the service is simple. Community-based CSOs such as neighborhood associations are more likely to help increase collection frequency, possibly making more rounds in support of local governments to pick up waste. The concentration of poverty-alleviation CSOs, however, tends to make waste collection more efficient by reducing waste picking rounds, possibly through their numerous members. While both CSOs are not associated

with improvements in collection quantity, they are at least more likely to help keep a city's current conditions. These results indicate that such CSOs may be able to effectively supplement the state when services are relatively simple.

Insights on the conditions and mechanisms further elucidate these findings. CSO participation in waste service provision is initially possible mainly if the municipal office has the administrative capacity to handle CSO relations, such as in Sicuani and Satipo. If administrators are overwhelmed, it is unlikely to occur as observed in Bagua Grande. Similarly, if municipal authorities have negative views of CSOs as organizations or biased, discriminatory perceptions of their members for their socioeconomic or indigenous backgrounds, these organizations would be regarded as less capable or restricted to tasks typically focused on street sweeping. This may happen even if the local government needs support in providing the service as exemplified in Bagua Grande. I also show that organizationally strong CSOs can manage waste collection efficiently and effectively. CSOs with a mission to promote long-term community development and organizational strengthening have better relations with the municipality and more effective participation. Collection performance is thus improved. Perhaps more importantly, CSO leadership is essential for strengthening the organization and building ties with the local government. This means that more CSO capacity is determinant when municipal capacity is low, which allows the CSO to have an essential role in supplementing or replacing the municipality in service provision, particularly when the service is simple. A poverty-reduction CSO led by women from indigenous backgrounds in Sicuani and neighborhood association CSOs in Satipo demonstrate the different ways in which these CSO capabilities matter.

Second, I argue that having high service-specific administrative capacity regarding office-level specialization and equipment is necessary to provide complex services such as waste

disposal adequately. Due to the more significant physical and human asset-specific requirements of complex services like disposal, community CSO involvement is not sufficient to support their performance. I show that waste management administrative capacity is the only local governance factor associated with improvements in proper waste disposal. Having relevant waste and environmental planning, policy instruments, and specific equipment for disposal are crucial for this service's performance. This is true in municipalities like Satipo, where differentiated capacity to equally understand and carry out *both* waste services —not just collection— at the top leadership, management office team, and field worker levels exists. Top leadership is highly committed to disposal, capacity at the office level is highly specialized and equipped for this service, and disposal workers are treated with dignity and respect. These are fundamental conditions for improving complex service performance.

However, the conditions and causal mechanisms studied reveal that these administrative characteristics are usually absent for disposal in the three organizational hierarchy levels, as the cases of Bagua Grande and Sicuani illustrate, explaining poor waste disposal outcomes. Local decision-makers have a superficial understanding of this service's complex requirements, and, since disposal sites are in non-visible, distant locations, it is further neglected. Within the office, service-specific administrative capacity for disposal is lacking. In contrast with waste collection, this service fails under unspecialized, suboptimal administrative conditions. While all waste workers in the field tend to be dismissed by local authorities and society, disposal workers are not seen and hence typically ignored.

Furthermore, CSOs have a distant involvement in disposal services, limiting their influence on performance. I find that community CSOs are not associated with performance improvements. This means that the presence of CSOs may not suffice to help strengthen the

provision of this complex service. When exploring the conditions and causal mechanisms of these results more carefully, my results show the crucial role of CSO organizational capacity. While waste offices tend to lack administrative specialization and hold a poor concept of CSOs for disposal—which are led by low-income and indigenous peoples in Bagua Grande and Sicuani, respectively—with negative CSO involvement consequences, existing CSO capacity is insufficient to help improve waste disposal performance. When the service is complex, CSOs do not help performance regardless of capacity. The literature may hence need to re-examine the fact that CSOs cannot provide some services. However, limited CSO involvement in this complex service is principally contingent on whether waste office capacity to manage the relationship exists and if decision-makers are committed to working with CSOs to help strengthen their capacity for more effective engagement. Satipo provides some critical insights.

Ultimately, a service's complexity determines whether CSOs participate and influence performance. Matching CSO organizational capacity with service requirements is a driving factor for CSO influence in complex service provision. This is observed in the gaps in CSO participation when comparing waste collection and disposal and in the extent of CSO contributions to performance in the two services.

Third, I argue that general administrative capacity is insufficient to understand service provision performance accurately, especially as they vary in complexity. Although the literature on performance highlights important administrative features of public organizations to explain its influence, these are general, aggregate factors that are significantly distant from the actual management and implementation of a service. I show that general municipal administrative capacity improvements only enhance simple waste collection frequency, but it does not influence complex disposal. Nondirect, general municipal capacity factors such as more personnel,

technological hardware and software, or a results-based budgeting program are not critical for increasing the amount of waste collected or disposing of waste properly. The conditions and causal mechanisms examined seem to corroborate that when service implementation depends on high operational and technical knowledge, general capabilities cannot compensate for limitations in those areas. Local governments that build the administrative capacity tailored for a complex service are more likely to have high-performance levels, as found in Satipo. Lacking the required administrative capacity to provide a complex service leads to deficient performance levels. The cases of Bagua Grande and Sicuani demonstrate this problem.

Finally, my fourth argument states that local collaborative governance arrangements such as cogovernance venues help improve service performance when it deals equally with complex and simple services in decision-making processes. My results show that cogovernance venues — where municipal and CSO representatives jointly make local planning and budgeting decisions— are associated with reduced collection frequency and increased quantity. The planning and budgeting decisions made in local cogovernance venues likely prioritize more efficient waste collection strategies, such as purchasing necessary equipment like compactor trucks. Cogovernance does not influence waste disposal performance — its issues are probably not perceived as urgent in the studied venues. Disposal's relative complexity and low immediate salience diminish the interest of municipal leadership and society, as shown throughout the municipal case studies.

Why does Satipo perform better in providing *both* simple collection and complex disposal? My findings reveal that this municipality differs in that it has built service-specific capacity for both services, and CSOs are organizationally strong and committed to promoting community development. Top leadership understands and supports the operational and technical

requirements even of complex waste disposal. Waste suboffices have specialized and equipped their teams in different subunits to provide both equally. Morale and bias in the treatment experienced by field workers are minimal in collection and disposal. It has a Governance Suboffice with personnel capacity dedicated to managing community relations, including involving CSOs in waste service provision without discrimination toward poor or indigenous communities. Similarly, CSOs are focused on improving their communities' well-being and have thus developed sufficient organizational strength to participate in both services in different ways.

Looking at these local governance capabilities partly shows why simple collection and complex disposal perform well in this city relative to places like Bagua Grande and Sicuani, where the conditions favor collection over disposal. While it seems that this occurs because Satipo is a relatively wealthier local government and has allocated more resources per capita to waste management (see Table 2.2), this does not appear as the main factor in this municipality. Resource allocation is a political and technical decision, in the first place. Historically, the experience of Satipo with waste management started with a former mayor's and his team's experience with environmental management in another municipality within the province. There, they learned that to provide better, more holistic waste management, they needed to draft a comprehensive policy, create an organizational structure, build capacity, and develop an investment project to receive funds for this policy from the Ministry of Finance (Int-SA-35). The Ministry of Finance initially provided Satipo's startup resources for waste management. This was the product of top leadership's commitment to building service-specific administrative capacity equally for collection and disposal. This process started in 2015.

After achieving all this, a new administration from a different political party was responsible for starting the entire operations from ground zero in 2019. With little guidance from

the Ministry of Environment, they decided to continue committed to this policy and administer waste services professionally (Int-SA-23). This new administration went further, fully closing the old dump, implementing waste reuse strategies, and redirecting the role of the Governance Suboffice toward getting communities involved (Int-SA-23, Int-SA-32). They could have avoided its full implementation due to the novelty and risks associated with this waste management approach in the country. Yet, they went ahead and figured it out. Satipo was selected as a case in this dissertation to precisely show why and how waste service performance can equally occur when services vary in complexity.

Alternative explanations in addition to municipal financial resources are also considered. However, they do not have a significant role in the context of this research according to the data obtained. Municipal political alignment with the national government, inter-governmental collaborations, or international donor financing and technical assistance could also influence service outcomes. However, they do not occur in any of the three local governments in the context of waste service provision. These local bureaucracies carry out waste management on their own, exemplifying what tends to occur in most municipalities in Peru.

## **6.2 Contributions to Theory, Methodology, and Policy**

Overall, the approach of my dissertation matters for comparative public administration research because it suggests, first, a more nuanced analysis of service performance and, second, a deeper assessment of the effects and mechanisms by which service-specific capacity, CSOs, and local collaborations influence performance differences between more and less complex services. This dissertation thus accounts for the varying performance between a simple service, like waste

collection, and a more operationally and technically complex service, such as waste disposal, in Peruvian municipalities.

Thus, my work makes two principal contributions to *theory*. First, it shows that service-specific administrative capacity more accurately explains service provision performance and observed gaps when services vary in complexity. Examining capacity and their distinctive conditions at different levels across the organizational hierarchy is crucial to understanding simple and complex service performance better. Thus, general capacity measures likely do not capture what we expect. More relevant or tighter research measures are hence identified so that analyses capture what is intended. Ultimately, this approach provides a more detailed understanding of performance — it unravels the study of services and service performance by complexity level. This removes implicit assumptions that all services are equal.

Second, it illustrates that CSOs do not always benefit public service provision. Their organizational capacity—in terms of internal structure, mission, human and operational resources, strategic plans, and leadership— affects whether and how they build a working relationship with their municipal counterparts for service provision. High capacity produces more robust participation and performance benefits if the service is simple. When capacity is poor, they can still have important performance contributions. If the service is complex, performance effects depend on the degree to which CSO capacity matches service requirements and their relationship with the local government. Less capacity relative to service needs results in no involvement, thus no effect on complex service performance.

My dissertation also advances the rigorous use of diverse *methodologies* in public administration research through a deductive-inductive approach informed by theory and fieldwork. Using a mixed-methods research design has allowed me to obtain rich qualitative data

to show the conditions and causal mechanisms that explain the quantitative analysis's findings in detail. I employ a unique panel dataset of all Peruvian municipalities across three years for quantitative analysis of the effect of municipal capacity, CSO presence, and cogovernance on simple collection and complex disposal. Based on a comparative case selection strategy, I also draw on qualitative interview and ethnographic data from four and a half months of intensive fieldwork in three municipalities, which was used to comparatively analyze the conditions in which municipal capacity and CSO participation affect both waste services.

This approach taught me why and how waste service performance disparities occur. This involved tracing the three local governance factors studied in relation to the provision of waste collection and disposal. I obtained information on specific organizational characteristics within municipal waste offices, the nature of the involvement of community CSOs in service provision and their organizational features, and local decision-making processes regarding waste. Similarly, I collected detailed data on the performance of both waste services, understanding the processes and issues of waste collection in the streets and at waste disposal, recycling, and composting sites. While my panel dataset is rich, it does not provide this detailed evidence on the conditions and causal mechanisms leading to performance disparities in waste services. Semi-structured interviews, participant and direct observation, systematic social observation, and secondary source analysis are the techniques I used to gather these data on my independent and dependent variables in the field.

This methodological approach has different benefits. First, it allows obtaining deep insights into the key explanatory factors and the processes through which they affect outcomes. With this kind of evidence, we can uncover what is driving the relationship in more detail and observe the multiple layers of how the interactions take place. A rigorous, data-driven, and

carefully studied case selection strategy is fundamental for this to work. Controlling for alternative confounding factors is crucial for a sound case study comparison. Second, the research's internal and external validity is strengthened, producing a more solid causal inference. This is typically the ultimate goal of social science research. Therefore, integrating methodologies to obtain different, complementary layers of evidence that further illuminate causal processes significantly enriches knowledge, social science, the relevant fields, and policy-making. My dissertation mainly informs comparative public administration research, which is a field that could benefit from increased methodological diversity and integration. Steps that help us get somewhat closer to the truth of relevant social science phenomena, while more time-consuming and demanding additional effort, are worthwhile for the significance of their contributions to expanding our understanding of real-world problems.

This dissertation also has three general implications for *policy*. First, strengthening service-specific administrative capacity at the local level is necessary for performance improvements in complex service provision. It is crucial to invest in reinforcing office capacity – from an administratively holistic approach – to directly tackle problems of performance that tend to affect complex services more. Typical immediate reactions such as hiring managers and teams with better *general* training or increasing the *overall* office budget to acquire equipment or hire experts would not help. It is thus fundamental to have a holistic approach to administrative capacity. Focusing on specific service needs, especially if it is complex, is crucial. This requires assessing the structure, policies and procedures, human resources, equipment, and how compassionate the leadership is with field workers. Having the right perspective matters to distinguish policy measures by service complexity. Putting them aside for being too complex

affects communities and sustainability in the short- and long-term — policy performance is essential for well-being and development.

Second, supporting the involvement of community-based CSOs and local collaborations is essential to keep the streets clean. Constant communication and commitment to the relationship are crucial. While the benefits of CSO participation in complex service provision are few in the context of this research, there is significant potential contingent on municipal capacity and openness to their contributions. If CSO organizational strengthening is prioritized by the local government, looking toward a more effective partnership for service operation and problem-solving, complex service provision will likely benefit. A closer CSO–municipality collaboration is hence essential. Increasing their responsibilities gradually in connection to results, complemented by targeted organizational capacity-building to match service requirements and open communication channels, may produce important performance advancements.

Finally, the two policy implications illustrate that distinguishing policy measures by service complexity helps to address service performance issues more effectively, especially for those with environmental sustainability implications in weak, vulnerable Global South cities.

### **6.3 Limitations and Future Research**

This dissertation has some limitations that future research could address. One is that the datasets on Peruvian municipalities do not contain information on CSOs involved in specific services or local cogovernance, particularly for waste services. Future research could conduct municipal surveys to collect these data. Similarly, closer coordination with national authorities could help to systematically gather more detailed municipal-level data on specific services that

vary in complexity, such as in waste management, that would contribute to a closer analysis of service provision in the country. Exploring service performance differences by regional or municipal subgroups could also reveal puzzling patterns.

Another limitation is the number of cases used in this dissertation. While the three cases examined provide significant evidence on the conditions and mechanisms of local governance driving waste service performance gaps, additional comparable cases would further strengthen the findings. Future research could include more municipalities in the three prioritized categories (see diagram 2.1). It could also include cases from the high administrative capacity — low CSO involvement category that was not explored — where service outsourcing is expected. More research should be done to verify the findings of this dissertation in different places in Peru or the world.

Moreover, since this dissertation focuses on medium-sized municipalities, future studies could explore smaller and larger municipalities to assess whether different drivers and conditions explain differential waste service outcomes or if they hold current results. Expanding this line of work to cities in other similar Global South countries would improve its generalizability.

An additional limitation of this dissertation is that it does not sufficiently explore the role of three crucial factors: issue salience, local political and social conflict, and indigenous peoples' CSOs. Future work could evaluate whether and how they influence waste service performance disparities.

#### **6.4 Big Picture Questions for Scholarship**

The field of public administration is growing more complex and specialized. At the same time, it is becoming more thematically focused and possibly less relevant for real-world policymaking and social issues. It has also become more methodologically narrow (Bertelli and Riccucci 2022; Dodge et al. 2005; Ospina et al. 2018; Raadschelders 2011; Raadschelders and Lee 2011). Given this context, through this dissertation I have aimed to somehow address these larger issues in the public administration field.

The field's complexity is reflected in the increasing number of disciplines it draws from and an apparent persistence in the use of either quantitative and qualitative methods of analysis, although more clearly relying on the former (Grimmelikhuijsen et al. 2017, 47-48; Groeneveld et al. 2015). Epistemologically, however, newer generations of public administration scholars can be generally described as fundamentally positivists, primarily seeking to address questions of causality with large samples or based on experiments and regression methods (Pitts and Fernandez 2009; Riccucci 2010). Some would argue that current research is more centered on public management than on public administration per se, emphasizing the role of individual behavior and general organizational characteristics focusing on outputs and outcomes (Behn 1995; Hill and Lynn Jr. 2015; Meier 2008).

Studies are thus less focused on addressing the influence (and path-dependencies) of the social, political, and environmental contexts in which public servants and agencies are embedded (Milward et al. 2016; Moynihan and Soss 2014; Roberts 2018). The founders of the field in the late 19th and early 20th centuries—who included both scholars and practitioners—were, nonetheless, not as preoccupied with quantitative methodological sophistications and specialized managerial topics. They were more concerned with actual societal issues and the task of

identifying, understanding, and (at times) implementing the political and bureaucratic solutions that would best support the transformation of government (focused in the US, of course) to make it both more efficient and responsive to society (Bertelli and Lynn Jr. 2006; McDonald III 2018).

The advent of globally relevant issues that affect all types of regimes in various stages of development (as a pandemic, climate change, migration, war, and terrorism, to name a few) may, however, require the field to appeal to its seemingly multifaceted, eclectic (as opposed to dual) nature, at all levels of analysis, to help tackle them. The debate regarding the alleged identity crisis of the public administration field, which includes public management as a subfield, is more a product of individual biases, both theoretical and methodological, than a real one. This was motivated mainly by the fervent critique of classical public administration scholars by Waldo (1948), Simon (1948), Dahl (1947), Kaufman (1956), and others, and the polarizing arguments between Waldo and Simon (Simon et al. 1952; Waldo 1952). A field in the making, particularly one that embraces both the normative and instrumental concerns of government, public administration cannot be explained by a handful of questions (big vs. small), a shortlist of methodologies (quantitative vs. qualitative), a small set of political regimes (advanced democracies vs. Global South), a relatively short time frame (one century), and limited interaction with policymakers and affected communities (research vs. practice).

The big debates that have appeared throughout the years in public administration literature have thus been treated as dichotomous discussions, with either one of the sides believing to have the “silver bullet” explanation for a given issue. This process was probably part of the field's catharsis in the path toward proving itself as a science. Yet, as Behn (1995) rightly claimed, “[n]o single piece of public-management research will offer the kind of breakthrough

that wins a Nobel Prize. The big questions of public management do not have a single answer ... they will have different kinds of answers and thus must be answered in different ways” (322).

This statement indicates that research will obtain different results for the same question under different contexts and methods. That does not minimize one question, approach, or outcome over the other or determine its supremacy within the field. Since knowledge is cumulative, the answers about the true natures (yes, with an “s” at the end) of the issues studied by public administration research will become apparent over time. Nevertheless, the different divides have allowed scholarly work to delineate certain theoretical and methodological boundaries (and mainstream preferences) within public administration work, at least in advanced democracies.

These scholarly debates have existed since the outset of the field. At the time, they did not represent critical fault lines that determined who was in and out of the research boundaries. In this context, a central question is, on the one hand, whether a limited dialogue between public administration research and practice renders current scholarly work less relevant to the most pressing issues faced by public managers and society. As researchers, we do not usually interact with practitioners or affected communities to inform our research. Does this distance from non-systematic practical managerial, political, and social concerns make our field a *less contaminated* social science? Practitioners’ and community members’ experiences may be viewed as part of particular, non-generalizable cases, sometimes anecdotal evidence, or too broad to be empirically studied. However, a more fluid dialogue with policymakers and people affected by policy on the ground is an inherent part of the field — in fact, interacting with these individuals enriches and grounds public administration research.

Another fundamental question, on the other hand, regarding methodological biases, is whether public administration scholarship is more *pure* or *scientific* by mainstreaming the use of rigorous quantitative methods in current research—and Ph.D.-level training in the field—at the expense of qualitative methods, for example. Given the complex and heterogeneous conditions explaining political, social, and environmental issues, it would be narrow and even unscientific to limit research in the field to quantitative methods. Mixed methods research is one of a few increasingly promising research designs and an adequate strategy to improve causal inference, depending on the research question. Since this type of work is more time-consuming, requiring travel to interact with people and the environment, it may mean that the field may need to revise its expectations in the future for the sake of making deeper contributions to social science and the real world.

These different approaches—on real-world relevance, interaction with practitioners, and research methods—have informed the larger questions addressed in this dissertation, through which I have aimed to bring our scholarship closer to some critical societal problems in which it is embedded.

## **6.5 Broader Implications**

My dissertation is motivated by the larger implications of waste mismanagement in the Global South. Improper waste management generates a highly pollutant greenhouse gas and aggravates the damages from flooding, besides its effects on public health and property value. This means that inadequate waste management, first, contributes to GhG generation that leads to severe rainfall from warmer temperatures and, second, blocks sewage and drainage systems that cause destructive flooding. Studying performance divergences between waste services of

different complexity helps grasp these broader problems better. If insufficiently understood, these issues may impact people's livelihoods, wellbeing, and public service infrastructures, principally in vulnerable Global South localities. Most importantly, their disproportionately adverse effects on the poor in the developing world may further undermine equity, inclusion, and thus democracy as a government form (Hallegatte et al. 2016). This work has crucial relevance for weak cities, especially in the Global South experiencing environmental consequences.

Learning about the conditions under which local governance factors —such as service-specific administrative capacity, community-based CSO involvement, and local collaborative governance— matter for providing environmentally relevant services that vary in complexity is thus significant. This means that comparative public administration research is critical for addressing inequality and exclusion. Its practical implications are also essential. Since environmental issues are rising poverty and inequality globally (and profoundly in developing countries), more precise knowledge about the administrative and societal vulnerabilities to provide increasingly complex environmental services in local governments can help to address them more effectively.

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- Moynihan, Donald P. and Joe Soss. 2014. "Policy Feedback and the Politics of Administration." *Public Administration Review* 74(3): 320-332. doi: 10.1111/puar.12200.
- Ospina, Sonia M., Marc Esteve, and Seulki Lee. 2018. "Assessing Qualitative Studies in Public Administration Research." *Public Administration Review* 78(4): 593-605.
- Pitts, David W. and Sergio Fernandez. 2009. "The State of Public Management Research: An Analysis of Scope and Methodology." *International Public Management Journal* 12(4): 399-420.
- Raadschelders, Jos CN. 2011. "The Future of the Study of Public Administration: Embedding Research Object and Methodology in Epistemology and Ontology." *Public Administration Review* 71(6): 916-924.
- Raadschelders, Jos CN and Kwang-Hoon Lee. 2011. "Trends in the Study of Public Administration: Empirical and Qualitative Observations from Public Administration Review, 2000–2009." *Public Administration Review* 71(1): 19-33.
- Riccucci, Norma M. 2010. *Public Administration: Traditions of Inquiry and Philosophies of Knowledge*. Georgetown University Press.
- Roberts, Alasdair. 2018. "The Aims of Public Administration: Reviving the Classical View." *Perspectives on Public Management and Governance* 1(1): 73-85.
- Simon, Herbert A. 1948. *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations*. New York: New York: The Free Press.
- Simon, Herbert A., Peter F. Drucker, and Dwight Waldo. 1952. "'Development of Theory of Democratic Administration': Replies and Comments." *American Political Science Review* 46(2): 494-503.

Waldo, Dwight. 1948. *The Administrative State: A Study of the Political Theory of American Public Administration*. Public Administration. New York: The Ronald Press Company.

\_\_\_\_\_. 1952. "Development of Theory of Democratic Administration." *American Political Science Review* 46(1): 81-103.

## Curriculum Vitae

### Renzo de la Riva Agüero

O'Neill School of Public and Environmental Affairs | Department of Political Science  
Indiana University – Bloomington  
[rdelariv@indiana.edu](mailto:rdelariv@indiana.edu)

#### Academic Appointments

**Assistant Professor, Public Management**, School of Public Policy, University of Connecticut, Hartford, CT, August 2022

#### Education

**Ph.D. in Public Policy**, Indiana University – Bloomington, IN, August 2022

Field Exams: Public Management, Comparative Politics

Dissertation: *“Too Complex to Deliver? Administrative Capacity, Governance, and Waste Management in Peruvian Municipalities”*

Committee: Jennifer N. Brass (chair), Sergio Fernandez, Lauren M. MacLean, Matthew Baggetta, Claudia N. Avellaneda, Sean Nicholson-Crotty

**Master of Public Policy**, McCourt School of Public Policy, Georgetown University, Washington, DC, May 2009

Fields: International Policy and Development

Thesis: *“Beyond agriculture: The role of economic distance on rural productive asset accumulation in Peru”*

Advisor: Gillette Hall

**B.A. in Political Science**, St. Olaf College, Northfield, MN, May 2005

Fields: International Relations and Latin American Development

Theses: *“Inequality in Brazil and Chile: Explaining the resurgence of left-leaning leaders within a neoliberal framework”* and *“Rights for undocumented immigrants: The limitations of the state”*

Advisors: Kris Thalhammer and Katherine Tegtmeyer Pak

#### Academic Affiliations

Ostrom Workshop in Political Theory and Policy Analysis, Indiana University – Bloomington  
Group for the Analysis of Development (GRADE), Lima, Peru (affiliation *in progress*, coord. with Miguel Jaramillo)

## Academic Publications

### Peer-Reviewed Publications:

- de la Riva Agüero, Renzo. 2022. “Do cogovernance and CSOs supplement municipal capacity for service delivery? An assessment of differences in simple versus complex services.” *Journal of Public Administration Research and Theory* 32(1):1-22. DOI: <https://doi.org/10.1093/jopart/muab026>.
  - Selected as this issue’s only *Editor’s Choice* article for its high-quality contribution to the field.
  - Received the 2022 Donald C. Stone Best Student Paper Award from the Section on Intergovernmental Administration and Management, American Society for Public Administration.
- de la Riva Agüero, Renzo. 2021. “Exploring administrative capacity and local governance in the Peruvian waste sector: Implications for complex service delivery in the Global South.” *State and Local Government Review* 53(2): 122-141. DOI: <https://doi.org/10.1177/0160323X211026862>.

### Manuscripts in Progress:

- de la Riva Agüero, Renzo and Claudia N. Avellaneda. “Organizational innovation after disaster: Do local governments transform in response to environmental pressures?”
- de la Riva Agüero, Renzo, Sergio Fernandez, and Jennifer N. Brass. “Local government outsourcing, performance, and efficiency: Evidence from the provision of electricity in South Africa.”
- Baggetta, Matthew, Brad R. Fulton, and Renzo de la Riva Agüero. “The diversity layer: Organizational member associations and the pursuit of bureaucratic representation.”

## Research and Teaching Interests

Public Administration in Developing Countries, Political Economy of Development, Civic Engagement, Collaborative Governance, Service Delivery, Local Governments, Organizational Theory and Behavior, Mixed-Methods Research, Field Research.

## Honors, Awards, and Grants

- Roy W. Shin Fellowship for dissertations on environmental policy and research serving the public, O’Neill School of Public and Environmental Affairs, Indiana University – Bloomington. 2022. **Awarded** (\$3,300).
- Donald C. Stone Best Student Paper Award, Section on Intergovernmental Administration and Management, American Society for Public Administration. 2022. **Awarded** (\$250).
- Founders’ Fellow, American Society for Public Administration. 2022. **Awarded**.
- Staats Emerging Scholars Award, Network of Schools of Public Policy, Affairs, and Administration (NASPAA). 2021. **Awarded** (\$350).
- President’s Diversity Dissertation Fellowship, Indiana University – Bloomington. 2021-2022. **Awarded** (\$23,000).

- Ostrom Workshop, Graduate Research Award, Indiana University – Bloomington. 2021-2022. **Funded** (\$2,001).
- Ford Foundation Dissertation Fellowship, The National Academies of Sciences, Engineering, and Medicine. 2021. **Honorable Mention**.
- David Gould Scholarship, Section on International and Comparative Administration, American Society for Public Administration. 2021. **Awarded** (\$500).
- David H. Davis Best Graduate Student Paper Award, Section on Environmental and Natural Resources Administration, American Society for Public Administration. 2021. **Awarded** (\$200).
- Tobias Center for Innovation in International Development, Research Support Grant, Indiana University – Bloomington. 2020-2021. **Funded** (\$2,500).
- American Political Science Association, Accessibility Grant. 2020. **Awarded** (\$150).
- Hispanic Scholarship Fund, Scholar. 2020. **Awarded**.
- Ostrom Workshop, Fellowship, Indiana University – Bloomington. 2020-2021. **Funded** (\$17,000).
- Political Science Doctoral Dissertation Research Improvement Grant (DDRIG), National Science Foundation. 2019. Unfunded, with high scores.
- International Dissertation Research Fellowship (IDRF), Social Science Research Council. 2019. **Final round out of 956 applications**.
- Integrated Program in the Environment, Sustainability Research Development Grant, Indiana University – Bloomington. 2019-2020. **Funded** (\$7,438).
- Tobias Center for Innovation in International Development, Research Support Grant, Indiana University – Bloomington. 2018-2019. **Funded** (\$4,878).
- Ostrom Workshop, Graduate Research Award, Indiana University – Bloomington. 2018-2019. **Funded** (\$3,778).
- Center for Latin American and Caribbean Studies (CLACS), Tinker Field Research Grant, Indiana University – Bloomington. 2018. **Funded** (\$1,950).
- Association of O’Neill School Ph.D. Students, Indiana University – Bloomington, Best Workshop Paper Award. February 2018. **Awarded** (\$50).
- O’Neill School of Public and Environmental Affairs, Indiana University – Bloomington, Fellowship to attend the Institute for Qualitative and Multi-method Research (IQMR). June 2017. **Funded**.
- O’Neill School of Public and Environmental Affairs, Indiana University – Bloomington, Scholarship for doctoral studies. 2016–2021. **Funded**.

## Conferences and Presentations

- “Too Complex to Deliver? Administrative Capacity, Governance, and Waste Management in Peruvian Municipalities.” Group for the Analysis of Development (GRADE), Lima, Peru (online, in Spanish), April 2022; O’Neill School Alumni Conference, May 2022.
- “Why Does Service-specific Municipal Administrative capacity affect the performance of simple and complex services differently?” American Society for Public Administration (ASPA), March 2022; Ostrom Workshop Research Series, Indiana University – Bloomington, April 2022.
- “Is governance enough? Assessing municipal capacity and organized civil society participation for complex service delivery.” American Political Science Association (APSA), September

2020; Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA), November 2020; Ostrom Workshop Research Series, Indiana University – Bloomington, November 2020.

- “Local government outsourcing, performance, and efficiency: Evidence from the provision of electricity in South Africa.” 12<sup>th</sup> International School of Public Management and Administration Conference, University of Pretoria, South Africa, October 2019 (coauthored with Sergio Fernandez and Jennifer Brass).
- “Opening the black box: Explaining the effects and mechanisms of municipal performance in climate change.” American Society for Public Administration (ASPA), March 2019; Midwest Political Science Association (MPSA), April 2019; Workshop on the Ostrom Workshop 6 (WOW6), June 2019; Tobias Center for Innovation in International Development, Indiana University – Bloomington, December 2019.
- “Organizational innovation after disaster: Do local governments transform in response to environmental pressures?” Midwest Political Science Association (MPSA), April 2018.
- “Public goods and services as end-products of serial processing in bureaucracies: Can organizational bottlenecks explain limitations in their provision?” Association of SPEA Ph.D. Students (ASPS) Conference. Indiana University – Bloomington, February 2017.
- “How can the private sector contribute to social development and inclusion? PPPs.” 5th Finance, Tax and Auditing Conference. Universidad San Martín de Porres, Lima, Peru, October 2013.
- “Agriculture insurance in Guyana.” Agriculture Risk Insurance Conference. Georgetown, Guyana, December 2009.
- “Productive use of the land: Experiences of Afro-descendent communities with cacao.” Central American Land Administration Projects Conference. World Bank, Washington, DC, September 2009.

## **Additional Training**

### **Qualitative and Multi-Method Research, June 2017**

*Institute for Qualitative and Multi-method Research (IQMR), Consortium on Qualitative Research Methods, Syracuse University, NY*

Modules:

- Qualitative Methods for Causal Analysis (I and II). Instructor: James Mahoney and Gary Goertz
- Mixed Methods Research for Causal Inference (I and II). Instructor: Jason Seawright
- Natural Experiments and Multi-Method Research. Instructor: F. Daniel Hidalgo
- Causal Inference from Causal Models. Instructor: Alan Jacobs
- Process Tracing and Small-N Analysis for Causal Inference. Instructors: Andrew Bennett and David Waldner

### **Stata Training Course, December 2011**

*Ministry of Production, Lima, Peru*

### **Workshop on the Methodology for a Regional Public Policy M&E System, November 2011**

*Brazilian Service of Support for Micro and Small Enterprises (SEBRAE), Brasilia, Brazil*

**Introduction to Geographic Information Systems (GIS) Course**, February 2010  
*World Bank*, Washington, DC, U.S.A.

**Latin American Land Issues in a Global Perspective: Event for Policy Evaluation**, January 2010  
*World Bank*, Washington, DC, U.S.A.

**Impact Evaluation Workshop of Agriculture and Rural Development Projects in Latin America and the Caribbean**, November 2009  
*World Bank*, Brasilia, Brazil

## Research Experience

**Research Assistant**, Indiana University – Bloomington, IN, May 2017 – May 2021

- Database management and analysis for nonprofit diversity and organizational structure data; Space characteristics and interactions in civil society organizations (with Matt Baggetta and Brad Fulton).
- Municipal outsourcing and service delivery in South Africa (with Jennifer Brass and Sergio Fernandez).
- Climate change and organizational innovation (with Claudia Avellaneda).
- Municipal bankruptcy in the US (with Craig Johnson, summer of 2017).

**Project Manager**, Indiana University – Bloomington, IN, January 2019 – May 2019

- Observing civic engagement research project through systematic social observations (with Matt Baggetta and Brad Fulton).

## Fieldwork

**Peru**: 2000-2001; 2005-2007; 2011; 2012; 2013-2014; 2018; 2021 (4 years, 5 months)

**Honduras**: 2008, 2009 (1 month); **Nicaragua**: 2008, 2009 (1 month)

**Paraguay**: 2010 (2 weeks); **Guyana**: 2009 (2 weeks)

## Teaching Experience

**Associate Instructor**, Indiana University – Bloomington, IN

- *Managing and Leading Organizations (V236)*. Instructor of Record (O'Neill School of Public and Environmental Affairs, Fall 2019).
- *Ethics and Public Policy (Y379)*. Teaching Assistant (IU Department of Political Science, Spring 2017).
- *American Political Controversies (Y100)*. Teaching Assistant. Led one week's session on unauthorized immigration (IU Department of Political Science, Fall 2016).

**Guest Lecture:**

- Theory and Management of Public Organizations (PP 5361), *University of Connecticut*

## Additional Skills

**Methods:** STATA; Qualtrics; NVivo; Field Research Methods; ArcGIS (beginner).

**Languages:** Spanish (native), English (advanced), French (intermediate).

## Professional Research and Reports

- *Strategy for the Planning and Implementation of Public Investment and Complementary Measures for Sustainable Development in Areas under Social Conflict* (Lima: Presidency of the Council of Ministers, 2013).
- *Social Inclusion National Strategy* (Lima: Ministry of Social Inclusion and Development, 2012).
- *Policy note: Importance of the identification of the differentiated benefits from entrepreneurial association for strengthening the design and implementation of SME support programs* (Lima: Ministry of Production, 2012).
- *Project for the creation and implementation of an Economic Studies and Program Evaluation Organic Unit* (Lima: Ministry of Production, 2012).
- *Sector Strategic Plan 2012–2016* (Lima: Ministry of Production, 2012).
- *Pilot proposal for the institutionalization and systematization of the approach and mechanism of the Development Project of the Puno-Cusco Corridor as reference for policy formulation and economic development management at the local level* (Cusco: Development Project of the Puno-Cusco Corridor, 2006).
- *Baseline study of the Nutritional Security Project in the Cusco Region* (Cusco: Plan International, 2006).
- *Assessment of the effects of the Project's market access technical assistance and public policy influence* (Cusco: Development Project of the Puno-Cusco Corridor, 2006).

## Consulting and Other Professional Experience

**Data Analyst, Matson, Driscoll & Damico, Weston, FL, May 2015 – July 2016**

- Consulting on economic damage estimations, data analysis and management of business interruptions in Latin America.

**Manager, Deloitte & Touche, Lima, Peru, April 2013 – January 2015**

- Manager of Public Sector Consulting. Leader of consultancies on quantitative policy analysis and design of public management reform interventions.

**Adviser, Presidency of the Council of Ministers, Lima, Peru, August 2012 – March 2013**

- Adviser to the Deputy Prime Minister. Responsible of quantitative policy analysis and management of the Deputy Prime Minister of the Presidency of the Council of ministers (PCM).

**Specialist, Ministry of Social Inclusion and Development, Lima, Peru, March – July 2012**

- Territorial Policy Coordination Specialist and adviser in the Policy and Strategy General Division.

**Adviser, Ministry of Production, Lima, Peru, August 2011 – February 2012**

- Adviser to the Viceminister of SMEs and Industries.

**Adviser, Metropolitan Municipality of Lima, Lima, Peru, December 2010 – August 2011**

- Adviser in the Social Development Division on policy and program design, implementation and evaluation for poverty reduction and access to opportunities of poor urban households.

**Consultant, World Bank, Washington, DC, June 2008 – May 2010**

- Assisted the management and supervision of land administration and land access projects in Bolivia, Honduras, Guatemala, Nicaragua, and Paraguay; rural sector development and small producer competitiveness strengthening project in Paraguay, and; a natural disaster recovery and community development project in Nicaragua. All as part of the Latin America and the Caribbean Agriculture and Rural Development team.

**Consultant, Embassy of Peru to the US, Washington, DC, November 2007 – May 2008**

- Devised research on US–Latin American relations for internal document on Peru’s future approaches and potential thematic interactions with the US, alongside the Ambassador’s assistants.

**Consultant, Development Project of the Puno-Cusco Corridor, Cusco and Puno, Peru, October 2005 – February 2007**

- Mixed-method evaluation of project outputs on rural producer access to markets and municipal government policy change. Designed pilot and implementation methods for the institutionalization of the Project’s rural development policy in municipal governments. Project financed by the International Fund for Agricultural Development (IFAD) and the Government of Peru.

**Consultant, Plan International, Cusco, Peru, June – September 2006**

- Led the quantitative and qualitative analysis of rural local policies and inter-institutional coordination for mother-child nutritional security. Conducted for baseline study of Nutritional Security Project, implemented in remote peasant communities.

## **Professional Service**

- *Peer Review, Academic Journals:* Journal of Public Administration Research and Theory; Public Administration Review; Social Forces; Academy of Management (2020 Annual Meeting)
- *Peer Review, other:* O’Neill School Brass Doctoral Workshop (“Brass Club”). Articles, dissertation chapters, grant applications (Indiana University – Bloomington, 2018–Present)
- *Committee Member:* Network of Schools of Public Policy, Affairs, and Administration (NASPAA), 2022; Section on International and Comparative Administration, American Society for Public Administration, 2021
- *Governance Primary Track Chair,* ARNOVA’s 51<sup>th</sup> Annual Conference (Association for Research on Nonprofit Organizations and Voluntary Action, 2022)

- *Governance Track Chair*, ARNOVA's 50<sup>th</sup> Annual Conference (Association for Research on Nonprofit Organizations and Voluntary Action, 2021)
- *Chair*, Panel on "Government Funding and Services: Patterns and Consequences" (Association for Research on Nonprofit Organizations and Voluntary Action, 2020)
- *Discussant*, Panels on "Cooperation, Collaboration and Co-production" and "Comparative Issues in Global Urban Politics" (American Political Science Association, 2020)
- *Conference Organizing Committee*, Workshop on the Ostrom Workshop 6 (Indiana University – Bloomington, 2019)
- *Chair and Discussant*, Panel on "Networks and Collaboration" (Midwest Political Science Association, 2018)
- *Translator*, Perspectives on Public Management and Governance (2018)
- *Public Policy Ph.D. Subfield Chair*, Political Science Graduate Student Association (Indiana University – Bloomington, 2017-2018)
- *Technical Secretary*, Viceministers' Coordination Commission (Presidency of the Council of Ministers, 2012)
- *Technical Secretary*, Reorganization Commission of CONCYTEC (Presidency of the Council of Ministers, 2012)
- *Co-Technical Secretary*, Inter-sectoral Rural Development Commission (Ministry of Social Inclusion and Development, 2012)
- *Chair*, International Policy and Development concentration (Georgetown Public Policy Institute, 2007-2009)
- *Lead Coordinator and Advocate*, New project to provide International Development students with practical and intellectual experiences within a pro-poor approach to development and governance (Georgetown Public Policy Institute, 2008-2009)

### **Professional Memberships**

- Academy of Management (AOM)
- American Political Science Association (APSA)
- Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA)
- American Society for Public Administration (ASPA)
- International Association for the Study of the Commons (IASC)
- International Society for Third-Sector Research (ISTR)
- Midwest Political Science Association (MPSA)
- Public Management Research Association (PMRA)

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